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RECONNECTING PUBLIC HEALTH AND URBAN PLANNING: AN EXPLORATORY STUDY OF CROSS-AGENCY COLLABORATION

By

Marlon Maus

A dissertation submitted in partial satisfaction of the
Requirements for the degree of
Doctor of Public Health
In the
Graduate Division
Of the
University of California, Berkeley

Committee in charge:
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ABSTRACT

RECONNECTING PUBLIC HEALTH AND URBAN PLANNING: AN EXPLORATORY STUDY OF CROSS-AGENCY COLLABORATION

by

Marlon Maus

Doctor of Public Health

University of California, Berkeley

Professor William Satariano, Chair

The most pressing health problems of the 21st century – such as obesity, diabetes, osteoporosis, cancer, depression, and cardiovascular disease – cannot be addressed using traditional public health interventions. Population growth[1] and climate warming are global challenges that threaten not just the health but perhaps the very survival of human beings. These, too, require innovative, "outside-the-box" solutions. At the root of these problems, and their solutions, lies the intimate relationship between where we live (our built environment) and how we live (our behavior). The separation of the disciplines has also been blamed, at least in part, for the failure to recognize the links between the built environment and the health disparities found among communities of color and of low socio-economic status. Correctly designed communities can improve their residents' health by encouraging physical activity, providing access to healthy food, and strengthening social networks and capital, while also decreasing waste and pollution, shortening commute times and the resulting stress, and addressing issues of social inequity.

A century ago, the relationships and dependencies between land use planning and public health were well understood – then, through the 20th century, the two disciplines evolved independently, and each lost its appreciation for the value of collaboration with the other. Before we can bring together the concerns of the built environment and public health, we must first reconnect the disciplines of land use planning and public health and reestablish the mutually beneficial relationship they once enjoyed.

[1] The U.S. is expected to double its current population by the end of the century, to nearly 600 million people. California's population in 2000 was 34 million; the estimate for 2050 is 54.8 million.

This study explores the current state of collaboration[2] between public health and land use planning agencies in California, in order to identify contextual factors that can act as either incentives or barriers for collaboration. The study consists of 18 in-depth, semi-structured interviews with land use planners and public health professionals that explored the relationship between the disciplines. By using Grounded Theory Methods and Social Exchange Theory, a Five Stage Model for Collaboration has been elaborated and the central theoretical construct of Cost-Benefit Analysis has been identified. A Cost-Benefit Audit tool (the *Collaboration Manual for Public Health and Planning*) based on the study results has been developed; a social ecologic model approach was used, and it suggests ways to improve and promote collaboration between public health and land use planning. The study proposes that a transdisciplinary approach to collaboration may be the most appropriate means to address the complex health problems that result from, and can be influenced by, the interaction of the built environment and the individual.

[2] Collaboration is defined as occurring when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms and structures, to act or decide on issues related to that domain (Wood and Gray 1991)

DEDICATION

This Dissertation is dedicated to my mother who not only brought me into the world but has been the one solid rock of support and love and happiness that has made it all possible.

And it is dedicated to Alan the editor-in-chief whose companionship makes life more meaningful.

ACKNOWLEDGMENTS

I wish to acknowledge the many people who contribute daily to my very existence and truly made this work possible…and I also ask for the pardon from the many more I should have mentioned but didn't

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My Yoga friends, Lena, Clair, Maryclair, Alexis.
My Bittersweet friends Penny, David, Diana, Manush and Marian, Jake and the rest of the great crew that makes it work a pleasure!

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PREFACE

"*Government should be collaborative*. Collaboration actively engages Americans in the work of their Government. Executive departments and agencies should use innovative tools, methods, and systems to cooperate among themselves, across all levels of Government, and with nonprofit organizations, businesses, and individuals in the private sector. Executive departments and agencies should solicit public feedback to assess and improve their level of collaboration and to identify new opportunities for cooperation."

Barack H. Obama, **Memorandum on Transparency and Open Government** January 21, 2009(Obama 2009)

Individuals and populations in the 21st century will be competing for increasingly scarce resources, notably in the area of health care. The U.S. economy will be unable to sustain the ever-increasing costs of a medical system that ignores prevention and stresses the use of expensive medical treatments. The chronic diseases of an aging population, the sad state of urban infrastructure, and the lack of political support for a comprehensive healthcare system are factors that must be addressed through a shift in the American approach to confronting health issues. If the built environment is indeed a major factor in the health status of individuals, then it behooves public health institutions to become involved in the planning and development of that environment. Government agencies have the opportunity and a mandate to collaborate in order to create a system that will be more effective than the silo-like mentality that has characterized the recent past. However, it is first necessary to understand the factors that act as barriers and as incentives for interagency and multidisciplinary collaboration. This study attempts to explore the perceptions and experiences of public health professionals and planners, specifically in government agencies in California, in order to identify the factors that affect collaboration. The study also suggests ways of using the results to guide future collaborations and develop other areas of research.

CHAPTER 1

INTRODUCTION

Background and Literature Review

Among of the greatest public health (PH) challenges facing the United States are the chronic conditions that are now the leading causes of illness, disability, and death. With an aging population and the enormous baby-boomer cohort (accounting for approximately 39% of all Americans over the age of 18, and 29% of the total population), public health professionals are looking for ways to promote lifelong mental and physical health and reduce the incidence of chronic diseases (Allen 2006; Lee and Skinner 1999). The connection between health and the built environment (BE) [3]is increasingly being investigated at various levels. Topics of research include: connections between the design of urban areas and physical activity; location of transportation and walking; and community design and weight, blood pressure, and other health indicators (*Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005; Cervero and Duncan 2003; Study Finds Links between Community Design, Weight, Physical Activity, High Blood Pressure Two Major Health Journals Present Special Issues Examining Impact of Built Environment on Health 2003). However, the main focus of this study is on methods to rebuild the connection between the disciplines of public health and land use planning (LUP) [4]that existed in the late 19th and early 20th centuries, but then largely disappeared (Kochtitzky et al. 2006)

If the premise is correct that addressing the complex health problems of the 21st century will require a collaborative approach between the disciplines, then we need to understand what factors are involved in such collaborations. Because initiatives seeking to reconnect the two disciplines are now occurring and will become more frequent, there is a need for a new paradigm for collaboration. It is not sufficient for the two disciplines to contribute their own expertise in a traditional multidisciplinary research model. Rather, there is a need to implement cross-cutting research based on a systems approach that integrates interdisciplinary contributions through enhanced collaboration

[3] Built environment (BE) may be defined as: "that part of the physical environment made by people for people, including buildings, transportation systems, and open spaces…the remainder of the physical environment is the natural environment" (Northridge, Sclar, and Biswas 2003)

[4] In the context of this study ***land use planning*** (and more briefly ***planning***) is used as a general term the includes urban planning, and city and regional planning. A ***planner*** is a professional working in LUP.

among institutions and agencies (Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006). This study explores the process of collaboration between PH and planning and develops theoretical models for collaboration to identify barriers and incentives. Furthermore, this study seeks to identify contextual factors that may be part of an emerging transdisciplinary (TD) approach to cross-cutting research and practice – a model which makes it more likely that efforts to reconnect the disciplines will be successful and sustainable.[5] (Stokols et al. 2005).

In order to prepare a theoretical framework on which to base possible tools and strategies for integrating public health and land use planning, this study explores the current relationship between the two disciplines. (See conceptual model in Appendix 3) After there is a better understanding of the barriers, obstacles, incentives, and motivations that influence the relationship between public health and land use planning, it will be possible to better plan for innovation, synergy, and the support for integration of different agencies and disciplines. This study focuses on the exploration of the collaboration between PH and LUP agencies in California.

"Health is a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity. The enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, or economic and social condition." World Health Organization (Constitution of the World Health Organization. 1994).

"The fundamental conditions and resources for health are peace, shelter, education, food, income, a stable ecosystem, sustainable resources, social justice, and equity. Improvement in health requires a secure foundation in these basic prerequisites." Ottawa Declaration, 1986 ("Ottawa Charter for Health Promotion" 1986).

In the early modern era, public health (PH) played a major role in land use planning (LUP)[6]. Notable examples would include the public health movement to redesign the tenements in lower Manhattan; this resulted in the Tenement House Act of 1867, which was intended to reduce disease by altering the built environment (Crisci 1990). Geographic analysis, a shared tool between PH and planning, was used in 1854 by physician John Snow to identify a public water pump as the source of an outbreak of cholera in London (Newsom 2006). In the mid-19th century, such planners as Frederick Law Olmsted were often ardent proponents of the idea that mental and physical health could be improved through appropriate urban design (Jackson 2001). Indeed, Olmsted served as President Lincoln's U.S. Sanitary Commission Secretary; even today, his exceptional urban designs continue to result in more livable places, as seen, for example, by large boulevards that mitigate the effects of modern traffic (Bosselmann,

[5] A transdisciplinary approach can provide a systematic, comprehensive theoretical framework for the definition and analysis of the social, economic, political, environmental, and institutional factors influencing human health and well-being (Rosenfield 1992).

[6] Also see interview with Allan Jacobs in chapter 3.

Macdonald, and Kronemeyer 1999). Underscoring the historical importance of the association between PH and urban design is the fact that two of the seven founders of the American Public Health Association were urban designers (Glasser 2002). Sanitarians' efforts were directed toward alleviating the effects of poverty and overcrowding by bringing in fresh air, pure water, and green spaces to prevent infectious diseases like cholera, typhus, yellow fever, and tuberculosis (Lindheim and Syme 1983). City planning efforts were often linked to health expectations. Richardson's Hygeia City (the "City of Health"), Howard's Garden cities, and even Le Corbusier's tower in the park (the "Radiant City"), were all premised on the idea that they would be healthier for their inhabitants (Richardson 1876; Howard and Osborn 1946; Le Corbusier 1967). These designers typically aligned areas of density next to open spaces, believing that the "health effect" of these so-called open designs would result from an easing of the overcrowding thought to cause physical and mental disease.

As a result of such efforts, a perception grew that development should be carefully controlled. This perception was then extended to include an emphasis on single-use development (that is, residential development separated from commercial development, and so on), even though there was scant scientific evidence for any health benefits resulting from this planning. The practice of "zoning" codified single-use development.

The ability of government to regulate density and land use was codified into U.S. law by a 1926 Supreme Court case, *Village of Euclid v. Ambler Realty.* The Court's ruling validated zoning and land-use regulation, and it cited the protection of public health as part of its justification (Village of Euclid V. Ambler Realty Co. 1926; Schilling and Linton 2005). The unintended result, which ultimately affected both public health and planning, was an emphasis on low-density, single-use development that led to the proliferation of "sprawl" in the U.S.[7] (see glossary, Appendix 4) The consequences of sprawl were prophetically described by William H. Whyte, first in an article in *Fortune* magazine and then expanded upon in the book *The Exploding Metropolis* (Whyte 1958; Whyte 1993)

At the same time, the connection between the disciplines became much more tenuous as planners and public health professionals focused more narrowly on their respective fields. During the second half of the 20th century, public health grew increasingly "medicalized." The field focused more on the diseases of populations and their cure and prevention, and thus on such activities as vaccination programs and responses to epidemics. Land use planning became more concerned with transportation, architectural design, and engineering – and less with the health of the community. In essence, an era of "silos" emerged in which interventions took place within each separate discipline, and their historical connection essentially disappeared.

[7] *Poor accessibility* is the common denominator of urban sprawl—nothing is within easy walking distance of anything else (Ewing et al. 2003)

There is now very little overlap in the work of the two disciplines (Greenberg et al. 1994). They have developed distinct goals and responsibilities, and they answer to different stakeholders – even though they continue to influence many common areas.

A major advance in PH was the suggestion by Syme in 1978 that classic epidemiologic studies of blood pressure had been ineffectual in explaining the reasons why some populations were more susceptible than others to becoming ill. He suggested that PH would be better served by looking at the "variations in life-style" to find systematic and patterned relationships that distinguish the factors affecting susceptibility to disease (Syme and Torfs 1978). Social networks and community ties were identified as independent determinants of population health (Berkman and Syme 1979). These ideas were developed more fully in by Lindheim (from Environmental Design) and by Syme (from Public Health) in a paper on environments, people, and health (Lindheim and Syme 1983). This is among the earliest papers suggesting that the sanitary programs of the 19th century had failed to adapt to a world where the main diseases were not infectious but rather chronic – such as coronary heart disease, stroke, cancer, mental illness, accidents, and suicide. The paper also recognized that it was not only the physical environment that had effects on health and disease, but also social determinants – such as social relationships, social position, and "disconnection from biological and cultural heritage."

This novel way of thinking about disease suggested that, by promoting healthy places, it may be possible to improve health outcomes for people, especially those at risk for health disparities. Thus, the very limited interaction of PH and LUP in promoting a healthier built environment during the latter half of the 20th century has resulted in several efforts at the government, professional organization, and community levels to reconnect the fields. As an example, the CDC's "Research Guide" stresses the need to "Examine how land use and transportation decisions can help or hinder the creation and maintenance of healthy and safe communities… Examine the role of public policy (e.g., zoning and environmental regulations) and social determinants of health and injury in land-use decisions and urban planning" (Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006).

It has become increasingly clear that traditional public health interventions by themselves frequently fail to improve health outcomes when dealing with such chronic conditions as obesity, injury, heart disease, mental disease, and diabetes. At the same time it has been shown that the built environment plays a pivotal role in all of these (Jackson and Kochtitzky 2001; Frumkin, Frank, and Jackson 2004). In view of the predicted strains on the health-care system resulting from the aging of the baby-boomer generation (some forecasts are for a third of GDP to be devoted to health care), then disease prevention rather than cure becomes a logical and urgent approach to public health (Lee and Skinner 1999). The increase in life expectancy means that maintaining the best health status for as long as possible should be a major goal for PH, planners, and policy makers. Physical activity is a key factor in maintaining good health in aging populations; therefore, the training of professionals versed in a TD approach to investigate the relationship of the individual and the environment becomes of

paramount importance (Satariano and McAuley 2003). Because cities are home to a disproportionate number of the elderly, urban form is a very important factor shaping the health of an aging population. To meet the special needs of the aging, PH must be involved in planning or redeveloping urban environments (Freudenberg, Galea, and Vlahov 2006). As stated in the CDC's Research Guide, *"Learning more about the relationship between health and the places where people live, work, learn, and play can better prepare us for the challenges of the 21st century"* (Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006). This assertion is based on an ecologic model of health determinants that recognizes the essential influence of the built environment on health. Figure 1 shows a conceptual model for the relationship between the built environment and health (*Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005). Figure 2 shows the Ecological Model for Active Living (Sallis et al. 2006).

Many efforts to reconnect the two fields are resulting from this awareness. These efforts generally focus on two main areas: 1) exploring the connection between the design of the built environment and health outcomes, and 2) examining the relationships among the stakeholders involved in designing and developing the built environment.

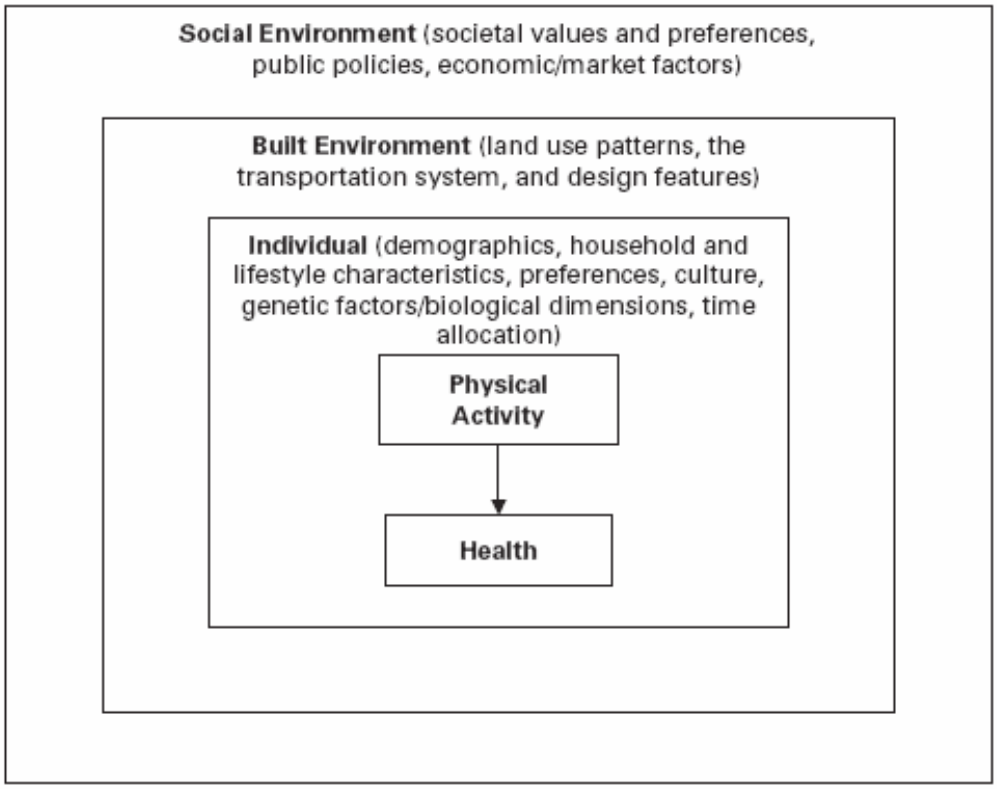

Figure 1. Conceptual Model for the Built Environment and Health. (*Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005)

There are two parts to the equation linking the BE and health. The first is the now well-established connection between physical activity and health (which will be further discussed below). The second is the connection between the built environment and human behavior, particularly physical activity. There are many studies in this second area, including those that relate walking and bicycling to urban design(Cervero and Duncan 2003), the use of transit and urban form (Cervero and Radisch 1996), sprawl and decreased physical activity (Frank et al. 2005; Ewing et al. 2003; Frank and Engelke 2001), reduced walking due to car use (Cervero and Gorham 1995), location and access to schools and the resultant physical activity in children (Cooper et al. 2005), and several meta-analyses (Handy et al. 2002; Williams 2007; *Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005).

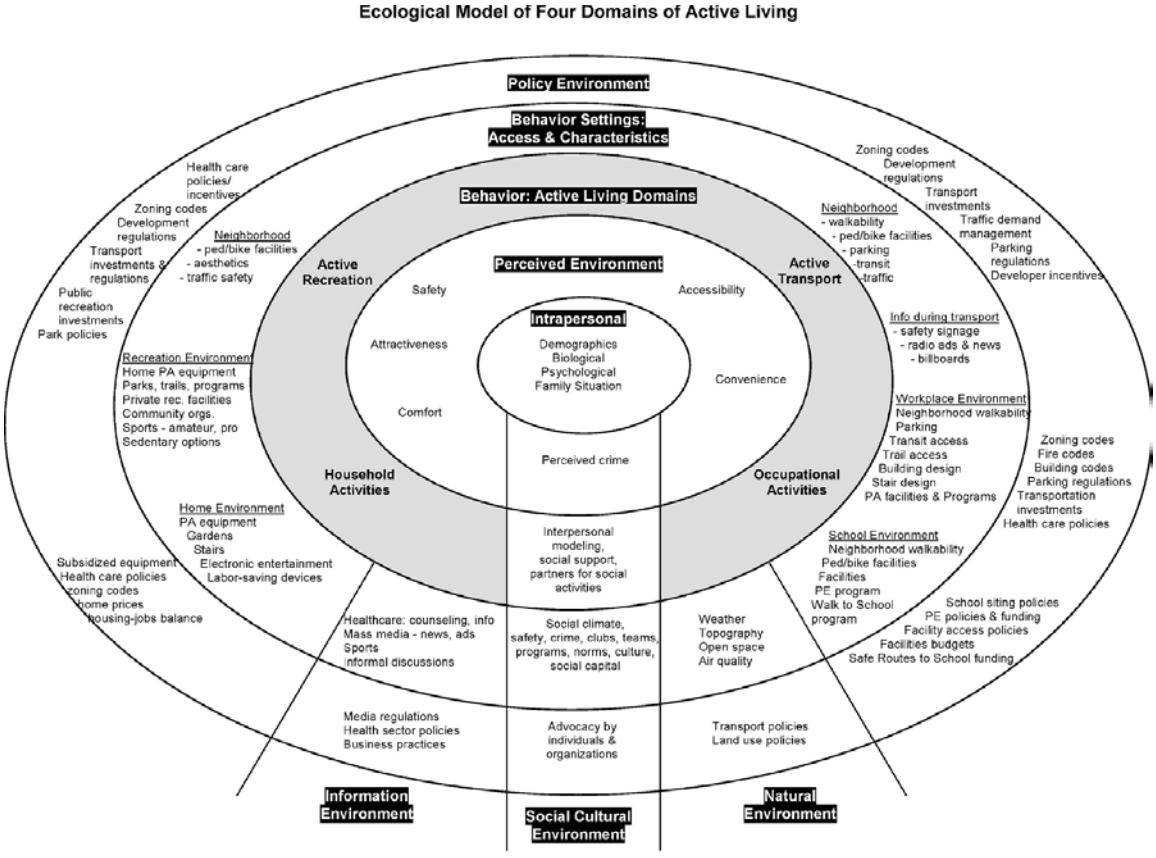

Figure 2. Ecological Model for Active Living. (Sallis et al. 2006).

One reason for the predominance of such studies is that physical activity is a measurable behavior that can be related to other measures, like car use, street length, connectivity, and land-use mix (Saelens, Sallis, and Frank 2003). However, the causal

relationship is less understood, in part because of the lack of an agreed-upon theoretical framework (Handy 2005). Even more difficult to measure and study is the connection between the design of the built environment and its resulting effects on health (Handy 2005; Boarnet 2005). The studies linking specific characteristics of the built environment and incidences of overweight/obesity and other chronic health problems are extremely limited and inconclusive – for reasons, such as being cross-sectional in design, not longitudinal, and rarely with control for self-selection (*Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005). For example, in a review of all available studies on the subject of sprawl and the incidence of overweight, the Robert Wood Johnson Foundation concluded that even the "best designed" studies have not found any association between the two (Williams 2007). Figure 3 shows that there are established associations (shown with a solid line) and speculative relationships (shown with a dashed line) (Ewing et al. 2003). In short, there is inherent complexity in a relationship that includes the social environment, the built environment, individual-level factors, and many more elements (Figures 1 and 2) (*Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005)

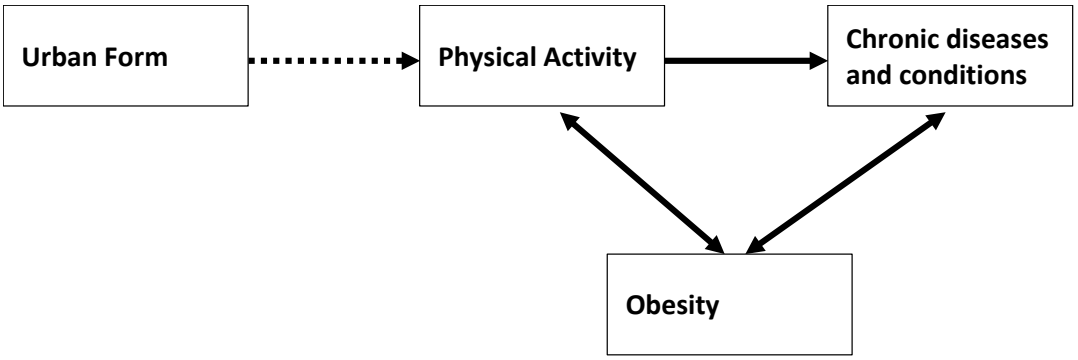

Figure 3. Relationships with the Built Environment. (Ewing et al. 2003).

Much of the interest regarding the connection between physical activity and improved health followed the U.S. Surgeon General's first report on *Physical Activity and Health* in 1996. Physical activity was chosen as the leading health indicator for *Healthy People 2010,* a national agenda for reducing the most significant preventable threats to health (Physical Activity and Health: A Report of the Surgeon General. 1996; Healthy People 2010: Understanding and Improving Health. 2000). The scientific evidence is strong that regular physical activity reduces the risk of premature mortality and the development of numerous chronic diseases, improves psychological well-being, is associated with better cognitive function in older adults, and helps prevent weight gain and obesity (*Does the Built Environment Influence Physical Activity? : Examining the Evidence* 2005; Barnes et al. 2002).

However, measures are not well developed to relate the built environment to physical activity. Likewise, there is little information on the location of physical activity, making it difficult to relate any specific characteristics of the built environment to activity (Handy et al. 2002). This situation may improve as Geographic Information Systems (GIS) and geocoding of data play a greater role in future studies (McGinn et al. 2007; Boarnet 2005). Also of great importance is the inclusion in research of specific at-risk populations – such as a diverse population of older adults. The recommendation of the CDC Healthy Aging Research Network for this type of research includes the need for "longitudinal studies, and the application of geographic information systems" (Prohaska et al. 2006). GIS may also be of use to improve the utilization of existing resources; for example, by helping to identify opportunities for exercise and physical activity in an effort to decrease the incidence of some cancers (Satariano 2007)(personal communication).

In the field of LUP, on the other hand, there are clear efforts to integrate PH concerns into neighborhood design by pointing out possible areas where the two overlap. One example is the report prepared for the LEED-ND (Leadership in Energy and Environmental Design, New Development) Core Committee by the U.S. Green Building Council (USGBC), the Congress for the New Urbanism (CNU), and the Natural Resources Defense Council (NRDC) (Ewing 2006). The report divides PH into such areas as physical fitness, mental health, or respiratory and cardiovascular health, and then looks at such indicators as the relationship to street connectivity or to sources of emitted substances known to cause disease (NOx, VOC, etc.).While the first part of the equation connecting the BE and PH is to show the association between the design of the BE and the resultant health outcomes, the second part is the need for separate disciplines to combine their respective methods, frameworks, and approaches in a way that a new research and practice paradigm emerges. In short, it is necessary that they stop acting solely within their silos and start integrating their practice.

Research into the relationship of the BE and urban health is arising from a range of disciplines: "using different theoretical frameworks and applying various disciplinary orientations and terminologies" (Freudenberg, Galea, and Vlahov 2006). Examples quoted include demography and epidemiology, which may look at where migration and population growth influence the distribution of disease, and sociology, which may focus on social activities and organization, and their association with changing behaviors. Because of the complex situation resulting from the multiple influences that have health effects in urban living, many disciplines must come together in both research and intervention. An example is that social capital associated with group membership may improve health, yet identification with a homogeneous ethnic community may result in spatial racial segregation resulting in poor health (Freudenberg, Galea, and Vlahov 2006).

It has been suggested that if multi-level research and interventions are to be successful, then a new model of collaboration must be developed (Sallis et al. 2006). The ideal model would require a more formal relationship between public health and land use planning – a relationship founded on sound theoretical principles that would

support increased collaboration. There are very few studies documenting the present state of collaboration between the two fields; therefore, this study explores this relationship and develops a theoretical model that can be used to improve the areas where the fields already collaborate, identify possible new opportunities and incentives for collaboration, and mitigate the challenges and barriers that interfere with increased integration.

Previous studies have tended to concentrate on the level of interagency collaboration, not on the effectiveness of those collaborations. Daley's survey study looked at the barriers and incentives for public health and environmental agencies to collaborate in order to address environmental problems (Daley 2009). The present study looks specifically at the incentives and barriers to collaborations between public health and planning agencies in California, while also relating the results to the level of action.

The objectives of the PH community in regard to the built environment have been discussed by others. Are these same objectives expressed by the planning community? The proposition to "integrate the disciplines" refers to areas of shared interest between the two. As in a Venn diagram, there is possibly a large area of overlap between PH and planning, but there will likely remain many areas that will continue to be unique to each discipline. Those unique areas cannot be ignored, because they inform the way a discipline operates. Each discipline's uniquely held areas must be understood by the other discipline – and this requires the development of a common language.

One aspect in which the two disciplines are distinct from each other is in their respective views of research – views based on their beliefs and experiences. Urban design has evolved from two separate traditions: 1) a visual-artistic tradition focused on the visual and aesthetic qualities of urban spaces, and 2) a social-usage tradition focused on the way people use or "colonize" spaces. From the two has emerged a current "making places" tradition, which combines aesthetic concerns with an awareness of the functions and activities that take place in the space (Carmona 2002). The "making places" tradition has created a need for empirical observational data in order to identify the factors that make some urban spaces successful (or, "good urban form") and others less so. At the core of the movement to create "good city form" is the awareness that design must look beyond functional theories, an issue expressed by Kevin Lynch (Lynch 1984). Lynch suggests that there are "values" expressed and used by various disciplines when looking at the design of the built environment. In the case of public health, for example, the values would include the importance of achieving good health outcomes. PH, with its roots in empirical science, will also require that there be data to justify any proposed interventions.

Another example is the use of qualitative observational research, which has its roots in the work of Jane Jacobs and her investigations of the functioning of Greenwich Village in the 1940s and 50s (Jacobs 1961). Another example is the manifesto by Allan Jacobs and Donald Appleyard, in which they identify seven goals and five physical characteristics as being essential for the future of a good urban environment (Appleyard and Jacobs 1987). Factors with greatest importance for PH include: livable streets and

neighborhoods, minimum density, and integrated activities (living, working, and shopping) in reasonable proximity to each other. Urban designers – such as Allan Jacobs, Tibbalds, Gehl, Calthorpe, and others – have more recently called for direct systematic observation of the built environment in order to gain first-hand information to be used in making decisions about its development and design (Jacobs 1984; Carmona 2002). The research ranges from case study experiments to explore how much can be learned from observation, to photographically documenting the sidewalks, parks, playgrounds, and streets of cities like New York or Copenhagen (Whyte 1980, 1988; Jacobs 1984; Gehl 1987).

At the core of the link between PH and urban design is the hypothesis that changes in the built environment affect the behavior of the populations and are ultimately reflected in their health. In a Venn diagram, the area where the spheres of influence for PH and urban design overlap would be the zone in which the disciplines can influence each other. The desire to define and understand this overlapping area is the motivation for much of the research currently taking place.

The separation of the two disciplines has resulted in the development of two distinct professional cultures and languages that are often inaccessible to each other. There is very little mutual understanding of the laws, regulations, power bases, and institutional procedures that govern each specialty. This gap has led to various efforts to publish “dictionaries” and manuals to introduce PH to LUP and vice versa (*Public Health Terms for Planners and Planning Terms for Public Health Professionals* 2006; Malizia 2005; Morris 2006). An increasing number of symposia are taking place to teach planners and PH professionals about each other (Symposium on Land Use and Health: Fostering Collaboration between Planners and Public Environmental Health Officials 2004; Fallon 2006; *Healthy Communities through Collaboration: Public Health and Land Use Planning* 2007). There have even been suggestions to introduce ideas of land use planning into the education of physicians and other health care professionals (Romine 2005).

The importance of understanding the constraints faced by each discipline cannot be overemphasized. Due to the history of land use regulation in the U.S., the local government level is often the stage where the process of developing the built environment takes place. This process is extremely variable among localities. For example, a document prepared by the National Association of Local Boards of Health (NALBH) for the Atlanta region suggests that public health become involved in the "comprehensive development plan,” which is the standard land use planning tool in that geographic region. In California, on the other hand, the Governor's Office of Planning and Research supports a state law that requires every county and incorporated city to use a "general plan" in the planning process. In San Francisco, for example, leading urban designers have come to realize that they must integrate their actions into the general plan for the city, if they are to succeed in creating the better places that they envision (Jacobs 1978).

PH professionals are rarely aware of these “comprehensive” or “general” planning processes, or of the zoning laws, permit requirements, environmental

requirements (such as the California Environmental Quality Act [CEQA] in California[8]), and so on. PH must be part of their formulation from the very beginning, in order to have its concerns included in the discussions.[9] (Schilling and Linton 2005; Fallon 2006; Malizia 2005; California Planning Guide: An Introduction to Planning in California 2005)

PH must also become acquainted with the internal issues of the LUP community. There is the perception within the design field that there are two competing roles for practitioners: as artists, or as environmental designers. Is it a discipline or a professional field? What is the theoretical base for design – what it can be, versus what it should be? (Lang 1991). Jon Lang looks at design theory from the perspective of the environment and behavior, which also happen to be the areas of concern to PH. He makes the point that designers are not always able to do what they would like to do, for reasons including land use restrictions, client's wishes, and political considerations. He also suggests that much of design theory, particularly in the U.S., has been normative rather than based on empirical data – and empirical data are preferred by health professionals. In retrospect, this explains why many of the urban design "experiments" – for example, the utopians, such as Ebenezer Howard or Henry Wright; key architects, such as Le Corbusier; and the Athens Charter in 1968 – failed to produce the anticipated behaviors among the people who inhabited them. Public health must become aware of the struggle within the design community to move away from design based on personal experience, opinions, habits, and beliefs (design as an art form) to a more scientific, substantive, and empirical approach (increasingly concerned with behavioral and environmental effects) (Grabow 1983).

In order to encourage this transformation, a proposed "catholic approach" to design education was based on a broader, interdisciplinary definition of what urban designers should know (Moudon 1992). PH was not among the disciplines listed by the author at the time of the proposal (1992); in 2005, however, the same author wrote:

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[8] California Environmental Quality Act (CEQA) statutes, in Chapter 1: Policy, § 21000. Legislative intent: The Legislature finds and declares as follows: (a) The maintenance of a quality environment for the people of this state now and in the future is a matter of statewide concern.(b) It is necessary to provide a high-quality environment that at all times is healthful and pleasing to the senses and intellect of man…(d) The capacity of the environment is limited, and it is the intent of the Legislature that the government of the state take immediate steps to identify any critical thresholds for the health and safety of the people of the state and take all coordinated actions necessary to prevent such thresholds being reached.

[9] The General Plan and Zoning are not the same. A general plan is a set of long-term goals and policies that the community uses to guide development decisions. Although the plan establishes standards for the location and density of land uses, it does not directly regulate land use. Zoning, on the other hand, is regulatory. Under the zoning ordinance, development must comply with specific, enforceable standards such as minimum lot size, maximum building height, minimum building setback, and a list of allowable uses. Zoning is applied lot-by-lot, whereas the general plan has a community-wide perspective (California Planning Guide: An Introduction to Planning in California 2005).

"public health research protocols are eye openers for environmental designers and urban and transportation planners. First, they stand out for their common use of primary data that provide targeted and high quality information… the power of such data to illuminate issues is in stark contrast with the limitations of the secondary data that urban and transportation planners are typically constrained to use in their research… further, public health studies… use tested or validated instruments for data collection" (Moudon 2005). Due to this difference in research approaches, PH is forced to question the guidelines commonly employed by designers to create "good" places, because of the apparent lack of solid evidence that these guidelines have been validated and/or evaluated (Frumkin 2003).

As the two disciplines rediscover each other, the efforts to reconnect will occur at two levels: 1) Research looking strictly at the association of health outcomes and aspects of the built environment (such as how street design relates to physical activity and obesity) (Frank and Engelke 2001; Frank et al. 2005; Ewing et al. 2003), and 2) research into the role that public health plays in planning the built environment (Hoehner et al. 2003; Dannenberg et al. 2003). As mentioned previously, the latter area is one in which where there has been very limited research, and it provides the main focus of the present study.

Few studies that could inform the present research were identified. One exception is a collaborative effort between the American Planning Association and the National Association of County and City Health Officials, supported in part by the CDC and named the "APA/NACCHO 2004 Public Health and Planning Survey" (Symposium on Land Use and Health: Fostering Collaboration between Planners and Public Environmental Health Officials 2004). This survey explores some of the attitudes and perceptions among planners and public health officials regarding the level of association between the two disciplines. This survey is part of a national initiative by the two organizations to build the capacity of local health and planning agencies to include health considerations in planning and community design projects (Symposium on Land Use and Health: Fostering Collaboration between Planners and Public Environmental Health Officials 2004; *Healthy Communities through Collaboration: Public Health and Land Use Planning* 2007). Its creators are motivated by the present separation in the practice of the two disciplines, despite their previous history of common objectives. As mentioned before, these organizations also sponsored a two-day symposium on land use planning and public health in 2004 (Symposium on Land Use and Health: Fostering Collaboration between Planners and Public Environmental Health Officials 2004).

The APA/NACCHO 2004 project is arguably the best example of an effort at "restoring the bridge between land-use planning and public health practice." In order to bridge the gap, the organizations are working to provide education, training opportunities, and practical tools to support local initiatives with a specific focus on

eliminating health disparities and utilizing health impact assessment (HIA)[10] tools (*Healthy Communities through Collaboration: Public Health and Land Use Planning* 2007). They aim to "help local public health agencies (LPHAs) and local planning agencies gain a better understanding of their respective authorities and functions, and how they can provide input and guidance to one another for healthier land-use planning." Because they are professional organizations, their research efforts are fairly limited and their goals consist mainly of educating and raising awareness among PH officials and local planners through workshops and professional training conferences. A review of the literature reveals that no qualitative, in-depth studies exploring the experiences and beliefs of the key stakeholders have taken place or appear to be planned, thus providing the main impetus for the present study.

Other efforts to increase the collaboration of land use planners and public health professionals are taking place at the local level (usually city or county). An example was "Solano County Public Health and Community Design: Building New Partnerships," a meeting held on December 11, 2006 in Solano County, California. This meeting brought together various practitioners, officials, and academic experts to explore ways to reconnect at a planning level. A summary of comments taken from the various lectures and group activities exemplifies the opinions voiced by many in the two fields. Some examples of direct quotes include (personal communication) (Summary of Break-out Group Discussions 2006):

- *"Have Public Health (PH) schedule new and ongoing meetings with Planning, Education"*
- *"Public Health do a report to the 4 C committee- Cities/Counties Coordinating Committee"*
- *"Create opportunities for PH and Planning to talk and work together"*
- *"Planning – have objective criteria for Public Health"*
- *"Public Health considerations should be a part of every planning discussion – become a standard in planning"*
- *"Look for a way to formalize relationships between planning and public health"*
- *"Hold cross-disciplinary opportunities for education"*

[10] *A combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population.*

- *"Provide concrete projects – not just training 'to death!'"*
- *"Regular meeting between planning and public health needed; consistency needed"*
- *"County person to be a liaison between cities to serve as a hub/clearinghouse of information"*
- *"Get PH language incorporated into city general plans"*
- *"County can be a role model for the cities; bring someone into the General Plan process with PH background; and/or bring PH into technical advisory group for county General Plan update."*
- *"Not everyone sees what PH can bring to the table"*
- *"Common language and the lack of ability to make everyone feel comfortable"*
- *"Paradigm differences between disciplines"*

A recurrent theme expressed by the participants is the desire for a formalized relationship based on a working theoretical model for collaboration. The present study proposes such a model, the Five Stage Model of Collaboration. By exploring in depth the experiences, attitudes, and perceptions of key practitioners, it may be possible to identify strengths and weaknesses (and perceived costs and benefits) and thereby support the integration of the two disciplines that is currently lacking.

Several theoretical models for integrating the disciplines have been considered. Some authors have suggested using ecosocial theory and environmental justice (Corburn 2004). Others have proposed variations of an "ecosystem health map," which puts health at the heart of urban planning (Barton and Grant 2006). Still others have proposed a conceptual model based on what they call "Social Determinants of Health and Environmental Health Promotion." This last model is described as a combination of the ecosocial perspective with various complementary and reinforcing frameworks, including the life course approach, health and human rights, the precautionary principle[11], and sustainable production (Northridge, Sclar, and Biswas 2003). Although these models seek to connect the theory of urban planning with public health, none seems to integrate the actual practice of the two disciplines at the individual level.

[11] Precautionary principle: "When information about potential risks is incomplete, basing decisions about the best ways to manage or reduce risks on a preference for avoiding unnecessary health risks instead of on unnecessary economic expenditures." (www.waterquality.de/hydrobio.hw/PTERMS.HTM)

Furthermore, none addresses the need to identify and overcome the barriers to collaboration faced by the practitioners themselves.

There is a clear need to develop a theoretical framework to define the agendas and goals of the integrated disciplines – which is what the proposed models seek to do – but there is a more urgent and practical need for tools to tackle the difficulties of facilitating and promoting collaboration among the practitioners involved. The development in the present study of a collaboration-based theoretical model should help suggest ways not only to improve the areas where the fields presently overlap, but also to point out the challenges and barriers facing future collaboration and suggest new opportunities for the translation and dissemination of knowledge (Sallis et al. 2006).

Transdisciplinary Model

A review of the literature reveals various proposed theoretical models that describe collaboration between disciplines. Of these models, one that appears to be particularly successful and is being formally evaluated is the Transdisciplinary (TD) model (see glossary, Appendix 4) of collaboration (Stokols 2006; Bergmann and Brohmann 2005). The present study proposes that the TD model can contribute effectively toward developing both a theoretical and a practical framework for reconnecting the fields of public health and land use planning. TD collaboration has been defined as a process by which professionals work together from the outset to develop a *shared* conceptual framework that integrates and extends discipline-specific theories, concepts, and methods in order to address a common problem (see the conceptual model for the study, Appendix 3) (Rosenfield 1992; Nash et al. 2003). It is distinct from simple disciplinary or interdisciplinary approaches, which retain the participants' separate conceptual frameworks and research expertise, even when they seek to address a common focus.

The process of developing tools, suggestions, guidelines, and possible strategies that can be used to reconnect public health and land use planning is a prime example of what the CDC's Research Guide calls "cross-cutting research." This concept is defined as "supporting a systems approach to research that builds on existing strengths; captures interdisciplinary contributions; and promotes and enhances synergy, teamwork, and ethical integrity" (Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006). Cross-cutting research is necessary in order to transcend the boundaries of disciplines, organizations, and programs when addressing complex problems. The CDC explains that it is "fundamental to…ready the public health system for the future" (Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006).

Cross-cutting research can be implemented by using various models that combine disciplines to a greater or lesser extent, including the multidisciplinary and interdisciplinary models. Many researchers, however, consider the TD model to be the essential approach for implementing cross-cutting research because it integrates societal-problem understanding into the planning process and research practice (Jahn

2005). The TD approach is the best way to generate a new, integrated knowledge base that is essential to solve complex problems. Note should be made that there is no value judgment implied in the progression from multi- to inter- to trans-disciplinary approaches. Transdisciplinary is not "better" per-se than other approaches. It is simply considered more appropriate in tackling complex societal problems, of which current chronic health problems are an example.

Translation research (TL) (see glossary, Appendix 4) and implementation research are also used to determine "how and why interventions do or do not work, and to facilitate promotion and wide-spread adoption of effective interventions and sustainable community-level approaches for addressing emerging health challenges" (Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006). It is clear that academic research is not an end in itself, and increasingly TL is being required by various funding and research organizations so that the results of evidence-based research findings, tools, and information will ultimately benefit the public (Sussman et al. 2006; Advancing the Nation's Health: A Guide to Public Health Research Needs, 2006-2015 2006; *Web Site Helps Community Leaders Translate Research into Behavior Changes Using the Re-Aim Framework* 2006; Bammer 2005). As an example, in the report "Crossing the Quality Chasm: A New Health System for the 21st Century," the IOM stresses the need to apply evidence-based science to improve health care by spreading it across organizations, networks, and geographic areas (Crossing the Quality Chasm : A New Health System for the 21st Century 2001; Dearing 2006).

In short, the translation of research knowledge is essential, if that knowledge is to serve the public (Sussman et al. 2006; Davis et al. 2003). The CDC has stated that a major goal is to "increase the spread and usage of effective public health interventions based on 'science that works' so that the greatest health impact for an individual, community, or nation can be achieved with the greatest efficiency. While the benefit of public health interventions correlates with its efficacy and effectiveness, the greatest health impact on individuals, the community, racial/ethnic, and other populations experiencing health disparities, and the broader population is achieved when an evidence-based intervention is optimally translated into public health practice and policy" (*Improving Public Health Practice through Translation Research* 2007).

An approach based on TD practice and TL research is much more in line with efforts to create healthy communities through greater collaboration and by facilitating the empowerment of the individuals affected by the development of the built environment. Many of the more successful examples of sustainable health-behavior change are based on increased participation of the community in the research and its translation to practice (Minkler 2000; Minkler et al. 2006). Minkler (2005) states that, in regard to successful examples of collaborations to improve the health of communities: "there is also a critical need to document and disseminate findings about outcomes of such efforts…" (Minkler 2005). This is one reason for the TL aspects included in the present study; by basing the strategies to reconnect the two disciplines on a TD and TL

model for collaboration, a greater and more sustainable impact on human health should result.

One of the prime areas of practice now developing a TD approach is the field of active living research (ALR). ALR looks at multilevel interventions in order to achieve a desired change in physical activity among a population (Sallis et al. 2006). This practice requires the collaboration of various disciplines. ALR is not only an area where TD principles have been applied, but also one in which there has been attempt to evaluate how successful these efforts have been (Stokols et al. 2005).

Because of the growing interest in the TD model – and the resulting increase in resources being allocated by governments and foundations for TD ventures – it has become clear that there is a need to evaluate the relative efficacy and cost-effectiveness of this model versus its alternatives for conducting interdisciplinary investigations. To address this need, a new "science of transdisciplinary action research" has been proposed. It will build on the scientific study of transdisciplinary research and community action by examining three types of collaboration and the contextual circumstances that facilitate or hinder them: 1) collaboration among scholars representing different disciplines; 2) collaboration among researchers from multiple fields and community practitioners representing diverse professional and lay perspectives; and 3) collaboration among community organizations across local, state, national, and international levels (Stokols 2006). The second of the three types most closely fits the integration of the two disciplines as explored in this study, although important aspects of the third type also play a role in interagency collaborations.

The main difference between the first two types is this: Collaboration among scholars should produce intellectual products that will advance science, while collaboration among researchers and community practitioners should lead to the *translation* of scientific findings into community-focused problem-solving strategies, such as designing and building healthier places to live. The context of the collaboration is also very different – the first tending to be situated in academic or research centers, and the second occurring in the community, governmental agencies, local academic centers, and other settings.

There is a greater risk of misunderstanding and disagreement in the second type of collaboration, because the goals of the participants tend to be different. Researchers are often more influenced by the "politics of research" (such as those associated with the quest for grant funding and publication), whereas community members tend to give greater importance toward empowering the community, promoting social justice, and enhancing public health (Stokols 2006; Wallerstein 1992; Syme 2000). The members of the collaborative team bring different levels of knowledge, status, and power to the group – and as a result, they may be less likely to succeed in their joint efforts (Minkler and Wallerstein 2003; Minkler 2005).

The third type of collaboration is mainly concerned with policy design and implementation, particularly in the case of broad-gauged health policies that span local, state, national, and international levels (Stokols 2006). In PH and planning collaborations, the creation of policy through one project will often lead to further

collaborations in order to implement the specified process changes or activities. Ultimately, efforts to improve the health of the population will depend on all three types of collaborations occurring within their areas of action.

The TD approach has been used to address other complex societal problems and has been adopted at the international level, particularly in Europe. The “Lisbon strategy” is the E.U. program to address various competing issues, such as economic growth, competitiveness and employment, and social and environmental sustainability (Jahn 2005). In this context, TD has been recognized as an essential approach for cross-cutting research and action. TD research has also been supported for many decades at the government level in Germany, including funding by the Federal Ministry of Research in 2000 for several a research projects. These projects include the creation of the "Evaluation Network of Transdisciplinary Research" (EVALUNET) (Bergmann and Brohmann 2005). (See Figure 4). EVALUNET has proposed a matrix and quality criteria that can be used to evaluate transdisciplinary projects (EVALUNET is not specific to PH).

The illustration in Figure 4 suggests there are three project phases: A, B, and C. Phase A consists of project construction and formulation, phase B is the project execution and methodology, and phase C represents the results, products, publications, and other means of creating value. The authors provide a guide for the formative evaluation of research projects based on the underlying theoretical framework.
The emergence of a TD approach in PH came about over the past two decades because of a shift from individually focused and behaviorally oriented strategies of health promotion toward more collaborative environmental and community approaches that encompass multidisciplinary views of health and illness (Stokols 1996). One of the most successful examples of interdisciplinary collaboration in PH was the creation of the National Institutes of Health (NIH) Transdisciplinary Tobacco Use Research Centers (TTURCs) during the 1990s (Abrams et al. 2003; Turkkan, Kaufman, and Rimer 2000). This began as a $70-million, five-year initiative; although originally meant to conclude in 2004, it was later funded for continued work in several centers (*Transdisciplinary Tobacco Use Research Centers* 2007). Throughout the process, the initiative has been based on a model that incorporates various methods to enhance TD work – and most importantly, to evaluate it. The present study takes several contextual factors cited as having contributed to their successes and incorporates them into tools for planners and PH to use in conducting their own TD collaborations.

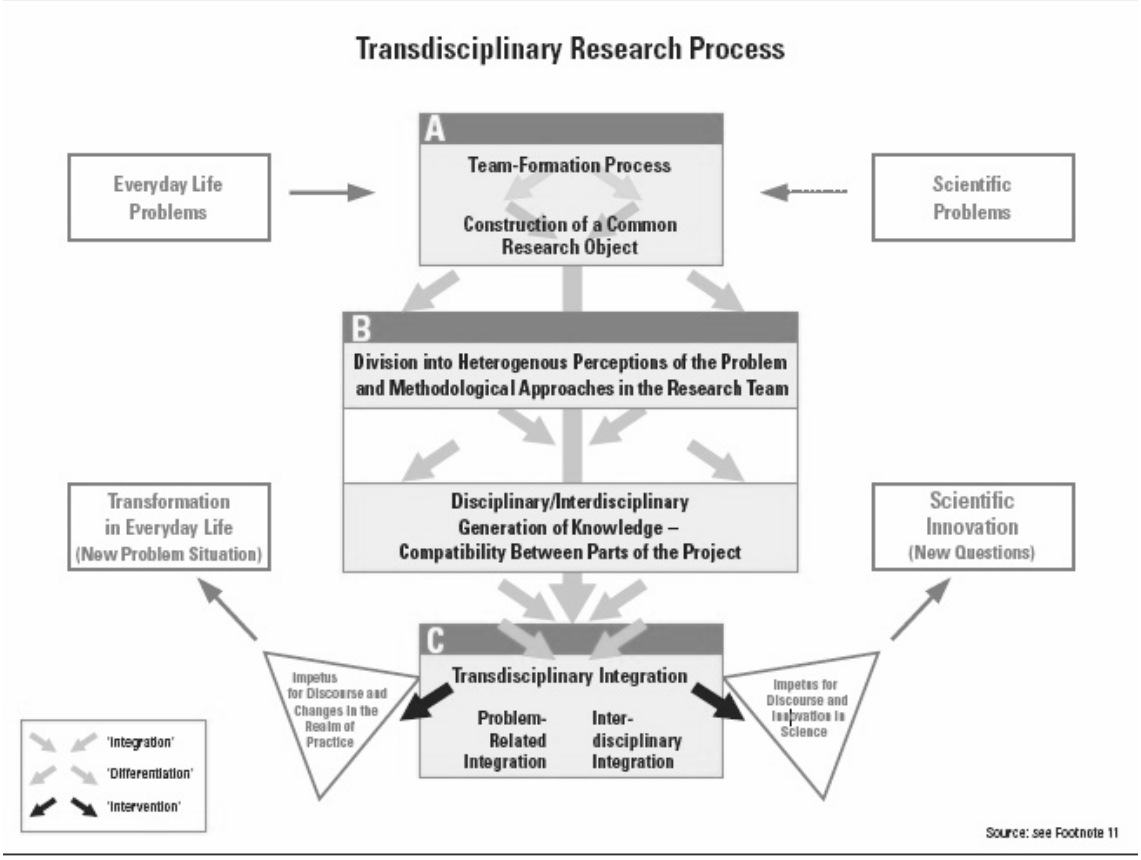


Figure 4. Transdisciplinary Research Process. (Bergmann and Brohmann 2005)

Public Health Significance

Many of the most serious health threats of the 21st century can be addressed only through a complex, multilevel approach that promotes health and prevention in a sustainable fashion. There is a historical precedent: during the 19th and early 20th centuries, PH and LUP were united in designing and building healthy communities that promoted physical activity and social capital and prevented infectious diseases and exposure to industrial toxic hazards. Later in the 20th century, the two disciplines separated – to a great extent because of their success in controlling disease and mitigating the built environment's effects on many health issues. In the past 20 years, however, several areas of collaboration have re-emerged. These include transportation planning, air quality, injury prevention, and more recently the promotion of physical activity in urban environments. Emergency preparedness and the health effects of global warming are additional areas that increasingly involve the two disciplines.

Although there is a growing body of research linking the built environment and health, there is much less research into how the two disciplines can increase their

collaboration. The growing pains resulting from the tentative steps toward reconnection of the two fields threaten many of the important projects now being undertaken. As an example, in the movement to link well-planned communities and social welfare ("Smart Growth"), public health leaders have often remained relatively silent (Jackson 2005).

A review of the proceedings from various meetings involving planners and PH practitioners (conducted in preparation for the present study) revealed that the participants themselves have expressed a desire for a "roadmap." This roadmap would consist of both a theoretical framework and a practical set of tools to guide increased integration. Participants were especially interested in identifying ways to balance their limited resources with their increased responsibilities, in view of the growing public health needs.

The present study addresses some of these demands; it provides in Appendix 5 (the *Collaboration Manual for Public Health and Planning*) a Cost-Benefit Analysis audit tool that supports the evaluation of potential collaborations, presents contextual factors that may enhance communication, and suggests some best practices. The present study also suggests policy areas that offer good opportunities for collaboration between PH and planning – while indicating ways in which institutions and professional cultures might be changed in order to bring them into better alignment when addressing the complex problems facing society.

As a first step, it is necessary to determine the present degree of collaboration and the elements that contribute to the success or failure of such efforts. This study seeks to fulfill this need by providing an in-depth qualitative exploration of the present state of collaboration between PH and LUP agencies in California. It creates an initial platform for future research, and it suggests tools, guidelines, and a theoretical framework that will be useful in promoting the re-integration of the two disciplines. The reestablishment of the historical connection of planning and PH will support enhancement of the built environment and, ultimately, sustainable improvements in community health.

Problem Statement

Interagency collaboration is often cited as a key element required in order to address the complex health problems related to the built environment (Sowa 2008; Daley 2009). However, there is little systematic evidence of the conditions that are necessary for collaboration to be successful. If the premise is to be sustained that collaborations can promote the effectiveness of public health interventions, then it is necessary to understand the contextual factors that represent the barriers and the incentives of such collaborations.

Research questions

Three major research questions and several sub questions were addressed in the study:

1) **What is the current state of collaboration between public health and planning?**
    a) What are PH professionals and planners' perceptions and experiences in collaboration within the planning process?
    b) How is public health's role in land use planning viewed by planners?
    c) How is land use planning's role in PH viewed by public health professionals?
    d) What role (if any) does public health play in land use planning?
        i) Does public health participation affect the planning process?
        ii) Who represents the public health agency in land use planning?
    e) What is the role of leadership regarding public health involvement?
    f) Is there an established framework for PH participation in LUP process?
        i) If not, is one emerging?
        ii) To what extent does it fit a TD model for collaboration?
2) **What are the contextual factors that affect the level of integration of the two disciplines?**
    a) Can a theoretical model be developed that can help explain the process of collaboration between PH and planning?
    b) Can theory be generated to predict the factors affecting the success or failure of collaborations?
    c) Are there contextual factors that increase motivation for collaboration?
        i) Factors that decrease motivation?
    d) At what stages, if any, in the planning process does public health become involved?
    e) Are there organizational or institutional factors that encourage or discourage collaboration?
    f) What are the perceived barriers and challenges to reconnecting the disciplines?

g) Are there aspects of a TD model of collaboration that in the context of the present LUP process lead to a positive effect?

h) To a negative effect?

3) Are there strategies and tools that can be proposed to make it more likely for public health to play an increased role in land use planning?

a) Are there efforts to translate academic research into practice as part of the integration of the two disciplines?

b) How can these findings be disseminated to the appropriate stakeholders?

c) How can these findings help create future sustainable collaboration?

Methodology

This study uses qualitative methods in order to address the research questions listed above. The guiding question is: "*what's going on here?*" According to Morse, qualitative methods are appropriate for the researcher seeking to understand a process in a given situation by learning from participants (Morse and Richards 2002). This type of study is suited to scenarios where change is anticipated, and where an understanding of process is essential.

Qualitative researchers aim to obtain an in-depth understanding of human behavior and the factors affecting such behavior. The qualitative method investigates the *why* and *how* of decision making, not just *what*, *where*, and *when* (Denzin and S. 1994; Strauss and Corbin 1998). At present, there appear to be no other studies into the perceptions and significant experiences of PH professionals and planners regarding their mutual collaboration. In order to generate data that is both rich in detail and embedded in context, this study uses semi-structured, in-depth interviews to investigate the current collaborative relationship between public health and land use planning (Maxwell 1998 ; Maxwell 2005; Creswell and Clark 2007). An understanding of this relationship leads to suggestions of tools, strategies, incentives, and guidelines that could facilitate and enhance the process of collaboration between the fields. These suggestions are guided by emerging theory and the TD model for collaboration. It is hoped that the dissemination of the results of the study will address the need for translation of knowledge (TL), discussed previously.

Qualitative research can vary from highly structured to highly unstructured (Miles and Huberman 1994). There are advantages and disadvantages to either approach; however, for a short-term project involving several subjects, a more structured approach is favored. The initial phase is the establishment of a research relationship with the subjects. This relationship begins by “gaining access” to the setting (Maxwell 1998 ; Maxwell 2005).

The present study achieved this access in several ways: Through contacts within various professional organizations that have expressed interest in participating in research projects linking LUP and PH; through professional contacts provided by Dr. Jackson and other faculty members; and through ongoing referrals by participants in this project and others at U.C. Berkeley.

Subject Selection

Selection of the sample was accomplished with the input of the professional organizations, government agencies, academicians, and other stakeholders identified during the initial probing.

Although this is a qualitative study, the question of sampling remains important. Unlike quantitative studies (which use either probability sampling or convenience sampling), qualitative studies often use what Maxwell calls purposeful selection (Maxwell 2005). This type of sampling looks for "people who are uniquely able to be informative because they are expert in an area" (Weiss 1994). For the purposes of this study, the main concern was to get the maximum variation of subjects. Cresswell suggests several goals for purposeful selection, including achieving representativeness or typicality of the settings, individuals, or activities selected (Creswell and Clark 2007; Maxwell 2005). A second objective is to capture the heterogeneity in the population – which, in this case, would require interviews of subjects that lie at the extremes of collaboration between the disciplines. A particular interest was to reach subjects that, for whatever reason, were not involved in collaborative efforts and would be therefore more difficult to identify and access. The concern was to avoid what has been called "key informant bias," which results from the use of a small number of informants for the majority of the data. This concern was addressed by using systematic sampling.

Snowball sampling was used to help identify potential participants (this is one of the four sampling techniques used by qualitative researchers – the others are availability, community forum, and focus group sampling). Snowball sampling entails the researcher selecting a specific respondent, who then links the researcher to additional respondents, and so on (Patton and Patton 2002).

Data Collection

Data collection consisted primarily of in-depth, semi-structured interviews. Document review was also included as part of the study in order to enhance validity through multiple data sources.

Three initial pilot interviews with selected key stakeholders in public health and land use planning helped probe the topics of interest and suggested more specific questions and methods. This process of “constant comparison” and theory development took place throughout the duration of the study (Glaser and Strauss 1967). These initial interviews also helped identify other subjects for the study.

An important aspect of reporting the results is that interviews were edited to protect the identities of the participants for the purposes of the study. All names were changed, and where possible the locations of the projects considered in the study. In

some cases the location of the project is so important that the name of the project was retained but the identity of the participant was changed to prevent their identification. For further clarification refer to the section on Human Subject Considerations.

There is no formula for determining the sample size in qualitative studies; therefore, the number of participants recruited was determined by the quality of the participants' experiences and the requirements for further theoretical sampling (Morse and Richards 2002). The main part of the study consisted of 18 in-depth interviews with public health professionals and land use planners (predominantly planners). The interviews were of the semi-structured type.

Structured interviews consist of administering structured questionnaires, and interviewers are trained to ask questions in a standardized manner. Semi-structured interviews, on the other hand, are conducted on the basis of a loose structure of open-ended questions that define the area to be explored. At any time, either the interviewer or interviewee may diverge in order to pursue an idea in more detail. These in-depth discussions are less structured and may cover only one or two issues in great detail. Questions consist mostly of requests for clarification and probes for details (Britten 1995).

The interviews began with open-ended questions, such as: What do you perceive to be the public health issues that relate to your work? Would you describe an example of a collaboration you were involved in? What role if any does public health play in your work as a planner? Does public health affect your decisions in land use planning, and if so, in what way?

Follow-up questions started a discussion to probe the subject's perceptions and experiences regarding the level of collaboration between the disciplines. A core set of questions emerged as the data evolved. These questions were then asked of subsequent interviewees. The guiding questions were:

- How does the process develop over time?
- What are the noteworthy events in the process?
- What facilitates the process?
- What hinders the process?
- Who are the key participants in the process and what are their roles?
- What are the outcomes?

Triangulation.

Triangulation is described by Maxwell as the use of a variety of sources and methods in order to reduce the risk that a study's conclusions will reflect only the

systematic biases or limitations of any single source or method (Maxwell 2005). The present study offered some limited opportunities for triangulation. In addition to the interviews, which were used to understand the perspectives of the stakeholders, direct observation of the geographic and physical locations made it possible to draw some inferences about the behavior and context where the interviews and projects mentioned took place. Specific questions about events and actions related to the planning process provided additional information about the context for the collaborations. A review of documents from specific land use planning projects and other evidence of collaborative efforts were ways of reducing systematic biases that might have resulted from the use of only one data source.

Reading the literature – specifically the results of local and national surveys and other studies looking at the relationship of PH and LUP – was a further way to inform the present study.

Data Analysis

"Not very much can be said about data and analysis in advance of the study" Lincoln and Guba (page 241) (Lincoln, Guba, and Lincoln 1985).

In keeping with the qualitative nature of the study, a guiding theory and theoretical model emerged and were modified as categories and themes originated from the data. Data analysis took place during and after data collection. Miles and Huberman (1994), in the textbook *Qualitative Data Analysis: An Expanded Sourcebook*, suggest various possible plans for qualitative data analysis (Miles and Huberman 1994). One approach that proved to be compatible with the present study suggests developing categories of information and then working from these categories to construct a connecting narrative and generate theoretical propositions. The process of category development required coding information isolated from within the transcripts of the interviews. The information units (interview quotes, in the case of this study) were then categorized on the basis of similarity and meaning. A saturation point was reached when the number of categories stopped increasing. It is a "constant comparative method" requiring continual revision, modification, and amendment. Miles and Huberman suggest the use of various methods of display for the context of the analysis, the results, and the conceptual framework (Miles and Huberman 1994). An example is the "context chart," a "network" that maps in graphic form the interrelationships among the roles, groups, and organizations that make up the context of individual behavior.

Statistical program packages have become available to facilitate qualitative data analysis. In this study, Atlas-ti software was used. The choice of Atlas-ti was due to its availability and level of sophistication, as well as researcher familiarity. (Software, such as Atlas-ti, is a tool to help with coding and creating categories – however, it does not analyze the data!)

The use of Atlas-ti qualitative analysis software made the development of "context chart" networks a relatively straightforward process. It was possible to look at the contextual factors identified in the study in their various relationships, such as the

ecologic level of action or the stage proposed by the theoretical model of collaboration. Construction of co-occurrence tables and networks also helped in identifying the main themes in the study.

Because of the qualitative nature of the study, there were no fully developed theories at the starting point; however, some examples of theories from the literature that were used to guide the inquiry included: Theories that look at contextual constraints on teamwork and integration (such as physical separation, access to electronic communication, etc.), theories of team formation, and theories on the negotiation process among participants in collaborations. These theories propose elements that have been reported as having effects on collaboration, as well as in finding ways to determine compatibility among different parts of collaborative projects (Bergmann and Brohmann 2005; Stokols et al. 2005).

After reading the interview transcripts, notes and memos were written and used to develop tentative ideas about categories and relationships. The next step was to develop coding categories, which were applied to the data as suggested by Miles and Huberman (Miles and Huberman 1994). The categories helped in the refinement of the interview questions. Identifying the connections among different categories and themes (as required by Grounded Theory (GT) methodology) was important in determining the factors affecting collaboration between LUP and PH (Maxwell 2005). Atlas-ti software greatly facilitated the coding and categorization activities of GT methods.

Data release and dissemination of findings

The final part of the present study consists of a proposal to assist in the reintegration of the two disciplines. Capacity building results from the pre-existing strengths and assets of the two fields. By exposing these resources during the interview process, it is possible to identify tools for the evaluation of potential collaborations. These contextual factors aid in identifying possible areas for expert involvement, opportunities for academic partnerships, and suggestions for funding sources, training, etc. Similar proposals have taken place in other fields, and there are several published guidelines and suggestions for the formative evaluation of TD research projects. An example used in engineering and the social sciences is the “Quality Criteria for TD Research,” which presents a model to identify the different areas that must be considered when a TD process is planned (Bergmann and Brohmann 2005). This guide, produced by the Institute for Social-Ecological Research in Germany, also provides detailed criteria for the design and evaluation of TD projects (Bergmann and Brohmann 2005). Other examples include guidelines for the Transdisciplinary Tobacco Use Research Centers (TTURC) (Stokols et al. 2005). The present study suggests a similar list of contextual factors that can be used to audit collaboration projects before and while they take place.

It is hoped that future studies will further expand the available tools and resources for PH and planning collaborations. The literature his clearly shown that such resources have been of benefit in other disciplines and settings. The examples suggest that tools like practice guidelines can lead to an increased use of evidence-based

decision-making. Some successful examples that have been developed using strategies suggested by marketing theory include "The Guide to Community Preventive Services (The Community Guide)" and the "Guide to Clinical Preventive Services," which synthesize a body of evidence and offer guidance for public health program decision-making at various levels (that is, local, state, tribal, national) (Maibach, Van Duyn, and Bloodgood 2006). Their value is that they help inform decisions inside and outside the public health system, including decisions made by employers, local communities and organizations, and even individual consumers (*Improving Public Health Practice through Translation Research* 2007). There are also studies that suggest how such tools should be designed to include incentives, policies, organizational and structural supports, appropriate and targeted funding, ongoing training for researchers and practitioners, appropriate engagement of the target population, and a clear process for stakeholder selection, interaction, and collaboration (Oldenburg et al. 1999). These studies and their findings can directly relate to any planning processes for engaging in public health interventions through the BE. The collaboration of PH and planning must use all resources available to both disciplines.

One of the long-term objectives of the present study is to disseminate the results to participants, professional organizations, academics, and officials involved in land use planning and public health. It is expected that sharing the results of this study will allow other researchers and practitioners to adopt some of the suggestions. It is also hoped that future research projects will result from sharing the results of the study.

The data dissemination plan includes the following:

1. Sharing the Cost-Benefit Analysis tool manual with participants (Appendix 5).
2. Presentations at national and regional meetings.
3. Findings from this study will be made available by the author for the use and dissemination by professional organizations to their members. (Two national organizations that were mentioned above – NACCHO and APA – were also contacted for suggestions of participants for the study.)
4. Dissertation Library Data. As a dissertation this project will be appropriately indexed and made available as a matter of course by the University.
5. Publishing papers in peer-reviewed journals based on the results and methods of the study.

Specific Aims or Objectives of the Study

Goals:

To help address the emerging health problems of the 21st century by encouraging collaboration and integration of the disciplines of public health and land use planning.

Objectives:

1. To explore the current state of collaboration between public health and land use planning agencies by describing and analyzing the experience, understanding, and perceptions of participants.
2. To identify the processes whereby collaboration between these disciplines can be effected in order to generate a new integrated knowledge base that can be used to address present and future public health problems.
3. To suggest some strategies that may be effective in promoting public health and planning collaborations.

CHAPTER 2

RESEARCH DESIGN AND METHODOLOGY

Theoretical concepts

At the beginning of 2011, the New York City departments of Design and Construction (DDC), Health and Mental Hygiene, Transportation (DOT), and City Planning released *Active Design Guidelines: Promoting Physical Activity and Health in Design.* The stated goal is to provide "architects and urban designers with a manual of strategies for creating healthier buildings, streets, and urban spaces, based on the latest academic research and best practices in the field." The departments explain that "active design is critical to addressing obesity and its related diseases – the fastest growing epidemics of our time – while also supporting the goal of sustainability" (2010). The preamble to *Active Design Guidelines* comments that urban designers may be public health's best allies in the battle to improve health by increasing physical activity – a battle best won by encouraging activity through the design of the environment, not by shaming people into eating healthier and exercising more.

In his commentary about *Guidelines,* architect and urban designer Jack Robbins concurs. He states that the "*Active Design Guidelines* may represent the beginning of a strategic shift in the battle to get Americans to exercise. Instead of trying to change individual choices by using a moral appeal about what is good for us (*you should walk to work because it is better for you*), it's about changing the environment to reshape the available choices (*you'll want to walk because it is easier, cheaper, faster, or more enjoyable*). (Robbins 2011)

There is an increasing realization that the complex societal problems facing us in the 21st century – particularly in the areas of Public Health and Land Use Planning – will require creative, outside-the-box, and generally collaborative efforts among many agencies, disciplines, and stakeholders (D'Amour et al. 2005; Bammer 2005; Bergmann and Brohmann 2005). These inter-professional or inter-sectoral collaborations will mean that professionals of various disciplines will more often work together (Stokols et al. 2005)

Much has been written about collaboration. Generally, the term collaboration conveys the idea of shared endeavor and purpose, a "collective action oriented towards

a common goal, in a spirit of harmony and trust…" (D'Amour et al. 2005). Various disciplines have sought to define, study, and understand how collaborations occur, how collaborative teams are formed, and which factors influence the process and outcomes of collaborative efforts (Leathard 2003; Falk-Krzesinski et al. 2010). In the field of health care, particularly regarding clinical patient care, many studies look at integrating the researchers, clinicians, specialists, nurses, and families in the most effective manner so as to improve patient outcomes (Gitlin, Lyons, and Kolodner 1994; Hinojosa et al. 2001; D'Amour et al. 2005; Fagin 1992; Liedtka and Whitten 1998; Zwarenstein and Bryant 2000)

Some attention must be given to the concept of "discipline," particularly when referring to professional specialties. Any professional field can encompass a wide variety of settings – and many professionals may find that their work overlaps with, or is complementary to, the work of people in other disciplines. Some individuals may develop competencies and skills usually associated with more than one profession. Indeed, "some fields such as public health and urban planning are inherently multidisciplinary in that they encompass several different disciplines whose perspectives are combined in analyses of complex topics such as population health and urban development" (Stokols 2006; Pinson 2004). In general, most professionals are likely to perceive themselves as working within some reasonably identifiable areas of competency, which they might call collectively their "profession" or "discipline."

In academia, on the other hand, a "discipline" tends to be more clearly defined because traditional professional education has emphasized a department-based approach. ("The world has problems, but universities have departments" (Brewer 1999).) This approach to education and research often results in a "silo" mentality where competition, not collaboration, may be fostered.

Outside of academia, professionals may find that this approach is perpetuated by the agencies responsible for Public Health and City Planning. As a consequence, the individuals involved in these agencies will find barriers rather than incentives for collaboration. In order to help these individuals improve the odds of a successful collaboration – in particular, TD collaboration – it is necessary to recognize the antecedents necessary for collaboration, suggest a possible working model, and identify theory that explicitly supports the collaborative framework.

The present study looks specifically at the collaboration between PH and LUP. In order to analyze the data using a grounded theory approach, it was first necessary to identify an existing framework for the study of collaborations between different disciplines. A literature search found that various disciplines and professional areas have looked at the concepts involved in collaboration, and the results are often similar. Many of the identified concepts are shared, even when the studies do not appear to be aware of those in other disciplines. This study primarily uses models developed in the health sciences field, because they are designed to address the same or similar problems as

those faced by PH. It would have been equally possible to use models developed for another professional or academic field, such as city planning and design, transportation, engineering, or even business or education. (It would be interesting for a future study to see if results obtained from a different analytic vantage point would be similar to those from the present study.)

In an effort to understand and define the idea of collaboration, D'Amour (2005) conducted an extensive literature review to look at concepts associated with collaboration in healthcare, as well as at different theoretical frameworks used in team formation. She found that certain concepts related to the process of collaboration came up repeatedly: 1) sharing, 2) partnership, 3) interdependency, and 4) power. Patient care necessitated that the professionals involved transcended their disciplinary boundaries and considered "the qualities and skills of other professionals" (D'Amour et al. 2005).

A second dimension in analyzing collaborations occurs in the continuum of cross-disciplinary levels starting from multidisciplinary, through interdisciplinary, to the more complex TD level. Various definitions with important differences can be found in the literature (although some authors find no basis for separating collaborations into different levels of complexity and instead apply the single term '"interdisciplinary" to all) (Maton, Perkins, and Saegert 2006). The present study places importance on degrees of collaboration as defined by these terms, because the different qualities each represents may influence the expectations and outcomes of collaboration. In addition, PH and LUP are professions that, because of the complexity of the issues they seek to address, are inherently multidisciplinary (Stokols et al. 2005). Transdisciplinary collaborations, more than multi- or interdisciplinary ones, are "more likely to force participants out of their disciplinary 'comfort zones' and require their unwavering commitment to sustained and mutually respectful communications" (Stokols 2006). The following list combines several of these factors: (D'Amour et al. 2005; Neuhauser et al. 2007; Rosenfield 1992; Nash et al. 2003; Stokols 2006; Abrams 2006):

- **Multidisciplinary**: Individuals representing different professions work on a project, but independently or in parallel. They interact on a limited or transient basis, and may not develop supporting structures for the team. They do, however, work in a coordinated fashion to address a common problem.
- **Interdisciplinary**: Project participants become more integrated as a group. The team is usually a structured entity with common goals and decision-making processes, but not a common conceptual framework. The participants work jointly, but from within their respective disciplines, to address a common problem. Key challenges include defining and delimiting professional spheres of activities and territories, and distributing responsibilities. This ensures more flexibility in the sharing of professional responsibilities.

- **Transdisciplinary**: Professionals work together from the outset to develop a *shared* conceptual framework that integrates and extends discipline specific theories, concepts, and methods to address a complex common problem. In practical terms, TD teams require increased consensus building, thereby blurring or erasing boundaries that separate professional disciplines. The deliberate exchange of knowledge, skills, and expertise transcends traditional specializations. A transdisciplinary approach can provide a systematic, comprehensive theoretical framework for the definition and analysis of the social, economic, political, environmental, and institutional factors influencing human health and well-being.

To date, the concept of transdisciplinarity has been most often associated with academic research activities; however, this study's concern is in its application in addressing complex PH problems through LUP. It also should be noted that this study is primarily looking at TD collaborations, which are not the same as TD science. The first defines an endeavor that brings together various participants and areas of expertise in order to address a complex problem. The second is a collaborative endeavor that also seeks to advance intellectual and academic boundaries (Stokols et al. 2005).

The paper "Fruits, Salads, and Smoothies: A Working Definition of Interdisciplinarity" provides a means of characterizing, or ranking, the richness of an interdisciplinary (or for that matter TD) collaboration. Four criteria are specified: the number of disciplines involved, the distance between them, the novelty of their collaborating, and their integration through the process (Nissani 1995). The last of these – level of integration – is the criterion that most closely indicates the level of development toward a TD approach (Austin, Park, and Goble 2008).

Methods that have been used in PH to connect researchers and community practitioners are action research and participatory action research. Action research was originally defined by Lewin in 1946 as "research leading to social action. Research that produces nothing but books will not suffice" (Lewin 1946).

The need to progress from research to action, and from research to translation of theory to practice, is resulting in efforts to integrate a TD approach into action research and translation science (Neuhauser et al. 2007; Stokols 2006; Kessel and Rosenfield 2008). This is not as radical a departure from much of the recent history of the practice of PH as it may appear at first. Many of the frameworks used for health research and PH interventions (such as the social ecologic model) are in practice applied in a participatory and TD manner. At the core of TD collaboration lie elements of participatory action and translation science. The importance of developing a science of transdisciplinary action research is that it may help "to achieve a more complete understanding of prior collaborations and to identify strategies for refining and

sustaining future collaborations (and their intended outcomes) among researchers, community members, and organizations" (Stokols 2006).

Advances in TD action research should result in translations of theory into community problem-solving strategies; however, such advances will depend on first having a better understanding of what constitutes TD action research collaboration. Stokols states that "an integrated science of TD action research does not yet exist," and he adds that a key challenge is to understand the elements involved in the formation of TD collaborations (Stokols 2006; Stokols et al. 2008).

An important recognition is emerging – that the various types of cross-disciplinary collaborations, including TD collaborations, can be defined or characterized by three dimensions: organizational, geographic, and analytic (Stokols et al. 2008). The organizational dimension can vary from intra-organizational to inter-organizational, or from intra- to inter-sectoral partnerships ("sector" refers to an area of political jurisdiction). The geographic scope can range from local to regional, national, and global teams; a team can be located in single locale (a university or government agency) or dispersed. The analytic scope can range from physically tiny (the molecular level) to intellectually broad (public policy).

The present study is primarily concerned with inter-sectoral partnerships among government agencies rather than those involving universities and community organizations. The term sector denotes agencies within a common political jurisdiction, such as the public health, transportation, and land use planning agencies in a city or county (Stokols 2006).

As stated, the present study aims to identify some of the factors involved in the formation of collaborations as they are perceived mainly by city planners and public health professionals. There is evidence of great resistance to collaborations generally among agencies involved with the built environment – a resistance attributed to the professional training of the participants. When asked about collaborations, representatives will often state more reasons to avoid rather than pursue such processes. If they do become involved in collaboration, then their usual stated preference is to divide tasks rather than pursue a higher degree of integration (Pohl 2005).

Significant preparation for collaboration – and in particular for TD collaboration – may increase the likelihood of success (Stokols 2006; Stokols et al. 2008). One means to accomplish this preparation is to use a series of "tools" that will help participants create a collaborative project. One such tool is proposed, an "Audit of Collaboration Readiness." The "audit" will identify factors known to influence TD collaboration – such as spatial proximity among team members, shared history of collaboration on prior projects, clear and equitable communications about goals and outcomes, and the presence of leaders who can foster a climate of cooperation (Stokols et al. 2008).

Another such tool is the "Cost-Benefit Analysis Tool" to help participants assess their collaboration preparedness. This tool's series of detailed questions would be asked before starting a project; responses would help determine if a collaborative effort is in line with an individual's expectations and professional needs, as well as those of the agency. The "Tool" should also help individuals assess whether they have the personal characteristics necessary to participate collaboratively, contributing in an environment of trust and open exchange of ideas (Gitlin, Lyons, and Kolodner 1994; Armistead and Pettigrew 2008). These questions would probe such topics as commitment, leadership, and availability of resources – all of which can be essential to the effectiveness of collaboration and team formation. By knowing beforehand the barriers and incentives usually present during the formative process of a collaboration, agencies will be able to address them in advance. The more positive antecedents present at the onset of collaboration, the greater the chances that the collaboration will succeed. The tool would consider carefully the contextual circumstances and collaborative readiness factors, all of which can, to a great extent, determine how effective a TD team can be (Stokols et al. 2008).

The present study focuses on the professional practice of individuals within organizations (mainly governmental agencies) who are addressing complex health problems as part of LUP projects. The participants are primarily concerned with the practical aspects of problem solving and policy development, rather than pure research (although it is possible that their projects may include interaction with universities or foundations involved in research into public health and city planning problems).

This focus on practical results reinforces the distinction between TD science and TD collaboration. In the science of transdisciplinarity, there is an aspiration toward reaching higher intellectual outcomes; in TD collaborations, the objectives focus on improved health, education, economic conditions, and so on (Stokols et al. 2003; Stokols et al. 2008). TD research is even more specifically defined as "collaboration among scholars representing two or more disciplines where the collaborative products reflect an *integration of conceptual and/or methodological perspectives drawn from two or more fields* (Stokols 2006).

In conclusion, while there may be elements of translational research or science in the collaborations considered in the study, it is the *applied* collaborations that are of greatest interest.

Identifying a theoretical framework and developing a model.

The importance of developing a model for PH and LUP collaboration lies in its use: for comparison with other types of organizations; for predictive value of success and effectiveness, for improvement of current and future collaborations; and, possibly most significant, for evaluation of collaborative projects. Published literature reviews have looked at types of inter-professional collaborations based on team membership, extent of collaboration, and settings for collaboration (Leathard 2003). Others have

looked at categorizing theoretical frameworks of collaboration, as well as at identifying the various definitions and concepts associated with collaboration (D'Amour et al. 2005). By using these reviews and the literature review conducted for the present study, it was possible to compare the initial findings and select the models that best addressed them. This information also made it possible to generate the first set of inductively derived codes used in the study.

There are many fields (such as education, sociology, business, and psychology) that have developed models for collaboration. Because of its PH focus, the present study limits the theoretical frameworks considered in developing a model for collaboration to only those used in healthcare. Such frameworks are often based on organizational theory, organizational sociology, or social exchange theory (D'Amour et al. 2005). During the ongoing analysis of the data, *Social Exchange Theory* was identified as the base that appeared to address the most important themes emerging from the study. Social Exchange Theory also supports the development of a working model that not only describes the process of collaboration between PH and LUP, but also might predict the potential for success. A more complete description of this analysis by means of grounded theory methodology is found in the methods section.

Many frameworks for collaboration described in the literature look either at the process in terms of human interaction, or at the environment of collaboration (D'Amour et al. 2005). The present study develops a model that incorporates both aspects. The process itself is considered using social exchange theory (which explores how professionals negotiate their positions within the team); the environment of collaboration is examined through concepts from team formation and TD studies. Some of the drawbacks of the frameworks found in the literature include: they may not be based on empirical data, or have not been sufficiently tested; the concept of leadership was not well documented and may need to be studied further; the external factors influencing the collaborative process must be further investigated; and, an assumption is made that the collaboration had an impact on the outcomes, but this impact has not been proven (D'Amour et al. 2005).

Five stage model of collaboration (Gitlin, Lyons, and Kolodner 1994):

After the initial coding of the in-depth interviews using a combination of inductively and deductively derived codes, the results were reviewed for emerging themes. Using the identified themes, a combination (with modifications) was developed from the models proposed by Gitlin to describe collaborations and by Stokols for TD collaborations (Gitlin, Lyons, and Kolodner 1994; Stokols et al. 2005).

Gitlin's proposed model originated with a desire to address the need for interdisciplinary collaborations in the complex issues faced by the health care sector in gerontology. With increasing frequency, government agencies and other funders of research and action are requiring cross-disciplinary approaches as a means to deal with

limited resources and improve outcomes. It is believed that “in effective collaborative teams, experts from the same or different disciplines are linked in such a way that they build on each other's strengths, backgrounds, and experiences and together develop an integrative approach to resolve a research or educational problem” (Gitlin, Lyons, and Kolodner 1994). The integrative approach would benefit other disciplines, such as PH and LJUP, facing their own complex problems.

One cause behind the lack of collaboration, as identified by various authors, is that educational systems, particularly in health care, do not encourage team-based approaches and interdisciplinary activity (Jantsch 1970; Jantsch 1972b; Austin, Park, and Goble 2008; Baier, Stubblefield, and Hoechst 1997; Reeves et al. 2008; Barr and Goosey 2002). The result is that students are encouraged to be competitive, acting as individuals rather than as teams. To remedy this situation, various medical schools have started innovative programs that stress leadership and a team approach to medical training. (O Connell and Pascoe 2004) Schools such as Thomas Jefferson Medical College have developed curricular innovations that include a “managed care team” to teach students about managed care issues. At U.C. San Francisco (UCSF) medical school, a project called the “Policies for Livable and Active Community and Environment” (PLACE) includes modules on “Building Interdisciplinary Teams.”

A similar claim for a lack of training in collaboration can be made in the areas of PH and LUP (Neuhauser et al. 2007; Moudon 2005), where the universities that train future professionals rarely make interdisciplinary and TD work a priority in their curricula. Extreme specialization on the part of the participants can lead to conflict during collaboration, and that conflict can result in the team’s inability to coalesce. Such a team might nevertheless be able to produce adequate outcomes (Hinojosa et al. 2001), or it may result in the failure of the entire collaborative effort (Sawa 2005).

Theoretical background:

The model for collaboration used in the present study has been largely derived from three areas: Social Exchange Theory, Team Formation literature, and Transdisciplinary collaboration literature. Following is a brief summary of each area, highlighting aspects that apply to the model developed for the study.

Social Exchange Theory.

Social exchange theory is based on a central premise that the exchange of social and material resources is a fundamental form of human interaction (Homans 1958). The theory is based on two core concepts: exchange and negotiation. These are two of the constructs supporting the model of collaboration presented in the study.

The basic principle of exchange is that an individual will join a group that provides a specific benefit and that in return he or she must help the group attain its objectives. In the negotiation process, an individual offers to contribute specific expertise to the group and expects to receive specific benefits in return. There is

constant negotiation as individuals and groups seek to optimize benefits and reduce costs, so as to proceed under conditions that will be fair to all. Benefits/rewards are primarily (Homans and Merton 1961) of a material character and secondarily of a symbolic character. The theory suggests that all human relationships are formed through a subjective cost-benefit analysis and a comparison with alternatives. The theory has roots in earlier theories developed in cultural anthropology, sociology, economics, and psychology, including rational choice theory and structuralism.

Social exchange theory assumes that it is possible to understand a social structure by examining the interactions among people, and that these interactions form the basis for understanding complex social behavior within groups (Gitlin, Lyons, and Kolodner 1994; Cook and Emerson 1978; Homans 1958; Blau 1964). Blau, in particular, took the theory as originally developed by Homans from the psychology of *individuals* engaging in exchange and, in contrast, looked at exchange as the "elementary particle of social life" in which *social structures* are rooted (Blau 1964).

The original study that inspired Blau and was quoted by Homans looked at 16 agents in a government office exchanging unofficial consultations during their lunch breaks (Homans 1958). The person seeking help received information; the person being consulted received respect and recognition (Blau 1955). The exchange was the basis of a "micro-collaboration," which is theoretically the foundation for a full-fledged collaboration, such as one between PH and LUP.

The theory as presented by Homans seeks to understand what attracts people to take part in a group, and how often groups experience valuable interactions. As the cohesiveness of a group increases so does the rate of interaction. One interesting observation supported by some of the study's findings is that a group member perceived to be a "conformer" – that is, seen as a valuable contributor – receives approval and inclusion, while a member seen as a "deviate" – unable or unwilling to contribute – is ultimately rejected by the group (Homans 1958; Schachter 1951).

Homans applied to the theory several assumptions from economics, such as: ***Profit = Reward –Cost*** (Homans 1958; Stigler 1952). The rewards or benefits can include material and financial gains, and social status and prestige; cost includes time, resources, and lost opportunities. Homans uses the balance of profits to an individual (and later extended to the group) as a measure to explain change in behavior within the group and the ultimate stability of the collaboration (Homans 1958). In conclusion, the theory proposes that individuals and groups are engaged in a constant process of negotiation in an attempt to maximize benefits, reduce costs, and pursue an arrangement that all participants perceive to be equitable (Gitlin, Lyons, and Kolodner 1994).

Fascinating experiments have been performed to validate the assumptions of social exchange theory – some have looked at how interaction patterns are shaped by power relationships among individuals, and at the resulting efforts to achieve balance in exchange relations. One such experiment looking at "trade agreements" concludes that

power is an attribute of position in a network, that equity or justice concerns may constrain the use of that power, and that emergent interpersonal commitments may impede the use of power (Cook and Emerson 1978).

There has been growing criticism of social exchange theory, due to its reliance on economic-behavioral assumptions that all social life can be treated as an exchange of rewards or resources among individuals. This has led several authors to integrate sociological and social-psychological theories that assume that actors in an exchange can be not only individuals but also groups, and that the processes within and between groups are more complex than a set of simple market transactions (Zafirovski 2003, 2005). Other criticisms of the theory include that it reduces human interaction to a purely rational process arising from economic theory and that it emphasizes "openness" (a concept developed in the 1970s), which may not necessarily be the best option in a relationship or collaboration (Miller 2004).

These criticisms have raising several key issues in the application of the theory – e.g., negotiation, power inequality, free-riding. They issues can be analyzed in settings with varied levels of complexity – from dyads to groups of varied size, and then to organizations, communities, and nations. An understanding of these issues can result in improved cooperation, as well as help avoid ongoing conflicts of interest and harmful forms of competition (Cook 2000). Several of these concepts were used in generating the codes used in the study.

Team formation literature.

Two constructs used in Gitlin's model have been derived from team formation literature. These are:

1) **An environment of interpersonal trust**, support, and cooperation. Group members must support and participate in an environment in which all feel free to express ideas, solve problems creatively, and resolve differences of opinion (Gitlin, Lyons, and Kolodner 1994; Dukewits and Gowin 1996; Sawa 2005; Armistead and Pettigrew 2008; Ferres, Connell, and Travaglione 2004; San Martín-Rodríguez et al. 2005).
2) **Role differentiation**. In order for group members to feel confident that they can accomplish their shared task, there must be clarity from the start of what is expected of them (Austin, Park, and Goble 2008). It is often necessary for the leader to develop a clear project structure so that each member knows what is required for success. During the negotiation process, each member takes responsibility for the tasks for which he or she is best suited. As a result, the group as a whole benefits by having the best technical competence applied to each task, which in turn contributes to the success of the collaboration and the stability of the team. The more that group members understand the requirements of the project and each other's roles, the more they develop

increased confidence that their efforts will not be wasted (Gitlin, Lyons, and Kolodner 1994). Part of role differentiation includes leadership's responsibility to set goals and provide support for the collaboration, and these activities can be analyzed using social exchange theory (Jacobs 1978).

TD collaboration literature.

Several constructs found in the TD literature contribute to the development of a TD model of collaboration.

As early as 1970, Judge and Clark discussed the concept of transdisciplinarity from the viewpoint of engineering as a means of creating more successful, efficient collaborations. The model they proposed was influenced by the science of systems analysis, applied to the development of cross-disciplinary programs. The authors suggested that as the separation of disciplines becomes less useful, successful collaborations require "a simple and unbiased general systems perspective to assist individuals and organizations to determine what fields of knowledge and activity are relevant to, or affected by, their activity; a simple means for students, managers, and administrators to use in relating their own specialties to other interacting fields" (Judge A and J. 1970).

In the arena of education, the term "transdisciplinarity" can be traced back to the same timeframe. It appeared at the first international conference on interdisciplinarity, held in France in 1970 and co-sponsored by the Organization for Economic Cooperation and Development (OECD). Around the same time, Jantsch proposed a restructuring of the university from one of isolated disciplines to one reflecting a TD model where innovation would result from the creation of new organizational units (Jantsch 1970; Jantsch 1972b; Jantsch 1972a). The publication in 1992 of a clear definition of "transdisciplinary" greatly contributed to the rise of a TD science linking the health and social sciences (Rosenfield 1992).

In Europe particularly, the concept of TD was adopted by social scientists as a means of addressing the complexity of globalization (Kessel and Rosenfield 2008). Since the 1970s, environmental research science in Germany and Austria has developed a very strong TD orientation in order to bring together different disciplines that could collaboratively address socially relevant, usually complex problems (Bergmann and Brohmann 2005).

It must be stressed that TD collaborations are not "better" than inter- or multidisciplinary collaborations; however, a TD approach has a better prospect of succeeding with the type of complex problems that are often addressed by PH and planning collaborations. For that reason, this study attempts to identify factors that may contribute to the development of TD collaborations.

Some empirical observations substantiate not only that there is no "scientific hierarchy preferring transdisciplinary approaches versus interdisciplinary or

multidisciplinary ones," but also that the decision to use a TD approach must be based on "the quality of the given scientific problem" (Kötter and Balsiger 1999).

In the time since the First World Congress of Transdisciplinarity in 1994 and the publication of a charter on transdisciplinarity, there has been enormous growth in the literature about TD science (Klein 2008b). This grow reflects the growing interest in utilizing this mode of collaboration in both academic and professional areas where complex problems are increasingly addressed. In the case of PH and LUP, the area of physical activity promotion has been target as one where TD research and action are necessary in order to "reverse current population-wide inactivity trends" (King, Bauman, and Abrams 2002). It has become apparent that traditional "personal-level theoretical perspectives" emphasizing personal-level interventions and intrapersonal processes (such as theories of reasoned action, transtheoretical model, decisional theories) have not worked to promote physical activity. Instead, it is necessary to incorporate macro-environmental planning into the promotion of physical activity. This process will help determine the level of physical activity that can be achieved through the design of the built environment and policies (King et al. 2002).

Description of the Model for Collaboration between PH and LUP.

The use of models is important. Models constitute a theoretical framework that provides a heuristic (discover/reveal) function, which in turn allows for a representation of the dynamic aspects of a phenomenon by illustrating the relationship between its elements in a simplified form. Theories, on the other hand, are frameworks that are intended to be primarily explanatory of the phenomena by postulating causal mechanisms (Green 2000).

The model has been constructed from a combination of several elements extracted from Gitlin's five-stage model for collaboration and Stokols TD model for collaboration. The resulting model can be applied in an analysis of data regarding PH and LUP collaborations – and this analysis can explore opportunities to address complex public health problems through the integration of the knowledge and practice of the two disciplines. Solutions to complex problems require the crossing of discipline boundaries. This model promotes such boundary crossing by helping identify barriers that hinder collaborations among isolated disciplines, and by encouraging activities that stimulate a transdisciplinary approach to collaboration.

Gitlin's five-stage model of collaboration was devised for the area of research and education in gerontology; it uses some key constructs derived from social exchange theory and the literature on team formation (Gitlin, Lyons, and Kolodner 1994). There are four constructs used: exchange, negotiation, an environment of trust, and role differentiation.

The constructs provide a systematic, theoretically grounded explanation as to how and why participants' actions contribute to the successful development and implementation of a collaborative project. They also help determine the likelihood that

such collaboration will result in a TD approach. The resultant model for collaboration joins public health practitioners and city planning agents, with their distinct areas of expertise and complementary resources, into a collaborative team. The model provides an understanding of the step-by-step processes that need to occur if the team is to carry out a project successfully and if the process is to proceed in a TD manner.

There are several themes that result from the theoretical constructs used:

- **Exchange**
  - Individuals obtain benefits from the collaboration
  - There is an expectation that they contribute skills and resources to reach goals
  - "Reciprocity" results benefiting the individuals and the group as a whole
- **Negotiation**
  - The value of the benefits and the costs determine if the collaboration is worth the effort
  - Individuals and groups try to maximize benefits and reduce costs
- **Environment of trust**
  - Trust that investing in the collaboration will bring benefits
  - Trust that encourages communication by allowing members to criticize
  - Trust that allows for creative thinking
- **Role differentiation**
  - Explicit idea of what is expected from team members of themselves and others
  - Developing a clear project structure

These constructs are used to support the five-stage model, which involves a series of activities occurring in five overlapping stages (see Figure 5):

1) ***Assessment and goal setting*****,** where participants examine their individual and institutional goals and assess the need for developing a collaborative relationship and its cost-benefit ratio.

2) ***Determination of a collaborative fit*****,** in which participants meet to exchange and negotiate potential project ideas and roles and begin to establish an environment of trust.

3) ***Identification of resources and reflection*****,** where individuals return to their group to reassess the resources needed for a collaborative effort and the benefits of participating.

4) ***Refinement and implementation***, in which suggestions and ideas are refined and put forward and the individual contributions differentiated.
5) ***Evaluation and feedback***, where team practices and roles are analyzed and future goals are established.

This model explains the "how and why" behind each step toward a culture that supports collaboration.

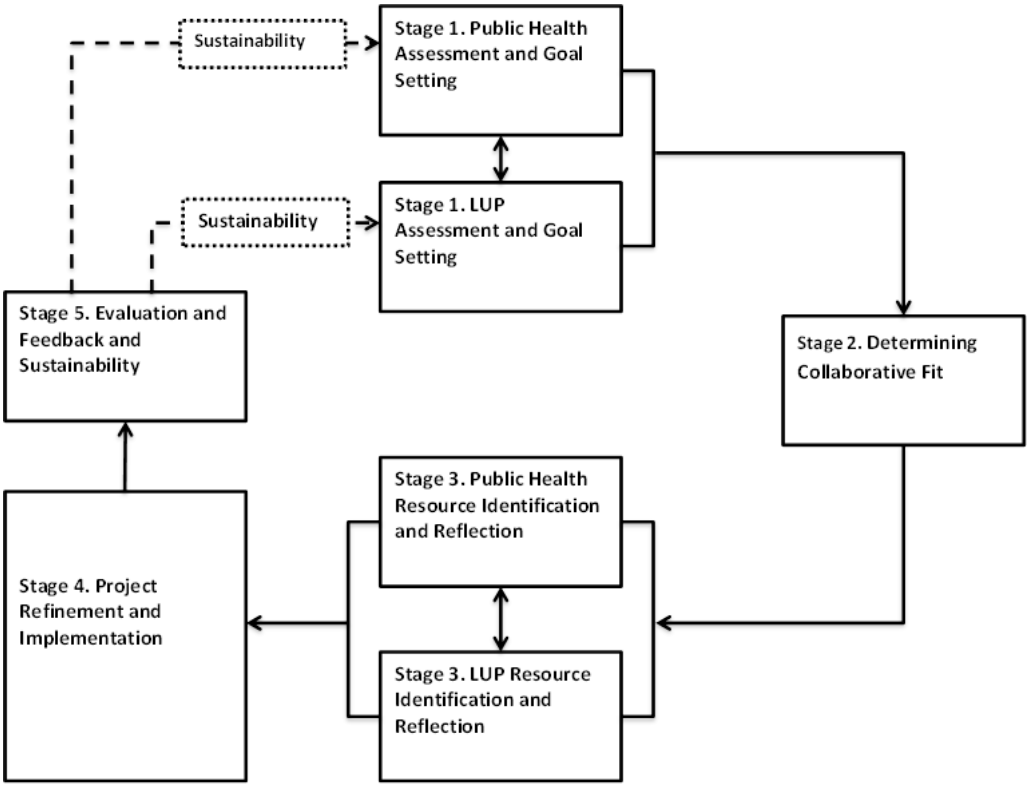


Figure 5. Five Stages of Collaboration.

The study combines this model with several constructs from TD research and action literature so that it reflects the level at which the collaborations take place (multidisciplinary versus interdisciplinary versus TD). The premise is that TD models may have a greater likelihood of success when used to address the type of complex problems considered by the PH and LUP collaborations examined. As stated previously, there is no inherent quality ranking in the scale from unidisciplinary to TD, and no suggestion that one is intrinsically superior to another.

The model proposed by Stokols for TD collaboration takes place at multiple levels (six in this case) of analysis (Table 1)(Stokols et al. 2008; Stokols et al. 2003; Stokols et al. 2005). This approach is based on the "social ecologic model" originally described by Bronfenbrenner (1977, 1979) in *Ecological Systems Theory* which used the concept that there are layers separating the effects of the environment on the individual.(Bronfenbrenner 1977; Bronfenbrenner 1979) This concept was an extension of Lewin's (1935) studies of human behavior as a function of the person and the environment.(Lewin 1935) The ecologic model has been widely utilized in designing health interventions and can serve as the theoretical basis for a model that stresses the "high impact leverage points and intermediaries within organizations that can facilitate the successful implementation of health-promoting interventions" (Stokols 1996, 2000; Neuhauser et al. 2007). The model suggests antecedent conditions that determine the readiness of a team to engage in TD collaborations (Figure 6) (Stokols et al. 2005). These conditions continue to affect the collaboration throughout its process, as well as impact the final outcomes. The outcomes, in turn, will affect the antecedent conditions and processes that would be present in future collaborations.

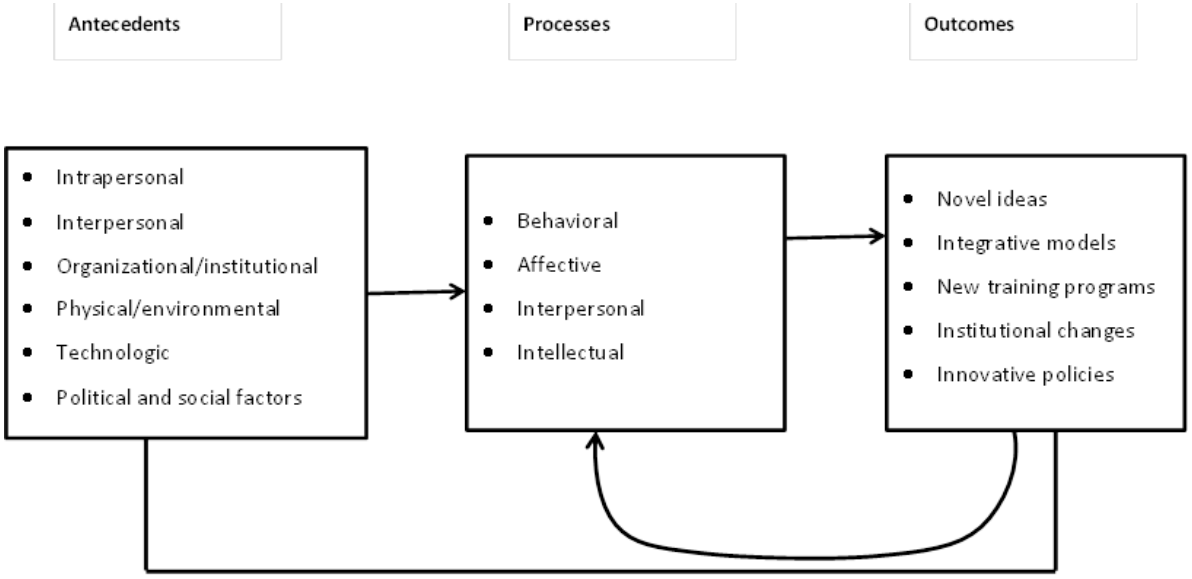


Figure 6. Model for Transdisciplinary Collaboration. (Adapted from Stokols 2005 and Stokols 2008):

Table 1. Ecologic Levels of Analysis for the Model of Collaboration.

• Intrapersonal
o Attitudes and values o Collaborative readiness o Previous collaborative experience o Effective participatory leadership
• Interpersonal
o Effective communication o Diversity of participant's skills and expertise o Mutual respect o Flexibility and adaptability
• Organizational/institutional
o Organizational incentives to collaboration o Institutional support for collaborations o Autonomy for members o Breadth of disciplinary perspectives o Opportunities for informal contact and communication o Presence of resources and long term support
• Physical/environmental
o Spatial proximity o Availability of meeting areas o Availability of individual work spaces o Supportive physical environments
• Technologic
o Technologic infrastructure for remote collaboration o Data security and social networking formation o Members technological readiness
• Political and societal factors
o The occurrence of PH problems that prompt TD collaborations o Enacting policies that support and encourage TD collaboration

Stokols also suggests four types of process for collaboration: Behavioral, Affective, Interpersonal, and Intellectual. The outcomes result in various developments,

including: Novel ideas, integrative models, new training programs, institutional changes, and innovative policies (Stokols et al. 2008).

This study uses the ecologic levels of analysis to explore the leverage points at which the contextual factors act at each stage of the Five Stage Model of Collaboration. Figure 7 shows the five stages and , in each stage, the six levels at which the contextual factors act. The image stresses that these factors act in every one of the five stages, contributing to the continuous cost-benefit analysis taking place. The contextual factors, many of which are antecedents to collaboration, were identified through GT methodology using both inductive and deductive coding.

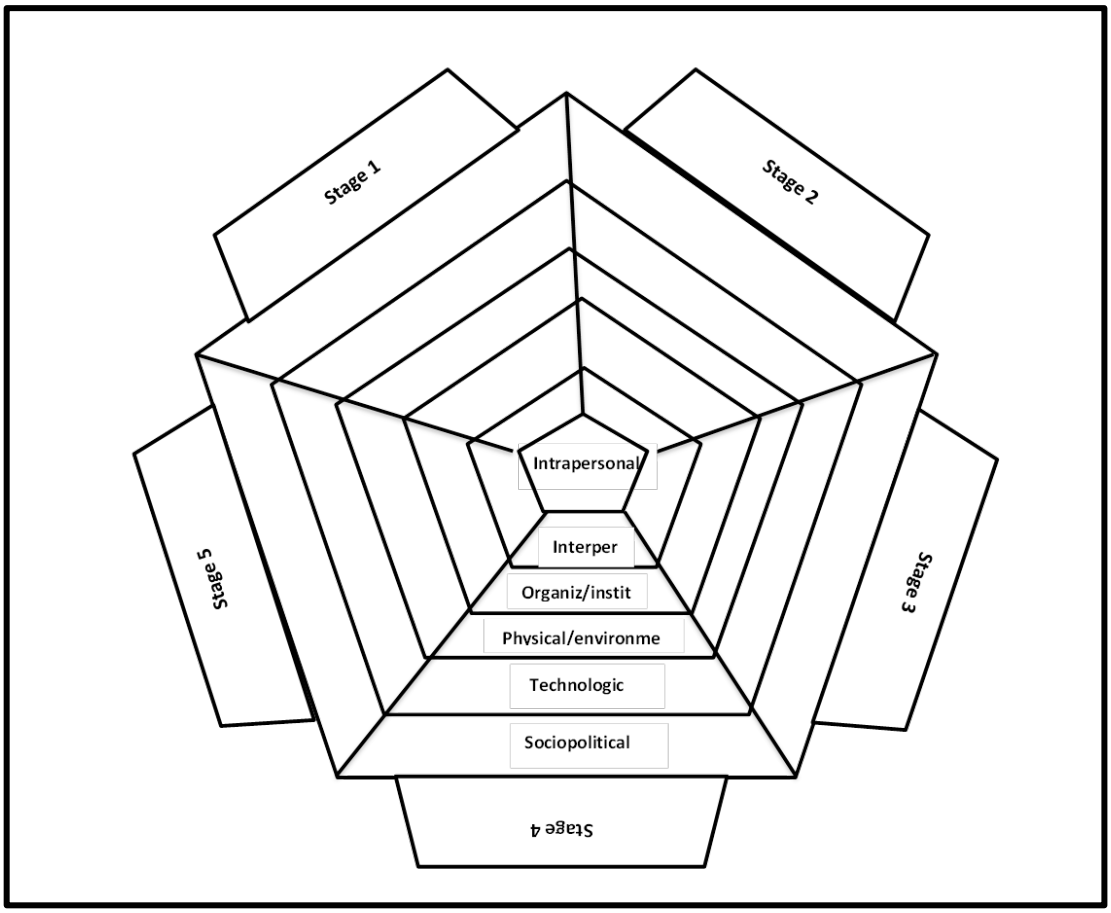


Figure 7. Five Stage Model and Ecologic Levels of Action.

The TD literature identifies additional factors of TD collaborations that can act as either incentives or barriers to transdiciplinarity. The present study uses some of those

additional factors in an inductive manner for initial coding purposes, in order to identify features of transdisciplinarity that may be present in the collaborations between PH and LUP. These factors, listed below, can determine the extent of transdisciplinarity taking place at each stage in the model – either by encouraging or discouraging collaboration. By encouraging actions that promote collaboration, it may be possible to improve the likelihood of success of the project.

A list of factors from the literature that impact TD collaborations (Stokols et al. 2003; Stokols et al. 2005; Neuhauser et al. 2007; Abrams 2006; Sussman et al. 2006; Stokols 2006; Bammer 2005; Morgan and Lifshay 2006; Nash et al. 2003; Rosenfield 1992; Austin, Park, and Goble 2008; Kessel and Rosenfield 2008; Godemann 2008):

- Diverse goals and varying levels of complexity and scope of the projects.
- Focus on a major complex problem.
- Conflict-prone nature of transdisciplinary and inter-organizational collaborations.
- Power-prestige differences causing conflict.
- Importance of pre-collaboration training and preparation as strategies for increasing the likelihood of longer term success.
- Spatial proximity among team members.
- Shared history of collaboration on prior projects.
- Clear and equitable communications about collective goals and outcomes.
- Presence of leaders that is able to foster a climate of cooperation.
- Effective leadership for transdisciplinary processes.
- Participants or champions with experience in TD collaborations.
- Sufficient diversity of participants to provide complementary and intersecting skills.
- Having an appropriate number of participants (size of the team).
- Having a shared departmental identity.
- Complexity of the organizations.
- Incentives for participation in collaborations.
- Motivation and incentives for cross-disciplinary participation.
- Understanding of transdisciplinary work.
- Development of a common language.
- Verbal, non-verbal, written and oral communication skills.
- Respect for others' models and methods.
- Institutional commitment and flexibility.
- Regular face-to-face meetings.
- Close collaboration between researchers and practitioners at all phases and levels.
- Expertise in problem-based research and practice.

- Strong multi-method research skills.
- Evidence of value-added outcomes.
- Adequate funding and resource allocation.
- Adequate access to electronic communication technologies.

In the Five Stage Model for Collaboration, each stage has several activities that are necessary in order to progress to the subsequent stage of the collaboration. The activities are shaped by the presence of the factors listed at each stage. As an example, factors that affect collaboration at the intrapersonal level include the attitudes and values of each individual, and the incentives for participation in a project. Activities addressing these factors during the first stage of the model would include that each individual must establish goals, as well as assess a willingness to work with others in the team. These activities are direct results from a premise of social exchange theory, which requires that an individual perform a personal cost-benefit analysis before engaging in collaboration (or in a negotiation). If the individual determines that benefits outweigh costs, then the participant is ready to move to the next stage and the likelihood of success for the collaboration is increased. If on the other hand, if an individual decides against participation, then the collaboration may be hampered or not take place at all.

Many activities are required for any collaboration; however, the literature suggests that certain specific activities are especially important for encouraging the emergence of a TD approach. These activities relate to the development from the outset of a shared conceptual framework. Some are described in various papers, and they include: the concept of four explicit stages of organizational development for interdisciplinary science (Kahn and Prager 1994), and for TD science (Bergmann and Brohmann 2005); activities in the area of TD study of physical activity (King et al. 2002), and for team collaboration development (Dukewits and Gowin 1996); and processes that are specifically necessary for TD collaborations (Stokols et al. 2005; Stokols 2006). The following is a compilation of these factors and the sources:

Kahn & Prager (1994):

- Listening across disciplinary gulfs.
- Developing a common language for new conceptual development.
- Onset of collaboration through consultation.
- Conducting joint projects that are the result of disciplinary integration.

Bergmann (2005):

- Taking up problems or questions from everyday life.
- Drawing on knowledge from practice.

- Drawing on scientific fields and disciplines adequate to the problem.
- Stepping across disciplinary boundaries.
- Carries out transdisciplinary integration of science and practice.
- Formulates new knowledge or questions and strategies for action and solutions.

King (2002):

- Increase communication between disciplines through more professional.
- Interdisciplinary meetings which would also help develop a common language.
- Identify journals to disseminate the findings from the meetings.
- Develop websites and other electronic communication channels where experts in different disciplines can connect and pursue new collaborations.
- Develop regular avenues for "cross-talk" across disparate disciplines.

Dukewitz (1996):

- Establishing trust.
- Developing common beliefs and attitudes.
- Facilitating the empowerment of team members.
- Having effectively managed team meetings.
- Providing feedback about team functioning.

Stokols (2005, 2006):

Identifying antecedents supporting or impeding the development of TD collaboration:

- **Behavioral**
  - Participating in working groups.
  - Modifying plans as a result of discussions with colleagues.
- **Affective**
  - Holding the belief that the group is integrated versus fragmented.
  - Feeling that members are appreciated.
  - Finding the collaboration enjoyable.
- **Interpersonal**
  - Creating high levels of social support.
  - Sharing professional values.
  - Addressing the extent of multidiciplinarity of members through promotion of interaction.
  - Increasing the degree of integration of the various agencies.
- **Intellectual**
  - Efforts to generate novel ideas and methods.

SPECIFIC ACTIVITIES OCCURRING WITHIN EACH STAGE.

This section describes activities that occur at each stage of the model, along with a discussion of how these activities are consistent with the underlying theoretical constructs.

Stage I: Assessment and Goal Setting.

During the first stage, individuals in PH or LUP establish their own goals and identify a potential development project with their colleagues and other key members in their own agency settings.

A main activity that takes place is the identification of the antecedents that influence the effectiveness of a collaborative team. Acting at the different levels of analysis (such as at the intrapersonal, interpersonal, organizational/institutional, physical/environmental, technologic, and sociopolitical), these factors determine if the collaboration will be effective and to what degree it can become transdisciplinary in nature (Stokols et al. 2008). In order to help assess whether a collaboration effort is appropriate, a "Cost-Benefit Analysis tool" is proposed. The tool consists of questions that permit an individual to perform a preliminary evaluation and audit of the proposed project. The results of this audit can then help address barriers and deficiencies. Issues such as personal interest in the project, the needs of the collaborating agencies, the availability of resources, and a realistic appraisal of individual willingness to be part of a process that requires flexibility, openness to new perspectives, and possibly, issues related to control and power. As will be seen below, the tool also contains questions that are appropriate for later stages of collaboration.

Social exchange theory suggests that, during the initial stages of collaboration, there is a period of evaluation and comparison in which individuals and organizations look at the resources available, the costs, and the possible benefits they may derive. Emerson describes exchange networks that result in productive exchange (Emerson 1976). At this stage, each individual and organization defines expectations for the project, looks at the alternatives, and completes a cost-benefit analysis to decide if the outcomes are worth the efforts required. This is where the concept of equity – or what Homans calls "distributive justice" – sets the stage for later negotiations (Homans 1958).

Gitlin states that there are six additional outcomes required so that the collaboration can progress. Each agency / individual involved must agree that: a) The specific issues to be considered in the project are consistent with the priorities of the agency / individual; b) The issues are of sufficient interest that they merit the investment of the resources, people, and time needed to plan the project; c)There is a willingness to collaborate with the partnering agency (and the discipline it represents), as well as to consider modifications to the initial ideas for the project; d) Sufficient

resources can be made available for the planning and execution of the project; e) Any gaps in the available resources can be identified; and f) The benefits to the individuals and the agencies are worth the costs (Gitlin, Lyons, and Kolodner 1994).

Depending on the nature of the project, it may be difficult to identify the best participants for the collaboration – that is, the individuals who have a shared interest in the problems being addressed, the requisite skills and expertise, and the support of their respective agencies. In order for a project to enter the first stage, it may be necessary to have in place some institutional or individual history of collaboration, a mandate for interagency communication, and the presence of effective leadership (San Martín-Rodríguez et al. 2005).

Anyone contemplating a collaborative project with another discipline needs to do a cost-benefit assessment at both the personal and institutional levels. The Cost-Benefit Audit tool (Appendix 5) proposed in this study helps participants evaluate many aspects of their readiness to engage in collaboration. In addition, a series of questions can further help individuals clarify their personal readiness for collaboration. The following are questions that have been adapted and augmented from the papers by Gitlin (1994) and Stokols (2008):

1. What issues in a project combining public health and city planning are stimulating and important to me?
2. Do I feel that collaboration is of value for this project?
3. How do my interests and ideas for this project fit the goals and priorities of my profession, department and/or agency?
4. What expertise and resources are currently in place to develop my area of interest or specific idea?
5. What expertise and resources would be necessary to successfully develop a collaborative project in this area?
6. What level of commitment in terms of time, energy, and other resources can I offer to such a project? What is the institutional commitment?
7. How willing am I to work with others to shape, develop, and implement this idea?
    a. Am I willing to be flexible and see different sides of a question?
    b. Am I willing and able to commit the time to a project?
    c. Am I willing to share with others?
    d. Am I open to adopting other ideas?
    e. Am I willing to invest time and effort to develop personal relationships with other participants?
    f. Can I deal with the uncertainty, tensions and complexities from TD work?
8. Can I count on effective and supportive leaders that would make collaboration possible?

Stage II: Determination of a Collaborative Fit

After the first stage, the individuals involved will have determined their level of interest in a possible collaboration with another agency in order to address issues of concern. Each participant may have arrived at this point through a different avenue. There may have been a mandate from policymakers that a certain problem must be addressed by a collaboration of various agencies. During the development of an existing project, the need for outside expertise may have been identified, and the individuals involved would have determined that collaboration with another discipline was necessary. Or, there might be a history of previous collaboration, which would naturally lead to a continued association in a new project being developed.

During stage II, the individuals involved come together to determine the existence of a "collaborative fit." Based on the theoretical models, the activities that would occur include: negotiation, role differentiation, and the development of an environment of trust.

Negotiation.

According to the definition of TD collaborations used in the study, participants must work together from the outset to develop a shared conceptual framework that integrates and extends discipline-based concepts, theories, and/or methods to address a specific, common problem. At the start of a negotiation, the members bring in their own frameworks. During this stage, they must identify and openly discuss differences, so as to avert conflicts. The presence of supportive leaders that empower members, encourage cooperation, and resolve conflict is especially important. The team must guard against any one individual exerting control over the process and pushing for the use of a pre-determined framework.

It has been noted that a focus on points of agreement may lead to successful resolution of any differences. An example of agreement could be the shared interest to address the problems of obesity and lack of physical activity. Prior experience of collaboration is a good incentive for success, as is a participatory process for goal setting and decision making.

Role differentiation.

The individuals must explicitly discuss their roles, responsibilities, and expectations for the collaboration. This should be an active process involving all members of the team. The constraints arising from such external factors as politics or bureaucracies must be identified. Having clarity regarding roles is a key means of avoiding or resolving conflict. Some case studies have reported the use of written contracts outlining some of the rights and responsibilities of team members (Austin, Park, and Goble 2008).

Each Individual's time commitment – and time orientation – needs to be determined. Orientation refers to an individual's expectations regarding the use of time. An individual's time orientation "tends to be situationally based and depends on the amount of time usually required to obtain feedback regarding one's actions on one's job" (Gitlin, Lyons, and Kolodner 1994). A public health officer, for example, might be used to receiving feedback for decisions much faster than is typical for a planner. The result might be that PH professionals will tend to organize their work flow into activities of shorter duration. A planner, on the other hand, may normally receive feedback after a much longer time period, and may plan work tasks accordingly. Because time commitment and time orientation can be sources of conflict within a team, all expectations around time must be discussed so there is a clear understanding among the participants.

Building an environment of trust.

In order for members of a team to work together effectively, an environment that fosters open communication and cooperation must be present. Members must be able to meet as often as necessary – particularly face to face – and they must have the technological capability to communicate with ease. Comfortable physical facilities must be available for meeting. A technological infrastructure should be provided, and the members should be ready and able to use it.

As familiarity among members increases, the cohesiveness of the group develops. This cohesiveness, in turn, encourages mutual respect and communication, and decreases tension and conflict. It has been suggested that trust among co-workers increases their perception that they have the support of their organizations (Ferres, Connell, and Travaglione 2004). Organized retreats or charettes are among the specific activities that can help build trust and collaboration. All team members must believe that the final form of the project will represent their ideas and objectives in order for the collaboration to go on to the next stage.

A list of some characteristics of an environment of trust that encourage an individual to become part of a "team" and to develop a common language and a common frame of reference necessary for TD collaboration includes (Gitlin, Lyons, and Kolodner 1994; Neuhauser et al. 2007; Kahn and Prager 1994; Armistead and Pettigrew 2008):

- Mutual trust, respect, and cooperation
- Respect for others' models and methods
- Flexibility and respect for differences of opinion
- Open, relaxed communication
- Participatory conflict resolution

- Participatory decision making
- Clearly defined and agreed upon tasks
- Motivation and incentives for cross-disciplinary participation
- Understanding of transdisciplinary work
- Development of a common language
- Regular face-to-face meetings
- Effective leadership for transdisciplinary processes

Stage III: Identification of resources and reflection

This is the stage in which the decision is made either to proceed in the collaboration or to take an alternative route.

The importance of having the adequate resources (both human and institutional) cannot be overemphasized. Many of the factors that influence team effectiveness include meeting spaces, office spaces, technological infrastructure, funding sources, diversity of participants with strong skills in their areas, etc.

Reflection involves the participants making personal assessments as to their readiness to participate in the project, as well an institutional decision to proceed. At this stage, having both "buy in" at the top and "buy in" from the participants is essential. Again, the presence of leaders able to address deficiencies adds enormously to the likelihood of success.

Social exchange theory suggests that an ongoing cost-benefit analysis will help individuals and groups reflect on their participation in the collaboration. As the list of required resources is created, the cost may increase to the point where the collaboration cannot occur. The transformation to TD collaboration may be especially dependent on additional facilitating factors, such as access to electronic communication technology, sufficient opportunities for face-to-face interactions, and the existence or development of interagency agreements and shared resources.

Stage IV: Refinement and implementation,

During this stage, the individuals come together as a team and share their Stage III assessments. There is another round of negotiation, where the different disciplines can discuss resources, goals, and roles, and so on. By this stage, there should be in place a model for cooperation based on the principles of trust previously discussed. Leaders continue to facilitate the process by helping eliminate any potential barriers, as well as by emphasizing the positive incentives.

There are several basic requirements for collaboration that must be present at this stage in order to facilitate the implementation of the project. The basics include: diversity within the team sufficient to provide the skills and knowledge necessary, access to a shared space to meet (actual and/or virtual), and a strategic plan with clear parameters and outcomes that has been created through the

previous process and is accepted by all team members (Austin, Park, and Goble 2008).

If funding still needs to be obtained, then a group within the team may be formed to apply for the funds or grants. If new participants need to be identified and added to the team, then it is possible that the group may need to go back through the previous stages as a new collaborative effort.

In the area of TD action research and practice, there are several aspects that can impact the development of collaboration among government agencies, community groups, universities, and other stakeholders. Due to the increasing complexity of these collaborations, there may be significant differences in the levels of commitment, power, and status, as well as in priorities and goals. Unless these differences are openly and explicitly addressed, there is a great potential for conflict and disagreement. It is necessary to avoid one discipline's dominating "the conversation" and deciding the questions being asked and answered (Bergum and Dossetor 2005). There is evidence that if potential differences in status and power between community members and the "experts" are minimized, then the prospects of success in addressing the community problems is much greater (Minkler 1997; Minkler and Wallerstein 2003).

Once the team has started implementing the project, new issues and challenges may arise that require more negotiation and resolution. This process is iterative, with the team working through the previous stages as necessary. Projects are dynamic in nature, meaning that there may be changes in status or in the roles that participants play. Social exchange theory suggests that the individuals and agencies would be engaged in a continuous process of cost-benefit analysis. If participants find that cost has increased without a corresponding increase in benefit, then they may choose to limit their participation. The concept of equity dictates that all members of the team believe that they are both giving to and receiving from the collaboration in measures comparable to others in the group.

Stage V: Evaluation and feedback

Collaboration, and in particular TD collaboration, is presumed to be a more effective way to address the complex problems of the 21st century. The only way to assess whether this supposition is true is to have a practice for evaluation of collaboration (Abrams 2006; Stokols et al. 2003; Stokols 2006). The evaluation should take place both during and after the process of collaboration. Enormous resources that are now being funneled into collaborations, and determining the cost-effectiveness of these projects requires that there be a solid theoretical foundation for evaluation. In the last few years, there have been efforts to develop a science of transdisciplinarity and team formation (Stokols 2003, Stokols 2005, (Stokols et al. 2008); however, this remains an area that is still very deficient (Klein 2008b; Boix-Mansilla, Feller, and Gardner 2006). Several key evaluative principles

have been identified through case studies. These principles include: variability of goals, management, leadership, leveraging of integration, effectiveness and impact, results, work planning and methodology, actors and competences (Klein 2008a; Boix-Mansilla, Feller, and Gardner 2006; Bergmann and Brohmann 2005). Quality criteria are being developed for use by inside or outside evaluators during and at the end of collaboration (Bergmann and Brohmann 2005). Note that internal evaluation is different from self-evaluation. A self-evaluation would consist of an assessment by the participants themselves. An internal evaluation can be performed by either the participants trained in evaluation or an outside professional evaluator. Resources for evaluation should be allocated from the start.

Evaluation occurs in the same environment as the project itself, and it should include the same aspects of open communication, respect, and trust that were developed previously. Evaluation looks for opportunities to create a sustainable collaboration that can address future problems. It also allows the agencies the opportunity to assess whether the project's goals were met and if not, find the reasons for failure.

The Cost-Benefit Analysis tool contains questions based on the study's contextual factors that can be asked during the project, as well as at the conclusion. These questions force participants to consider possible barriers to collaboration and hopefully identify solutions. These are a few examples of the topics covered by the questions:

- Did the team set goals and the scope of the work jointly?
- Does the project address a relevant, complex everyday problem?
- Does the collaboration require a transdisciplinary approach?
- Are there clear goals and responsibilities that all team members are committed to?
- Is there the opportunity for open communication of ideas and concerns?
- Are time and funds adequately provided for?
- Has leadership provided the support needed for the collaboration? Does the institution empower individuals to pursue collaborative projects?

Conclusion:

This section has summarized the theoretical framework that underlies the analysis of the data. Based on the theoretical constructs, a series of activities, characteristics, and factors have been listed. These listed items were used to create the initial codes, which were then modified and consolidated as required by the grounded theory approach used in this study. The findings section presents the results of the analysis as pertains to collaborations between PH and LUP.

Five stage model and transdisciplinarity in PH and LUP collaborations.

In this section, the five-stage model previously discussed is related to a TD approach toward collaborations of PH and LUP. This section consists of a more in-depth description of how the model was adapted to the emerging concepts in the study, based on a GT methodology. There is some repetition of key concepts, and the section can be read as a stand-alone explanation of the model used to analyze the results of the study.

The five-stage model incorporates various activities and pre-existing factors that, when accomplished, will increase the likelihood of success of such collaborations. The concept of "success" must be defined narrowly, in order to fit the mission's specific to PH and planning agencies. Although there are general criteria provided for TD science and practice, discipline-specific goals must be also considered (Stokols et al. 2008). Other disciplines and other stakeholders may look at completely different objectives, such as translational science, professional training, or clinical discovery. In the case of PH departments specifically, the study suggests that some main objectives are: building healthier communities (as defined by metrics such as physical activity, obesity rates, and heart disease prevalence), improving social equity (which leads to better population health), controlling potential environmental sources of disease, helping establish policy that leads to integrated and sustainable PH involvement in the planning process, and obtaining dedicated funding for the projects that lead to PH and LUP collaborations. LUPs often have goals that share many aspects of those found in PH, such as planning healthy communities, considering equity (in the planning and zoning process), and long-range planning for sustainable growth.

The five-stage model has a theoretical foundation based on three elements: social exchange theory, team formation literature, and theory and TD literature and theory. From this theoretical framework, it was possible to refine both deductively and inductively several constructs that apply to PH and LUP collaborations. Social exchange theory provided the constructs of negotiation and exchange; team formation literature provided the constructs of role definition and trust development; TD theory contributed contextual circumstances that facilitate or hinder team performance and collaboration. The latter were arranged by the level of analysis according to an ecologic model.

Each stage of the five-stage model consists of a series of activities and antecedents that, when present, have a determinative effect on the process of collaboration. The presence or absence of these activities can be used when evaluating a collaborative project at each stage, as well as when seeking an understanding of the likelihood of success. An assessment of these activities should also provide tools to improve the process, and thereby increase the possibility of success. Case studies of TD collaborations suggest that the presence of antecedent contextual factors exert a synergistic effect on the outcomes of TD science (Stokols 2006). It appears that the more contextual factors that are present, then the greater the prospect of an effective and successful collaboration. This study seeks to identify some of the contextual factors that are most applicable to the setting of PH-LUP collaboration.

The following sections describe the three elements of the theoretical foundation (social exchange theory, team formation literature, and theory and TD literature and theory) as they relate to the final coding scheme used to analyze the in-depth interviews. The findings are presented in the Discussion section in Chapter 4. Table 6 lists all contextual factors (and activities) at the ecologic level of action and analysis for each stage of the Five Stage Model of Collaboration. They are arranged in a manner that allows the reader to easily identify visually which factors act across multiple levels, which are more specific to one stage and level and which are of such importance that they appear in many stages and levels.

Transdisciplinary element.

As previously discussed, a transdisciplinary approach to collaboration is especially suited to the complex problems faced by PH in the 21st century. Obesity, heart disease, diabetes, and the health effects of global warming are all multifactorial problems that require various disciplines to work together. In the arena of government agencies, this integration faces both individual and institutional barriers for collaboration. Because of the unique contextual factors regarding geography, funding, mandates, and variety of stakeholders involved, it is especially important to look at the circumstances that act as barriers or incentives for collaborations between PH departments and planning agencies. Collaborations, especially TD ones, result in greater costs, time commitments, and a higher degree of complexity than unidisciplinary projects; therefore, collaborative projects require justification and preparation. In the paper "The ecology of team science: understanding contextual influences on transdisciplinary collaboration." Stokols et.al. (2008) suggest that the effectiveness of TD collaborations is highly variable, and it depends greatly on contextual circumstances and readiness factors (Stokols et al. 2008).

In order to develop a list of contextual circumstances that apply to team formation and collaboration, Stokols looked at the empirical literature within four distinct areas of research on team performance and collaboration in a variety of institutional and community settings:

(1) Social psychological and management research on the effectiveness of teams in organizational and institutional settings;

(2) Studies of cyber-infrastructures (i.e., computer-based infrastructures) designed to support transdisciplinary scientific collaboration;

(3) Field investigations of community-based coalitions for disease prevention and health promotion; and

(4) Studies focusing explicitly on the antecedents, processes, and outcomes of effective collaboration within transdisciplinary research centers and training programs.

Stokols (2008) states that "The review of empirical literature on team performance … highlights the importance of certain factors, identified across multiple research domains that either enhance or hinder the effectiveness of transdisciplinary collaborations." Some of the most commonly cited factors exerting influence on TD collaborative processes and outcomes include effective leadership, establishment of trust, and organizational aspects of collaboration readiness (Stokols et al. 2008). Using an ecologic model, Stokols rearranges the contextual factors derived from the four domains listed above according to the various levels of analysis at which they are felt to act. These levels are: intrapersonal, interpersonal, organizational, physical environmental, technologic, and political and societal factors.

For the present study's purposes, each of the four areas of empirical literature reviewed provided insight into contextual factors specifically applicable to PH and LUP collaborations. These factors consist of activities and antecedents that can be related directly to the collaboration stages of the five-stage model. As described above, the activities and antecedents were used to derive both inductively and deductively the codes used to analyze the data. The codes were then refined in an axial fashion according to GT methods and grouped into families (term used in Atlas-ti CAQDAS software) for purposes of analysis. Code families were created for the constructs used in the five-stage model and for the ecologic level of analysis. These code families are listed below.

By five-stage model construct:

- Negotiation
- Exchange
- Role definition
- Trust development

By ecologic level of analysis:

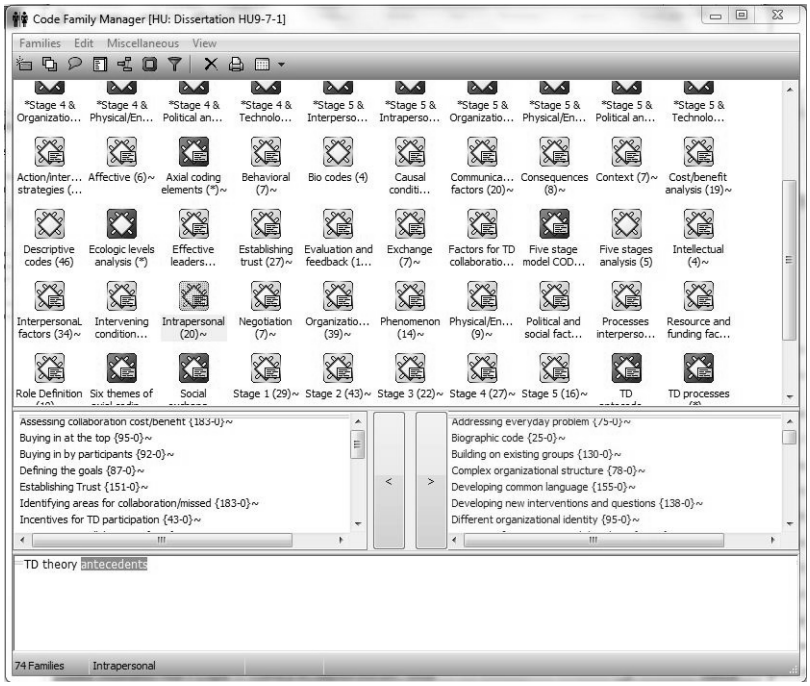
- Intrapersonal
- Interpersonal
- Organizational/institutional
- Physical/environmental
- Technologic
- Sociopolitical

The smallest unit of analysis – the "code" – represents an activity (or contextual factor) that can occur either in one or in multiple stages of the five-stage model. In addition, the code can originate from one or more theories presented in the description of the theoretical foundation. Perhaps an example will be the best way to clarify these statements.

"Regular communication across disciplines" is a code representing an activity proposed in the literature as being necessary to develop a shared theoretical framework and a common language, both of which are *sine qua non* of TD collaborations (Neuhauser et al. 2007; Kahn and Prager 1994). This activity is also a contextual factor present in the process of negotiation and exchange, as proposed in social exchange theory. In addition, this activity is cited as being necessary for trust development by team formation literature. In the ecologic model, it is the basis for effective communication at the interpersonal level of analysis.

The activity represented by this code is present during the second stage of the five-stage model, the stage in which participants are establishing a process of negotiation and cost-benefit analysis. It is again noted during the fourth stage, in which the project is being implemented; this action is deemed to be essential for the success of collaboration (especially in a TD manner).

Figure 8. Code Families Created in Atlas-ti.



The section on data analysis describes the activity (or code, or contextual factor) in relation to the stage at which it was described by the subjects interviewed. Then, its significance is analyzed according to its relationship to other codes found in similar

constructs, such as the idea of negotiation or team formation. The "families" mentioned above were created with Atlas-ti for this purpose. (Figure 8)

One of the earliest definitions of TD was proposed by Rosenfield and others as involving the development of shared conceptual frameworks that integrate and transcend the multidisciplinary perspectives represented among the team members (Stokols et al. 2008). In contrast, the NIH Roadmap initiative for medical research defines both interdisciplinarity and transdisciplinarity as involving the creation of a new hybrid discipline that does away with traditional separations of disciplines (*Nih Roadmap for Medical Research: Interdisciplinary Research.* 2003; Stokols et al. 2008). Rosenfield's definition is the one chosen for this study, which is more concerned with the degree of collaboration between PH and planning, rather than with the development of a hybrid field. However, the NIH definition does offer the tantalizing prospect of a truly combined PH-planning discipline in the spirit of the historical PH discipline practiced by the likes of Olmstead in the 19th and early 20th centuries (Jackson 2001). It must be noted that this truly combined approach is starting to be seen in the combined degrees of PH and City planning being introduced by various universities, combined meetings (such as Partners for Smart Growth), and an exponential growth of combined literature. One example of a combined degree is the three-year concurrent program at UC Berkeley that enables students to receive both a Master of City Planning (M.C.P.) and a Master of Public Health (M.P.H.).

The definition, prioritization, and management of project objectives are activities that reappear and can vary through the stages of collaboration (Stokols et al. 2008). In the model, this factor is taken into consideration by the continual cost-benefit analysis that occurs throughout the collaboration; this ongoing analysis is integral to the theoretical framework of the model, which is based on Social exchange theory. A challenge develops when different stakeholders involved in PH and LUP projects have their own priorities and definitions for goals; these differences may result in significant difficulties in project design, management, and evaluation.

Collaboration can occur at different levels of scope: intra-organizational, inter-organizational, and intersectoral partnerships (Stokols et al. 2008). In the case of PH and planning agencies, the focus is on inter-organizational alliances formed to address the health problems of specific communities. These collaborations, therefore, have an effect on limited geographic distributions. They are rarely focused on areas greater than the county level, and more commonly at the city level. This is the result of the political structure in California that, with a few exceptions, makes public health a county- level agency and planning a local jurisdiction agency, such as a city department. The study considers the case of the City of Long Beach, which is one of the exceptions in that it has a city public health department; the Long Beach case also refers to some state level projects intended to change policy.

Stokols (2008) cautions against generalizing the results from a study of TD collaborations in one field to another field. Although some contextual factors may be

found in all collaborations, many are case specific. The present study is narrowly design in order to provide a framework for collaborations between PH and LUP agencies that address complex health problems through community and policy perspectives, and through PH participation in the land use planning process.

One of the main theoretical foundations for the five-stage model is based on team effectiveness literature. Some of the constructs on which the study concentrates have been reviewed in that literature; these include role definition and trust development. In addition, there are several factors that have been studied by social psychology and management research; these include leadership, conformity, and conflict (primarily studied in laboratory settings), and team members' familiarity with each other, social cohesiveness, group size, and leadership styles (Stokols et al. 2008; Bennis 1997).

As part of the concept of "trust development," increased familiarity among the members appears to make teams more successful. It is interesting to note that more heterogeneous groups appear to be better suited to addressing complex problems, for reasons such as increased communication with members outside the group, a greater variety of ideas, and other cognitive factors (Milliken and Martins 1996).

Team size is another factor that was coded as an aspect of the diversity of participants and disciplines. This measure is very dependent on setting, because a 20-member team may be regarded as small or medium in a training center, but as large in a government agency of corporate department (Stokols et al. 2008; Rhoten 2003). Most of the agencies described in this study are relatively small, and the number of participants in collaborations even smaller, with rarely more than two or three members from any one agency involved in a project. It has been suggested that smaller groups are more likely to engage in interdisciplinary work than larger groups (Rhoten 2003).

One of the main emerging themes in this study is effective leadership. Studies of TD research suggest that leaders are extremely important in determining how collaborations occur in TD research centers (Stokols et al. 2008; Stokols 2006). While many personal traits have been described as affecting leadership – such as intelligence, appearance, and education – it may be the capacity of leaders to generate and sustain trust that may be most important (Stokols et al. 2008; Bennis 1997). Some of the traits mentioned in this study are in line with those suggested by Bennis (1997) (Bennis 1997). Leaders provide direction and meaning; they remind people of what's important and why their work makes a difference; they generate and sustain trust; they display a bias toward action, risk taking, and curiosity; and, above all, they are purveyors of hope (Bennis 1997). Sustainable leadership has emerged as a key condition for the continuation of collaborations joining PH and LUP. Important traits for sustainability include justice, diversity, resourcefulness, and conservation (Hargreaves and Fink 2004). These traits are mentioned multiple times in this study, in relation with the goals of PH as applied to LUP.

Interagency collaboration requires that different aspects of a project may be managed at different levels and in different areas of responsibility (Armistead and Pettigrew 2008). As a result, leadership may operate at these varied levels and areas. The directors of the agencies may have to show leadership in organizational matters, such as getting the resources necessary to allow the team members to act. The actual development of the project may require a leader at the mid-management level that is effective in organizing other stakeholders to pursue the collaboration. Even within a single project, there may be leaders responsible for specific aspects or components, such as financial, organizational, or administrative. Early literature mentions Social Exchange theory as a way to study leadership (Jacobs 1971).

Communication patterns have emerged as an important aspect of collaboration. Regular communication among the members of a team and between the disciplines; regular meetings, both formal and informal; and communication outside the team are all aspects that impact the effectiveness of collaborations. Trust and "psychological safety" are some of the feelings engendered in groups through good communication, with the latter factor meaning that members believe the team is a safe forum for interpersonal risk taking (Edmondson 1999).

The geographic separation of agencies means that they often interact through electronic and technological means. Even a single agency may be dispersed in different locations. A combination of available technology – such as internet and video teleconferencing – and the experience of the team in using such tools are both critical factors in the success of distance collaborations; common ground, coupling of work, collaboration readiness, and collaboration technology readiness are the suggested parameters (Stokols et al. 2008; Olson and Olson 2000)

In the case of geographic separation among a team's members, an initial, early face-to-face meeting increases the likelihood of success ("Trust Breaks Down in Electronic Contexts, But Can Be Repaired by Some Initial Face-to-Face Contact") (Rocco 1998). In this study, the authors looked at the establishment of trust as the basis for successful collaborations and how this trust is affected by virtual teams.

Stokols (2008) looks at team effectiveness in community coalitions, especially those that translate scientific knowledge into programs and interventions that promote PH and social justice. He identifies some of the factors that facilitate or constraint these coalitions: identification of common goals and outcomes, distribution of power and control, history of collaboration, leadership and member characteristics, and organizational support. In this study, several of these factors are noted as influencing projects and collaborations and also presenting important challenges at different stages of the collaboration. One example is the use for goal setting of a participatory manner versus a top-down approach. Another challenge is the difference in the perception of the timeline to achieve goals, because public health tends to operate on shorter time lines (based on their regular approach to PH interventions) versus planning, which often tends toward longer timelines (such as the GP revision every 10 years). Another factor is

the different power and control levels depending on political, funding and mandate issues. It has been suggested by Minkler (2003) that prior experience in working with partners helps TD action research collaborations to be successful. A similar finding appears in this study. Lack of time, scarce resources, insufficient recognition or appreciation, competing institutional demands, loss of autonomy, and interpersonal conflict can all cause a decline in participation in collaborations (Stokols et al. 2008; Israel et al. 1998)

The concept of transdisciplinary action research is based on Lewin's (1951) original papers on the societal value of translating psychological research into community problem-solving strategies (Stokols 2006). In his paper offering a conceptual framework for establishing the science of TD action research, Stokols (2006) examines three types of collaborations: (1) collaboration among scholars representing different disciplines; (2) collaboration among researchers from multiple fields and community practitioners representing diverse professional and lay perspectives; and (3) collaboration among organizations, agencies, and institutions spanning local, regional, and national levels who coordinate their efforts to implement and evaluate major public health policies and programs. The interagency collaborations between PH and planning share many of the characteristics of TD action science in that they are trying to integrate their different areas of expertise and professional backgrounds into a "community wide effort to design and implement broad-gauged policies for improving environmental, social, and public health outcomes" (Stokols 2006; Best et al. 2003; Gray 1996).

The development of a science of TD action research is now in its very early stages. The examples that Stokols (2006) describes are extremely varied, including scientific collaborations, community problem-solving coalitions, and inter-sectoral partnerships among universities, community organizations, and government agencies (the last operating within a particular political jurisdiction, such as municipal, state, provincial, or national). In the case of PH and LUP, this study finds that the societal concerns being addressing – such as designing healthy communities or increasing physical activity – entail cooperation at varied jurisdictional levels because the organizational sectors involved operate at different geographic scales.

Addressing a complex societal problem, such as the "obesity crisis," is especially well suited to a transdisciplinary methodology since it requires integration of various perspectives, such as economic, social, political, psychological, and urban design (Stokols 2006). The consequence is that these projects present greater complexity and challenges, because the agencies involved span different geographic areas, have different political and institutional mandates, and involve various professional disciplines and stakeholders. As found in this study, the members of such broad collaborative teams often must use electronic methods of communication rather than face-to-face meetings, which have been shown to be important for team formation, particularly in the early stages of a project (Olson and Olson 2000). Stokols (2006) describes three important contextual factors that may enhance the effectiveness of

these collaborations. “First efforts must be made to regularly involve representatives of all participating organizations and agencies in collaborative discussions to articulate and endorse the major goals and intended outcomes of the partnership. Second, because the translation of scientific findings into evidence-based public policies and subsequent evaluation of those policies extend over multiple years and even decades, it is crucial that political and financial support of the partnership’s activities be secured not only at the outset but also over the course of the entire project. Third, the long-term success of inter-sectoral partnerships is enhanced by the presence of highly skilled leaders and enthusiastic program champions who are uniquely able to promote cooperation among team members and engage the support of others. The success of large-scale partnerships spanning multiple agencies, organizations, and institutions may actually depend on the availability of multiple program champions situated within each of the participating sectors whose joint efforts keep collective goals salient and facilitate coordination among constituent organizations and team members” (Stokols 2006).

Contextual factors that affect inter-sectoral collaborations are listed among the activities and factors that were developed into the codes used to analyze the data. These contextual factors represent some of the deductive codes adapted from the literature and then refined, as well as new codes derived inductively from the GT analysis. In addition, as major “themes” emerged, several factors were further grouped through axial coding into families (as described in the methods section). Five final major themes were chosen using frequency and co-occurrence analysis of the data; one major theme or category emerged, as suggested by GT methodology. Other themes that were also considered include: spatial proximity, history of previous collaborations, institutional support, etc. Many of the themes were also noted in the literature (Stokols et al. 2008). The five themes (or families) that recurred in the analysis of the data and which were also noted repeatedly in the literature are:

Core category: *Cost-Benefit Analysis*

1. *Effective leadership*
2. *Communication factors*
3. *Resource and funding factors*
4. *Establishing trust*
5. *Evaluation and feedback*

Evaluation and feedback about the collaboration takes place in the last stage of the five-stage model. The evaluation of complex projects spanning large jurisdictions and involving a great variety of participants with differing goals is a truly daunting activity. It appears that, at present, there are no prospective studies looking at the causal links between the contextual factors, the ensuing processes, and the final

outcomes of TD collaborations. It is hoped that some of the projects that are being developed between PH and planning will provide an opportunity to design prospective explanatory case studies (Yin 1998; Fernández 2004). This methodology is especially well suited to answering "how" and "why" questions, rather than "how many." Stokols also suggests using audits of collaboration readiness to identify possible constraints to evaluation based on previous research, possibly addressing them before committing to the collaborative project (Stokols 2006). These audits could be used to further study the relationship of pre-existing contextual factors and the ultimate outcomes of the collaboration.

Study Design

This was an exploratory qualitative study of the collaboration between PH and planning in addressing complex health issues in the built environment. In exploratory research, social phenomena are investigated with minimal a priori expectations so as to develop an explanation of these phenomena (Lincoln, Guba, and Lincoln 1985). Qualitative methods are proposed to address the research questions of the study through an analysis of concepts and themes derived from an exploration of the contextual factors of collaboration.

Qualitative methods are the preferred approach when the guiding question of a study is what's going on here?,. According to Morse, when the research is done in order to learn from participants' experiences, and change is expected, and the understanding of change and process is central, then qualitative approaches are indicated (Morse and Richards 2002). *"Qualitative data can provide rich insight into human behavior,"* meaning that qualitative research is an interpretive, naturalistic approach to the world; therefore, depending on what is being studied, the "*methods must be fitted to a predetermined methodology" (Guba and Lincoln 1994).* Qualitative data is useful to uncover the views of the studied individuals (emic views); thus, theories, to be valid, must be qualitative and grounded (Glaser and Strauss 1967; Strauss and Corbin 1990). The study is based on a modified inductive approach, identifying patterns in the data by means of codes and themes. "Inductive analysis means that the patterns, themes, and categories of analysis come from the data; they emerge out of the data rather than being imposed on them prior to data collection and analysis"(Patton and Patton 2002)

At present, there appear to be no other studies of the perceptions and significant experiences of PH professionals and planners regarding collaboration. In order to generate data that is both rich in detail and embedded in context, this study has used primarily semi-structured, in-depth interviews to investigate the current collaborative relationship between PH and land use planning (Maxwell 1998 ; Maxwell 2005; Creswell and Clark 2007). A greater understanding of this relationship and the development of a theoretically based model for collaboration will allow for future suggestions of a variety

of tools, strategies, incentives, and guidelines to increase and facilitate collaboration between the disciplines. These suggestions will be guided by a TD theoretical model for collaboration, and it is hoped that the dissemination of the results of the study will fulfill the need for translation of knowledge discussed previously.

Qualitative research can vary from highly structured to highly unstructured (Miles and Huberman 1994). There are advantages and disadvantages to the two approaches; however, for a limited number of cases in a short-term project, a more structured approach is favored. The initial phase is the establishment of a research relationship with the subjects. This phase requires "gaining access" to the setting (Maxwell 1998 ; Maxwell 2005). This study achieved this access in several ways: through contacts in various professional organizations that expressed interest in participating in research projects linking LUP and PH (such as NAACHO and the Local Government Commission); through professional contacts provided by Dr. Jackson, Prof. Macdonald, and other faculty members; and through referrals by participants in this project and other ongoing projects at UCB.

One method that has become important in qualitative research is the Grounded Theory (GT) approach, as well as its application to data analysis using the constant comparative methods proposed by Glaser and Strauss (1967) and Strauss and Corbin (1990) (Glaser and Strauss 1967; Strauss and Corbin 1990). This study uses this method (GT) suitably modified in order to develop a model based on theory that identifies the factors that are required in collaborations between PH and planning.

The study uses GT rather than an alternative method – such as ethnography, hermeneutics, or ethnomethodology – because GT combines strengths of both the positivist and interpretivist [12] approaches in that it uses qualitative data to represent the understanding of actual participants in PH and planning collaborations (Charmaz 2000, ,

[12] Intrepretivism and constructivism are related approaches to research that are characteristic of particular philosophical world views: *"Proponents of these persuasions share the goal of understanding the complex world of lived experience from the point of view of those who live it. This goal is variously spoken of as an abiding concern for the life world, for the emic point of view, for understanding meaning, for grasping the actor's definition of a situation, for Verstehen. The world of lived reality and situation-specific meanings that constitute the general object of investigation is thought to be constructed by social actors"* (Schwandt 1994). Interpretivists reject the notions of theory-neutral observations and the idea of universal laws as in science. *"Knowledge consists of those constructions about which there is a relative consensus (or at least some movement towards consensus) among those competent (and in the case of more arcane material, trusted) to interpret the substance of the construction. Multiple 'knowledges' can coexist when equally competent (or trusted) interpreters disagree"* (Guba and Lincoln 1994). Traditional grounded theory is positivistic/postpositivistic in intent (Guba and Lincoln 2005) with researchers believing that theory will emerge from the data that they collect. They have a steadfast belief in the notion of a truth waiting to be uncovered. This form of grounded theory is also known as Glaserian grounded theory in recognition of the ontological and epistemological position of one of the original authors, Barney Glaser. (Cutcliffe 2005; Mills et al. 2007)

Strauss, 1990 #628; Denzin and S. 1994). There is a serious debate occurring for the last two decades as to the tenability of a purely positivist philosophical foundation for modern GT which is outside the scope of this review.(Charmaz 2000; Bryant 2003; Mills et al. 2007) Suffice it to say that while primarily using an inductive theory-building approach (as mentioned previously), this study uses later adaptations of grounded theory which also allow for the use of existing theory, so called post-Glaserian GT or Strausserian GT. The coding procedures are designed to eliminate assumptions not found in observation and requiring the deductive verification of concepts and relationships from the inductive steps (Strauss and Corbin 1990)

According to Strauss and Corbin (1990), GT is a "qualitative research method that uses a systematic set of procedures to develop an inductively derived grounded theory about a phenomenon." “A grounded theory is one that is inductively derived from the study of the phenomenon it represents; that is, it is discovered, developed, and provisionally verified through systematic data collection and the analysis of data pertaining to that phenomenon. Therefore, data collection, analysis, and theory stand in reciprocal relationship to one another.” (Strauss and Corbin 1990). The method is designed to allow researchers to produce “conceptually dense” theories that associate concepts consisting of "patterns of action and interaction between and among various types of social units" (Strauss and Corbin 1994). Main sources of data in GT are interviews, as well as field observations, documents, videotapes, and photographs (Strauss and Corbin 1994).

Data analysis in GT takes place simultaneously with data collection. (Thus, the name constant comparative method is proposed by Strauss and Corbin (Glaser and Strauss 1967; Strauss and Corbin 1990).) The procedures used for data analysis are referred to as open coding, axial coding, and selective coding (Strauss and Corbin 1990). The codes generated are validated during the study, and the process of data gathering continues until theoretical saturation is reached and no new codes or relationships emerge (Strauss and Corbin 1998; Beck 1993).

Figure 9 presents an outline of the steps of the study. It visually presents each activity several of which took place simultaneously or in an overlapping fashion. After the participants were contacted and interviewed the data was generated in the form of verbatim digital transcripts. They were then coded using GT methods using Atlas-ti software until theoretical saturation was reached. The formulation of a Five Stage Model of collaboration and the development of the Cost-Benefit Analysis tool (*Collaboration Manual for Public Health and Planning*, Appendix 5) resulted from the final data analysis.

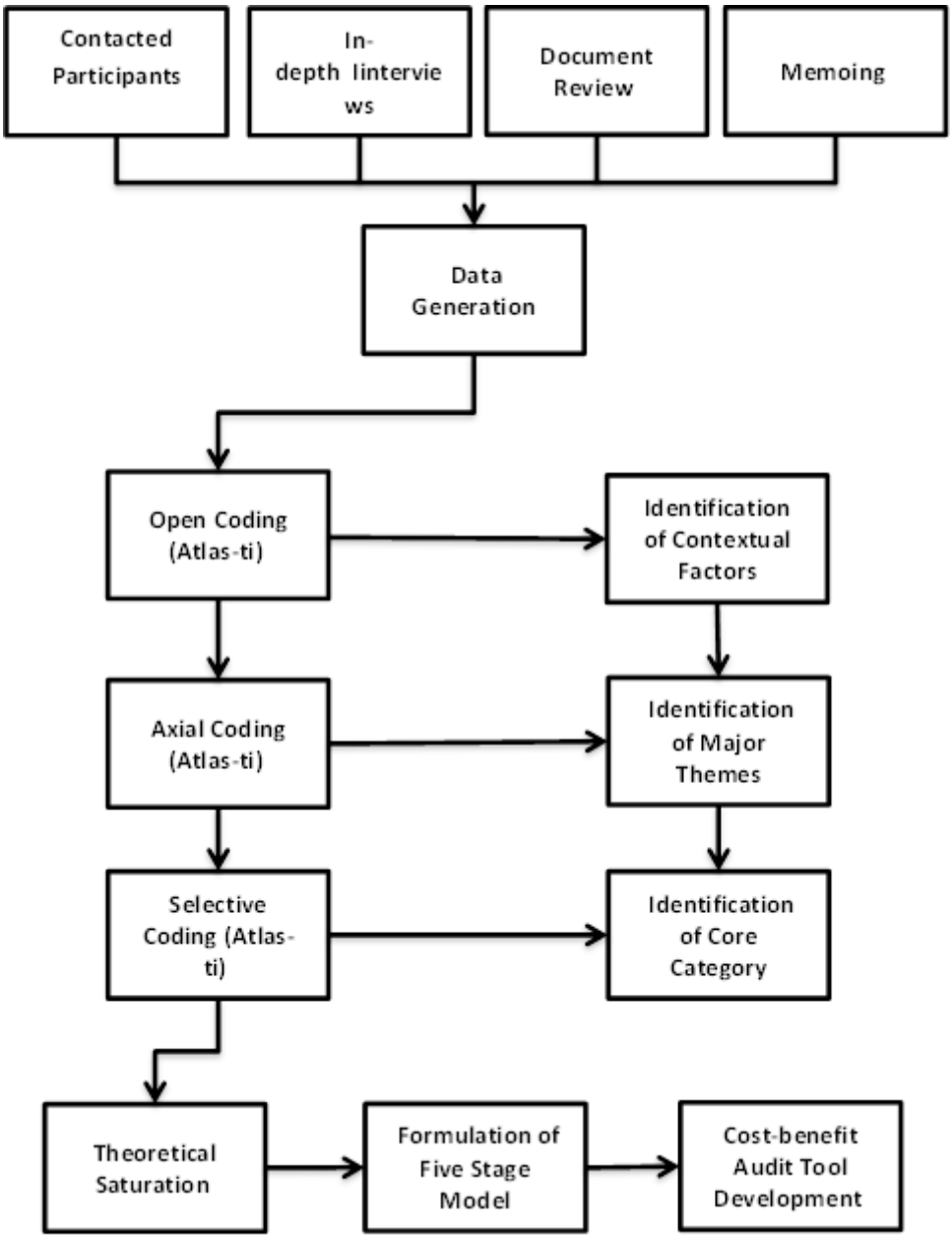


Figure 9. Outline of the Study Using Grounded Theory.

In this study, the initial open coding took place using both inductive and deductive codes. In his examination of the associations between codes, Abramson addresses the concerns of type I (false positive) and type II (false negative) errors in

qualitative research using Atlas-ti software (Abramson 2011). Atlas-ti software allows for the codes to be applied to specific quotes in the interview transcripts. The codes can be arranged and grouped into both hierarchical and non-hierarchical groupings. Codes allow for the analysis of large amounts of data through the referencing and cross referencing of observations. Inductive codes are used exclusively in GT, and they are generated after data gathering and analysis have begun. Deductive codes are generated from the review of existing literature, theory, and other empirical inquiry. Deductive codes may or may not end up being used in a specific study, but they are considered a starting point for the analysis and further data generation. Various concepts can be coded for, such as demographic descriptors (age, gender), to theoretical constructs (negotiation, trust formation).

According to Abramson, "the most common practice in sociology and related disciplines is currently to use a combination of inductive and deductive codes." (Abramson 2011).In this study, this is the approach taken since various codes were suggested initially by existing theories of collaboration. As will be further described, the coding process itself helped identify the theoretical model that best fit the data in this study and the theoretical framework used for the analysis. In addition, Abramson suggests that a strategy for minimizing type I and II errors is to use both inductive and deductive codes, and also tools available in Atlas-ti (such as the co-occurrence table explorer). This strategy was applied in this study in order to identify patterns and examine the codes from different vantage points.

This study concentrates on the creation of substantive[13] theory, that has been described as possibly more relevant to processes involving organizations and agencies rather than to those involving only individuals (Fernández 2004). This focus is more in line with the approach advocated by Glaser (Glaser and Strauss 1967). The use of GT was determined by the need for an exploratory study, because there was little in the literature exploring PH and planning collaborations. It was necessary to study the participants in their natural settings and generate theories that would help create a model for the process of collaboration. Fernandez (2004) expanded the GT model proposed by Lehmann (2001) to include all the steps already described, adding the use of extant literature to inform the creation of theory and the inductive coding stages

[13] Developing formal theory is the goal of a scientist or a sociologist. Substantive theory is much more closely linked to actual practice. Glaser and Strauss (1967) define what they mean by these terms as they relate to GT: "*By substantive theory, we mean that developed for a substantive, or empirical, area of sociological inquiry, such as patient care, race relations, professional education, delinquency, or research organizations. By formal theory, we mean that developed for a formal, or conceptual, area of sociological inquiry, such as stigma, deviant behavior, formal organization, socialization, status congruency, authority and power, reward systems, or social mobility." (Glaser and Strauss 1967)* In the case of this study substantive theory refers to theory developed to explain collaborations between PH and Planners. Formal theory would refer to a higher level of action such as organizational theory or systems theory.

(Fernández 2004; Lehmann 2001). The illustration in Figure 10 from Fernandez (2004) shows the GT building process as being a spiral that starts with data collection (in the case of this study, in-depth interviews and document review). This building process occurs in a substantive area of enquiry (in this study, PH and planning agency collaboration). The data are then coded and categorized using a constant comparison method. This method eventually leads to theoretical saturation, ending the gathering of further data meaning that no new codes or relationships emerge (Strauss and Corbin 1998; Beck 1993).The result is the development of a substantive theory.

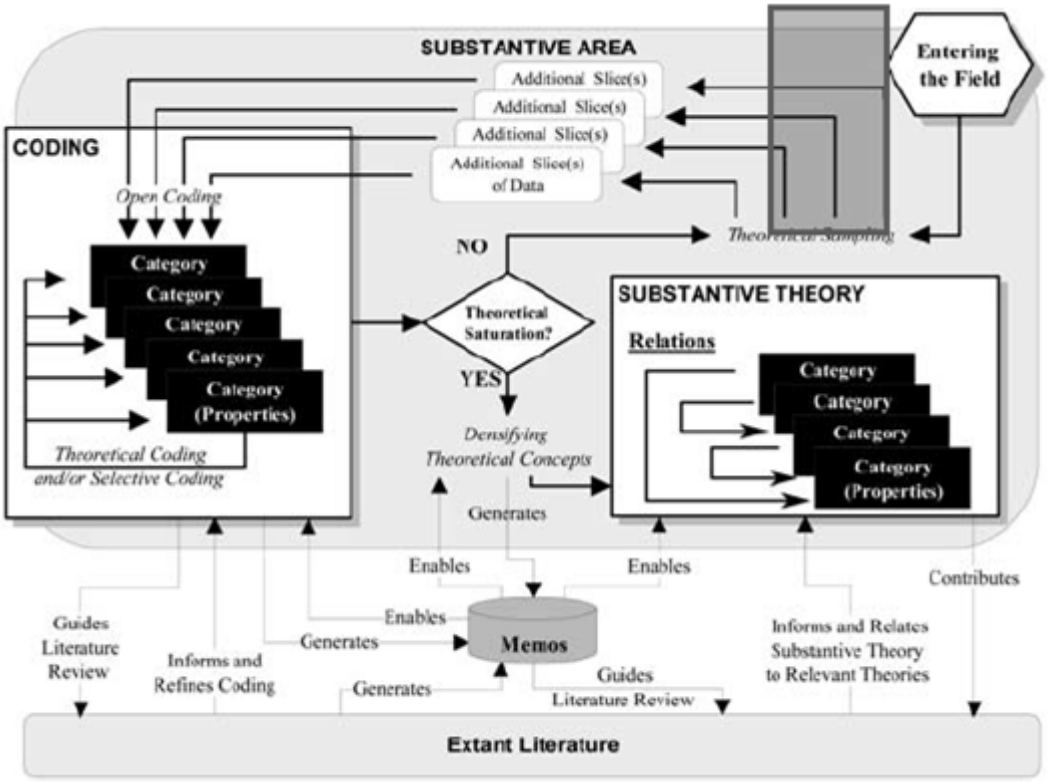


Figure 10. Grounded Theory Building Process. (Fernández 2004)

In summary, this study gathered the data by recording the in-depth interviews and transcribing them. At the same time, using Atlas-ti software, data were coded and categorized. Coding and categorization resulted in emerging themes and a core category, used to generate substantive theory explanatory of the process of collaboration being explored. The core category was cost-benefit analysis, and the

theory applicable was a modification of Social exchange theory. Several other theories were used to suggest a model that could explain the process being observed. These included TD theory and literature, and Team Formation theory and literature. The model produced was based on a model identified from the literature and which with modification was applicable to the process of collaboration: the Five Stage Model of Collaboration presented in the study. An Audit tool for Cost-Benefit Analysis was created, based on the application of Social Ecologic theory, which allows for the practical application of the theoretical model. The Audit tool is expected to contribute toward promoting collaboration between PH and planning and to the existing literature. Figure 11 shows the process occurring *after* the development of substantive theory using grounded theory methodology. This is the process that ultimately led to the formulation of the Cost-Benefit Analysis tool (titled *Collaboration Manual for Public Health and Planning* in Appendix 5). Note that the construct in Figure 11 labeled "*Substantive Theory Generated from GT*" is the end-result of the process illustrated in Figure 10, which generates the theory.

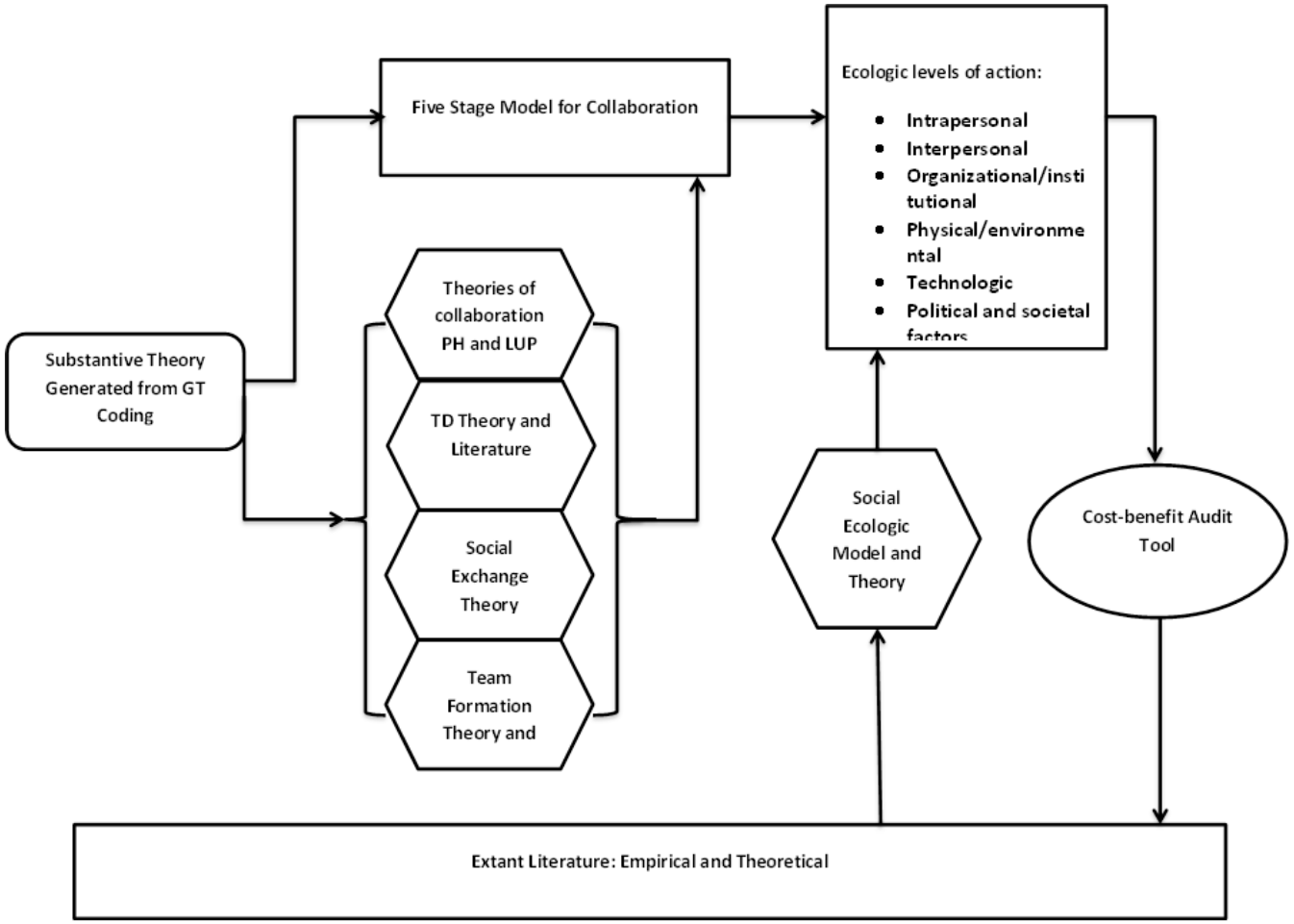


Figure 11. Summary of Study Methodology.

Study Setting

The setting for the study consisted primarily of participants from California government agencies, including county public health departments, local and county planning departments, and development and transit agencies. A smaller number of participants were from private consulting firms or quasi-governmental organizations or academic settings.

An effort was made to include as wide a variety of settings as would be consistent with the purpose of the study. Highly urbanized settings (such as San Francisco and Los Angeles) were included, as were suburban and rural areas. Areas representing varied socioeconomic status were sought for the study. No actions were taken to address issues of gender or age, although it may be interesting to investigate these factors in future studies.

Study Subjects and Sample Size Calculation

(There is some necessary overlap between this section and the methodology section in the introductory chapter.)

Selection of the sample of participants was done with the input of the professional organizations, government agencies, academicians and other stakeholders identified during the initial phase of the study. A long list of possible participants was created in a database that included name, contact information, position, job description, referral source, etc. List maintenance was ongoing throughout the study as new possible participants were identified. Examples of such additions include referrals by members of the dissertation committee to city planners and PH officials. These contacts were then asked for further referrals. An explanation of the study and a series of initial questions were presented to all potential participants. Whenever a particular project could be associated with a participant, other people involved in the project were contacted if possible. If both a PH person and a planner were available, then they were contacted to seek participation in the study.

Because there is no formula for determining the sample size in qualitative studies, theoretical sampling cannot be planned when using GT methods. The specific sampling decisions evolve during the research itself (Strauss and Corbin 1990). Although this is a qualitative study, the question of sampling is still very important. Unlike quantitative studies (which use either probability sampling or convenience sampling), qualitative studies often use what Maxwell calls purposeful selection (Maxwell 2005). This type of sampling looks for "people who are uniquely able to be informative because they are expert in an area" (Weiss 1994). For the purposes of this study, the main concern is to get the maximum variation of subjects. Cresswell suggests several goals for purposeful selection including achieving representativeness or typicality of the settings, individuals, or activities selected (Creswell and Clark 2007; Maxwell 2005). A related

objective is to capture the heterogeneity in the population – which includes interviewing subjects who are at the extremes of efforts of collaboration between the disciplines. A particular interest is to reach subjects who, for some reason, are not involved in collaborative efforts and may be more difficult to identify and access. The concern is to avoid what has been called "key informant bias" resulting from the use of a small number of informants for the majority of the data. This concern was addressed in the study by using systematic sampling.

The number of participants recruited was determined by the quality of the participant's experiences and the requirement for further theoretical sampling (Morse and Richards 2002). Once theoretical saturation was reached during the ongoing analysis and collection of data, the sample size was considered complete.

Some of the following criteria were used to limit the sample:

- Participants were either in PH or planning
- They were available to be interviewed in person
- They were in a geographic location where the researchers could interview them
- They were willing to participate in the study
- They granted a verbal human subjects consent to participate

Data Collection

Three initial pilot interviews with selected key stakeholders in PH and land use planning were used to help probe the area of study and suggest more specific questions and methods. These pilot interviews also helped identify other participants for the study (snowballing sampling).

Interviewing is one of the main modes of data collection in the social sciences, and it is done because the researcher is interested in the subject's stories. (Seidman 2006) The main part of the study consists of 18 in-depth interviews with land use planners and public health professionals. The interviews were of the semi-structured type. Structured interviews consist of administering structured questionnaires, and interviewers are trained to ask questions in a standardized manner. Semi-structured interviews, on the other hand, are conducted initially on the basis of a loose structure consisting of open-ended questions that define the area to be explored. At any time, either the interviewer or interviewee may diverge in order to pursue an idea in more detail. In-depth interviews are less structured and may cover only one or two issues in greater detail. Questions are based on what the interviewee says and consist mostly of requests for clarification and probes for details (Britten 1995).The interviewees were extremely willing to share insights and stories of their work, thereby proving that semi-structured interviews are an excellent method of data gathering.

The initial question concerned biographical information. The participants were asked to describe their training, position, and occupation. The interviews began with open-ended questions, such as: What does it mean to you to be a planner/PH professional? This was followed by more specific questions, such as: Can you tell me of any areas or projects where you have worked with a planner/PH person? As the participant described such projects, questions regarding their experience were used as follow-up. Examples include: What were the advantages to having PH involved? What were the barriers to the collaboration? Who started the collaboration? Did you have the support of the institution and/or the directors of the agency?

Examples of questions for a specific project, the Better Streets Project (BSP), are as follows:

- How did you become involved in the plan? (Orders from above? Personal relationship? Institutional involvement?)
- At what stage did you become involved?
- What was your role in the creation of the final proposal?
- With whom do you mostly interact? Planners? PH?
- What support do you get from your agency or others?
- Is there support from above? How?
- Are you involved in the technical aspects of the plan? The political? The social?
- What roles do other parts of your agency play in the plan (i.e. PH other BE people)?
- With which other agencies or consultants did you interact?
- What helped you collaborate with the other discipline: personality of people, institutional mandates, etc.?
- What was a barrier to collaboration?
- What do you feel could improve collaborations in general?
- Do you foresee further collaborations with PH?

The guiding research questions that determine what is asked of participants include:

- How does the process develop over time?
- What are the noteworthy events in the process?
- What facilitates the process?
- What hinders the process?
- Who are the key participants in the process and what are their roles?
- What are the outcomes?

The interviews were conducted in the locations chosen by the participants. In several cases, interviews took place in the offices of the participants; in other cases, in

coffee shops or restaurants. One participant requested to be interviewed after hours to avoid possible conflicts with work. The interviews were recorded digitally, and the recordings were given to a professional transcriptionist for transfer to a Word document. Specific guidelines for formatting were followed, in order to ensure that all transcripts were consistently entered into the Atlas-ti analysis unit. This formatting helps with the retrieval of information and coding. All recordings are kept in a hard drive with backup and are secure. The interviews lasted a minimum of one hour, up to a maximum of three hours. The interviews were analyzed as quickly as possible, and the findings were used to inform subsequent interviews, as required by the constant comparison analysis method of GT (Strauss and Corbin 1998)

Additional data collection focused on getting independent information about the participants and the projects mentioned. Whenever possible, supporting documents were used to verify the chronology of the projects, the people involved the activities, and the results. Documents were also used to fill in any gaps in the biographical information. Examples of such documents include the published proposals and drafts for the Better Streets Project in San Francisco, the General Plans for the various cities and locations mentioned by participants, and newspaper articles about the projects. The CVs and biographies of participants were also used to gather data for the biographical sketches in the Appendix 1 of this study. If publications were listed, these were obtained to check for any pertinent information about the projects mentioned. If mention was made of specific facts – such as the size of a county, population, or disease burden – an effort was made to verify them with available data bases.

Research Question

Central research question: The central research question derived from the literature review and discussions with experts in the field, and then investigated in this study, concerns the relationship between PH and planning in addressing complex health problems and the BE. Specifically, the study explores the contextual factors associated in the collaboration of PH and planning. The study looks at the barriers and incentives to collaborations, as well as the process of collaboration. The study specifically looks at degrees of collaboration and at the progression towards a transdisciplinary approach.

The study attempts to answer the following interrelated questions:

I. What are planners doing to collaborate with PH?
    a. In what activities do planners in order to collaborate with PH?
    b. What are some of the barriers/incentives that planners perceive to collaborating with PH?
    c. What do planners think about collaborating with PH?
    d. What do planners do differently when PH is involved in the planning process?

II. What is PH doing in order to collaborate with planners?
    a. In which activities does PH collaborate with planners?
    b. What are some of the barriers/incentives that PH perceives in regard to collaborating with planners?
    c. What does PH think about collaborating with planners?
    d. What is PH doing to affect the planning process?
III. What is the process leading to collaborations between PH and planning?
    a. What are the contextual factors involved?
    b. What activities are required for collaboration to occur?
    c. What effects on the planning process are perceived by participants as having resulted from collaboration?

Data Analysis

"Not very much can be said about data and analysis in advance of the study" Lincoln and Guba, (page 241) (Lincoln, Guba, and Lincoln 1985)

The objectives of the study guided the choice of methodology and data analysis. In keeping with the qualitative nature of the study, the guiding hypothesis was modified as categories and themes emerged from the data. The data analysis took place during and after data collection in the constant comparison method of GT (Strauss and Corbin 1998)

Miles and Huberman suggest various possible plans for qualitative data analysis (Miles and Huberman 1994).One approach found to be compatible with the present study consisted of developing categories of information and contextual factors (codes) and working from these categories to construct a narrative to connect these factors and generate a set of theoretical propositions. This process involved coding the information (quotations) isolated from the text, using both inductive and deductive codes. The codes were merged, deleted, or revised as necessary, based on the data analysis and new interviews. The information units were then categorized on the basis of similarity and meaning using Atlas-ti and the tools for family and superfamily grouping. A saturation point was reached when the number of categories stopped increasing. The constant comparative method required continual revision, modification, and amendment. To aid in the process of analysis, Miles and Huberman suggest the use of various methods of display for the context of the analysis, the results, and the conceptual framework (Miles and Huberman 1994). An example is the "context chart," which is a “network” that maps in graphic form the interrelationships among such factors as the roles, groups, and organizations that make up the context of individual behavior. Atlas-ti provides tools to create such networks – and the results were very helpful in the present study to

understand the relationships of land-use planners and public health professionals to each other and to their organizations during the process of collaboration.

Because of the qualitative nature of the study, there were no fully developed theories at the starting point; however, some examples of theories from the literature that were used to guide the inquiry included: theories on team formation, collaboration, social exchange, leadership, transdisciplinarity, and translation of knowledge. In addition, findings from the literatures of team formation and TD were also used to generate the initial codes.

Extensive use of memos was utilized to develop the initial ideas about categories and relationships (Muhr 1991; Sarker, Lau, and Sahay 2000).

Open coding generated 83 codes, consisting of the initial deductive codes and the codes generated inductively from the first three interviews. The codes were assigned to specific quotes in the interview transcripts using Atlas-ti. The quotes ranged from single sentences to entire paragraphs. Through axial coding, the initial codes were examined in order to group them and thereby organize ideas and specify concepts. By combining redundant codes and deleting unused codes, the number was reduced to the final 52 codes. One example of this code reduction: the code “listening across disciplines.” which originated from the TD literature, was merged with “developing a common language” after it was noted that they co-occurred in almost all instances. Most of the final codes consisted of contextual factors of collaboration, but a few were used for identification purposes, such as “education degree” or “position.” One code, “quotes for stories,” was used to identify examples of exceptional quotes that illustrate key concepts.

In the third step, selective coding was used to refine and integrate the categories based on a central category. Six final themes emerged as the most effective explanatory framework for the collaborative process examined in the study. Codes at this level are considered to be essentially theoretical constructs resulting from connecting and consolidating axial codes. These “selective” codes are used to analyze the research data and identify the core category of emerging themes in PH and planning collaborations (Strauss and Corbin 1990).

Atlas-ti CAQDAS

Statistical program packages have become increasingly available to facilitate qualitative data analysis. The software used was in this study Atlas-ti (Muhr and Friese 2004). “Atlas” is an acronym that stands for “Archiv fuer Technik, Lebenswelt und Alltagssprache” (Archive for Technology, the Life Environment and Everyday Language), and the extension “ti” for “text interpretation.” The Technical University of Berlin's Project ATLAS (1989-1992) produced the first prototype of the software .

The choice of software was based on familiarity, availability, and level of sophistication. It must be stressed that the software is a tool to help with coding and creating categories. The software does not analyze the data. Several papers on software selection were reviewed before Atlas-ti was determined to be the most appropriate choice (Dohan and Sánchez-Jankowski 1998; Lewins and Silver 2007).

Open coding in Atlas-ti occurred by reading through the interview transcripts and finding the sentences or passages that could be related to a code from the prepopulated list. At the same time, in-vivo coding (using the words of the participants) and new code creation took place.

Axial coding and selective coding are greatly facilitated by the use of the network editor and the creation of families and superfamilies. These tools were specifically designed to help researchers combine and analyze the data so as to move progressively to higher levels of abstraction (Muhr 1991)

Validity

Maxwell refers to validity as the "correctness credibility of the description, conclusion, explanation, interpretation, or other sort of account" (Maxwell 1998). The two areas that he specifically suggests as needing to be addressed in a qualitative study are researcher bias and reactivity. The first refers to the selection of data that fit the researcher's existing theory or preconceptions. The second refers to the influence of the researcher on the setting or individuals studied.

Some means used in the present study to address validity concerns include the use of intensive interviews to collect "rich data," soliciting feedback about the data and conclusions from the study participants, asking other researchers to look at the data as it was being coded and receive their input, efforts to identify and analyze negative cases, and comparison with other studies and data.

In qualitative studies, reliability concerns the replication of the study and is addressed by coding the data so that another person can understand the themes and arrive at similar conclusions. This task was handled through consultation with other researchers.

The possibility of researcher bias was addressed by discussing the ongoing study with members of the dissertation committee in an effort to understand how the researcher's values and expectations may have been influencing the development of the study.

Subject selection was limited to the key people in both fields, suggested by either professional organizations or other subjects. This selection process created a risk of interviewing only those who represented a subgroup of the universe of planners or PH professionals (that is, those already involved in collaborative efforts). Efforts were

made to identify and include outliers, particularly those who are not participating in interdisciplinary projects.

Because of the size of the study, it was not possible to include many stakeholders that are important in the land use planning process. This means a risk of having missed important factors that have a direct bearing on the extent that PH is involved in LUP. It is hoped that future studies will be able to expand the groups of people interviewed to include other planners, architects, designers, health professionals, lay-people, policymakers, etc.

Because of limited opportunities to use other methods for data collection, there is a risk of systematic bias or limitation.

Lincoln and Guba postulate that the trustworthiness of a research study is important in evaluating its worth (Lincoln, Guba, and Lincoln 1985).They propose four factors that can be used to establish the trustworthiness of qualitative research. They also offer several ways in which each factor can be examined:

- **Credibility** - confidence in the "truth" of the findings
    - triangulation,
    - member checking,
    - Negative case analysis.
- **Transferability** - showing that the findings have applicability in other contexts
    - Thick descriptions of phenomena
    - purposive sampling
- **Dependability** - showing that the findings are consistent and could be repeated
    - Dependability audit
- **Confirmability** - a degree of neutrality, or the extent to which the findings of a study are shaped by the respondents and not researcher bias, motivation, or interest.
    - Scrutiny and review by peers
    - confirmability audit

Triangulation.

Triangulation is a means of corroboration that allows the researcher to have more confidence in the study conclusions (Padgett 2008). Triangulation is further described by Maxwell as the use of a variety of sources and methods in order to reduce the risk that a study's conclusions will reflect the systematic biases or limitations of a specific source or method (Maxwell 2005).Triangulation is not meant to corroborate study findings, but rather to analyze them in different ways (Padgett 2008). The study offers some limited opportunities for triangulation. In addition to the interviews used to understand the perspectives of the stakeholders, direct observation of the project sites

(such as Riverside and Petaluma) made it possible to draw some inferences about the behavior and context where the interviews take place. Observational comments, where pertinent, are included in the Narrative Results chapter. A review of documents related to specific cases of land-use planning projects mentioned in the interviews, as well as other evidence of the collaborative efforts described, is a way of reducing systematic biases from using only one method.

Negative case analysis

This involves searching for and discussing elements of the data that do not support or appear to contradict patterns or explanations that are emerging from data analysis (Patton and Patton 2002; Creswell and Clark 2007).Several cases in the study presented a contrasting approach to collaboration and were used to help define the barriers and incentives for collaboration. This comparison helped identify the contextual factors that facilitate collaboration.

Audit trails

Throughout the study audit trails were maintained via scrupulous notes on data gathering, and analysis. Atlas-ti provides an easy tool for memo creation which facilitated such audit trail.

In addition to trustworthiness, several suggestions have been made to help maintain the validity of qualitative research. The study incorporated as much as possible these suggestions. These include: (Wolcott 1990)

- **Be a listener**. The subject(s) of qualitative research should provide the majority of the research input. It is the researcher's task to properly interpret the responses of the subject(s).

- **Record accurately**. All records should be maintained in the form of detailed notes or electronic recordings. These records should also be developed during, rather than after, the data gathering session.

- **Initiate writing early**. This helps the researcher be more prepared to focus the data gathering phase on the information that will meet the specific identified needs of the project.

- **Include the primary data in the final report**. The inclusion of primary data in the final report allows the reader to see exactly the basis upon which the

researcher's conclusions were made. In short, it is better to include too much detail, rather than too little.[14]

- **Include all data in the final report**. The researcher should not leave out pieces of information from the final report because she/he cannot interpret that data. In these cases, the reader should be allowed to develop his/her conclusions.

- **Seek feedback**. The researcher should allow others to critique the research manuscript following the developmental process. Professional colleagues and research subjects should be included in this process to ensure that information is reported accurately and completely.

- **Attempt to achieve balance**. The researcher should attempt to achieve a balance between perceived importance and actual importance. Often, the information reveals a difference in anticipated and real areas of study significance.

Finally, Drisko presents six criteria for conducting qualitative research in social work that appear to be applicable to other areas of research (Drisko 1997).The study attempts to apply these criteria and to document the results in the appropriate chapters.

- Identification of the chosen philosophy/epistemology,
- Identification of audience and objectives,
- Specification of the study method,
- Identification of biases,
- Maintenance of ethics,
- Assurance of consistency between conclusions and study philosophy, objectives, and presented data.

Human Subjects Considerations

UC Berkeley requires that all research projects involving human subjects be presented to the CPHS. The presentation required that the researcher first take an online training regarding human subject research. The origins of the requirement are based on the "Belmont Report: Ethical Principles and Guidelines for the Protection of

[14] Human subject requirements are a possible limitation to the inclusion of raw data in the final report. Anonymity means some data must be edited and protected. Please refer to the section on Human Subjects Considerations.

Human Subjects of Research" (The Belmont Report: Ethical Principles and Guidelines for the Protection of Human Subjects of Research. 1979)

CPHS Protocol number 2007-3-106 "urban planning and public health: reconnecting the disciplines" was granted an exemption by the committee under category #2. A waiver of written consent was granted because, "It is expected that all questions are related to the present state of cooperation between the fields of land use planning and public health. These are essentially professional views about the impact of land use planning laws, public health participation in the planning process, the use of health impact assessments, etc. They present no more than minimal risk of harm. There does not appear to be any potential for embarrassment professionally or personally. Since the interviews are being done in a setting where written informed consents are not usually obtained it may actually be more awkward for the participants to be asked to sign one than to give a verbal consent for the interview."

An important aspect of the study is that the final dissertation report aims to protect the identity of the participants. Although most participants stated that they did not mind having their identities revealed in the study, it was decided to anonymize all participants with the exception of Professor Allen Jacobs. Through his courtesy Jacobs gave permission to use his name because of the great importance his interview has in setting the stage for understanding the historical context of collaboration. This was accomplished by changing all names and when possible the location of the projects explored in the study. All projects studied are completely in the public realm and did not involve any private actions. Some of the projects are site-specific so that it is not possible to change or conceal the location since that would render them useless for analysis. In those cases the involvement of the participants was described in a manner that it would make it difficult to identify them with any certainty. In addition, quotes that could appear objectionable were deleted.

While every effort was made to protect subject identities, it remains a possibility that people acquainted with the cases studied who read the final report may be able to speculate as to the identity of the participants. The study involves only professional activities in the public realm and as described in the protocol application they present no more than minimal risk of harm and there does not appear to be any potential for embarrassment professionally or personally.

The principal researcher is well acquainted with human subject protection protocols having previously submitted several clinical and animal research studies at a major hospital.

CHAPTER 3

Findings

Introduction to Results

This introduction is included to help readers understand the relationship of the analysis to the data. There is some duplication of material presented in the Methods section, which gives a more complete description of the process used to gather and analyze data. The **Introduction** is followed by the **Analysis of Results** of the study using the methods described. The tables used for analysis are grouped in their own section, **Analysis Tables**. The Tables are followed by the **Summary of Results** section, and then by the **Narrative Results,** the final section.

In the Analysis of Results section, a modified ecologic model is used to look at each stage of the Five Stage Model of Collaboration.

In the Summary of Results section, a few significant quotes are used as exemplars for the contextual factors developed in the study and resulting in activities at each stage of the five-stage model proposed. These are essentially unchanged from the Narrative Results section (from which they originate). In this section readers are able to view a much more condensed account of the data results and analysis than in the Narrative Results section. It is meant to give readers an idea of the richness of the material collected for the study. Readers are encouraged to read the complete Narrative Results section if possible.

The Narrative Results section of this chapter presents all quotes that were deemed to be pertinent for coding. Each refers directly to particular contextual factors in a specific stage of the five-stage model. To facilitate understanding of the way these factors contribute to the collaboration process, the quotes are presented as a narrative. The software, Atlas-ti, also allows for a complete list to be generated exactly as was transcribed from the recorded interviews. This list is not particularly illuminating without the editing and GT analysis following open and axial coding. As much as possible, the quotes tell the "story" that the participants articulated. This presentation is intended to make this section richer and, especially, more readable. In addition, there are analytic commentaries of the quotes that relate directly to the conclusions of the study.

The Narrative Results section is lengthy, because it is important to give readers and other researchers the opportunity to look for themselves at the data on which the

research is based and to draw their own conclusions. This requires that substantial portions of data be presented, including sometimes extension quotes from interviews (Murphy and Dingwall 2003; Drisko 1997).This choice of presentation may require greater effort from readers as they look at all the data presented in the study. In contrast, the Summary of Results section is more in line with the way in which data might be presented in an article-length text. As noted above, the excerpts are organized according to the Five Stage Model of Collaboration. This presentation allows the reader to review participants' statements that illustrate the processes occurring at each stage. Because some contextual factors occur in more than one stage, it was desirable to keep some quotes linked together if they were part of a larger story. This means that these quotes and their coded contextual factors may appear in only one stage, rather than all they apply to.

Analysis of Results

To prepare for this study, a preliminary review was undertaken of the literature focusing on collaboration, in particular TD collaboration, and qualitative research. Several theories and conceptual models were identified as being pertinent to this study's questions regarding the process of collaboration between PH and planners. The theoretical concepts derived from the literature suggested approaches to viewing and interpreting the data. The review also suggested a list of contextual factors that were used for the initial deductive codes applied during the open coding stage of grounded theory methods.

The initial participants for the in-depth interviews were selected by using the theoretical sampling methods suggested in grounded theory — that is, using the developing categories and emerging theory to select the sample. Those subjects agreeing to participate were interviewed and recorded. The recordings were transcribed verbatim and loaded into the computer-assisted qualitative data analysis software (CAQDAS) used for the study, Atlas-ti. Using codes derived from the literature, very dense (many codes often used for the same section) open coding was applied to the text. In-vivo coding and inductive code development were then applied to the interviews. Many codes were revised, merged, and deleted as it became clear which contextual factors were being described in the participants' statements. During the later stages of coding the process of axial coding was used to relate categories to their sub-categories. Axial coding helps the researcher focus on the connections among categories. The process essentially takes place in alternation with ongoing open coding. The analysis software ATLAS-ti allows the creation of families to represent the axial

codes. It must also be noted that as the categories were refined, they were used to guide some of the lines of questioning during the interviews.

Once all the interviews were completely coded, Atlas-ti was used to separate the codes into families that would comprise each stage from the five-stage model in which the contextual factors are proposed to exist. In addition, separate families were created in order to group the contextual factors by the six ecologic level of analysis used in the study. As described in more detail below, this analysis (together with selective coding) was used to identify the six themes that emerged during the final stages of grounded theory.

Atlas-ti was used in the study to find the correlations of the different contextual factors revealed by the in-depth interviews.

After the interview transcripts were fully coded by using both open and axial GT procedures, it was possible to perform a co-occurrence analysis to help identify through selective coding the final six major themes. Co-occurrence analysis is described in the Atlas-ti manual as the process of looking for codes that co-occur in the documents by using operators to identify codes that refer to part or all of each individual quote. Predefined filters sorted the codes identified through this analysis, so that the results would be presented in groups according to relationships suggested by theory. For this study, filters were created that would group the codes present in each stage of the five-stage model and by the ecologic level of analysis. These groupings are necessary in GT methodology in order to progress to higher levels of abstraction. The filters are Stage1/Intrapersonal level, Stage1/Interpersonal level, etc. The complete list of filters is shown in Table 2 where each cell represents a filter.

	Stage 1	Stage 2	Stage 3	Stage 4	Stage 5
Intrapersonal	¤	¤	¤	¤	¤
Interpersonal	¤	¤	¤	¤	¤
Organizational/institutional	¤	¤	¤	¤	¤
Physical/environmental	¤	¤	¤	¤	¤
Technologic	¤	¤	¤	¤	¤
Political and societal factors	¤	¤	¤	¤	¤

Table 2. Filters (Families) Used in Atlas-ti to Analyze Data.

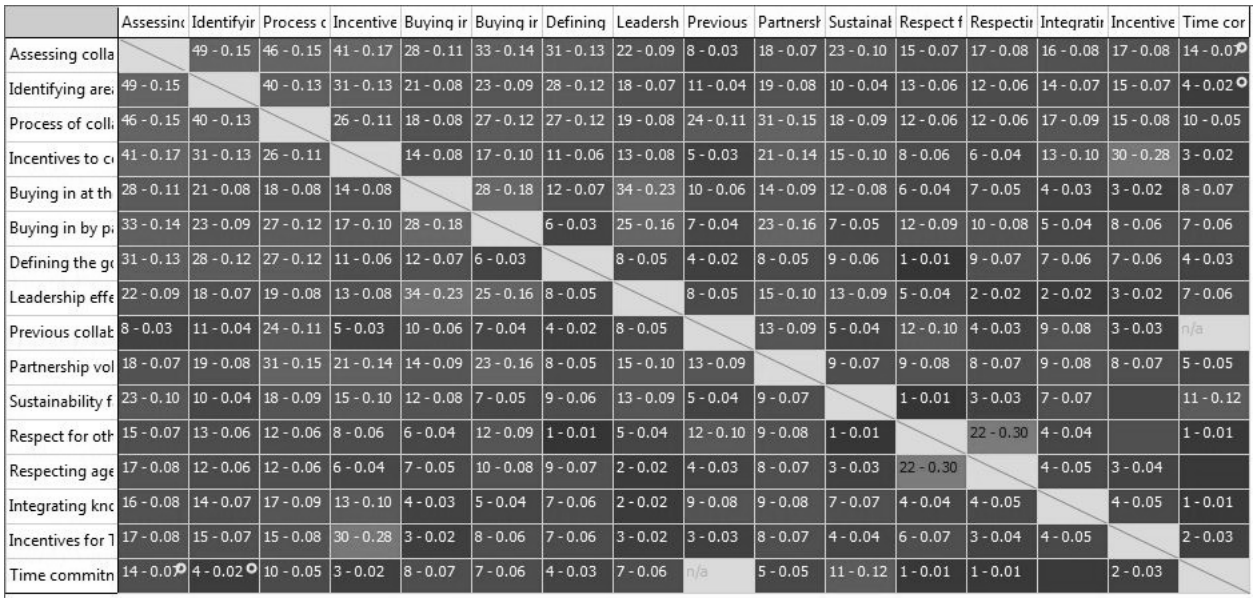
The results were placed in Excel tables, which were used to identify the codes that are most likely to appear together. The various instances of co-occurrence identified themes or concepts that the individuals being interviewed believed to be important in collaboration between PH and planners. These results helped determine the final six themes.

Atlas-ti also provides a c-coefficient[15] that represents the strength of association of the various co-occurrences (the closer to 1, the stronger the co-occurrence association; if 1, the two codes always co-occur, if 0 they never co-occur). This coefficient was used as further evidence supporting the themes identified. In the section Analysis Tables, the number of co-occurrences for each cell in the matrix is presented, and this number is followed by salient quotes selected to illustrate each theme. Figure 12 shows an example of the co-occurrence table for Stage 1 and Intrapersonal level. It also shows the c-coefficient in each matrix cell. Example: “Buying in by participants” co-occurs with “Assessing collaboration cost/benefit” 33 times, with a c-coefficient of 0.14. There were a total of 30 co-occurrence tables like the one presented here.

[15] Normalized Co-Occurrence or c-coefficient (from Atlas-ti literature).

The global co-occurrence described is an absolute or un-normalized metric. Note that different sets of queries (k1, k2, and k12) retrieve different sets of documents (n1, n2, and n12). For the purpose of comparing term co-occurrences between different queries and sets of retrieved documents, one would need to normalize these within a practical scale. Normally one would prefer to compare values running within a practical scale, for instance running from 0 to 1, such that one would be able to compare relative, normalized co-occurrence.

This normalized co-occurrence is defined here as the "Co-Occurrence Coefficient" or C-coefficient. In the case of pairwise co-occurrence, i.e., co-citation frequency between two and only two terms k1 and k2, the C-coefficient is given by
Eq 1: C12-coefficient: n12 / (n1 + n2) - n12
the results are between 0 and 1, where
* c12 = 0 when n12 = 0; i.e., k1 and k2 do not co-occur (terms are mutually exclusive).
* c12 > 0 when n12 > 0; i.e., k1 and k2 co-occur (terms are non-mutually exclusive).
* c12 = 1 when n12 = n1 = n2; i.e., k1 and k2 co-occur whenever either term occurs.



	Assessinc	Identifyir	Process c	Incentive	Buying ir	Buying ir	Defining	Leadersh	Previous	Partnersh	Sustainat	Respect f	Respecti	Integrati	Incentive	Time cor
Assessing colla		49 - 0.15	46 - 0.15	41 - 0.17	28 - 0.11	33 - 0.14	31 - 0.13	22 - 0.09	8 - 0.03	18 - 0.07	23 - 0.10	15 - 0.07	17 - 0.08	16 - 0.08	17 - 0.08	14 - 0.07
Identifying are	49 - 0.15		40 - 0.13	31 - 0.13	21 - 0.08	23 - 0.09	28 - 0.12	18 - 0.07	11 - 0.04	19 - 0.08	10 - 0.04	13 - 0.06	12 - 0.06	14 - 0.07	15 - 0.07	4 - 0.02
Process of colla	46 - 0.15	40 - 0.13		26 - 0.11	18 - 0.08	27 - 0.12	27 - 0.12	19 - 0.08	24 - 0.11	31 - 0.15	18 - 0.09	12 - 0.06	12 - 0.06	17 - 0.09	15 - 0.08	10 - 0.05
Incentives to c	41 - 0.17	31 - 0.13	26 - 0.11		14 - 0.08	17 - 0.10	11 - 0.06	13 - 0.08	5 - 0.03	21 - 0.14	15 - 0.10	8 - 0.06	6 - 0.04	13 - 0.10	30 - 0.28	3 - 0.02
Buying in at th	28 - 0.11	21 - 0.08	18 - 0.08	14 - 0.08		28 - 0.18	12 - 0.07	34 - 0.23	10 - 0.06	14 - 0.09	12 - 0.08	6 - 0.04	7 - 0.05	4 - 0.03	3 - 0.02	8 - 0.07
Buying in by pa	33 - 0.14	23 - 0.09	27 - 0.12	17 - 0.10	28 - 0.18		6 - 0.03	25 - 0.16	7 - 0.04	23 - 0.16	7 - 0.05	12 - 0.09	10 - 0.08	5 - 0.04	8 - 0.06	7 - 0.06
Defining the go	31 - 0.13	28 - 0.12	27 - 0.12	11 - 0.06	12 - 0.07	6 - 0.03		8 - 0.05	4 - 0.02	8 - 0.05	9 - 0.06	1 - 0.01	9 - 0.07	7 - 0.06	7 - 0.06	4 - 0.03
Leadership effe	22 - 0.09	18 - 0.07	19 - 0.08	13 - 0.08	34 - 0.23	25 - 0.16	8 - 0.05		8 - 0.05	15 - 0.10	13 - 0.09	5 - 0.04	2 - 0.02	2 - 0.02	3 - 0.02	7 - 0.06
Previous collab	8 - 0.03	11 - 0.04	24 - 0.11	5 - 0.03	10 - 0.06	7 - 0.04	4 - 0.02	8 - 0.05		13 - 0.09	5 - 0.04	12 - 0.10	4 - 0.03	9 - 0.08	3 - 0.03	n/a
Partnership vol	18 - 0.07	19 - 0.08	31 - 0.15	21 - 0.14	14 - 0.09	23 - 0.16	8 - 0.05	15 - 0.10	13 - 0.09		9 - 0.07	9 - 0.08	8 - 0.07	9 - 0.08	8 - 0.07	5 - 0.05
Sustainability f	23 - 0.10	10 - 0.04	18 - 0.09	15 - 0.10	12 - 0.08	7 - 0.05	9 - 0.06	13 - 0.09	5 - 0.04	9 - 0.07		1 - 0.01	3 - 0.03	7 - 0.07		11 - 0.12
Respect for oth	15 - 0.07	13 - 0.06	12 - 0.06	8 - 0.06	6 - 0.04	12 - 0.09	1 - 0.01	5 - 0.04	12 - 0.10	9 - 0.08	1 - 0.01		22 - 0.30	4 - 0.04		1 - 0.01
Respecting age	17 - 0.08	12 - 0.06	12 - 0.06	6 - 0.04	7 - 0.05	10 - 0.08	9 - 0.07	2 - 0.02	4 - 0.03	8 - 0.07	3 - 0.03	22 - 0.30		4 - 0.05	3 - 0.04	
Integrating knc	16 - 0.08	14 - 0.07	17 - 0.09	13 - 0.10	4 - 0.03	5 - 0.04	7 - 0.06	2 - 0.02	9 - 0.08	9 - 0.08	7 - 0.07	4 - 0.04	4 - 0.05		4 - 0.05	1 - 0.01
Incentives for T	17 - 0.08	15 - 0.07	15 - 0.08	30 - 0.28	3 - 0.02	8 - 0.06	7 - 0.06	3 - 0.02	3 - 0.03	8 - 0.07	4 - 0.04	6 - 0.07	3 - 0.04	4 - 0.05		2 - 0.03
Time commitn	14 - 0.07	4 - 0.02	10 - 0.05	3 - 0.02	8 - 0.07	7 - 0.06	4 - 0.03	7 - 0.06	n/a	5 - 0.05	11 - 0.12	1 - 0.01	1 - 0.01		2 - 0.03	

Figure 12. Example of Co-occurrence Table.

Table 3 shows the compiled results of all co-occurrence tables used in the study. The upper number is the number of co-occurring codes; the lower number is the number of co-occurrences in the text. Example: There are 16 codes found in Stage 1 activities that indicate an action at the Intrapersonal level (one such code is "Buying in by participants"). The 16 codes relating to Stage 1 / Intrapersonal co-occur 673 times with other codes in this group.

Table 3. Consolidated Results of all Co-occurrence Tables

	Intrapersonal	**Interpersonal**	**Organizational/institutional**	**Physical/environmental**	**Technologic**	**Political and societal factors**
Stage 1	16/672	16/692	24/765	5/321	5/351	9/553
Stage 2	17/676	32/735	36/804	9/324	10/358	11/563
Stage 3	10/582	14/604	19/657	4/313	5/347	7/489
Stage 4	9/443	21/700	23/745	6/315	6/347	5/532
Stage 5	7/533	12/559	15/586	6/309	6/327	7/479

Table 4 lists *all* the contextual factors derived from open and axial coding in the study and the ecologic levels at which they are considered to act. They are provided mainly so that all data are available to other researchers. These factors were initially derived inductively from a review of empirical literature and refined deductively using GT methods. These factors are thought to influence the effectiveness of collaborations in general, and TD collaboration in particular (Stokols et al. 2008). Ecologic levels of action:

Table 4. List of Contextual Factors by Level of Action.

Ecologic Level of Action	**Contextual factors ("codes")**
• **Intrapersonal**	Assessing collaboration cost/benefit. Buying in at the top. Buying in by participants. Defining the goals. Establishing Trust. Identifying areas for collaboration/missed. Incentives for TD participation. Incentives to collaboration. Integrating knowledge from practice. Leadership effective. Outcomes and results. Overcoming future barriers. Partnership voluntary. Previous collaborations. Process of collaborating. Respect for other discipline. Respecting agency mission. Sustainability factors. Time commitments.
• **Interpersonal**	Building on existing groups. Buying in by participants. Defining the goals. Developing common language. Developing new interventions and questions. Diversity of participants and disciplines. Empowering Team Members. Establishing formal dialogue. Establishing informal dialogue. Establishing Trust. Evaluation and Feedback Providing. Group Synergy. Identifying areas for collaboration/missed. Incentives for TD participation. Incentives to collaboration. Integrating knowledge from practice. Interdependency. Involving community. Knowledge sharing. Onset of major collaboration. Outcomes and results. Overcoming future barriers. Partnership voluntary. Process of collaborating. Regular communication across disciplines. Regular meetings. Respect for other discipline. Respecting agency mission. Services through trust. Sharing. Strategic plan creation. Sustainability factors. Time commitments. Value-added outcomes.
• **Organizational/institutional**	Assessing collaboration cost/benefit. Building on existing groups. Buying in at the top. Complex organizational structure. Defining the goals. Developing common language. Developing new interventions and questions. Different organizational identity. Diversity of participants and disciplines. Empowering Team Members. Establishing formal dialogue. Establishing informal dialogue. Evaluation and Feedback Providing. Identifying areas for collaboration/missed. Incentives for TD participation.

Ecologic Level of Action	Contextual factors ("codes")
	Incentives to collaboration. Interdependency. Involving community. Knowledge sharing. Obstructive Institution. Onset of major collaboration. Outcomes and results. Overcoming future barriers. Partnership mandated. Partnership voluntary. Previous collaborations. Process of collaborating. Regular communication across disciplines. Regular meetings. Resource/Funding factors. Respect for other discipline. Respecting agency mission. Services through contract. Services through trust. Sharing. Strategic plan creation. Sustainability factors. Time commitments. Value-added outcomes.
• **Physical/environmental**	Establishing formal dialogue. Establishing informal dialogue. Incentives for TD participation. Incentives to collaboration. Infrastructure providing for collaboration. Regular meetings. Sharing. Spatial relationship. Sustainability factors.
• **Technologic**	Establishing formal dialogue. Establishing informal dialogue. Incentives for TD participation. Incentives to collaboration. Infrastructure providing for collaboration. Overcoming future barriers. Regular meetings. Sharing. Spatial relationship. Sustainability factors.
• **Political and societal factors**	Addressing everyday problem. Defining the goals. Developing new interventions and questions. Identifying areas for collaboration/missed. Incentives for TD participation. Incentives to collaboration. Onset of major collaboration. Partnership mandated. Resource/Funding factors. Services through contract. Sustainability factors. Value-added outcomes.

Occupational Background of Participants

In the following section, the study participants have been grouped according to employer, if working for a County of City, or as being a "Consultant" or "Academic." Certain major projects are discussed in detail in the in-depth interviews and may be cited by more than one subject

However, not all participants associated with the same organization will have necessarily taken part in a cited project (for example, Kirwan is in San Francisco, but he did not take part in the Better Streets project). Participants who are consultants may have worked with multiple agencies, and therefore they may have been part of collaborations in more than one location and/or project. Some individuals were interviewed to gather their views or perspectives on a certain project, without their having been part of an actual project team. The methods section discusses the exact methods used to select the participants.

Table 5 lists the geographic location (if in a governmental agency) or affiliation, the assigned name of the participant, and a short description of the position. Note that for reasons of anonymity the position descriptions are not the specific titles but rather positions that suggest equivalent levels and functions. This table provides a quick reference guide to the participants and locations used in the study. More in-depth biographies of the participants are presented as in Appendix 1.

Table 5. Brief Description of Participants.

Location or Occupation	**Participant Name**	**Job Title**
Riverside County	Jane Escobar	Mid-level Planner, Riverside County Planning Department
	David Burnam	Senior Manager, Riverside County Department of Public Health
City of Long Beach	Charles Ryan	Mid-level planner, City of Long Beach Planning Department
	Owen Lambert	Senior Planner, City of Long Beach Planning Department
San Francisco	Charles Henderson	Senior Planner, San Francisco Municipal Transportation Agency (SFMTA)
	Katherine Lonner	Mid-level Manager, SFMTA
	Angela Ebert	Project Coordinator, San Francisco Department of Public Health
	Robert Gent	Mid-level Planner, San Francisco City Planning Department
	Justin Kirwan	Senior Manager, San Francisco Department of Public Health
Los Angeles County	Mary Brislin	Public Health Nurse, Los Angeles County Department of Public Health
	Sara Anderson	Senior Planner, Los Angeles County Department of Regional Planning

Chalmers	Paige Coulton	City Manager, City of Chalmers
Contra Costa County	Julia Bennet	Project Manager, Contra Costa County Department of Health Services
Petaluma	George Dunn	Senior Manager, City of Petaluma
Consultants	Henry Hunt	Senior Manager, Local Government Commission
	Gina Perez	Founder and Principal of Perez Consulting (consulting firm based in Southern California)
	Greg Sanders	Principal and Founder of Sanders and Associates (consulting firm based in Northern California)
Academic	Allan Jacobs	Member of the Department of City and Regional Planning at UC Berkeley

Summary of Results

The following quotes are selected from the Narrative results section in order to illustrate the main themes for each stage of the Five Stage Model of Collaboration as described by Gitlin (1994). The contextual factors developed in this study are listed in Table 4 by the level of analysis at which they act to influence the effectiveness of collaboration. The ecologic model is adapted from Stokols 2008. The examples follow a narrative pertaining to one of the case projects that were selected for study, such as the GP update for the City of South Gate, Los Angeles County.

Stage 1 of Collaboration: Assessment and Goal Setting

"Where participants examine their individual and institutional goals and assess the need for developing a collaborative relationship and its cost-benefit ratio"

1) In her interview, Brislin, the Community Liaison Public Health Nurse in one of the eight Service Planning Areas (SPAs) in Los Angeles County, describes the learning curve and cost-benefit analysis that occurred before starting a project involving

collaboration with the planning department. The project objective is to create a new health element in the GP revision for the City of South Gate.

Brislin describes the initial steps as she prepared to begin her first collaboration with the planning department. *"Historically the health departments have not had relationships with the cities. At least here in L.A. County, the county-level government and city-level government, when it comes to health, have really had no relationship. We really don't talk even though we are serving their residents; we don't really go through the city to provide those service; and we don't really advocate at the city level. So what's been interesting is when this whole project in South Gate came about in 2006, there was no, absolutely no relationship with the City of South Gate, so we really had to just create that network first of relationships before we could even move forward."*

Her first exposure to the concept of the BE and PH came during a series of internal trainings at the Department of Public Health: *"We had received training about the 'built environment.' We all were having this 'ah ha' moment of realizing that we could tell people to walk every day at a thousand health fairs, but if they don't walk out and don't have a place that supports that, it's redundant*." The training had been provided by various consultants – such as the Public Health Law and Policy Group, which stresses the importance of the General Plan update as a platform for PH involvement in the planning process. Brislin describes the realization that *"public health could have a voice and advocate on that level. So, my nurse manager came back to me --- and I was fairly new in the position – and said, look for somebody doing a general plan update and let's get our feet wet. We found out real quickly that South Gate was just starting their process, that they were starting the community meetings and they were starting their visioning, guiding principles for the document and we didn't even know like who runs this. Is this the city that's running it, is it consultants? Who's running this general plan update?"* A key activity during the first stage is to identify potential collaborators for the project.

Once they realized that two consultants (Greg Sanders from Sanders and Associates, and the Transportation and Land Use Collaborative or TLUC) had been retained by the city to do the general plan update, they approached them to "*see if they're open to having the Department of Public Health be involved in this process and how can we advise, what expertise can be bring to the table."* Initially PH feared that *"they were going to be a hard sell. That I was going to have to explain why health is important and why public health could be affected by land use choices*." As it turned out, both consultants were well aware of the importance of the connection between PH and planning and they were eager for the collaboration to occur. The positive outcome of this initial contact effectively allowed the project to proceed to the second stage of the model.

According to TD theory, identifying new interventions and questions is a hallmark of TD collaborations (Bergmann 1995). Finding these new areas is an important

activity in the first stage, although that process continues to some extent throughout life of the collaboration. In this project, Brislin expresses PH's surprise at finding whole new areas that would require new interventions in the future. *"I think we were disappointed that diabetes was higher up in South Gate than it was in L.A. County. Obesity as well…this is the one that hit people really hard – we brought out the kids. Seven out of ten residents are obese or overweight…"* Using these findings, they presented to the community *"little pictures of kids playing soccer. It's a big soccer community, and it was five out of ten kids were overweight or obese. [And] again, had an 'ah ha' moment where people said, wow, this is really a major issue for our community and then they were more open to, okay, how does land use play a role?*"

The importance of buy-in by leaders was demonstrated by the City's commitment to allow and encourage its small, overworked Department of Community Development to attend the meetings and devote the effort required to include the health element in the general plan. *"I would say that it was the leadership within the city staff, the city administration that encouraged the planning staff to be involved*." Brislin states that a key reason the planners were involved was because *"the director of Community Development really had a pretty strong leadership [role]…he warmed up to the idea of a stand-alone health element, and he got the general concept of asthma, unhealthy food options, obesity."*

Cost-benefit analysis occurs during this first stage. An insight gained from this collaboration was that personal experience can truly influence the outcome of this process. For the director of the planning department, *"He saw those connections and one of the 'ah ha' moments for him was that he had a personal family member with asthma, so because of that connection it made him a little bit more open to them. Throughout this process I have found that when people have a personal face to it, they're much more likely to take it on as a cause and champion it. We had multiple examples of that throughout this, even with city council members*."

"Doctor Fielding is the head of our Public Health Department. Under Fielding there are area health officers. Each area health officer oversees two SPAs. (Service Planning Areas)" Brislin was under one of the health officers, a physician, who oversaw two of the SPAs. Thus a physician and a nurse manager who attended training meetings where PH and BE were discussed realized as a result that *"this was kind of something that's coming, this is going to be something that public health was going to be getting more into*." This led to Brislin's being assigned the job of finding a project with which PH could get involved in order to gain further experience with issues of BE. Negotiation and cost-benefit analysis occurred at all levels (individual and institutional) before the resources were allocated to permit exploration of the new idea for collaboration. Interesting to note, the decision *"was really done on a local administrative decision, not the Department as a whole*." The result was that *"we were kind of renegades in a way, and in retrospect, I did it really the backwards way because there were a lot of people*

higher up in the department that I later found out were really uneasy about me doing this…"

There appears, in this case, to have been little obstruction by the institution at large (the Department of Public Health) in spite of the reservations mentioned; indeed, a year later, the department started its own collaborative program for PH and the BE called the "Policies for Livable and Active Community and Environment" (PLACE) program.

"Someone was really smart on that one. And that was basically the 'built environment' program within the Department of Public Health. But that wasn't created until about 2007, so almost a year after we had already started this."

2) Anderson is the Senior Regional Planning Assistant for the Department of Regional Planning of Los Angeles County, and was among the main participants in the project to update the GP of the City of South Gate with a new health element. Anderson had previous experience creating a GP equivalent in a highly participatory fashion for other communities (although she had only minimal collaboration with PH). The experience had specifically prepared her for involvement in collaboration, because she had personally and institutionally worked through much of the initial cost-benefit analysis that primed her to collaborate.

Collaboration with other departments was a key aspect of her responsibilities: *"My responsibilities were project management, working with other departments or working with the community, for doing outreach, designing exercises and the materials and sort of bringing the community along, and to really collaborate as partners on laying out the goals, and then specifically getting to the level of talking about what policies would help us reach those goals and what actions would implement those policies, and breaking it down in that way."* Here are several elements of TD action practice: other disciplines, community involvement, and buying in from the top (the Board of Supervisors).

In her previous work, she had found PH to be cooperative and also a provider of resources: *"The Public Health Department in L.A. County is, I think, fairly progressive and they're really, I think, they're really doing some pioneering stuff there that we were happy to kind of tap into and incorporate into this community plan."*

In order to determine if collaboration between disciplines is worthwhile, social exchange theory suggests that each participant looks at what the other brings to the table. Anderson describes the process of collaboration as: *"They've attended some of our workshops and meetings, and some have really made an effort to be interdisciplinary, which is a very rewarding experience."* It is not easy because *"it takes a lot of coordination."* Ultimately the PH department can *"provide direct input. They participate in some of the activities we organize. Most importantly, they review the draft materials including the goals and policies, and they suggest language, and they can*

point us toward evidence or data or resources to support a position." Planners receive value in return for their investment of time toward setting up the activities and providing the resources for the project and its collaborations.

3) Sanders is a land use and transportation planner. As a consultant, he is the principal and founder of Sanders & Associates, and he has taken a lead role in numerous General Plans, including the one for the City of South Gate.

Sanders sees his work as an opportunity to improve the communities affected by the GP. He describes how they, as consultants, always include a health and sustainability element when they are doing a General Plan for a city – whether asked or not. They *"just do it as part of our work, so when we're doing planning work, we bring in the health and sustainability aspects whether we're asked to or not*." They use the data compiled by the county, especially Los Angeles County (which is very comprehensive) to incorporate *"those ideas and the information in the 'existing conditions report,' we always do mapping of the physical 'built' environment and tie that to health*." He argues that using PH as a basis for recommendations in the planning process is a good idea because *"it's one of the things that people don't argue with when you say this – it has a health impact – and so that's what we do it just as part of our business*."

Sanders's involvement during the first stage of collaboration among different agencies is to facilitate the initial process of education and knowledge acquisition that is required for the cost-benefit analysis and goal definition. This process was the case with the GP update for the City of South Gate; there, he was first contacted by Brislin while he had been engaged by the planning department. The humorous anecdote of how the PH department became involved which was told previously by Brislin is recounted once more *"We were working on the general plan there, and the Health Department [Brislin]called us and said, hey, we know you're working, you're the consultants working on the general plan, you may not know but we're the Health Department. You may not know but there's this connection between health and 'built' environment*." Sanders finds this amusing because he felt that *"the person who was calling didn't actually – she's actually a friend of mine now – she actually hadn't done her research and really know who she was calling because if she'd gone on the website she would have seen all this public health stuff, but she hadn't done that and so she was sort of calling blind saying, hey, would you be interested? And we sort of jumped and said, well, yeah, great you're calling us*."

Stage 2 of Collaboration: Determination of a Collaborative Fit

"In which participants meet to exchange and negotiate potential project ideas and roles and begin to establish an environment of trust"

1) In order for the initial meetings to take place, leaders must encourage and facilitate the empowerment of participants in order to develop the necessary relationships and an environment of mutual trust. In the case of Anderson, the PH leadership was instrumental in setting up the necessary structure and resources for collaborations. The director of the Los Angeles PH department has been mentioned by other participants in the study as being someone who encourages collaborations with other agencies, especially the planning department (see Brislin interview). Anderson singles out the director: *"she's been wonderful… she's been at our summit. She gets it. She wants us. She invited us to come talk to her nurses, which nobody has ever done before. It was really great and afterwards I met Mary [Brislin] and we had such a great conversation! That's not something we get to do all that often."*

2) In regard to the second stage of collaboration, the participants describe many processes leading to the creation of the environment of trust, and the development of a common language and a shared framework. These factors are important for all collaborations to succeed, but they are especially important for TD collaborations. One such example of creating a common language and an understanding of each other's concepts is related by Escobar; she states that regarding the design of pedestrian walkways, *"As an architect, I used to love winding sidewalks … because in a drawing, it looks beautiful. But she was able to educate me... before when I would go to a new area, I'd be looking for the aesthetics and architecture and design aspects of it, but now when I go to a new community, I look around, how are people? Are they healthy? If they are, what is it in the urban environment?"* She credits Nancy, her collaborator from PH, with having helped her shift her perspective on the urban environment. Escobar is now much more aware of the health implications of design decisions, such as: "*why am I living across the street from a grocery store, but I have to put my life in jeopardy to get there?*"

Developing a common language is a two-way process. During the second stage (and continuing during the fourth stage of implementation), the planner learns the language of PH, while the PH person learns the concepts inherent to planning. The Lakeview/Nuevo area plan and planning process project (also discussed by Burnam) was one of the earliest major collaborations between PH and LUP in the county The project was initiated by Escobar, and it consisted of a complex process requiring *"weekly meetings with developers and weekly meetings with committee members, Town Hall meetings, and public health was just part of the process, where Nancy would attend these meetings with me and she started understanding the planning lingo a little bit more."* Escobar describes the education of Nancy as a process in which Nancy first started learning the new language, becoming familiar with the concepts, and then participating in the project development itself. Initially the specific tasks assigned to Nancy were small, such as *"can you look at this Trails Network and tell me if this works, and then she would give some written comments."* As Nancy's understanding increased,

she came to know what the GP for the area consisted of, what was expected of the design process, what were the elements of zoning, jurisdictional concepts, and design guidelines, and so on. She became much more active and effective in the collaboration. This is a great example relating to the second and fourth stages of collaboration, because Nancy was helping develop a completely new framework of action as she was developing a common language with the planners.

3) During the second stage, it is possible that not all stakeholders "buy" into the project. Hunt recounts that, after the initial stages when the PH and planning agencies had decided to collaborate in the redevelopment plan, they started interacting with various other previously uninvolved stakeholders. To their surprise, they discovered that other agencies were not ready to get on board, such as the *"Economic Development Department, which had been doing some other projects in this town, so we sort of clashed there."* In addition there was a *"large landowner around the town who has several thousand acres, about four thousand acres, where he's been growing grapes and citrus, but now wants to build houses. The planning department very much wanted us to come up with a plan for how that growth could take place, and this developer had different ideas, and didn't think we should be meddling on his land."*

Stage 3 of Collaboration: Identification of resources and reflection

"Where individuals return to their group to reassess the resources needed for a collaborative effort and the benefits of participating"

1) Brislin explains how the project entered the third stage of collaboration. This project, the update of the GP for South Gate, is a good example of leadership buy-in and complete institutional support for the collaboration. The planning department, as Brislin states, *"wanted the Department of Public Health at the table, and within about six months, we realized that there was some funding from Kaiser that was available from one of their community grants, because Kaiser really wanted to do something that was a 'built' environment grant or land use grant, and so they funded us $75,000…"* However, she was initially surprised at how *"big they were thinking,"* since the goal was to *"create a stand-alone health element within the general plan, which was obviously non-existent before, as well as do community outreach engagement where they would have three workshops on various topics to not only teach the people about the connection between planning and health, but also get input from the people on what the issues are and how to solve them."*

This study has found repeatedly that one of the main activities during the third stage relates to funding and resources. Lack of resources, particularly with shrinking budgets, can be serious barriers to developing collaborations – even in the face of mandates that may require such collaborations.

2) Anderson describes the importance of resources for encouraging collaboration. Having resources allocated for collaborations, together with a mandate for a program, results in a setting for establishing connections and trust among participants. The Policies for Livable and Active Community and Environment (PLACE) program conceived by the PH department is described by Anderson as having been created by *"the Board of Supervisors,"* allowing the PH department *"to make several grants. I think five grants about a year or two ago, and the recipients are collaborations between a community organization and a municipal organization."* These grants have two distinct components: "*a policy component and actually a project component, a physical project*." Anderson's involvement was as a member of the review committee, where she *"was very happy to do that, to provide a planning perspective."*

3) According to Hunt, the Mecca project consisted of two main parts: the first being *"how to shape development there, what improvements needed to be made within the town, and how to design streets and sidewalks, because as I said, there's no curb and gutter in most of the town."* The second part was to *"look at the growth that was coming as a result of land going from agriculture to housing around Mecca and to come up with some recommendations for addressing that."*

Hunt was asked to become a consultant to the project when it required further funding and a decision was made to apply for a grant from Cal Trans. Resource and funding issues lie at the core of the third stage of collaboration. Without adequate funding and infrastructure, the participants may elect not to proceed to the fourth (or implementation) stage. Hunt's brought expertise in that his group had successfully applied for a series of grants called *"environmental justice grants"* from Cal Trans; these are used in low income and marginalized communities, making these grants an appropriate fit for the Mecca project. These grants encourage the collaboration of various disciplines in order to address the environmental problems of low-income communities. It should be noted that mandates, including those that result from funding streams, often serve as catalysts to collaborations. The availability of funds will often cause groups that have been on the tipping point of collaborating to proceed based on that additional contextual factor.

Stage 4 of Collaboration: Refinement and implementation of the project

"In which suggestions and ideas are refined and put forward and the individual contributions differentiated"

1) The project to update of the GP for South Gate required the involvement of the community in designing the health element. This provides a clear example of the participatory nature of TD action collaboration, as has been previously described (Stokols 2006). The communication with the community and with other members of the collaborative team took place through a series of workshops and charettes. These

community workshops offered the infrastructure for the collaboration to evolve. The first meeting *"was very well attended, and I tell everybody in order for it to be well attended you have to have it either on the weekend or in the evening. You've got to provide child care. You've got to provide food. And in our situation we needed translation because a large majority of the population is Spanish-only speaking*." The consultants did much of this organizational work, but the PH department, through Brislin, was instrumental in providing the data that the consultants required. Gathering this data was a complicated process that only PH could perform, and the fact that PH could provide the data was the great selling point for its presence in the collaboration (again the cost-benefit ratio!)

As Brislin describes the process, the consultant *"needed to assess what the health situation was, so he gave me this laundry list – really a wish list – of data that he wanted in order to do that, and it was everything from pedestrian-vehicle accidents to diabetes rates to childhood obesity, to everything you can think of, and we did our best. We spent a lot of our research and EPI hours trying to get that data for him, and he wanted it in multiple levels. He wanted nationals, state, everything down to census track, and in most situations we could only get it down to maybe city or health districts, which clumps a bunch of cities together*." The PH department had committed to the project and was able to provide the data requested, but *"even though it looks simple, this took a lot of effort and internal staff to get this data*."

Another aspect of the meetings was the great diversity of participants. This, too, is a hallmark of TD collaborations. In attendance at the workshops organized by the consultants were: *"city staff from their planning department which they call Community Development. You had elected officials. You had City Council staff there and then we also had Public Health Plan and Public Health Law and Policy speakers… And then the rest were residents. You know, people that just had, obviously, something they wanted to invest in*."

As described previously, the PH department was instrumental in providing the data that the consultant used for the presentations and also to justify the PH element in the general plan. *"That was a big thing. Data, data, data, data. We provide kind of a spotlight because when you hear the Public Health Department is involved in something, it can sort of raise the conversation up a notch*." The other important contribution is the connections that PH has *"in the community that can be accessed when you're going to incorporate residents. They got, you know, a whole grassroots level of advocacy that they can easily activate."*

2) Sanders describes how the collaboration produced several changes and reorganizations to the PH component for the GP for South Gate. As the level of collaboration with Brislin increased, new elements and topics were introduced. *"[We] pulled some topics out. Put it in a separate health element and also started addressing other topics. Like, we hadn't really addressed access to healthy foods and nutrition, and*

we did that a lot more." He felt that if the PH department had not been involved, then the results would have lacked many of the PH elements because the planning departments in general have not been *"as conscious"* of these issues. However, this situation regarding planning's awareness of PH appears to be changing. As evidence, Sanders mentions a project in Encinitas where *"they actually wanted health as part of the general plan. So they put it in when they did a request for proposals."* In another project, in Murietta, *"they wanted sustainability in their general plan, and we proposed adding health to that as an optional path. And they said, that sounds great, we hadn't thought about that*."

3) According to Hunt, an interesting aspect to the Mecca project is that it was not the *cause* for the collaboration between PH and planning department, but rather the *product* of prior collaboration. The individuals involved, Nancy and Jane had been discussing the *"mutual benefits from working more closely together. So I think they started with working on some other issues, and then this Mecca one came up as, 'ok, here's sort of a neat project we could work further on.'"* This illustrates that, once there is a history of collaboration and teams have been formed, particularly in a TD model, there is a greater likelihood of further collaborations occurring. Identifying new projects, asking new questions – these are hallmarks of TD collaboration.

4) Escobar refers to the learning curve that Nancy underwent as the Mecca project was instituted. As she learned the language of planning better and better, she became more comfortable being the leader in the collaborations. Escobar describes that, for the project for the city of Mecca, Nancy actually became the leader and Escobar the secondary person. Nancy was the person who obtained the necessary funding through grants for the project and asked the Local Government Commission to be the main consultants. Her role in these activities was also discussed by Hunt. Her function and activities were the prime catalysts for the collaboration; she would *"do all the work for us to make it really happen."* Escobar lists some of her activities: She organized the first stakeholders meeting to which they invited all the key players, around 30 or 40, including community members, Economic Development agencies (EDA's), transportation, and representatives from the supervisor's office. They then strategized with the consultants about how they wanted to develop the Mecca project. To help the process, Nancy prepared the hand-outs for all meetings, followed up with a five-day design charette, and then with a major community local event. In the last, Nancy was present, overseeing both her staff from PH and the planning staff from Escobar's office. Escobar herself was unable to attend, but felt comfortable having Nancy organize and oversee the entire community participatory event.

When probed further on this arrangement, Escobar describes the strength of PH in organizing community-based events, *"they have gone through this process, and they have educated themselves so they're more people-friendly; and they also bring a lot of community organization strength, which traditionally our department does not have."*

One factor that influenced her handing over the reins of the Mecca project to Nancy was the sheer volume of work that Escobar was handling at the time. Her department was pursuing the South Valley Implementation program, the Lake Nuevo program, and several others in the wine country. This illustrates the concept of trust formation, which creates strong bonds of dependency in the collaborative team. In this case, Escobar was able to use those bonds in order to be involved in multiple projects and, at the same time, leverage the capacity of the planning department through the PH collaboration. As she describes it, *"the collaboration has been very effective in that. We respect each other professionally. There has never been that problem and we recognize each other's strengths, what we bring to table."* She shows respect for her PH colleague as a person, as well as respect for the other discipline – two contextual factors necessary for successful collaborations.

Stage 5 of Collaboration: Evaluation, feedback and sustainability issues

"Where team practices and roles are analyzed and future goals are established. This model explains the how and the why behind any step toward a culture that supports collaboration. It is when team establishes the framework for future collaborations. Institutionalization of the collaboration may occur."

1) The collaboration between PH and planners to create a health element for the GP update for the City of North Gate had begun as an internal departmental training, because of increasing awareness of the relationship between PH and the BE. As it progressed and a TD framework developed, the project had grown to become a pilot project that could potentially change the way all PH and planning departments in the county will interact. It proved to be a time- and labor-intensive project that probably could not be duplicated for all the cities in the county. The team had determined that it would be necessary to create *"some sort of tool kit because … in order to reach at the time 22 other cities that were in our SPA , we were not going to be able to put the work load into that. So we wanted to create some sort of tool kit, so that we could then go to other cities and…create some kind of positive peer pressure where it's like, look, South Gate made this change. How about you, Huntington Park? You're right next door. You've got the same demographics, the same issues in many ways. You know, why can't you make this change as well?"* Evaluation, feedback, and considerations for sustainability encouraged the development of future projects based on the lessons learned in the initial endeavor. Brislin and the others in the collaborative team were looking at continuing the project in order to address the complex health problems faced by cities in Los Angeles County.

When evaluating the outcomes of the collaboration, Brislin realizes that there is still much more to be done in relating the BE to PH. This insight is the result of her own growth from the experience, as well as her exposure to other disciplines. Thus, despite

the growing awareness of the importance of a health perspective in the planning process, Brislin comments that cities are not *"at a place where we need to be, where it's just assumed that public health is going be involved and going to have some sort of voice at the table. I don't think the cities are thinking that way yet when it comes to land use*." However, even though the PH department appeared committed to the idea of collaboration, it was having serious internal discussions and cost-benefit debates. Brislin explains that while *"they're setting up the infrastructure to be there, the real issue is again balancing that infectious disease, chronic disease… that's been a real big internal struggle because, what staff? What if we open this door into this whole new level of working with cities on land use issues? Who's going to do that? And we have to figure out how to balance the work load. So, that's an ongoing issue, actually. It hasn't been resolved."*

The fifth stage of collaboration involves evaluation and feedback, where team practices and roles are analyzed and future goals established. It includes the creation of a culture that supports collaboration through resource allocation, role definition, and reassessment of the costs and benefits to the institution. The established roles and functions of the PH department may need to be changed in order to accommodate the new culture of collaboration. Brislin describes various new skills that she had to acquire and knowledge that she had to obtain, because her skills as a community nurse *"were very different than what I needed when I came to this…there's a whole set of information that I had to quickly cram, and I still don't feel like I'm an expert at all on just planning and land use… figure out how are governments, city governments, even organized. Who makes decisions? What are planning commissions? Who's on the planning commission? How does the City Council go?"*

Brislin explains that, to acquire the new skills and knowledge, a combination of internal workshops, conferences, and training events initially took place at the PH department. Experts from the Health Law project, Jackson, and other consultants were brought in. In addition, Breslin's ability to attend annual professional conferences, such as New Partners for Smart Growth, was an important incentive to collaboration because this allowed her to discover completely new areas for collaboration. An example mentioned was working with school districts for joint use programs.

Sustainability requires ongoing training and education of participants, both old and new. Once the Policies for Livable and Active Community and Environment (PLACE) program had started, Brislin and others in the different SPAs were invited to attend several events organized at the county level. The PLACE program has been instrumental in providing an infrastructure for continued collaborations. However, there is still a degree of uncertainty because *"we have not built the infrastructure of whose responsibility it is within the Department of Public Health"* to devote the time and effort to collaborations with planning. In addition, even the PLACE staff members, of which there were seven, were *"very limited in what they can do but we've talked about we*

really need a planner within the Department of Public Health that could then be a consultant of sorts, an internal consultant."

This study has shown that many consider the idea of health to be a key selling point for land use decisions. At both the developer level and the city or regional planning agency level, the use of health issues to add value to collaborations is a tool that promises to promote more collaboration. Brislin points out that in an era of shrinking government budgets, it is necessary for PH to *"draw the connections for them so that they see how this is an investment in the community and gets back to issues of city pride and making their city a desirable place to live, a desirable place to have business… and a lot of that is the benefits of addressing health in the general plan. So connecting that, those two points, often times will convince a city that it's worthwhile*." This line of argument can result in the continuation of collaborations between PH and planning.

After the collaboration has taken place and the initial outcome of including a health element in the GP has been achieved, there still remains the question of long-term outcomes related to changes in the health of the community. Is there actually an improvement in the diseases of interest? For example, is there a decrease in obesity or diabetes? Several times during the interview, Brislin wonders who will be the *"watchdog of this document. Who's going to make sure that they do all the things that they said they were going to?"* Although she believes it is not the place of the PH department alone to take on this responsibility, she feels that PH could participate in a group (a *"coalition"*) charged with oversight. This is an important concern that relates to the concepts of sustainability and long-term continuity of collaborations. Do they survive past an initial project? Do they survive a change in leadership? (*"A win for Dr. Fielding the last three years and then it disappears."*)

Brislin brings up an observation on the education of professionals in PH – using the example of public health nurses, whose training stresses the traditional ideas of immunizations, epidemics, and diseases such as TB to the exclusion of community-level interventions. She believes that, as a nurse, she was *"doing a great good for that individual, but not really putting a stop on the gushing waters. So, I wish that message would have been given to me when I was a nurse and in training*." She believes that including this message in training would benefit PH, planning, and the communities they serve by encouraging more people to collaborate in integrating PH and LUP.

2) Sanders suggests that educating planners and PH professionals is another tool that could facilitate sustainable collaborations. When asked if this training should occur at the university level while professionals are getting their degrees, Sanders answered that *"it has to be applied. You know, it has to be people who are actually out doing the planning practice*." He described a project he had proposed to the leaders of the PLACE program, which involved organizing a series of one-day trainings where the *"right folks"* would be in one room and new areas of possible collaborations could be identified. This

training would occur in a safe environment where the participants would not feel any pressure to react – as might happen when mandates were used (in-house training?). PLACE would provide the infrastructure for the meetings, rooms, equipment, and funds, and the consultant (Sanders) would facilitate the process. He suggests this would result in *"some cities will probably be interested in taking it further and some won't, but I think the public health side has to understand what the planning process is and how they can plug into it without just jumping in and stepping on toes*." He describes well-meaning practitioners returning from meetings, such as Partners for Smart Growth, where *"people go; they hear; they get excited; they go back and know how 'to do it better,'"* resulting in conflicts between the disciplines.

Narrative Results

This section uses excerpts from the interview transcripts and case vignettes to illustrate the contextual factors, concepts, constructs, and themes that are components of the theory emerging from the data. The resulting Five Stage Model of Collaboration can best be illustrated using quotes from the participants. The examples are chosen because they provide insights into the complex process of collaboration.

Stage 1 of Collaboration

The first stage in the Five Stage Model of Collaboration consists of "assessment and goal setting, where participants examine their individual and institutional goals and assess the need for developing a collaborative relationship and its cost-benefit ratio."

Escobar

Escobar has assembled an efficient and effective team of three other planners that she describes as complementing each other, with each bringing specific competencies to the group. She explains that *"we have one person who has a strong GIS demographics background, one person who has very solid legal background, and one person who has a great eye for aesthetics. So with those three, I think we can do a lot more."* Fortunately for the team, they have not been compromised by the budgetary problems facing the county (which have resulted in other teams being seriously curtailed and even eliminated). Her team had been spared by an action from the Board of Supervisors that sustained funding. However, some of the staff was wondering if the new director of the planning department would be supportive of collaboration.

In his interview, Burnam had commented that, because several long-range planners had been eliminated from the department, the remaining four positions were somewhat at risk from further cuts. Burnam added that Escobar may be uncomfortable being totally candid, *"And I don't know how much she'll say at work, because she feels like she's a lot on her own now. And, they give her too much to do."*

Escobar, however, was quite positive about the new director, giving him great credit for increased understanding of the issues regarding PH and BE. She believed that it would take some time for him to become fully comfortable with collaborating with PH: "*I think his background has been in urban planning most of his life and so developmental review is his strength. This is a new area for him, but he does recognize the value of something of this scale so that's the good news, that he's interested."*

By assembling a strong and interdisciplinary team, Escobar has created, as a leader, the infrastructure for a group that is ready to collaborate with PH in the appropriate projects. When asked why she has been so strongly interested in the issues of PH and BE, she explains that it is partly due to her background in architecture and urban design. She describes herself as holding very strong beliefs, even to the occasional *"detriment"* of her department.

One example of Escobar's strongly held beliefs is her commitment to the idea that higher-density, mixed-use design is good for the community and for health. Escobar was raised in a developing country, giving her a unique perspective on alternative designs for communities. In addition, she received her master's degree at a time when concepts of New Urbanism were becoming more accepted, particularly in academia. After graduation, she looked for a challenge – and she decided that she could make a difference at Riverside County. At the time, Riverside was a very traditional county, with an outlook that essentially assumed sprawl-type developments (*"seventy-two hundred separate lots").* Her goal was to change the perception of what is good for the community and introduce concepts she believed would benefit the developments. She believes she has been successful in that goal, stating that *"in the last five, six, seven years that I have worked here, I've seen a gradual shift in how we have done business."*

She gives an example that relates to developments in unincorporated areas of the county. She explains that, in those areas, developers will present several isolated projects, each consisting of perhaps 3,000 dwellings. Although each project by itself might be acceptable, when taken as a group they might end up creating 20,000 new dwellings in a very short time. The permit process looked at each project individually, rather than considering the very different implications of the size of the combined developments. Escobar explains that her contribution has been to help people look at such situations *"more broadly, to zoom out a little and look at it from ten-thousand, thirty-thousand feet"* rather than just on a single project unit or smaller group of dwellings. She met much resistance at first, because developers and decision-makers were opposed to paying the fees that would be required to fund the services that the

new, broad-based design guidelines demanded. For example, the requirement to create a trails network was incorporated into the design guidelines. However, Escobar believed that the well-being and health of the community would ultimate depend on this more comprehensive planning outlook.

Escobar explains that, in terms of jurisdiction, the planning department has the discretionary approval of project applications for all unincorporated areas. This organization does have the mandate to act in the design process, but it is up to the leaders to set the course. Escobar has shown that she is also a champion for the idea of linking PH and LUP. The opportunity for a formal collaboration occurred in 2004, when the director of the PH department at Riverside attended a meeting of Partners for Smart Growth. There, the director saw how some other public health departments were playing a role in planning processes. Upon her return, she developed as part of the department's strategic plan a program called the Livable Communities Initiative. Escobar explains, *"She also assigned one of the [public health staff], a very capable person who happens to be a very good friend of mine now, Nancy, and had her take a lead on the Livable Communities component."* At the same time, the planning department had a progressive director who also saw the potential benefits of collaboration and provided resources to help start the collaboration process. The support allowed for formal dialogue and buy-in (two important contextual factors) at the top levels, while also initiating increased communication and informal dialogue at the staff level.

Escobar is extremely complimentary of her relationship with her counterpart in the PH department, Nancy (who has since retired, and her position eliminated). Escobar explains that *"Nancy and I clicked immediately as we started working with each other, and we started seeing strength in each other, and what she brings versus what I bring. I bring the big picture idea versus her being more detail-oriented. She narrows it down… We really connected with public health and since then, gosh, every single project I've worked on, they [public health] have been a very integral part of the process."* One reason that this effort at collaboration with PH has been successful – where previous ones were not – is because *"they didn't see the kind of commitment that I was able to bring to the table."*

What effect does the loss of a champion have on the sustainability of the collaboration? Given the depth of the professional relationship between Nancy and Escobar – their extreme rapport being among the best examples of true TD collaborations in the study – it is important to look at the effects that Nancy's retirement had on the ongoing relationship between the two agencies.

Escobar mentions that, on a personal level, she remains very much in touch with Nancy. At the agency level, she has seen no major change in the degree of support for collaboration. She attributes the continuity to the presence of three people in the PH department who are steadfast in their support of connecting health and the BE. *"Public health has a community health officer, Dr. Friedman, who believes in this. So you have*

an agency director, a department director, and a Deputy Director – all three of them are committed to this Livable Communities cause."

However, having key people in the partnering agency that are directly part of a collaborative team is important for the sustainability of collaboration. In the case of Riverside, the loss of Nancy with no replacement has meant that no PH representative is attending various regular meetings where PH used to participate. This change does have effects. Escobar believes that it is not only PH but also other departments, including transportation, which is postponing collaborations because of budget cuts. The problem lies with a structure that depends on individuals who *"are interested"* in collaboration, rather than an institutional system that identifies and trains substitutes to fill the role. That type of training can take time. *"David and I have talked about how Nancy developed her awareness on planning over a period of time."* Escobar explains that it is unlikely there can be someone training with a champion like Nancy *"because there is no budget to have two people in one agency involved in the collaborations."*

Escobar finds personal benefits in collaborating with PH. The person involved in TD collaborations is transformed by the experience and starts approaching her own discipline in a much larger context. For herself and also for her staff, Escobar perceives that when they work with public health *"it helps us professionally. As a professional, I have grown – my view of the urban environment has significantly changed since I've started working with them."* For this reason, it is critical that there be someone in each agency who understands the *"value"* of collaboration and has developed a TD approach to working with the other agencies. Escobar clearly expresses some of the thought that has gone into cost-benefit analysis at both the personal and institutional levels. As an individual planner, she has benefited greatly by expanding her understanding and her capacity to address complex problems. This surely makes her more valuable as a professional (perhaps a reason why her unit was spared cuts while others were not?). In terms of the institution, Riverside County has benefited by establishing a reputation in the planning community of being at the forefront of the smart growth movement in California. This stature has also had practical benefits, with several grants and resources coming to the county for the purpose of further encouraging PH involvement in the BE.

In the effort to understand better the role of the individual in collaborations, it is also important to explore some factors that stimulate a person to become a champion for collaboration specifically in the planning field. For example, does early exposure to a variety of urban settings promote tolerance for a diverse environment? What role does a person's professional education play in the choices made during a career? In open-mindedness for collaboration? Escobar alludes to some of these factors in describing her own experience. Growing up in a developing country exposed her to a great variety of urban patterns that were much more dense and mixed than is usual in the U.S. This factor had significance when she attended Cal Poly for a master's in planning – and where she confronted her chairman with serious questions about the BE around the

school. She recounts that she did not have a car for the first 15 days of school, *"and that became a nightmare because although I lived ten minutes away from campus in a high-density area, it took me two hours to get to the campus because I had to go … all the way to the transit station, change the bus, which is one ugly hour, and then go up here!"* She started asking questions, such as: *"why are we not talking about these things in the planning profession?"* Asking such questions was thinking-outside-the-box in car-centric California, and this thinking eventually led the school to ask her to stay to teach. It is clear that these factors were important steps in her development toward becoming a champion and leader in the effort to integrate PH and planning at Riverside County.

Escobar describes several workshops that had been jointly conducted several years previously with PH in order to evaluate the effects of the legal requirements of the California Senate and Assembly bills, as well as the perceptions of the affected planners and PH people. (The transcripts and deliberations of two such workshops – called Creating Livable Communities – have been used as sources for several of the elements cited in this study for developing specific contextual factors for collaboration; this is further discussed in the Methodology section.)

Escobar expects more of this type of educational programming to take place in the future because of the urgent need to educate the county's decision makers about the impacts of the new regulations. She explains that as of *"January First onwards, we need to have every single project comply with AB 32, CEQA requirements, and so on – but they don't know that, and it's like, why are you denying these projects?"* Escobar sees PH's involvement as essential in the meetings.

Escobar alludes to the need for various factors to be present at the same time for a collaboration to occur. She explains that *"we were able to do so much with the Department of Public Health because there was a window of a couple of years where all county stars were aligned. There were a few supervisors that understood good planning... a few planning commissioners that understood good planning…a few directors of the department that were understanding good planning, and then there were staff level people that were understanding good planning… so we were able to generate enough awareness on the need for collaboration that people started seeing the value."*

She is describing the need for buy-in at all levels, so that an environment of trust is created. This trust allows the team to proceed with the support of individuals and the organization. The buy-in has to be at both levels, according to Escobar, *"top-down and bottom-up."*

According to Escobar, regulatory requirements can be helpful by encouraging collaborations. However, requirements also have certain drawbacks. If regulations at the state level force a reevaluation of design and planning practices, then they support the common goals of PH and planning. Escobar explains that *"it helps to have the regulatory requirements coming from state level, because when I say 'let's do*

sustainable communities' it's only a planner saying it to decision makers versus the state saying 'if you don't do it, we'll tell you where your sustainable communities are.'" However, due to serious budgetary and economic problems, *"this is the worst economy to happen in because [they] have stopped giving allowances, and now you're requiring us to do all these additional things."*

Thus, the socio-political factors that affect collaborative efforts can have a positive or negative impact depending on other contextual factors (as in this case, funding and resources). Escobar's statement that the stars have "to be aligned" is quite prescient in this scenario.

Although Escobar is very supportive of community participation within the collaborations – an approach that involves the community through the charette process and other education programs – she also finds times when it is necessary to take a forceful stand for her recommendations. Referring to the example of a place like Berkeley, where the community essentially opposes all projects that involve increasing density or mixed use, she explains that it is her conviction that *"communities sometimes don't get the message clearly. I think if something is good, we need to have the courage to forcefully go for it and deny a couple of projects that are low density and then see how developers act accordingly."* She describes her rule of three Cs: *"concept, you need to have clear concepts; you need to have conviction in your own concepts; and then you need to have the courage to act on it. You know, three Cs are absolutely necessary!"* She explains that if everyone on the team agrees conceptually that something is right – for example, the integration of PH into planning – then you must have the courage to act on it. She cites as an example the fact that she would continue calling David Burnam for any project in which she felt that PH collaboration was needed.

Escobar also brought up the need for PH to be involved in various other collaborations with other agencies and groups. There is great pressure being put on the collaboration of planning departments and PH departments as complex health problems are prioritized nationally and locally. However, other important relationships are not as evident. Another participant, Bennet, was also very clear about the importance of these other relationships – in her case, with transportation departments, development units, school authorities, etc. *"I think public health needs to start plugging themselves into transportation decisions, economic development decisions… we talk a lot about planning and public health, but there is not enough discussion on transportation and public health, which is a critical theme if you think about the trans network. It is part of the circulation element of any general plan."* It is possible that having a collaborative team in place continuously permanent for planning and PH makes it more likely that collaborations with other disciplines will develop. There are other examples described in this study where agencies other than planning were part of grants that had been obtained by PH departments. There were also conferences and meetings that were

multidisciplinary and multi-stakeholder, and there was involvement in community outreach efforts.

A practical reason Escobar gives for the need to have PH involved with such agencies as Economic Development Agencies (EDAs), is that these agencies are the ones responsible for many of the counties' redevelopment projects. They *"have the cash to do the actual change on the ground,"* yet they are rarely involved directly with PH. Escobar believes that the reason for this lack of involvement is the traditional *"silo mentality"* found in the engineering profession (among others). The EDA, according to Escobar, usually does most of its work in a vacuum. She asks the question: *"is there one individual in the EDA that we can work with that understands this? I think we need go beyond the silos and start recognizing those champions within those organizations that can really change."* She describes Nancy as one such individual, someone who *"really championed this issue of integration of health and planning and [the need] to recognize these individuals."*

Some contextual factors involved in this account include: A complex organization that can be obstructive from a silo mentality, a respect for the other discipline and the mission of the other agencies, and a willingness to give credit due to other individuals and institutions.

Examples of other agencies that should be incorporated into PH collaborations include transportation, the fire department, the education department, and the environmental programs department. In the last, Escobar identifies two individuals she has been in contact with, who if *"we have the discussion with them on health, I'm sure they would understand what we are talking about, and they would start championing the subject."* Some, such as the fire department, generally tend to create more obstructions to the establishment of collaborations. Escobar describes how that department requires hours of education about how some of its design guidelines (i.e. a 26-foot right-of-way) negatively affect Escobar's goals of making streets more pedestrian friendly in order to allow increased walking, physical activity, and access to mixed-use areas. Presenting such conflicts to the fire department in terms of PH's goals would be, in Escobar's view, much more powerful and persuasive than having them presented only by planning. PH is able to provide solid data that is more conclusive than traditional planning presentations.

Burnam:

The recession has strongly affected the county, because it had been experiencing much land speculation and development. In spite of the recent slow-down, however, Burnam still expects the county to add ten cities, each with more than 100,000 people, over the next 20 years. He sees the problem as one of controlling the way this development occurs. Riverside is repeatedly cited in studies as having some of the worst

sprawl and pollution in California. Most newly added cities have been planned under a sprawl model. There is very little issue of in-fill planning (which he sees as more relevant in fully developed areas like Los Angeles). He wants to make a difference for future development by involving PH in the planning process to avoid the problems of the existing sprawl model: that is, housing with no downtown, no accessible local stores, mostly strip-malls, car dependency, city hall located in a strip mall, and school complexes with limited transportation options (*"like a prison in the middle of nowhere"*).

Burnam was instrumental in creating a collaborative project called Livable Communities, which was fully funded with existing funds. The project obtained a county grant and, exceptionally, was able to hire a full-time PH person to work with transportation, developers, and the planning department.

At the time of the recent housing boom, there were many developments occurring in which the developers were apparently interested in doing the projects in a better way (that is, avoiding the mistakes of the existing development models). At the same time, the county did not want to pay for service infrastructures that the developments would require. This convergence of interests supported the goal of introducing PH needs and concepts into the planning process. Today, after the crash, Burnam believes that it is necessary to continue the project because it is the future of development planning. Many of his goals are based on smart growth ideas such as: *"You can devise a city – think about it, design it from scratch, and you build it with the community center, and there's a town square, and there's parks, and there's sidewalks, and different kinds of housing, and different mix of stores."*

The specific development project that sparked the collaboration between PH and planning was called Lakeview/Nuevo. A developer had acquired all the dairy farms in an area, putting together several thousand acres. The finished community was planned to have a population of over 100,000. The county asked that the required service infrastructure be paid for by the development itself. The county also requested certain design changes so that the new development was not following the old sprawl model. For example, they wanted to make sure *"there's a police station and a fire station, maybe a health clinic, and make sure there's parks, and make sure there's trails that connect, and it's not just ten thousand homes on a ten-lane thoroughfare, and no stores for ten miles."*

The collaboration was started by the planners, but as Burnam explains *"we jumped on it."* PH was involved in planning and design decisions that, on the surface, might have appeared to be outside its realm – but which are known to have an effect on such behaviors as physical activity. Some issues included, *"where would the parks be, where would the trails be, how you would design sidewalks, which sounds simple but in the desert area … have you ever seen a meandering sidewalk where the sidewalk goes like this? It looks beautiful. Everyone hates it. No one uses it. So everything designed had those sidewalks, so we've been fighting saying, no, they look nice but nobody will*

use them. You need to design sidewalks that people will use… and then bike lanes have to be a certain width or people can't use them."

Here is a clear example of a PH person speaking the language of planners and urban designers. As noted, this example came as a result of past collaboration with the planning department that had created a sustainable relationship. It was relatively easy for this project to take place, given the ongoing communication and understanding between the departments.

The origin of the relationship was the Partners for Smart Growth conference that the PH people from Riverside had attended. At that meeting, they had met Richard Jackson and Randall Lewis (a progressive developer who was the principal in the Lakeview/Nuevo development), who also introduced them to other like-minded people. This started a learning process that resulted in the communication with the Riverside planning department. Burnam and a colleague, Nancy, attended the meetings and then, *"taught ourselves that whole planning thing from the public health perspective."* (Nancy has recently retired and has not been replaced for budgetary reasons.)

During this first stage, the PH department had done much introspection to determine its interest in the subject of the BE. Because of the exposure to information and people at conferences, PH had come to see that the BE could be an important part of reaching PH goals. A champion and leadership, combined with the availability of funds (at the time), allowed PH to proceed to the second stage – where they would meet with their counterparts in the planning.

The loss of the staff position of the individual who had initiated collaboration with the planning department (Nancy) was mentioned repeatedly by members of the team. The position lost funding for budgetary reasons. The position had been charged with, among other duties, interacting and collaborating with other agencies. The loss causes Burnam to wonder to what extent collaborations will continue. There is one area that still has some funding, the *"Safe Routes to School Program, which is federally funded through Cal Trans. And we will help bring in a consultant."* However, he makes it clear that no one in the department has the time or resources to actually do the important work Nancy was doing. Others will be able to *"kind of play at it and do a little bit of showing up at meetings, but not anyone who's going to live it every day making all those connections."* The importance of a single champion is clear, *"basically that was one person. One person can make a difference in case anyone is confused."*

These statements about leadership correlate with some of the contextual factors that are described in the study as leading to the start of collaborations: Having the resources, making the connections, opening dialogue, establishing trust, and identifying areas for collaboration. Thus, the loss of the leader or champion, as in the case of Riverside County, could result in a serious decline in collaborations. Riverside was often cited as an example of a progressive county that was getting new development right. An example Burnam cites is the GP for Mecca, where because of the institutionalization of

some of PH concepts, they were able to make a difference in the final plan. Burnam wonders if this trend will continue.

Another factor that Burnam mentions as affecting collaborations includes a change of the Health Director at the PH department. The new director was trained as a nutritionist and was interested in maintaining the continued collaboration with planning. The department used the program Healthy People Living in Healthy Communities as a catalyst to make all this happen. In contrast to this positive outcome, this is a factor with potentially negative effects – an increased reliance on grants to do some of the work on the BE. The problem with grant money, according to Burnam, is that *"almost every dollar we have is' categorical,' meaning … there's very few people that can do what needs to be done. Almost everyone does what the grant [requires]."* Although grants allow some latitude and can be leveraged to address some of the concerns of the agency, *"you can't do everything."*

As an aside, in a political environment where smaller government becomes the goal, there is a serious risk of not having the PH funding for collaborations. Burnam explains that general funds are mostly intended for *"disease control…for tuberculosis and STDs."* Private funds or grants rarely allow for the latitude that is necessary for a successful TD collaboration; *"grants are very specific, and they don't get you where you need to go."* He describes how his department and the planning department (Jane) were able to use funds to go out to various communities – not just in Riverside County, but even as far away as Los Angeles County – and present ideas of smart growth. At times these ideas were well received, but in some cases *"they go, 'great,' that might work over there [Riverside], but it doesn't work here even though it's exactly the same situation."*

Cost-benefit analysis to decide if collaboration is indicated for a particular group or situation is exemplified by the different responses that Burnam received from urban and rural parts of the county. *"The biggest problem in Riverside now is the people who live in the rural areas and don't want any development, and when you try to talk to them about [growth] they get mad. 'We don't want sidewalks.' The thing is you're a rural area. You don't 'get' sidewalks, and it really helps when you talk to them about this."* He feels that appropriate communication and education could change the response of the rural areas. They don't *"get"* sidewalks, but with enough discussion they would understand that their problems are *"exactly the same situation"* as in urban or suburban areas.

One tool often brought up by PH is the Health Impact Assessment (HIA); however, its use is still controversial. HIAs have been described as *"not intended to endorse or oppose a policy or project – rather it is a way to provide information for the public and decision makers to help them understand the health impacts of a proposed decision"* (Horton 2010). However, there are increasing calls to use them as Environmental Impact Assessments (EIAs) are used, or even incorporate them as a

health requirement of EIAs. Both sides – those who advocate its use and those who see HIAs as too prescriptive --speak passionately about the advantages and drawbacks. While one author calls it a "confused field," Burnam is very clear on where he stands on HIAs after participating in several training programs (Kemm, Parry, and Palmer 2004). *"I think they're destructive. I don't believe in them. I think they're terrible, and I think they give the wrong message. We have to use a different term because…we can't get any traction with health impact assessments. The term is wrong. It's not a health impact assessment."* He explains that HIAs may have some use as applied in San Francisco or Berkeley, fully developed areas where infill is the norm. However, in areas such as Riverside, where development is occurring mainly on rural or farmland, the HIA as presently used has no application. He compares it with Environmental Impact Assessments (EIAs), which are mandated yet make no difference in terms of what land is developed and how. EIAs *"just tell you what's going to happen. They won't have to mitigate it. They just say, 'it can't be mitigated.' But it doesn't mean you don't build the freeway!"* In other words, a HIA would be a waste of money that would antagonize developers – and possibly also the planners – without actually having positive outcomes. Burnam is strongly against making them mandatory for this reason, and believed that Richard Jackson agreed with him on that issue.

Mandates have been mentioned as a factor in encouraging collaborations. The type of mandate is obviously contextually important, because an HIA, according to Burnam, would have exactly the opposite effect. In the case of Kirwan, who is less interested in establishing a collaborative team than in having the opportunity of giving PH's input into the planning process, HIAs may be a more appropriate tool

Burnam mentions that projects with specific cities occur with the collaboration of their planning departments. A project with the City of Riverside involved creating walking paths in all 20 of the city's neighborhoods. The project was paid for with a grant that PH had obtained. The purpose, from PH's viewpoint, was to get people active and also measure trail usage. The planning department could then use the findings to support further trail improvements.

Burnam then mentions a complication created by the fact that planning and transportation are usually in the same city agency. According to him, transportation engineers *"have one goal in life, right? Move cars fast. And everything we're trying to do is different, and if it's too crowded, you add lanes. The concept of what we're talking about they don't like. It's against everything they believe in."* This sets up a serious barrier in that collaborations can be hindered by a lack of common purpose and language. The respect for the other discipline may be lacking, thus resulting in an adversarial relationship between transportation and PH. If, and when, a *"good person"* is involved, then the collaboration can be successful. However, Burnam laments that such people usually get promoted to new positions, and it is necessary to start all over again.

As a preparation for future collaborations, Burnam discusses the need for a 20-year plan for PH involvement. For developments, "*you've got to think what it's going to look like in twenty years, not what it looks like [in] five years."* The long planning process means that, *"by the time you buy the land, get it zoned properly, go the planning commission a couple times, and get these things designed … everything we were looking at had already been approved years ago. You can make minor changes. You couldn't make fundamental changes."*

Short, sporadic communication may work if the goal is to accomplish an immediate simple task – for example, getting a bureaucratic seal of approval that may be required by rules and regulations. However, an ongoing, sustainable relationship between the planners and PH is necessary in order to develop a meaningful, effective collaboration that makes fundamental changes and addresses the complex problems cited in this study.

In the case of Riverside, this ongoing relationship is the result of the presence of individuals who have developed the professional relationships necessary to move rapidly to stage 4 of collaboration. In essence, stages 1 to 3 have already taken place within the team, and the participants are ready to become involved in new projects by starting at the later stage of collaboration. Burnam describes this situation clearly when he singles out Escobar (and also Nancy, before she retired) for being responsible with the long-term plans and PH involvement. *"That's what Jane does. She does all our long-range planning."*

A regrettable result of the reliance on specific individuals and, in this case, unfunded positions, is the risk that the long-term collaboration could come to an end if the person leaves or the position is eliminated. Burnam mentioned Nancy retiring, and he explains that several long-term planner positions were eliminated and the rest were *"on the chopping block because they're not paid from the development fee so the Board agreed to keep four – her and then four of them – to fund them. So it's safe for now."*

Hunt

Hunt is a consultant interested in fostering collaborations between PH and planning. He often makes presentations to PH departments in order to create an environment of trust and an awareness of potential areas for collaboration. He describes approaching PH people in order to find out what they are doing in the BE area and then start a conversation.

He also describes an important transformation in this process. In the past, his approach was one of advocacy, but he has moved toward an evidence-based approach or *"research-based approach and things that were new to us, because our work had been focused much more on advocacy and making the case for better communities."* Some of the first projects involved work for the DHS to provide *"technical assistance for*

local jurisdictions to make them improve walkability and bicycle friendliness. That was sort of our first collaboration with health at the state level."

Hunt describes varied tactics and projects that can foster collaborations between PH and planning. These activities can occur at many levels of government and community, and they can focus on many aspects of health and community design. He cites being told by one planning department, *"what you're doing basically supports our mission of creating healthier communities, so I don't care how you make the argument, just keep doing what you're doing."* On the other hand, specific funders often have *"a clear plan and so on, and so we need to shape our work around that."*

The Mecca project is an example of a project that focused on a complex societal problem, and which required collaboration among various stakeholders in order to address issues involving multiple disciplines and agendas. The project involved the development of a health and built environment plan, and it has been possible to gather different perspectives on the project from the interviews with Jane and Burnam, as well as with Hunt.

Hunt describes the background for the project. Mecca *"had very little infrastructure… it's a town with no sidewalks, with bad drainage. It's a very poor, low income community, so there's a lot that can be done to improve the community and the health of the residents there."*

The impetus for the health and BE plan for Mecca seems to have arisen in the PH department. PH had been initially involved with the community while building a community health center (described by Hunt as *"the nicest thing in town").* The health center was located in the center of town, and it had become an important resource within this very poor community. The involvement of PH started from the need to address medical needs, but was expanded after realizing that *"this community needs more health support…they created a clinic where kids could come and families could come. And as a result of that work they started recognizing there were some serious land use problems here."* PH started developing new interventions and identifying areas for collaborations. In the process of cost-benefit analysis (during the first stage) a decision was made to collaborate with the planning department. To a great extent, this decision was a product of a history of previous collaborations and the personal relationships between Escobar and Nancy.

Community input was an important factor as the collaboration started, helping define its goals and scope. They included *"some local leaders who were people who'd grown up in this town and who had gone on to college and other things and had come back to improve conditions."* The PH department then produced a video documentary that is *"beautifully done. It's in English and in Spanish, and it interviews some of the key people…and it's got music, and talks to some of the farm workers who'd been there for one or two generations and their children. It's all about the pride that this community has. And it also talks to the landowners."*

After the initial stages of collaboration, the PH and planning agencies started interacting with previously uninvolved stakeholders. To their dismay, they discovered that the other agencies were not necessarily willing to become involved, such as the *"Economic Development Department, which had been doing some other projects in this town, so we sort of clashed there."* In addition there was a *"large landowner around the town who has several thousand acres, about four-thousand acres, where he's been growing grapes and citrus who now want to build houses. The planning department very much wanted us to come up with a plan for how that growth could take place, and this developer had different ideas, and didn't think we should be meddling on his land."*

Serious confrontations arose during meetings among the various agencies – confrontations that had to be resolved through the intervention of the leadership that had mandated that the departments work together. The leadership said, essentially, that *"we can't have different departments going off in their different directions."* The groups finally were able to work together, with the added result that the *"developer who was resisting any input on what should happen on his property has come around now and apparently is interested in some of the ideas that were put out during our workshop."*

An interesting aspect of the Mecca project is that it was not the *cause* for the collaboration between PH and planning, but rather the *product* of collaboration. The individuals involved, Nancy and Jane, had been discussing the *"mutual benefits from working more closely together. So I think they started with working on some other issues, and then this Mecca one came up as, 'OK, here's sort of a neat project we could work further on.'"* This illustrates that after there is a history of collaboration and teams have been formed, particularly in a TD model, then there is a greater likelihood of further collaborations occurring. The abilities to identify new projects and ask new questions are hallmarks of TD collaboration.

Hunt was asked to become a consultant to the project when it required further funding and the team decided to apply for a grant from Cal Trans. Resource and funding issues are at the core of the third stage of collaboration. Without adequate funding and infrastructure, the participants may elect not to proceed to the fourth (or implementation) stage. Hunt has expertise in this area, because his group has successfully applied for a series of grants from Cal Trans called *"environmental justice grants."* These grants encourage the collaboration of various disciplines to address the environmental problems of low-income communities. It is very apparent that mandates – including those that result from funding streams – serve as important catalysts to collaborations. The availability of funds is often the additional contextual factor that will cause groups on the tipping point of collaborating to proceed.

The Mecca project consisted of two main parts: The first was *"how to shape development there, what improvements needed to be made within the town, and how to design streets and sidewalks; because as I said, there's no curb and gutter in most of the*

town." The second part was to *"look at the growth that was coming as a result of land going from agriculture to housing around Mecca and to come up with some recommendations for addressing that."* This latter part grew to become an important plan that also involved 4,000 acres owned by a private developer who, as mentioned earlier, was initially resistant to any involvement by any city agency.

Hunt and his team put together a larger team for the PH-planning collaboration. It included several city planning consulting groups, a renowned street planning specialist (Dan Burden), and others as needed (such as a traffic engineer and an urban planner).

Hunt describes the involvement of these consultants in this way: They do much of the background work, including looking at the history of previous projects and the development initiatives. Based on that research and a needs assessment, they come up with proposals for the collaboration participants, and may also help in getting input from the community or other groups. They produced specific recommendations in the case of Mecca, because funding already funding was available for some of the developments in the city. (Examples for these specific recommendations included possible designs for sidewalks and streets.)

Looking at the long-term plan addressing the growth of the urban areas and the encroachment into farm land – particularly those 4,000 private acres – they suggested creating or expanding high-density housing areas rather than doing a more typical suburban model.

Throughout the planning process, the involvement of PH provided several benefits that Hunt recognizes. According to him, *"the role that we have found has been very helpful in working with public health has been in doing the outreach to the community and getting the community involved."* He feels that, in general, planning departments are not very good at involving the community, even though they are interested in doing so. On the other hand, PH is much better at encouraging community input. The reason is that PH, because of its clinical work, finds itself *"embedded"* in the community and has created relationships that can be leveraged for planning purposes. PH already knows community leaders and key participants that can be called upon when input is required for a project. Hunt credits PH with making the community workshops and charettes successful by bringing in hundreds of participants rather than the more usual dozen people.

He mentions an additional benefit that PH brings to the table – an awareness of cultural sensitivity and socioeconomic aspects that helps encourage involvement from otherwise marginalized groups. These groups are so important in the planning process, given that participatory TD collaborations essentially begin with the identification of issues in the community that need to be addressed through the combined efforts of PH and planning (and perhaps other entities). An example Hunt mentions is in *"Fresno County …where the health department started working with one of the neighborhood schools, and through that, basically started addressing some of the built environment*

issues. …What was powerful was the health folks already were talking to the residents. So they already had that connection. And the planners and public works people came to the workshop and heard what the residents were saying and needed and started thinking about how to respond to that. I think it's a very powerful combination."

Hunt – as did Jane in her interview – sees the recent collapse of the housing market as a potential source of opportunity for more collaborative efforts between planning and PH, and possibly developers as well. He is concerned, however, that increased long-term planning involvement with health issues could create unnecessary or burdensome *"layers of review and bureaucracy that'll slow projects down."*

In particular, he is worried about the idea of HIAs, which in his view are perceived by developers as being too similar to Environmental Impact Assessments (EIAs). He observes that under CEQA [California Environmental Quality Act], for example, EIAs have been used to delay and attack *"good projects."* According to Hunt, one solution to this potential problem is to develop mechanisms that would reward developers for including PH objectives in their plans. For example, this might result in a shortened approval process or reduced red tape.

This suggestion by Hunt is an example of how new approaches and creative solutions can evolve through the collaboration of different disciplines. PH objectives – such as the need to increase physical activity through BE modifications – could be addressed by those best positioned to do so: the developers. The developer activity would happen under the guidance and with the encouragement of those most able to modify the planning and approval process: the city planners and policymakers. In this example, TD collaboration would yield a series of solutions that would not be possible under a less collaborative, possibly adversarial model. The greatest caveat, according to Hunt, is that the PH department, as a governmental agency, must never be seen as advocating for one development project over another.

Physicians and architects are among the other groups that have been involved in the evolving BE-health connection. Hunt singles out the county medical society of Shasta County (North Valley Medical Association) as a group that has been involved in some collaborative efforts between health practitioners and developers. The medical society is an association that represents the physicians in the county. In this instance, according to Hunt, they organized a large workshop in 2006 that included several developers. Several other organizations were represented, including the Shasta County Public Health Department; the newspaper *Record Searchlight*, the cities of Anderson, Shasta Lake, and Redding; and the Sacramento Valley Section of the American Planning Association. Hunt explains that the PH department was not directly involved in organizing the conference. The society invited such speakers as Alex Keltner, Dan Burden, and a progressive-thinking developer from Chico. The effort was based on the society's advocacy efforts toward addressing what they saw as health problems that could be confronted in the BE arena. It was described in their advertising brochure as an opportunity to:

> *"Learn more about the relationship between land use planning, transportation, and public health from nationally known experts. Learn how we can integrate healthy life-style choices into the design of new neighborhoods and our growing communities. Participate in a "visioning" exercise that will help decision makers understand what you want to see in the design of your community and the new neighborhoods and shopping areas that will become a part of it."*

Architects, through the AIA, have been involved in several initiatives to create *"health by design."* Hunt mentions a workshop that was organized jointly by the AIA and the UC Davis Medical Center. In this case the collaboration was between architects and physicians rather than planners and PH people.

Significantly, the county PH department was not present. Hunt explains that this department has two groups with different approaches: on one side, a staff champion for involvement in the BE and a medical officer also interested in these issues; on the other side, a director who is not interested in, nor at present supportive of such involvement. Hunt speculates that the director is not willing to allow resources to be diverted from the more traditional PH roles toward new roles like collaborations with LUP. However, he wonders that perhaps if external funding could be obtained by those in the department who are interested in the BE, then the director might possibly allow for a collaborative project. *"If you find the funding to do that work, we're OK with you doing it, but until you do we're not going to do it."* Hunt makes no mention as to the involvement of the local planning department.

In order to address these funding issues, Hunt and a consultant, who is now working in his group, approached the CDC at the national level. Their contact in the CDC is a strong supporter of health through the BE, and he believes that small grants given to county PH departments would go a long way toward jump-starting collaborative efforts. In the case of Yolo County, a small grant for a PH staff person interested in collaborations could help overcome some of the institutional barriers now faced. Hunt mentions as examples of such small grants, the Local Public Health and the Built Environment grants (LPHBE) established by California Active Communities (CAC)[16].

[16] California Active Communities (CAC) located within the California Department of Public Health (CDPH) supports and promotes community design solutions to increase physical activity and decrease the risk for chronic disease, such as obesity and diabetes. In 2004, CAC established the LPHBE Network Project to provide training, technical assistance, and funding to local public health departments (LPHDs) interested in integrating public health into community design.

These amount to approximately $5,000 and go to the counties. He describes the case of Fresno, where one such grant allowed for workshops and meetings to explore the possibility of the PH department collaborating with planners. This type of exploration is an essential part of the first stage of collaboration, where the initial cost-benefit assessment takes place.

Ryan

The GP update for the city is the main collaborative project in which Ryan has been involved. He has been pursuing the project for eight years, and he describes the process as being a *"very contentious process with the public and with the politicians…"* In addition, the department itself has *"gone through a lot of staff changes. We've gone through a lot of different consultants, and so it hasn't been a very consistent process*." The main area of collaboration is with consultants chosen for specific tasks. Rather than work with one large firm, they use several consultants, each with expertise in a field. Examples include consultants who are doing work at the *" fine-grain level in each neighborhood*," such as a transportation consultant helping with the mobility element on better integrating transit, and bringing in bicycle ways and pedestrian features.

When asked about collaboration with other agencies – specifically PH – he explains the main reason planning is involved is because of its having been awarded a Policies for Livable and Active Community and Environment (PLACE) grant. These grants from Los Angeles County, as described elsewhere, are intended to help create new policy and develop an actual project. In Ryan's case, the grant was awarded through the planning department, but it resulted in the creation of a team that *"includes people from the public health department, myself in planning, and then we have people in public works who are sort of doing the physical portion of the project*." He describes the team as being fragmented – like the city government itself – but also as being unique in that in *"this little team is that we have a little bit of view from all the different divisions*." This more comprehensive view allows the planning department to incorporate policies based on the concept of *"active living*." He credits the PLACE grant with engendering the *"collaborative team… [and] making changes into this element to further beef up the sections on active living. So that is where – that's sort of a collaborative role in this process."*

In looking beyond the one specific project of the GP update, Ryan suggests that planners and other disciplines also contribute to PH-initiated projects. He sees that a continued collaboration could help PH achieve its own goals. However, he observes that PH is not using the other disciplines to its own advantage. Although planners have incorporated PH into their projects, PH has not done the same in its initiatives. He comments that PH talks about improving health through land use and transportation

issues, but *"I don't see the public health department coming to us – and the other city departments – and demanding certain things from us*." These departments *"have the keys to the land, and if we're not zoning areas that allow and encourage grocery stores, they're not going to get too far in their goal."* Ryan states that his group goes *"out of their way to bring them [PH] in*," but he describes PH's position as *"they're not pounding on doors saying, you must change this*." He admits that planning would probably resent the intrusion of a demanding PH department, but he nevertheless believes it would be the *"right thing to do."*

Ryan suggests that the GP, through partnership mandates, could be an important instrument for establishing institutionalized collaboration. *"If there's a way to sort of entangle us more via the general plan, then that would be a way to institutionalize it*." One suggestion is to use *"score cards"* to evaluate the outcomes of specific collaborations. An example might be to assess the increased presence of grocery stores after development projects where both PH and planning had been involved. Ryan was not aware of HIAs, but was intrigued by the idea, especially if tied to the California Environmental Quality Act (CEQA). He speculates that HIAs could create collaborations among professionals, even if they were not effective in creating actual changes to the planning process.

Lambert

Perhaps because of a history of previous collaborations, this collaboration appears to have been relatively easy to establish. The collaboration functions mainly at the *"project management"* level, including *"affordable housing, housing action plan area…and public outreach*."

During the interview, Lambert was asked several questions in order to explore in more detail the level at which collaboration was occurring. Lambert reported that his first connection with PH occurred when he met with the director of PH for unrelated reasons, and was given a book on the topic of PH and BE. However, the main reason that regular meetings and communications were established between the disciplines was that both PH and planning realized that they had common interests. The two saw that they could try to *"leverage the things that they can do, the things that we can do. They can do some community outreach that we can't do. We can get [through PH] lots of segments of the population that we couldn't get to*." This statement indicates that, in a cost-benefit analysis, collaborating with PH brought distinct advantages for planning, rather than working alone.

Lambert describes how his group gained community involvement as a result of the access PH could provide through its activities in clinics and community-reach interventions. When PH was handing out health information at community meetings (about diabetes or inoculations, for example), the planning department could also

access the community, getting input needed for the *"long-range transit plans*." As a result, more input from the community was being integrated into the GP. The collaboration between planning and PH also helped in developing new questions and areas for collaboration. The elements for TD action collaborations are all in place.

Lambert indicates that the outcomes include decisions about *"where we're going to put density … where you're going to need to provide transit going forward …also looking at things like street cars*." The transformation to a true TD collaboration occurs when completely new topics come up for consideration. After the physical plans for transit and development are established, then new issues arise, such as *"it turns out those are generally the neighborhoods where we don't have access to quality grocery stores and we've got poverty issues and crime issues and…some air quality concerns along the freeway, children who have asthma and those kinds of things*."

The TD action collaboration has changed the nature of the GP update. It had been a process that was almost exclusively focused on zoning issues, with at best a peripheral relationship with PH-related concerns. Now, it is a process in which physical changes to the BE, social equity issues, and active living agendas have become essential elements.

Lambert mentions an upcoming major collaboration with PH ("Building Healthy Communities") that is funded by the California Endowment.[17] He describes the project as a ten-year grant to look at *"access to healthy foods, healthy living, community organizing, and all kinds of educational programs"* for which PH is central. The grant was obtained by PH and several non-profits, but the planning department wanted to be involved because of *"the issues raised, where there are aspects of the physical plan that need to be addressed to deal with some of the issues that you guys are trying to take on*." He describes the project as a collaboration in which his department is following the lead of PH.

Lambert describes the process for this new collaboration, which will begin by establishing communication and trust and performing the initial cost-benefit assessment: *"we haven't even had the kick-off meeting yet. That kick-off meeting is going to be in August. So who all's going to be involved is still sort of taking shape. We're all excited about it. We all think it's a great idea but who all and how involved is still sort of unknown*." Activities that have taken place include organizational meetings and information gathering by the participants. Under the guidance of the PH

[17] The "Building Healthy Communities" project is described as a 10-year, $1 billion program of The California Endowment where 14 communities such as East Oakland and Richmond and others across the state are taking action to make where they live healthier. Some of the areas being targeted include: improving employment opportunities, education, housing, neighborhood safety, unhealthy environmental conditions, and access to healthy foods. It was slated to start in 2010. (Source: http://www.calendow.org/healthycommunities/pdfs/BHC_Overview.pdf)

department, planning has provided *"information, letters of support, documentation, maps, those kinds of things, mostly through emails*." Finally, in a few months *"we'll all sit down together and kind of figure out – just do everything we want to do*." Regular meetings and communication across the disciplines are contextual factors that characterize TD collaborations.

Geographic proximity aids in developing TD collaborations. PH departments in California, as has been noted previously, generally operate at an organizational level different from planning departments. Most PH departments are at a county level, while planning tends to be at a city or local level. The City of Long Beach, however, is an unusual case in that it has a City Health Department. Lambert attributes the relative ease of collaboration to this fact alone. *"We're lucky that we have a public health agency here in the city, so that makes it different; now that we do have that, how do we coordinate with them and make sure that we're working together?"*

When discussing mandates to involve PH in the planning process, Lambert characterizes mandated HIAs as probably less useful than report cards with actual metrics. He feels that HIAs could become another hurdle that does not help with meeting objectives. Rather, it would be more effective to measure the success in meeting goals, and involve the community in that process. An example relates to the goal of increasing physical activity. In conjunction with the changes in the built environment, the community could organize walks, bicycling, etc. These activities could be measured, and the communities would get feedback on how well they are doing in these areas. Demonstrated improvement would be an incentive that could increase participation. Long Beach has many community associations that could be asked to organize these efforts. Lambert also mentions a separate effort that could smooth paths toward meeting goals – performing blanket EIAs in certain areas and for certain projects before the developers apply for permits.

Henderson

Henderson describes his work in this area as being one of the *"most important conversations"* in which he is presently involved. It is significant that he refers to a *"conversation"* rather than a *"project."* The word choice demonstrates contextual factors that have been identified in this study as being representative of a good leader – such as, establishing communication, encouraging open exploration, and including other stakeholders. Henderson states the problem in terms of policies that inhibit physical activity. He traces the history of these policies to the 20th-century engineering focus on cars rather than pedestrians, and he believes that *"rolling back"* some of these policies would return the focus to the pedestrian. People should have an incentive to walk as part of their daily activities, and having more people walking would, in turn, *"enhance urban design,"* with increased business activity, and better aesthetics, design, and scale.

He observes that working in San Francisco makes it relatively easy to pursue pedestrian-friendly changes, because the city is based on a 19th-century grid pattern. Nevertheless, there can be an institutional barrier *"to turn over to the pedestrian because we're afraid it's going to create congestion. We're afraid it's going to tip the level of service – which is a measure of performance – into a lower grade which means, therefore, we have an environmental review issue which…ironically forces a very auto-centric infrastructure on a city that could otherwise be much more pedestrian-friendly."*

Another area of interest he identifies is the access, or lack of access, that the transportation infrastructure imposes on vulnerable segments of the population, such as people with disabilities, the elderly, and people without cars. Such groups can be unable to get healthy food, because their only options are small convenience stores (such as 7-11), essentially making them *"prisoner to whatever commercial establishments are immediately around them."*

A recurrent theme in the interview is lifestyle as the cause for many of today's health problems. *"We've shifted the health menace from sort of exterior forces that are having an outward effect on our health to a lifestyle that has created its own health menace."*

He describes the existence of *"an interesting mid-level network of people in San Francisco's city establishment and agencies that take a lot of initiative to put together connections that are often not there."* These agents may identify areas where informal collaborations can readily occur; they *"talk casually among themselves and say, you know, this is a relationship we'd like your input on."* This situation is an excellent example of non-mandated, informal collaborations that can arise among individuals in the different agencies that serve a geographic area.

The two projects he has chosen to present during this interview were both the result of formal, mandated collaboration that is structured by a network created at a higher level. Henderson is a member of the "Physical Activity Committee of the Mayor's Initiative to Shape Up." The group is identifying policies that are inhibiting health, working with the San Francisco PH department. There is a second project, the "Better Streets Project," where PH and his agency also collaborate. He comments: *"in two cases in San Francisco that's been, I think, reflected at the very top level as well. This 'better streets' plan, obviously. The Mayor's Shape-Up Initiative is another one."*

The "Shape-Up Initiative" started as collaboration between two agencies and expanded to become a larger interdisciplinary group. *"The two prime leads in the Shape-Up Initiative were public health and the Department of Children, Youth and Their Families. So those two agencies convened this very interdisciplinary group that they thought were essential to make the Shape-Up Initiative meaningful and MTA was one of them."* The MTA brought in expertise in *"traffic engineering and planning decisions that*

either enhance or inhibit these goals of physical activity and that come out of the Mayor's Initiative."

Henderson is asked to identify other areas where PH can collaborate with planners. He mentions respiratory health, mental health, and preventive health (which includes physical activity and respiratory diseases). However, he also talks about *"economic health"* and *"investment health,"* which contribute to the health of the community. In the case of mental health in a community, *"if there's no transit service there, then they're isolated. They don't have job opportunities. That leads into mental health [problems] and depression, and you lose a job…"*

Henderson is well aware of the historical progression in the involvement of PH in LUP. He mentions several times the classic connection between respiratory illness and environmental hazards, especially air pollution and emissions. Although, *"those are all sort of second-nature to us… it's just important to mention it…because we don't want to be so complacent about it, we forget that's another angle."* However, it is in the area of physical activity that new developments are occurring in the collaborations between PH and planners: *"This idea of walkability and engraining physical activity into the urban infrastructure."*

He observes that conflicts can be unintentionally generated at the legislative level, where decisions may result in conflicts with the goals of some programs. Henderson gives, as an example, the case of a Southern California legislator who was trying to prevent child care facilities from being located near transportation arterials because of the noxious fumes. Although the relocation of such facilities may be practical in suburban areas where most people drive, in urban areas *"where the transportation arterial might actually be the transit arterial, and therefore you need walking distance between the transit depot and this child care destination, what you're doing is you're making it harder for people to use transit at all. So that was a heavy-handed initiative that actually undermined good public health."*

Other examples of conflict that he describes include some communities in the Bay Area that may self-identify as being progressive, but *"don't really get it*." These communities include places where *"the idea of pedestrian access is a meandering sidewalk that's kind of a decoration along the front of some berm*[18]*. The idea of gated communities – I really do believe gated communities contribute to depression and isolation – I think it's a horrific development pattern."*

He sees the environmental movement as being divided. The *"old-guard"* espouses limitation on all development, which results in low density and lack of access to non-automobile transportation. This "*old-guard*" exists in many communities, and Henderson cites *"…especially Berkeley. I mean I know Patrick Kennedy's foibles in trying*

[18] A narrow ledge or shelf, placed along the top or bottom of a slope.

to get high-density development and transit-oriented development there. I know what he's been up against." Also, *"Marin County – there's a Sierra Club in Marin County and a Sierra Club in Sonoma County. The Sierra Club in Marin County is against a rail line coming through their county because they're afraid that it will increase development and bring in people from outside the county. So what they have is a highway-oriented development pattern where development is happening at the intersections of major roads and highways, and they're willing to fight each one of those case-by-case, rather than embrace a whole different infrastructure where people can walk and take a train and never use a car. Sonoma County's Sierra Club, I understand, is much more progressive. It embraces the train, and understands that development's going to happen so why not discipline the development by putting in a different kind of infrastructure."*

According to Henderson, public health is involved in these issues because there is a clash between the *"old school environmentalists"* and more progressive ones, as in the example of Marin versus Sonoma. The divide, as he sees it, is between whether *"to accept development in urban places and protect the open space outline, or just resist development and cross your fingers for population control*."

"I think the big cities – Oakland, San Francisco, Berkeley, San Jose even – get it. They understand that you need to sort of make small blocks. A lot of pedestrian-alternative routes, of emphasizing pedestrian movement over cars. Slowing cars down, and viewing congestion as good. Congestion as an instrument to traffic control."

"Congestion" is, in fact, another area of conflict. Henderson states that congestion is actually a factor that means success in PH and planning collaborations – where congestion may result intentionally from actions taken – yet congestion in itself is seen as a problem by many people involved in planning. *"We are punishing cities for congestion, but we all know that the best places to go have to be congested and a lot of people embrace congestion as a sign of success, but that's still not a mindset for a lot of people in the Bay Area. So, I see that you don't even have to go to Iowa. You can just go to places like Dublin…"*

Furthermore, he cites places such as *"Marino Valley. I've got to tell you. It wins awards for being a well-planned community. It's all about gated communities, cul-de-sacs, and segregated land uses, all of the things that are just horrible ingredients. Simi Valley is another place. I think it's got to breed some of the most unhealthy lifestyles for children. You see depressed adolescents. They're isolated. They need cars, and because they're depressed, they're drinking, so you have drunk adolescents driving cars, and you have very segregated land uses, and you don't have sidewalks, and all the orientations of the buildings are through the big parking lot entrances. Yet these are considered idyllic communities."*

Instead, he suggests that we look to small towns that are successful in creating healthy, livable communities, such as Arcata, San Luis Obispo, and Davis. *"These towns*

have a grid, but they're small town. They're not urban, and yet they have this kind of 19th-century feel to them that is actually holding up well by today's standards."

Differences can arise because of the geographic levels at which agencies are organized. San Francisco is unusual in that *"we are a city and a county."* However, in other places, PH may work at a county level while planners work at the city level. In San Francisco*, "I see the Department of Public Health as a peer. I don't see – I don't have a county."* In other places, *"public health decisions are made at county level that are somewhat oblivious to – potentially oblivious to – local jurisdiction-level issues."* This disconnect can result in situations where a health department is dealing with both incorporated and unincorporated areas ,and where *"you have towns that are so widely divergent – Los Gatos and Gilroy – I mean how can one county!"*

The complex system can cause potential problems, which Henderson expresses as follows: *"…take Orange County, we think of it as a white, wealthy county, but there's a huge Vietnamese population there; there's a strong historical Latino population there. Widely divergent income levels and very different demographics in one county, and I just don't know enough about Orange County to understand how their County Health Department can navigate Newport Beach versus Santa Ana."*

Lonner

The interview took place in Lonner's office, located in the same department as Charles Henderson's. It is not clear how Lonner's position relates to Henderson's. She started the conversation by explaining the special situation of the MTA, as compared to similar agencies around the country. San Francisco's MTA is much larger and controls more aspects of transportation: *"There isn't really an agency quite like ours...where we manage the public transit system, MUNI, as well as the entire transportation network. Within MTA we have a bicycle program, pedestrian program, traffic calming, parking management, traffic engineering, and all the other aspects of our roadway and of our transportation system, our network."*

MTA's broad responsibilities allow it to implement projects *"from the planning stage through design and detailed design, engineering and then, we oversee construction. Sometimes our crew does the construction; a lot of time we hire contractors, but we manage and oversee the construction and then we're responsible for maintenance. So we really have the whole spectrum."*

She makes a clear distinction for the MTA, defining it as an *"implementation agency,"* rather than a planning agency, such as the city's planning department, or a management agency, which is how she describes the transportation authority. At the MTA, in contrast, *"we are an implementation agency and we get to, like I said, get to be involved from the very beginning through maintenance. And so, although I'm an engineer, I do planning, I'm involved in planning, and that's why the pedestrian program*

was selected to work on, first the pedestrian master plan, and then that became the better streets plan."

The Better Streets Plan started with separate projects being planned by different agencies. The MTA was *"leading an effort to develop a pedestrian master plan, similar to pedestrian master plans in Berkeley, Florida, Sacramento…pedestrian master plans: they set policy, have design recommendations, they also would come up with about a twenty-year list of capital projects that we would implement based on this pedestrian master plan."* Meanwhile, *"city planning, working with public works and with the public utilities commission, were working on developing a streetscape master plan; they were looking more at landscaping and, uh, storm water management, ecological features – getting more out of our streets when it came to collecting rainwater. So, very different scopes, very different angles, maybe, but we're talking about the same area of our streets!"*

Therefore, she explains, *"there was a lot of overlap and in 2006 there was a groundswell of support from the public and then from our departments to merge the two documents. So from there was born the better streets plan."* This appears to suggest that the institutions became committed to the collaboration after there was recognition from the public and the heads of the departments of the synergy that would result. She describes what each agency brought to the table, with some elements coming from the pedestrian master plan, others from the planning and design projects.

The master plan is described as having a great deal to do with pedestrian accessibility issues – which from the beginning required the involvement of PH and also the Mayor's office of disability. Once the *"two documents"* were merged in late 2006, public health became involved in the new project because of the previous collaboration with the MTA. In addition, several other agencies were involved *"and I think in the end the result was a much more complete, much more thorough analysis of the pedestrian environment. It was a joint effort by seven city departments…. [The] MTA and city planning were co-leads, because of the history of the two plans. Then, department of public health, the mayor's office on disability, the department of public works, public utilities commission, and the transportation authority …so, the seven city departments met every two weeks throughout this development of the plan."*

The better streets project is an example of a collaboration that results from the merging of different ventures and a broad range of participants. It serves to illustrate how different agencies bring different perspectives that are appreciated, and sought, by other participants. It also demonstrates that the existence of previous collaborations helps new ones emerge. This factor can be illustrated by the connections between two agencies, the MTA and one section of the San Francisco PH department. Lonner begins by explaining that: *"We've always had a close working relationship with Angela…"* There had been previous collaborations with *"Angela's section, I was going to talk a little bit about some of our other projects. We have a safe streets task force, and we do a lot of education campaigns in conjunction with Angela's group, the community health*

group. So I think it was a logical choice to continue to work together on developing the pedestrian master plan."

Some degree of conflict appears to exist with other sections of the PH department: *"over the past year I've heard a lot coming out of the environmental group…they weren't involved, well, they weren't as involved in the development of the better streets plan but they certainly were in our technical advisory committee. Through the better streets plan [we] have built a better relationship with the environmental health group."* However, there is a clear acknowledgement of credit: *"Angela was the one on the coordination team. Angela's the one who helped us develop and draft part of the text of the better streets plan."*

This anecdote illustrates the importance of leadership in two ways. First, there is the influence of a leader in the field, Richard Jackson, who inspires the participants to integrate different disciplines into their plan and thereby address complex problems outside their original domain (in this case, obesity and diabetes). A project that began as a means to improve the city's streets becomes more than just an esthetic or transportation project. Instead, it becomes the means to address the concerns of a completely different domain public health. The collaboration helps guide the design choices, actions, and conclusions of the participants, while also helping justify the project. It is an example of the value added by collaboration.

The second aspect of leadership is exemplified by the individuals who, by their presence in the group, bring the perspectives of varied disciplines, help develop a common language, and inspire continued collaboration. Ebert is a representative from PH who has helped develop trust through previous collaboration and regular communication across disciplines.

Developing new areas for collaboration and intervention is identified as a key contextual factor in TD collaboration. The fact that new projects are developing demonstrates action across disciplines, and that collaboration has become a sustainable model. Lonner describes many projects that have resulted from the initial collaborations: *"The 'shape up' initiative. It's a large group of people, led by the department of public health and department of children, youth and family and then…Kaiser is [also] there. There's community groups, there's …a community group in the bay view…known as Quesada Street… so they're a partner in the shape up initiative. And there are a lot of projects and community events that are supported by shape up…because of all these different community groups and partners that are involved in shape up."* The advantage of having PH involved is that *"health is brought into these…the benefits of healthy streets and a healthy community, are brought into the community through these different events and activities."* The collaboration benefits the community.

Creating trust through informal communication is another means of fomenting collaborations. Austin (2008) suggests that sometimes dialogue *outside* work is more

productive than dialogue *inside. (Austin, Park, and Goble 2008)* Activities that allow different disciplines to become involved in areas outside their respective expertise can be helpful when developing a common language. In this case, Public Health, through the existing 'shape up' collaboration *"each year [organizes] a walking challenge: city departments and community groups are encouraged to form a walking group and then the goal is to walk the length of the California coastline. We all …have a walking group and we'll take walks at lunch or after work and keep track of how many miles we walk and they all get submitted and the website tracks how far we walk, as a city."*

The organizational structure in San Francisco's municipal government is complex. Nevertheless, close partnerships can develop between agencies if the elements necessary for collaboration are present. *"Another challenge, in San Francisco is that we have so many city departments and city offices and agencies…but I would say that public health is one of the, the closest partners that we have in the city family, and among the city departments."*

When asked about planning projects in which PH was <u>*not*</u> involved, Lonner had some trouble identifying any examples. *"So I have trouble thinking of projects where the department of public health isn't involved in some way. Maybe, like parking management?"* PH is seen as a key contributor to the development of projects, because of its experience in community participation, in obtaining *"small"* grants for community projects, and in often being the initiator of community-based plans. *"Typically there's a study or a plan…community based plan…that makes recommendations for improvements. And a lot of times its public health and Angela's group that fund some of the community efforts; she does a lot of mini-grants…so it's community health that's funding those plans, they make recommendations and then it's MTA that will implement those recommendations."* Lonner recognizes the strengths of the other discipline and allocates due credit – elements considered essential to the development of long-lasting collaborations. She concludes, upon further consideration, that *"I guess a lot of what I do with the pedestrian program does involve public health."*

A recurrent theme is the importance of individuals in the process of collaboration. When individuals connect and trust develops, long-lasting partnerships are possible. However, Lonner is aware that individual connections are not always possible: *"I have to say some people may not want to collaborate. I think I personally would like to collaborate, would like to partner. But I'm not sure that that feeling is shared by everyone, and I think that there are people that resist projects or changes or whatever… partnering takes time and effort, and I think some people don't want to spend the time or the effort partnering."*

Power issues present another aspect that must be addressed. A fear of sharing knowledge – among individuals or agencies – is a key barrier to partnerships. Lonner describes this as *"another challenge…there is a feeling of: 'this is my work' and that…certainly comes up here, I'm sure it comes up in smaller agencies, there's sort of*

jurisdictional boundaries that don't get crossed or people that think 'well that's their job, this is my job' and think 'well I'll share … the results of my work but I'm not going to collaborate in the development of my work.'"

Institutions, as well as individuals, can also be obstructive when it comes to collaborations. Lonner states the importance of *"overcoming a feeling of …jurisdiction or… intellectual property … [which] could be a challenge; personalities and institutional barriers as well."* Again, the importance of leadership is mentioned: *"Well maybe I would be willing to share with you information, but our director may not want collaboration. A lot of it comes down to, I don't' know, funding or institutional barriers that would prevent partnerships. For us sometimes, it's just the fact that we're so big it's hard to find the right person to talk to. And there may be smaller agencies where they're so small that there's no one to talk to."*

Ebert

Ebert's involvement in the Better Streets Project (BSP) stems from her expertise in pedestrian safety and community outreach, *"…it's really that community outreach piece that takes up the majority of my time. And that has provided a huge entrée into the Better Streets Plan because that's given us years of community contacts that are extremely interested in pedestrian safety which is a half of the whole plan."*

Other participants in the BSP had reported that PH was involved from the start. However, Ebert does not seem to have the same recollection of the sequence of events: "*This is a multi-agency effort, and the Health Department wasn't included in the beginning."* She sees the origin of PH involvement in the BSP arising from her own interest in community outreach. The Planning Department and other agencies that comprised the BSP had *"put out a RFP for a contractor to handle the community outreach piece of this…The Planning Department is leading the effort but – and I approached them saying, why don't you work with us? We've been doing community outreach in this area for years, and we're really the only agency that can cover the whole city. Everybody else is just neighborhood-based."* As a result of her expertise in community outreach, Ebert *"became involved in helping to manage that piece of that. So that's where I came on board."*

There can be many reasons why PH becomes involved in a collaborative project: a mandate from above, a policy decision, a legal requirement, the personal interest of the people involved, a history of previous collaborations, or because community involvement is required. In the case of the BSP, it appears that several of these reasons contributed; there are also several factors that could have hindered PH's involvement.

Ebert explains that pressure from community groups contributed toward PH's being asked to be part of the final project. *"It's a long convoluted history … The Better Streets Plan was originally going to be two separate plans that were moving forward at*

the same time in different departments. There was going to be the Pedestrian Master Plan in MTA, and there was going to be a Streetscape Master Plan at Planning, and they're really two sides of the same coin. Pedestrian Safety and Streetscape Environment, so these were actually all gearing up, getting ready to go, and like several months into it, some higher-ups decided to merge the two. …I was already pretty heavily involved in the Pedestrian Master Plan piece of it, and I was sitting on an advisory committee, and we had been meeting… so when the decision was made to merge that, all the community groups that were involved in this side said, don't forget public health. Don't forget to keep them in the loop."

Ebert was asked why she was involved in the original pedestrian part of the project (being developed through the MTA), and if there was any involvement in the separate Streetscape environment part (through the Planning department). She explained that she was involved in the pedestrian plan and became involved in the streetscape part after they merged. Was she involved because of her personal interest? Because it is part of her job description? Or, because of the support of the agencies? *"I wouldn't say support from institutions. It's my job. …mainly it's because we have a long history of working with community groups here in San Francisco and like I said, everything – almost everything is actually driven by community groups and so there's a couple of groups: Senior Action Network, Walk San Francisco – we've been working with them for years and they recognize what a contribution that we bring so they insisted that public health remain involved when these two documents merged into the Better Streets Plan."*

The project's ultimate success is dependent on developing the appropriate resources and a framework for collaboration. There are plans to achieve these objectives in a formal way, including regular meetings for the heads of different agencies, *"One of the things that is due to happen or is going to be put forward is an institutional audit of how this can be implemented … they're going request that the City Controller's Office do an audit of all the agencies that can be involved and what kind of restructuring is necessary. What are the resources …there might be some recommendations that there needs to be more interagency oversight and probably reference the director's working group. That was a direct result of this effort. That was pulled together about two years ago. It was the first time the directors of all these agencies who were responsible for Streets were regularly meeting."* PH, however, is not directly involved in the directors meetings since their director appears to have different priorities for the department. *"Our public health director is not in that… [he] is much more interested – not that I've had a personal conversation with him – but this is what I hear. That he is much more interested in things like universal health insurance and he just leaves it all to Justin and there you go…He recognizes it as a professional priority, but it's not his and so he leaves it up to others. … I do recollect them discussing inviting*

him." It seems that the director is not obstructive but is also not actively pursuing increased collaboration with planning.

The success of a project involving collaborations ultimately depends on what each member brings to the table. PH has areas of expertise that need to be recognized and utilized by other agencies. Respect for other disciplines, establishing connections, and identifying areas for collaboration are all themes that Ebert brings up in summarizing the ways that PH can have a positive impact in planning projects: *"One thing that I keep saying at all these regional and state meetings is that public health's area of expertise is not only just health but public outreach, and it's required in a lot of these planning efforts and we should be intimately involved in those. If not, leading them, getting the funds and leading them and making sure that underserved communities are adequately heard."*

There is recognition that, in order to be successful, collaborations must facilitate the empowerment of all members. Members must be respected for their knowledge and expertise, and there must be power-sharing to ensure a more equal standing within the group. In many cases, however, PH may be relegated to an advisory role, or even worse, replaced by paid consultants who might not have the same level of expertise. *"I mean the planning, getting involved in the zoning coaching, all of that absolutely. We absolutely need to be involved and give some feedback, but that still gives control to the planners and the engineers. I mean, we're advising them. They're horrible at public health. I mean, it's just atrocious some of the ideas that have been bantered about. That should be led by public health and that would create a reciprocal relationship and that funding should be shared."* In regard to the practice of hiring outside expert firms, Ebert comments: *"It shouldn't be contracted out to consultants who do not have any experience in outreach whatsoever. They're transportation management consulting firms. So that's an area that I think really needs to be fleshed out a lot more and I think that could really make public health's role much more prominent."*

Gent

Gent was asked about the involvement of PH in the BSP. He brings up several issues that led to the ongoing collaboration: *"We've been working with [Ebert] at the Department of Public Health and have a regular meeting every couple weeks. We've just been sort of incorporating it into the plan [and] into the thinking as much as possible. A lot of it has actually been outreach relating to the Better Streets Plan."* This statement demonstrates the requirement for regular communication, as well as for the development of common goals and beliefs. The activity Gent cites – the outreach component – has been cited in other interviews as a key skill PH brings to the table.

The BSP has been redefined "*not only as conduits for auto traffic or vehicle traffic but also as places where we can have a public life or social gathering space, an*

ecological function, a greening and a neighborhood character function, and also emphasizing pedestrian travel as a safe and accessible convenient way to travel." This redefinition took place in part because of PH's involvement: *"maybe through a public health plan and then a little bit of the content in the plan itself… and it's more of a high-level thing…"* This last statement suggests either a higher level of coordination or a philosophical influence.

Gent describes the origin of the BSP: *"Well, there were actually two projects about – go back to summer of '06-- there was a pedestrian master plan which the MTA agency had been working on for a couple of years at that point. And which is about how do we encourage safe walking as a mode of transport in the city. And there was also a project called the Streetscape Master Plan that came out of the Mayor's Office of City Greening when the Mayor hired Marshall Foster to do that and he pulled together some funding sources. Planning had some funds, DPW, PUC, we brought that together… got some consultants and that was focused on the design of our Streetscapes – everything from the curb geometries to the street furnishings and the trees and lighting to the Storm Water Management ideas that the PUC has been working on."*

Unlike other members of the BSP team that were interviewed for the study, Gent alludes to political pressures to develop a joint project by combining existing ones: "*There were these two processes. There was a lot of overlap. There was a little bit of – I don't know. I won't say political outcry. That's a little strong but, there was a little noise about, why don't you combine these two projects, and that's what happened basically. We pulled them together under the auspices of the Greening Director, and we decided to call it the Better Streets Plan and to really focus on pedestrian realm and come up with policies and guidelines for the pedestrian realm. And that's what we've just published…"*

Gent makes clear that Ebert represents PH in the collaboration. Another PH unit is involved in the project, but in a lesser role as a participant in *"a wider technical advisory committee, which is about fifty people from all of the different city departments that are working on different aspects of street design and use and management…and there's some other folks from the Public Health Department there, from the – I can't remember their title – but, it's Justin Kirwan's group. They've just sort of commented on various drafts…"* There are different organizational units within the PH department; the fact that another agency may choose to collaborate with one unit rather than another is one aspect in the development of a collaborative effort.

The collaboration is seen as both formal (with Ebert being part of the core group that constitutes the institutionalized aspect of the project) and also informal: *"You have a round table meeting every two weeks and we weigh in… it's more of an informal – I talk to [Ebert] about her issues or things that are coming up."* This informal aspect of collaboration occurs at the interpersonal level, and it is often a prime moving force.

Another contextual factor that often inspires collaboration is sharing a common experience, such as a conference, meeting, or interdisciplinary activity. In the case of

the BSP, Dr. Richard Jackson gave the opening speech at the inauguration of the project. This event was cited by all participants as an important event for the project – one that brought PH and the other disciplines closer together.

An important question is how do collaborations originate? Are they more successful or less successful when mandated from the top? What is the role that leaders at the top of the organization must play in order to sustain collaboration? How important are the personal relationships at all levels for sustaining collaboration? Gent answers some of these questions as they apply to the BSP. The project initially *"originated from the top in a sense to say: 'let's bring all these projects together' but there isn't anything that institutionalizes that. That says that agencies must work together, and here's the forum that they do that in. It depends a lot on the ability of us to actually get along. That if I didn't like working with [Frank], if I didn't like working with [George][19] from DPW, etc., it probably would not have continued in this way. I think it depended a lot on the personality of the staff and our ability to mesh personally."*

Large city agencies are complex organizations. Thus, effective guidance from the top becomes an important requirement for successful collaboration. In the case of the BSP, top-level guidance was present for some aspects, but lacking for others: *"There was, when we started, the Director of City Greening, who was in the Mayor's Office, who pulled everyone together initially. That was [Gregg] who left for Seattle a couple months later, and there was sort of a void."* The new director: *"wasn't quite as present, and I don't think was going sort of make that happen, and then there was another void. So for just a long time there really wasn't a lot of centralized leadership to make it happen, and then both the projects sort of had to have a life of [their] own."* Ebert perceived some strain on the project as a result of a lack of leadership, *"People are there because they want to be there but, it's been frustrating at times because you kind of want direction from the top saying, you guys are going to do this!"*

The complexity of city agencies can also become a barrier to collaboration. Ebert sees his own agency, the planning department, as being much smaller and more focused than the PH department. *"We're a pretty small department relatively speaking. We have maybe 150, 200 people now. But, compared to the Public Health Department or the MTA or the DPW, I mean, those are huge departments with various wings…"* The size and complexity of the PH agency leads Gent to express doubts as to whether there is direct support for Ebert's role. He also speculates that there could be some competition, or overlap, within PH regarding involvement in different planning projects. In describing the support from the PH leadership, Gent says: *"How far up does that go in public health? I don't know. Does [the director] have any idea about the Better Streets Plan? Probably not. I really don't know. That's a much larger department whose main mission*

[19] Names altered for anonymity.

is not really focusing on this type of thing but, it does have a wing that is more interested in pedestrian safety, environmental health measures, etc. where there's more of an overlap."

When asked specifically to identify barriers to collaboration and the possible success of the BSP, Gent cites some internal problems (such as a complex organizational structure, and conflicting cultures and institutional agendas) and some external barriers (rising from community objections to the project). The BSP has been presented to the community several times, and in general: *"The public likes it, right? I heard you're going to make my streets better, you're going to make them walkable, etc. There are some people who may see this as anti-car or 'taking my parking space,' things like that. But, at least in the outreach we've done that's a tiny minority…"*

The complexity resulting from the interaction of different agencies, with their differing cultures and agendas, is much more of a problem: *"There's a lot more challenges in terms of the interagency work and trying to get all the agencies on board with some of these ideas. A lot of which represents changes to how we might build or design or maintain streets today, because we have a long history of entrenched standards, and they all have a reason. There's someone whose job it is to keep a lookout for that and make sure it happens that way but, the big picture gets lost sometimes."* He expresses some frustration with the ways in which a positive development can, in turn, lead to a negative one. For example, when people notice that the traditional way of planning streets *"isn't resulting in the type of streets you want to see,"* then there is a need to *"change some of these standards."* But, when suggestions for change are made, then issues can be raised; an example would be emergency access, which might then be the cause for *"hurdles that this plan is really getting to."*

"The complicated nature of the interagency that's managing projects …it makes it difficult. [The project] has a long history with being two plans and all these different funding sources and what-not. So that makes it a very complicated project to keep a handle on and keep it linear in the sense of we need to publish a draft, and then we need to publish final, and we need to input the ideas, etc. There's a lot of moving parts, I guess." It seems that the more complex the structure of the participating agencies, then the greater the risk that the collaboration, or the project itself, will be unsuccessful.

Ways to overcome these barriers would include changing the institutional mindset and organization. This change should occur at the level of the people planning and implementing projects – and, more important, at the top level: *"We may be looking at ways that institutionally we can be set up better to more efficiently deliver street improvements. That doesn't necessarily need a change by the Board of Supervisors. There could be better organization among the directors of our department, figuring out a way for us to work together."*

Other changes present a greater degree of difficulty, because they may involve complex political decisions. *"If we want to make specific code changes or adopt this as*

part of the general plan – which is a possibility – you've got to go to the Planning Commission, you've got to go to the Board, etc. So, it could become an adopted city policy but, it's a fine line between a standard and a guideline right now…and we have parse through that and figure out…what should that flexibility be versus what type of requirements should we make." When the implementation of a project becomes more difficult, the strength of collaboration is weakened and the outcomes become less certain. In this case, many of the goals that PH brought to the project may be jeopardized by the ultimate feasibility of changing zoning codes or adopting appropriate standards and guidelines. The planners may be forced to revert to their more traditional planning role, which might not be as oriented toward PH's objectives.

Anderson

Anderson's county is distinctive in that it has a history of working to improve the community. But, ironically, Anderson reports they had done very little *"community-based planning"* before a director decided such planning was important. Here again, there is evidence of the effect of leadership on setting the agenda and the shaping the role a department will play. Anderson came on-board at that time. For her first project, she *"started the pilot community plan which is in a community about twenty miles east of downtown called Hacienda Heights."* This type of plan is like a General Plan, but it is created specifically for an unincorporated community. A community plan, however, is not mandated like a GP. It provides a tool for planners, but its use depends on the *"resources available in the Planning Departments. There has to be a certain level of readiness in the community. There has to be funding. There has to be buy-in from the other different political offices and so forth."* The community plan can include a PH component for a specific community, a set of tools that shows what *"a lot of the 'healthy places community' thinks that they need to be… [what] it takes is a champion inside the Planning Department at a high enough level to make sure that the language stays strong and that the commitment stays there after it goes around and around."*

Collaboration with other departments was a key aspect of Anderson's responsibilities: *"My responsibilities were project management, working with other departments or working with the community, for doing outreach, designing exercises and the materials and sort of bringing the community along and to really collaborate as partners on laying out the goals and then specifically getting to the level of talking about what policies would help us reach those goals and what actions would implement those policies and breaking it down in that way."* In this quote it is possible to identify aspects of TD action in practice: other disciplines, community involvement, and buy in from the top (the Board of Supervisors).

In her work, Anderson has found the PH department to be cooperative and also a resource provider: *"The Public Health Department in L.A. County is, I think, fairly*

progressive, and they're really, I think, they're really doing some pioneering stuff there that we were happy to kind of tap into and incorporate into this community plan."

In order to facilitate better collaboration, Anderson identifies the need for the PH agenda to have representation in the planning department: *"I'm sort of the health person in the Planning Department*." However, differences in the organizations can make collaboration difficult unless there is *"almost a reconditioning of the leadership and management styles and priorities…"*

When determining if collaboration between disciplines is worthwhile, social exchange theory suggests that each participant look at what the other brings to the table. Anderson describes the process of collaboration as: *"they've attended some of our workshops and meetings, and some have really made an effort to be interdisciplinary, which is a very rewarding experience."* It is not easy, because *"it takes a lot of coordination*." Ultimately, the PH department can *"provide direct input. They participate in some of the activities we organize. Most importantly, they review the draft materials including the goals and policies, and they suggest language, and they can point us toward evidence or data or resources to support a position."* Planners receive value in return for an investment of time in setting up activities and providing resources for the project and collaborations.

The importance of personal contacts in different agencies is highlighted by Anderson's efforts to connect with people in the PH department. Even before she started working at the county's Planning department, she was introduced to PH professionals involved in a program dealing with health and the built environment. She met with a PH administrator and *"just sat down and talked about my interest in health and planning and at that point, nobody was going in the planning direction…or with the public health side of things so, I thought being in the County we'd be able to not only help [but also] could be working on similar projects or even bring each other in on the same project."*

PH leadership was instrumental in setting up the necessary structure and resources for collaborations. The director of the Los Angeles PH has been cited previously as having encouraged collaborations with other agencies, especially the planning department (see Brislin interview). Anderson singles out the director: *"she's been wonderful… she's been at our summit. She gets it. She wants us. She invited us to come talk to her nurses which nobody has ever done before. It was really great and after I met Mary [Brislin] and we had such a great conversation! That's not something we get to do all that often."*

Having resources allocated and a mandate are important contextual factors that promote an environment of trust among participants. The Policies for Livable and Active Community and Environment (PLACE) program created by the PH department is described by Anderson as created by *"the Board of Supervisors,"* allowing the PH Department *"to make several grants. I think five grants about a year or two ago and the*

recipients are collaborations between a community organization and a municipal organization." These grants have two components: *"A policy component and actually a project component, a physical project."* Anderson's involvement was as a member of the review committee, where she *"was very happy to do that, to provide a planning perspective."*

A history of prior collaborations – such as the PLACE program – and the presence of informal networks are both important in encouraging future collaborations. However, without resources, there are serious limitations imposed by organizational structures and bureaucratic demands. *"I think you can attach some funding and formalize it, and I know informal networks are so valuable, but they only get you so far in the bureaucracy."* The requirement that *"there is a job number for that [collaborative project] and that it is a legitimate use of your time…those are things that administrators care about."* There must be buy-in at the top; for example, a mandate such as a *"Board motion that said 'I want these five departments to collaborate and to come back with a white paper in ninety days or a hundred,' whatever it is…that would get it done.*" These mandates, Anderson believes, could be initiated at any level: state, county, or city.

Because she has collaborated with PH in the past, Anderson realizes the value added to a project. She is aware of what PH brings to the table, and she recounts that *"we're just getting started on a couple of new programs that are in communities that haven't had any services for years, really, and we know we want to have public health involvement from the beginning. We know that is something we are very interested in. We're definitely going to need help with outreach in communities where English is not the first language, for example. That's going to be an issue and they already have those relationships."* She cites projects similar to the local plan for Hacienda Heights.

Differences in organizational culture can also be barriers to successful collaborations. PH, by nature, has a *"culture that is not particularly time sensitive."* This factor has been mentioned as an obstacle by other planners.

Anderson observes that, for the middle bureaucracy, collaboration is simply not the way they *"are accustomed to approaching their work, or they have their roles [defined]. The people who are in those roles are not necessarily comfortable with interdepartmental collaboration or a trans-disciplinary approach."* In order to get them to change, *"commitment has to come from the top down and then…pressure from the bottom up, sort of squeeze the middle where these connections are not really being forged or appreciated*."

Mandates from the top can come in the form of legislation requirements that encourages collaboration among different agencies. Anderson would welcome such legislation as *"a way to start the conversation. A mandate definitely will start the conversation because, of course, that could be tied to funding which-- whether it's explicit or inputs it, it's definitely the direction that planning needs to be going and governance too."* An example she cites is SB 375, which by *"mandating a regional*

approach so we'd be forced to come out on our silos a little bit, not so much interdisciplinary but more inter-jurisdictional," might ultimately encourage collaborations among agencies, including PH.

PH can provide the planning department with expertise on the *"relationship between place and health,"* a connection that is not necessarily accepted by all planners. *"Public Health Department, they see this link. It's much more part of their day-to-day so they can jump right in and be part of the discussion and have some really helpful, practical [input] and they can point you towards the data to support your argument…"* There is value added by a collaboration that allows planners to support their own agendas with the contributions of PH. In return, PH gains recognition and the opportunity to include its own agenda in the community and development projects.

Barriers to collaboration mentioned by Anderson include a complex organization that can be obstructive, and the lack of resources faced by all agencies. It must be noted that the interview meeting with Anderson took place outside of her regular workday because she felt that her working hours had to be *"tagged to a job*." Spontaneous, non-mandated, informal dialogue becomes very difficult because *"It's not as easy as just picking up the phone and talking to someone about something and discussing themes and ideas – sort of that's the bureaucracy of having to tag everything to a job number. This is why I'm speaking with you afterwards [after her regular working hours]."* Attending meetings at the PH department forces her to *"pick and choose what I can do, because I think now we're a little bit understaffed, and all these sorts of resource constraints*." Anderson is extremely attuned to the issues that PH is pursuing, and she would *"love to say that I do everything the Public Health Department promotes, I'm at all the meetings and all that, and I'm sure they'd love to do more as well but sometimes it's not easy to just being there."*

Brislin

The description of the PH department reveals an extremely complex system unlike any other agency in the county, including the planning department. Brislin describes the system as follows: *"the Department of Public Health breaks up L.A. County into eight areas, and they call them SPAs…because you have close to ten million people in this area. You've got to break them up some way. I'm in [a] SPA [which] has 1.2 million in it so that's the population that we're dealing with."*

By contrast, the planning department is much more fragmented because *"each city has its own Planning Department."* Fragmentation presents a serious barrier to collaboration, because another *"SPA has like 22 cities within there, so you figure each one of those has their own planning office, so it ends up being a lot of different offices to be in contact with.*" In addition, the city and regional planning agency places *"the unincorporated areas under County Regional Planning or CRP, their acronym, and the*

CRP is over all these little pockets of unincorporated area throughout the county and some are quite large. Definitely big enough to really be considered to be a city…"

This study suggests that a complex organization is often a significant barrier to collaborations between agencies. Brislin relates that *"we've just recently started a relationship with that office – I should say, 'we' meaning the Department of Public Health and the Office of Regional Planning so that we can really advocate for those communities to get up-dated plans."* This anecdote is an example of working to overcome barriers by building on a previous collaboration (when a city plan was updated in a collaborative process).

There is a board – the Council of Governments – which reflects the SPA concept, but Brislin believes is has little regulatory power.

With this background in mind, Brislin describes the steps necessary in order to begin her first collaboration with the planning department. *"Historically the health departments have not had relationships with the cities. At least here in L.A. County, the county-level government and city-level government, when it comes to health, have really had no relationship. We really don't talk even though we are serving their residents. We don't really go through the city to provide those services, and we don't really advocate at the city level. So what's been interesting is when this whole project in South Gate came about in 2006, there was no, absolutely no relationship with the City of South Gate so we really had to just create that network first of relationships before we could even move forward."*

Her first exposure to the concept of the BE and PH came during a series of internal trainings at the department of PH: *"We had received training about the 'built environment.' We all were having this 'ah ha' moment of realizing that we could tell people to walk every day at a thousand health fairs, but if they don't walk out and don't have a place that supports that, it's redundant."* The training had been provided by various consultants – such as the Public Health Law and Policy Group, which stresses the importance of the General Plan update as a platform for PH involvement in the planning process. Brislin describes the realization that *"public health could have a voice and advocate on that level. So, my nurse manager came back to me and I was fairly new in the position and said, look for somebody doing a general plan update and let's get our feet wet. We found out real quickly that South Gate was just starting their process, that they were starting the community meetings and they were starting their visioning, guiding principles for the document and we didn't even know like who runs this. Is this the city that's running it, is it consultants? Who's running this general plan update?"*

After they learned that two consultants (Greg Sanders from Rainey and Associates, and the Transportation and Land Use Collaborative, or TLUC) had been retained by the city to perform the general plan update, they approached them to *"see if they're open to having the Department of Public Health be involved in this process and how can we advise, what expertise can be bring to the table."* They were concerned that

"they were going to be a hard sell. That I was going to have to explain why health is important and why public health could be affected by land use choices." However, both consultants were well aware of the importance of the connection between PH and planning (see Rainey interview) and eager for collaboration to occur.

This is an example of leadership buy-in and complete support for the collaboration. In the update of the GP for South Gate, the leadership, as Brislin states, *"wanted the Department of Public Health at the table and within about six months, we realized that there was some funding from Kaiser that was available from one of their community grants because Kaiser really wanted to do something that was a 'built' environment grant or land use grant and so, they funded us $75,000…"* However, she was initially surprised at how *"big they were thinking"* given that the goal was to *"create a stand-alone health element within the general plan, which was obviously non-existent before, as well as do community outreach engagement where they would have three workshops on various topics to not only teach the people about the connection between planning and health, but also get input from the people on what the issues are and how to solve them."*

What had begun as an internal departmental training to increase awareness of the relationship between PH and the BE, had grown to become a pilot project that could potentially change the way PH departments and planning departments interact throughout the county. It was a time- and labor-intensive project, which could probably not be duplicated for all cities in the county. They had determined that it would be necessary to create *"some sort of tool kit because … in order to reach at the time 22 other cities that were in [that other] SPA, we were not going to be able to put the work load into that. So we wanted to create some sort of tool kit so that we could then go to other cities and…create some kind of positive peer pressure where it's like, look, South Gate made this change. How about you, Huntington Park? You're right next door. You've got the same demographics. The same issues in many ways. You know, why can't you make this change as well?"*

According to TD theory, the identification of new interventions and questions is a hallmark of TD collaborations (Bergmann 2005). In describing their project, Brislin expresses the group's surprise at discovering whole new areas that would require interventions in the future. *"I think we were disappointed that diabetes was higher up in South Gate than it was in L.A. County. Obesity as well…this is the one that hit people really hard – we brought out the kids. Seven out of ten residents are obese or overweight…"* Using these findings they presented to the community *"little pictures of kids playing soccer. It's a big soccer community, and it was five out of ten kids were overweight or obese. [And] again, had an 'ah ha' moment where people said, wow, this is really a major issue for our community and then they were more open to, okay, how does land use play a role."*

The city's very small, overworked department of Community Development attended meetings, devoted effort toward developing their contributions, and then included the health element in the general plan. Their commitment to the process came about because of buy-in at the leadership level: *"I would say that it was the leadership within the city staff, the city administration that encouraged the planning staff to be involved*." Brislin states that a main reason the planners were involved was because *"the director of Community Development, Steve Lefever, really had a pretty strong leadership [role]…he warmed up to the idea of a stand-alone health element, and he got the general concept of asthma, unhealthy food options, obesity."* An insight gained from the collaboration was that personal experience has a true influence on the process of cost-benefit analysis. For the director of the planning department, *"He saw those connections and one of the 'ah ha' moments for him was that he had a personal family member with asthma so because of that connection it made him a little bit more open to them. Throughout this process I have found that when people have a personal face to it, they're much more likely to take it on as a cause and champion it. We had multiple examples of that throughout this, even with city council members*."

In the Five Stage Model for Collaboration, stage one consists of assessment and goal setting, where participants examine their individual and institutional goals, and assess the need for developing a collaborative relationship and its cost-benefit ratio. In the present collaboration, Brislin describes the learning curve and the other processes that occurred before the project was instituted.

"Doctor Fielding is the head of our Public Health Department. Under Fielding, he has area health officers. Each area health officer oversees two SPAs." Brislin worked under one of the physician health officers. After attending training meetings where PH and BE were discussed both the physician and the nurse manager realized that *"this was kind of something that's coming, this is going to be something that public health was going to be getting more into."* This led to Brislin's being assigned the task of finding a project for PH to get involved in, in order to gain experience. Negotiation and cost-benefit analysis was involved at all levels (individual and institutional) before resources were allocated that would allow Brislin to explore the new idea for collaboration. Interestingly, the decision *"was really done on a local administrative decision, not the Department as a whole."* The result was that *"we were kind of renegades in a way and, in retrospect, I did it really the backwards way because there were a lot of people higher up in the department that I later found out were really uneasy about me doing this…"*

In this example, it appears there was little obstruction by the institution at large (the Department of PH), despite the reservations mentioned. Indeed, a year later the department started its own collaborative program for PH and the BE called PLACE (Policies for Livable and Active Community and Environment), which is discussed elsewhere.

"Someone was really smart on that one. And that was basically the 'built environment' program within the Department of Public Health. But that wasn't created until like 2007 so almost a year after we had already started this."

Kirwan

Kirwan defines his role much more broadly than did the other PH officials interviewed for the study: *"We are a city that believes in equity, and I am in charge in making sure that we don't have environmental injustice in San Francisco. So, I guess the theoretical mandate is pretty broad, and it allows me to weigh in on many different policy sectors, including land use and transportation, and redevelopment and housing and labor policy."*

It is his emphasis on the role that PH plays in assuring equity in the arena of health outcomes – and his definition of the factors that contribute to these outcomes – that sets him apart from many other PH professionals. Kirwan is seen as somewhat of a maverick, and to some extent outside the traditional role that PH professionals play. In order to understand his approach to collaborations with LUPs, it is important to comprehend his philosophy regarding the role of PH in society.

Kirwan believes that PH must leverage its political mandates in order to achieve broader goals. An example might be using legal mandates regarding noise and air pollution abatement as ways to also support the goal of increased physical activity – in other words, using environmental health regulations as tools toward achieving other goals.

He is critical of traditional agencies, which he describes as the *"standard bureaucratic response would be to hide under the table until somebody demands that you take action on something, and then first they only respond to the sort of strict legal interpretation of the law saying 'I'm only empowered to legally enforce X, Y, or Z under these conditions.' I can't enforce that, so I can't do anything because I can't enforce that law. Not to get beyond your legal ability and not to volunteer in any way"*

He sees the role of PH as being proactive, of using the power vested in PH to make certain demands on other agencies and stakeholders in order to address the basic inequity problems that lead to such *"symptoms"* as obesity. He states that *"we're still not particularly interested in fitness. It's only a distant symptom of other things. It was first groups saying that you are poisoning us with toxic pollution from regulated sources, and what we learned there was that, okay, yes, this neighborhood had toxic pollution but it also had violence related to segregation, and the lack of infrastructure, and the lack of jobs, and the lack of services, and it was isolated from the city, and the housing quality was built to last ten years and it was already 40 years old, and so on…"* The basic problem, as seen by Kirwan, is not obesity per se, but rather the circumstances present

in an urban environment that may cause this health issue to be present. In Kirwan's view, the circumstances are for the most part societal and related to inequality and inequity.

Kirwan is a very strong advocate for Health Impact Assessments (HIA) as a means to include PH concerns in development projects. HIAs (defined elsewhere) are in many ways similar to Environmental Impact Assessments (EIAs). HIAs remain highly controversial (the topic has come up with other interviewees). Stakeholders of various disciplines do not agree on how and when a HIA should be used – and even whether they should be mandated or voluntary. Kirwan, on the other hand, states that, *"Health impact assessment is kind of like some armor for public health people to sort of legitimately enter the debate with."* Describing the *"gentrification struggles in South of Market, where people were very publicly calling for prevention of displacement of jobs and businesses for economic and human welfare reasons, all we did was tie their people values, housing and housing stability …to health prevention goals and bring that information into the public process through health impact assessment."* In this example, therefore, the mandated HIA was used to bring the wider concerns of the community to the planning process.

Kirwan cites various other examples of PH being brought into a development project by the planners or developers because of specific mandates (such as toxic pollutant concerns); then, with that entrée, PH identifies other concerns in the community and addresses them through the power of the PH agency. He views other agencies as potential adversaries in the process. *"There's the community. They weren't asking, they were telling the Health Department, 'you need to protect us.'"* The struggle emerges when the *"community is telling the Redevelopment Agency, you're poisoning us. The Redevelopment Agency is saying, come on, we want some science on this. We want some education on this, and the community tells the Health Department, you've got to go and beat the Redevelopment Agency."* At this point, the PH department enters the discussion, bringing in actual data on the pollution problem – and, according to Kirwan, also identifying additional areas of concern. He believes that it takes time to convince the other agencies that PH has something more to contribute than just the data it was brought in to supply. He attributes this to a mindset whereby other agencies are focused on only *"the present single problem. They're going to be attentive to certain types of advice for their most important problems, because most agencies are in these very reactive, very sort of immediate problems."*

In order to increase the involvement of PH in planning, the PH department under Kirwan's leadership has developed tools in addition to HIAs that allow the agency to advocate for the community. *"The efforts that were catalyzed by our engagement with displacement struggles really led to … healthy development too[s], and a whole program, a very comprehensive program of land use analysis and response."* These tools were used initially with the Planning Department, not the Redevelopment Agency.

However, he states that *"the same community groups that were engaged with planning were saying to the Redevelopment Agency, you've got to use these tools that the Health Department has developed."* He describes the involvement as *"very sort of organic and evolving and opportunistic and synergistic. It's not a one-place, one-time..."*

It appears that, in Kirwan's view, these other agencies are compelled to involve the PH department because of mandates and tools that require them to address PH concerns; these concerns are very broadly defined by Kirwan. PH becomes an advocate for certain policies, rather than a collaborator with the planning departments. There is no mention of collaboration, but rather a focus on the PH department being another player in the development and planning process – a player that has a broad agenda that is often supported by the community as a means of addressing broad societal problems.

Kirwan believes that the involvement of PH should be institutionalized through formal mechanisms. PH is *"being asked by planners or by the community to be involved for a particular reason, and we are able to then contribute more*." One of the mechanisms he mentions is the Environmental Impact Report (EIR), because *"all land use development of any substance needs an environmental impact report*." Kirwan explains that health effects analysis is a mandatory requirement within the environmental impact report, and the people in the PH department *"are the health experts in San Francisco. The Planning Department has historically utilized consultant experts on health to achieve their mandate. We came in and said the consultants are not broad enough. They're not modern enough. They're not getting the answer right. We, as the official environmental health agency say that this is what you need to analyze and the tools aren't sufficient…"* One of Kirwan's greatest contributions has been the development of various tools to analyze the impact on health of planning decisions. He has a large team *"with different expertise and different tools that are analyzing certain, I would say, high priority components for us within the environmental impact in every project."*

Kirwan describes the model under which the PH department has gotten involved in development projects. In the past, the PH department generally commented after-the-fact on development proposals. Now, they are directly involved at a much earlier stage, looking at the proposal, and, *"we red-line analysis and contribute analysis to it."* The healthy development tool created by the PH department *"has been used in not only the Eastern Neighborhoods Plan, but several other large plans. It's being used by the mayor's Office of Housing in the redesign of project housing to mixed-income housing. All of our federal project housing is being planned for redevelopment."* He believes that, because this type of analysis adds value by causing a redesign of the project, it will help institutionalize the involvement of PH in planning. Both formally and informally *"we'll always be asked to do it to the extent we're public health."*

Another example cited the redevelopment of a city housing project, where the presence of asbestos was the health concern raised by the planners. Using the Healthy

Development Tool it had developed, the PH department also identified the fear of gentrification during any relocation as a major concern of the community. Once involved, PH used its mandate to assess the risk of asbestos exposure during construction to also suggest that planners *"offer relocation in place as well as outside relocation for people, depending on what people's perceptions of it are."* PH also suggested that they *"don't talk about naturally-occurring asbestos in isolation because it's such a hot-button issue.*" In this example, the scientific analysis of the circumstances indicated that there would be minimal exposure to asbestos during construction – which in the short run would not be harmful. Rather than report only these findings, however, the PH department took the broader position of being an advocate for the community, suggesting that there should be an option to not relocate and thereby allay fears of gentrification.

There is debate within the PH community regarding a professional versus an activist role for public servants. Kirwan believes that an activist role best serves the mandate of PH.

Kirwan describes a rich collaborative effort occurring within the PH department. Several times he refers to the great diversity of staff and expertise that allows PH to analyze different aspects of the projects, *"I have a team of people with different expertise and different tools."* The collaboration and institutionalization of a team approach is occurring at a mid-level where *"staff is doing things that their bosses don't particularly understand…"* And, finally, *"what makes our work more sustainable is we have staff capacity, we are adding information and knowledge that otherwise wouldn't be there."* He suggests that if PH does not go beyond providing analysis and data, then the planners could just as well get their information from books. They *"can read Richard's [Jackson] book about public health and the 'built' environment or the LEED Report and [ask] why do I need a public health person at the table?"* PH is involved because of their expertise in such areas as air quality modeling, pedestrian injury model, pedestrian environmental quality index, etc. – but then PH very *"strategically"* addresses *"the issues we care about."*

Kirwan is aware that planners and developers may not necessarily like the approach that the PH department takes; however, he believes that ultimately they have to appreciate that these are *"substantive contributions"* that they can act upon. He says that *"whether they feel it's more work for them, or less work for them, or good or bad"* is not the issue.

Regarding the different tasks of the different disciplines, he feels that the disciplines have clear roles that they play because of their expertise. *"We are not the planner – there is this separation of planning and health*." The PH person is *"charged with the health of the population*." Therefore, PH must tell the planners that it sees a health problem, and that PH wants the planners to help with the solution. In exchange, PH will help the planners advance their project. Rather than being a collaboration (as

defined for the study), this process is instead a multilateral negotiation taking place among various stakeholders, each having its own agendas, goals, and expertise. The process is not even a true multidisciplinary collaboration, because it may not involve the joint pursuit of common goals. In addition, Kirwan states that the process has to be very public and *"on the table,"* a situation that might be less likely to produce a true TD collaboration since it may preclude the opportunity to develop an environment of trust among participants.

Negotiation, as described by Kirwan, involves taking a mandate or tool, such as HIA, and applying it to a question raised by the LUPs. An example would be telling planners, regarding *"an air pollution source. 'You're going to plan to put housing here. You either don't build it or you put a cap on the lid*.'" In another example, planners wanted to locate a Tot Land for children under a freeway overpass. The PH department said it could not be built because of the hazard to children. However, PH suggested that a basketball court would be acceptable, because it would be used by adults and there was a need for areas for physical activity in the neighborhood. The PH department never actually sat with the planners to work together, but instead brought its own findings, analysis, and suggestions to the table so as to accomplish its mission of promoting and protecting the health of the community.

Other mandates that can be utilized by PH to affect planning and development are the regulations affecting zoning and the health code. Kirwan refers to article 38 of the health code as a *"new regulation on development that said, new development shall assess air quality if it's near busy roadways and put in ventilation systems to correct it."* Food regulation, smoking regulations, noise regulations, and pedestrian safety are all examples of PH regulations that directly affect planning. These do not require that there be collaboration, but rather they allow PH to be involved in the process as a separate entity.

Kirwan provides the clearest description of the advocacy role that he embraces when he states that PH must take its knowledge and expertise and *"put it in the public space"* rather than *"working behind the scenes in collaboration."* Sometimes that knowledge is *"going to help the staff move a decision forward. Sometimes it's a check on them."* He recognizes that there is a need to negotiate. He describes having learned that giving planners too many suggestions can be counterproductive; rather, identifying priorities allowed PH to get the desired changes while leaving open possibilities to negotiate further modifications.

Many of the planners interviewed for the study commended the ability of PH agencies to involve the community in the planning process, which they felt was not an area of expertise typically found among planners. This ability was partly attributed to the high regard in which health professionals are held by the community, and because of interventions through clinics and health services. Pre-existing relationships with

community leaders and organizations provided a background and infrastructure for PH to be the *"convener"* of collaboration efforts.

Kirwan, in contrast, suggests that *"it's unlikely that the planners are going to want us to be the conveners. I think planners do see themselves as conveners in consensus building. At least academically, I mean, that's what they're supposed to do. They're supposed to bring lots of interests together and decide – I think health is one interest. So I really don't see ultimately health as the convener, at least in the planning discourse."*

When asked more closely about these perceptions that PH brings distinctive skills for community involvement, Kirwan explained that he does not agree with the trend in PH departments toward broader community organizing and community building. He describes PH as having defined self-interests that determine who *"we are*." The PH people know what is healthy and what is not, and they should make this known rather than wait *"until the community understands this before we tell them. It's ridiculous. We should be advocates for public health. That's our legitimate role, right? Let the planners balance these interests."*

PH has power because *"public health is an important social value,"* which enables PH to dictate decisions in the planning process that are part of its agenda (such as traffic calming). *"We have to know power. We have to use our power…"* The collaboration and consensus building functions are the responsibility of the planners because *"they're really not for smart growth or sprawl. They are effectively planning, which is really consensus building*." In this structure, LUPs alone must handle the planning process and its final product – which includes the input of the various stakeholders, one of which is PH.

Kirwan has faced criticism that, by acting as an advocate, the PH department has become a political entity rather than an objective professional agency. The department has been accused of opposing developments for social or political reasons, rather than for health reasons. He explains that this perception is more the result of common interests with other activist, noting for that *"the neighborhood advocates are advocating for one thing, we may have an overlap in the agenda. We have a broader agenda."* The department explains to planners and developers that it is *"not going to tell [them] not to build. We're going to tell you here is the mitigation you can employ. Or here's where you should build*."

General plans have been described by both planners and PH people as a good place for collaborations that involve PH in the planning process. Kirwan sees general plans as already reflecting what is desirable for healthy living. He feels there is little disagreement about health elements, *"school nearby, healthy foods, safe streets, not too much noise, good air quality. I mean, it's the same thing: It's healthy living. People understand healthy living conditions."* According to Kirwan, a general plan is a policy mission statement that is often not followed, and therefore the goals are not achieved.

As a result, what he sees as the true basis for PH concerns (that is, strategies reflecting his philosophy regarding PH's proper role) is not reflected in traditional general plans. The concerns include *"the growth of inequity [which] may require us to revisit. I mean, who thought that some neighborhood wouldn't have grocery stores? We didn't think that. We'd think everybody would have grocery stores. Safeway was there. But economics and segregation intervene and we don't, and so we may need to get something like that in the general plan*."

He suggests that, in the future, equity regulations will be necessary in the general plan in order to assure that healthy living conditions are applied equitably. Implementation and accountability, followed by enforcement of existing regulations, are more important than adding new subjects to the general plans. PH should be able to bring up equity issues with less political controversy, because *"we bring them as health needs of certain populations."* They raise the issues as *"differences in health needs and problems in the population,"* not as issues of historical discrimination of particular communities, a topic that would be much more politically charged and controversial.

Kirwan suggests that there is a need for a *"health movement that's outside of public health. That health movement should be placing demands on public health institutions to be doing their job."* It is similar to the environmental movement, which has moved *"smart growth"* into the public arena of planning. He sees leaders in different cities utilizing the PH system to create a health movement. HIA is one tool that these leaders, who are outside local public health institutions, are using to pursue their agenda. He feels that PH departments should be participating in this movement.

Kirwan discusses the importance of leadership in the context of a *"health movement."* These leaders are outside the PH system, but they utilize the tools provided by PH, such as the HIA. Nevertheless, the PH department *"should be leading, they should be creative, they should be experimenting."*

He explains that PH was not called in to participate in the update of the general plan for the city. PH asked to be included, but was not invited until after the plan was written. He is obviously upset at this lack of communication and collaboration, yet does not talk about how it could have taken place at an early stage. He does not suggest any means of establishing communication. Instead, he suggests that the PH department go back to the general plan as written, *"find three examples of needs in our city where the general plan says, these problems shouldn't exist. We're going to take those general plan mandates and policies and go to the Planning Department and say every time you put in a new project we want you to do these three things."* This would be an example of a mandated partnership, rather than a voluntary partnership – which is a characteristic of TD collaborations.

Kirwan sees the use of mandated collaborations as an important *"contribution"* on the part of PH to the planning process. He mentions the use of *"all the tools and the laws and everything at your disposal if you want those things. It's around figuring out –*

again, it's not having a nice place at the table. You will have a good relationship, but you'll have a relationship because you know what you want." Again, the process of collaboration Kirwan describes is essentially based on external mandates – and not a process that might be intended to grow more organically from within.

When asked to discuss the availability of resources to help the PH department pursue relationships with planning, he is adamant that they are available. When asked how many people work in the organization and the prioritization of their jobs, he responds with an example, *"how many STD's do you have? Two? Three? How many people you have working on STD's? Seven!"* He suggests, then, to change roles or jobs to cover the needs that arise. He states that this also leads to *"constituency demands,"* as in the case of bioterrorism, which shifted an enormous amount of resources (perhaps without justification) after the anthrax scare in the Senate office. He exclaims: *"Absence of leadership!"* As a member of one of the largest PH departments in the nation, he deals with a very large number of employees. This situation must be contrasted with the more typical PH department, which may consist of a few overworked employees.

Kirwan takes a very different approach to the involvement of PH in LUP. He believes that when it comes to improving the health of a community the PH department is the most capable of making decisions. For that reason he does not place as great value in the participatory process that is required for the collaborations described in the study. Kirwan also emphasizes the importance of equity in PH. In order to achieve the inclusion of equity goals into LUP, PH works as a separate discipline and uses mandates to require LUPs to consider PH concerns in its decisions. The stakeholders are separated by their roles, goals, and functions. The approach can be defined as multidisciplinary, in that multiple stakeholders come together in a plan in which all agendas are included. It is not transdisciplinary. As discussed previously, a TD approach is not necessarily better than a multidisciplinary approach. Each has advantages and disadvantages and must be used appropriately. Not all problems require a TD solution. However, this study suggests that a TD approach may be more appropriate and successful when confronting the complex problems involving PH and LUP, especially when using a participatory action model if appropriate.

In spite of this caveat, it should be observed that Kirwan has been quite successful in the use of tools like the HIA to achieve the inclusion of PH goals in development projects like Hunters Point. The question remains whether a TD approach would have been equally or more successful, and perhaps more sustainable in the future.

Bennet

Bennet identifies the establishment of the West Contra Costa Safe Community Coalition as the beginning of her experience in collaboration with city planners. The

coalition involves (in addition to community involvement) a large number of agencies and governmental entities, including: the cities of San Pablo and Richmond, West Contra Costa County, West Contra Costa Transportation Advisory Committee, and the County's Community Development and Public Works departments. In Bennet's view, in order to reduce pedestrian/bicycle injuries, it is necessary to affect the traffic pattern through a comprehensive approach that includes education, enforcement, and engineering. However, she feels that engineering is the most important factor, and that *"if you change the structure of the street so that cars are going more slowly and bicycles and pedestrians are protected in various ways, then that's going to be the most effective."*

This observation is important because it demonstrates a deep understanding of the issues involved in the planning and control of urban traffic activity as related to the design of the built environment. This and several subsequent statements made by Bennet could have been uttered by a planner rather than a PH professional. This integration of the language and concepts from another discipline into Bennet's own PH activities sets the stage for the various collaborations she then proceeds to describe.

Her interest in collaboration began with her attendance at some early meetings combining PH and the BE. At one meeting, a traffic engineer suggested that Bennet should work with engineers in order to approach some of PH problems. At another meeting, she heard Richard Jackson speak, and she became inspired to start convincing the other members of her agency so that *"whenever something – a strategic discussion would happen about our directive, I would just sort of chime in, fairly quietly really, 'I think we ought to be working on the 'Built Environment.' I said that two or three times. I think we ought to be working on the 'Built Environment.' I think we ought – you know, over the course of a year or two when these kinds of discussions would arise*."

This comment provides an excellent example of a stage one process of cost-benefit analysis, which occurred within a department and also at a personal level for the individual involved. Here, Bennet quietly and politely encouraged awareness and buy-in among other participants and the higher-ups in her agency. Meanwhile, she had started communication with other agencies and disciplines through coalitions funded by state grants.

In order to be able to pursue her interest in collaboration, Bennet sought the buy-in of the directors and managers above her. Her supervisor was convinced of the value of Bennet's ideas; she, in turn, spoke with the Public Health Division Director who also gave his full support. Later on, additional support came from the head of the department. Bennet states several times that having support from the top was essential in allowing her to pursue the collaboration. Her fear had been that her supervisors would have said that she should *"stick to direct service programs…don't try to change policy,"* which would have effectively stopped her from continuing in her path.

Bennet describes the complex organization of the different agencies and its impact on collaborative efforts. The PH agency is at the county level, but it does not

have an exact peer in planning. There is a county-level planning department, but it is involved only with projects for unincorporated areas. For incorporated areas, the county-level PH department must work with the individual, local-level planning departments (such as in the cities of El Cerrito, Richmond, and San Pablo).

What were obstacles for PH to be included during the planning stages of the GP project? Bennet has several suggestions:

- *"I think that health was just beginning to be on the radar screen of planning people."*
- *"It wasn't something you thought of first even if you're doing a health element."*
- *"I don't think that either planning people or consultants thought of health departments as having the capacity to do this."*
- *"When MIG and the…foundation [were planning the collaboration],they thought of Justin and Dick because they have a very high profile… the thing is, I mean I do care if we have a profile, but mostly I'm interested in doing local work, and we didn't yet have the partnerships with planning."*
- *"This was two-and-a-half years ago, and so we didn't yet have the partnership with planning that we needed to."*

Throughout the interview, Bennet stresses the importance of relationships. The present study suggests that this contextual factor is a key to the formation of collaborative teams. Trust must be developed in order for a collaboration to succeed, and existing human relationships are one of the best ways to develop an environment of trust. Bennet's background in social work becomes especially interesting in light of her awareness of the importance of relationships. Social work, as a discipline, stresses the aspect of trust development more than many other professions, because social workers depend on the trust of their clients (Hollis 2002).

In order to develop relationships with the planning department, Bennet started attending the Transportation Advisory Committee meetings; over several years, she established herself and her agency as a resource for planners. Finally, PH was *"written into the action plan of the West Contra Costa Transportation Advisory Committee as a player in safe routes to school funding so part of – a lot of this collaboration stuff is looking for the opportunities, asking the question – can we, you know, can we come to your meetings and showing up and actually, kind of offering something*."

The next step was to obtain a grant to pursue the education efforts described previously regarding BE issues and PH. To fund the seminars, forum, and publication, they applied for a grant through the Safe Routes to School initiative. The agency offering the grants *"discouraged non-traditional applicants, such as Health Departments, so we asked WICTAC (the advisory committee) if they would be the lead agency. We wrote the grant. We'll get most of the money and do most of the work, but they're the lead*

agency, and it will be part and parcel of what they do. So that's a major partnership, with the transportation agency."

The forum was a success. Next, they were able to invite various participants from the different agencies to hear Richard Jackson, who had just moved to Berkeley. Bennet had made an effort to meet Jackson as soon as he arrived in the Bay Area. She and her manager made an appointment to see him and to discuss potential areas of involvement at the local level. The author of this study was present at this initial meeting with Jackson, and remembers Bennet as being a pleasant, friendly person who appeared more interested in creating a personal and professional relationship rather than presenting Jackson with a specific plan. Later, after she invited him to be a keynote speaker at the forum, it became clear she had been setting the foundation for a sustainable relationship. An important aspect of Bennet's approach to collaboration is that the ground must be prepared in advance.

The forum was planned through several regular meetings among the stakeholders. The second stage of collaboration included discussions with the planners, MIG consultants, WICTAC, and the Policy Link group (responsible for introducing the health element in the GP). At this point, there was a negotiation and definition of common goals through both formal and informal dialogue. A diversity of participants and disciplines (important in TD collaboration) was sought, and a common language was in development. The scope of the project, as mentioned previously, was broadened as the dialogue between the agencies took place. Initially, the entire education project was intended to be *"focused on bicycle and pedestrian issues only, and we decided to broaden it to all health issues."* The planned publication was originally intended to focus only on bicycle and pedestrian issues, but it too was extended to include all health issues *"because we were already seeing you really can't do one thing when you're working on the Built Environment. You cannot – and that's the beauty of it – you cannot put yourself in a box, and so we began to see the paper and the forum as really the platform for the next steps in our Built Environment work, and it made sense to really talk about how the Built Environment affects all health issues, not just bicycle and pedestrian issues*."

The growth of the project and the broadening of its focus were results of the common language that developed as the collaboration goals were being defined. This creation of a new framework – as a result of various disciplines interacting – is a hallmark of TD collaboration. The realization that the complex health problems related to the BE cannot be approached doing *"one thing at a time"* is a shift in paradigm. The conventional approach is for separate agencies to be operating independently, each in its own silo. Bennet has described, in her words, *"the perfect storm"*: an interest by various agencies to collaborate in order to present a forum of ideas and education on the relationship of PH and planning; the presence of an inspirational speaker, Dr.

Jackson; an availability of funding; a history of previous collaborations and the resulting personal relationships; and buy in by participants and at the top.

The forum attracted over 100 participants, and the publication of the paper generated great interest in the topic. The success of the forum went beyond the stated goals of the organizers. The expanded scope had, in fact, brought information *"highlighting the connection between health and land use and transportation planning"* to participants that consisted of various agencies, commissions, and key staff people at the city and county levels. Just as important, it *"had put us on the map…it did something for us in terms of establishing a local profile for us in terms of doing this work; and at the same time, working on the Richmond health element was doing the same thing and really building the partnership with the City of Richmond*." Thus, a very important benefit to the PH agency – as well as personally to Bennet – was a recognition and respect of PH's mission, discipline, and competencies.

According to Bennet, a factor that facilitates the involvement of PH in planning is that the two disciplines are separately involved in similar activities through many of their traditional functions, such as working *"at the community level, doing coalitions and networks, wanting to change policy – so part of it is we're just transferring the way that we've always worked into a new arena*." She comments that expressing this particular philosophy – which is not necessarily shared by other PH departments – makes it much easier to pursue collaborations. These are examples of the development of new interventions based on previous experience (described as an important part of TD development by Bergmann, 2005), integrating knowledge from practice, and building on existing groups.

The above translates into PH's being able to help planners in their community outreach efforts when implementing such projects as the Richmond GP or the re-development of 23rd St in Richmond. PH can help bring in constituencies that, according to Bennet, planners might not be able to reach because of language or immigration-issue barriers.

Another important factor in the first stage of collaboration is buy-in – at the participant level and especially at the top. This crucial element is particularly important in the realm of highly structured, bureaucratic governmental agencies. In such systems, hierarchical structure typically does not allow much room for individual creativity and exploration. Jobs are highly defined, and deviations from the norm are rarely encouraged. In order to be able to pursue unorthodox projects and initiatives, the *"champions"* must first get buy-in from their superiors. Bennet demonstrates an awareness of this situation, mentioning several times that her efforts would not have been possible if Tracy, above her; Brunner, above Tracy; and Walker, above Brunner, had not all come to regard her efforts as benefiting the agency. When budgets are tight, this approval process is particularly crucial. Bennet explains that a characteristic of her department which allows her to pursue collaboration efforts is: *"we have permission. I*

have permission. I could go meet with the Richmond planning director probably on my own if that was the thing that made sense." However, she is also keenly aware of limitations: *"I wouldn't meet with city manager on my own, but I have permission to do this work, and I have the trust of my superiors to do what makes sense and to keep them in the loop appropriately, and bring them in when they need to be brought in…I'm not going to do anything stupid or crazy. I'm not going to misrepresent the department and… I couldn't have a meeting with a couple city council members and not tell my boss about it."* In her view, it is all part of the working relationships she has developed.

The 23rd St renovation project in Richmond was the next opportunity for Bennet to build on the existing relationships and the collaborative team. She was already aware that the project was being planned, having heard about it during the work in the community. Bennet approached the director of redevelopment to *"partner"* in the project. She knew the director from past meetings of the WITTECH. The reason given for PH involvement was to *"make sure it's safe for bicyclists and pedestrians*." However, the other reason was that PH intended to apply for another grant – and needed to partner with a planning agency for the application process. Bennet describes that the *"conversation happened as the guy was leaving town and needed to pick up his car. So in order to have that conversation, I met him at his office, drove him to the place he needed to get his car. It was a five- or ten-minute conversation. 'Does this system make sense, and will you write us a letter of support?' And he said, yes, and yes, and we wrote certain things into the grant about the redevelopment of 23rd Street*." PH did receive the grant, ensuring PH's integration into the planning process: *"they're calling us up and know that we need to be at the table."* In summary, *"we're on the technical advisory group and the steering committee for the 23rd Street redevelopment process*."

Due to the relationships Bennet has developed with planners, the PH department now looks to identify potential areas involving the BE when beginning new projects for health initiatives. PH is able to more easily start collaboration than previously. An example she describes is the *"Healthy Eating, Active Living Initiative that's funded by Kaiser, and we're part of that and we've worked with the leadership of that initiative to get them [planners] involved in some of these things."*

In the earliest stages of collaboration (specifically in stage one), it is necessary to identify potential partners. Next, funding streams must be developed (especially during the second and third stages). There is a dependency between these two contextual factors in that some funding streams can be impacted by the selection of collaborators. Bennet cites cases involving the California Endowment system of grants, which has a history of partnering with what Bennet calls *"non-indigenous"* community organizations. *"They actually consistently make a mistake in funding non-indigenous organizations to do things in communities that they're not really a part of, because they did that with Human Impact Partners and Urban Habitat. I think it is a mistake to do that."*

Baier describes her experience in regard to the naval base closure in the city of Concord. A health element was being introduced into redevelopment plans that were going to be funded by a grant from the Endowment. Bennet knew from experience that, with the Richmond GP, the Endowment initially brought in other groups and consultants but not the PH department. Problems were encountered, and only later was PH brought in. So, in regard to Concord, Bennet worked to ensure her agency's inclusion from the start. If this inclusion were not to occur, then there would be a risk that the collaboration would ultimately fail because of an inadequate understanding of the local factors affecting the project. Bennet noted that Human Impact Partners, one of the groups brought in by the Endowment for the Naval Base project, *"is a little bit in trouble with the City of Concord because… they met with the City of Concord at some point after they were already involved in the Concord Naval Weapons stuff, and told them they were going to be doing a health impact assessment, and I wasn't at that meeting."* The city agency resented being told what was going to be done in its district.

PH clearly realized the importance of communicating with all stakeholders from the earliest stages; that appropriate selection of participants was essential; and that building on existing relationships would make the success of the collaboration more likely. Ultimately, the grant for the Naval Base health element was given to the PH department. The scope of the project had once more been expanded to include activities that are common in PH but not necessarily performed in other disciplines: evaluation and feedback being prime examples. Bennet explains that *"we're getting paid to do what we do…we're getting paid to feel our way along in terms of the implementation of the health element and the Concord Naval Weapons Station, and the Endowment is looking to us to track all that and to come out with some lessons learned that may be useful to other people."*

A mandate from the legislature is another factor that can act as an incentive for collaborations at the interagency level. Whether for a specific reason, such as environmental controls (clean air or pollution), or less specific reasons, such as requiring the exchange of information (security agencies), legislative mandates act as an infrastructure for collaboration. Bennet describes an *"inter-departmental committee in county government that's mandated by the [county] Board of Supervisors to basically ensure that health considerations are included in land-use and transportation planning processes."* However, there is a built-in limit on this mandate because it is applied at the County level With PH, activity at the county level applies only to un-incorporated areas; it does not apply to cities, which is where most of the urban planning takes place.

Even without mandates, collaborations can take place; however, mandates facilitate implementation. Bennet explains that *"this is the one instance [the Naval Base health element] in which it really did come from the top, and we have to do it, and otherwise it would have been pretty slow in coming but it's working well. I mean there's a good spirit of collaboration."*

It helps to know how mandates originate, and this awareness can help guide conversations with legislators regarding the need to connect PH and planning. The mandate described above was the result of a member of the Board of Supervisors attending a meeting where Dr. Jackson and a Dr. from the SF Department of Public Health discussed collaborations in San Francisco. Some of the attendees said that they thought that such collaboration happened only in places like San Francisco. Bennet and others explained that such collaboration was, in fact, happening also in other PH departments, but in a much less institutionalized manner. After the meeting, Bennet spoke to the supervisor who told her: *"I'm going invite the health department and community development and public works to a meeting and we'll figure something out and we'll put something on the Board agenda and so he did all that; long story short, that became Planning Integration Team for Community Health (PITCH)*."

PITCH now meets on a regular basis to develop new areas for collaboration. Unfortunately, it was not given its own funding, instead becoming an added activity for the agencies involved. This situation led to problems in the collaborative process, which Bennet describes: *"after we had so many problems getting meetings together and confusion about locations and things like that, we took on the staffing. We said you know what, in order to make this work; we'll do a little bit of staffing."*

PITCH has helped collaborations progress more easily through the five stages of collaboration. In the first stage of collaboration, the PH department looked at its own goals and objectives, and *"sat down, and we figured out what does the health department want to be involved in and how are they [the planners] going to find out about it."* In the second stage of collaboration, the group identified potential areas for collaboration and developed new projects and ideas. They set in place the infrastructure for communication – so that when the implementation moved to the fourth stage, the team would be able to concentrate on the project itself. Bennet explains that *"we have identified a number of areas that we think are worth working on together and I think what may be really useful is we have developed a protocol for the health department being involved in things."* Finally, the protocol and potential projects were sent to the higher ups for approval, and to the Board of Supervisors as a report on activities. Thus, the mandate did result in specific activities that would lead to collaboration between PH and planners.

The process was greatly facilitated by the existing relationships among the agencies. *"We were already partnering with them. In fact, we partnered with our planning department, the transportation division, on bicycle and pedestrian issues from before I started doing this… it's been ten or twelve years that we've been working with that department on bicycle and pedestrian issues, and some of the same people are still there."*

The scope of action and power structure of the various agencies can determine which projects can be pursued, and at which levels. Some issues must be considered at

the legislative level, rather than at the agency or staff levels. Bennet states that the supervisor who helped create PITCH had moved on to the Assembly. Bennet now has an ally in the legislature for issues related to BE and PH. Bennet also says that some issues cannot be dealt with at the agency level, and therefore the group will *"kick some issues upstairs, which have to be dealt be at the legislative level, and I think that that's a really good function of this group."* One example would be the forced location of schools in hard-to-reach areas because of parking and space requirements, with the result being decreased physical activity from walking or bicycling to school and increased reliance on driving. Another example would be the requirements in street designs that have been intended to allow fire-truck and emergency vehicles to circulate more easily, but which are detrimental to pedestrian safety and accessibility.

A cost-benefit analysis described by Bennet indicates that the incidence of injuries to pedestrians is much greater than deaths or injuries from fires. Yet the existing design rules prevent the narrower streets and traffic calming measures that would benefit a much larger number of pedestrians. Bennet put it succinctly: *"nobody can say it's okay for some little kid to die in a tragic fire because the fire department can't get there."* The final decision on such matters rests with the legislators, who must weigh the choices of preventing one type of injury over another. However, the solid scientific data presented by PH and planning are essential to such decision-making.

Dunn

When asked about his involvement in projects with PH, Dunn states that this involvement have been very limited because PH is at the county level in Sonoma, while LUP is at the city level. (This is another instance of a commonly discussed barrier.) Dunn has an interest in PH issues, particularly after some contact with BARHI and the Sonoma County PH department.

He identifies the General Plan revision as an ideal place for PH to get involved in the planning process. *"There are opportunities to plug in at the policy level if you're doing a general plan up-date… that can manifest itself in ways like regulations about how many fast food locations you might have in a community or trying to identify land uses in certain neighborhoods where you might be able to have grocery stores or dealing with density and higher density close to transit, for example, so people have other alternatives to cars; dealing with policies related to urban sprawl so that you're trying to focus development inward rather than continuing to expand outward."*

Dunn describes the process by which any project brought to the department is routed *"to other departments for their review and comment so we'll get comments back from the water department, public works, the fire department, and police."* He explains that much of the work done in order to approve a project *"is really done before it goes to hearing, and we operate on the basis that we won't take a project to the Planning*

Commission or our Design Review Board unless we can recommend approval." PH has not been involved in this process, because no relationship with the PH department has been established. Dunn reports that *"the Sonoma County Planning Directors have actually started working with the County Department of Health. I don't know if you know Barbara Graves but she's kind of their policy and planning person and we're trying to do a project in conjunction with Sonoma State to start to establish some of those connections so that we could do that."*

At this stage, it appears that there has been some buy-in at the top – resulting in an effort to start the process of collaboration. This effort, however, seems to involve a more formal approach toward creating a setting for future collaborations. Dunn states that a similar process has occurred with other agencies – such as the Corps of Engineers, the Coast Guard, the Department of Fish and Game, and the U.S. Fish and Wildlife Service – for specific projects that involve their jurisdictions (river or other habitat projects).

Several times during the interview, Dunn refers to mandated collaborations and formal dialogue. He refers to the fact that *"a lot of the outside contacts that we make are the result of either some kind of legal requirement or a policy directive from either the Board of Supervisors or the City Council."* An important reason for such requirements and directives is fairness – developers could complain that unless PH's involvement in a development plan is mandated, PH review may not be applied equally to all plans. Put simply, the existence of formal contacts and mandates makes collaboration with PH more sustainable and acceptable.

Dunn describes in particular the difficulty in making the connection between PH and LUP work in a *"meaningful"* way. He states that planners do see the connection to health, but that the impediments are often found in institutional and legal limits. In the case of a small development in Petaluma, a limitation is imposed by the land-use patterns of the area. The development project is a small infill parcel with 11 units, and *"because it's not close to anything, people are still going to have to drive. You don't have a mix of land uses, and so some of the things that people are trying to address relative to public health are not going to be able to be addressed in that project."* So, even if PH were to be involved, its ability to affect the project would be very limited.

Coulton

The entire interview with Coulton was solely in regard to Stage 1 of the Five Stage Model of Collaboration. The conversation dealt exclusively with the contextual factors and antecedents that an individual would consider before determining if there were a need for a collaborative relationship with PH. The issues that were examined included: identifying areas for collaboration: getting buy in from leaders; defining goals; incentives for collaboration; obstructive institutions; resources and funding issues;

regular communication; partnerships, either mandated or voluntary; diversity of participants and disciplines; respecting other disciplines and agencies; and empowering team members.

When asked about her exposure as a planner to working with PH, she responded that she had not seen many PH issues considered *"in the course of planning."* She describes the two functions of planning: *"one is responding to development proposals, which are very time-limited. The other aspect of it is redoing the general plan. There is no requirement for public health as part of the general plan."* Coulton mentions that this situation may be changing a *"little bit,"* because of the new stance of the state regarding global warming.

At this point, the interviewer mentioned that there is an increased consensus among PH professionals that many pressing health issues – such as obesity, lack of physical activity, access to healthy foods, and others – can be addressed through collaboration between PH and planning. Some examples mentioned included the City of Richmond and other municipalities that were specifically incorporating health elements into their revisions of the GP. Her response pretty much set the tone for the rest of the interview.

"I think with a city like Richmond, it would make some sense to spend some resources, and I think there are other larger cities where those kinds of resources might make sense. In a smaller city, or a mid-size city, to be honest, I'm not sure that that is something I think is a wise expenditure. Our budgets are so limited now, that you want to do the basic health and safety. Going much beyond that without a clear need I think might be tough – you know, the larger cities often sort of chart the way and once they start doing it, eventually the state picks it up and makes you do it. But, absent the state making us do it, in a city like Chalmers, we don't have a lot of problems. We only have a population of 33,000, although we have a huge commercial area. But our population itself is only 33,000 and we have not had --- it's a well-off city, and we haven't had public health issues."

In making this statement, Coulton is expressing points of view that require close analysis. Her perception of the need (actually, lack of need) for collaborations between PH and planning is not uncommon, having been described by Kuiper (2009) in relation to PH agency leaders. Kuiper reported that favorable leadership attitudes toward collaborations between PH and planning involving the built environment had resulted in creating a formal job description for this specific activity, which resulted in more participants in collaboration (Kuiper 2009). Coulton's statement about the need to use resources effectively lies at the heart of any cost-benefit analysis that would motivate collaboration, as proposed by social exchange theory. Again Kuiper found that resource shortage was a prime concerns among PH leaders when deciding on collaborations with planning to address the BE (Kuiper 2009).

Given Coulton's description of the health of populations and communities where she has worked, her conclusions would be completely justified. If indeed it is the case that the City of Chalmers is a *"well-off city, and we haven't had public health issues,"* then using resources to collaborate with PH would make little sense and could, in fact, constitute a waste of resources. As Coulton describes it, the planning department and the city government in general should deal with only *"the basic health and safety."*

The second issue Coulton brings up is the fact that when larger cities identify problems and address them, then one larger result can be state-level mandates that affect communities like Chalmers. However, these mandates can also mean that a city government might do certain things that in Coulton's view are not necessary because the problems they are addressing are not present. In fact, she is bothered by unfunded state mandates that cause a city *"to make pretty tough decisions at times between having a patrol car out patrolling the streets and addressing these … longer range issues… it's very hard to justify taking money away from those essential services."* She concedes that global warming and health issues exist and are important, but that the short-term needs of a community, in particular police capacity, are a greater priority in view of limited budgets.

She can cite an example of a specific environmental problem that resulted in risks to the health of a community, and which required the PH department to become involved with planning. The problem concerned the Shell Oil refinery in Martinez, where regular oil spills were a public health and safety issue. The County PH department became involved, and Coulton indicated that the local government relied on the county to address many of the issues.

In Chalmers, Coulton has only limited interaction with the County PH department. She indicates awareness mainly of their functions for inspecting restaurants and plans for restaurants. *"We don't interact with them in terms of what's the general health of Chalmers."* Nor, does she approach any other health issues at the county level.

Given the relatively large number of redevelopment areas in Chalmers (at least 300 acres within city borders, according to their website), the issue of PH input into the planning process came up. Coulton explained that planning is highly regulated already, and that planning decisions address the design issues very clearly, for example *"there's a certain amount of shade that we require in parking lots to reduce global warming. There are locations near transit. We try to have more density near transit. There are large areas in the city that are zoned for mixed use…"* She explains that *"we look at the details of any new development with a magnifying glass. When we have a particular development – say a development's that right near a creek. We look at set-backs from the creek. We look at how the development is laid out. We may make significant changes in that development in order to maximize the future residence exposure to the creek and to keep the negative impact from happening in the creek."* However, she does

not reference any direct involvement by PH in the planning process. Any PH benefits are surmised to arise from regulations that affect design in a way that should be consistent with keeping negative health impacts to a minimum. There appear to be no active elements promoting PH issues.

What are some of the health benefits that Coulton identifies as coming from the type of planning process that occurs in Chalmers and similar communities? She cites planning decisions intended to reduce car trips and accommodate bus stops, traffic light placement, and improving car circulation by putting in more parking spaces, which ultimately decreases pollution. The origin of these regulations is the GP, the zoning ordinance, and the subdivision ordinance; Coulton explains that most of these have been on the books a long time, and that PH was not involved in creating or drafting any of them. The power of the GP and the ordinances is somewhat limited because, as Coulton explains, if a developer meets the requirements then the planning department essentially must to approve the project. The subdivision code provides the one area where the city could have more control of health and other issues. Coulton explains that a *"subdivision is what the law calls a privilege not a right. So you don't have a right to be able to subdivide. The fact is that if you deny a subdivision, and there's every justification or every reason not to deny it, then you'll get sued and ultimately you'll have to approve it."*

In her assessment, Coulton is expressing the view that the way development takes place in a city is dependent on the laws and regulations that are embodied in the GP and zoning ordinances. According to her, these are derived from *"the police power of the cities. It could be changed at the whim of a council, so if a council wanted to add some of those things [PH concerns] in as long as they weren't excessively burdensome or arbitrary."* However, it is clear that such concerns have not been taken into account through direct involvement with PH. Any PH benefits are simply incidental by-products of regulations instituted by legislators and planners. These benefits, as described by Coulton, are essentially environmental benefits that keep water clean (her main example is a development near a creek) and measures that facilitate driving so that pollution is minimized. She explains that any other issues, if present, would be dealt with on an individual basis, one development at a time, using *"the other kind of analysis which is really dependent on the location and lay-out of the subdivision."*

Subdivisions are regulated within the framework previously described by Coulton. However, there seems to be no mention of the smart growth elements described by planners in other cities. She does leave open the door for PH elements being incorporated into future planning, saying that cities like Chalmers *"might look more at a public health kind of issue, and of course you could go back and change the zoning ordinance if you wanted."* In looking at actual developments in the City of Chalmers, it was noted that most are essentially the same the sprawl design that has been taking place for decades. None of the developments reviewed seemed to

incorporate New Urbanism or Smart Growth ideas. Although specific obesity statistics for Chalmers are not available, a review of available statistics for the County shows that overweight and obesity are very significant problems in areas classified in the same category as Chalmers.

Coulton is the Executive Director of the Chalmers Redevelopment Agency, which is headed by the Redevelopment Programs Administrator, with the City Council as Board of Directors. On the planning side, Coulton explains that *"I let the Community Development Director run building, planning, and engineering*." She therefore empowers others to run the departments, while being involved in the higher decision making level.

The interview questions tried to probe more deeply into her attitudes about the hypothetical presence of a champion within her department, someone interested in pursuing collaborations with PH. She stated that the decision as to whether to allow such collaborations would be up to the director to whom she has delegated the running of the department. Coulton would become involved only if such efforts to incorporate PH issues into the planning process resulted in either unreasonable demands on developers or delays in the approval process. The term "unreasonable" would be defined as opposition from either the developer or the community. The hypothetical example Coulton provides is this: if, for a health reason, the planner demanded that a development be split into five parcels instead of three, so as to increase density, then *"I probably would say to the Community Development Director, there's no way the council will approve five units or six units. You need to go back to the developer's original proposal which was three."* So, in practical terms, any demands to change the existing design guidelines would be seen as a barrier to collaboration with PH; hence, it would seem that collaborations are unlikely to occur.

Another issue is presented by limited resources, which requires that certain day-to-day functions of the planning department take priority. If a planner were collaborating with PH, and this collaboration in any way impacted those routine functions, then Coulton would expect the human resources to be reallocated: *"If I had planners that were off doing a lot of public health work, and we weren't going to meet the state deadline for getting a housing element again, I would be going to the Community Development Director and say, wait a minute, this housing element has to get done. So it's either a resource or an unreasonable issue generally*." Speaking in practical terms, limited resources would appear to make it unlikely that any PH collaboration with planners could take place.

Coulton suggests that a possible way to promote collaborations with PH would be to have educational initiatives for government agencies. She suggests that super-agencies like ABAG (Association of Bay Area Governments) could do seminars and training to raise the consciousness of PH issues. She speculates that many cities would first need to buy into the concept before anything major could take place. She cites as

barriers the lack of resources and, as important, the lack of interest from the *"general public"* in regard to spending money on something they would not perceive to be a problem. Coulton states that a place like Chalmers, which does not view itself as having an obesity problem or an asthma problem, would be very reticent to spend money on PH issues[20]. *"You have to sell that to the public as to why that's a benefit…one would have to tell cities why it's in their self-interest to do it*."

An argument that many other planners give for having PH at the table with planning is that health arguments can be very powerful in changing design guidelines and development projects. In Coulton's view, however, PH arguments carry some weight, but their impact is minor when compared with planning arguments. If a suggestion for increased mixed use in a development was made based on PH concerns, Coulton states that *"I don't think it would be that persuasive but saying to the city; 'there are all these reasons you want to be an area that's zoned mixed-use, for example, that's near a bus stop, a major bus, like a DVC – the council said, fine. We'll make that mixed-use because we understand the planning rationale for it. If you were just to say, we think everybody would be healthier if you had mixed-use, that's not enough of an argument, I think*." In Coulton's estimation, there are ample reasons to propose changes in design guidelines or development objectives by working solely within the planner's discipline, so that *"you don't need the public health argument."* The PH discipline does not add value to planning processes, and indeed may prove detrimental because the collaborations could take away resources from the agency's stated mission and duty.

The first and second stages of collaboration often include the emergence of champions from among mid-level positions, and these champions may arise with the support of the upper levels of the organization. This study has found various examples of planners going into a planning process already armed with some level of PH collaboration in order to promote ideas that address health issues through planning. Coulton, in contrast, sees a serious risk in this approach. A planner that championed PH issues *"risks being seen as kind of rogue planner if they're initiating it at the mid-level. A top- down approach is more effective in the sense that the Community Development Director understands, goes to a seminar, and thinks it's a great idea, starts talking to the staff about it*." This perspective, in part, leads to her proposal that ABAG sponsor

[20] A review of available statistics from the California Health Interview Survey (CHIS) for the year 2009 shows that in the Claris Urbanization category 3 which corresponds to Chalmers the percentage of overweight adults is 36.2% (31.6 - 40.8) as compared to 31.2% (26.1 - 36.2) in more urban areas. Rates of obesity are 18.0% (14.4 - 21.6) and 24.3% (19.6 - 28.9) respectively for suburban and urban areas. It must be noted that Chalmers has a very small minority population compared to other equivalent areas that is reflected in the obesity rates.

seminars to increase the awareness of PH issues in the planning community and government agencies.

The main reason why Coulton does not believe that a mid-level staff member could be effective in addressing PH problems in a place like Chalmers is because *"in a city that doesn't have those problems, it's not as obvious."* However, it is different in a city like Richmond where they *"[probably] have an obesity problem. I know they have an asthma problem,"* and therefore the planner is *"a hero for bringing in an idea that needs to be addressed*."

As stated before, one of the main purposes of TD collaboration is to address the complex problems of health in the 21st century. Coulton points out that if those problems are not perceived as being present locally, then there would not appear to be any reasons for collaboration. This perspective is particularly true in an era of dwindling resources. The resources available should be used to address other local issues. These issues might not present significant challenges, and Coulton appropriately believes that they would are unlikely to require working outside a single discipline or agency.

The complexity of agency organizations in California is often cited as a barrier to collaboration. Differences in jurisdictional levels are most frequently mentioned as being complicating factors. Coulton, in contrast, believes that such coordination is common and not necessarily difficult. She cites various examples, such as roads, which require coordination with CALTRANS at the state level. Another example is the East Bay Regional Park Districts, which greatly impacted the City of Martinez, but *"it's not something that has been particularly difficult to deal with."* Sewer and water agencies are also cited as entities with which coordination can be straight-forward.

It must be noted that none of these examples are truly collaborations in the sense of those being explored in this study; rather, these are examples of interagency functions that have been defined and set up for specific reasons. Although these functions are addressing important issues for communities, they are not dealing with newly identified problems or working in new ways. None of these examples would fulfill the basic definition of TD collaboration with the purpose of addressing such emerging, complex issues. (This is not to say that these interagency functions might not benefit from new approaches or new ways to improve their core activities, but these scenarios would be outside the scope of this project.)

Coulton describes mandates, especially unfunded mandates, as one of the main ways that state agencies can force city governments to act in certain ways. An example she gives is the Water Resources Board, which demands that all streets be swept in order to avoid trash ending up in the sewers. This mandate is, in fact, at odds with the Air Resources Board, which is trying to prevent more pollution from trucks, which would include street sweepers and other maintenance vehicles. Coulton is exasperated that *"we literally can't afford …$400,000 this year. We don't have that money, and I don't know who to please…it's not that we don't want clean water, but literally, we would be*

laying off police officers … or laying off other staff here in order to meet the clean water [mandates]." She suggests that the only way PH would be able *"to get in the game-- if you want to get in quickly instead of doing it slowly over time – is to have some sort of state agency"* that creates mandates or adds elements within EIRs that would require cities to address PH concerns.

Coulton adds that she probably wouldn't be pleased to see this approach. Coulton provides this reason – cities like Chalmers have little experience in implementing recommendations resulting from EIRs. Cities are not in a position to form internal teams familiar with these issues, and so they usually need to bring in consultants. (It can be assumed that a similar concern would extend to mandates through HIAs.)

Coulton's concerns regarding unfunded state mandates could be addressed by creating dedicated funding streams in conjunction with such mandates. She suggests a tax similar to the tobacco tax, which would be directed specifically to PH-planning collaborations.

The discussion turned to examples of collaborations in which PH became involved in the planning process after having learned the language and function of the planning agencies – and was able to contribute ideas toward improving development plans. After hearing descriptions of such projects, Coulton responded: *"I think it's an okay idea in theory, but I think in practice, it would cost more money, which theoretically you could charge the developer for. I think cities like their sovereignty and just having – it would depend on where the public health person was from. If it were from the county, they would be very much mistrusted. Most cities mistrust counties."*

Coulton's comments describe a system in which it is difficult to develop trust; a lack of trust is a serious barrier to collaboration. The situation as described, in regard to Chalmers and its county, would appear to be the opposite of the situation found in Riverside County. In Riverside, the development of trust motivated relationships among mid-level staff members, these relations led to the support of the agency directors, and the result was a sustainable collaboration. Coulton identifies many of the barriers to collaboration that have been discussed: lack of funding, lack of trust, lack of respect for the other discipline and mission, complex organizational structures, obstructive institutions, lack of buy-in at the top, and so on. It is essential to overcome those barriers in order for a collaboration to evolve; according to Coulton, a pressing PH need must exist in order for this to occur.

A more thorough analysis of the health and built environment variations between a community like Chalmers and those investigated in Riverside County would go a long way to establishing whether there are in fact major differences in health-related problems. The results of such an analysis should either support or disprove the assertion that the perceptions about the existence of these problems are the barrier to collaborations.

Coulton attributes the distrust between county and local agencies to more pervasive political divisions. The root cause, observes Coulton, is that the politicians themselves do not trust each other: *"politicians at the county level and the politicians at the local level often don't like each other…. The county doesn't trust the cities, and the cities don't trust the counties. In most places I've worked, counties don't make much of an effort-- they're quite large, and they don't always make an effort to make themselves attractive to individual cities."* Coulton perceives an environment of distrust and resentment permeating all levels of government and resulting in an absence of incentives for collaboration.

In an effort to better understand Coulton's views about the jurisdictional levels of the various agencies, the interviewer asked if a local health department would have a better chance of collaborating with a local planning department. This situation is hypothetical for Chalmers, which does not have a PH agency of its own, but it is the situation in some nearby communities, such as Berkeley.

Coulton replied that she could not respond to this scenario, because she believes that local PH departments are a mistake. The PH mission is better accomplished at a county level, while planning is better done at the local level. This division of responsibilities, however, is also a source of mistrust between the agencies: *"It's a Catch-22*." The PH department is seen as an obstructionist agency, because of the difficulties it creates through its restaurant permitting and inspection functions. *"A new restaurant coming in has to go through County Public Health, and it often takes nine months. So the city goes out and talks a restaurant into coming in, and they're all excited about it, and the restaurant is bleeding money because they can't get the plans checked through the county…. when you say County Public Health to people in cities, what comes to mind is, 'oh yeah, those are the folks that won't check the plans for the restaurant we finally got here.'"* Thus, Coulton sees an essentially adversarial relationship with county PH agencies. It is important to note that Chalmers does not have community clinics and only limited social services – and these are precisely the elements that seem to engender goodwill toward PH.

A more affluent community like Chalmers does not provide opportunities for public health to come in and create the grassroots relationships that can be found in less affluent communities. Through other interviews, this study has found that those grassroots relationships can be appreciated by planners, who find them valuable for development. In contrast, the planning agency in Chalmers views PH as a function that obstructs good ideas for development. The perception is that if PH were to be included in the planning process, then it would be likely to create new mandates that negatively affect progress. In fairness, it must be noted that the county-level PH agency does not appear to have tried to change that perception – for example, by approaching the city-level planning agency in Chalmers, seeking to create bridges and start communication.

In several cases presented in this study, planners and planning consultants attended meetings in the PH department where discussions took place about potential areas of collaboration. (Examples include discussions of the obesity epidemic and the creation of walking or bike lanes, the better streets project in SF, the location of schools in new communities such as Mecca, etc.) When asked if she might see such possibilities for her agency, Coulton stated categorically that *"I'm having a hard time envisioning what kind of meeting the public health [department] would have… trouble envisioning what public health would be doing that in this city, for example, that you'd want to send a planner to talk about."* Coulton again states the lack of health issues in Chalmers that the PH department could address (such as obesity / lack of physical activity). Furthermore, because Chalmers is essentially built-out, opportunities to influence development are very limited: *"we've got limited land and it's either going to be commercial or residential. We have almost no industrial."*

In Coulton's view, PH could have effect if there were industrial land development opportunities, because by its nature, industrial development involves health issues – there are, among other factors, environmental issues and location concerns of compatibility and use that could use PH input. This point of view – that PH is essentially concerned with the narrow functions, such as epidemics and environmental health – is somewhat at odds with the expanded functions concerning social and community issues that many PH departments now espouse.

It is not within the scope of this study to look deeply into this debate, but it is important to point out that not all professionals are comfortable with an expanded scope of action for PH departments. PH involvement in planning may be seen as a step toward social engineering concepts that some consider to be outside the professional mandate established for PH agencies. On the other hand, as discussed above, some see the roots of modern PH as originating from the efforts to eradicate diseases through the manipulation of the BE and the social environment in an ever-expanding ecologic model (Figure 2). For a contrasting viewpoint, see the San Francisco Department of Public Health, where the director sees social justice issues as the rightful purview of PH.

An opposition to the ideas of New Urbanism or Smart Growth, which are generally supported by public health, also seems to permeate city government institutions in Chalmers. Coulton mentions that some mixed-use initiatives have been proposed in regard to redevelopment of some traditional strip shopping malls. The idea of adding some housing is welcomed, but there is also great concern among some city council members that this housing would result in increased density – and density is seen as a problem because of car-related issues: *"We don't want extra traffic because even if it's mixed-use, then by having the housing over … the commercial, you have fewer trips theoretically. But if you add a lot more housing, you're just going to get more trips. So I mean we have to be honest about that. More intensity brings more car trips and more traffic…."* This direct linkage of increased density with increased car use is at odds

with the view in larger cities, where becoming less car-centric is a major goal and where increased density is generally seen as a means to decrease car use.

Coulton is very much aware of this controversy, having previously been Assistant City Manager in other small cities. In one of these cities as she describes it, *"the community – at least the downtown community – wants nothing to change."* They essentially oppose any move towards increased density and mixed use. On the other hand, she contrasts this city with another one further north, and also with Chalmers. She describes the city as *"willing to take a risk and go very intense, and I think Chalmers is somewhere in between. They're willing to be dense, but they don't want it ugly, and they don't want a traffic problem, and they don't feel that's kind of looming over everything else."*

In summary, Coulton presents herself as an effective and pragmatic city manager who is confronting the realities of limited resources and shrinking budgets for city agencies. The idea of collaborating with PH is not one that she supports, based on her experience with the county PH department (a relationship that can be characterized as essentially adversarial). She is not aware of any specific needs that would require PH involvement with the city of Chalmers (which, in her view, has no immediate PH problems). The actual running of the planning department is left to staff, and there are no obvious incentives to seek collaborations with PH. The legislative and other city functions offer no clear interest – indeed, more likely, active opposition – to collaborative efforts that could require reallocating resources without evident necessity. PH should not be involved in social engineering, even for the *"greater public good,"* especially if such activity would be likely to result in limitations on the local community's use of resources. *"You could say public health is everybody's problem, but the need is a little bit different depending on the size of the city and the circumstances of the city";* thus, state mandates to the cities may be intended *"for the greater good,"* but they are often untenable because they are generally unfunded. PH should be involved primarily with infectious disease and environmental health problems (its standard roles in recent history). Chronic disease, to the extent that it may be present in a community like Chalmers, is viewed as an issue to be addressed by clinical medicine, not public health.

Coulton summarizes her view on PH collaborations: *"Unless the state made me do it, or offered me money to do it, I wouldn't put up the resources because this community, as far as I know, does not have public health issues, and I think I would know. I mean it's actually a pretty healthy community, and if I thought there were a problem then maybe I'd say, okay, take resources away from A and put them to B. But I haven't seen anything that would tell me, and the planners haven't said to me, 'oh my God, you've got this huge asthma problem and we have to deal with it,' then I'd say, 'oh, yeah, then we ought to include that.' But if I don't have any evidence of it, I wouldn't seek it out because remember, whatever I did, I'd have to take resources from something else."*

Sanders

Sanders has been much involved in incorporating PH arguments into the planning process. Sanders describes how his firm, as consultants, always includes a health and sustainability element when creating a General Plan for a city. They *"just do it as part of our work, so we're doing planning work, we bring in the health and sustainability aspects whether we're asked to or not."* They use data compiled by the county – especially Los Angeles County because of its comprehensiveness for the examples discussed – in order to incorporate *"those ideas and the information in the 'existing conditions report'; we always do mapping of the physical 'built' environment and tie that to health."* Sanders argues that using PH as a basis for recommendations in the planning process is a good idea because *"it's one of the things that people don't argue with when you say this, 'it has a health impact' – and so that's why we do it just as part of our business*."

Sanders is involved in a new project to develop a health element for the General Plan of El Monte, not updated since 1991. Because El Monte does not have a PH department, the city's Community Services Department (CSD) is filling the PH role in the GP process. *"So the Community Services Department is really where it's being run out of, and they run the Senior Center and the Meals on Wheels Program, and so it's more health-related but there's no Health Department."* The vision for the new general plan is described by the city as *"El Monte is a vibrant and safe community that respects its historical and cultural diversity and strives to provide a high quality of life through well-designed neighborhoods, quality education, park and recreational amenities, economic and employment opportunities, and a healthy environment."*

Sanders sees PH and sustainability issues as *"two sides of the same … when you think about the sustainability, the health, liability, smart growth, essentially the development pattern that you get is essentially the same."*

In Sanders's experience, collaborations between planners and PH agencies can be started by different people or agencies, depending on the project. Some collaborations were due to funding from the CDC (the LEED ND [Leadership in Energy and Environmental Design] publication on PH); in the case of Riverside County, collaboration was started by the County department of PH. The latter resulted from Sanders's previous involvement in a project in the City of Chine, where he had met David Burnam from the PH department. (As it was noted before, previous collaborations are a powerful motivator for new ones.)

Sanders describes the projects in which he is involved as taking *"a series of relatively clear steps. One is sort of issue identification. The second is policy development. And the third is really the crafting of the element itself, or crafting of the policies, writing it up."*

In the Riverside collaboration, Sanders suggested setting up the *"Healthy Community Working Group."* This consisted of a multidisciplinary group of about 30 people that included staff from various county departments, as well as some *"outside agencies that were very active in the county in promoting health."* A reason he decided to include so many possible stakeholders is because, at the county level, there is very little communication among agencies. The county staff is *"so big and diffuse that I felt you couldn't actually mention anything about the Parks and Rec if you're the Health Department without bringing the Parks and Rec Department on. You couldn't talk about safety, public safety, without the Sheriff and Fire. And so we tried to get all those people to the table, educate them on why we're doing this."*

Bringing people to the table before the project starts is a process that Sanders describes several times during the interview. This process is an important element in all types of collaboration – and especially in a TD transformation. The participants should establish a common framework even before the project is initiated or planned. This common framework prevents conflicts that can arise in a multidisciplinary approach, where participants bring their own fully formed ideas to the project. He describes the process as *"a series of meetings with them, and they helped to guide the work that we did."* Much of the actual work of obtaining data and writing policy elements involved the consultants and the PH department working closely together, resulting in a project that *"was really a collaboration."* Sanders adds that it was an iterative process.

Another project led by Sanders involved the City of South Gate (the same project discussed by Brislin). In this interview, Brislin's anecdote describing how the PH department became involved is repeated. In the case of South Gate, *"we were working on the general plan there, and the Health Department [Brislin] called us and said, 'hey, we know you're working, you're the consultants working on the general plan, you may not know but we're the Health Department, and you may not know, but there's this connection between health and built environment.'"* Sanders finds this amusing because he felt that *"the person who was calling didn't actually – she's actually a friend of mine now – she hadn't actually done her research and didn't really know who she was calling, because if she'd gone on the website, she would have seen all this public health stuff but she hadn't done that and so she was sort of calling blind saying, hey, would you be interested? And we sort of jumped and said, well, yeah, great you're calling us."*

This anecdote illustrates a reason why a lack of communication often exists within collaborative projects. There is no established way for agencies to collaborate across disciplines; therefore, individuals face barriers that can include their own ignorance of what may be occurring in the other agencies. In this example, the ultimate collaboration was particularly successful because the consultant was well aware of the function that PH can play in developing a general plan, and the PH department was ready to assign people and resources to the project. The initial, somewhat awkward communication did not have any negative impact. The collaborating groups were able to

recruit a non-profit (TLUC), and with its help, obtain a Kaiser development grant. *"It really became a partnership with the Health Department, us, the City who essentially sort of welcomed the Health Department with open arms, and then this non-profit. We did three public workshops."*

The County PH department was not involved in two other projects mentioned by Sanders – the South Gate and Murietta projects. Sanders attributes this contrast to the fact that some planning departments *"are more with it and want to incorporate health. There are some Public Health Departments who are really pushing for it and creating Healthy City Coalitions and educating and going out and being very pro-active and that's what Mary was trying to do."* However, partnerships between a public health agency and a planning agency are very seldom seen. He mentions a new project in Mountain View, where the city is using grants to set up a partnership to work with the county.

Missed opportunities for collaboration, disrespect for the agency mission, and a lack of boundaries occur when *"you have actual public health folks trying to do planning, which I don't think really works. There are other times where people who are planners are going off and doing the public health work without the public health folks, and I don't think that works either."*

Sanders brings up the importance of individuals taking the lead in creating collaborations. He recounts how in Riverside, the relatively easy establishment of collaboration occurred because of the personal friendship of the PH person and the planner involved. If there had not been a personal connection, then the collaboration might not have happened. At South Gate, the people leading the collaboration were instrumental in the success of the program (aided by resources from external grants). When there are pre-existing personal relationships, trust is more easily established because there is a feeling that *"this is someone we like to work with, and we both agree this is a really good thing, and there's no kind of turf issues – versus some places where you go in and there's no communication."* The process of establishing trust is a recurrent theme when discussing collaboration.

Organizational complexity – as evidenced by the different levels of the agencies – is also a factor in the cases that Sanders describes. The Riverside project was made easier by the fact that it was *"a county department working with a county department – County Health and County Planning – and so that makes a difference because they both have the same bosses with the Board of Supervisors."* When levels are different – such as with a city agency and a county agency – the possibility of barriers is much greater. The city planning department may perceive that the *"County Health Agency is trying to push a city to make land use decisions and transportation decisions, and that has to be done very delicately. And so that's why the relationships are critical."*

Informal communication and non-mandated, voluntary partnerships are seen as good ways to establish trust and help collaborations succeed. The barriers to trust that Sanders describes in this regard would include an initial skepticism because agencies

"don't like anyone coming in from outside and telling them how they should use their land. They don't even like the Regional Transportation Agency telling them what their roads should be like in the city, even regional roadways going through a city."

It is easier for collaboration opportunities to appear in a process that is *"open and able."* Sanders believes that a GP represents just such process because *"here is this long-term visioning process, and it's open to anybody to participate, and so the door is much more open for the Health Department to come in and say, look, let's talk about how health can be part of this."*

The education of planners and PH professionals provides another tool that can facilitate collaborations. When asked if this training should occur at the university level while professionals are getting their degrees, Sanders answered that *"it has to be applied. You know, it has to be people who are actually out doing the planning practice."* He described a project he had proposed to the leaders of the PLACE program, which was to organize a series of one-day trainings where the *"right folks"* would be in one room and new areas of possible collaboration could be identified. Meetings would occur in a safe environment, where the participants would not feel pressure to react – as might happen in a mandated training scenario. PLACE would provide the infrastructure for the meetings – the funds, facilities, equipment, and so on – and the consultant (Sanders) would facilitate. Sanders believes the result would be that: *"some cities will probably be interested in taking it further and some won't, but I think the public health side has to understand what the planning process is and how they can plug into it without just jumping in and stepping on toes."* He describes cases of well-meaning practitioners creating conflicts with other disciplines after returning from meetings (such as Partners for Smart Growth, where *"people go. They hear. They get excited. They go back, and think they know how to do it better").*

Perez

She describes the early years as a period when *"public health folks really weren't on board yet,"* and it was mostly *"at the very high level we were saying that public health needs to be at the table and telling our planners 'you should go and talk to your public health folks.'"* This direction was initially met with resistance within PH departments, which generally did not see a role for LUP in improving the health of communities. As Perez describes it, *"they had to understand first the landscape of that whole new world that they were going to start to really intervene upon."*

Perez identified areas where PH agencies were trying to address problems – such as physical activity and walkability – but were not equipped to develop collaborative projects with planning agencies. As part of a small grant program from the state, she was able to offer *"to develop a series of trainings…and some tools… for public health departments."* Contra Costa, Shasta, and Los Angeles were the first grantees of that

program. She describes how there was a lot of capacity building in PH even before the *"big money came to the table."*

Her contacts are mainly with PH departments, where she educates and trains the staff to understand the planning process and the ways to use it in order to achieve PH goals. She explains that PH needs to understand the levels at which planning typically works, especially the regional transportation agencies or MPOs (Metropolitan Planning Organizations). One of her main activities is *"facilitating when they're ready to sort of sit down and have a conversation with the planners or the transportation professionals. Sit down and help lead a round table…how can you start to collaborate and help them just formulate some initial ideas about how they can work together."* These comments are in line with suggestions that preparation before collaboration is an important factor in its ultimate success (Stokols et al. 2005; Klein 2008b).

The start of communication and the development of a common framework and language *before* a major project are incentives to TD collaboration. In this example, for the first stage of collaboration, the PH department uses a consultant to help with an implied cost-benefit analysis, with setting goals, and with defining strategies and roles before proceeding to the second stage. The consultant then facilitates initial meetings that help the collaborating disciplines develop a common language, build trust, and establish formal dialogue and regular communication.

In Perez's experience, however, it is essential to start the training with only PH, rather than with the multiple agencies. She believes that otherwise, the PH people *"really would be [in a] deer in the highlights situation"* when put in the same room with planners. She believes to first *"get them up to speed, so some of the terms are familiar and some of the processes."* (An example is to provide a basic understanding of a General Plan.) After PH is comfortable with some planning basics, she follows up with *"training with the planning, transportation, and public health folks."*

Geographic factors are important considerations when different agencies interact. Perez believes that the success of the Shasta case was, in part, due to the fact that *"they have a decentralized PH Agency, and so what happened is that many initiated it."* The head of the PH agency was able to allow the more locally based staff to pursue the project. Perez believes that it would have been more difficult, if not impossible, for the same process to occur in a more centralized agency. The reason is the different ways in which actors conceptualize their sphere of action. In centralized PH agencies, the actors view themselves as operating equally across the whole county, and they *"get nervous to invest too much in focusing in one city."*

More thought needs to be given to the jurisdictional boundaries of agencies that might need to collaborate. In order to operate in the realm of planning, PH should be involved at a more local level, rather than at a county level. A further complication, according to Perez, is the ignorance of some agencies about the functions of other agencies in their geographical regions. There are cases of county-level PH agencies who

have tried to initiate collaboration with county planning agencies – only to discover that county planning may have jurisdiction over just the unincorporated areas, not the cities or towns. At first it might seem logical that two agencies operating at the county level would collaborate. But, in this case, the two do not have equivalent boundaries for their jurisdictions. If the PH department is seeking to address the problems in more urbanized areas – which is likely – then they have approached the wrong planning agency. Instead, PH should be approaching multiple city planning agencies. The misunderstanding results, in great part, from a lack of communication among the agencies.

Perez mentions that there are different routes a PH department may take toward getting involved in the planning process. It can be done in a more confrontational mode – Perez cites San Francisco as an example – or it can be done in a spirit of open collaboration. Perez prefers the latter scenario. The suggestion is to build relationships over time, and start by involving PH where *"you're wanted."* There is a greater chance of creating successful collaborations if you cultivate relationships – and also show some patience for the process. Her advice to PH departments is very telling: *"eventually they're going to have to start nudging where there needs nudging, but give yourself two, three, four years to build your reputation. Start to become a known entity at the table – and you can get so much done with cooperation."*

Examples abound of a PH department – usually just one or two of its staff members – starting modest collaborations with counterparts in other agencies, and then those collaborations grow to include much larger projects. She mentions Contra Costa – specifically the City of Richmond – where the initial collaboration started among PH, the Parks department, and the Police, and then expanded to include engineering and planning. At one point, one individual in the PH department, Julia Bennet, became the *"thread between the city's departments,"* connecting not only multiple agencies but also Community Redevelopment and the City Manager.

This example leads to the topic of sustainable leadership. What happens when a person like Julia Bennet leaves the position? Does the entire infrastructure for collaboration disintegrate? Perez suggests that while *"we'd have to get passionate personalities to get it going, but then it can't be about the passionate personalities."* It is necessary to build capacity within departments, so that many individuals are working on many issues (she calls this approach "cross-programmatic"). As an example, the asthma person in Contra Costa County is also working on built environment issues. Having more people able to work outside the more conventional silos improves the likelihood that a system of collaboration will persist independently of any individual actor.

Perez identifies another area for potential collaboration for PH. Transportation has great effect on issues of concern to PH, such as obesity and physical activity. She notes that, increasingly, public health departments are working with regional planning agencies to develop blue prints that ultimately *"adopt these concepts and really integrate them into their plans; it has a trickle-down effect."* Thus, her recommended

strategy is to work closely with the associations of local governments, the MPOs, and others to make these groups more interdependent with PH. Identifying new areas for involvement and developing new interventions and questions are essential aspects of TD collaboration.

Perez points out, however, that despite all the training and education, much of the process of collaboration still does not come naturally to most professionals. They must continue to work on the skills required for collaboration, even while they are in the middle of an ongoing collaborative effort. One of the reasons is that *"it's just a whole new arena. There's no proscribed – you can't sit there and download 'here's step A, B and C with this.'"* Developing trust, a common language, and a deeper understanding and respect for the other discipline are all qualities that are built slowly – and for many people, that building occurs during the collaboration itself, rather than beforehand.

Perez describes a case (related to her by the head of a planning department) in which a staff member from the PH department *"came in with a very sort of humble approach. You know, with ideas and suggestions but also a very high dose of respect for understanding where they were coming from as the planning department."* The result of this quiet approach – rather than being more confrontational or demanding – helped set the tone for what became a very successful collaboration. It also resulted in planning's recognition that PH also deserved respect and a deeper understanding of its mission (see codes list!).

Stage 2 of Collaboration

Escobar

During this stage, there occurs a "determination of a collaborative fit, in which participants meet to exchange and negotiate potential project ideas and roles and begin to establish an environment of trust." At Riverside County, this stage was facilitated by the ongoing relationship that had developed during previous collaborations between PH and Planning. The participants describe many processes that lead to the environment of trust, common language, and shared framework.

Escobar provides an example of creating a common language and an understanding of each other's concepts; it relates to the design of pedestrian walkways. *"As an architect, I used to love winding sidewalks … because in a drawing, it looks beautiful. But she was able to educate me... before when I would go to a new area, I'd be looking for the aesthetics and architecture and design aspects of it, but now when I go to a new community, I look around. How are people? Are they healthy? If they are,*

what is it in the urban environment?" She credits Nancy with having helped her shift the way she looks at urban environments. She is now much more aware of the health implications of design decisions, such as *"why am I living across the street from a grocery store but I have to put my life in jeopardy to get there?"*

Developing a common language is a two-way process. During the second stage (and continuing during the fourth stage of implementation) the planner learns the language of PH while the PH person learns about the concepts inherent to planning. The Lakeview/Nuevo area plan and planning process project (also discussed by Burnam) was among the first major collaborations between PH and LUP in the county. The project was initiated by Escobar, and it involved a complex process requiring *"weekly meetings with developers, and weekly meetings with committee members, Town Hall meetings, and public health was just part of the process, where Nancy would attend these meetings with me, and she started understanding the planning lingo a little bit more."* Escobar describes the education of Nancy as a process in which the PH professional started by learning the planning language and becoming familiar with planning concepts, and then became a participant in the project development itself. Initially, her specific tasks were small, such as *"can you look at this Trails Network and tell me if this works and then she would give some written comments."* As Nancy built her understanding about the GP for the area and the demands of the design process, zoning elements, jurisdictional concepts, and design guidelines she became much more active and effective in the collaboration. This is a great example of the second and fourth stages of collaboration, in which a participant helps develop a completely new framework for action while also creating a common language with the other discipline.

Escobar refers to the growth that Nancy demonstrated as she worked up the learning curve. As she mastered the language of planning, she became more comfortable being the leader in the collaborations. Escobar describes how, for the project for the city of Mecca, Nancy actually became the leader and Escobar the secondary person. Nancy obtained the necessary funding through grants for the project and asked the Local Government Commission to be the main consultants. (This example was also discussed by Hunt.) Her function and activities were prime catalysts for the collaboration; she would *"do all the work for us to make it really happen."* Escobar lists some of her activities: She organized the first stakeholders meeting, inviting 30-to-40 key players, including community members and representatives of the Economic Development Agencies (EDA), transportation, and the supervisor's office. The group then strategized with the project consultants about how best to develop the Mecca project. In order to facilitate this process, Nancy prepared the background materials for all meetings, followed up with a five-day design charette, and later with a major community local event. At this last event, Nancy oversaw both her staff from PH and Escobar's staff from planning. (Escobar had been unable to attend but felt comfortable with having Nancy organize and oversee the entire community participatory event.)

When probed further on this arrangement, Escobar describes the strength of PH's capacity for organizing community-based events, *"they have gone through this process and they have educated themselves, so they're more people-friendly, and they also bring a lot of community organization strength, which traditionally our department does not have."*

One other factor that influenced her handing over the reins of the Mecca project to Nancy was the sheer volume of work that Escobar was involved in at the time. (Her department was handling the South Valley Implementation program, the Lake Nuevo program, and several others.) This scenario illustrates the concept of trust formation, which creates strong bonds of dependency within the collaborative team. Escobar was able to use those bonds – and PH's capabilities – in order to allow her to be involved in multiple projects at the same time as the PH collaboration; *"the collaboration has been very effective in that. We respect each other professionally. There has never been that problem and we recognize each other's strengths, what we bring to table."* In making these statements, Escobar demonstrates respect for her colleague's discipline, as well as for her colleague as a person – two contextual factors necessary for successful collaborations.

Burnam

Fortuitously, the planning department had just brought in a new director who *"really believed in all this stuff, and when we hooked up, he was, oh, I was hoping someone like you guys existed!"* Burnam explains that this encouragement by planning's leadership helped move along the collaboration. Unfortunately, that director then left. The process slowed significantly because the next director brought in a different vision and priorities that were more consistent with *"old style planning."* The importance of sustainable leadership is especially crucial in agencies where, as Burnam puts it, *"we're one-deep in everything. If somebody retires or if somebody moves or somebody gets a new job, then you start from scratch. There's no corporate push."* As part of the collaboration, the PH department was invited to organize trainings for the planners, attend conferences, and speak with developers. PH presented as its main theme, *"walkability, and the idea that if people could be active then their health would improve."*

This intense communication and interaction in advance of any specific collaborative projects set the stage for a partnership among the individuals, as well as at the organizational level. Following are some contextual factors that can be identified in the experience as described by Burnam: building on existing groups, developing common language, including a diversity of participants, establishing dialogue, providing the infrastructure for collaboration, establishing trust, and identifying areas for collaboration. The last factor, in particular, was noted by Burnam. The county *"had*

updated its general plan under this guy for the first time in 20 years…we were too late to be part of that update, but now they're following a schedule...that's how we're going to institutionalize it."

Burnam is aware of the potential for misunderstanding when one discipline is collaborating in a TD manner with another. He explains (half joking) that when PH is involved in the actual details of planning *"that's not really our role. We don't know anything. We 'don't know nothing' about that."* He and Nancy say *"we know enough to be dangerous."* They have participated in much collaboration with planners, but recognize that *"we're not planners."* Respect for the other discipline and for the mission of the other agency is an important factor for success in collaboration. Recognizing what each discipline brings to the table and taking care not to *"step on toes"* are factors that lead to trust formation. In the second stage in collaboration, the partners must negotiate to determine what each can do; Burnam's recognition of his and his partners' competencies is a factor that will encourage collaboration.

A complex organizational structure is a potential barrier to collaboration (Stokols et al. 2005). In the case of the planning department, Burnam cites the existence of two different groups charged with the approval process of plans for development. He demonstrates some frustration with this situation, because although the health element is part of the GP, its actual implementation depends on the approval process that is not necessarily easy to work through. *"The challenges – I don't know what's going on now because we don't know what they're approving."* He describes a complex system, *"There are long-range planners, and then the day-to-day planner approving the same something."*

In other words, planners are approving specific plans for specific areas while also developing guidelines for the design of entire communities. These communities, according to Burnam, are usually *"little tiny rural communities that are going to grow from three thousand to twenty-five thousand people so … our Redevelopment Agency then will commission someone to do design guidelines to see what it could look like."* However, the people involved in this process *"don't really want any input so it's been a battle to cross-over. They have their own way of doing things."* There appears to be a barrier to collaboration in that the *"day-to-day"* planners are not interested in collaborating, in contrast to the long-range planners.

Burnam has developed a series of lectures for presenting his ideas about the BE to planners. These lectures incorporate many of the concepts that have been developed by city planners and applied by PH people to address health problems, such as obesity and lack of physical activity. These lectures include various cityscapes – including several in Riverside County – that he compares and contrasts. The premise that *"if you live in walkable neighborhood, you're two-and-a-half times more likely to get physical activity, you're going to weigh six pounds less, and you'll increase your life expectancy by four years"* is used to promote *"pedestrian friendly, walking/bike routes, a sense a place,*

meaning there's town squares and parks where people can – a sense of community, you can walk to the schools or bike to the schools. There's some access to health care. There's open space. Healthy foods. Fresh fruits. And mixed land use." He shows examples of well-planned communities with pedestrian-friendly streets – Winter Park, Florida or Wellesley, Massachusetts – and then a local example, where *"actually right around the corner from here. A huge pole in the middle of the sidewalk. It's still there. And they had to rebuild this whole gas station. That pole is still there."*

Burnam's passion comes through in his conversation, and especially in his command of the terms and concepts he has learned from planners and architects. Just like his counterpart in the planning department, he has developed a common language. Obesity is not just a medical problem; it has become a problem of impassable sidewalks, sprawl, and the need to plan livable communities. Pollution around schools and the resulting incidence of respiratory illness is *"part of that whole safe routes to school…because everyone's driving and nobody's walking and then they have that whole problem."* They have developed a common language where they *"talk about the barriers, the use between land-use and transportation. What's the problem? Auto dominated! Everything [caters] to cars now – no pedestrian scale."*

The time for PH to become involved is early in the process. In order for this to occur, certain contextual factors must be present – such as existing relationships or at least a history of collaboration. Institutional factors that encourage and facilitate collaborations must be in place before a project is finalized. Burnam explains *"Everyone says the answer is to have public health meet with the current planners approving things as they come by. That's three years too late to be involved in the process. You understand why? Because you have to be there before they make the design… remember, making a change that late in the process is way too expensive. They won't do it. If you're there in the beginning, and their designers design it around those principles there's no extra cost."* The second stage of collaboration, in which the participants start meeting, must occur early in the life of a project.

The theme of early involvement is one that appears many times during the interview. At one point, Burnam uses the metaphor of a patient waiting until after he has had a heart attack to take preventive actions. *"It's like people coming to [their doctor] when they're sixty-five years old and they need all this stuff. Why didn't you come to me when you were twenty?!"*

Developing a common language – a process also beginning in the second stage of collaboration – involves learning each other's terms. In the case of PH and planners (and developers), Burnam specifically mentions that they need to understand *"what you mean by having schools in the community. They know what you mean by a sidewalk. They know what you mean by bike lanes, and a park, and how to situate the parks, and where to put the different size park space in the community."* PH can also help with suggestions during the development of the designs. An example is the desire of all new

developments to have access to a supermarket. (Access to healthy food is a PH goal that overlaps with the design requirements of a development plan.) However, *"everyone wants a grocery store, but you can't have a grocery store until you have ten-thousand homes. Right? So what do you do in the meantime? Nobody could survive, so you have to find a way. Is it farmers markets? Is it this a Fresh and Easy concept, with a much smaller store?"* The resulting strategies are richer, and they result in a synergy from an early and TD collaboration. This is also an example of the *"value-added"* by collaboration, because ultimately the developers benefit by having their developments become more appealing and profitable. There are several examples of smart growth developments, such as transit-oriented developments (TODs), selling more rapidly and at higher prices, even during a recession (Podmolik 2011). This growth in TODs in California has been encouraged by SB 375 (Saillant 2010).

Burnam mentions that a way to start informal dialogue and promote collaboration is simply to *"take a planner out to lunch."* However, he also points out that in complex jurisdictions, it is often disciplines other than planning that are most resistant to collaborations.

Hunt

The types of projects in which his group is involved can be educational in nature (exposing particular groups or agencies to the concepts relating PH and the BE) or more project oriented. The latter might be a development project that requires a facilitator to create the necessary environment for the collaboration between agencies (and among other stakeholders). He listed examples of these different types of projects, which are included in the following analysis.

When mentioning some of the key participants in most projects, Hunt refers often to elected officials. (It must be remembered that the mission of his organization, the not-for-profit LGC, is in fact to assist local elected officials develop livable communities.) Many of his activities, such as organizing conferences and workshops, particularly target local governments. Hunt discusses the need to involve elected officials very early on, so that there is a better chance of later collaboration. In order to help this occur, he organizes a *"one-day training workshop with local planners, elected officials, other health folks, to just come together to talk about these issues."* Establishing communication and trust, and developing a common language are the first steps necessary when determining the need for collaboration in order to address common problems. A related factor mentioned by other interviewees (Bennet) is having an ally in the legislature. Hunt mentions that one invitation for him to make a presention came from a county supervisor in Solano who *"took up this issue sort of early on."*

Hunt describes several other types of educational projects that his group is involved in. These include comprehensive educational programs that they are asked to set up; these programs may take a month to organize and may involve multiple agencies, government officials, and other stakeholders. They are often asked simply to come to a meeting and speak about the issues involving PH and the BE. An example would be a meeting in Los Angeles County, where the health department set up a presentation by Richard Jackson on the *"health side"* and by Hunt on *"what are the changes in the land use side we want to see."* The success of these presentations encouraged several other counties to request similar presentations at their health departments.

In regard to the other type of project his group is involved in – helping set up the collaborations for specific developments – Hunt describes as an example their involvement in the community design plan for the unincorporated area of Mecca in Riverside County. For this project, they were approached jointly by PH and planning to help them *"go after a Cal Trans Grant."* Interesting to note, he mentions that this was an exceptional case in that PH was one of the initiators. He admits that in all other cases he could cite, the planning department called in his group. As was described elsewhere, the situation in Riverside was quite distinctive, due to the individuals involved. Hunt and his group proceeded to organize the necessary charettes, a type of work they had been doing for many years.

As an awareness of health issues and the environment become more widespread, there has been a shift in the focus of his work. He is asked to participate in comprehensive programs to work *"with the community residents and the planning department on: 'what are we?, what's the future of this town or city going to look like?, how do we accommodate growth and still maintain good quality of life, improve health, and create a more walkable environment?"*

In the second stage of collaboration, the participants assess their capacity for collaboration and use an ongoing cost-benefit analysis to decide whether to continue or limit their involvement. Hunt describes his role as a facilitator during this stage, with an example of an initiative at *"Fresno County, where their health department is basically exploring …what to do and how to interact, what their role should be in the county on these planning issues."* Again, the catalyst for this analysis and potential collaboration is a *"small grant from the department of public health,"* which has allowed them to organize several brainstorming sessions with the county health department, the county planning department, the City of Fresno's planning and public works departments; and also representatives from the City of Clovis, which is next to Fresno. There were more than 40 people present at the initial meetings. During this second stage, there is also an exploration as to who would be the appropriate participants and the necessary diversity of disciplines and agencies to involve. There is also an opportunity to identify areas of collaboration and develop new ideas.

The meetings were focused on exploring the role PH could play in the planning process. Subsequent smaller and more focused meetings came up with the concept of three levels of participation. The first level was involvement in changing policies, such as GPs, zoning, and other long-term guidelines. The second level was to become involved in the review of specific development plans at the local level. The third was to become involved at the neighborhood level, looking to improve the conditions of the community. This is an example of developing a common framework for collaboration. Rather than PH and planners developing their own separate plans for addressing common problems and then try to integrate them, they instead jointly explore the role of PH in the planning processes. By doing this early in the collaboration, they are setting up the necessary antecedents that will help create the ultimate success of the process.

These meetings were described as being very well accepted by all participants and as providing a place for the various participants to meet. Some contextual factors present in this example include: buy-in from the top or by the participants, building on existing groups, establishing dialogue (formal and informal), establishing trust, holding regular meetings, and providing the necessary infrastructure for the collaboration.

The great variety of agencies and participants present in these meetings is noteworthy. There were also several levels of seniority represented, which allowed for the development of relationships at different levels. Some of the people present, according to Hunt, were: the county health officer, several staff persons, a member from the Fresno planning department, a staff planner from the county, a representative from the city public works, the city traffic engineer, several representatives from the county supervisor's offices, representatives from the transit agency, and a person from the county's department of environmental health.

Ongoing communication among agencies and disciplines and an infrastructure for continued communication are two important contextual factors mentioned in the development of TD collaborations (Bergmann and Brohmann 2005; Stokols et al. 2008; Morgan et al. 2003). The existence of health grants, such as the HEAC grants or funds from CCROPP (Central California Regional Obesity Prevention Project), that target issues that lend themselves to a collaborative approach between PH and planning is a very powerful incentive for agencies to work together. Hunt mentions examples such as Kings and Kern counties where *"CCROPP has staff that's embedded in the health departments and … they had a planners' round table where once a month they brought together the planners and health people to do a lunch-time workshop on just broad issues of community design."* The grants thus provided staffing, physical facilities, food, and the organization for the ongoing communication of the disciplines.

Ryan

The importance of providing appropriate resources and the infrastructure for successful collaborations and sustainability is a topic that comes up throughout the present study and is also widely reported in the literature. An example is the Policies for Livable and Active Community and Environment (PLACE) grants, which have emerged as extremely important in the development of collaborations in Los Angeles County. These were mentioned independently by several subjects in the study. Because of its apparent success, this model is one that should be further explored as a catalyst for TD collaborations.

One indication of a progression from inter- to TD collaboration is Ryan's observation that before the grant and the resulting *"collaborative team,"* the main PH issues dealt with in the planning department related to "air quality*, we have an air quality element in the original plan."* After the formation of the collaborative team, they defined a much wider set of goals and developed new interventions and questions that were to be included in the GP.

Coincidentally, at the same time that they received the PLACE grant, a new director took over the department. The change in leadership, along with the collaboration, resulted in a marked change in the *"terms that we were using to describe what we do."* They incorporated many PH concepts, so that they were now talking *"in terms of complete streets, active living."* There was a major change in how they framed their arguments for the health elements in the GP. The elements mentioned included why they were encouraging people to walk and bike, and why they sought to build with higher density and create transit-oriented development: *"we're trying to make the argument that it's for public health reasons. It's for reducing diabetes, reducing obesity, and reducing asthma… I think that's how we're going to try to frame our discussion."*

The emergence of a completely new framework based on collaboration with other disciplines, the development of a common language, and the adoption of concepts from other collaborators are all indications of a transformation into TD collaboration. Furthermore, there is a clear evolution into an action model of TD collaboration, because of the strategy to involve the community; this strategy was fostered by the grant and the presence of PH in the team. (In this example, however, they chose to use consultants to arrange the involvement with the community rather than the PH department.)

The key role of successful leadership is further noted when Ryan credits the leader of his team, Owen Lambert, as being *"on the cutting edge on sort of these planning theories."* He believes that even without the grant, he would have consulted with the PH department, specifically with the person who became part of the team. That person was personally committed and interested in the relationship of PH and LUP, especially in the topics of healthy communities and active living. Through this

relationship, the collaboration has developed. Once more, it is at a personal level of connections and trust-building that teams and ongoing collaborations take place.

Ryan discusses in detail what he believes PH *"brings to the table."* The process that they are pursuing to update the GP requires that they involve the community and use evidence-based science. He credits PH with having more experience in both areas, and he finds them to be an asset as part of the team. Long Beach has a PH department separate from the county, which he feels is important. Having a department at the city level is unusual, but helps foster collaborations. The department is *"in the community every single day working with youth, working with the elderly and they…have a much better sense of parts of the community than we do because they are doing the nitty-gritty work, the labor intensive work of trying to teach people…"* The values of the PH department include a focus on social equity, on the neglected or disadvantaged, and on low-income communities. When LUPs present a project, the PH department is the *"first ones to say, oh, well, this won't play in a large segment of the people I deal with."*

Planners deal with *"Neighborhood associations"* and with groups that Ryan describes as *"the squeaky wheels as far as land use."* As a result, the people who are doing social work and advocacy work are not necessarily the ones that influence the decisions of the planning commissions. Ryan believes that presenting plans in the context of health matters can win support from the community through the established contacts that PH has developed in their regular activities. An example is the development of a bicycle plan, which he feels may face opposition if not supported at the community grassroots level.

The PLACE grant was awarded to the planning department because other departments opted out after considering the terms of the grant. The original applicants present at the first meeting included people from the health department, from public works, from the parks and recreation department, and even from a non-profit organization, the Bike Station. (The grant sought a policy-related proposal and a much smaller physical project, and this was not consistent with the other departments' missions, which did not include policy change.)

Because the planning department was involved in the GP update, it felt that policy change was integral to the plan. It was *"collectively decided"* that city planning would apply for the grant – and that the other departments would become collaborators as necessary. Specifically, the PH department was seen as a *"natural ally,"* and from the start a key member of the team. The person representing the PH department became a member of the group and was asked to be present at the interviews for the application as a way to *"increase our chances of getting the money"* by making a stronger application.

The momentum to apply for the grant came from the group within city planning, but had the full support of the director at the time. She was described as being involved in the application process and devoting much time to making sure the application was

the best possible. *"She stayed up to two o'clock in the morning reworking our grant to make sure it was perfect and when the Public Health Department came down to interview us, she was the one who gave the department presentation to the Public Health Department."*

Ryan mentions in passing that the Public Works department did not apply for the grant because the *"boss at the time thought that bicycling was a waste of time and money."* This is an example of the importance of leadership in creating collaborations, and of the process of cost-benefit assessment.

The grant also has helped with the continuity of the collaboration, although it is by no means institutionalized. He proposes that although PH and Planning may have *"talked anyway*," the grant provides a reason and justification for the communication.

Although the PLACE grant was instrumental in sustaining the collaboration, Ryan identifies several constraints. When the team suggested using some of the money to go into the community and promote active living by buying a *"blender bicycle"* (*"you know, a stationary bike that's hooked up to a blender and we can make smoothies"*), it was told that the grant was for a policy initiative and could not be used for interventions or marketing. This denial resulted in some resentment and the suggestion that *"the heavy-handed approach is not the direction we want to go. We want do it much more subtle, do it through cultural change."*

Geographic proximity is one of the factors identified in the literature as promoting successful collaborations. Ryan mentions that *"unfortunately the Public Health Department is located off-site so the collaboration isn't as close as it would be if they were on-site."* Proximity of other team members results in what Ryan describes as spontaneous meetings and the opportunity to *"see them on a daily basis throughout the lunch, you know, and everything."*

Developing a common language has already been suggested as a factor integral to TD collaboration. Ryan explains that before PH became involved, the planning department was using health language in the GP draft that was *"very soft and not very specific but I personally didn't know what was the proper way to describe things from a public health perspective."* He specifically asked the PH member to help them use more correct and specific terms, concepts, and data. He describes how it has been a very slow process, and *"that's an area where we're still feeling our way through this process and maybe a year from now, we might say more."*

He mentions several resources that can help with developing a common language. One is a publication called *How to Create and Implement Healthy General Plans: A Toolkit for Building Healthy, Vibrant Communities Through Land Use Policy Change* (published by Public Health Law and Policy Group and Sanders and Associates), which offers *"model language"* for the use of planners, as well as ideas about zoning and policy for health. He also mentions the Governor's Office of Planning and Research (OPR), which publishes a yearly planner book of lists and an introductory guide to

planning in California that incorporates PH elements. He considers this top-down approach to be effective guidance for inserting active living goals into GPs.

In order for a common language to develop, there has to be a shared experience either through collaboration or through education. Ryan refers to the latter when he wonders if *"growing the next crop of planners, what language, what programs and forces are at planning schools related to this topic."* He suggests that more courses in the area of PH and BE could help establish a TD approach early in professional careers. I described the course that Dr. Jackson had started at UC Berkeley, and Ryan felt that was what he had in mind.

Lonner

Lonner discusses some of the issues involved in the process of collaboration: *"one of our biggest challenges in developing the better streets plan is that it's seven city departments that are all very different…planning does the planning but they're not an implementation agency, they're also not as big… public works isn't as big but they also have operations divisions and cruise out in the field. So they're probably a couple thousand at least with several bureaus and divisions, and the work is divided among the bureaus… the various DPW aspects or roles in… maintaining, or in designing … constructing and operating and maintaining our streets are divided up in all these bureaus."* She suggests that this institutional complexity is part of the collaboration process and must be dealt with. In addition, her own agency *"the MTA is a huge department with almost five-thousand employees within the MTA, including the bus operators, the bus drivers, the parking control officers…when you look at the entire agency, we're huge."*

She describes how this complexity resulted in *"a good learning experience for all the departments that were involved to see how all the departments operate and how they function, but it was also a challenge because we had to make sure that we had all the right people involved in our technical advisory committee."* Clearly this scenario necessitated a greater understanding of the organization, roles, and goals of the other departments and disciplines. It was a way of developing a common language and opening avenues for communication between the disciplines. To accomplish this, the challenge was getting the *"right people involved."* However, given the number of agencies *("there were one or two people representing each department in our coordination team that met every two weeks"),* the group may have reached the participant limit for a workable collaborative group. Managing meetings effectively may be compromised when *"we had, I think … sixty people? As part of the technical advisory committee – from fifteen different departments, including the arts commission, the port, the redevelopment agency, a lot of the other departments that have projects in our pedestrian realm, along our streets. So it was a big group."*

In order to deal with this possible barrier to collaboration, the practice emerged of developing a common language and regular communication across the disciplines. *"It was a big group, and it was important that we had the right people at the table and we took the time to explain the policies and the policy recommendations and the design guidelines that we were developing."* Furthermore, as the project matured, the input of other stakeholders was sought, *"the first draft of the plan was released to the public on June 5th. And right now we're collecting comments."*

Before PH became involved in the Better Streets Project, there was a history of previous collaboration between the MTA and the department of PH. It developed from a mandated partnership (to address street safety) among the Department of Public Health, the MTA, and the police department. The *"safe streets task force [is] getting at the three E's: education, engineering and enforcement. And it is, I believe…Angela's group within the department of public health that does the health education. And Angela specifically does pedestrian safety."* Here, Lonner identifies one individual who has become the prime contact within the PH department for collaborations. The factors of trust, a common language and goals, and availability all explain how an individual becomes a leader for continued collaborations. That is *"the background of why we work so closely with Angela and her group."*

Each participant, each discipline, must bring to the table a set of skills that contribute to the project. These skills must be both recognized by the other participants and respected as being important. *"There [are] a lot of campaigns that we've had where we partner with the department of public health and specifically the health education group… why we do that is because Angela and her group have connections to the community, they have that grassroots sort of involvement with the community, and they're always out doing health education."* The reason *"it's a natural partnership"* is that *"it expands our reach…going through the department of public health and their contacts and their connections to the community broadens our reach into the community, which is extremely important."* Thus, the participatory nature of PH developed through decades of experience addressing problems at the community level – creating connections to the community – is an asset and a skill that helps the transportation and the police departments pursue their goals in a more effective manner.

Would having an *"embedded"* person from another discipline in the other agencies help the collaboration process? Would that person help develop a common language and shared goals? Brislin prefers the model of the Better Streets Project, *"where we have staff-level coordination teams, and there are representatives from all these departments, and each one shares their perspective, not only their perspective but they're agencies perspective. It's a way of cross training without having to send someone there."* She is not averse to having people from one agency rotate through or spend time in other agencies; however, she thinks that *"where you learn the most is in doing*

something and having a project that you can work on together, and I think as we move forward, the better streets plan is really policy and design guidelines, and when we move forward to implementation, it's important to have, or would be important to have a member of the department of public health as part of that team that is designing or evaluating or reviewing projects." Dealing with real-life, complex problems, learning from experience, and integrating knowledge from practice are all hallmarks of TD collaboration. Lonner recognizes that the milieu provided by ongoing collaborations is an important way to sustain the partnership.

Buy in at the top, institutional support, and in particular the participation of the heads of the agencies is considered necessary for the long-term survival of collaboration partnerships. Mid-level, or staff-level, collaborations are the ones that handle implementation and can be mandated and/or voluntary participation; Lonner identifies a lack of participation at the director level as *"a good example of a gap."* She explains further, *"just as we have a staff coordination team, we also have the director's working group, which is a roundtable of department directors that are involved in our streets [projects]. The director's that attend are from Municipal Transportation Agency, Public Utilities Commission, Department of Public Works, Planning, Transportation Authority, sometimes 'rec. and park', sometimes [the] Mayor's Office on Disability attends but the health department does not send a director and they haven't been a part of the director's working group."* (Henderson reported in his interview that there is a directors working group that meets regularly, with the participation of the PH department. He stated that a high-level person attends, although not necessarily the director himself. At least from Lonner's perspective, this is a significant gap.)

It is important for a leader to be visible and to actively participate in the collaboration process. The collaborations between PH and the MTA appear on the surface to be mostly at the staff level, even if in fact there is active communication at the top (as suggested by Henderson). She perceives that *"Health hasn't been there, and, although the community health education group has been really involved and we've worked with the environmental health group the…director of public health, hasn't been involved in the development of 'better streets plan', or has had limited involvement."* She admits that she does not know if he may have been involved in the plan in some way – but she notes that he has not participated in any of the events. She adds that his presence would be seen as valuable. She mentions the *"organizational chart,"* which shows numerous departments, commissions, boards, etc., all under the aegis of the Mayor's office. The complexity of the institutions can contribute barriers for collaboration. Even if there is good communication at all levels, participants may nevertheless *perceive* a lack at some level. Lonner perceives that *"there's the staff-level coordination team, and then we've had a community advisory committee. And we've also had a technical advisory committee. And we've had a lot of public outreach, so, it's not just at the staff level but that's where I'm involved*." She again mentions that she

would like the director to be more visible in some way. Her comments about the director serve as a reminder that leadership must not only buy in, but also should make its support clearly known.

What are the barriers to collaboration with the Environmental Health group? *"I don't know, in a way, you'd have to ask them, because I sort of see it as their projects, projects that environmental health has initiated and I don't know. I think when they come to present to us we make it pretty clear that we would like to be a partner in this but we don't have the historical relationship of partnership that we've had with the community health group. It's tough I think for all of us, coordination and partnership takes a lot of time and a lot of effort. And I think we're all for it. You know, we all want to partner and we do want to work together but it takes effort and time."* Effort and time are often mentioned when collaborations are discussed. Lonner states that they are willing to collaborate, but they lack a history of previous collaborations and an institutional commitment. Therefore, the collaboration does not happen.

Ebert

A telling moment is when she describes the process by which her involvement changed from a reluctant acceptance by others in the group to one of an active and welcome participant. *"I think…in the beginning, it was more about just appeasing us and then they realized that we really did know what we were talking about and this has been almost a two-year effort and by the end I think people have really honestly truly forgotten all of that and really do appreciate a lot of our input."* Through time and effort and ongoing collaboration, dialogue and a respect for the other discipline had developed. The DPH was providing expertise that did not exist in the other discipline: *"the main piece that I've been helping with is advising on what would this plan look like when we're presenting it to the general public and what kind of feedback do we want… getting underserved neighborhoods some equal say and representation because that hardly ever truly happens… we tried to do an adequate job whereas I think – in most planning efforts that doesn't really even truly happen."*

Ebert explains some of the details of how community outreach is done in SF, and how using health as a selling point would help a project to be accepted by the community. To start with, *"you can't just go and host your own meeting. You have to partner up with other community groups that have their own constituencies that help… spread out the word. San Francisco is very driven on outreach to communities and outreach to the right community groups."* However, she explains that it is a very complicated and subjective process, so that having PH involved allowed the group to *"get the most bang for our buck because unfortunately they had a minimal budget for community outreach."*

Identifying a value-added aspect was another important contribution to the project. *"I kept telling them: you know, you really need to highlight the health aspect of this because that's going to be your selling point. I mean, look at the media headlines when it comes to obesity. If you're going to be talking about the walking environment, talk about walking as a form of physical activity. Talk about walking as a way to promote eyes on the street and prevent violence and asthma…"* This approach was accepted by the group and became incorporated into the final proposal: *"as part of the ten goals, one of the goals turned out to be to promote healthy places and that language really originated all from us... making sure that that theme is incorporated throughout the whole document, which is I think pretty new for planners to think about things that way."*

The goals of the (Better Streets Project) BSP were defined by the group; they were also meant to address other initiatives, such as the Shape-up initiative from the Mayor's office. Public health brought the goal of increased physical activity and was *"really kind of looking forward to the Better Streets Plan and its implementation on how to promote walking as a form of that and so that's really been my main role in terms of the budget."*

As the plans for the project progressed, PH contributed greatly to the final documents and was accepted as a full participant in the group. Ebert describes how *"then they followed through on what policies…our feedback to Robert, which he totally agreed with, and it's going to get incorporated later is that … there is no specific one policy that's going to promote a healthy place."* PH helped create a common language that would not have existed otherwise and would have resulted in a missed opportunity for incorporating health interventions in the plan. *"If all those policies get completed and incorporated and implemented, it is going to be a healthy place... he's [Gent from MTA] going to include language."*

As PH becomes more integrated into the group, they are asked to contribute time and expertise in various committees. In spite of the fact that they cannot directly contribute to the budget, they have *"been involved in the technical advisory committee. We've been involved in the coordination team committee and this is the first time, I think, that people have really considered us as part of a viable place. Because the Public Health Department is not what we call an enterprise department…we couldn't contribute any funds, but we've been incorporated because we have so many other resources that we can bring to the table that's not financial."*

Regarding the interaction between the DPH and the Planning department, she explains that: *"our end never had much involvement with the Planning Department before this…"* By *"our end"* she means her section within the DPH. Asked to clarify this statement, she explains that there are other sections within the DPH that have had interactions with the Planning department. *"It's a mixed relationship between [the other groups] and the Planning Department so actually they were quite hesitant to get*

involved with us… So it took some time for some trust to be established between me and the rest of the group because of that. Thankfully that did happen…" When asked about some of the problems that had occurred in the past, she was very hesitant to discuss them.

What had Ebert done differently that had resulted in a very successful collaboration between various agencies and disciplines? She invested a great deal of effort to understand the needs and goals of the other people. She helped develop a common language. By reassuring them of their desire to work together, she cultivated a trusting relationship. She *listened* to them. She describes her efforts: *"Fortunately, I think that it has been somewhat subjective that I've tried really hard to understand the planners' point of view and what they need to do and how we can help and that's how I started so that they can see that we're not out to get them. And that seemed to have made them more willing to listen to us…"*

It soon became clear to other participants that Ebert had an approach to collaboration that was different from other groups in the Public Health Department, "*which actually then worked to my advantage because they wanted Public Health listed. They don't want to work with him. So I became that conduit and it's really made him angry. He's really…"* This is an important example of how even within one institution, there can be enormous differences in attitudes toward collaborations. Leadership style, communication skills, conflicting institutional agendas, lack of dialogue, sharing hostility, and a lack of trust can all be serious barriers to the process of collaboration.

Developing a common language and developing respect for the other discipline are some of the most basic steps necessary for developing collaborations, and in particular the TD model. In order to explore this topic in more depth, Ebert described what she had done in order to learn about the other participants. *"Actually it was by working on this plan, and I don't think I actually truly do understand a lot of their language, but just listening very carefully and being part of these meetings and not trying to forward an agenda when I truly don't understand what's being said and asking for some clarification."*

After listening and understanding the needs of other participants, she was able to contribute to the conversation, as an example: *"I know the history of why curb bulbs won't happen any time soon in San Francisco, and knowing that it's this debate with the Fire Department and how can we help. 'Oh, Dan Burton just published a white paper on how to convince emergency responders to get…' and they're like: 'Oh, wow, you know, there's some arguments we could use that somebody already – you know, we don't have to reinvent the wheel and…'"*

She listened, asked for clarifications, did not bring a hidden agenda, and contributed specific knowledge and skills that helped others in the group accomplish their goals. By these means, trust was built and the collaboration expanded. It worked both ways, with the people in the other agencies helping Ebert obtain a grant from the

federal government. The process of getting the grant increased the respect for the other agencies and their work.

No tools are available to help public health professionals understand the language of the other discipline, and this lack forces them to essentially learn on their own, *"honestly that Safe Routes to School grant and learning – it is a whole other language and it's been very hard because Caltrans doesn't provide any guidance whatsoever so it's sort of been a crash course and I don't know how to say it but I'm just picking it up as I go."* The realization that such tools could help collaborations may lead to agencies and institutions developing them.

However, a better understanding of the other disciplines does not necessarily occur in equal measure among all participants. To what extent have the planning and transportation people gotten to know the concerns of PH? *"Not to the same degree. I think they see the value of how public health could help them and I think ultimately people would like to see safe healthy places, but I think just from a reality perspective they're just so overwhelmed that they want to get things out the door. Whatever is the easiest, quickest way possible that helps them do that and get accepted by the general public…"* To this effect, she explains that *"if the public health argument helps with that, then that's great. But I wouldn't say that it's been like this 100% reciprocal relationship. Oh, you scratch my back. I'll scratch your back…"*

The development of buy-in, trust, a common language, and the willingness to act across disciplines and ultimately develop TD collaboration comes at a cost. It can be a tedious, sometimes slow process: *"I think selling their plan – like getting them into it and having the planners buy into that idea slowly over time – they start to actually believe it themselves. Cognitive dissonance. Right? So I think that having them write it into their plan and having them see that perspective and just letting that sit with them, they're going to adopt that attitude eventually."* She again emphasizes the importance of developing a relationship based in cooperation and trust. It is as if positive personal relationships are a key factor in collaborations, *"As long as it's, again, this positive relationship, not an antagonistic one."*

Gent

This led to questions about PH involvement. When did it start? Who participated, and how? *"I do remember – I think Angela and the Public Health Department had been working with the MTA on the pedestrian master plan and that sort of came over. She wanted to talk to us. She had some money for various outreach activities. We did some focus groups and basically – I'm not exactly sure --whether she sort of formally budgeted on this process… but, she's basically just been involved and that's been our interaction."* An important point about this response: The collaboration with the DPH through Ebert's participation is much taken for granted, showing an

acceptance of her role. There is no mention of a formal instruction to collaborate, and even the *"budget"* mentioned is not necessarily a formal one. The role of Ebert as a representative of the DPH and an equal contributor to the project is further described: *"we also have a core team, a number of different agencies, Angela representing the Public Health Department."*

Gent elaborates on the areas where PH has had particular influence in the BSP: *"There actually is one chapter in the plan that talks about the different roles that streets ought to play and then it has policies for each one. One of our elements – they call them the Ten Elements of Better Streets – one of the elements promotes healthy lifestyles and there's a few policies there relating to it."* It is not so much that public health recommends many detailed actions, *"It's more of a theoretical lens than any sort of specific point."* In short, PH changes the project by creating an awareness of its values and goals, the *"lens"* that Gent refers to.

Having various disciplines involved creates a *"synergy among the goals. That our focus isn't necessarily public health, although I obviously think that public health is important, but more that we're talking about sort of a quality urban design and a quality pedestrian environment. There's a synergy with that."* This is the merging of disciplines to create a common language and beliefs that results ultimately in a TD approach to collaboration. PH, specifically Ebert, changes not so much the goals themselves but rather the approach to: *"how we communicated and how we talk about the goals and the benefits of the project and things like that."*

As part of the process of involving the community in the development of the plan, the planning department hired a consulting firm. Ebert had mentioned that this was role was one they could have performed, or at least have been more involved in. She also mentioned that the consultants did not really specialize in community outreach. Gent describes what the consultants do and their background: *"So we actually hired a team of consultants to pull a lot of the publicity and the strategy and the logistics and outreach materials… the feedback mechanisms and things like that. They've done a lot. We've done a lot ourselves in terms of surveying and putting together publicity materials like presentations and presentation boards… So it's been sort of a collaboration but the consultant team is actually a transportation consultant called Nelson and they have a publicity consultant called Circle Point on board on they've worked with a number of seniors like the Senior Action Network and Lighthouse for the Blind and some others."*

Bennet

During the second stage of collaboration, Bennet was surprised to find that many of the fears that planners would be resistant to having PH involved did not materialize. They imagined that *"the planners themselves would be significant obstacles – like that*

we're going to have to fight to be at the table. And that didn't happen either. I mean it was very surprising!" Asked why it did not happen, she listed several reasons. The planners realized that having PH arguments for some of the design decisions helped them present their proposals. The result was that *"if you make the street safer for bicyclists and pedestrians, you will increase physical activity."* At this point, Bennet realized that her initial emphasis on working with engineers was limiting the scope of what could be accomplished in the pursuit of PH initiatives. She realized that traffic *"engineers really are mostly technicians…but the planners are the ones that figure out what the community is going to look like and what should go where and the quality [of life]…so gradually our work evolved into working more with planners."* The result was that the *"partnerships with planners have borne more fruit really in terms of affecting how streets are designed."*

The need to identify appropriate collaborators is an integral part of stages one and two. In evaluating a possible collaboration, previous experience with another discipline and especially with known individuals are important factors in the decision to pursue a collaborative project. Bennet demonstrates both factors in this example – by having had a previous collaboration with engineers, and by making a decision to seek more planners for the planned collaborations. She attended several conferences, including the Smart Growth Conferences, where she did not find any planners or other PH people from West Contra Costa County. Then, together with her department, she decided to introduce *"cutting edge topics"* to other agencies. This was important for the *"people from the West Contra Costa County – first of all, there's a big need for this. Huge bicycle and pedestrian injury rate, particularly high pedestrian injury rate and there's high rates of everything that relates to inadequate physical activity like diabetes, and obesity, etc. etc."* To accomplish this goal, a new project was started that consisted of three parts:

1. Four seminars for the planners and engineers
2. A forum for elective and appointed officials so that they could be aware of these issues at the municipal level and make decisions that supported bicycle and pedestrian travel.
3. Write and publish a Built Environment paper

She and her allies at the Transportation Commission obtained a grant to do this project. The forum was planned and during the fourth stage of implementation, they decided to broaden the topic to various health issues. They realized that the City of Richmond had resolved to include a health element in the new GP. This provided the opportunity to expand the scope of the planned collaboration. They then invited

speakers, including Richard Jackson, to set the stage so they could *"eventually [be] brought into the Richmond general process. We weren't anybody's initial thought, to tell you the truth."* In order to *"inject"* themselves into the GP being planned for Richmond, they invited all the stakeholders (and MIG, the planning consultants) to the forum. At the same time, the paper also grew to include many more public health issues.

Determining who the participants should be in the health element of the GP update (partly funded by the California Endowment) presented some barriers. Bennet explains that *"people should have been insisting that the local health department was at least contacted to see [if] they wanted to participate but they didn't know that we already had a lot of capacity to participate and we were a little insulted but eventually we got brought into the plan."* In addition, the community-based agency that was supposed to focus on PH issues actually had a political agenda and an *"economic development housing focus which is really important but it's not health and they were only giving lip service to health."* Thus, it was necessary for PH (in stage two of the collaboration for the GP for Richmond) to also negotiate their place at the table; their place had not been automatically assumed, based on either existing institutional requirements or current relationships.

Bennet then decided to make it *"part of my mission in life to crack – and that's how I thought about it – crack into the City of Richmond because they have such huge health issues all the way around."* There were several pre-existing conditions that allowed her to succeed in this endeavor. These included previous collaborations with some people and agencies in the city for mandated PH issues, such as environmental issues, traffic safety programs, violence injuries, etc. None were directly related to BE, but they had created the group previously mentioned that focused on *"safety communities."* The group had lost much of its grant funding due to post-9/11 changes to the federal funding stream, but the members had *"stayed together, and we did some more traffic safety educational things, but we still hung together. …and therefore we're ready to continue the work when the climate changed which eventually did and everybody just sort of hung in there. We didn't meet as frequently. We weren't doing as much. It was more traditional enforcement and education activities but that group was really important, even though it's a little, low profile group – very important in maintaining relationships."*

Developing a common language during the second stage of collaboration is a key requirement for a TD process. An understanding of the terminology and, particularly, the concepts that guide other disciplines becomes a building block for a collaboration that results in a new theoretical framework. Bennet recounts her participation in planning meetings, where she is able to express opinions in the technical language of planners. *"So they're looking at lighting. They're looking at traffic. They're looking at security in this little plaza. So there're all these technical people around the table and I'm with the consultants and the city staff and all of them are men."* She chooses very

carefully which areas to comment on: *"my comments are personal comments like, why do people always choose palm trees in these streetscape improvement projects?"* She explains this is a *"personal comment,"* because it reflects her view that this is not a native species. Some of the planners agree with her and mention that Los Angeles has been removing palms for that reason. This type of interaction builds trust in the group.

Her following comments introduce PH concepts to the plans being presented. What are the *"specific things that you can do to improve the street for pedestrians? What the specific engineering things are?"* She mentions that the *"bulb-outs"* are not the best choice for pedestrians; instead of having two ADA ramps, they are often designed with only one, due to cost factors. Pedestrians can be forced into the riskier situation of crossing at the corner rather than the crosswalk. The planners and engineers listen to her, and often the results include changes to the plans. *"I want to call this to people's attention, because what you're doing in this project in some ways sets the tone for what you do throughout the city and a lot of cities are doing this when they should be doing this."*

Dunn

The lack of a common language is one of the main impediments to formal collaborations mentioned by Dunn. The leaders and staff of the PH department *"don't necessarily know what to say and how to say it."* The main problem is that *"we speak different languages. We have different procedures, and we don't know how to plug into each other's knowledge base."* It is a matter of understanding the other discipline, and respecting the agency's mission. Most PH people *"don't really know about planning, per se…they don't necessarily know about how the development review process works and they don't necessarily want to show up at a public hearing and say, well, wait a minute, we don't like this project because it's too far away from everything. They don't want to be perceived as being an impediment."* These are major barriers to the establishment of collaboration, which requires trust and understanding. However, these barriers have been overcome in other partnerships with other agencies, where there is *"regular communication"* and the *"legal basis to do that or the policy basis to do that."* He calls this *"having jurisdiction."*

Sanders

Sanders brings up an important question, asking how the knowledge and expertise of various disciplines can be leveraged to *"come up with something good?"* One tool being used increasingly in the field of BE and PH is the Health Impact Assessment (HIA). Sanders recounts that he is using HIAs to *"promote better land development patterns, development patterns that have positive health benefits but also*

positive environmental benefits." This approach is still controversial, and Sanders alludes to this fact when he questions whether *"Health Departments should go and support different development projects as they're moving forward and saying, 'this project which is right at a transit station and is a green building, it has good indoor air quality' we, as the Health Department, are going to say, this is a good thing for health."*

Regular meetings of the departments can also be used to build capacity and relationships. Sanders mentions that Alameda County has started quarterly meetings of the health and planning departments. However, because of the jurisdictional barriers, they are not as successful as might be a regional agency with more control over land-use. He mentions that is the case in the Twin Cities area in Minnesota, where *"the regional agency… said the cities there have to update their comprehensive plans, general plans, on a regular cycle and so they all sort of have to do it at one time and the regional agency gets guidelines for what needs to be in it and in this latest round, which was about a year ago, they basically said, you have to incorporate public health into it and so, all of a sudden, all these cities had to do that. But that doesn't happen as much in California."*

Understanding and respecting the other agencies' mission (Rashid) and respecting the other discipline (Neuhauser), are described as essential factors for developing collaboration. Sanders says as much when he states that *"if the public health folks want to come into a planning process, that they [should] understand what their role is and what their role isn't because the cities are sensitive to outsiders coming in and telling them how to do their land use."* To participate in the planning process, Public health must *"figure what the value added is to bring them in."*

Perez

Perez built her consulting practice on the premise that it was necessary to first educate PH on its potential role in the planning process and *"the strategic points of intervention."* She collaborated in that endeavor with such organizations as NACCHO and APA, organizing focus groups with local health officials across the country in order to understand their perspectives. Funding was partly from the CDC, which also resulted in several publications and reports regarding the role that PH agencies could play in LUP.

The second stage meetings, according to Perez, were less about training and more like a workshop *"helping them see where they can start to collaborate."*It was an opportunity for the participants to meet and engage in the initial negotiation process, in which potential projects are discussed, trust development occurs, and roles are defined. When the other agencies are involved, she tries to educate them as to *"what can public health bring to the table. How they can be value added to what you're doing and what are some of the models from across the country."* The process of collaboration depends

on the understanding of each agency's role, creating a respect for the other discipline and an awareness of the benefits that the TD collaboration would bring to a project.

The development of a common language is one of the activities that Perez includes in her training sessions. She describes the difficulties – because even related agencies like transportation and planning often have *"very different realms funded by very different streams, real different kinds of training and mind set and they have a hard time talking to each other."* Thus, in order for PH to create partnerships with other agencies, they have *"to learn a whole new field and multiple fields and become well-versed in a whole new arena to do this work and to be really good about it, to be really savvy."*

Stage 3 of Collaboration

Stage three of collaboration involves primarily 'identification of resources and reflection, where individuals return to their group to reassess the resources needed for a collaborative effort and the benefits of participating.'

In the case of interagency PH and Planning collaborations, the contextual factors of resources and funding and support from the agency leadership have emerged as among the most crucial elements mentioned by the participants. For Riverside County, this has been especially important, due to the loss of one key participant.

Social Exchange Theory posits that the concept of negotiation is paramount in the decision-making process. The following is one example of stage three of collaboration, where the members of the team look for the necessary support for the possible collaboration.

Escobar

In stage three of collaboration, the team members look for the necessary support. In the theory of social exchange, the concept of negotiation is paramount in the decision-making process. For Escobar, education of potential stakeholders is vital to creating the environment that will support interagency collaborations. She refers to the need to identify *"people that believe in the cause within the County family and then use them as your voice because as one person I can only communicate specific things. [However] when I recognize that that Commissioner is really interested in that, now all I need to do is have a one-on-one discussion with her, get her excited about this cause and next thing you know, she's talking to the rest of her colleagues and the same with Board of Supervisors getting them excited about these concepts."*

Hunt

Hunt also mentions that, in general, his experience has been that the planning departments are very welcoming of the involvement of PH departments. One of the few exceptions of which he is aware would be San Francisco; he has heard that the planning department has been resistant to getting involved with PH. As was mentioned previously, this same impression is held by other subjects interviewed. The caveat for involvement has been the planning department's wish that PH not duplicate planning's work but rather *"bring added value so don't start hiring planners to do planning, if there are ways in which you can help what we're doing, then that's great."* As part of their own cost-benefit analysis, planners have determined that they can provide the required skills of their own discipline; they are demanding a respect for their knowledge and their mission as an agency.

In the third stage of collaboration, the individual agencies (and participants) reassess their interest in, and level of, participation. Through an ongoing cost-benefit analysis, they decide as to whether proceed with the collaboration and to what extent. According to Hunt, after the meetings that he has described, the PH department went on to decide *"what they should be doing on this issue in the future."* The purpose of the meetings had been not just to promote relationships and communication with the other agencies, but also to get *"some clear direction for the health department…where should their priorities be."* Under each of the three areas of potential collaboration, they were able to identify one or two subjects that would be the most important and that *"everybody felt would be the most useful."*

Hunt mentions that, in the next step, the PH department would come up with the strategy on how to pursue the projects, which staff to assign, how it would be funded, and what resources could be allocated to the projects.

At the same time, during the third stage, the planning departments must also go through a similar process of cost-benefit analysis to identify their own capacity for collaboration. Hunt explains that *"they basically recognize that there's added value in the work they do to have health at the table saying 'this not only will be a better community with less traffic and so on, but one where people can lead healthier lives.'"* In this case, the city of Fresno was developing an area of town where having the support and input from PH was very helpful for planners in their planning process.

Ryan

Speaking in regard to science-based practice, Ryan states that although LUPs are often familiar with the data and methodologies used to connect health and the BE, they seldom have a chance to *"practice in this environment, you don't do that on a regular basis and so it's not as familiar to …*" He believes that PH deals with these issues on a

daily basis and is therefore more familiar with data and methods and able to apply them to collaborative projects. The value-added includes not only acceptance by the community and legislators, but also the means to justify funding for the projects. As an example of data that may be provided by PH, he mentions barriers and incentives to physical activities, such as the choice of streets for biking, location of facilities to encourage biking, short trip route design, etc.

When asked for practical examples of measurable outcomes that could be achieved through the GP as a result of the PH LUP collaboration, Ryan put forward the idea that using PH arguments could overcome the limitations of the planning process. Planners, he explained, are not developers, they are regulators. That means they cannot force a specific land use *("a grocery store instead of a car-wash"*) So even if a community has identified the need for a grocery store, planners are bound by their mandate to approve a permitted land use. However, he suggests that *"if in our general plan there was embedded with active living and healthy communities, if there were policies in there saying this area needs a grocery store and this site is one of the four sites that have been identified because of the size, then there may be an argument for denial."* Thus, language and concepts resulting from the collaboration and incorporated in the GP could result in measurable outcomes. This also relates to his suggestion of a score-card for evaluation. Ryan stresses that the identification of specific needs and goals should occur collaboratively, not within each department separately.

Support for potentially controversial limits on developments could come from the community through connections with the PH department. This could *"bring support against the project."* However, it could be problematic if the PH department were seen as acting as an advocate for the community, rather than working with the planning department. He mentions that there was a precedent for this sort of liaison with the community in the past. There had been *"community planners,"* whose job had been to communicate with the community, to identify it needs, and involve it in the planning process for development projects. Due to budget limitations, the positions had been eliminated, but the concept could serve as a model for what PH involvement could achieve. The community planners had been respected both by the community and by the developers because they were not advocates – rather they were *"completely neutral."* They were charged with presenting facts, this helping everyone else make up their own minds. According to Ryan, PH team members could perform this function because they are in the community, meeting with organizers and providing services on a daily basis. They would not suggest specific uses for land, because that could lead to confrontations. (An example would be requesting that a homeless shelter be placed in a certain area.) Ryan explained that these decisions become a political issue and are not dealt with at the staff level since it would reach the *"city manager's office and the front page of the local paper*."

Lambert

Although he is very excited about working with PH to achieve his own and his departmental goals, Lambert is realistic and explains that there are other ways of getting to the same outcomes. It is an important aspect of cost-benefit assessments that alternatives also be considered. Which are more efficient? Which may be too costly or difficult to integrate? He relates that if the PH department were to tell him that, because of budget considerations, *"we'd really love to do that…we think it's great…you guys are doing a great job…we'd love to work with you, but we just can't…we either don't have the bodies, or we don't have the money,"* then they would still pursue the same goals and objectives. It is a question of doing *"all the right things for all the right reasons so, maybe it's a public health reason, maybe it's a sustainability reason, maybe it's a smart growth reason, maybe it's an economic reason but we're heading in the same direction from all of those aspects so any one could be the driver. We're still going to the same place… we're not going to get stopped because oh, we're not going to do it for public health reasons. We'll do it because we have to reduce greenhouse gasses. Or we're going to do it because we have to create more livable communities or whatever. We're still headed in the same direction."* Having determined that these are important issues, they will collaborate with other disciplines to accomplish them.

Out of these collaborative efforts, there is a possibility for the institutionalization of ongoing collaborations with PH and other disciplines and departments. The way Lambert sees this occurring is through the *"framework element."* By including policies in the new GP, there would be an infrastructure of guidelines and mandates that would support the application for grants by PH (and other departments) to address issues that may arise in the future. This helps overcome future barriers to collaborations. Examples he mentions (related to transportation) include: *"access, bicycle convenience, those kinds of encouragements are in our plan so that when we apply for the grant we can say – you know, these are the things that we value and this is what we want to do going forward."* It is because of their respect for the other agency's mission (key concept in TD) that they have *"already agreed that anything that we can do to help them in their mission, we want to include in the plan."*

Leadership from the director and City Council is mentioned several times in connection with the collaboration with PH. For the most part, Lambert feels that the collaboration happens at the manager level with complete support of the directors of the agencies. He describes occasional meetings of the directors, but not necessarily ongoing ones. As long as the agencies are collaborating, it is not necessary for a heavy top-down approach. However, in the event of a schism in a department, there would be a need for *"somebody who has the sort of political will and backing"* to address the problem. An example he mentions is the Public Works department, which is working on bicycle facilities. Several people in the department want to increase bicycle use by

making it more convenient. Others are described as *"more traditional traffic engineers"* that *"want to make sure that the cars can rule."* The two groups have never actually met to discuss their differences, and they simply each *"do their thing."* He explains that this scenario often occurs in city government until a leader steps in and *"says, no, this is the direction that we're going."* The leader provides a *"direction from above"* that *"you will work together."*

Henderson

One question that comes up is whether there should be a PH person in the planning department (and vice versa). He responds that there is a great diversity in the agency, that in fact: *"they're not always classic traffic engineers. They're transportation engineers. They come from different background."* This allows them to *"bring their perspective into our discussion."*

Lonner

One of the main questions is about the allocation of resources that make collaborations possible. Lonner mentions that the task force project is sustained by *"a federal grant. …the, Transportation Enhancement Activities grant, TEA grant. It actually comes from congestion management and air quality funds, CMAT funding. … the program is [for] transportation enhancements. So we're able to do this education campaign and we've been, as part of our monthly meeting, discussing the project and the campaign."* The grant recipients are the MTA and PH. The police department is a more *"loose participant."* Several features make this an ongoing, successful collaboration, including the presence of individuals that know and trust each other, the development of a common language and goals, the availability of dedicated resources, a time commitment resulting in regular meetings, and buy-in from participants and the top, which results in a mandated partnership.

When questioned further regarding funding and resource issues that can affect collaborations, she identifies as a problem a *"lack of resources and what I can say about the pedestrian program? For long periods of time there were just two people in the MTA's pedestrian program. I've been the manager and then I've had one staff person. We were officially three people, which isn't that much more, myself as the manager, one engineer and one planner…"* The funding for her program is described as "*primarily grant funded. We do get some funding from … red light running fines. And we have red light running cameras spread throughout the city. Someone runs a red light, they get captured on camera, they're sent a fine, or a ticket, and then they have to pay a fine and fortunately that funding does come back to the pedestrian program, but primarily we're grant funded. So we can only do the things that we get money for."*

When asked about her impression of funding and resources in the PH department, she describes the situation: *"historically the pedestrian program within the MTA has been understaffed and has had a lack of resources. And that certainly affects how much we can be involved in other projects. I don't know what the fiscal or financial situation is [in the PH department], but whenever we talk about or whenever we read articles in the newspaper about budget cuts or budget crises, you always hear the department of public health as one of the agencies that is at risk. And part of it I think is that, I think the department of public health is one of the largest departments in the city and I think that's because it incorporates the hospitals and clinics, all the public health officials and staff, but I think they're definitely affected by the fiscal situation of the entire city."*

Ebert

"At the same time also that this was happening we got Safe Routes to School Grant from the Feds – from the federal track. Non infra-structure grant and the unbelievable amount of paperwork that Caltrans requires to get some federal transportation dollars or implement a very simple project has helped build a lot of sympathy between me and them because now I know what they have – all the paperwork behind the scenes of what they have to go through and I've been asking them a lot of advice…"

Going through the process of applying for the grant had *"helped build bridges because unless – I mean, unless you're a planner, no one understands how complicated it is to actually get those dollars to build something…I find that that Safe Routes to School Grant has really helped build a lot of relationships because we were all experiencing the same thing now."*

Ebert shows a great deal of empathy toward the agencies with which she is collaborating. It is clear that she has developed not only great respect for what they do, but also an appreciation for the difficulties they face. *"Particularly MTA in the city has been beaten up quite a bit because you have all the advocates here, like the Bicycle Coalition and Walk San Francisco who want all these wonderful things, and we want them too, but then you have departments like Caltrans and the average John Q who don't want them; and so they're stuck between a rock and a hard place. So to get some… understanding and some sympathy I think goes a long way, because I honestly believe that they all need group therapy over there! It's just a really hard job to manage that very fine line."*

The infrastructure for collaborations – including funding and other resources – is required for successful and sustainable TD projects. In the case of the (Better Streets Project) BSP, Ebert sees it as an initial collaborative project that in time could become institutionalized, *"in all of this, we got $7,000 for my time and this has been an almost*

two-year effort. It's pretty sad… I feel like we have not capitalized on quite yet and it could be just because that's how San Francisco runs. I mean, Chicago's a totally different story where it's determined by the Mayor and his government and then just gets done. Here it's very much driven by community."

It is precisely because San Francisco is a community-driven city (where the success of projects is very dependent on the effective interaction of government agencies and community groups) that PH makes such a powerful ally for planners (and other groups). However, for that alliance to happen, the infrastructure must be in place, *"frankly nothing gets done without some dollars behind it so if that became institutionalized where public health was leading educational campaigns on why these things are important and why health is a priority. Leading the public health outreach, not only just on a lot of these projects, but the health aspect to it and got paid to do that – that would be –good."*

Gent

The resources and funding for a collaborative project must be provided from the start. Lack of resources is often seen as a major barrier to successful collaborations. In the case of the BSP, most agencies provided significant amounts of money to the project, often funded by Prop K money. PH, on the other hand, provided very little in terms of money, but appears to have supported staff time. *"If I had to go back and trace where all of this different funding for the plan came from, it's probably more complicated than you want to know about but, there's been certain amounts from all departments… Public Health put in a lot less… [They] sort of have been wanting to help out in terms of staff time etc."*

Anderson

Anderson describes how the process for creating the community plan for Hacienda Heights was complicated by the many stakeholders and the need to involve the community *"in a way that makes all of the bureaucrats comfortable."* This required many cycles of an *"iterative process"* in which she would present first to the community and then to the agencies involved. Each time she presented at a *"higher level"* level, there was *"more resistance … to anything new, whether it's related to health or the environment or anything that's still considered on the fringe."* Lack of buy-in at the top and complicated organizational structures can act as barriers to the development of a plan. There appeared to be a great deal of support for the concepts resulting from the collaboration with PH and other disciplines, yet incorporating the concepts was a problem. As the project became more of a reality *"the more broad everybody wants to*

be, the less of a commitment they want to make, especially in this environment where resources are so limited."

Leadership was, unfortunately, very much dependent on specific individuals. When the champion of community-based planning was *"let go,"* the entire system *"recoiled"* and went back to a much less collaborative model; that is *"when we ran into some challenges moving it [the project] through the ranks… within the Department of Regional Planning where we had a change in leadership. The person who sort of envisioned and championed this community-based planning program left the department. He was let go and there was sort of a re-coiling after that, sort of dial things back. Take a step back."* The need to do a continual cost-benefit analysis becomes particularly evident during a change in leadership. It appears that even before the leader left, there was already a process to *"take another view and sort of reassess and, I think, the emphasis on the community-driven process that emphasis, was sort of shifting in the last several months of the Hacienda Heights project."*

Bennet

The next series of incentives to collaboration appeared as a result of drastic budget cuts, which presented opportunities to consolidate previously separate programs in the agency. *"We had to combine programs in a different way, and we put injury prevention and physical activity promotion together under me with the idea that many of the strategies for pursuing both of those things had to do with promoting walking and bicycling and having a good environment for doing so."* This change happened at the institutional level, but had the effect of increasing awareness of the processes of planning and zoning and their effect on PH concerns. Gina Perez, as a consultant, was involved at this point in various training sessions within the agency that further increased Bennet's desire to become involved with the planning agencies.

Obtaining resources and funding (such as grants) to initiate the efforts for collaboration has been identified as a key factor for interagency collaborations (Rashid et al. 2009). A small grant of $5,000 allowed the PH department to *"do strategic planning within Health Services about how we would pursue the 'Built Environment' and we didn't come up with a huge work plan, but we did come up with a number of strategic goals and they had to do with building partnerships."* The important points exemplified about the process of collaboration, especially in a TD model, include the definition of goals and strategies, the creation of a support infrastructure, and the exploration of new ideas to pursue collaboration.

Sanders

The important aspect of resources and funding for the South Gate project also highlight what could have been a major barrier to including a comprehensive PH element in the general plan. Essentially, the plan was done under the auspices of the Community Development Department, which provided no funding or time commitments to the project. In the end, it was mostly funded by grants and the PH Health department. The products of the collaboration were given to the city; they *"were sort of handed this gift of educating the public and having this ground-breaking document, this ground-breaking chapter of their general plan."*

This lack of resources at the city level is repeated in the El Monte project, where the funding is a PLACE grant of approximately $200,000. This grant permitted the hiring of a public health professional. The grant requires that they do a physical project and a policy project. *"The policy project is adding a health element, health and wellness element to their general plan. That's what we're doing now…We do have a working group there as well. [It] is both staff but also a lot of their partners in the community. So it's much more, bringing more of the folks in than just departments: the health clinics, churches, schools, all these folks are really at the table and providing a lot of ideas."*

Perez

Resources and funding for her activities come from various sources. Many of the trainings she did *"were paid for by the State, so they were free to public health agencies."* (The state health department had established several Capacity Building grants of about $30,000, awarded directly to the counties.) In other cases, the funds originated in programs, such as injury prevention, where there was increased awareness of the importance of collaboration with planners in the goal of designing *"walkable communities."* She observes that the amounts of the grants or funds do not need to be large; she believes that they serve to bring different stakeholders to the table.

Stage 4 of Collaboration

Stage four consists of 'refinement and implementation, in which suggestions and ideas are refined and put forward and the individual contributions differentiated.' In PH and Planning collaborations, stage four is often a continuation of work begun in stage two; participants often find that only in stage four do they begin the implementation of the plans and ideas that originated in stage two. One reason for this seeming delay is that government agencies have a very long time table for project implementation; therefore, it is often difficult to identify a specific starting time when a project.

Implementation may begin when a mandate causes the first meetings to take place between agencies, or when the funds are allocated to a project. Even projects that have an easily identifiable start date – such as groundbreaking for physical construction – actually have much longer implementation histories.

Escobar

The results of the collaborations between Escobar and the PH department have had a far-reaching outcome on the planning process, possibly to the point of institutionalization of some of these values. The PH concerns *"are now part of our development review process, so any development that goes through Riverside County now has a trails committee that looks at that and makes sure there is pedestrian connectivity of this development with the larger surrounding areas. Public health now looks at each single development application."* The collaboration process is essentially an ongoing one; stage four is constantly in progress because the initial stages have resulted in a scenario in which collaboration is not just a one-time event. Escobar describes the various projects that have resulted in her collaborating with Nancy: they jointly wrote the revised design guidelines for developments, they worked on community facility phasing and funding plans (mainly building trails through the mitigation fee act) in emerging communities, and they completed several education programs intended to generate awareness on PH and BE issues in the community. The main, and possibly more far-reaching, area of success was the introduction of the health element in the GP; this is also discussed by Burnam and credited by Escobar to her close relationship with Nancy.

The original GP from 2003 had been created before the directors of PH and planning had started communicating regularly. Because of that, the original GP did not contain a health element. Escobar states that it took five years of collaboration to *"get there."* In the latest revision, there was a very strong design element addressing the concerns of PH. Escobar attributes, in part, the success to the capacity of PH to obtain grants to support the efforts. She states that planning has *"always struggled for money and when you want to do some of the regional planning stuff there is not enough, especially when there's not enough awareness for need for things like that."* PH has been *"really great in getting grants for us, for some of the advanced planning."* This quote illustrates some of the contextual concepts that have proven to be extremely important in encouraging and sustaining collaborations: providing an infrastructure, having a history of previous collaborations, availability of funding and resources, and synergy between participants (value-added results). For Escobar, resources are at the core of the collaborative effort. She explains that *"because when you have limited resources you look around to [obtain] that two-person grant,"* and PH is an ideal partner to do so.

Escobar is very quick to give credit to PH, and Nancy in particular, for the benefits accrued from the collaboration. She describes both the formal and informal aspects of the collaboration, which have resulted not only in a personal friendship, but also in several collaborative professional endeavors between the two. They have attended various meetings and conferences together, where they made joint presentations about their efforts in Riverside County. In these meetings, they also learned about options for combining PH and planning that they later brought back to the agencies: *"we would attend sessions where people are talking about health elements and it's like, hum, can we do this in Riverside County?"*

Escobar then refers to the confrontation with the principal developer that occurred during the Mecca project. This confrontation has been mentioned by other people involved in the project. Apparently, after the charette, the team felt that they would be ready to make the final presentation after they had included the last input from the community and the other stakeholders. PH and planners had been communicating and sharing information with the consultants employed by the developer, but these consultants were not giving much feedback to the team. Instead, the consultants had decided that the final design was not what the developer wanted, and they went to the Fourth District Office, turning the process into a political battle. Because of that *"planning and public health both felt like we were not ready for the presentation. We did not do enough education internally. We did enough education externally with the community. We failed to do the internal education process as the project was evolving and especially at the top levels."* They therefore cancelled the presentation, until they had addressed the concerns of the other stakeholders. Meanwhile the developer went forward with his original application – which did not incorporate any of the suggestions from the PH and planning team, especially the community input. The result was that the *"Planning Commission asked the same questions that the community was asking, and we were asking, such as 'What is going to happen to agriculture?'"* In the end, changes in legislation (SB 375) resulted in the entire development being tabled by the developer for the present. Escobar was hopeful that, in the future when the economy recovers, the project would be revived under the design guidelines that her group had developed.

Burnam

Once the Planning department had established a relationship with PH, they were invited by Jane Escobar, one of the long-term planners (also part of this study) to provide a draft for a health element to be incorporated into the next GP. The PH department hired an outside consultant, Greg Sanders, to help them create that draft. Sanders (also part of this study) is an expert in connecting PH and LUP. At the time of his interview, the draft had been approved and was up for public comment. Burnam makes

the point that this is the way to institutionalize the inclusion of PH concerns in the planning process; despite the fact that the new planning director may not support it, the inclusion is very difficult to remove after it has been made part of the GP. Also, *"how can you be against it? You can tell it is 'mom and apple pie,' but it's never been in the general plan anywhere, and we have some core principles about school sites and jobs and parks."*

In the above example, the project produced the intended result; that result was a health element in the GP for the county that essentially introduces PH in a sustainable way to the planning process. However, this inclusion does not ensure that the guidelines and elements will be incorporated into future developments. For that to occur, there must also be an enforcement mechanism. Burnam describes the need for PH to develop its own strategy for implementation of the health element of the GP. The planning department is described as having lost much of its revenue with the housing crash, *"as soon as the building stops, their budget goes nowhere and so they're in slow motion as well."* To help overcome this issue, the PH department *"sent planners to training. We paid for planners to go to training on this whole concept. Some were in South Carolina."* They had obtained a grant that helped send planners to conferences, including the New Partners Conference (also attended by Burnam and Nancy).

PH had determined that the benefits from collaborating were sufficiently significant that it was worth their helping provide the resources to encourage collaboration. Their belief, repeated several times by Burnam, was that in spite of the setback due to the recession, the long-term prospect for collaboration was very real. Meanwhile, the opportunity to influence planning was decreased because *"when times get tough like this, everyone goes back to the 70-200 square feet lots – 3,000 square foot homes."* Thus, the large development projects are not occurring. People do what is easiest; small projects are easy to do because they follow existing zoning codes and are more easily approved. Burnam explains the problems in terms of *"form-based codes"* and other planner language, which is evidence of the development of a common cognitive framework with planners.

Burnam describes the City of Mecca as an example of this planning process and the involvement of the PH agency. It is an example also described by Hunt from the Local Government Commission and others. Burnam's story is somewhat different.

He describes a poor, mostly rural farming community that is about 90% Mexican in origin and mostly Spanish-speaking. The owner of the grape farms has decided to develop the land for housing, because the area is quickly developing and apparently cannot sustain farming any longer. In an initiative led by the PH department, but in collaboration with the planning department, they started a year-long, community-based participatory process to get input for the development plans. To this end, PH obtained a Cal-Trans environmental justice grant to fund the effort. They *"had mariachi bands. We brought the community together. We did Charettes, we did everything out there."* As

part of the process, they involved the Local Government Commission as a consultant to aid with the development of a plan that would then be presented to the economic development agency, the land owners, and the developer.

The result was that the developer and the economic development agency *"got nervous, and so there was a big political snafu. Throughout three months, we had them meeting to try – the county people-- had to figure out what we wanted to do."* Although the Planning department was involved throughout the process, it had no influence on the reactions of the other government agencies and the other stakeholders. Clearly the collaborative team of PH and planning had failed to take into account the possible perception and acceptance by the other stakeholders. The result was that, after the collaborative team presented the plans to the economic development group in the hope that the plans would be used to modify the design guidelines, the team was excluded from any further deliberations. The design guidelines were approved, and Burnam states *"we found out yesterday that they approved the design guidelines, but we didn't have final input. We had input half way through, but they never sent us a final draft so we don't even know if it got approved."*

Burnam's analysis of why this *"snafu"* occurred is that the complexity of the organization is one of the main barriers for collaborations. There are many agencies, often working on parallel paths and competing in the same areas. Lack of communication and unclear jurisdiction are mainly to blame for the problems of failed collaborations. *"It's even within the county system; there are different groups that are doing their own thing. I don't know if you heard this before, but economic development doesn't go through the planning process!"* Such arcane rules, for example, mean that a redevelopment area is handled completely differently from other zones.

This case is also an example of TD action collaboration, where PH and planning were making an effort to involve the community at all levels of the planning process. For a year, they communicated with the community, partly based on their experience in health aspects, so as to develop a truly participatory plan for the development of Mecca. Burnam contrasts this method with the usual way of getting community input by the county in planning or zoning matters; this usual way consists of *"just before you approve everything, you have a public hearing and a hundred people give…three minutes of input and you're done."* Instead, PH and the planning department at Riverside were trying to *"actually go into the community. We have a picnic, a party, a mariachi band. We spend the weekend doing a charette. Get their input. Bring translators. So the community actually has input. That's not the way the County usually does things. It's foreign. Public Health – it's normal for public health. It's foreign to planners and transportations agencies."*

In terms of the stages of collaboration – once the team is formed, it is very difficult to replace members without causing a delay or even failure of a project. Stage four (implementation) is very dependent on the buy-in that has occurred previously. If a

new person is not convinced of the merits of the project, then it may be necessary to negotiate all over again, and possibly abandon the project altogether. Forming the team (during stage two) requires finding the most appropriate collaborators; according to Burnam, in the case of transportation this may be very difficult. He suggests that a change at the federal level in the way engineers think of traffic requirements may be ultimately the only solution.

Burnam discusses the best time for PH to become involved in the planning process. The collaboration has to occur much earlier in the planning process, because otherwise there is no opportunity to develop a common framework. It is, in fact, the difference between a multidisciplinary approach and a TD one. He relates a particularly striking example of a failed collaboration that took place too late in the process. The initial contact from the planners in the City of Coachella to the PH department was from a *"semi-enlightened planner, who…starts sending us all his stuff to look at and get comments on."* Based on previous exposure, he had decided that getting PH involved would have some benefits. He sent them information about housing developments in the city. After about six months, PH realized that they were dealing with 20 separate housing developments that had not been considered as a unified plan. PH found little to suggest in each development individually; when looking at the group, however, PH realized that the planners had *"created a monster that because they didn't plan it, they didn't have an overview of what this whole area was going to look like so they approved these 20 different housing projects, and it's a complete disaster because nothing was tied. The walls up, people couldn't get to the bus stops!"*

PH is often credited with bringing data to the table that ultimately helps developers and planners make decisions. PH is also able to present data and get the community involved. Burnam refers to the fact that *"we have all the data. We can talk about the health of those people. We have epidemiologists. … We know how to bring groups together. If they really believe in this stuff, we know how to bring people together in a non-threatening way."* Sharing knowledge and getting community involvement are major contextual factors affecting the success of TD collaborations.

An interesting and practical example of the benefits of a change in one discipline due to collaboration with another is the health clinic in the town of Paris, Riverside County. Burnam describes a project design that initially had all the parking in front and limited pedestrian and public transport access. Since they were involved from the start and were cognizant of the implications of the design, they were able to effectively revise the orientation of the building. They also relocated the bus stop closer to the entrance. This fulfilled some of the forms that PH was espousing, including an image of accessibility by transportation other than cars, and with a pedestrian entrance toward the street not the parking lot.

This case, however, did not result from collaboration with the architects and planners. PH had the advantage in that they were the clients for the clinics, so they were

able to force the changes. Burnam states that *"they didn't buy into it. We just forced them to do that."* The fact that they have to deal with the local planning agency, rather than with the county one, means that every non-county level project requires the department to start over in terms of the collaborative efforts. The PH department is poised to participate in collaborations with LUPs, but must go again through all five stages in most cases, instead of starting at an advanced stage.

Hunt

There is evidence that increasing complexity of organizations is a barrier to collaboration, particularly in the early stages. In the case of interagency collaboration in California, the jurisdictional divisions among the different agencies are a significant barrier to many collaborative efforts. That PH acts predominantly at the county level and LUP at the local level (except in unincorporated areas) is the prime example. However, the school system is another area that has repeatedly been cited as an extremely difficult organization to involve in collaborations (specifically, collaborations intended to improve health features of public schools). Examples of such features include increasing physical activity in the face of school location requirements that discourage walking and bicycling, food access, etc. Hunt describes efforts by his group to organize meetings similar to those mentioned above, but specifically for school districts. The project was the *"City Counties Schools Partnership… it was an organization created by the League of California Cities."* This organization had some funding through a Robert Wood Johnson Foundation grant, which his group had obtained for this purpose. The workshops involved a variety of agencies and stakeholders – public health, planners, school boards, and school district officials – to talk about these issues. They set up about ten such workshops around the state; in some cases, the City Council School Partnership took the lead, while in others his group took the lead.

Hunt also discusses the complexity of large PH departments – such as the LA County department, where he was involved in helping organize conferences based on a grant. He had initially met with Eloisa and started a conversation about the project, but soon was dealing with Gene who seemed to be in charge of the grant. *"So I was like I'm confused, what's going on! So then a few months ago when I was preparing this APA presentation, I spoke to Eloisa and I finally started understanding that Eloisa is the person working on physical activity and health, and then Gene is over in the chronic disease side or something."* He attributes this confusion to a very bureaucratic agency in which departments were acting individually regarding the grant and the collaborations.

Another example Hunt mentions is a project taking place in Shasta County, involving the county and a local non-profit called Anderson Valley Health partnership, which was doing work on community design. Hunt made some presentations to the group, which got them involved and would be followed by more community design

workshops. Similar experiences were listed in Contra Costa, where *"they actually did a series of walkable community workshops where I came in and helped them with that,"* and others in Shasta County.

Another example where PH is *"leading the charge"* according to Hunt is also in Shasta County, which is preparing to do a GP update for the unincorporated areas. Through a HEAC (Health Eating, Active Communities) grant[21] PH arranged to participate in the planning process by having Hunt and his group organize participatory workshops that also involved the community. From this process, they come up with ideas and recommendations that the Planning department may or not incorporate into the GP. An important factor is that the county has limited resources in the planning area to do the GP update, but the PH department (through the grants) is able to fund the collaborative efforts. In fact, the PH department has dedicated staff for this project, paid for by the California Endowment HEAC grants and by the Kaiser Foundation (Samuels et al. 2010; Zenzola 2009).

Lambert

All his comments reflect a desire to achieve healthier communities by creating a new framework by which a city can measure how successful it is in achieving the goals it has set for itself (see suggestion of a *"report card"*). He keeps referring to the *"framework element"* that they are introducing into the GP; this would serve as an instrument to have policies that support the stated goals, including specifically those of PH. *"We're looking at the 'framework element' as an opportunity to have those kinds of things [certain types of policies] including public health."* The idea of a framework element was the result of a realization that there were many elements which contributed to the final outcome, and it was better to keep them integrated. Other plans use a separate *"transportation element"* or *"mobility element";* in this context, instead of including an *"active living"* element just for PH, they have instead developed the framework that will generate future guidelines intended to lead to better health outcomes. He states, *"public health is sort of integrated. It's not that we're doing these things because they make people healthy exclusively. We're doing it because not only does it do that but it makes for a better quality environment and at that point we started dissolving the distinction between why we were doing something and just making sure that we're doing the right thing, and being as comprehensive and integrative as we could be."* As part of this effort, they have been working very closely with the PH department, having them review the development of the framework element.

[21] HEAC grants are multi-year and multi-site initiative funded by the California Endowment to reduce childhood obesity through policy, environmental, and systems-level change.

PH has clearly defined some of their goals: *"minimal (sic) environmental justice and equity in all sorts of situations. Access to open space, access to healthy foods, mobility issues …we're moving towards is complete streets and complete neighborhoods. So complete neighborhoods would basically provide all of your daily needs nearby in a community way so it makes it easier to walk to the store, or walk to the dry cleaner."* The PH department has also, through this collaboration, helped planners identify new areas that were not in their original plan: *"What we hadn't really thought about as much was access to healthy foods and the Public Health Department has been very clear with us that that's one of their big issues."* To that end, PH has provided them with *"some language that they've gotten. There are some health organizations that have prepared standard policies and language, model ordinances... we're now at a point where we're taking that and a whole bunch of other comments and moving those into the document."* This example shows the importance of developing a shared language. The collaboration with PH has provided the venue for this exchange to occur; *"they're helping us with the specifics, the language, the policy, the programs that they have."*

Lonner

One of the main goals for the project from the beginning has been to effect change. Ultimately, it is through policy that the group hopes to *"change the look and feel of our streets,"* The participation of the community is extremely important, as noted, and the community has been asked to look at and comment on the changes proposed to improve the streets: *"we started out with ten elements of better streets: that the streets would be memorable, that they'd be well cared for, that they'd be safe, just to name a few of the elements. And from those elements we developed the policy recommendations, and… how to make our streets meet those ten elements."*

She felt that health was a prime motivator for many of the proposals, because it gave added significance to the project: *"when health came into the equation was really when we were looking at, 'well, what does this all mean?'"* The answer was based on a presentation by Richard Jackson that highlighted the benefits of good urban design on public health. *"What's the benefit? …Dr. Jackson did a great job of articulating that at our kickoff last April, where …his focus was, 'what does this mean, what does this translate into and what are the benefits that we can realize' and to do that you have to talk about how many people are obese, are overweight in our society … how many people are experiencing diabetes, or have diabetes- type 2. How many people could benefit from having a better pedestrian environment from a health perspective? So that's where the discussion about health really carried a lot of weight and was really a central focus of the discussion. And I think it's in the back of all of our minds (in the coordination team), and with Angela there she would also bring that to everyone's attention."*

The goals of the Better Streets Project put it in line with other city-wide projects. Lonner describes one such project, the Shape up initiative, which was originated by the mayor's office with the *"[department of] public health, and the Department of Children, Youth and Families that co-lead the shape up initiative. But MTA's involved, a lot of community groups are involved, the YMCA [and] a lot of health agencies and companies are involved."*

Common goals present the opportunity for the two projects to interact and develop significant group synergy: *"the better streets plan was something that we would take to 'shape up' and … we've partnered with 'shape up' where we can. 'Shape up' has been an advocate for the better streets plan and we've tried to be an advocate for shape up."* Public health is present in both projects, collaborating with various other agencies and stakeholders. The two projects then develop various areas of collaboration that share public health as their main focus: *"We're doing Sunday Streets in August and September where we're opening streets to pedestrians and bicyclists and prohibiting cars from entering the space. And I think it's planned to be several miles along the waterfront in San Francisco. So that's another place, another opportunity to coordinate and partner. The American Podiatric Association and Prevention magazine do a list of the most walkable cities in the United … and San Francisco is one of the top ten… we have been, I think for at least the past few years[They] will be giving the mayor an award for being one of the top ten cities. So, I think health is definitely in the forefront of all of our minds. It's one of our goals in creating a better pedestrian environment, to improve the health and safety of pedestrians in San Francisco. So, I think it is an important part of it."*

It is important in collaboration projects to define areas in which the collaboration creates value-added synergy. When asked about ways public health can help advance the better streets project, Lonner identifies part of the mission as being *"to promote walking."* The public health aspect is *"sort of a win-win situation. If we have more people walking we have healthier people. And vice-versa, healthier people mean that we have more people walking…"* This contribution by PH is in addition to other reasons that the city wants to promote walking, including: *"to prevent or to reduce congestion… as a mode of transportation so we can get more people out of their cars…walking to the bus stop and from the stop to a destination. …We want walking to be safe because we know that everyone is a pedestrian."* Walking is therefore not only a mode of transportation that should concern transit engineers, but also has been redefined at multiple levels as *"not just any mode of transportation, it's a sustainable mode and it's a healthy mode. And so it's, that's why we're trying to promote walking as a sustainable and healthy mode of transportation."* This is a clear example of the process of developing a common language and common beliefs through collaboration.

Ebert

The (Better Streets Project) BSP is at a phase in which it has been out for review from the community. There is a possibly differing perception about the future acceptance by the community among planners and the PH people, based on their interactions with community members. Ebert is somewhat dubious that the project will be easily accepted without some amount of debate based on previous projects, especially the city's bicycle pan. In regards to the bicycle plan she states that, *"I wouldn't think there'd be such an outrageous resistance to it and it's been under court injunction for almost two years now."* The BSP had been presented in a much more positive light by the planners interviewed; in contrast, the PH person involved is more cautious about its easy adoption, *"That's actually yet to be determined I think. I'm not sure… it hasn't been adopted. … It's out for public comment right now. I think there's a bunch of people who don't want to see their streets calmed. They want to be able to get to the freeways as quickly as possible. I think we're going to see that this fall."*

As the BSP goes through the lengthy process of adoption, there are many potential pitfalls that could derail the effort. Overcoming these potential barriers is an important task in which PH can play an active role. One area is the possible need for zoning code changes later in the process,*" I think that's the second or third phase of this…eventually we're going to have to get into zoning code changes and things like that and that's where the rubber is going to meet the road."* Involving the community earlier and more actively than in previous plans is one approach being used, *"There was actually a very – because of the bicycle plan injunction and the fallout from that, there was a very concerted effort to get something out there and on the books to present this idea and then we could later go through the fine details that are going to be the much more controversial pieces."* Previous plans had gone through lengthy processes, but they had learned from that experience, *"we didn't want a five-year EIR that was going to halt everything. We wanted something out there… if anything was going to get built or developed soon, …it could get incorporated into their EIR processes...It was a very conscious decision and almost directly as a result of what happened with the bicycle plan."*

PH affectively changed the BSP, helping to develop different goals. Initially, planners were mostly concerned with the physical aspects of streets. PH brought an additional community-based aspect, because of the approach usually utilized in PH interventions, *"another thing that we managed also to get in the plan is that it wasn't just about engineering changes: There had to be educational campaigns, there had to be community outreach involved, and there had to be enforcement as well."* PH asked to be an equal partner in the collaboration, bringing in not only expertise but also implementing parts of the plan, *"and that we are the responsible agency for – mainly for the educational end of it all. And not only for protection and safety… but educating the*

public and policy makers on the connection between walking and all the other health issues. That right now is just words on a piece of paper but if this ever gets truly funded in the way that it should be and implemented in the way that it should be, that would be our goal and that would be really very exciting." Getting respect for their mission and their discipline, and allocating credit for their effort is important, *"So that was actually one of my main goals – but I never told anybody there. That that was going to get in there because we deserve [it] … that needs to happen and we deserve to be the people who do that."*

Individual leadership at any level appears to be essential for the success of collaborations. When these leaders stop being involved, there is a potential for the collaboration to falter or even fail. Are they replaceable? Can other individuals step into the collaborations? These questions must be answered when looking at factors that affect collaborations. In the case of the BSP, Ebert alludes to this when describing the next phases of the project, *"So the next steps, as far as I know – I shouldn't add this caveat but I had a baby in September. I went on maternity leave. I came back in January and I've only been part-time so I'm really way behind on so many things but, as far as I understand, the next steps are we collect public comment and incorporate that."*

When asked about what she saw as her role during the implementation of the plan, she replied that it would be to: *"be involved in making sure our comments get incorporated and helping to get public comment."* She is somewhat concerned that there may be some disagreement within the PH department, and she sees another part of her role as a mollifying influence. She refers to another unit in PH that is generally perceived as acting more independently and not as collaborative. This has proven in the past to be an obstruction to collaboration both within the PH department and with other agencies. One of the primary roles that Ebert and other PH representatives have played is to overcome the barriers to collaboration that have resulted from the conflict occurring in previous projects. This issue was remarked upon by other participants in the study when recounting other projects.

Gent

Even though the basic plan of the Better Streets Project has been published and is up for review and comments from the community, it is clear that there is much yet to be determined. When asked about the effects the plan would have on planning and zoning codes, Gent explained that all was being explored: *"we'll have to work on all the implementation measures that could get written into the planning code and into the zoning code, private development requirements for building out Streetscape and pedestrian improvements."*

At the time of the interview, the collaborative team had reached the point where they were presenting publicly a draft of the project for comments. He expected

the environmental health group of the PH department to submit comments, as they have in other projects. He also felt that the regular meetings they had been holding could be changed so that the group could better divide the responsibilities of implementation. *"That is probably where they will plug in at that point. I'm trying to figure out what's the next step and we've had this working group with a core team that I was talking about that has met every two weeks for the last year and a half and I think we're probably at the point where we don't all need to be meeting every two weeks."*

The complexity of the PH department makes it somewhat unclear about the roles that different units play within the department, and especially how they relate to other agencies. *"Justin's group has been more involved in terms of their Eastern Neighborhoods health assessment… a lot of what they have been involved in is land-use related and obviously there's a huge overlap between land use [and] transportation and this plan is more on the transportation side. In fact, we have an outreach event tomorrow where we're going to be talking about the Better Streets Plan and Justin's group is going to be talking about their work and it might actually be a good opportunity to figure that out."* The reason Ebert's group may have been involved from the start is that they were included in one of the projects that eventually became the BSP: *"because this is partially a pedestrian master plan…Angela's group has been involved with that [and] we've been involved with pedestrian safety and so that's who we've worked with in this case."*

When asked about the process of collaborating with the Department of Public Health, Gent felt that the BSP was actually an atypical example of the interaction of PH and planning in the City of San Francisco. Most projects are about land development, where Kirwan's group is usually involved in doing health impact assessments. *"This Better Streets Project is atypical of the projects we usually do, most of the projects we do are more land-use based and it might be good to talk to some folks who have worked on the Eastern Neighborhoods to get their sense of the inner relationship between planning and public health on that. I think that that might be more of an inner relationship of the type that you might be looking for. This project is pretty unique because it's really more of a street design. It's not focused on land-use or private lots or anything like that and…so many agencies are involved, I think it's atypical of how the city has worked."* One issue to explore is whether this atypical collaboration is more or less successful than other partnerships, and what are some of the factors that distinguish it.

Public health has a defined role in the implementation of the BSP. The planning and transit agencies will have the main role because of their construction and maintenance activities, and also because they are the main funders of the project. *"A lot of the implementation will be with the agencies that build and maintain streets and public health obviously doesn't do that so primarily you're looking at DPW, PUC and MTA... and also those that fund which also public health really doesn't do…"* PH will have *"more of a role in terms of an education and the awareness piece and how we can*

promote these ideas and these types of improvements that we want to make as a public health improvement or to get people to see it that way." Once again, PH is seen as the facilitator for communication with the community and other stakeholders in the project: *"going out and communicating that message and going to communities and working with them to promote that."*

Is PH better at communicating with the community? *"They're not necessarily better but, it's a different perspective and I think it's a perspective that resonates with …. Your average person… we could go out there and we could say: this is going to result in a modal shift from automobile transport to pedestrian quality."* He explains that PH is a more *"tellable"* message such as improved cardiovascular health, less obesity, etc.

Brislin

The community workshops offered the infrastructure for the collaboration to take place. The first meeting *"was very well attended and I tell everybody in order for it to be well attended you have to have it either on the weekend or in the evening. You've got to provide child care. You've got to provide food and in our situation we needed translation because a large majority of the population is Spanish only speaking."* The consultants did much of this organizational work, but the PH department, through Brislin, was instrumental in providing the data that the consultants required. This was a very complicated process that only PH could do, and it was the great selling point for their presence in the collaboration (again the cost-benefit ratio!)

As Brislin describes the process, the consultant "*needed to assess what the health situation was so he gave me this laundry list – really a wish list – of data that he wanted in order to do that and it was everything from pedestrian-vehicle accidents to diabetes rates to childhood obesity to everything you can think of and we did our best. We spent a lot of our research and EPI hours trying to get that data for him and he wanted it in multiple levels. He wanted nationals, state, everything down to census track and in most situations we could only get it down to maybe city or health districts which clumps a bunch of cities together."* The PH department had committed to the project and was able to provide the data requested, but *"even though it looks simple, this took a lot of effort and internal staff to get this data."*

Another aspect of the meetings was the great diversity of participants. This too is a hallmark of TD collaborations. The workshops organized by the consultants included *"city staff from their planning department which they call Community Development. You had elected officials. You had City Council staff there, and then we also had Public Health Plan and Public Health Law and Policy speakers… And then the rest were residents…people that just had, obviously, something they wanted to invest in.*"

As described previously, the PH department was instrumental in providing the data that the consultant used for presentations and to justify the PH element in the

general plan. *"That was a big thing. Data, data, data, data. We provide kind of a spotlight because when you hear the Public Health Department is involved in something, it can sort of raise the conversation up a notch."* The other important contribution is the connections that PH has *"in the community that can be accessed when you're going to incorporate residents. They have a whole grassroots level of advocacy that they can easily activate*."

Bennet

Bennet continues to develop relationships with other agencies and disciplines. She has progressed *"from working with engineers to working with planning people to working with redevelopment agencies."* One reason for this progression is the desire to *"give input into real-life projects, not just plans and so the Redevelopment Agency is where those things happen because they do real work."* After the initial plans are presented and approved, construction drawings are prepared. These drawings *"move right into construction, so it's not something that's going to sit on the shelf for a long time, so for us, that was an experience that we wanted to have – it's kind of getting into what happens on the ground when these things are constructed in the community*."

The effectiveness of the involvement of PH in the planning process is illustrated in an example Bennet describes. When a proposal was prepared for a traffic calming plan for a section of San Pablo, it was initially rejected and tabled at the city council level because of community objections. A city engineer revived it – after working with on other projects. The community outreach was conducted very differently, making sure that all the original opponents were included in the planning process. As a result, the plan was adopted without any objections during the hearings.

An issue that may have jeopardized the relationship between PH and the other agencies in the City of San Pablo was the result of a project called Healthy Neighborhoods. Bennet explains that although *"we don't really need their permission to work in it, but its good politics to do that."* At the time, the PH department agents involved *"did something without talking to the city, and the city has kind of never forgotten."* Lack of communication, lack of awareness of the other agencies' mission and function, and lack of respect for the other discipline were responsible for this omission.

In order to establish communication and trust between agencies, there is a need for an understanding of the institutional structure, mission, and practices of the other agency involved. Complex organizational structures act as impediments to TD collaborations, especially in the formative periods. Bennet illustrates this factor when she describes how, after the initial part of the project to create a health element for Richmond, a second stage to obtain funding was organized. This time the planners invited the PH department to participate in the discussions (also Richard Jackson and a representative from the San Francisco Department of Public Health). The invitation to

the PH department was only to the director, Dr. Brunner. As a result, Bennet and Tracy, the people who were actually involved and knew about funding, were excluded. Bennet explained that this occurred because the other agencies are more hierarchical and though *"we have a hierarchy for sure but I'm the lead on my work. I don't have to ask permission for a lot of things. I have been given a lot of responsibility. Tracy's been given a lot of responsibility and a lot of autonomy and we know when we need to check in with each other where a situation is a bit beyond what my responsibility is. I need to check with so and so."* Thus, Dr. Brunner is at the table; yet he is, according to Bennet, much less acquainted with the details. The perception of the planners is that *"like it's the top guy who knows everything."* To make up for this gap, a series of telephone meetings took place after the initial face-to-face meeting. In her view, this was not ideal, and it was very hard to review documents and discuss the visual details. They called the planners and explained their objections: *"this is just really hard to do over the phone. We can't really tell what's going on…"* After that discussion, they were included in subsequent face-to face meetings, which facilitated the collaboration. This contextual element has been described as extremely important in TD collaborations and one that may not be completely replaceable by technologically mediated meetings, such as teleconferencing or emails (Lehmann 2001; Dale, Newman, and Ling 2010).

During the fourth stage of implementation, PH is able to bring solid data to the table, which is of great use to planners. Examples Bennet gives are data of the mapped pedestrian collisions in the entire City of Richmond, where 23rd Street has an extremely high rate of collisions. This information was of great interest and created a *"lot of traction"* for making the street safer in its new design.

Although part of the technical advisory group, Bennet explains she must still remind the other participants, including the consultants, that PH has certain activities related to the grant that must take place. This includes making some presentations to the committee about the PH elements in the redevelopment project. Time was requested for presentations to the group during a regular meeting, which was arranged. Bennet explains that, although they must be proactive in order to be included, once they are involved, the planners are very appreciative and responsive to their needs. They trust her, and as she puts it *"I do think I have some personal credibility."*

The sustainability of the collaborative relation between agencies is dependent on various factors, including the process of collaboration which can take several dispositions. It can be confrontational, or cooperative and accommodating. In Bennet's view, the way *"we look at this work in the Health Department is that we're in this for the long term."* Any battles that may jeopardize this long-term outlook would have to be well justified.

An example she gives is of a particularly aggressive community organizer who had the ear of a powerful member of the city council and was advocating for a bicycle lane in a major thoroughfare being redeveloped. In the view of all expert professionals,

including PH, placing the lane in that location (rather than in an adjacent, less busy street) would endanger bicyclists and pedestrians. The activist persisted and organized a community bicycle coalition to demand that the lane be built. Several people involved in the dispute escalated the confrontation. There were several meetings for all stakeholders to express their views, but *"some of the people who came to the initial meeting aren't there anymore. She insulted people right and left – so I'm going, oh, my heavens, how am I going to deal with this person. It doesn't work to be oppositional to her."* Bennet instead chose not *"to throw myself headlong into conflict. I think there are people who do. That they thrive on that sort of thing. I would just rather kind of keep it even keel, because I think you have to take the long view."*

Bennet approached the recalcitrant activist and offered to collaborate with her in other projects where the resources available to PH for pedestrian and bicycle safety could benefit some of the goals of the bicycle coalition. *"So at this point, this person who's chairing the bicycle and pedestrian committee, she realized that I'm pretty indispensable to her because I know what projects are in the pipeline. I know what funding applications are being considered. I know what funding supports bicycle and pedestrian facilities and she really can't do it without me and she realized that to her credit."*

This defused much of the tension as the community activist realized the potential benefits she could gain and changed her hostile behavior. Several of the other members of the collaborative team realized the strength of Bennet's abilities to mediate and deal with the community, which resulted in a greater appreciation and desire to have her in the collaborations. This scenario includes some of the contextual factors involved in negotiation, such as interdependency, positive outcomes and results, respect, trust, value-added outcomes, and sustainability of the collaborative team. The last factor is illustrated by the fact that when a new project arose in the redevelopment agency, Bennet's group was *"invited to be on the technical advisory group for that and not only that, the redevelopment staff person who was working on that and the 23rd Street Project – he's the lead staff person – he calls up to make sure we're going to be able to make it to the meeting."*

The credibility that PH brings to the table for some proposals is also mentioned by Bennet. With some issues, such as increasing physical activity, having data and the support of PH helps planners make a case for including special measures to address problems. A planner making the statement that *"people will be healthier if they walk more, [is] not quite as credible as if somebody from the Health Department says it and I generally say – especially if I'm new to a group or if we're just getting started – why I'm there, from the Health Department and how if you construct a street that is safe for bicyclers and pedestrians you will reduce injuries and you'll increase walking and bicycling and that's very important to health."*

Dunn

The added value that PH could bring to the projects includes sharing knowledge and providing solid data that could be used to set *"objective standards and thresholds"* for PH interventions. He describes how using epidemiologic data could show correlations between health and planning decisions. An example he cites is the mention of sidewalk widths in a lecture by Richard Jackson. Implementation would occur during the planning stage, and probably most effectively in the general plan.

The LEED (Leadership in Energy and Environmental Design) and LEED ND programs are described as providing incentives to developers and designers to deal with such issues as transportation and green buildings that may not have been otherwise addressed. If somehow such approaches could be incorporated into the zoning review process for PH concerns, then it could result in an effective way for PH to collaborate with LUP. Dunn believes that this could be more acceptable than public health professionals *"just saying, well, we don't like this project because – it's a single-use, it's on the far side of town and people are going to have to drive so we don't like it."* Dunn is trying to avoid involvement that is *"punitive"* to developers and prefers to use a *"positive way"* that offers encouragement so that *"the applicants are actually thinking about it more."*

Community involvement in the process as presently constituted is not necessarily good and *"public hearings probably do more harm than they do good, and they're really the worst places to try to resolve some of these large issues that new development often raises. 98% of the people – and that's probably even low – that come to a public hearing are there because they oppose the project."* Policymakers are often swayed by the very vocal opponents that show up to the meetings. Although Dunn does not refer to the expertise of PH in communicating with the community that other LUPs have described, he states that PH has another important skill – it can help set the guidelines and rules that developers would be liable for.

Sanders

The collaboration at South Gate produced several changes and reorganizations of the PH document for the GP. As the collaboration with Brislin increased, new elements and topics were introduced. *"[We] pulled some topics out. Put it in a separate health element and also started addressing other topics. Like we hadn't really addressed access to healthy foods and nutrition and we did that a lot more."* He felt that if the PH department not been involved, then the results would have lacked many of the PH elements because the planning departments in general have not been *"as conscious"* of these issues. However, that situation appears to be changing, and he mentions a project in Encinitas where *"they actually wanted health as part of the general plan. So they put*

it in when they did a request for proposals." In another project, in Murietta east of Los Angeles, *"they wanted sustainability in their general plan and we proposed adding health to that as an optional path. And they said, that sounds great. We hadn't thought about that."*

Perez

Perez describes a project in which she was involved and was planning to write up as a case study. (The purpose of case studies is to provide examples for PH departments interested in getting involved in collaborations with LUP.) The project in Contra Costa County started out as *"an extension of their bike and pedestrian safety traffic safety work that they used to do."* They then started expanding the scope of the project by bringing in the street design piece, which *"gave them the foot in the door"* with the planning department. They created a relationship based on that project and then *"expanded from traffic engineering and the transportation world to the land-use world and then it got even broader. So it was just sort of growing, growing, growing…"* This case exemplifies the concepts of sustainability based on relationships and trust formation and a history of previous collaborations. The scope of the projects grew as the collaboration was successful in adding value to the results and greater benefits over costs.

For individuals and agencies the process of cost-benefit analysis can be the strongest motivation for collaboration, even in the absence of *"passion…It comes down to folks have to be getting something from it. It's either their passion on issue and they see this as a vehicle for moving forward."* When funds became available in Shasta County several cities chose to get involved partly as a way to get the funds and partly because of the interest that existed in collaborating with LUPs. In the case of the City of Anderson they had been ready to start the GP update and when the funds became available PH became very involved. Together with the Planning department, PH had been interested in including elements regarding trails, pathways and bike ways and their conditions within the city; however, they had large gaps in their data. The funds, which were obtained by PH, allowed them to fill those gaps by hiring an external firm to geocode the paths using GIS. As the project developed, they published a brochure about the trails; throughout the process, PH involved the community to audit the trails and become involved in their development. At the end of the process, it was evident that there had been great value added; as Perez states, *"the city was benefiting a lot."*

The project did not end with the involvement of PH in the update of the GP. The planning department applied for grants to improve the trails according to the community input made possible by PH involvement. Caltrans provided over $500,000 for that endeavor. It was an achievement made possible because of PH's bringing in the community input and labor. Without PH at the table, it is possible that this additional

collaboration may not have taken place. This fact was recognized by the head of the planning department; when the time came to obtain input for the new GP. He insisted on getting PH involved so that the community, particularly low-income people, could be included. Based on past experience demonstrating PH's strength in doing outreach, and communicating with and involving the community, planning realized the great benefit PH brought to the collaboration.

Perez stresses the calculation that the head of planning went through. He had a very limited budget to do the update of the GP. He was interested in involving many more stakeholders that he was able to reach. They included renters, poor people, and other marginalized groups. On the other side, PH was interested in addressing health disparities by gaining community engagement in the planning process. He had planned on holding one meeting, but the meeting was so successful that they held an additional three meetings with the community. PH also helped in crafting the wording of the elements of the GP that affected health issues. There was great synergy in their collaboration, with a final product that was much better than if they had tried to combine their perspectives after the fact.

The cost-benefit equation was clear from another example Perez describes. In L.A., the county was going to release an obesity report that was initially drafted by following public health agency boundaries and city council districts. The PH person approached the Director of City Planning and suggested that instead they redraw it by *"community planning areas."* She felt that this scheme was much more helpful for the PH agents, the *"people on the ground,"* and would also defuse potential political implications. (Council members could potentially use the report to show that one district was less obese than another!) This TD understanding of the issues and the pre-existing partnership resulted in a report that was more successful in addressing the problems by relating both the health of the community and its design.

Stage 5 of Collaboration

In the fifth (and final) stage of the model, several actions take place that ensure the sustainability of collaboration. These include 'evaluation and feedback, where team practices and roles are analyzed and future goals are established.' The model explains the "how and why" behind any steps toward a culture that supports collaboration. Some of the contextual factors that were mentioned by participants include funding factors and sociopolitical factors, such as mandates and political leadership support of interagency collaborations.

Burnam

The sociopolitical contextual factors that affect collaborations are present at all stages of the model. They have various effects, such as altering the power balance and the capacity of an agency to act. An example Burnam gives is the fact that the top ten contributors to the board of supervisors are all developers, *"so if the developers get too much grief from the Planning Department or the Planning Commission, what do they do? They call the Board member."* This results in pressure on the planning department to be more accommodating. Burnam suggests that this might change in the future, but remains skeptical.

A second sociopolitical factor he mentions is the stream of funding for cities and counties in California. In other places *"everything's funded with property tax."* In California, the funding is from sales tax and vehicle license fees. Thus, when decisions need to be made about the type of developments, *"how do you not have automobiles and big buck stores? How do you not have that? How do you cut off your own source of funding?"*

Burnam concludes that the problem in terms of making the connection between PH and the BE is a political one, mainly funding. The problem is not the collaboration with planners, which he feels is occurring. The problem is with political leadership and funding. He mentions that soon the fees charged to developers will be cut in half in an effort to increase construction. That means that there will be less money for the agencies, and, as was discussed previously, this will affect the prospect of collaborations.

Hunt

Additional factors that facilitate the involvement of PH are incentives or mandates for the collaboration. Hunt mentions having elected officials direct staff in different agencies to work together; specifically health departments to work with planning departments in either general or in clearly defined issues. As mentioned before, Hunt expresses his belief that involvement by elected officials and policy makers is a key factor for the development of collaborations. This involvement occurs not only in creating the necessary mandates, but also through their own buy-in for making projects such as GP updates or new project review a collaboration of various agencies. Hunt proposes that to get policymakers on board, his group has started organizing dinner meetings funded by the Robert Wood Johnson Foundation to *"educate"* elected officials in the Fresno region. They have an attendance of 20-to-30 officials and invite PH representatives to make presentations about health and community design. He explains that it is *"our feeling is that it's critical to get the policymakers on board, on the stuff you're not going to get very far."*

"I would emphasize the importance of having electeds on board because our experience over the many years working on these issues is that if you don't have at least a buy-in of the policymakers, it's very hard to get these things to happen." Indirect policy makers, such as city managers, are also extremely influential in the collaborative process. Often the elected officials leave much of the details of implementation to city managers: *"In small towns, I must say the city managers play a very important role because the elected officials are part time they defer a lot of decisions to the city managers so I put a lot of emphasis also on getting a good city manager to work on this."*

The importance of leadership for the successful implementation of a collaboration is especially clear when governmental agencies are involved. The leaders and the champions that cause collaborations and teams to form can represent different levels and areas of expertise. In addition, they may be in one agency or in various agencies. Hunt discusses this issue in the following manner. He states that the people involved can vary widely from county to county. In some counties, it is *"the folks working on chronic disease that are in the health department that are the ones that are taking this issue on."* In other counties, it is the people working on physical activity and health or involved in injury prevention. This occurs more in the large counties with many departments within the agency; in smaller counties it may be a single staff member or the director who are *"leading the charge."*

The problem that can result from this dependence on individuals to move the collaboration forward is that in cases where there is an obstructive individual or agency the collaboration may be threatened. Hunt explains that he has had *"experience in some counties where the health director or the health officer basically thinks this is not an important issue and doesn't move forward."* He states that you see the *"planning department doing their thing. But you don't get health and planning collaborating."* He cites Yuba County as a place where this occurred, in his experience. Interestingly, Hunt feels that this obstructive behavior is more common in the PH side than in the planner side. His explanation is that planners have been working on smart growth issues for some time and are very welcoming of any supportive collaboration in their efforts. PH is particularly welcome by planning because it brings to the table the health elements and additional resources that are very useful. He cites the example of Mecca, where PH was essential in the entire planning process.

Perhaps because of his vantage point – as a consultant in a not-for profit that focuses on its mission to connect local elected officials with other groups focusing on creating livable communities – Hunt is more aware than others about the role of developers in the planning process. Because of his work at the Local Government Commission, he stresses the role of elected officials and developers as stakeholders in planning. In regard to developers, Hunt notes that they are changing in their approach to planning and are starting to buy into the benefits of considering health issues in their

development plans. *"There have been a few developers out there who really get it. Randal Lewis has been the one on board probably for the longest period of time."* Once more, the process has been aided by education efforts from Hunt's group and from other grants that subsidize this effort. An example is a series of meetings between PH and developers in Orange County that were organized by the Urban Land Institute with a grant from the Urban Land Foundation. Some of the meetings were conducted by Hunt.

Hunt concludes by pointing out that there is very little research to *"identify what has worked well, what hasn't, what some of the challenges are, what some of the obstacles are, issues of communication, language, what things to avoid, and what things to emphasize. I think the more we understand that, the better position we'll be in and the better position health and planning will be in to work together."* He is expressing the concern of several other people involved in collaborations between PH and LUP that there are no clear, practice-based guidelines that could help interested people pursue such collaborations. These guidelines and examples are emerging naturally, because there is an evolution and exponential growth in the collaborations. A realization that many complex PH problems require the collaboration of different disciplines in the planning process is forcing this development to occur. However, this is a relatively new relationship, and *"we're still sort of feeling it out, we're trying to understand each other's terminology and language and how we work and the better we do understand that, I think the more productive the relationship can be."*

Hunt refers to the Policies for Livable and Active Community and Environment (PLACE) grants given by the PH department in LA County in order to encourage collaborations and partnerships. He suggests that the grants were perhaps too large (only five large grants were offered) and required to be distributed in a politically cautious fashion (only one per district). Smaller grants may have had a more widespread effect. He mentions that several small projects, such as a downtown revitalization plan, did not get funding because of the size and requirements for allocating grants.

The other barrier was the complexity of the organization. Hunt explains that since several different people in the department were dealing with the grant process, it was not clear who was in charge. He had been initially in touch with one person, Eloisa, whom he had met at a conference. Soon he was dealing with a second person, Gene. *"So I was like I'm confused, what's going on!"* It finally became clear that there wasn't good communication within the department, and that the two staff people were in different areas, one working on physical activity and health, and the other on chronic diseases. He attributes the divide to a bureaucratic structure that causes the staff to work as individuals not as a team. This lack of clarity is a factor that can prevent TD collaborations, because it affects the communication between disciplines. Lack of communication is a known negative factor to trust formation (Stokols et al. 2005).

Lambert

The concept of evaluation and feedback for the project, and for the ultimate goals of planners and PH, is mentioned by Lambert, as it was by Ryan. Both have suggested a *"report card"* approach that measures the process itself (the actual metrics remain to be decided). It asks *"How are we doing? How have we done?"* In order to accomplish these measures, the GP will now be under a mandate that it be reviewed on a yearly basis. The plan will set the highest standards – *"it's fairly easy to say these are the things we would do in a perfect world"* – but the task will be accomplished in an incremental manner, with evaluation and measurement to see what has been done and what remains to be accomplished. As part of the evaluation aspect, he describes a new Sustainable City Commission with a three-unit staff in the city manager's officer; this new commission created a sustainable city plan that includes various projects for the city being incorporated in the framework element of the GP, which Lambert is involved in. Another mark of TD collaborations is the involvement of various disciplines and enough people – a critical mass – for the collaboration to succeed. In this project, this critical mass is very much the case.

The completion of the GP project is not seen as the end of the collaboration, but rather as the start of many future projects that will involve PH and city planning. The idea that changes will occur in an incremental way year-after-year, with planning and PH involved in an almost-mandated partnership, will provide for sustainability. Lambert identifies education as an essential activity for accomplishing the GP goals, an activity where PH will play an important role. PH will be *"getting the word out about it, helping – adding not only nutritional education to some of their programs but talking about driving less because we're also going to be getting greenhouse gas emission goals from the State."* It is important to make the planning objectives consistent with the responsibilities of the PH department, such as healthy lifestyles, the different life choices that people make. If this occurs, the *"Public Health Department will be really helpful in educating people about that."* The value-add brought by PH includes the fact that it is already set up to educate the community through ongoing programs, multi-language approach, and community-level connections.

He foresees increased ongoing communication between the agencies *"about what they're working on, what we're working on and looking for ways that we can synergize what they're doing with what we're doing or collaborate or kind of leverage something that they're doing with something that we want to do."* He suggests that ongoing monthly meetings would be a good way to maintain the communication. Regular meetings, regular communications across disciplines, and establishing formal and informal dialogue are all contextual factors needed in order to establish trust for a successful collaboration.

Henderson

He concludes that San Francisco is *"is a city that likes to cut edges – it likes to be sort of doing things that have never been done before…this is city that attracts people like that [with progressive ideas]. But I do think that the Bay Area is brought up to that same level just by proximity. I mean Berkeley, obviously, because intellectuals are part of the University; Stanford has done a lot, I think, in the world of public health and transportation. So, yeah, the Bay Area is a pretty good laboratory for this, but I think the simple answer is public health is very much part of what we're doing more and more, and it's becoming not just good policy, but it's also good financial strategy as we realize that grants are rewarding people for doing this, we can actually line up and get money from pots of money we never even thought about before."*

When asked about the future possibilities of public health and planning encouraging progressive development ne says: *"once something catches on everybody wants it."*

This concludes a very rich interview with someone who truly *"gets it."* He is a person at the top who buys into the concept that PH and planners need to collaborate, because this collaboration results in better lifestyles, health, and economy. He is very aware of barriers and incentives for these collaborations. He exhibits many of the traits that characterize effective sustainable leadership: he learns from the past, promotes diversity, improves the team environment, conserves resources, spreads leadership, and lasts (Hargreaves 2007). He also promoted a TD approach by his actions: he listens and acts across disciplines, conducts joint projects, develops new interventions and questions, and respects other agencies' missions and goals.

Lonner

The MTA appears to have a very good working relationship with Ebert's group in the PH department. As noted previously, Lonner works closely with Ebert; they have been together in many previous collaborations. When asked about other projects that the PH department is involved in, specifically the Environmental section, she describes some projects where collaborations did not occur. It is evident that there is no equivalent to *"Angela"* and no institutional commitment from that unit in the PH department or its leaders. *"My understanding is the environmental health group is developing tools to evaluate the effects of land use and transportation on community health... They have the 'pedestrian environment quality index' as well as the 'bicycle environment quality index' as tools to rate either the pedestrian or bicycle environment based on a series of factors."* Based on her previous experience in collaborating with PH, she realizes the added value of working together: *"And that was something where I*

would have liked to have been more involved and I think our agency would have liked to be more involved."

However, there appear to be some conflicting institutional agendas in that *"the environmental health group developed that on their own, and we've been asked to review some of their work, and I think once it's completed we'll be asked to use the index, but we weren't involved from the beginning and we weren't involved in the development and they did, they presented the work to us and they presented it as, or as they were presenting it they mentioned that they work with the professionals and consulted the experts in pedestrian safety."* Conflicting agendas, lack of communication, and an obstructive institution or leadership are all barriers to developing productive collaborations. Their having been presented with a product (the *"tools"*) that they were mandated to use – but which they were not involved in developing – has engendered resentment and does not bode well for future efforts at collaboration. The PH department has, in this case, ignored the valuable resources present at the MTA: *"we were [not] involved in the development and I think there's a lot of expertise within our agency specific, not just to transportation engineering or transportation planning but also to the city and county of San Francisco, a lot of us live and work in the city. I live less than two miles from here, and I walk, bicycle, drive, take transit in and around the city, as do a lot of my colleagues here at MTA, so I think we could have provided a lot of information and a wealth of knowledge."*

Lonner expresses optimism: *"I hope to still be involved, and I don't think it's finished yet and I think we can still maybe shape or at least inform some of that. But it was conceived of and I think developed without involvement from the MTA."* It is interesting to contrast the Environmental Health group and the Community health group (where Ebert works) for the differences in management, leadership, goals, etc. Both are part of the PH department, but they are perceived in vastly different ways by other agencies, and they have very different attitudes towards collaborations and the development of projects that could involve the planning and transportation agencies.

Ebert

Sometimes the community outreach that PH facilitates can produce *"some frustration when we partner with a community group that they don't like. You know, MTA or some other department doesn't like their agenda whether their concerns are valid or not. So it's a mixed bag, but I think we're further along than where we were – much further along than when I started six, seven years ago."* The importance of ongoing collaborations contributing to a change in attitudes cannot be overemphasized. Each new collaboration becomes easier and has a greater chance of success. It also makes it more likely to transcend the narrow disciplinary silos, thus resulting in a true TD collaboration.

An area where PH excels is in program evaluation. I asked Ebert if they were planning on doing any evaluation as part of the (Better Streets Project) BSP. She was very intrigued by the suggestion, *"It's true and I can float it to them. My gut reaction would be like thanks but no thanks. We are too busy. We've got all these other things but, I like the idea and this is the first time – that's the way I could sell it – this is the first time that these many departments have worked together. So this is sort of a pilot project in and of itself so there should be some kind of documentation of where things worked and where things didn't."* Her willingness to consider other ways of improving the project, while also understanding the possible reaction of other members of the collaborative, is an important trait in any person facilitating collaborations.

Applying the lessons learned in SF to other geographic areas, Ebert sees PH departments providing a bridge between communities and planning agencies. Using their strengths and unique functions, PH professionals could be working inside other departments, or collaborating with them. *"San Francisco is quite a unique place. I can't imagine that really truly happening in Sacramento or anywhere else, but public health still could be the leader when it comes to outreach… public health departments; county public health departments have public health nurses. Community outreach workers. Why isn't there a cadre of community outreach workers going out and talking about these issues? [Referring to Riverside County]I mean, why isn't there a coordinator like that in every single public health department?"*

Having in each department a full-time or part-time position representing the other discipline, or someone trained in both, is a suggestion that would address some of the communication barriers between disciplines. This approach would also address the question of diversity in the agencies, *"And the way this state and this country …the amount of diversity, I'm not seeing that amount of diversity reflected with the planners…they always seem to be struggling around 'what do we translate and how do we do this and how do we outreach to that community' and it's not – it's an issue, but it's not that much of an issue for us."* The opportunity for PH to be involved is often missed, *"Every neighborhood plan, every general plan, there has to be community outreach components to that and why aren't we doing that?"*

Gent

Gent perceives the collaboration with Ebert as being on a more informal basis, even though the meetings are often planned and scheduled. Interaction occurs also outside the meetings. He sees her as having much experience in various areas that are important to the project and contributing in those areas. She respects the activities of the other participants and is not seen as a burden or source of obstruction. *"I have this image of we're all sitting around the table but, more often than not, we do have a regular meeting but, it's more of a check-in.. . here's what's going on right now and*

people will give their thoughts. Angela might say: did you consider talking to these people? Or, we may get a piece of work from the consultant and I would send it around to the whole agency…" Ebert has defined the areas she is more concerned with: *"Angela has not been that involved because we were more working on the Streetscapes side of things and I think she's more concerned with what the MTA was doing and the Pedestrian Master Plan…"* It is clear that the collaboration is based on good communication and a feeling that they can work together: *"I have more of a good rapport with Angela where we just talk sometimes where I just say: this has been an issue and I'm concerned about this… and we'll just talk through some things…"* Gent describes some of the skills and expertise that Ebert contributes: *"she's a very good resource in terms of just knowledge of the community and people who are interested in this subject and how we might go about reaching people and outreaching to people and that's been the primary overlap."* Her role is: *"more like an advisor, I would say, but, in some cases a liaison. We've done a number of focus groups; we've done a walk and tour. She's worked with a lot of organizations around town and knows it better than I do. I mean she's a great resource for that."* He is not only giving her credit, but also shows respect for her contribution and skills – necessary factors for the development of TD collaboration.

Anderson

Formalizing relationships helps institutionalize them and possibly helps sustain them long term. The Parks Department is cited by Anderson as an example of an agency that is *"trying very hard to sort of solidify and formalize some working relationships which translates into a bunch of meetings, talking about it but really not necessarily changing behavior so far."* Again, leadership is a key element because *"what it takes is a couple of people – again at whatever that right level is for the project or for the program – to make the commitment and put their staff behind it, which is just very hard for some administrators to do right now."* Communication – that is, dialogue between disciplines, whether formal or not, at the level of the main active participants (usually mid staff level) – must occur because *"if the conversations are not happening at the staff level, they're not going to happen…"*

Anderson does not believe that policy is generally used effectively as a tool to bring about change. However, *"we need policies, we need good language and there's a lot of great work going on around policy… and we can see these success stories but I think a lot of the people don't know what to expect from it or how to implement it or how to monitor it." "Getting the policy into the plans is a critical first step because it gives you the foundation…then once the plan's adopted…How does that translate? Who's going to carry the ball?"* Policy may help address one of the problems presented by active collaborations that do not include plans for continuity. Rather, such

collaborations occur on a project-by-project basis *("The way it's set up now, now we move on to the next plan"),* and therefore the collaborative process has to reemerge for each project.

Anderson expresses admiration for several other people in the PH department. Her main contact was involved in the revision of the general plan for LA County. She was instrumental in getting PH concerns included. Under her guidance, the PH department *"was very involved in developing policy language and that they would come [to meetings]at our department to talk about the importance of either having a public health element of infusing public health language into other policies."* She notes that her contact *"was really pushing for that and she persisted about meetings… sort of worked her way through the department and made a lot of connections and so a number of people would think of her and would be happy to call her and to get consultation and that sort of thing."* Unfortunately, resources in all agencies dwindled and the priorities and individuals involved changed; for these reasons, she stated that *"I haven't seen anything like that in a while."* Once again, this demonstrates a dependence on individual leaders to sustain an environment supportive of collaboration. It also emphasizes the essential need for continuity to occur through the availability of resources and the institutionalization of the process of collaboration.

Brislin

Because the program for collaboration for the revision of the city of South Gate's GP proved successful and resulted in tangible benefits to the department and the communities it served (demonstrated by the stand-alone health element in the general plan and the grants obtained from Kaiser), further resources were allocated and institutional guidelines were created. This, in effect, is an ongoing process, and also important at other stages of collaboration, such as stage three. "*Now we've got some more infrastructure and we have actual talking points when it comes to the 'built environment' and planning. We have guidelines.*" The director of the PH department showed his support for the program in a letter that stated, in Brislin's words, that "*built environment and land use and-- this is why it's important and this is why we're getting more involved and this is why public health needs some voices at the table."* In Brislin's view, their having started collaborating at the local level rather than at the county level "*was a little bit backwards in our situation.*" (It would be interesting to explore the possibility if, in fact, the collaboration would have been less successful had it started from the more bureaucratic and inflexible county agency rather than the smaller unit in which individuals were able to communicate and proceed more easily.)

Brislin describes the state-level mandates, such as SB 375 (discussed elsewhere), as having the effect of increasing the acceptance of PH participation in the planning process. Specifically, the Council of Governments "*was a little bit more open to having*

public health be present." In addition, the cities that the PH department has approached (while they are in the process of creating their own general plans) seemed "*a little more open to us being there and it doesn't seem like such a surprise like, oh, what is public health doing.*" Mandated versus voluntary participation by agencies is an important topic for discussion, because both approaches have advantages and disadvantages and often are found in combination during the process of collaboration.

In spite of growing awareness of the importance of a health perspective in the planning process, Brislin believes that cities are not *"at a place where we need to be where it's just assumed that public health is going be involved and going to have some sort of voice at the table. I don't think the cities are thinking that way yet when it comes to land use."* Although, the PH Department is committed to the idea of collaboration, it is having serious internal discussions and cost-benefit debates; while *"they're setting up the infrastructure to be there, the real issue is again balancing that infectious disease, chronic disease… that's been a real big internal struggle because what staff? What if we open this door into this whole new level of working with cities on land use issues? Who's going to do that? And we have to figure out how to balance the work load. So, that's an ongoing issue, actually. It hasn't been resolved."*

The fifth stage of collaboration involves evaluation and feedback, where team practices and roles are analyzed and future goals are established. It encompasses the creation of a culture that supports collaboration and includes resource allocation, role definition, and a reassessment of the costs and benefits to the institution. The established roles and functions of the PH department must change in order to accommodate the new culture of collaboration. Brislin describes various new skills and knowledge she had to obtain; her skills as a community nurse *"were very different than what I needed when I came to this…there's a whole set of information that I had to quickly cram and I still don't feel like I'm an expert at all on just planning and land use… figure out how are governments, city governments, even organized. Who makes decisions? What are planning commissions? Who's on the planning commission? How does the City Council go?"*

In order to help staff acquire new skills and knowledge, a combination of internal workshops, conferences, and training events took place at the Department. Experts, including from the Health Law project, Dr. Jackson, and other consultants were brought in. Breslin's attending annual professional conferences, such as New Partners For Smart Growth, was also an important incentive because these allowed her to explore areas for collaboration that she was not aware of (an example mentioned was working with school districts for joint use programs).

Once the PLACE program had started, Brislin and others in the different SPAs were invited to attend several events organized at the county level. The PLACE program has been instrumental in providing support for continuing collaborations. In spite of this support, however, there is still a degree of uncertainty because *"we have not built the*

infrastructure of whose responsibility it is within the Department of Public Health" to devote the time and effort to collaborations with the planning departments. And even PLACE staff, of which there were seven, were *"very limited in what they can do but we've talked about we really need a planner within the Department of Public Health that could then be a consultant of sorts, an internal consultant."*

The use of health impact as a selling point for land use decisions has been discussed. Whether at the developer level, or at the city or regional planning agency level, the use of health issues to add value is a tool that promises to help collaborations occur. Brislin points out that in an era of shrinking government budgets it is necessary for PH to *"draw the connections for them so that they see how this is an investment in the community and gets back to issues of city pride and making their city a desirable place to live, a desirable place to have business… and a lot of that is the benefits of addressing health in the general plan. So connecting that, those two points, often times will convince a city that it's worthwhile."*

A concern Brislin raises several times during the interview is to ask who will be the *"watchdog of this document. Who's going to make sure that they do all the things that they said they were going to?"* Although she feels it is not the place of the PH department to do it, she believes that they could perhaps participate in a group (a *"coalition"*) charged with oversight. This is an important concern and relates to the idea of sustainability and long-term continuity of collaborations. Do they survive past an initial project? Do they survive a change in leadership? (*"A win for Dr. Fielding the last three years and then it disappears"*)

Brislin brings up her observation that the education of professionals in PH, such as a public health nurses, stresses teaching in the traditional ideas of immunizations, epidemics, and diseases such as TB – to the exclusion of community-level interventions. She believes that, as a nurse, she was *"doing a great good for that individual, but not really putting a stop on the gushing waters. So, I wish that message would have been given to me when I was a nurse and in training."* She feels this would benefit PH, planning, and the communities they serve by encouraging more people to collaborate in integrating PH and LUP.

Bennet

Sustainability also requires that the process of collaboration not depend on the presence of specific individuals. Sustainable leadership creates a system that is independent of the leader. Bennet is aware of this, and explains that since *"I only have one staff person and one of my goals as a supervisor is for her to be able to do what I do and so forming independent relationships with these people is important to our work."* Now, when Bennet goes on vacation, her staff is able to participate and even initiate interactions with the planners.

Sustainability may also be dependent on training people earlier in the process of collaboration. Exposing planning and PH students to the other disciplines during their education or initial jobs may help break down the silo mentality that historically characterized academia and continued in other institutions like government agencies. From homeland security to health initiatives, sharing of information is often a weak link hindering the best outcomes. Bennet talks of a change she has noticed in the younger staff members she has interacted with. *"What is happening is that younger staff are coming in who have been exposed to these issues in schools or in other jobs and they're studying these things and they're looking at what other cities have done and they really do have – like there's one person in particular now in the Redevelopment Agency staff that goes on the Web and says, 'here's what they did in this city. You know, why not try that?'"*

Dunn

In California, the California Environmental Quality Act or CEQA is an important motivator for interagency communication and mandated formal dialogue. He describes these *"responsible agencies"* as having an ability to affect outcomes of the environmental determinations; therefore, it becomes essential to make sure they have the opportunity to be involved in the process. PH is not usually involved in reviewing and commenting on projects, but according to Dunn it could be. This change would require additional responsibilities and the commitment of resources by PH agencies. There are requirements to review plans in a timely manner, and PH would have to adhere to these requirements.

Sanders

Sanders believes that the next frontier is for various departments – the County Health Department and the City Planning Department – to *"really work together in very specific ways that are critical to individual communities."* In his opinion, it is not enough to simply develop policies and create partnerships.

Elaborating further on the topic of individual cross-disciplinary relationships as a basis for establishing trust, Sanders explains that the complex jurisdictional institutional organizations make it very difficult for a top-down approach to collaborations. *"You can't have the Los Angeles Board of Supervisors tell the city to work with the Health Department. It just doesn't work because the 88 other cities in Los Angeles County each have their own council."* He stresses the importance of developing relationships, and he explains that he *"always tell people, like the public health folks – you know, they say, how do we get to know the planners? And I say, buy them lunch. It's really as simple as, go out to lunch and talk about what are the commonalities."*

PH departments are charged with promoting and protecting health. Sanders believes that they should be helping fund the collaborative process not by underwriting the general plan but rather by allocating resources to educate PH people and getting them involved in the planning process.

Developers are mentioned as possible partners in the collaboration, not necessarily because of a commitment to PH, but because they can benefit financially from including health elements. He cites the case of a developer in Berkeley that put a *"great building in and put it in a great location because he realized that's what would sell and he could make money doing that and it would help the city. And it turns out to be the model of what we would want. So I think our role, the planning and health is to support the developers for doing projects like that rather than to have the developers pay to say that there are health benefits."* This approach is less coercive than the HIA or regulatory mechanisms that have been suggested elsewhere. In addition, Sanders suggests that giving recognition to developers through programs like LEED may also encourage them to include health elements.

PH can also support elected officials in making decisions regarding land use projects that benefit health. If PH is present during the planning process, it can state that *"this is a good project because it's good for health,"* which would make it more difficult for the project to be opposed. As Sanders explains, "*people will not say, I don't want something that's good for health...people are not going to come and say, here's a building I don't support and I'm against good health. And so it's a political argument more than anything and I think there really is a role for the Health Department to come out and support individual projects for exactly that reason."*

Perez

Effective leadership is mentioned, because she finds it to be extremely variable in developing areas for collaboration. Some agencies have buy-in at the top, accompanied by a very hands-off approach that allows the staff to pursue the project more independently. In other cases, the health officer attends the trainings and is much more involved in the process. She describes two counties, Shasta and L.A. which demonstrate these two different approaches (one hands-off, the other very involved), yet both are very successful in pursuing collaborations with the LUPs. She found *"that the people that are really moving it forward really are passionate about it."* This was particularly true early in her involvement in the field, at a time when PH and LUP were just starting to collaborate. At that time, a few individuals were becoming involved because of their personal interest; they often did this work on top of their regular jobs. Funds were scarce or not available, and they did not necessarily have the full support of their agencies. She noted that as funds have become more widely available for collaborations, they are often distributed for political and geographic considerations

rather than to agencies that have a champion *"who's on fire about this issue and really wants to move it forward."* As the process of collaboration becomes more institutionalized, it appears to become much more routine, more a case of *"folks are doing it because it's just what they're doing"* and not the passion that characterized the early years. Perez discusses also the importance of having champions for projects. In her experience, these are the individuals responsible for making collaborations succeed.

Perez discusses the differences between TD efforts in the case of tobacco control and PH and LUP collaborations. She sees that, in the case of tobacco, the goal was to mobilize the community and ultimately affect policy. The aim of collaborations between PH and planning, on the other hand, is to create relationships in which the partners know that they have the same objectives (if for different reasons) and decide to move forward. According to Perez, there is a risk for PH acting (as in the case of tobacco) in order to mobilize the community and take a position with sociopolitical implications. The risk is that PH would be perceived as *"an interest group,"* and would therefore lose its professional objectivity. To some extent, planners may see PH as an agency that can assist with some largely bureaucratic functions, such as the review of planning proposals for health impacts.

Perez's statements indicate that the activism implied in TD action collaboration could be a source of concern, even controversy. This potential conflict should be explored comprehensively, because of the potential implications. This exploration will require an evaluation of the political, social, and professional benefits and costs in order to determine if a TD action model will succeed.

Interview with Allan Jacobs

Note to readers: This is the only interview reported with the actual name of the participant (with his permission). Dr. Jacobs provides a unique contribution to this study, providing perspectives on the history of collaboration between Public Health and Planning.

Jacobs has been a member of the Department of City and Regional Planning at the University of California at Berkeley since 1975. In addition to teaching, he has participated in a wide range of professional planning activities. He has served as a consultant in city planning and urban design to Curitiba, Brazil; Berkeley; the Los Angeles Redevelopment Authority; Portland, Oregon; and many other cities. He has published influential books, such as *Great Streets*, *Looking at Cities*, and *Making City Planning Work,* and has conducted research in the field of urban design.

Jacobs served as Director of Planning for the City of San Francisco from 1967-1975, when he developed a new comprehensive plan for the city, emphasizing public access to the San Francisco waterfront, design guidelines for downtown development, and revitalization of neighborhood design throughout San Francisco.

Jacobs holds a Bachelor of Architecture cum laude from Miami University, and a Master of City Planning from the University of Pennsylvania. He attended the Harvard Graduate School of Design, and was a Fulbright Scholar in City Planning at University College London. He has won a number of honors and awards, including the AIA Excellence in Education Award, California Chapter, 1994; Resident in Architecture, American Academy in Rome, 1996; and a Guggenheim Fellowship in 1982. (Excerpted from Project for Public Spaces)

Throughout the many interviews conducted for this study, the theme emerged among both PH and planners that the time has come for the two disciplines to connect through collaborations in the area of the BE. The feeling is that something new and revolutionary is occurring. Professor Jacobs, however, offers the reminder that the history of such collaboration is much longer and more complex than most participants realize. His perspective is both erudite and personal. Discussing the relationship of PH and planning, Jacobs recounts why the memory of how PH and planning share common roots has been lost to the new generations of planning students (and PH students).

Jacobs explains that when he was studying planning, any good professor would communicate the reasons why many the legislations affecting planning had been passed. At the time, this was current knowledge; it *"wasn't ancient then, when I studied city planning. It is ancient now. It's like me talking to students when I first came here about the legislation that got passed and why it got passed during the depression and thinking they might; they didn't understand anything. You had to explain to them what the depression was. To you, it was living history. I mean I grew up during the depression. To them, it was ancient history. It's the same thing all over again."*

In order to understand the socioeconomic issues in the era of industrialization in Britain and America in the mid-19th century, it is essential to understand the reasons why PH and planning were once completely interconnected. Having studied planning in the 1950s, Jacobs remembers that, *"either in your readings or via the professors or both, you read about the muckrakers of the U.S., the Jacob Riises or all of the studies and the legislation that went into the British legislation, or earlier in the mid-early 1800s, those studies of the slums. You read about them. Some of that I read about later, but you read about that stuff so you knew that one of the major, major, major, impetuses of – that's a bad word – the major beginnings of city planning were concerns with public health, with slums – so-called slums."*

Jacobs describes how when he was a planning student, he had to learn about the designs of flats and tenements that would increase exposure to light and air circulation. This was the result of the history of *"airless flats and the dumb bell tenements."* According to Jacobs, these designs were based on studies done by Germans in the early part of the 20th century, after mapping out communicable diseases such as Tuberculosis. He recounts his amazement when similar designs and legislation were being rediscovered by modern planners. *"Meeting a young Chinese bureaucrat here last week*

in Elizabeth's class who was talking about the law in China that says: all the buildings must get X hours of sun in the bedroom and therefore they are all oriented the same way and you cannot have a shadow…"

At a higher level, Jacobs explains that even the origin of the design of the *"new British towns"* was related to the desire to *"undo slums."* The stories and pictures by Jacob Reis of *"slums that were sexually promiscuous – that had a big impact in England…whether it was brothers screwing sisters"* motivated *"a lot of city planning. Not all. Some of it was all pure design. You go back further to earlier city planning, way back, where it was almost all form."* However, as Jacobs explains, even in its earliest periods, city planning involved aspects of PH, so that even though in *"the Renaissance [it] wasn't public health that they were concerned with. At least to my knowledge, the early Roman cities, they were concerned with clean water, for sure, and so there was a public effect, and the lay-out of the city had a water supply, and sewage…."*

In order to inspire his students, Jacobs often assigned them readings such as the series of books on how cities were built by David Macauley. He explains that much in those books was actually about PH. He also refers to Olmstead, who was *"trying to build a healthy community."*

What have been some of Jacobs's experiences with PH professionals? He describes a very positive event soon after he moved to the Bay Area around 1968 – meeting several people who had come out of the PH department and who were working in other agencies and projects. One was in *"what we call FACE Program, Federally Assisted Code Enforcement. He came out of the Public Health Department, and he was working in the Department of Works. And there were a couple of guys in the Department of Works who would come out of the Public Health Department."*

The FACE program he mentions really originated in PH concerns going back to *"supposed public health reasons for the 1948 Housing Act of the United States which established redevelopment."* Why *"supposed"*? Jacobs explains: *"an awful lot of the reasons for it were to eradicate unhealthy living in slums. That was a major reason for that act. The ability to create – and it had criteria in it that were used to designate an area a slum and that meant unhealthy living and that was the beginning of – as far as I'm concerned – the phony criteria, the truly phony criteria!"* One of such criteria he mentions is one he encountered when working with the city of Cleveland, where *"they still had rules having to do with sunlight through the windows at 70 square feet of sunlight because that was related to tuberculosis. And one of the criteria for creating a slum was overcrowding. People could not live healthily in an overcrowded situation. What was overcrowding? Over 1.1 persons per room! You know that standard? You must. Oh, yeah. Over 1.1 persons per room."*

At that point he realized that most people, including his uncle and grandparents who shared a one-bedroom apartment in New York City were living, by those criteria, in slum conditions! *"I saw the building not that many years ago, and it's still there. So I*

guess it's still a slum." These criteria signaled the start of the separation of PH and planners, and the advent of a group Jacobs calls *"housers,"* such as Katherine Barrow Wooster, who followed the precepts of village design in America and England. Several treatises embraced these ideas, *"there were books that they put out that related public health where the criteria of walkability to a school was not crossing a major road to a school. Soon after that, they began to go other ways, if for no other reason than the planners began to get more and more pseudo-scientific about the field and less objective, much less objective as far as I see it, my view, about really making connections between the physical environment and people's 'well-being' of public health, or health."* This caused planners to go one way, and PH another.

Jacobs describes planning schools as originating with a desire to, *"train professionals to do city planning, and at a master's level. That's important. No PhD. At a master's level."* Berkeley's school of City Planning was one of the earliest, established in the 40s [1948] by Jack Kent, who had been the San Francisco planning director. The reason for training master's students was the concern that if PhDs started becoming the norm, then there would be a loss of the desire among planners to do true *"professional planning."* What then happens is that the PhD program *"gets bigger and bigger and bigger, or more and more important. Pretty soon, the teaching of professionals gets smaller and smaller. Pretty soon, that's going to have an impact on the field. It has had an impact on the field."* (University departments of city planning are under great pressure to have PhD programs, so that they relate to other academic disciplines.)

Students who arrive to the university with a desire to do professional planning quickly have it *"taken out of them within the first semester. The faculty takes that out of them."* Perhaps in fields such as Landscape planning there is more interest in professional activities; however, Jacobs sees them as being too accommodating to clients. *"They're quiet, will accommodate anything as long as they can draw pretty – and they do. They're accommodators. And that's a problem."* Jacobs sees the importance of setting goals and objectives based on sound principles as essential to good practice. The loss of those principles leads to a dissociation of collaboration with other disciplines, because principles are essential for the process of negotiation as described in this study.

Jacobs gives one of the most cogent explanations of the role of planning and its relationship to the health of people. *"I would make it very, very clear that the field or the profession is concerned with the arrangement of urban physical environments in relationship to the nature of the land itself and to the well-being of people who live in them. But, the fundamental concern of the city planner is the arrangement of the physical environment and that's the expertise that the city planner should bring to it. It is not economic development, although you should know something about that. It is not housing, the economics of housing, you should be damn well concerned with, but, you are ultimately concerned with the physical arrangement."* For Jacobs, the expertise of planners is in the physical arrangement of a community, which ultimately has far-

reaching consequences including for PH, but planning is not *exclusively* a tool to be used to transform other branches.

The questions that the planning discipline deals with are: *"What really is the difference in the physical arrangement of a community? An urban environment in relation to the land? The nature of the land itself and the people? What's the difference in how you lay it out or design it or make policy as to whether it's for a rich or a poor person? You will have to go a long way to prove that there's a difference."* Jacobs feels there should be a difference.

To illustrate this concept of social equity, Jacobs talks about the *"San Francisco Urban Design Plan, and there were nine preliminary reports that went with it."* In order to present this plan to the community in the Mission district, the department conducted a series of meetings. They provided interpreters in Spanish and presented the different height limits that the plan was proposing. After discussion, the community made it clear that *"they god damn well wanted higher heights because they could then have more people and they needed more housing for them. And it was very strong. Very, very strong. I didn't think that was good reasoning, but it was very, very strong."* Jacobs spent several weeks discussing the issue with the community representatives and at the end he concluded that they had made a very strong case for a different height limit in their community as compared to others. He was ready to agree to an increase from 40 feet to 60 feet when *"the same group of people came in again and they argued that they were wrong. They had been wrong and they said, in this society, why should we live in an environmental situation that's different from everybody else? If 40 feet gives you a kind of housing that's good and better than that, why shouldn't we have that as well? Why should we get something less than everybody else? And we were wrong. We back your 40 feet. I was totally prepared to go the other way. It was a huge lesson to me."* This is one of the clearest examples of what results from a participatory action collaboration that develops a common framework and common objectives. Negotiation resulted in a better understanding of the complex problems and a superior solution. One of the important concepts that Jacobs proffers is that if 40 feet truly is better for health (or better for another reason) then that should be the standard used irrespective of the socioeconomic level of the community. When Jacobs presented this case at an academic meeting, one of the professors in Public Policy declared that, *"Those people didn't know what was good for them"* which caused Jacobs to tell him *he* did not know what he was saying!

Jacobs suggests that there are mandates that could be used to foster collaborations between disciplines, but more importantly, between agencies in California. The GP is mentioned as being a potential tool if, *"you insist that, within the State of California, every city is required by law to have a master plan for the city."* Jacobs recounts several unfortunate instances where he worked very hard to include elements from other agencies and then had them backpedal at the last minute. *"When I*

was Planning Director, we tried to do that. I must say it's not so easy. It is not easy. People don't want to take stands. People want to have, to do what they want to do when they want to do it. They don't want to have policy and that's one of the problems of planning too." He describes how he *"worked my ass off to do a plan that was a joint plan with the Park and Recreation Department and we worked and we worked and we worked together and at the last minute, no, no, we don't want to do that!"* The same thing happened with an element of the general plan that had to do with education, and one with the Police Department.

Negotiation and cost-benefit analysis are suggested in this study as being the primary activities necessary for collaborations. Jacobs alludes to this when he explains that involvement with PH by planners will depend on the question: *"to what extent can involvement with public health be helpful to me in what I do?"* He also feels that the same process occurs with PH when evaluating possible collaborations. Ultimately the collaboration will be successful if both participants derive benefits. He gives possible scenarios to demonstrate this. One is the design of a building with many curb cuts, which results in traffic issues and makes it harder to get trees planted along the street. The planner would go to PH to ask which of these effects has negative or positive impacts in terms of quality of life. One effect could be that decreasing trees results in a less healthy environment. *"Elizabeth has just been doing these studies on the cost and benefits of street trees. So there's data that seems to show that street trees are very cost-effective, and they are healthier because what they do to ozone, [and] their ability to absorb carbon [dioxide]."* The support of PH in proposing plans that have more trees and fewer curb cuts could help overcome the resistance by other agencies. Suggest a plan *"allowing trees and you will run into problems with the Department of Public Works with it…but together you make a huge argument for what is better physical design. It's fascinating."* The city of Vancouver is an example of a city with *"very few curb cuts. They have what they call a boulevard but it's along what I call a tree line. There are very few curb cuts."* This benefits the community and contributes to the goals of PH, *"I don't think I'm going on real, real far stretch to say that that has an impact on public health; definite public health impact there."*

This approach is not new. Jacobs refers to the *"middle days"* when planners were trying to create healthier communities. Again, Vancouver is an example of that type of city planning, *"a place like Vancouver, once again, every … neighborhood has a park and more often than not a school right next to it. How did that happen? That's an old, old policy from those old days. They were the middle days that we talked about…that are right out of the 'planning the neighborhood' stuff."*

Regarding negotiation, Jacobs suggests that using data can sometimes help a planner *"play hardball."* He explains that in his experience, he has had to face a *"fight with an engineer over the width of a lane, and he won't change the width of the lane to narrower because, even though I've given him data that show that it's safer, it is against*

his standard, and if they break the standard and there's an accident, they'll be liable. Oh, yeah? So I'm going to tell you, sir, fine, use your standard. Don't change the width but now that I gave you data that shows that it's safer to be narrower, if there's an accident on that street, I know somebody's going to sue your ass. He's sitting in the room right now, he's looking at you."

Jacobs has often used data to push ideas that improve the design in terms of PH issues and other livability concerns. This approach, apparently, was not always taken well by the other agencies involved, and he believes it may have resulted in his not being asked to participate again in future projects. In the case of Fruitvale Ave. in Oakland, the narrower, more pedestrian street was essentially an idea that had to be forced on the developing agency, which leads Jacobs to ask, *"You think I'll ever get hired in Oakland again?"*

Another important contextual factor that the present study has repeatedly found to be essential for collaboration is the dialogue between disciplines. Jacobs describes the importance of this factor when he suggests that even a short dialogue between him and a PH person would identify potential areas for collaboration. *"Questioning you more for a period of time about public health issues … I would very quickly get responses about public health that I could then say, ah, here is where we come together."* Yet he feels that such dialogue occurs only rarely, *"it's not happening…you need some kind of dialogue where somebody is willing to base his best professional guess."*

The role of leadership in helping develop collaborations is another important factor in this study. For Jacobs, schools play an important role in developing leaders. Schools should *"train for being what a good professional is. You do work with others; you stand up for what you think – you make your assumptions clear and your values clear. You then do work and research that is as replicable as you can make it which is that if someone else does the same study with your assumptions… they are going to come up with the same answers. That's what good professional work is, in my opinion. That's what I think professional work is. And then you apply your values to it."*

Regarding the possible conflict between professional duties and an activist agenda, Jacobs explains that the leader must be honest and straightforward while pursuing his beliefs. He gives the example that, when he was the director of the Planning Department in SF, people knew that he, *"had an agenda but, I was also honest and straightforward and if the data showed something [he would not ignore it]…we were doing, the Federally Assisted Code Enforcement Project. We were asked to do it in the Alamo Square area of San Francisco. One of the reasons for doing it was to build a wall around redevelopment because I was really opposed to the whole redevelopment program and people knew it."* When he presented the project, which included loans for people to fix up their properties, he was accused of causing gentrification. After conducting an analysis, Jacobs determined that in fact two blocks would be affected, so

he then proposed to the community to exclude those two blocks. The response he got surprised him because the community *"argued for keeping them in. Why? Because with you, we know what we're going to get. If we don't go with you, we're likely get redevelopment and we'll all get kicked out."* He attributes this response to the fact that he was simply honest with the community throughout the collaboration.

In summary, Jacobs has identified many of the factors that have emerged in this study as having an impact on collaborations between PH and Planning. His incredible historical perspective allows him to refer to a time where such collaborations were the norm rather than the exception. Whatever the aspect – whether it is leadership, or mandates, the presence of resources, or active dialogue – ultimately it is the honesty and respect for one's own and the other's beliefs that brings about collaboration. By example, Jacobs has shown that developing a common framework faces many barriers and requires many incentives, but in the end it results in the design of better, healthier, more socially responsible communities.

CHAPTER 4

DISCUSSION

"I personally would like to collaborate, would like to partner. But I'm not sure that that feeling is shared by everyone and I think that there are people that resist projects or changes." A city planner

"It's a really good partnership. Going through the department of public health and their contacts and their connections to the community broadens our reach into the community, which is extremely important." A city planner

"Partnerships with planners have borne more fruit in terms of affecting how streets are designed." A PH manager

Introduction

This chapter is organized in five sections. The first section (Implications for Practice) is a brief review of the motives for collaboration between PH and planners, as well as their implications for everyday practice. The second section (Five Stage Model and Levels of Action) summarizes the Five Stage Model of Collaboration and the Social Ecologic levels at which it operates. The third section (Cost-Benefit Audit) introduces the concept of the Cost-Benefit Analysis Audit, based on the model for collaboration and associated theory. The fourth section addresses the strengths and limitations of the study, and also outlines possible areas of future research suggested by the study. The final section (Conclusion) discusses the models and theories that resulted from the study and the conclusions derived.

Implications for Practice

PH (public health) and LUP (land use planning) share a long history of collaboration, much of it dating to the era before the emergence of the clinical/medical model for public health practice. During the 19th and early 20th centuries, PH and LUP regularly joined forces in order to address some of the most pressing and complex

health problems being presented by overcrowding, epidemics, industrialization, poverty, and rapid urban growth.

The 21st century presents new, serious PH challenges that require new, creative approaches to their study and solution. Among these challenges is a rise of chronic diseases – such as obesity, heart disease, and diabetes – that are positively or negatively influenced by the built environment and the limitations or access it may impose in regard to physical activity and healthy food. These diseases, therefore, must be addressed by various disciplines and agencies – indicating that a re-unification of PH and LUP may be necessary in order to solve such complex problems.

This re-unification will need to occur at varied levels and settings, and it will involve many disciplines and stakeholders. One key setting would be the collaborations that occur between PH and planning in governmental agencies. This study proposed to look specifically at the current state of collaboration between public health professionals and land use planners in an attempt to identify new opportunities and incentives for increased collaboration, as well as to identify the challenges and barriers that may be hindering such increased integration. The choice of focus for the study was due to the major consequences that such collaborations carry in terms of policy and economics, and on the day-to-day effects on the health and well-being of communities.

Five Stage Model and Levels of Action

The Five Stage Model of Collaboration has its foundation in Social Exchange Theory, TD Theory, Team formation literature, and TD collaboration literature. It consists of five stages in the process of collaboration; all stages must take place in order for a collaboration to occur. Each stage entails several activities that take place among individuals and agencies within a pre-existing setting. The study refers to the activities and their antecedent factors as "contextual factors." These contextual factors include not only actions taken by individuals (such as "holding regular meetings"), but also institutional factors that have a bearing on the success of the collaboration (such as "Resource/Funding factors").

The five stages of the model are as follows (Figure 5) (Gitlin, Lyons, and Kolodner 1994):

1) "*Assessment and goal setting*, where participants examine their individual and institutional goals and assess the need for developing a collaborative relationship and its cost-benefit ratio." A potential project is identified, and often a champion for collaboration emerges. If no need for collaboration is ascertained at this stage, then the process would cease. It is possible that contextual factors, such

as legislative mandates, may impose collaboration on the participants; however, for the collaboration to proceed there must be a realization that the benefits will outweigh the costs to participants and institutions. Factors that encourage the process of collaboration include: A history of previous collaboration; professional and personal relationships; ongoing collaborations; and effective leadership that is knowledgeable regarding collaboration. Also at this stage, several factors are important specifically for the development of TD collaborations; these factors include the nature of the problem, the willingness of the participants to seek other disciplines, and the willingness to develop a common framework. Identifying other participants is very important at this stage, and often a consultant is involved. Gaps in available resources are also considered during the stage-one cost-benefit analysis.

2) "*Determination of a collaborative fit*, in which participants meet to exchange and negotiate potential project ideas and roles and begin to establish an environment of trust." Initial meetings take place, and opportunities arise for the development of trust among participants. Open and frank discussions are a hallmark of stage two. Negotiation and goal setting – with clear role definition – are essential actions. There is often a great deal of interaction among the participants, and also with such external groups as community associations, legislators, and developers. Consultants may be involved in charettes, lectures, and meetings. Although much communication takes place electronically, face-to-face meetings appear to be quite important in creating an environment of trust. Time commitments are negotiated, and the initial steps are taken in order to identify necessary resources, such as grants. Developing a common language is a key factor in TD collaborations, as is a shared conceptual framework. Having a diversity of participants and disciplines also contributes toward a TD approach. Another key factor in effective collaboration is the presence of leaders versed in participatory conflict resolution and willing to empower participants. Social and professional communications are also important incentives.
3) "*Identification of resources and reflection*, where individuals return to their group to reassess the resources needed for a collaborative effort and the benefits of participating." At this stage, there is ongoing cost-benefit analysis as available resources and people, time constraints, and political considerations are all assessed. Any pre-existing agency agreements or mandates can have great effect (either positive or negative) on the collaboration. Institutional complexities, particularly jurisdictional issues, may appear as hindrances. Leadership plays a key role by either encouraging or discouraging the participants.
4) "*Refinement and implementation*, in which suggestions and ideas are refined and put forward and the individual contributions differentiated." During this stage,

the project is implemented in line with any constraints placed by the available resources and funding. Continual cost-benefit analysis takes place, while other potential participants are identified and unexpected events are tackled. The unexpected can come from external sources (such as a legislator becoming involved) or be internal (such as the loss of a key member of the team). A strategic plan is developed and modified as necessary.

5) "*Evaluation and feedback*, where team practices and roles are analyzed and future goals are established. This model explains the how and the why behind any step toward a culture that supports collaboration." This study stresses the concept of sustainable collaborations between PH and planning. Although the model used was originally developed for single projects, it also can be applied to the process of institutionalizing interagency collaborations. For this institutionalization to occur, there must be continued evaluation during the project, feedback at the end of a project, and the formation of an ongoing team. Many examples of such teams can be seen in the study; however, there are also cases in which the loss of a team member, change in the agency leadership, or adjustment in priorities and knowledge can result in the loss of sustainable collaboration. In recent years, funding issues have emerged as key factors.

An ecologic construct has been used to analyze the action of contextual factors at different levels; this analysis helps clarify the model, as well as helps develop the theory applicable to PH and planner collaborations. Models are essentially heuristic (to discover or reveal) in nature, helping describe the process or phenomena under observation. Theories, on the other hand, are explanatory and predictive. There is much debate regarding the relationship of model and theory, but for this study the five-stage model is used to operationalize the concepts emerging from the theory (Frigg and Hartmann 2009). The ecologic model divides the levels of action by starting at the individual level and then moving to increasingly broader spheres. It is a model used widely in the literature in PH interventions, and is has been adapted effectively for TD collaborations (Stokols et al. 2008). The following are the six levels at which the contextual factors in the study can be grouped:

- **"Intrapersonal"** The study identifies certain attitudes and values that appear to be common in individuals who become champions of collaboration. These attributes and values lead to collaborative readiness, and they often can be related to previous collaborative experience. Effective leadership is a trait that can be discerned at this level.
- **"Interpersonal"** The development of a common language as a result of effective communication is a factor seen at all stages of collaboration. A diversity of participant skills and expertise also plays a key role at this level. In order for trust

to develop, there needs to be mutual respect among participants, as well as for the institutions of which they are a part. Obstructionist individuals and institutions can be overcome by flexibility and adaptability.

- **"Organizational/institutional"** Among the most important themes emerging from the study is the presence of organizational incentives to collaboration. Empowerment of participants, institutional support for collaborations, and available resources were repeatedly mentioned by the participants. A variety of participants bringing a breadth of disciplinary perspectives will help increase the likelihood of collaboration. The institution must also provide opportunities for informal contact and communication.
- **"Physical/environmental"** The study identified that the physical location of agencies is a key aspect in collaborations. When agencies are physically in the same space, there is more opportunity for individuals to interact both formally and informally.
- **"Technologic"** The study found that technology provides two important areas for collaboration. The first area is electronic communication, which facilitates team formation (although some personal contact is still important). Government agencies in general appear to be well equipped in this area, offering a sufficient technologic infrastructure for remote collaboration. The second area involves the provision of data in support of collaboration. Access to information through collaboration is cited as a value-adding aspect of the participation of PH in the planning process. Planners often mentioned the importance of data from reliable and authoritative sources in their decision-making process.
- **"Political and societal factors"** Given the context of this study – government agencies – few areas are more important than the political factors that affect interagency collaborations. Politics is truly pervasive. Almost every contextual factor includes political ramifications – whether it is funding, the creation of mandates, the complex hierarchical structure of California government, or even the personal and professional considerations of individual participants. In terms of societal factors, societal PH problems are providing a major incentive for collaboration. As society recognizes the costs of obesity, lack of physical activity, and chronic diseases, it is demanding a TD approach that can better confront these challenges.

Cost-Benefit Audit Tool

One of the aims of the study is to *"bring tangible benefits to the experts"* in the form of tools that can be used to encourage and facilitate the process of collaboration between PH and planning. The following section introduces a tool that is based on the

findings of the study and the theory generated: It is referred to as the Cost-Benefit Audit (CBA). The tool is in the form of a manual titled *Collaboration Manual for Public Health and Planning* presented in Appendix 5.

The idea of a Cost-Benefit Audit (CBA) originates from the theoretical basis of the Five Stage Model of Collaboration. Social Exchange Theory proposes that people calculate the worth of a relationship – in this case collaboration – by subtracting the cost from the benefits: **WORTH = BENEFITS – COSTS**

Because different individuals have different expectations, the actual result of this calculation may vary depending on the level of comparison. Greater expectations on the part of the individual may result in a decision not to participate in collaboration. If the cost-benefit process were more evident and transparent, then it would allow participants to avoid the pitfalls of engaging in futile or unnecessary collaborations. It is hoped that the CBA tool (titled *Collaboration Manual for Public Health and Planning* in Appendix 5) proposed for each stage of the five-stage model will help the participants evaluate the desirability of starting a collaborative project or of continuing in one. The CBA would make more apparent the need to answer such questions as: Is collaboration the best approach to the project? Do we have the necessary resources? The CBA would also allow participants to address potential barriers in advance of committing to collaboration. This approach could save resources, and it could also make the process of collaborations more agreeable to the participants.

To decide if a team initiative should take place, Stokols (2008) suggests the use of an audit. The audit would consist of factors that have been identified as having the greatest bearing on the successful formation of transdisciplinary research and teaching programs (Stokols et al. 2008). The audit would allow for selection of the best possible leaders, as well as an evaluation of the participants' readiness for collaboration. Funding could be made contingent on addressing possible deficiencies.

The model proposed by Gitlin (1994) for collaborations of health professionals in gerontology suggests the use of a series of six self-assessment questions; these six self-assessment questions help individuals identify their collaboration readiness, and also assist in the process of goal setting (Gitlin, Lyons, and Kolodner 1994). An example of an assessment question is: *"How do my interests and research/education ideas fit with the goals and priorities of my profession, department, and institution?"* In addition, Gitlin lists six outcomes (quoted in the theory section) that are necessary to initiate collaboration with another discipline or institution[22].

[22] The agency and the individual involved must agree that: a) the specific issues considered in the project are consistent with the priorities of the agency and the individual; b) The issues are of sufficient interest that they merit the investment of resources, people, and time to plan the project; c)There is a willingness to collaborate with the other disciplines and agencies and consider modifications to the initial ideas; d) Sufficient resources can be made available for the planning and execution of the project; e) Any

While several of the factors listed both in the audit and the self-assessment questionnaire are project specific, there are also many that would apply to collaborations in general. Likewise, the present study includes contextual factors that appear to be closely tied to the specific study setting, (interagency collaborations) but also includes others that are shared with other studies of collaboration and team formation science.

The proposed CBA is based on the contextual factors that were found to act at each stage of the five-stage model – and which also act at each ecologic level of analysis. In Table 6, the contextual factors used in the study are listed by stage and level of action. They are arranged so that they can be easily compared in terms of multiple appearances in various levels and stages. They provide In Table 7, the benefits/incentives and the costs/barriers are listed for each stage and level. As an example, in stage 2 at the interpersonal level, an incentive for collaboration (or TD collaboration) is *"formal dialogue is established."* A barrier at the same level and stage would be: *"participants remain separated into silos."*

The audit would allow participants to address barriers by reviewing each stage and noting where such barriers are found. Participants could also locate and emphasize the contextual factors that serve as incentives and would increase benefits – and this process would tilt the balance toward a more successful collaboration. For example, if there is a determination that *"participants remain separated into silos,"* then the leaders could seek to establish communication by holding meetings for participants to become better acquainted.

The proposed audit is composed mainly of the factors most commonly quoted in the analysis of the data. This frequency suggests that participants deemed these factors to be of high importance in the collaborative process.

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gaps in the available resources must be identified and; f) the benefits to the individuals and the agencies are worth the costs (Gitling 1994).

Table 6. List of Contextual Factors by Stage and Level.

Table 6.1

Stage 1 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
1 Addressing everyday problem						X
2 Assessing collaboration cost/benefit	X		X			
3 Building on existing groups		X	X			
4 Buying in at the top	X		X			
5 Buying in by participants	X	X				
6 Complex organizational structure			X			
7 Defining the goals	X	X	X			X
8 Developing common language						
9 Developing new interventions and questions						
10 Different organizational identity						
11 Diversity of participants and disciplines			X			
12 Empowering Team Members			X			
13 Establishing formal dialogue						
14 Establishing informal dialogue						
15 Establishing Trust						
16 Evaluation and Feedback Providing						
17 Group Synergy						
18 Identifying areas for collaboration/missed	X	X	X			X
19 Incentives for TD participation	X	X	X	X	X	X

Stage 1 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
20 Incentives to collaboration	X	X	X	X	X	X
21 Infrastructure providing for collaboration				X	X	
22 Integrating knowledge from practice	X	X				
23 Interdependency						
24 Involving community						
25 Knowledge sharing			X			
26 Leadership effective	X	X				
27 Obstructive Institution			X			
28 Onset of major collaboration						
29 Outcomes and results						
30 Overcoming future barriers						
31 Partnership mandated			X			X
32 Partnership voluntary	X	X	X			
33 Previous collaborations	X	X	X			
34 Process of collaborating	X	X	X			
35 Regular communication across disciplines			X			
36 Regular meetings						
37 Resource/Funding factors			X			X
38 Respect for other discipline	X	X	X			
39 Respecting agency mission	X	X	X			

Stage 1 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
40 Services through contract						
41 Services through trust						
42 Sharing	X	X	X	X	X	
43 Spatial relationship						
44 Strategic plan creation						
45 Sustainability factors	X	X	X	X	X	X
46 Time commitments	X	X	X			
47 Value-added outcomes			X			X

Table 6.2

Stage 2 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
1 Addressing everyday problem						
2 Assessing collaboration cost/benefit	X		X			
3 Building on existing groups		X	X			
4 Buying in at the top	X		X			
5 Buying in by participants	X	X				

Stage 2 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
6 Complex organizational structure			X			
7 Defining the goals	X	X	X			X
8 Developing common language		X	X			
9 Developing new interventions and questions		X	X			X
10 Different organizational identity			X			
11 Diversity of participants and disciplines		X	X			
12 Empowering Team Members		X	X			
13 Establishing formal dialogue		X	X	X	X	
14 Establishing informal dialogue		X	X	X	X	
15 Establishing Trust	X	X				
16 Evaluation and Feedback Providing						
17 Group Synergy		X				
18 Identifying areas for collaboration/missed	X	X	X			X
19 Incentives for TD participation	X	X	X	X	X	X
20 Incentives to collaboration	X	X	X	X	X	X
21 Infrastructure providing for collaboration				X	X	
22 Integrating knowledge from practice	X	X				
23 Interdependency		X	X			
24 Involving community		X	X			
25 Knowledge sharing		X	X			

Stage 2 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
26 Leadership effective	X					
27 Obstructive Institution			X			
28 Onset of major collaboration		X	X			X
29 Outcomes and results						
30 Overcoming future barriers	X	X	X		X	
31 Partnership mandated			X			X
32 Partnership voluntary	X	X	X			
33 Previous collaborations						
34 Process of collaborating	X	X	X			
35 Regular communication across disciplines		X	X			
36 Regular meetings		X	X	X	X	
37 Resource/Funding factors			X			X
38 Respect for other discipline	X	X	X			
39 Respecting agency mission	X	X	X			
40 Services through contract			X			X
41 Services through trust		X	X			
42 Sharing		X	X	X	X	
43 Spatial relationship				X	X	
44 Strategic plan creation		X	X			
45 Sustainability factors	X	X	X	X	X	X

Stage 2 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
46 Time commitments	X	X	X			
47 Value-added outcomes		X	X			X

Table 6.3

Stage 3 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
1 Addressing everyday problem						
2 Assessing collaboration cost/benefit	X		X			
3 Building on existing groups		X	X			
4 Buying in at the top	X		X			
5 Buying in by participants	X	X				
6 Complex organizational structure						
7 Defining the goals						
8 Developing common language						
9 Developing new interventions and questions						
10 Different organizational identity						
11 Diversity of participants and disciplines		X	X			

Stage 3 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
12 Empowering Team Members						
13 Establishing formal dialogue						
14 Establishing informal dialogue						
15 Establishing Trust						
16 Evaluation and Feedback Providing						
17 Group Synergy						
18 Identifying areas for collaboration/missed						
19 Incentives for TD participation						
20 Incentives to collaboration	X	X	X	X	X	X
21 Infrastructure providing for collaboration				X	X	
22 Integrating knowledge from practice						
23 Interdependency		X	X			
24 Involving community						
25 Knowledge sharing						
26 Leadership effective	X					
27 Obstructive Institution			X			
28 Onset of major collaboration		X	X			X
29 Outcomes and results						
30 Overcoming future barriers	X	X	X		X	
31 Partnership mandated			X			X

Stage 3 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
32 Partnership voluntary	X	X	X			
33 Previous collaborations						
34 Process of collaborating	X	X	X			
35 Regular communication across disciplines						
36 Regular meetings	X	X	X	X	X	
37 Resource/Funding factors			X			X
38 Respect for other discipline						
39 Respecting agency mission						
40 Services through contract			X			X
41 Services through trust	X	X	X			
42 Sharing						
43 Spatial relationship						
44 Strategic plan creation						
45 Sustainability factors	X	X	X	X	X	X
46 Time commitments	X	X	X			
47 Value-added outcomes	X	X	X			X

Table 6.4

Stage 4 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
1 Addressing everyday problem						
2 Assessing collaboration cost/benefit	X		X			
3 Building on existing groups		X	X			
4 Buying in at the top						
5 Buying in by participants						
6 Complex organizational structure						
7 Defining the goals	X	X	X			X
8 Developing common language		X	X			
9 Developing new interventions and questions						
10 Different organizational identity			X			
11 Diversity of participants and disciplines		X	X			
12 Empowering Team Members		X	X			
13 Establishing formal dialogue		X	X	X	X	
14 Establishing informal dialogue		X	X	X	X	
15 Establishing Trust	X	X				
16 Evaluation and Feedback Providing		X	X			
17 Group Synergy		X				
18 Identifying areas for collaboration/missed	X	X	X			X
19 Incentives for TD participation	X	X	X	X	X	X

Stage 4 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
20 Incentives to collaboration						
21 Infrastructure providing for collaboration				X	X	
22 Integrating knowledge from practice						
23 Interdependency						
24 Involving community		X	X			
25 Knowledge sharing		X	X			
26 Leadership effective	X					
27 Obstructive Institution			X			
28 Onset of major collaboration		X	X			X
29 Outcomes and results						
30 Overcoming future barriers						
31 Partnership mandated						
32 Partnership voluntary						
33 Previous collaborations						
34 Process of collaborating	X	X	X			
35 Regular communication across disciplines						
36 Regular meetings		X	X	X	X	
37 Resource/Funding factors			X			X
38 Respect for other discipline	X	X	X			
39 Respecting agency mission						

Stage 4 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
40 Services through contract						
41 Services through trust						
42 Sharing		X	X	X	X	
43 Spatial relationship						
44 Strategic plan creation		X	X			
45 Sustainability factors						
46 Time commitments	X	X	X			
47 Value-added outcomes						

Table 6.5

Stage 5 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
1 Addressing everyday problem						
2 Assessing collaboration cost/benefit						
3 Building on existing groups						
4 Buying in at the top						
5 Buying in by participants						

Stage 5 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
6 Complex organizational structure						
7 Defining the goals						
8 Developing common language		X	X			
9 Developing new interventions and questions		X	X			X
10 Different organizational identity						
11 Diversity of participants and disciplines						
12 Empowering Team Members						
13 Establishing formal dialogue		X	X	X	X	
14 Establishing informal dialogue		X	X	X	X	
15 Establishing Trust						
16 Evaluation and Feedback Providing		X	X			
17 Group Synergy						
18 Identifying areas for collaboration/missed	X	X	X			X
19 Incentives for TD participation	X	X	X	X	X	X
20 Incentives to collaboration	X	X	X	X	X	X
21 Infrastructure providing for collaboration				X	X	
22 Integrating knowledge from practice						
23 Interdependency						
24 Involving community						
25 Knowledge sharing						

Stage 5 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
26 Leadership effective						
27 Obstructive Institution						
28 Onset of major collaboration						
29 Outcomes and results	X	X	X			
30 Overcoming future barriers						
31 Partnership mandated			X			X
32 Partnership voluntary	X	X	X			
33 Previous collaborations	X		X			
34 Process of collaborating						
35 Regular communication across disciplines		X	X			
36 Regular meetings						
37 Resource/Funding factors						
38 Respect for other discipline						
39 Respecting agency mission						
40 Services through contract			X			X
41 Services through trust						
42 Sharing						
43 Spatial relationship						
44 Strategic plan creation						
45 Sustainability factors	X	X	X	X	X	X

Stage 5 Contextual Factors	Intrapersonal	Interpersonal	Organizational/ Institutional	Physical/Environmental	Technologic	Political And Societal Factors
46 Time commitments						
47 Value-added outcomes						

Table 7. Cost-Benefit Audits (CBA).

Table 7.1 Stage 1 CBA

	Benefits	Incentives	Costs	Barriers
Intrapersonal	• Identifies new areas for collaboration • Respects other disciplines • Engages in voluntary partnerships • Buy-in at a personal level	• Able to make sufficient time commitment • Clear definition of personal goals • Involvement of effective leaders and champions • History of previous collaboration • Open to collaboration	• Misses opportunities for collaboration • Partnership is mandated • No personal buy-in • Lacks respect for other participants and disciplines	• Lacks experience in collaborating • Presence of obstructive leaders • Lack of time commitment • No clear goals defined personally and institutionally • Does not trust collaborations
Interpersonal	• There is regular communication between participants and across disciplines • Respect for other discipline	• Leaders empower the participants • Participants recognize value added to outcomes	• Partnership is mandated	• Participants remain separated into silos • Does not see value-added by collaboration • Does not respect other discipline

	Benefits	Incentives	Costs	Barriers
	and agency mission • Partnership is voluntary			• Presence of obstructive leaders
Organizational/Institutional	• Participants are empowered to develop collaboration	• There is wide agency support for collaboration	• Participants are not empowered by institution and leaders	• Complex organizational structure • Obstructionist institutional rules and regulations
Physical/Environmental	• Stability of the agency location allowing for sustainability	• Geographic proximity of the agencies possibly sharing facilities		• Widely dispersed locations
Technologic		• Ability to use the technology among the participants		• Lack of support of member's technological needs
Political And Societal Factors	• PH concerns become increasingly recognized by society	• Legislation that indirectly results in the need for collaboration • Existence of mandates that		

	Benefits	Incentives	Costs	Barriers
		are supported and funded		

Table 7.2 Stage 2 CBA

	Benefits	Incentives	Costs	Barriers
Intrapersonal	• Identifies new areas for collaboration • Respects other disciplines • Willing to share knowledge and credit • Engages in voluntary partnerships • Clear definition of personal goals	• Open to collaboration • History of previous collaboration • Able to make sufficient time commitment • Involvement of effective leaders and champions	• Misses opportunities for collaboration • Presence of obstructive leaders • Partnership is mandated • Lacks respect for other participants and disciplines • Does not trust collaborations	• Lacks experience in collaborating • Lack of time commitment • No clear goals defined personally and institutionally
Interpersonal	• Develops interdependency between PH and planning	• Participants recognize value added to outcomes	• Partnership is mandated • Adversarial relationship	• Participants remain separated into silos

	Benefits	Incentives	Costs	Barriers
	• Formal dialogue is established • Trust develops between participants • There is regular communication between participants and across disciplines • Synergy emerges from group formation • Goals are set in participatory manner • Buy-in results from goal setting • Common language develops resulting in	• Leaders empower the participants • Sufficient diversity of participants and disciplines is present • Respect for other discipline and agency mission • Partnership is voluntary	emerges • No common goals developed • Lack of diversity hinders developing new ideas and innovation • Does not identify new areas for collaboration	• Does not see value-added by collaboration • Does not respect other discipline • Presence of obstructive leaders • Lack of trust in other discipline and agency

	Benefits	Incentives	Costs	Barriers
	greater understanding • Shared framework for action emerges • New areas for collaboration are identified			
Organizational/Institutional	• Participants are empowered to develop collaboration • Regular communication is established between agencies	• There is wide agency support for collaboration • Buying-in at the top occurs • There is sufficient variety of perspectives among the participants from the agencies	• Participants are not empowered by institution and leaders • Communication is impeded by institutional hierarchical structure • Narrow range of participant disciplinary outlook	• Complex organizational structure • Obstructionist institutional rules and regulations • Institutional barriers to sharing of information
Physical/Environmental	• Agency setup provides for increased communicatio	• Geographic proximity of the agencies possibly sharing facilities	• Lack of facilities to meet	• Widely dispersed locations • Complex organization of

	Benefits	Incentives	Costs	Barriers
	n and face to face meetings • meetings and charettes	• Availability of facilities for presentations		jurisdictions causing physical separations • Barriers to ongoing communication because of separation
Technologic	• Access to latest communicatio n technology • Respect for the value added by alternate technology	• Ability to use the technology among the participants • Understanding of the technology used by other disciplines • Readiness to exchange information securely	• Primitive technologic setups in smaller agencies • Excessively complicated technology hinders communication and understanding • Distrust of other discipline technologic readiness	• Lack of support of member's technological needs • Lack of security for exchange of information
Political And Societal Factors	• Changes in political arena that result in increased support for a	• Existence of mandates that are supported and funded • Legislation that	• Changes in the political arena that cause support to be lost	

	Benefits	Incentives	Costs	Barriers
	project	indirectly results in the need for collaboration		

Table 7.3 Stage 3 CBA

	Benefits	Incentives	Costs	Barriers
Intrapersonal	• Open to collaboration	• Involvement of effective leaders and champions	• Presence of obstructive leaders • Does not trust collaborations	
Interpersonal	• Formal dialogue is established • There is regular communication between participants and across disciplines • Buy-in results from goal setting • Respect for other discipline and agency mission	• Sufficient diversity of participants and disciplines is present • Leaders empower the participants	• Lack of diversity hinders developing new ideas and innovation • Does not respect other discipline • Presence of obstructive leaders	
Organizational/Institution	• Buying-in at the	• There is wide	• Participants are	• Complex

	Benefits	Incentives	Costs	Barriers
al	top occurs • Participants are empowered to develop collaboration • Resources and funding are allocated to the project • Regular communication is established between agencies • There is sufficient variety of perspectives among the participants from the agencies	agency support for collaboration	not empowered by institution and leaders • No allocation of sufficient resources and funding • Communication is impeded by institutional hierarchical structure	organizational structure • Obstructionist institutional rules and regulations • Narrow range of participant disciplinary outlook • Institutional barriers to sharing of information
Physical/Environmental	• Geographic proximity of the agencies possibly sharing facilities			• Widely dispersed locations
Technologic	• Understanding of the technology		• Excessively complicated	• Distrust of other discipline

	Benefits	Incentives	Costs	Barriers
	used by other disciplines • Respect for the value added by alternate technology		technology hinders communication and understanding	technologic readiness • Lack of support of member's technological needs
Political And Societal Factors	• Political support for agency collaboration • Changes in political arena that result in increased support for a project		• Lack of resources to fund mandates • Changes in the political arena that cause support to be lost	• Political opposition to projects because of other stakeholders • Appearance of new problems that take precedence over existing projects

Table 7.4 Stage 4 CBA

	Benefits	Incentives	Costs	Barriers
Intrapersonal	• Open to collaboration • Willing to share knowledge and credit	• Able to make sufficient time commitment • Involvement of effective		• Presence of obstructive leaders • Lack of time commitment

	Benefits	Incentives	Costs	Barriers
		leaders and champions		
Interpersonal	• Develops interdependency between PH and planning • Formal dialogue is established • Trust develops between participants • Synergy emerges from group formation • Goals are set in participatory manner • Willingness to integrate shared knowledge into practice • Common language develops resulting in greater understanding	• There is regular communication between participants and across disciplines • Participants recognize value added to outcomes • Sufficient diversity of participants and disciplines is present • Leaders empower the participants	• Partnership is mandated • Adversarial relationship emerges • No common goals developed • Lack of diversity hinders developing new ideas and innovation • Does not see value-added by collaboration • Does not identify new areas for collaboration	• Participants remain separated into silos • Lack of trust in other discipline and agency • Presence of obstructive leaders • Unwilling to adapt and integrate new knowledge

	Benefits	Incentives	Costs	Barriers
	• Shared framework for action emerges • Partnership is voluntary • New areas for collaboration are identified • Onset of a major collaboration			
Organizational/Institutional	• Buying-in at the top occurs • Resources and funding are allocated to the project • Regular communication is established between agencies	• There is wide agency support for collaboration • Participants are empowered to develop collaboration • There is sufficient variety of perspectives among the participants from the agencies	• No allocation of sufficient resources and funding • Communication is impeded by institutional hierarchical structure • Institutional barriers to sharing of information	• Complex organizational structure • Obstructionist institutional rules and regulations • Participants are not empowered by institution and leaders • Narrow range of participant disciplinary outlook

	Benefits	Incentives	Costs	Barriers
Physical/Environmental	• Agency setup provides for increased communication and face to face meetings • Meetings and charettes	• Geographic proximity of the agencies possibly sharing facilities • Availability of facilities for presentations	• Complex organization of jurisdictions causing physical separations • Lack of facilities to meet	• Widely dispersed locations • Barriers to ongoing communication because of separation
Technologic	• Understanding of the technology used by other disciplines • Respect for the value added by alternate technology	• Access to latest communication technology • Ability to use the technology among the participants • Readiness to exchange information securely	• Primitive technologic setups in smaller agencies • Excessively complicated technology hinders communication and understanding	• Lack of support of member's technological needs • Distrust of other discipline technologic readiness • Lack of security for exchange of information
Political And Societal Factors	• Community involvement in a participatory fashion • Changes in political arena	• Community opposition because of lack of communication • Political	• Lack of resources to fund mandates • Changes in the political arena that cause support to be lost	• Political opposition to projects because of other stakeholders

	Benefits	Incentives	Costs	Barriers
	that result in increased support for a project	support for agency collaboration • Existence of mandates that are supported and funded	• Appearance of new problems that take precedence over existing projects	

Table 7.5 Stage 5 CBA

	Benefits	Incentives	Costs	Barriers
Intrapersonal	• Identifies new areas for collaboration • Willing to share knowledge and credit	• Open to collaboration • History of previous collaboration • Involvement of effective leaders and champions • Clear definition of personal goals	• Misses opportunities for collaboration	• Lacks experience in collaborating • Presence of obstructive leaders • Does not trust collaborations
Interpersonal	• Develops interdependen	• Leaders empower the	• Does not see value-added by	• Participants remain

	Benefits	Incentives	Costs	Barriers
	cy between PH and planning • Trust develops between participants • There is regular communication between participants and across disciplines • Willingness to integrate shared knowledge into practice	participants • Participants recognize value added to outcomes	collaboration • Unwilling to adapt and integrate new knowledge	separated into silos • Presence of obstructive leaders • Lack of trust in other discipline and agency
Organizational/Institutional	• Regular communication is established between agencies	• There is wide agency support for collaboration	• Obstructionist institutional rules and regulations • Communication is impeded by institutional hierarchical structure	• Complex organizational structure
Physical/Environmental	• Stability of the agency location	• Agency setup provides for	• Complex	• Barriers to ongoing

	Benefits	Incentives	Costs	Barriers
	allowing for sustainability	increased communication and face to face meetings	organization of jurisdictions causing physical separations	communication because of separation
Technologic	• Continued communication made possible by teleconferencing and e-mails.		• Resources may have to be shifted from other areas and projects.	
Political And Societal Factors	• PH concerns become increasingly recognized by society	• Existence of mandates that are supported and funded	• Changes in the political arena that cause support to be lost	

Strengths, Limitations, and Opportunities for Future Research

Out of necessity, most studies must be focused narrowly if they are to be completed within any reasonable time period and prescribed budget. In the case of this study (executed as a dissertation for a doctorate degree), both requirements became obvious as the study developed. On the one hand, there was a desire to increase the scope by interviewing a wider variety of practitioners, looking to fields beyond PH and planning, and at such external stakeholders as politicians and community members. Fortuitously, GT provides a natural limitation through the concept of theoretical saturation. In this study, it was quite clear when this stage had been reached.

The study is based in California and looks only at government agencies. The original consideration to expand the study to include more geographical locations in California, and perhaps other states, was not possible given the budgetary limitations. This expansion remains something that should be done in the future, in order to explore the generalizing of the findings to more locations. The present scope of the study would preclude generalization to other agencies, stakeholders, or locations. California governmental structures are distinct in many ways, and the resulting complexities in the jurisdictions among the different agencies became an important topic referenced repeatedly in the study. These complexities serve mostly as barriers to collaboration – although given the correct circumstances (such as political support), they may also serve as a facilitator. Other collaboration settings need to be looked at more closely in the future – including those of NGOs, not-for profit agencies, community organizations, developers, and civil and religious organizations – in order to examine how they all relate to LUP decisions both inside and outside of government. Other states with different governmental structures must also be studied.

While limiting the study to California could limit generalizability to other states, the fact that there is such great diversity across the state might make the findings applicable to more situations than if the study had been done in a smaller, more homogeneous state. As was explained by one of the participants when referring to just one county, Riverside, the area is so large and varied that it encompasses cities and rural areas, multiple climates, and many different approaches to government and community planning.

For the purposes of triangulation, it would be useful to see a future survey obtain a more quantitative examination of PH collaboration with planning. Mixed methods could help in designing a more robust Cost-Benefit Audit tool. This initial study, being the first, was more exploratory in nature.

One of the strengths of the study is the direction it provides for future research. There do not appear to be any previous attempts to develop a model that could be used to analyze, promote, and nurture collaborations between PH and planning in

governmental agencies. There are other important areas being examined under the larger project (of which this study is a component) being undertaken by Dr. Richard Jackson to examine the interaction of health and the BE. These include the study by Heather Kuiper at UC Berkeley, which looked at the participation of PH Departments in California in shaping the BE to address health issues.

The theoretical basis for the model proposed in this study was found primarily in the health sciences literature. As mentioned previously, theories of collaboration from other fields – such as planning, architecture, economics or education – could be used to test the model proposed.

The GT methodology of constant comparison helps reduce the risk of bias-induced distortions being introduced into the data analysis and the conclusions. However, it cannot completely eliminate such risks. The use of memos forces the researcher to state assumptions and considers knowledge acquired before the study, so that these can be incorporated into the analysis. The researchers can then accept, modify, or reject such assumptions. This method was used extensively in the present study, and it was facilitated by the use of Atlas-ti software.

Both generalizability and replication have been cited as being difficult in GT methodology, because no two circumstances are alike (Glaser and Strauss 1967). However, the addition of a survey could be helpful in this respect (Taber 2000).

Another limitation of the study is that the outcomes of collaboration between PH and planning must be considered at two distinct levels. The success of the collaborative effort is the most direct level for consideration. The fact that the participants have effectively completed a collaborative project (such as introducing a health element in a GP) is one indicator of success. However, a perhaps more important indicator would be the ultimate outcome – that is, improvement in the health of the community. Because the need to address complex PH problems is the focus of the collaboration to begin with, it therefore follows that correcting those problems is the major justification for collaboration. If the health element in the GP ultimately leads to land use design that can be shown to improve community health, then the collaboration was successful at this higher level. Studies to investigate health outcomes are the next logical step in seeking ways to measure the success of the reconnection of PH and the built environment.

Several areas for future research are suggested by the findings in this study.

What is the continuum of perspectives on collaboration? The effectiveness of collaboration may or may not be dependent on the degree of collaboration. It would be important to look at case studies to assess this relationship.

It may be possible to explore more closely the barriers and incentives to collaboration to determine if some are more influential than others. This could allow some to be addressed earlier and with more resources.

The use of case studies could help validate the model proposed in this study. If the cases were done longitudinally causality could be further established between

collaboration and positive PH policy outcomes from the planning process. Ultimately the goal is to explore the association between PH and Planning collaborations and the long term health outcomes such as reduction in obesity rates and cardiac disease.

Conclusion

This study looks specifically at collaborations between PH agencies and planning agencies in California. The study seeks to *explore* the perceptions of the participants by using a modified GT methodology. It uses existing literature on the subject of collaboration, TD collaboration, and team formation to identify the initial contextual factors that are believed to be important in collaborations. Guided by GT methodology, data were gathered primarily through in-depth, semi-structured interviews and conceptualized using a constant-comparative method. The contextual factors were further developed and refined while the data were being gathered inductively. At the same time, a theoretical model emerged from the data – a model of five different stages that could be used to describe collaborations between PH and planners. Although the model was initially proposed by existing literature, the contextual factors were adapted and modified to fit the specific setting of this study.

The development of a Five Stage Model of Collaboration between PH and Planning was discussed in detail previously (see Discussion). It is a model that acts at various stages of the process of collaboration and helps identify the factors that may hinder or promote the integration of the two disciplines in addressing complex PH problems. This process of collaboration lies in a continuum from a multidisciplinary approach to a more integrated transdisciplinary approach. The level of collaboration is determined both by the needs of the project itself and by the readiness of the team being formed. The factors identified from the in-depth interviews reveal the *perceptions* of the participants regarding the value of collaboration when looking for solutions to problems or embarking on new projects. These perceptions are ultimately the determining factors as to whether collaboration will succeed. The use of qualitative methods, specifically Grounded Theory (GT), was justified by the need to understand the motivations of the participants within their own milieu.

Analysis of the contextual factors was done using the Social Ecologic model because it is thought that this model best explains the relationship between an individual's behavior and his environment. By considering the multiple levels of action, from intrapersonal to organizational and to political at each stage of collaboration those contemplating collaboration are better situated to maximize the probabilities of developing a successful collaboration.

GT methods are intended to generate theory that will explain the patterns of behavior observed among the participants (Glaser 1978). It is expected that a *core category* or *theme* will emerge during the research process, and this core theme can be

used to relate the other categories. The core category identified in this study is **Cost-Benefit Analysis.** This is the activity that underlies most of the contextual factors identified in the participant's narratives.

Core category: Cost-Benefit Analysis.

Five major categories developed from the contextual factors , which are also related to the core category:

- Effective leadership
- Communication factors
- Resource and funding factors
- Establishing trust
- Evaluation and feedback

Cost-Benefit Analysis provides the main premise of the underlying theory used to develop the five-stage model: Social exchange theory. According to social exchange theory, human interactions involving the movement of social and material resources can be explained by the concepts of exchange and negotiation. A cost-benefit analysis will determine if an individual will join a group that will provide him or her with a specific benefit. However, the individual must also help the group attain its objectives, even if this responsibility entails a personal or institutional cost. As the study suggests, cost-benefit considerations affect every stage of the model of collaboration; they also act at every level of analysis.

The other five major categories relate to cost benefit analysis because they appear to be consistently associated with the process of collaboration of PH and planning within the setting of the study. Within these categories or themes, there are various specific contextual factors that are deemed to be specifically important in developing TD approaches to collaboration. Examples include: leaders who encourage participatory collaboration, the development of a common language, openness to other disciplines, the building of trust, etc. As stated in the theory section, TD collaboration is not inherently "better" than inter- or multidisciplinary collaborations. The problem to be addressed provides the best guide for choosing the methods that should be used to solve it. It is similar to the scenario of choosing a research method for a particular study. The researcher should be well versed in several methods and should be open to choosing from among these methods, depending on the research question. Ethnomethodology is not better *per se* than case study analysis. TD plays an important role in this study, because the complex everyday problems of PH in the 21st century would appear to be best served by a TD approach. The study suggests that some of the

most successful collaborations reported were able to move to the TD realm due to the actions of the participants and institutions. These collaborations exhibited several contextual factors that are associated with transdisciplinarity in the literature and theory.

The model uses a five-stage approach to collaborations that is based on social exchange theory, team formation literature, and transdisciplinary science. The model addresses various issues that have hindered collaborations between LUP and PH, such as the lack of mechanisms for communication between the disciplines, the difficulty of allocating appropriate resources, and difficulty of achieving sustainability and a culture of collaboration. The model provides the means for PH and LUP agencies to address issues that affect their shared constituencies through the formation of collaborative relationships that aim to be transdisciplinary and sustainable. It remains to be seen in future studies the extent to which the model can be used to assess collaborations in other project settings – and to what degree the model could be used to influence project effectiveness and rate of success.

The study used primarily in-depth interviews, which were recorded digitally and transcribed in order to be analyzed using Atlas-ti software. The software greatly facilitated the GT methods requiring extensive coding and memoing, but it was not a substitute for the intense process of analysis. The participants' willingness to share their experiences was absolutely outstanding. The richness of the stories and the depth of understanding are clearly noted in the results section. This wide-ranging experience resulted in reaching the conceptual saturation that helped bring the study to a successful methodological closure. Triangulation with document data sources was limited, and it was used mainly to check for accuracy of time sequence statements and identify project details.

"Relevance for the grounded theorist means bringing tangible benefits to the experts. As Glaser said, when the field experts can understand and use a theory by themselves ... then our theories have earned their way. Much of the popularity of grounded theory to sociologists and layman alike, is that it deals with what is actually going on, not what ought to go on' (Glaser, 1978, p. 14)." As quoted in Fernandez (2004) (Fernández 2004).

The present study looked at the process of collaboration between PH and planning from the perspective of the participants. GT studies seek to understand the main concern of the participants, whose behavior is continually guided by their desire to resolve their concern (Glaser 1998). The core theme identified defines the overriding pattern for the activities that take place in the setting studied. In this study cost-benefit analysis emerged as the core theme. It appears to be the prime driving force behind the concerns of participants in collaborations between PH and planning. The core theme and how it guides the actions of participants in collaborations is best explained by the theory of social exchange. This theory emerged from the phenomenon being studied. In turn, the theory provided the foundation for the development of a five-stage model of

the process of collaboration, which serves to describe and predict events associated with the process of collaboration. The model helps move beyond simply describing the properties of the participants; rather, it aims to generate theoretical conceptualization which then serves to explain and predict how collaborations work and how they can be made more successful (Fernández 2004).

The Five Stage Model of Collaboration and the theory resulting from the study were used to design a tool, the Cost-Benefit Audit tool (titled in Appendix 5 "Collaboration Manual for Public Health and Planning"), which has practical implications for PH and planning collaborations. Because it is based on sound theoretical foundations and derives its strength from in-depth study of a real-life phenomenon, it has the potential to assist individuals desirous of embarking on a collaborative effort to make the best decisions. The identification in this study of the factors that influence collaborations, and which can act as barriers or incentives at each stage of collaboration, allows participants to maximize the positive factors and address the negative ones before and during a collaborative project. This study helps increase the understanding of how collaboration occurs in this setting, how it should develop, and which forces will shape it.

The public health issues being confronted are momentous, and they deserve to be addressed with the best possible tools and strategies. Few strategies hold as much promise as does the successful collaboration between the Public Health and Planning disciplines. It is with this belief that this study hopes to contribute towards making such collaborations thrive in the future.

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APPENDIX

1. BIOGRAPHICAL SKETCHES

A striking finding of this study is that there are some pre-existing factors that appear to play an important role in the willingness and desire of participants to undertake a collaborative effort. Professional training and previous experiences with collaboration in any capacity are powerful indicators of how well a person will engage with other disciplines. In order to illustrate some of these motivating factors, vignettes of several study participants are presented. These vignettes focus on relevant interview quotes. The exact titles of the positions have been redacted.

Escobar, Jane:

Riverside County, as has been explained, is considered by many observers to be an exemplar of collaborative efforts between PH and planning in the state of California. When participants for this study were being identified, several leaders in the field suggested that staff members in the Riverside County PH and planning departments be asked to take part in the interviews. One person suggested was Jane Escobar. Escobar has been a Programs Coordinator at the Riverside County planning department for the past seven years. Her job description is extremely varied, and she has collaborated with many county and local agencies. Escobar describes her collaboration experiences as having been involved in zoning board amendments, general plan amendments, and committee plans. She notes that these activities have been recognized as being quite progressive. These include developing community facilities and obtaining funding for a community project, by working with the Department of Public Health and other county departments. Escobar stated that she has played *"a very different role as I worked on property maintenance ordinances, worked on animal-keeping ordinances… really it's a very wide spectrum of issues that was under the strategic programs section."*

Burnam, David:

David Burnam has been working for the Riverside County Department of Public Health for more than 15 years. Burnam is an intense person, often speaking quickly, while jumping from one idea to another. He is, however, very thorough in his descriptions and command of topics.

> "I come to this whole thing differently than most people do. I was a philosophy religion major at [undergraduate], then I moved across country, landed in San Francisco and then, before Prop 13, school was free. I went to paramedic training, became a paramedic. In those days it wasn't for eighteen year olds. It was mostly for people in our twenties who had degrees. So I was a paramedic.
>
> Then I went into administration in Alameda County as a program coordinator in the EMS Agency. So we were in charge of the ambulance at trauma centers. I worked with Berkeley Fire and the hospitals.

And then, I became the Assistant Director for EMS in San Mateo for two years, and I've been down here since 1994. I was [a] director [of a unit] until 1998, and then I got promoted so now I'm a [Senior] Director for public health and I oversee the EMS group. I oversee Public Health and Emergency Preparedness which grew out of the bio terrorism group. HIV/Aids – let me think what else. Industrial hygiene, injury prevention, mostly focused on pediatric injury prevention, car seats and bicycle helmets, safe routes to school, and then whatever is left of our Building Healthy Communities Program, community outreach, which mostly is our volunteer program and health fairs, that kind of thing. And then with all our recent cuts, our Deputy Director has retired. I inherited the WICK Nutrition group, which is huge. That's another 200 people to do the WICK [and nutrition services together].

So I have no idea what my budget is anymore. I used to know. I don't know what it is now. Or how many people I oversee. Three or four hundred, seriously! It's ever changing, as the budget's changing, and the people leave and don't get replaced.

Riverside County, for your study, is over seven-thousand square miles, so the size of New Jersey, New Hampshire, Vermont. Anywhere else, there would be a state health department, and so if people say 'well, it's just a county.' well, it's not just a county, but 26 cities, 2.2 million people. It's, from my perspective, pretty massive. [For comparison] in Alameda County there's 1.4 million people in seven-hundred square miles – they're similar but completely different. Our country really divides east and west. The west is like a 'normal' county, mostly urban and suburban. Then the east is a bunch of cities and lots of empty sand dunes and desert stuff all the way to Arizona. Basically from L.A. to Arizona. Imagine how crazy that is."

Hunt, Henry:

Henry Hunt holds a Bachelor of Architecture and a Master of Urban Planning. He was a pioneer in collaborations between PH and planning in California. He has been a senior programs director at the Local Government Commission since 1995, and he also manages one of the centers addressing community design. Previously, Hunt worked at a city development agency, an air quality management district, and a council of governments.

"The Local Government Commission (LGC) is a nonprofit, nonpartisan, membership organization that provides inspiration, technical assistance, and networking to local elected officials and other dedicated community leaders who are working to create healthy, walkable, and resource-efficient communities. The LGC's membership is composed of local elected officials, city and county staff, planners, architects, and community leaders who are committed to making their communities more livable, prosperous, and resource-efficient."

Hunt has co-authored documents on transit-oriented development and street design, and on sustainable development and community design. He has directed a first-of-its-kind project – in collaboration with the California Department of Health Services – to promote physical activity by improving the design of the pedestrian environment. He is in charge of a program to encourage Leadership for LGC, supported by the Robert Wood Johnson Foundation.

One of his main functions at LGC has been facilitating public workshops and planning processes.

As a planner, Hunt has an inside understanding of the processes involved in land use planning. As a consultant in a not-for-profit group, he works with PH departments, planning departments, and other groups to help them develop collaborations. He accomplishes these tasks mainly through education initiatives sponsored by the different agencies and groups. He attends meetings, such as Partners for New Growth, as well as those organized at the state, county, and city level. He presents the advantages of collaborations between PH and LUP in the quest to address important health and physical activity concerns. In addition, he helps agencies obtain funds from grants and other sources in order to finance collaborative efforts.

Hunt was very helpful in his interview, providing a good historical perspective of the growing frequency of collaborations. He sees this process as having started in 1998, after a seminal CDC meeting that inspired several leaders to look into the issues of PH and community design. His first effort was to organize "*seven or eight regional meetings with planners, elected officials, and public health*" where he would ask them "*what do you think about this issue on how health is being impacted by community design? And started getting some really good feedback on that.*" Early on, few people were even aware of issues like the obesity epidemic, let alone the impact of the built environment on health. But Hunt soon noticed an increase in the level of interest and the number of people attending meetings exploring the relationship between PH and LUP.

In the early 1990s, Hunt organized several sessions for the CA APA (California Chapter of the American Planning Association) and other organizations on the topics of physical activity and health, and the approaches of using the BE to address them. He states that, at that time, "*almost nobody showed up. It was so new. It was just not on planners' radar screens. Maybe we got 20 people in the room. We also did a session at the National APA, with Richard Killingsworth. That was a little better attended, but again it was one of these areas that were still very new, very early on*."

Although at the time, the connection between PH and city planning, indeed all of the BE and Health, was a new concept for many people, that situation quickly changed and "*now, pretty much everywhere I go, people, planners are aware of it.*" Various national organizations, such as the APA, started several projects and publications to disseminate information on the topic. NAACHO (National Association of County and City Health Officials) and APA published an important paper on the subject focusing on the BE and health (*Public Health Terms for Planners and Planning Terms for Public Health Professionals* 2006; Public Health in Land Use Planning and Community Design Fact Sheet: An Overview of the Connection between Land Use Planning and Public Health 2010).

Ryan, Charles:

Ryan is a mid-level city planner with the City of Long Beach. He explains that *"there are two divisions. There's current planning, and there's advanced planning. I work in advanced planning. We do the long-reach planning for the city."*

As background, he explains that the City of Long Beach is a large, urban, fully developed city in the County of Los Angeles. Long Beach has its own PH department, in addition to the county department. Ryan is mostly involved in the update of the GP. He works closely with the

Coastal Commission, with SCAG, and with the MTA. As part of his work he is: "*conducting community meetings for an update of our general plan, and so we're trying to figure out where the residents of the city want to go in the future. So we're going out and talking about a vision for the city, providing them information about what we think would be the best practices out there in planning, and try to build consensus with them*."

He is part of a very small department, considering the size of the city it serves (sixth largest in California). He mentions that Portland, Oregon – roughly the same size city – has 75 planners versus 17 in Long Beach. In order to overcome this lack of in-house staff, they include a large number of consultants in their projects. He describes at length how they use these consultants. Although consultants do help, they also require staff attention. Ryan notes that the staff members *"take a lot of time managing the consultants and making sure that their work product is acceptable to peer management and to the public."*

Lambert, Owen:

Lambert is a senior planner (Senior Planner) in the group charged with the update of the GP for the City of Long Beach. Before his current position, he was a community planner for Long Beach, a position eliminated because of budget considerations. He sees his role as remaining very similar, in that he sees what he is doing as a means of creating more livable communities. He relates that his involvement with PH started after attending a conference (New Partners for Smart Growth) in New Orleans. It was an epiphany for him in *"that they're talking about health trends and the physical environment, and it seemed like there's a sort of recognition that there was a merging between the things that were making people less healthy, and the way we were developing our cities post World War II in the suburbs. That realization was for folks on both sides…there are some things that we can do."*

He became involved more in long-range planning, which he sees as being in line with many of the goals that PH is also pursuing. He mentions that planning's goal of building better communities works *"really well hand-in-hand"* with PH. It is about making communities more walkable and pedestrian-oriented – the types of places people visit on vacations, the types of places where people want to live if they have a choice." He looked at long-range planning *"in the hopes of bringing those things kind-of in-line with public health, smart growth, active living."* Ultimately, he identified the update to the GP at Long Beach as the *"one big project"* where he could bring together his interest, expertise, and experience.

Henderson, Charles:

Charles Henderson is a senior planner, a top-level manager at the San Francisco Municipal Transportation Agency (SFMTA). He oversees planning for all modes of transportation, as well as the integration of land use and transportation planning. He partners with other agencies and transit providers in this major urban transportation agency. His areas include the Bicycle Program and Pedestrian Program, which support the Shape Up program by making walking and bicycling an every-day part of life in San Francisco.

He came to SFMTA in 2006 after several years at BART. A major focus of his work at BART had been to develop walkable communities around transit stations. Prior to BART, Charles managed the development of a transportation plan with the San Francisco County Transportation Authority. He had also worked as an architect, urban designer, and

transportation planner at the San Francisco Planning Department. Henderson earned a Bachelor of Architecture as an undergraduate, and a Masters of Urban and Regional Planning.

He becomes very excited when told that this study is about reconnecting PH and planning. He states *"this is a huge conversation,"* showing his appreciation for the importance of the topic. Given his background and present job, it is clear that Henderson is aware of the multiple ramifications of collaborating with PH agencies. He identifies one area, out of many, that he is specifically interested in discussing: the increasing emphasis on physical activity and preventive health care, which he calls a *"new focus"* for collaboration. His official biography also makes clear that he is personally very interested in pursuing physical activities, such as biking and swimming.

Lonner, Katherine:

Lonner is a mid-level manager with SFMTA's transportation planning and development division. She is in charge of the agency's programs dealing with physical activity and street design. Her background is in civil engineering: *"So I'm a licensed civil engineer. My specialty is transportation engineering. So I come at this with a little different perspective."*

At the end of the interview, Lonner shows great interest in finding out more about this study and the interviewer's personal background. She is inquisitive and communicative, very much at ease with other people, and not dogmatic or overly assertive when discussing her work. She is talkative and a pleasure to interview. There are many occasions during the interview when she shows remarkable insight into the process of collaboration, likely due to her own involvement in various collaborative projects. As she states, that *"for the most part because of 'better streets plan,' I've seen a willingness to collaborate and a willingness to work together."* This illustrates that one of the best incentives for successful collaboration is a previous, positive collaboration experience.

Ebert, Angela:

Angela Ebert is often a contact for the MTA at the Department of Public Health. Her background is in injury prevention. She has been with the department for over seven years. An important part of her work is to *"give out – and this is pretty unique – give out mini-grants to community groups to work on…safety issues in their neighborhood, and our whole philosophy is the community capacity building like it's really – they identify the problem and they go out and collect the data. They analyze the data. We provide a lot of training and technical assistance, and then I help them shepherd through the various city agencies, and see if we can get some solutions to some of the problems that they identify."* Her position clearly gives her access to some funding and other resources – a great advantage compared to other interview subjects, many of whom are facing strict budget restrictions.

Gent, Robert:

Robert Gent is a mid-level planner in the San Francisco City Planning Department. He, with others, has been involved full time in the (Better Streets Project) BSP for about two years. At the time of the interview, he has been with the agency for five years, and before that was in the private sector with a consulting firm. He has a degree in Planning, and he has worked in

collaboration with Elizabeth Macdonald's DCRP Studio at UC Berkeley in the Masonic Avenue project.

Anderson, Sara:

Anderson is a senior planner for the Department of Regional Planning of Los Angeles County. Anderson's department provides planning services to unincorporated communities in the county, *"which is any area in this huge county that's not a city."*

Brislin, Mary:

Brislin is a Community Liaison Public Health Nurse in one of the eight Service Planning Areas (SPAs) in Los Angeles County. Her position, as she describes it, is a *"title [that] is fairly new to this department."* Most PH nurses are involved in infectious disease and case management, but *"about five years ago, the department made a pretty big shift when they said, we need to start looking at chronic disease prevention and looking at it as multi-faceted, not just medical intervention, but looking at social determinants and the physical environment and all the other impacts."* Her main involvement in the BE arena was in collaborating with the planning department in the creation of a general plan for the City of South Gate. This project was one among *"many, many other projects in anything from promoting breast feeding to working with newborn mortality to, gosh, also to H1N1…"* A recurrent theme during the interview was the issue of time availability (or lack of availability) needed for collaborative projects with planners.

Kirwan, Justin:

Kirwan is a medical doctor who works in the San Francisco Department of Public Health. He describes his role as one of great responsibility in areas that apply to the environment. "*I am the city's environmental expert who they have to rely on when they want to say something is safe or when they want to say something is dangerous."* Because of his position he often interacts with planners.

Bennet, Julia:

Julia Bennet was among the earliest proponents in the Bay Area for collaboration between PH and LUP. She makes the observation that her *"experience is that most people come to this in some very indirect path, and that was the case with me."* Bennet holds a masters degree in social work and a bachelor's degree in recreation administration. She started working in school-based alcohol and drug prevention, which evolved into violence prevention, spending almost ten years in the City of Richmond. Injury prevention had been placed under violence prevention, leading to her becoming involved in many programs looking at the root causes of bicycle, auto, and pedestrian traffic injuries. Her area of expertise became the obtaining of grants to fund *"community-based, pedestrian-oriented work."* Under the state's Safe Communities' Program, she obtained a grant to establish a coalition and "work at the neighborhood and city level on traffic calming."

Bennet is now a Projects Manager at Contra Costa County Department of Health Services.

Dunn, George:

Dunn is senior planner for the city of Petaluma. He has an undergraduate background in history and teaching, and a master's in city planning.

Coulton, Paige:

Coulton is the City Manager for the City of Chalmers. Her job description includes the following functions: Is the administrative head of City Government; supports and implements City Council policies; directs the activities of the various city departments to ensure effective and efficient delivery of services; may recommend programs and clarify procedures for the Council but is bound by the decisions of the Council in his/her own actions; the City Manager also serves as the Executive Director of the Chalmers Redevelopment Agency and is responsible for the implementation of Agency programs and policies to eliminate blight, revitalize the local economy, complete capital improvement projects, and provide affordable housing opportunities. In this last function particularly (as head of the redevelopment agency), she interacts regularly with the planning department.

Coulton's background training is as a planner. She initially worked in cities in Southern California and in Northern California. Later, as she describes it, she *"added various functions: building, redevelopment, code enforcement,"* ultimately becoming Assistant City Manager and City Manager in other cities before moving to Chalmers.

Sanders, Greg:

Greg Sanders is a land use and transportation planner. He is the principal and founder of Sanders & Associates, has he taken a lead role in numerous General Plans, including those for the cities of Santa Monica, South Gate, Coachella, and Tracy, and for the Eden area of Alameda County.

Sanders's work focuses on building more livable communities through a community-driven, participatory decision-making process. He is a nationally recognized leader in the fields of Smart Growth, sustainable development, and comprehensive planning. He has over 12 years of experience as a consultant in the field of planning and the environment. Sanders has spoken extensively on applying the principles of new urbanism to comprehensive plans, incorporating public health concerns into the planning process, and promoting sustainable development at the local level. He is the author of several books and reports, including several relating PH and the Built Environment. Prior to founding his own firm, Sanders worked at several other consulting firms in the Bay Area. Earlier, he worked as a policy analyst for the Natural Resources Defense Council. He is currently the co-chair of an environmental task force and a senior fellow in a leadership program.

He has a Master of Regional Planning and a Bachelor of Arts in English (major) and Environmental Geology (minor).

His early experience involved working in non-profit groups in Washington, DC during the 1990s. He was exploring issues related to sprawl and smart-growth, when he realized that *"in making the argument for why you would do a certain development pattern, linking it to health would have a large impact because it's one of those things that sort of crosses philosophical boundaries…it sort of doesn't matter – suburban, urban, Republican, Democrat – everyone wants themselves and their family to be in good health. There's just no argument with that."* He

has authored various publications on his main interest, the creation of general plans with an emphasis on including a PH element.

Perez, Gina:

Gina Perez has an MPH, and is the founder of a consulting firm that specializes in helping "public health, planning, and transportation agencies integrate health into local land use and transportation planning." She has worked in more than five states, with leading national organizations from planning and health, and with hundreds of community design and public health professionals. She describes having helped them increase awareness and support, develop strategic and collaborative planning and policy approaches, and build organizational capacity to advance healthy built environments.

Perez participated in some early meetings between PH departments and planning (in early 2000s, the New Partners). She was inspired by several of the leaders in the field – mentioning specifically Richard Jackson – to become a facilitator for the process of collaboration between PH and LUP through education, training, and coaching (primarily of PH professionals). She has been a leader in publishing of manuals and literature about developing healthy communities in California through a collaborative process that can include PH departments, planning departments, community groups, and NGOs.

Jacobs, Allan

Jacobs has been a member of the Department of City and Regional Planning at the University of California, Berkeley since 1975. In addition to teaching, he has participated in a wide range of professional planning activities. He has served as a consultant in city planning and urban design to Curitiba, Brazil; Berkeley; the Los Angeles Redevelopment Authority; Portland, Oregon; and many other cities. He has published influential books, including *Great Streets, Looking at Cities,* and *Making City Planning Work.* He has also performed research in the field of urban design.

Jacobs served as Director of Planning for the City of San Francisco from 1967 to 1975, where he developed a new comprehensive plan for the city, emphasizing public access to the San Francisco waterfront, design guidelines for downtown development, and revitalization of neighborhood design throughout San Francisco.

Jacobs holds a Bachelor of Architecture from Miami University, and a Master of City Planning from the University of Pennsylvania. He attended the Harvard Graduate School of Design, and was a Fulbright Scholar in City Planning at University College, London. He has won a number of honors and awards, including the AIA Excellence in Education Award, California Chapter, 1994; Resident in Architecture, American Academy in Rome, 1996; and a Guggenheim Fellowship in 1982. (Excerpted from Project for Public Spaces[23]

[23] Project for Public Spaces (PPS) is a nonprofit planning, design and educational organization dedicated to helping people create and sustain public spaces that build stronger communities. PPS was founded in 1975 to expand on the work of William Whyte, the author of *The Social Life of Small Urban Spaces.*

2. VIGNETTES

The Five Stages of Collaboration and the General Plan for the City of South Gate, Los Angeles County.

"We really didn't know what we were getting into," (Brislin).

By 2009, the collaboration between PH and planning to update the GP for the City of South Gate had succeeded well beyond its initial objectives. As Brislin describes it, *"the general plan does have a stand-alone health element that they call 'healthy community element.' It covers a wide variety of topics, much more variety of topics than I think I've seen in other general plans that have done a health element."* It had been necessary to develop a common language, especially an understanding of the other discipline's nuances in the use of words in writing the general plan. In addition, there resulted a respect for the mission of the other agency and a deeper understanding of its abilities and limitations. Social exchange theory indicates that concessions must be made so that it is a win-win situation, and that neither party gives up more than is perceived to be *"fair."*

"It all comes down to some little words that really make a difference like – the city 'shall,' or the city 'will,' or the city 'may' – and we had to kind of really be sensible, because the city now is in the middle of this financial crunch, and we didn't want them to feel obligated to the point that they would throw this idea out completely. So, there were some concessions made in the wording of it and the teeth…"

From 2006, when the department of PH first became interested in the BE, to 2009, when the interview took place, the project to collaborate in the revision of the general plan for the city of South Gate had gone through various stages of collaboration. These stages can be described using the proposed Five Stage Model of Collaboration. In addition, several of the elements required for transformation to a TD level are clearly presented.

Through their presence *"at the table"* from the very first stages of the project (a requirement for TD practice, which implies the development of a common framework) and due to the willingness of the consultants to include PH in the planning project, a transformation took place to a TD action model of collaboration. Brislin's final evaluation, in which he expresses great empathy and understanding for the needs of the planning department (and of the community served), is evidence of the transformation. He comments that similar projects are not seen as being as successful in including the comprehensive *"stand-alone"* element of PH in a general plan.

The process through which the collaboration developed comprised many regular meetings. These included presentations by the newly *"converted"* PH department to the stakeholders, including community members. These workshops were *"really very good. The very first one was designing a healthy South Gate, and it was really just an overview of what, how land use affects health. So we looked at access to parks and walked the streets, even having the city really looking at wooing health care providers into the community, so that there could actually be health care services in the community."*

The first of the five stages involves assessment and goal setting at both the departmental and personal levels. In this example, there is the initial commitment to assign

resources to the pursuit of a built environment and PH agenda. Buy-in at the top and by the individual participants is demonstrated when the heads of the agency set a priority for Brislin to include the BE element. Brislin then conducts her own cost-benefit analysis and chooses to pursue a project to collaborate.

In the second stage, there is a determination of collaborative fit. A project is identified – in this example, the General Plan – and the initial meetings with the consultants and stakeholders occur.

In the third stage, resources are identified – in this case, the Kaiser grant and the internal commitments of staff. At this stage, the team also needs to reflect on its new, expanded objectives. Kaiser and TLUC want a much expanded project that includes new goals and time-consuming activities. The tasks - creation of tools, more meetings and presentations, and other activities – require further cost-benefit analysis by the participants. Can they afford the extra commitments? They conclude that they can proceed with the collaboration.

The fourth stage seems the project being implemented and refined. Looking at this example, a PH stand-alone element is created in the general plan. Effective workshops include the community and educate other participants. The PH department is instrumental in providing the solid data that the planners use to convince the board of the importance of a health element.

Finally, in the fifth stage, Brislin proposes an evaluation of the project and offers feedback on the outcomes. The PH element is deemed to be among the best of any general plan in the county, possibly the state, and the relationships created have set the stage for future collaborations. Brislin observes that one of the most effective tools for future collaborations is the education of the consultants that do much of the planning work for the cities and county. It is this realization that collaborations are not just institutional, but rather dependent on participants from outside the government agencies. This realization supports the creation of new models and theories of collaboration; it indicates a TD approach because it creates new ideas and explores new questions.

The Five Stages of Collaboration and the General Plan for Riverside County.

The adoption of a health element in the GP for Riverside (as recounted by Escobar) is an ideal illustration of the Five Stage Model of Collaboration. This project ultimately took more than five years to complete, and it was dependent on the ongoing process described by the five-stage model.

In the first stage, there was an assessment of cost-benefit for the individuals and institutions. The director of the PH department attended a meeting where she realized the possible benefits of collaborating with the planning department in order to address health problems. The director assigned a staff member (Nancy), evaluated the costs and benefits, and obtained buy-in to proceed. They identify possible collaborators in the planning department that they approach.

After the planners had also evaluated their own possible costs and benefits, the collaborative teams proceeded to the second stage. There, the participants met and negotiated the areas of involvement. They identified the GP, which at that time had been created without a health element, as an area to pursue. They also targeted some smaller, more immediate

projects through which they could initiate collaboration (the trails project, etc.). These small projects set the stage for the long-term collaboration required in order to revise the GP.

In the third stage, the participants separately assessed the resources available and looked at the benefits identified. The planners realized that PH can contribute essential resources. PH's strengths include its ability to get the necessary grants and obtain community input as needed during the development of the plan. The decision to proceed was implied in the process, when the project moved to the fourth stage of collaboration.

The fourth stage is the refinement and implementation of the project. By this point, the team had successfully collaborated in several small projects very successfully, and the participants had established an environment of trust and interdependency. They had also created the necessary infrastructure for ongoing collaboration: regular communication, meetings, and goal definition. They had developed a common language, empowered team members, established formal and informal dialogue, identified funding and resources, and most important, established a true voluntary partnership.

The fourth stage proceeded slowly. Escobar explains that the extreme conservatism of the county made it necessary to move in small, incremental steps. Escobar describes the first draft as: *"let's start baby steps; not too aggressive."* However, after the process took place, *"what we're hearing from everyone is, 'we want a more aggressive document.'"* At this stage, several socio-political factors appear that support the strengthening of the health element and its goals. *"SB 375 which requires closer connection between land uses, transportation, housing issues [does] help in pushing the agenda forward."* Stage five – which addresses the sustainability of the collaboration and specifically the ultimate successful results of the collaborative project – is very much facilitated, according to Escobar, by the *"multi-regulatory climate that the state has set up."*

An analysis of this example illustrates how various ecologic level factors influence the process of collaboration at each stage of the five-stage model. The interpersonal factors in the close relationship between Nancy and Escobar acted during stage two, while the team was negotiating and being formed. Intrapersonal factors – such as the readiness to collaborate – were evident when the directors became receptive to collaboration during stages one and two. In the case of the GP, political and societal factors were especially evident in that the regulatory environment at the state level was developing during the time that the collaboration was taking place. The realization that health and BE are intimately related – and that planning decisions have great effects on health – was making it increasingly likely that collaborations would occur across the state. Escobar describes a *"constant process of education."* The new regulations require further discussions and meetings between the agencies to determine *"what all this means--the AB 32, SB 375--what is our obligation as a local jurisdiction… everybody knows that these regulatory requirements are there, but nobody knows what that means in terms of actual actions that we will need to take to translate that for Riverside County and what it means for us."*

The PLACE program in the City of Long Beach.

According to its website, the City of Long Beach strives to be the most bicycle-friendly urban place in the country and seeks to improve walkability through the "Long Beach

Initiative." To these ends, the city is part of the Policies for Livable and Active Community and Environment (PLACE) Initiative, utilizing program funds to update the General Plan with active-living policies and programs and amendments to the city's Bicycle Master Plan. The plans will include pedestrian- and bicycle-friendly principles, and will emphasize "complete" streets that meet the needs of all users of the roadway, including pedestrians, bicyclists, children, and the elderly, as well as motorists. Additionally, the Bicycle Master Plan will identify potential placements for bike lanes and facilities throughout the city.

Accompanying this policy initiative is a physical project comprised of two Bicycle Boulevards, which will transform residential streets into *"bike expressways,"* while still accommodating low-volume vehicle traffic.

The PLACE Initiative is led by the Department of Public Works. The Department of Development Services also plays a significant role in the PLACE initiative. City Planner Charles Ryan spends approximately 25% of his time on the PLACE initiative. Lara Turnbull, from the health department, plays a key role in policy development and community outreach (*General Plan Update for the City of Long Beach* 2011).

SB 375 as a mandate for collaboration

California SB 375 requires the Air Resources Board (ARB) to develop regional greenhouse-gas emission-reduction targets for passenger vehicles. This requirement applies to each region covered by one of the state's 18 metropolitan planning organizations (MPOs). Each MPO then prepares a "sustainable communities strategy (SCS)" that demonstrates how the region will meet its greenhouse-gas reduction target through integrated land use, housing, and transportation planning. Once adopted by the MPO, the SCS will be incorporated into that region's federally enforceable regional transportation plan (RTP). ARB is also required to review each final SCS in order to determine whether it would, if implemented, achieve the greenhouse gas emission reduction target for its region. If the combination of measures in the SCS will not meet the region's target, then the MPO must prepare a separate *"alternative planning strategy (APS)*."

SB 375 which requires closer connection between land uses, transportation, and housing issues has the potential of having significant health impacts. For this reason the presence of PH representatives during the formulation of the SCS's is very desirable. Planning organizations will seek the collaboration of PH in the fulfillment of SB 375 requirements.

3. CONCEPTUAL MODEL OF TD COLLABORATION

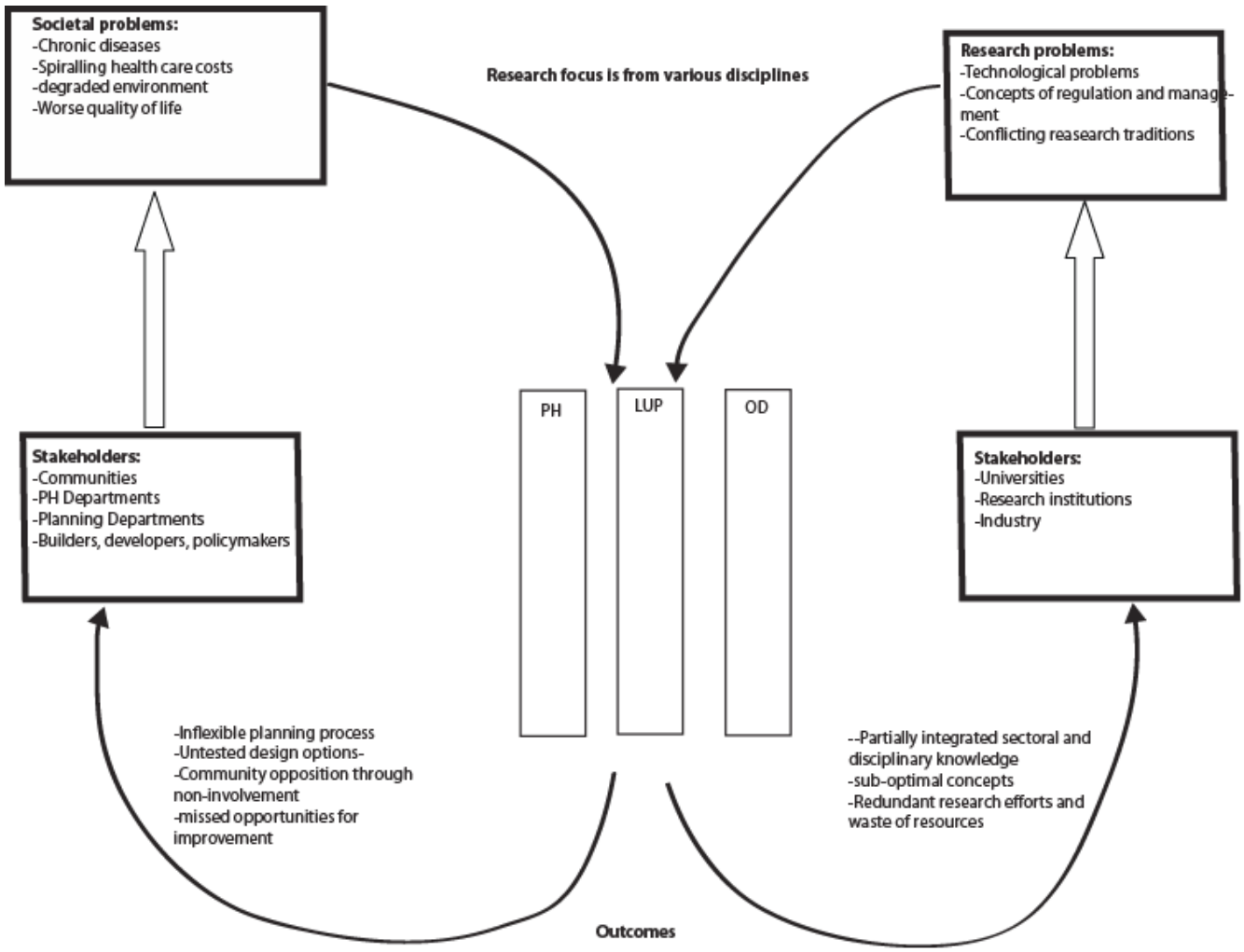
Complex scientific and societal problems require the involvement of various disciplines to find solutions through research and practice. The conceptual model adopted for the study suggests that a transdisciplinary approach as compared to alternative methods, such as a multidisciplinary approach may result in more successful collaborations between PH and planning. To better effect crosscutting research, an intersectoral collaboration is required that results in a new integrated knowledge base. Interagency collaborations are the main focus of this study. In a more expanded model TD collaboration would include the following actions (Jahn 2005):

- The new mode of knowledge production would allow for the partnership of academia, government, community and industry.
- It sets an inclusive agenda for research and problem solving from the start.
- It creates solutions that are adaptive to different stakeholders and situations.
- Integrates social, natural, medical and engineering sciences.

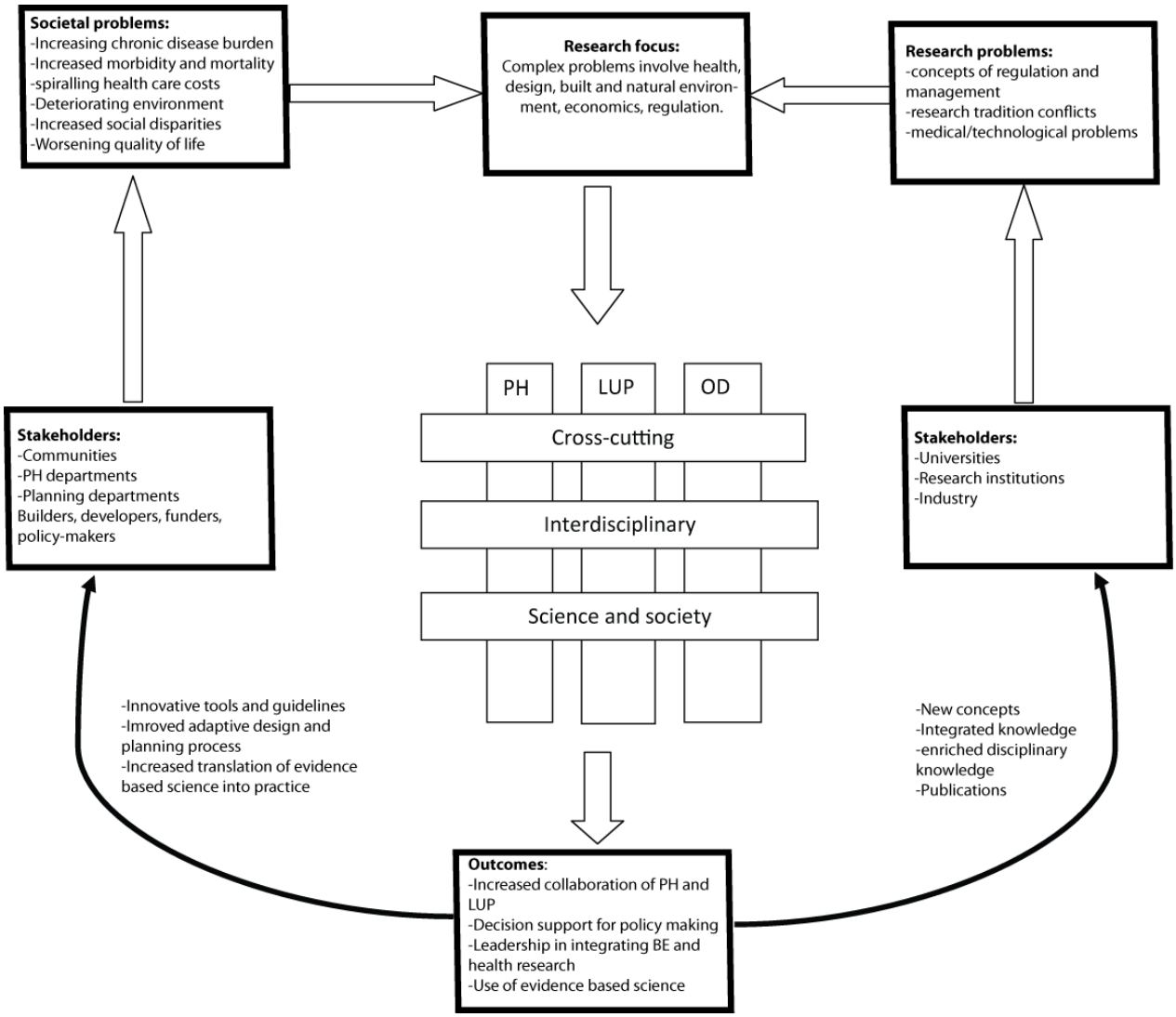
This study explores the current state of collaboration between public health professionals and land use planners so as to identify new opportunities and incentives for increased collaboration and also to identify the challenges and barriers facing increased integration. Figure 13 shows the different disciplines under multidisciplinary and TD model. The TD model shows how the outcomes produced provide the opportunity for the integration of PH and LUP.

Figure 13. Transdisciplinary Versus Multidisciplinary Models. Adapted from Jahn, (2005)

Multidisciplinary Collaboration Model



Transdisciplinary Collaboration Model.



4. GLOSSARY

Built environment. Defined broadly to include land use patterns, the transportation system, and design features that together provide opportunities for travel and physical activity. *Land use patterns* refer to the spatial distribution of human activities. The *transportation system* refers to the physical infrastructure and services that provide the spatial links or connectivity among activities. *Design* refers to the aesthetic, physical, and functional qualities of the built environment, such as the design of buildings and streetscapes, and relates to both land use patterns and the transportation system.

Case-control studies. Studies in which exposure to an acknowledged risk factor is compared between two groups of individuals from the same population with and without a condition. For example, individuals could be sorted on the basis of their activity level (e.g., active versus sedentary) into case and control groups to see whether there are statistically significant differences in environmental characteristics that may influence the propensity of the two groups to be physically active.

Collaboration. Collaboration is defined as occurring when a group of autonomous stakeholders of a problem domain engage in an interactive process, using shared rules, norms, and structures, in order to act or decide on issues related to that domain (Wood, 1991). This definition can accommodate a vast array of collaborative forms. It makes no assumptions about which or how many stakeholders will participate, at what level of social organization the collaboration will occur, whether it is temporary or not, the nature of the intended outcome, or whether the effort will succeed.

Connectivity. The directness of travel to destinations.

Context-sensitive design. A project development process encompassing geometric design that attempts to address safety and efficiency while being responsive to or consistent with a road's natural and human environment.

Cross-cutting research. Cross-cutting research supports a systems approach to research that builds on existing strengths; captures interdisciplinary contributions; and promotes and enhances synergy, teamwork, and ethical integrity. Ultimately, this research will help ensure that all people, especially those who experience health disparities, will achieve their optimal lifespan and experience the best possible health at every stage of life. This research cuts across discipline, organizational, and programmatic boundaries.

Cross-disciplinary research. Umbrella taxonomy term that includes: multidisciplinary, interdisciplinary, and transdisciplinary research (Rosenfield 1992)

1. Level one: Multidisciplinary Researchers work in parallel or sequentially from discipline-specific bases to address a common problem
2. Level two: Interdisciplinary Researchers work jointly but still from discipline-specific bases to address a common problem
3. Level three: Transdisciplinary Researchers work jointly using a shared conceptual framework drawing together discipline-specific theories, concepts, and approaches to address a common problem.

Cross-sectional studies. Studies that examine the relationship between conditions (e.g., physical activity behaviors) and other variables of interest in a defined population at a single point in time. Cross-sectional studies can quantify the presence and magnitude of associations between variables. Unlike longitudinal studies, however, they cannot be used to determine the temporal relationship between variables, and evidence of cause and effect cannot be assumed.

Decentralization. Movement of population and employment away from city centers.

Density. Typically measured as employment or population per square mile.

Diffusion research. The systematic study of the factors necessary for successful adoption by stakeholders and the targeted population of an evidence-based intervention that results in widespread use (e.g., state or national level) and specifically includes the uptake of new practices or the penetration of broad-scale recommendations through dissemination and implementation efforts, marketing, laws and regulations, systems-research, and policies.

Dissemination Research. The systematic study of how the targeted distribution of information and intervention materials to a specific public health audience can be successfully executed so that increased spread of knowledge about the evidence-based public health interventions achieves greater use and impact for the intervention.

Ecological models. Based on social cognitive theory, which explains behavior in terms of reciprocal relationships among the characteristics of a person, the person's behavior, and the environment in which the behavior is performed. Ecological models emphasize the role of the physical as well as the social environment.

Energy expenditure. Represents the sum of three factors: (*a*) resting energy expenditure to maintain basic body functions (approximately 60 percent of total energy requirements); (*b*) processing of food, which includes the thermic effect of digestion, absorption, transport, and deposition of nutrients (about 10 percent of total requirements); and (*c*) non-resting energy expenditure, primarily in the form of physical activity (about 30 percent of total requirements).

Energy imbalance. The situation that occurs when energy intake (calories consumed) exceeds or is less than total daily energy expenditure. Weight gain occurs when energy intake exceeds total daily energy expenditure for a prolonged period.

Evidence-based. This means that the intervention has undergone sufficient scientific evaluation to be proven to be efficacious or effective (e.g., intervention is considered valid or "proven" because it is strongly linked to desirable outcome). The following terms are often interchangeable: "evidence-based," "proven," "effective," "valid," or "sufficient scientific evaluation."

Exercise. A subcategory of physical activity defined as that which is planned, structured, repetitive, and purposive in the sense that improvement or maintenance of one or more components of physical fitness is the objective.

Experimental studies. Studies in which subjects are randomly assigned to the exposures of interest and followed for the outcome of interest. The most persuasive scientific evidence of causality usually is derived from experimental studies of individuals. The important advantages of experimental studies are that researchers have considerable control over all aspects of the study, including the type of exposure, the selection of subjects, and the assignment of exposure to the subjects.

Geographic information system (GIS). An automated system for the capture, storage, retrieval, analysis, and display of spatial data.

Global Positioning System (GPS). A worldwide radio navigation system comprising a constellation of 24 satellites and their ground stations. GPS uses these "man-made stars" as reference points to calculate positions accurate to a matter of meters.

Health. A state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity.

Health impact assessment. A combination of procedures, methods, and tools by which a policy, program, or project may be judged as to its potential effects on the health of a population, and the distribution of those effects within the population. Local, regional, and national governments' actions have major impacts on health, its determinants, and inequalities in these. The introduction of health

impact assessment (HIA) is an opportunity to remedy the lack of consideration of health impacts by such organizations. HIA seeks to influence decision-makers to improve the proposal.

Implementation research. The systematic study of how a specific set of activities and design strategies are used to successfully integrate an evidence-based public health intervention within specific settings (e.g., primary care clinic, community center, school).

Intervention. An intentional action (singular or constellation) designed for an individual, community, or region that alters a behavior, reduces risk, or improves outcome. Interventions can be a medical or behavioral therapy, modification to the natural or built environment, including engineering controls, public health policy, public health program, health communication, or public health law.

Land use mix. Diversity or variety of land uses (e.g., residential, commercial, industrial).

Longitudinal studies. Studies in which individuals are known to have various levels of exposure and are followed over time to determine the incidence of outcomes. Quasi-experimental designs and natural experiments are two categories of longitudinal studies. Quasi-experimental designs are those in which the exposure is assigned, but not according to a randomized experimental protocol. Investigators lack full control over the dose, timing, or allocation of subjects, but conduct the study as if it were an experiment. Natural experiments are situations in which different groups in a population have differing exposures and can be observed for different outcomes. Neither type of design is a true experiment, because researchers have not randomly assigned the individuals to exposure groups.

Neotraditional developments. Developments whose design is characterized by land use and street patterns that encourage walking and cycling. These include such features as interconnected street networks, sidewalks, walking and cycling paths, mixed land uses, and higher densities than those of more typical suburban developments. Also known as *new-urbanist* developments.

Non-motorized travel. Travel by non-motorized means, including walking, cycling, small-wheeled transport (e.g., skates, skateboards, push scooters, hand carts), and wheelchair.

Obesity and overweight. Adults are defined as being obese if they have a body mass index (BMI) of 30 or greater, and as being overweight if they have a BMI of 25 or greater and less than 30. Children and adolescents are defined as overweight if they have a BMI above the 95th percentile for their age and sex. A definition of obesity for children and adolescents on the basis of health outcomes or risk factors has not yet been formulated.

Pedometer. A monitoring device that counts steps and measures distance.

Physical activity. Bodily movement produced by the contraction of skeletal muscle that increases energy expenditure above the basal (i.e., resting) level.

Physical fitness. The ability to carry out daily tasks with vigor and alertness, without undue fatigue, and with ample energy to enjoy leisure-time pursuits and respond to unforeseen emergencies. Attributes of physical fitness include such characteristics as cardiorespiratory endurance; flexibility; balance; body composition; and muscular endurance, strength, and power.

Research. Defined as a systematic investigation, including research development, testing, and evaluation, which is designed to develop or contribute to generalizable knowledge (Department of Health and Human Services. Code of Federal Regulations: Title 45, Subpart A, Section 46.102. Available at http://www.hhs.gov/ohrp/humansubjects/guidance/45cfr46.htm#46.102).

Self-selection bias. In lay terms, refers to the need to distinguish the roles of personal attitudes, preferences, and motivations from external influences on observed behavior. For example, in the case of the built environment: Do people walk more in a particular neighborhood because of pleasant tree-lined sidewalks, or do they live in a neighborhood with pleasant tree-lined sidewalks because they like to walk? If researchers do not properly address this issue by identifying and separating these effects, then the

research's empirical results will be biased in the sense that features of the built environment may appear to influence physical activity more than they in fact do.

Social marketing. The application of commercial marketing techniques to the analysis, planning, execution, and evaluation of programs designed to influence the voluntary behavior of target audiences, with the aim of improving their personal welfare and that of their society.

Sprawl. Sprawl can be defined as any environment characterized by (1) a population widely dispersed in low-density residential development; (2) rigid separation of homes, shops, and workplaces; (3) a lack of distinct, thriving activity centers, such as strong downtowns or suburban town centers; and (4) a network of roads marked by large block size and poor access from one place to another. *Poor accessibility* is the common denominator of urban sprawl — nothing is within easy walking distance of anything else. Compact development is the antithesis of sprawl, keeping complementary uses close to one another (Ewing et al. 2003).

Traffic calming. Measures that attempt to slow traffic speeds in residential neighborhoods and near schools and pedestrian ways through physical devices designed to be self-enforcing. These include vertical deflections (speed humps and bumps, and raised intersections); horizontal deflections (serpentines, bends, and deviations in a road); road narrowing (via neckdowns and chokers); and medians, central islands, and traffic circles.

Transdisciplinary. Transdisciplinary (TD) collaboration has been defined as a process by which professionals work together from the outset to develop a *shared* conceptual framework that integrates and extends discipline-specific theories, concepts, and methods in order to address a common problem (Rosenfield 1992; Nash et al. 2003). It is distinct from simple disciplinary or interdisciplinary approaches, which maintain separate conceptual frameworks and focus their unique research expertise to study and address specific problems. A transdisciplinary approach can provide a systematic, comprehensive theoretical framework for the definition and analysis of the social, economic, political, environmental, and institutional factors influencing human health and well-being.

Translation research. Characterizes the sequence of events (i.e., process) in which a proven scientific discovery (i.e., evidence-based public health intervention) is successfully institutionalized (i.e., seamlessly integrated into established practice and policy). Translation research does not encompass pure biomedical or formative basic science research. Translation Research is comprised of many complex components that include specialized fields of study. Specifically, translation research is comprised of dissemination research, implementation research, and diffusion research.

Transit-oriented developments. Projects that involve mixed-use development (i.e., residential and commercial) near public transit stations.

5. COLLABORATION MANUAL HANDOUT

The following section contains the Cost-Benefit Analysis tool which can be distributed separately from the rest of the study. It will also be made available to all participants in the study and their agencies and organizations. It will be posted on the internet for easy download. It is expected that other modules will be developed in the future..

Module

1

RECONNECTING PUBLIC HEALTH AND URBAN PLANNING: AN EXPLORATORY STUDY OF CROSS-AGENCY COLLABORATION

UC Berkeley School of Public Health

Collaboration Manual for Public Health and Planning

UC BERKELEY SCHOOL OF PUBLIC HEALTH

Collaboration Manual for Public Health and Planning

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1

Manual for Collaboration

"As a city planner I have seen several children in my kids' school that are severely overweight. They live in developments where they can't walk and have little access to healthy food. We are now reviewing the proposal for a new development in our city. How can I collaborate with our public health agency to make sure that we make a difference in the health status of this new community?"

This manual was prepared based on the study "Reconnecting Public Health and Urban Planning: An Exploratory Study Of Cross-Agency Collaboration" from UC Berkeley[1]. The study looked closely at collaborations between Public Health and planning to determine the factors that promote or hinder collaboration. The study developed a Five Stage Model for collaboration that is firmly based on theory and that resulted in the creation of a Cost-benefit Audit Tool that can be used by Public Health and planning agencies to plan collaborations.

[1] Maus, M. (2011). *Reconnecting Public Health and Urban Planning: An Exploratory Study of Cross-Agency Collaboration*, (Doctoral dissertation). UC Berkeley School of Public Health.

ICON KEY
🕮 Valuable information
✎ Practical applications

Icons provide a guide to the different uses of the manual for professionals. Since the manual is the result of an academic study there are areas that relate to the underlying theories that can be explored further in the reference section. Practical applications are clearly marked.

Introduction

It is a familiar situation. A manager at a Public Health department has attended a meeting where serious health problems, such as childhood obesity, were discussed by experts from many disciplines. The consensus was that to truly address these problems it is necessary for Public Health agencies to collaborate with Land Use Planners and other professionals. When she returns to her department she is now the champion of collaboration, but how to go about it? She must identify a new area for collaboration, determine if she has the support of her institution, if the resources can be made available, and what are the benefits to the mission of her agency. Once the initial questions are resolved she must identify potential partners, engage them in a dialogue, and negotiate the goals and the strategic plan. During the entire process there are moments of panic and doubt. If conflicts and deficiencies are not resolved the entire collaboration is jeopardized. Working within a department or a discipline is hard enough. Working across disciplines and institutions is even more challenging.

There is no question that Public Health and Land Use Planners are increasingly looking at collaborating to tackle the complex health problems facing the nation in the 21st Century. Obesity, diabetes, lack of physical activity, access to healthy food, and depression are all problems that require the involvement of both Public Health and Planning agencies for their solution.

One of the most common complaints voiced by Public Health and Planning managers contemplating collaboration is that there are very few resources available to help them through the process of collaborating. They demand clear and proven suggestions that will assist them in determining if collaboration is justified, if they have what it takes to succeed and if not how it can be improved. This manual is based on sound theory to provide professionals with a tool they can use to embark on collaborative efforts. It can be an important part of every manager's arsenal.

Background

The historical origins of Public Health and Land Use Planning are closely linked. From zoning laws that restricted land use for health reasons to the control of disease epidemics through the design of buildings and communities for many decades the two disciplines worked almost as one. However in the last decades of the 20th Century a separation occurred where Public Health and planning went their separate ways and had few opportunities to collaborate. All that has changed with the realization that many of the health problems facing the nation cannot be solved using a traditional medical model. Communities must be designed to encourage and facilitate healthy behaviors. Every new development or project involving the built environment should at least consider soliciting the input of Public Health. While not all projects require a formal collaboration, there is much to be gained from consultation.

There are many barriers that face professionals looking to collaborate on a project. These include deciding the degree of collaboration required by the project, assessing if there are sufficient human and institutional resources available, if there exists the necessary support from the organization and its leaders, and if the people involved are capable and willing to collaborate. This manual addresses many of these concerns with the use of an *audit* of the costs and benefits of such collaboration.

Why use the concept of costs and benefits? The Five Stage Model developed by the study used as its foundation a well-known theory called "Social Exchange Theory" developed in the 1950's to explain how people decide if they are going to engage in a relationship. This theory suggests that for people to engage in a relationship with other people they become involved in a process of Cost-Benefit analysis. The process can be either formal or informal. They ask the questions: what will I or my institution gain from collaborating? What will it cost me or my institution? Depending on their answers they will decide whether to enter into a relationship. Asking the right questions and addressing any concerns identified can determine if the collaboration will be successful and sustainable. To answer these questions participants look at the resources available such as time and funding, leadership, institutional support and then engage in negotiation with their potential partners to improve the benefits and decrease the costs in an equitable manner. Collaboration must be a win-win situation! This Cost-Benefit analysis and negotiation occurs with all participants.

The degree of collaboration is also important. A simple zoning question may just require a public health representative to assess the potential health impacts and sign off on the permits. A more complicated project such as the creation of a transit oriented development with huge long term implications for health and the economy would benefit from a much closer collaboration. The term "*transdisciplinary*" has been coined to express a degree of collaboration that is much more integrated than multi- or inter-disciplinary collaborations. It is not necessarily better that other forms of collaboration, it is simply more appropriate

for addressing very complex problems that require the creation of a new shared working framework. One of the goals of this manual is to facilitate transdisciplinary collaborations when appropriate.

The Five Stage Model for Collaboration

Models are used to explain and represent ideas and processes. Think of an airplane model that can be used to determine what will ultimately be built. An engineer uses a model to modify the design of the airplane and to perfect it. In the case of this manual the model outlines the stages required to engage in collaboration and what factors are required at each stage to have a successful collaboration. The following are the five stages:

Stage 1. Assessment and Goal Setting.

In this stage there are planners and/or public health professionals looking at a problem or a project and deciding if there is the need for collaboration. They ask themselves if they and their institutions would benefit from collaborating with other disciplines and agencies. The asses if they have the necessary resources and if they are willing and able to collaborate. This process happens at both a personal and institutional level. They must also start setting the goals for the collaborations.

Stage 2. Determining Collaborative Fit.

Once there is a decision to explore the possibility of collaborating there must be an identification of potential partners. If there have been previous collaborations the process may be easier since there is already a "team" in place. Otherwise partners must be identified and the collaborative fit must be determined.

Stage 3. Resource Identification and Reflection.

The individuals and institutions continue a cost-benefit analysis to decide if the benefits outweigh the costs. They look at the available resources and my try to get access to greater support for the collaboration. They may also decide at this stage that the need or resources are simply not there and the collaboration will not proceed.

Stage 4. Project Refinement and Implementation

This is the stage where the collaboration is implemented. The people involved continue to develop the strategies necessary to address the problems and complete the project. They also work together to overcome unexpected difficulties. They create the environment of trust that is essential for the collaboration to succeed.

Stage 5. Evaluation, Feedback and Sustainability

An important part of all collaborations is deciding if they accomplished their objectives. Was it a win-win situation? The feedback and evaluation helps determine if there will be future collaborations based on the success or failure of the present one. If a team has been established it is possible that it will persist after the project ends. The collaboration becomes sustained and helps future collaborations develop more quickly and effectively.

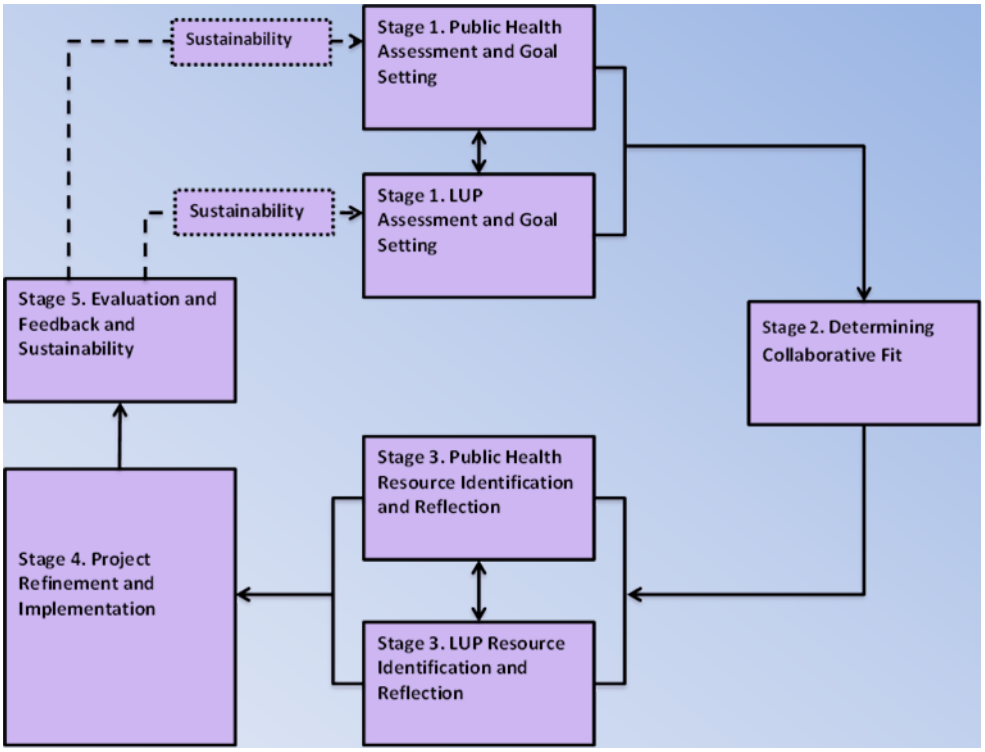


FIGURE 1. Five Stage Model of Collaboration between Public Health and Planning. Each stage involves several actions that are either facilitated or hindered.by the existing contextual factors. Increasing the benefits and decreasing the costs makes it more likely that collaboration will succeed and be sustainable.

The study found that the theoretical basis for all collaboration depends on a *Cost/Benefit analysis* which is performed by all participants during each stage. It usually takes place both at the personal level and at the institutional level. It may or may not be a formal analysis and may consist of simple personal reflection. This manual is designed to help the participants by pointing out the processes taking place at each stage and what factors play important roles. There are five "themes" that have been found to define the factors considered during the Cost-Benefit analysis:

- ***Establishing trust***
- ***Communication factors***

- *Effective leadership*
- *Resource and funding factors*
- *Evaluation and feedback*

The study also uses the concept of a *Social Ecologic Model* of action. This model proposes that an endeavor is more likely to be successful if it works within multiple spheres of influence at the same time. The six levels used in this manual are:

1. *Intrapersonal*
2. *Interpersonal*
3. *Organizational/Institutional*
4. *Physical/Environmental*
5. *Technologic*
6. *Political And Societal Factors*

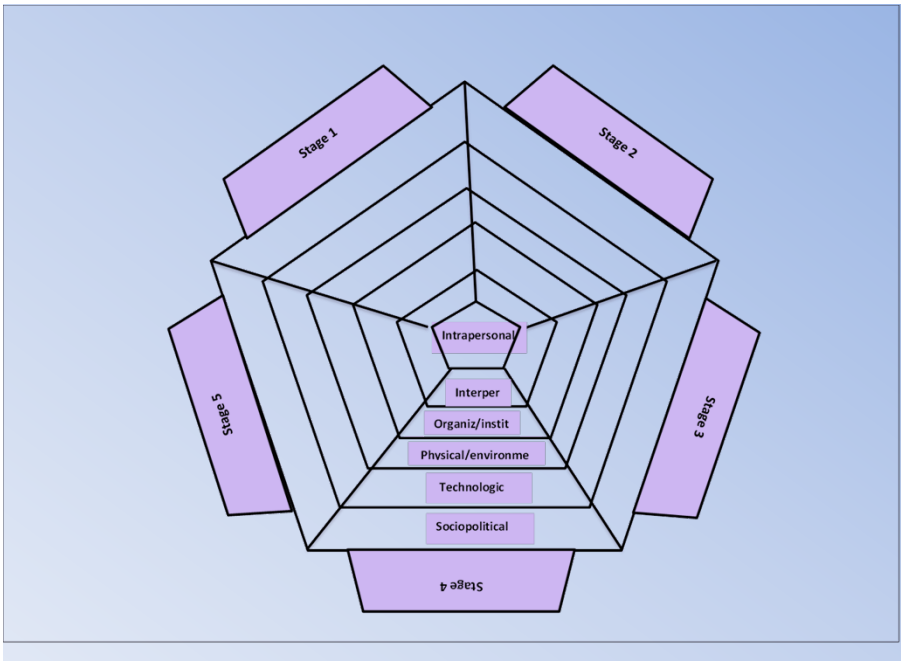


FIGURE 2. There are six spheres of action at each stage. By targeting multiple levels simultaneously it is possible to make collaborations more likely to succeed.

A collaborative team may persist after the conclusion of a project.

A history of previous collaboration is one of the best predictors of the success of future collaboration. This results from the fact that personal relationships are a key factor in establishing an environment of trust. Once a "team" has been formed, there is a greater likelihood that the

collaborative process will be sustained through various projects. It is possible for an existing team to progress very rapidly to stage four, *Project Implementation*, when engaging in a new project. However it is still indispensable for the participants to carry out a Cost-Benefit analysis to establish that they have the resources and support necessary to complete the collaboration.

Cost-Benefit Analysis Questions

The following list of questions is based on the contextual factors operating at each stage of the Five Stage Model of Collaboration. They are divided into the ecologic levels at which they act within each stage. These are some of the questions that should be considered when contemplating collaboration. The contextual factors have been found to be important at each stage of collaboration. The more incentives present the better the chances that collaboration will succeed. Likewise, if more barriers are identified and addressed in a timely fashion, the more likely that the project will be completed successfully.

Example:

A planner in a city planning agency that is involved in the revision of a general plan is wondering if there should be a health element when there wasn't one in the past. She heard in a recent meeting of public health officials and land use planners that obesity and diabetes are becoming two of the greatest problems in the US and that they affecting many of the cities and communities in her county. She herself knows that several friends of her children in the local public school are severely overweight.

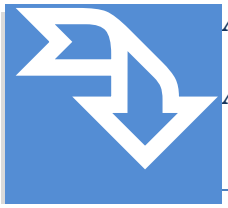
She is convinced that getting public health involved would help her develop and promote the creation of the new health element for the general plan. She knows someone at the county health department from previous collaborations that is interested in issues related to the built environment. Not only is that person interested in collaborating with planners, but in the past was able to get funding for common projects. She decides to contact that person and suggest they start a new collaboration.

This manual is designed to help guide her at each of the five stages of the process. The Cost-Benefit Analysis tool uses the extensive theory-based list of factors that influence collaborations between Public Health and Planning to create several questions for participants. These questions act as a checklist for the collaborative process. As an example, the questions would suggest that she make certain that necessary resources are obtained at each stage. They remind her of the importance of determining the level of support from her superiors. It would help list some of the factors that may be more project specific, such as necessary meetings with the community which may be best organized by public health professionals based on their existing relationships with grassroots organizations. In short, it is a list that can be quickly checked at each stage to remind her of some important factors.

While in most cases participants are already aware of many of the necessary requirements for collaboration on a project, having a comprehensive list can be very helpful.

How to Use This Manual

The participants contemplating a collaborative project will identify the stage they are engaged in and refer to the appropriate section of the Cost-Benefit Analysis tool. They will then try to answer the questions that are relevant to the project. Note that each answer requires the participants to explain the ***reasons*** why an answer is chosen. It is in the ***process*** of answering a question that solutions to potential problems may be developed or further questions identified.



As an example take question 1.2.2 and various possible answers:

Are the participants mandated to engage in collaboration?

- *Yes, because…There is a new bill, SB 345, that requires interagency collaboration*
- *Yes, but…The new bill, SB 345,is unfunded and may not be enforced*
- *No, because…There is no requirement for collaboration in SB 345*

Note

Not all questions may apply to specific projects and they don't all have to be answered. Some projects may have no need for meeting facilities, or for the involvement of disciplines other than Public Health and Planning. However, by considering all the questions the participants will be made aware of the incentives and the barriers to the collaboration and thus improve the chances for success.

Cost-Benefit Analysis Tool

1. **Stage 1 Questions:**

1.1. Intrapersonal

1.1.1. Can sufficient time be committed to the project by all participants?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.1.2. Is there buy-in from all participants?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.1.3. Have clear goals been defined at the personal level?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.1.4. Have clear goals been defined at the institutional level?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.1.5. Do participants trust each other?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.1.6. Do participants recognize a value added to the project by collaboration with another agency?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.2. Interpersonal

1.2.1. Do participants respect the function and role other discipline or agency?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.2.2. Are the participants mandated to engage in collaboration?

- ☐ Yes, because…
- ☐ Yes, but…

- ☐ No, because…
- ☐ Other…

1.2.3. Have leaders empowered participants to explore collaborations with other disciplines or agencies?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.2.4. Have possible obstructions to collaboration been identified?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.3. Organizational/Institutional

1.3.1. Does the present agency culture already support collaboration?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.3.2. Does the institution empower individuals to pursue collaborative projects?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.3.3. Are there established institutional procedures for cross-agency collaboration?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.4. Physical/Environmental

1.4.1. Are the agencies in a close geographic location?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.5. Technologic

1.5.1. Are participants competent in the use of technology such as internet, virtual meetings, and social media?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.6. Political And Societal Factors

1.6.1. Is the problem being considered recognized by the agency as within its jurisdiction?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…

- ☐ Other…

1.6.2. Does the community it serves recognize this as an important problem?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

1.6.3. Do the legislators involved with the project recognize this as an important problem?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2. Stage 2 Questions:

2.1. Intrapersonal

2.1.1. Does the project identify a new area for collaboration?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.1.2. If this is to be a transdisciplinary project, is the project of sufficient complexity and does it concern everyday problems?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…

- ☐ Other…

2.1.3. Do the participants have previous experience in cross-agency collaborations?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.1.4. Do they have experience collaborating with the other participants involved in the present project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.1.5. Have participants been involved in previous transdisciplinary projects? (increased likelihood of a new TD collaboration)

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.1.6. Has a cost-benefit analysis been done formally?

- ☐ Yes, and suggests that the collaboration can take place because…
- ☐ Yes, but…
- ☐ No, because
- ☐ Other…

2.2. Interpersonal

2.2.1. Is there sufficient disciplinary diversity in the collaborative team to fully tackle the problem or project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.2.2. Is the expertise of the potential collaboration partner appropriate for the problem being considered?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.2.3. Is the partner competent in his/her practice?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.2.4. If collaboration is justified, what degree of collaboration would best satisfy the requirements of the project?

- ☐ Each discipline working separately on the problems and integrating their solutions at the conclusion (Multidisciplinary)
- ☐ Working together on some aspects of the project and consulting on others maintaining a separate disciplinary focus (Interdisciplinary)
- ☐ Working together to develop goals and solutions, developing a common language and integrating their knowledge (transdisciplinary)

2.2.5. Is the project of large enough scope to involve all participants?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

2.2.6. Have the common goals for the project been set jointly and openly with the other participants?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

2.2.7. Have criteria for the success of the project been specified?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

2.2.8. Are other participants being integrated into the project?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

2.2.9. Are they being included in the decision making process?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...

- Other…

2.2.10. Is there a “champion” for the collaboration?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.2.11. Does the champion have the support of his/her supervisors?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.2.12. Does the champion have the support of his/her peers?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.2.13. Does the champion have the support of his/her subordinates?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.3. Organizational/Institutional

2.3.1.Does the scope of the project require collaboration between PH and Planning?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.3.2. Do the goals for the project coincide with the personal goals of each participant?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.3.3. Do the goals for the project coincide with the goals of the agency?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.3.4. Has a formal structure decision making been developed?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.3.5. Have the heads of the agencies been involved in developing the project?

- ☐ Yes, because …
- ☐ Yes, but…
- ☐ No, because…

- Other…

2.3.6. Are the heads of the agencies supportive of collaboration?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.3.7. Are the higher-ups in agreement that collaboration with the other agency is the best approach for the project?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.4. Physical/Environmental

2.4.1. Are the participants able to meet physically if necessary?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.4.2. Have adequate facilities for the project meetings been identified?

- Yes, because…
- Yes, but…
- No, because…
- Other…

2.4.3. Are the facilities easily accessible to all participants?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.4.4. Have meetings and/or charettes been held?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.5. Technologic

2.5.1. Is there sufficient technologic support available?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.5.2. Are participants competent in the use of the technology necessary for collaboration?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.6. Political And Societal Factors

2.6.1. Is the project relevant to the health problems of the community?

- ☐ Yes, because…

- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.6.2. Is there political support of the project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.6.3. Is there political support for collaboration between agencies?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.6.4. Are there mandates that require the agencies to collaborate in the present project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

2.6.5. Do the mandates provide the resources for the collaboration?

- ☐ Yes because…
- ☐ Yes, but hey need to be supplemented because…
- ☐ No, but the collaboration must still take place because…
- ☐ No, but…

- ☐ Other…

3. **Stage 3 Questions:**

3.1. Intrapersonal

3.1.1. Have the participants reflected separately on their own capacity for collaboration?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.1.2. Have the participants reflected on their readiness to engage in collaboration?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.2. Interpersonal

3.2.1. Have roles for each participant been adequately and clearly described with their full participation?

- ☐ Yes, because…
- ☐ Yes, but not with their full participation because…
- ☐ No, because…
- ☐ Other…

3.3. Organizational/Institutional

3.3.1. Have sufficient funds been allocated for the project?

- ☐ Yes, because…

- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.3.2. If funds must be obtained, has it been determined who is responsible for providing or acquiring the funds?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.3.3. Is there a plan to apply for grants or other extra-departmental sources of funds?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.3.4. Are there adequate human resources available for the project?

- ☐ Yes, and no major changes will be required because…
- ☐ Yes, but it will require…
- ☐ No, because…
- ☐ Other…

3.4. Physical/Environmental

3.4.1. Would the agencies be able to share facilities?

- ☐ Yes, because…
- ☐ Yes, but…

- ☐ No, because…
- ☐ Other…

3.5. Technologic

3.5.1. Is there recognition of the value added to the project by the technology used by other disciplines?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.6. Political And Societal Factors

3.6.1. Is there agency support for collaboration in the form of resources and funding?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

3.6.2. Are there other projects involving the participants that could potentially interfere with the present one?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4. Stage 4 Questions:

4.1. Intrapersonal

4.1.1. Do the leaders remain committed to the project?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

4.1.2. Are participants able to fulfill the obligations and roles previously identified?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

4.2. Interpersonal

4.2.1. Has the project been initiated and is it keeping to the proposed time-table?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

4.2.2. Have any conflicts between participants emerged and have they been openly discussed and confronted?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

4.2.3. Have relationships between participants developed that support integration of the disciplines?

- ☐ Yes, because...

- Yes, but…
- No, because…
- Other…

4.2.4. Has trust developed among participants?

- Yes, because…
- Yes, but…
- No, because…
- Other…

4.2.5. Have the goals been reviewed and revised as necessary in a participatory manner?

- Yes, because…
- Yes, but…
- No, because…
- Other…

4.2.6. Is there regular communication among PH and Planning participants?

- Yes, because…
- Yes, but…
- No, because…
- Other…

4.2.7. Is there regular communication with other participants in the project?

- Yes, because…
- Yes, but…
- No, because…
- Other…

4.2.8.Are the scheduled meetings taking place as planned?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.2.9.Are here any new difficulties affecting the time commitments made initially?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.3. Organizational/Institutional

4.3.1.Is there continued buy-in and support from the higher-ups and agency heads?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.3.2.Has all necessary funding for the project been obtained?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.3.3.Are all human resources necessary for the project in place?

- ☐ Yes, because…

- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.4. Physical/Environmental

4.4.1. Are the necessary facilities for meetings working out?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.5. Technologic

4.5.1. Has the necessary technologic infrastructure for communication been functioning adequately?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.5.2. If other technology is being used has it been effective and reliable?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other or N/A…

4.6. Political And Societal Factors

4.6.1. Has the political support for the project been steadfast?

- ☐ Yes, because…

- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.6.2. Has there been unexpected opposition to the project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

4.6.3. Has there been unexpected opposition to the cross-agency collaborative effort?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

5. Stage 5 Questions:

5.1. Intrapersonal

5.1.1. Has the collaboration fulfilled the personal and institutional goals set for the project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

5.1.2. Has the present experience in collaboration increased the willingness to collaborate in the future?

- ☐ Yes, because…

- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

5.2. Interpersonal

5.2.1. Has the collaboration resulted in establishing a formal collaborative team?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

5.2.2. Did an environment of trust develop among the participants?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

5.2.3. Have personal relationships been established among participants?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...
- ☐ Other...

5.2.4. Is there continued communication among participants after the completion of the project?

- ☐ Yes, because...
- ☐ Yes, but...
- ☐ No, because...

- Other...

5.2.5. Has there been a formal or informal evaluation of the results of the project?

- Yes, because...
- Yes, but...
- No, because...
- Other...

5.2.6. Has there been a formal or informal evaluation of the process of collaboration?

- Yes, because...
- Yes, but...
- No, because...
- Other...

5.3. Organizational/Institutional

5.3.1. Has a sustainable mechanism been established for future collaborations?

- Yes, because...
- Yes, but...
- No, because...
- Other...

5.3.2. Is there institutional support for future collaborations?

- Yes, because...
- Yes, but...
- No, because...
- Other...

5.3.3. Did the project change the culture of cross-agency collaboration for the better?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

5.3.4. Have any individuals or positions been designated to manage future collaborative projects?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

5.4. Physical/Environmental

5.4.1. Have any facilities been identified to accommodate future collaborations?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

5.5. Technologic

5.5.1. Are there adequate technologic facilities for continued communication after the completion of the project?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

5.6. Political And Societal Factors

5.6.1. Are there existing or new mandates or political incentives for collaboration in future projects?

- ☐ Yes, because…
- ☐ Yes, but…
- ☐ No, because…
- ☐ Other…

END OF QUESTIONS