Building Healthy Communities: Integrating Walkability Concepts into Local Land Use Planning

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Building Healthy Communities:
Integrating Walkability Concepts into Local Land Use Planning

By

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In recent years, American communities have been diagnosed with several chronic health diseases such as diabetes, heart disease and obesity. Several researchers attribute sedentary lifestyles as one of the contributing factors to chronic diseases. The lack of physical exercise can be blamed by the auto-dependent suburbia lifestyle that many generations have become accustomed to. Poor land use developments have roads and freeways dominating the use of space, with the intent of having an automobile get from one place to another as efficiently as possible. This has allowed places to be much further apart therefore it has had a negative impact on the pedestrian environment. Historically, pedestrian planning has been a low priority in the United States. However in recent years, urban planners have been exploring alternative modes of transportation that includes walking and bicycling. Pedestrian plans have been established in some cities throughout the United States, however a majority of cities do not have a pedestrian plan.

This research investigates the health benefits of walking along with the benefits of planning for pedestrians. Do those cities that take interest in pedestrians have high quality pedestrian plans or strong pedestrian components as part of a comprehensive plan? What consists of a high quality pedestrian plan?

The primary research method used was plan evaluation which includes plans from Lincoln, Nebraska; Boulder, Colorado; Minneapolis Minnesota; Portland, Oregon; San
Francisco, California; and Seattle, Washington. This paper first explores Lincoln, Nebraska's plans and the lack of pedestrian components in its plans. Then it explores the five other well-known cities' pedestrian plans. The intent of this research is to compare these plans to a pedestrian element coding worksheet to see if these cities' plans contain all crucial elements for a high quality pedestrian plan. Once the plans are analyzed, the coding worksheets show what elements (indicators) are included in the plans and which are not included. The outcomes of this research produces an outline stating what elements are needed for an ideal pedestrian plan.
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Walk Friendly Awards
Chapter I - Introduction

There is a growing interest in the link between health and the built environment. Comprehensive planning is one approach to linking the traditional notion of planning (land use, transportation, community facilities, housing, and parks and open space) with health themes (physical activity, public safety, healthy eating, mental health, social capital, and pollutants). Comprehensive plans and long-range Master Plans can help facilitate decisions about health and built environment.

An increasing number of Americans suffer from chronic diseases like obesity, diabetes, and asthma, and research is showing that the built environment contributes to the epidemic rates of these diseases. These diseases can be prevented and various researchers have found that physical exercise is the best remedy. Since health concerns have been rising due to these chronic diseases, planners and public health professionals have begun to promote healthy plans in some communities. There are several urban planning and public health policy plans, which guide development and health prevention for cities. These plans strive to increase the overall quality of life for residents. The creation of a health and well-being plan element in comprehensive plans may increase healthier living strategies and impact quality of life. One way of making communities healthier is by promoting physical activity and the easiest way to get people to get out is by simply walking. Most communities recognize that quality of life is very important, and some have incorporated plans to promote wellness and physical activity. These plans are referred to as pedestrian and bicycle plans. Planning for non-motorized travel can benefit communities in many ways. It obviously will be beneficial to people's health along with broadening travel options for non-drivers. Pedestrian plans can increase safety
and comfort of pedestrians and bicyclists, increases recreational activity and exercise, better accommodates for people with disabilities, and most importantly, creates more livable communities. This paper presents the recommendations for future pedestrian planning for communities by establishing baseline elements that should be included in pedestrian planning. Examples of goals, implementation strategies and policies will also be included within the key elements. Establishing a pedestrian plan will benefit communities to encourage walking and in turn become a healthier and more livable community.
Chapter II - Literature Review

Section 2.0: Urban Planning

Urban planning is a multidisciplinary field in which professionals work to improve the welfare of persons and communities by creating more convenient, equitable, healthful, efficient, and attractive places now and for the future. Urban planning, since its conception has been influenced by public health. Historically, urban planning was considered as a solution to alleviate the public health issues, especially overcrowding and sanitation. Major planning achievements such as land use planning and zoning were the solutions to the public's health problems caused by haphazard development of industries and residences.

The planning profession immerged in the late 19th and early 20th centuries with objectives to improve the citizen's quality of life. As Europeans arrived to the northeastern part of the United States, new industrial cities grew and urbanism began. When American cities grew, they were typically organized around a vibrant core, whether it be a downtown or a busy main street. These closely built residential areas and lower density suburbs spread outward from the core, serviced by streetcar lines and commuter railroads. Then along the main freight rail lines and waterways, grew to be factories, warehouses, and worksites (Peterson, 2009, p. 124). The industrial cities' layouts were very congested and polluted, with many people living in slums in the city's center. As urban planning attempted to address the issue of sanitation and living environments through public works and housing reform, the field of urban planning saw numerous significant conceptual contributions to its growing body of work. "Early movements, such as the Garden City and City Beautiful, promulgated the idea of urban
parks, improved civic life, and public art to encourage health and advance well-being."

(Levy, 2006, p. 36) "While design aspects are integral to the field, so too are the social,
economic, and political processes, which also influence city reform and function."

(Corborn, 2009, p. 3-4) Most of this occurred after the automobile took priority as prime
mode of transportation. Now planning is starting to reduce the use of the automobile and
focus on other modes of transportation.

Current planning practices in the United States (particularly transportation
planning) has favored the automobile. Since Henry Ford invented the automobile, cities
have spread out requiring proper infrastructure to support the automobile. Automobiles
have caused unbalanced land-use developments that increasingly favor urban sprawl
which causes most people to spend more time in a vehicle which in turn causes traffic
congestion, pollution, and makes a more unsafe environment for non-motorized users.
Many planners are looking at these current trends of high automobile usage as being
unsustainable and encouraging unhealthy development of communities. Therefore
different transportation modes that planners are looking into to encourage non-modal
transportation planning. These non-modal transportation planning practices is one way of
becoming more sustainable. Sustainability as defined by the EPA is the long-term
maintenance of well being, which has environmental, economic, and social dimensions,
and has responsible management of resource use (EPA, 2012). Different modes of non-
motorized travel tie into concepts of sustainable practices to encourage the development
of healthy communities.

Planning for non-motorized transportation has been increasing over the past
several years, while planners and engineers are looking to develop better trails and
walkways for citizens. Walking and bicycling is now viewed as legitimate modes of transportation. State and local government agencies are recognizing that pedestrians shouldn't be looked over when it comes to providing proper accommodations to support walking.

Section 2.1: Walkability

Walking is our oldest and most basic form of transportation. Each of us does it every day as some part of every trip. Everyone walks or uses a pedestrian network to get to work, to shop, to reach the bus stop, to get exercise, or just to have fun. Understanding what walkability means and understanding what pedestrians desire is key to knowing how to approach areas to encourage walking. Walkability can be defined as a measure of how friendly an area is to walking (City of Fort Collins, 2011). An ideal walkable community would include housing, office, retail and adequate access to services such as public transportation, schools, and libraries. Also streetscapes would better serve a range of users, which include pedestrians, bicyclists, transit riders, and automobiles.

Most American cities have been built around the automobile making it hard for pedestrians to feel safe in most areas. Many people have negative perceptions on walking whether it's because they don't feel safe, or they don't have anywhere to walk to. These are resulting from poor development patterns where it seems nearly impossible for people to walk to their local grocery store. "Decentralization of metropolitan populations and centers of employment to suburban locations increased travel distances to work, school, and other daily tasks. This is why people became so dependent on the automobile. Zoning codes and ordinances were written to allow larger lot sizes, which steers away from pedestrian-friendly patterns like historic cities used to have" (Boyle & Lehman, 2007, p.
2). Other sources mention various reasons of why people maybe be hesitant to walk or have safety concerns. The Pedestrian and Bicycle Information Center says that the main concerns of why people don't walk include the following:

- There are no sidewalks; existing sidewalks are blocked or in poor repair
- There are access issues for people with physical disabilities
- Motorists drive too fast or do not yield to pedestrians
- Crossing the street is dangerous
- The community is not an inviting place to walk
- There is concern about crime and walking at night
- There isn't certain destinations within walking distance (i.e.: store, work)
- Children can't walk to school
- Pedestrians act dangerously

There are solutions to all of these perceptions but it is very clear that people have negative perceptions on walking. There are ways to break the barriers to a safe and comfortable walking environment and it all begins with adequate planning.

Walking has numerous benefits that not only help the health of individuals but it also has several environmental benefits. It's obvious to most people that walking is exercise, and exercise equals healthier people. The more people walk, the healthier they will be. Currently, 30 percent of adults in the U.S. who are 20 years of age and over are considered obese (CDC, 2011). The percentage of young people who are overweight has more than tripled since 1980. Almost 16 percent of children between the ages of 6 and 19 are considered overweight (CDC, 2011). Being overweight puts people at high risk for developing diabetes, cardiovascular disease, high cholesterol, stroke and cancer. Other health issues such as mental illnesses and depression also can affect those who don't get enough physical activity. According to the Surgeon General, 30 minutes of walking five
days a week will significantly reduce the risks to adults for the previously mentioned health conditions while contributing to healthy bones, muscles and joints.

Walking is an easy and affordable way to get exercise and people shouldn't have to worry about the safety and accessibility of property sidewalks or walkways. Another benefit from walking is increasing social capital, which is the connection between and within social networks. By achieving this, people will get to know their neighbors, gain trust and be socially engaged. Social justice is another important benefit to walking. Not everyone owns a vehicle therefore they don't have the option to drive. This may because of a family's income status, people with certain disabilities, or adolescents who are unable to drive. If there aren't adequate sidewalks or crosswalks then people are forced to engage in unsafe walking practices. The availability of pedestrian facilities is important because it provides options for pedestrians.

The environmental benefits to walking are reducing pollution resulting in cleaner air. Studies have shown that automobile pollution is responsible for nearly 80 percent of carbon monoxide and 55 percent nitrogen oxide emissions in the U.S. (EPA, 2011). "Though automobiles are getting more efficient and cleaner than they were in earlier years, if total traffic continues to grow, overall air quality will deteriorate" (PBIC, 2011). With increased sprawl due to inconsistent development patterns and separation of land uses the need to drive has increased dramatically over the past 30 years. Traffic congestion and increased emissions is still a major problem in major metropolises. Although eliminating usage of automobiles is impossible however the eliminating the use of a vehicle for short trips could be drastically reduced if proper walkways were available. The 1995 National Personal Transportation Survey (NPTS) found that
approximately 40 percent of all trips are less than two miles in length—which represents a 30-minute walk. By walking instead of driving, the reduction of traffic congestion, pollution are significant while benefiting the walker by increasing their physical activity level and mood.

Improved quality of life benefits is overall the most important aspect of being able to walk. By helping people become more healthy, encouraging social cohesion by having more social contact, and giving those who don't have the option to drive an easy and safe walk to their destination are major components when making a community a better place to live.

Walking is has many economic benefits because people will be spending less money on their vehicle with maintenance, fuel, and insurance, so they can spend it on other things that help support the local economy. Foot traffic can also provide economic boosts to area businesses since people are more likely to visit stores and restaurants that are close to their neighborhoods. "By providing an easy and comfortable pedestrian-oriented environment, it can pay big dividends for area economic vitality and growth" (BeCentro, 2010).

In the past walking has generally received little or no attention in the planning, design, and development of our communities since most communities were planned around the automobile. However, over the past decade pedestrian activity has been a major factor in transportation planning and design for American cities (Southworth, 2005, p. 246). The importance of walking has become a more acceptable way of transport and planners and designers are now looking into new ways to incorporate proper walkways to encourage walking throughout neighborhoods and downtowns. "There are
many ways planners and other city officials can do to encourage walking instead of driving. Planners can work on getting zoning codes and other regulations to be updated or changed to encourage walkable developments." (Boyle & Lehman, 2007, p. 7) Local state, and federal governments are working to include pedestrians and bicyclists into their transportation regulations. "Pedestrian walkways shall be considered, where appropriate, in conjunction with all new construction and reconstruction of transportation projects, except where pedestrian traffic is not permitted" (FHWA, 2006). "Also the Federal Highway Program's Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and 1998 Transportation Equity Act of the 21st Century (TEA-21), has had a major shift in policy away from auto-centric planning, to mandated accommodation of the pedestrian and bicycle in federally supported transportation projects." (Southworth, 2005, p. 246) Now that the importance of pedestrian accessibility is recognized at the state and federal levels, it is justified that walkability is important in all communities.

Various cities around the country have been adopting implementation strategies to make their community more walkable. All cities have pedestrian problems and issues but different solutions are being implemented by pedestrian plans. There are various forms of pedestrian planning, whether it's within the transportation section of a comprehensive plan or a standalone plan, often referred to as a master plan. A pedestrian master plan (PMP) is a public document developed through public participation, visioning and analysis of current conditions, laying out a community's vision for future pedestrian activity, identifying the actions required to make that vision happen, tying actions with funding sources, and committing agencies and stakeholders to its implementation and use
(Aytur, 2011). The importance of having a pedestrian master plan because it lays out the critical elements for making a place more walkable.

**Section 2.2: Pedestrian Plans**

Plans in different cities have been set in place for long and short term transportation plans that include improving sidewalks and walkways for pedestrian traffic. Most plans should focus on creating a safe walking environment for all ages and abilities that is interconnected and provides an alternative means of transportation as well as recreational opportunities. Knowing what pedestrian's desires are an important factor when considering how to go about improving or developing pedestrian plans. Most pedestrian plans want to improve existing walkways, increase safety, offer alternatives to driving, increase social interaction on streets and address health concerns. They also strive to be strong, livable communities that thrive on sustainability. Pedestrian plans establish the programs, policies, design criteria, and projects that will further enhance pedestrian safety, comfort and access in their neighborhoods. Community involvement and surveys have been done in some city plans to see what the public desires, and what they consider being determining factors in why they choose to walk or not walk.

**Section 2.3: Policies and Laws**

Transport policy throughout the United States has recently sought to find ways to decrease reliance on car use and increase the use of other modes of travel. One focus of these policies has been to enhance urban livability by increasing pedestrian activity in cities. The United States has given greater importance to non-motorized modes of travel in its transport policies. The various modes of non-motorized transportation must be included in the policies and practices of government agencies at all levels.
"The majority of federal bicycling and walking policy focuses on broad planning requirements and funding. State level policies have a similar focus, although there is more discretion in planning and funding decisions. Ultimately, local policies and regulations have the most direct impact on walkability at the site, neighborhood, and community levels" (PBIC, 2011).

**Section 2.3.1: Federal Policies**

Government support of walking and biking has been increasing over the past decade. Efforts to plan for bicycle and pedestrian mobility were given a tremendous boost by the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) (FHWA, 2006). As a result of federal legislation, the United States Department of Transportation (USDOT) is responsible for transportation policies and spending programs at the federal level. They also work in conjunction with the Federal Highway Administration (FHWA) who works direction with various state's Department of Transportation (DOTs) to implement policies and programs. For urban areas, federal funds are channeled through the state DOT and then through metropolitan planning organizations (MPOs). MPOs are federally-mandated transportation planning agencies in charge of creating long and short range transportation plans for their regions. "States and MPOs are required to incorporate appropriate provisions for bicycling and walking into the State Transportation Improvement Program (STIP) and Transportation Improvement Programs (TIPs). The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have issued technical guidance for bicycle and pedestrian planning at the State and MPO levels in order to meet Federal requirements" (FHWA, 2006).
Section 2.3.2: Accessibility for All

Age and functional disability can reduce a person's mobility. Through good pedestrian facility design, it can help everyone with mobility. The Americans with Disability Act (ADA), signed into law in 1990, seeks to assure that all Americans including those with disabilities, will have full access to public facilities and services. The ADA prohibits state and local governments from discrimination against people with disabilities in all programs, services, and activities (PBIC, 2011). "Physical or mental disabilities in no way diminish a person's right to fully participate in all aspects of society, yet many people with physical or mental disabilities have been precluded from doing so because of discrimination" (ADA, 1990). Good accommodations for pedestrians, including disabled pedestrians—people using wheelchairs and other mobility aids, people with low vision and the blind, is critical to meeting the requirements of ADA.

Section 2.3.3: State & Local Policies

There are various states and local governments that have found that there are several outdated policies in which need reviewing and revisions. Policy changes to address walking and bicycling may include a number of elements such as:

Goals that emphasize non-motorized transportation -- This includes encouraging alternative transportation modes by revising transportation goals and objectives.

Changes to standard operating procedures -- This includes policies for standardizing bicycle and pedestrian improvements through the regular activities of local, regional, and state governments. An example of this would be adding pedestrian facilities such as sidewalks whenever streets are constructed or maintained.
Revisions to tools used to manage growth -- This would include land use planning tools like zoning ordinances, subdivision regulations and street design standards can encourage and/or require development of bicycle and pedestrian facilities during development projects.

Changes to the motor vehicle code -- This can include eliminating laws that are problematic for pedestrians or bicyclists. Motor vehicle laws should be designed to give pedestrians the right-of-way when crossing the street and should limit right-turn on red where appropriate.

Changes to driver education programs -- This is meant for including pedestrian and bicyclists in education programs that encourage walking or biking. This type of mobility education attends to people's transportation needs while improving safety, environment, costs and health (PBIC, 2011).
Chapter III - Research Methods

Section 3.0: Overview & Area of Study

This chapter contains a discussion of the study area, Lincoln, Nebraska and a brief summary on population demographics, health disparities, planning issues, and a discussion concerning plans relevant to Lincoln.

Area of Study

The area of study for this project, referred to as Lincoln, is a community that offers a variety of jobs, housing, numerous services and education. Lincoln is known for providing a "good quality of life" for all of its citizens. Currently Lincoln has a population of 258,379 persons according to the 2010 Census data and lies within the Platte River Valley in southeastern Nebraska. The City of Lincoln serves as both the capital of the State of Nebraska and the seat of government for Lancaster County.

Section 3.1: Health Disparities

Being able to promote a healthy community is tough without having any plans or goals set in place. Lincoln has a joint committee on Public Health and Land Use Planning to evaluate community design to determine if current practice, policy, and law assure a safe and healthy community. The committee looks at how the environment affects people's health. Active living by Design is a report set in place that focuses on obesity and weight issues among adults and youth in Lincoln and Lancaster County. Obesity has been defined as an epidemic of poor nutrition and physical inactivity. According to the Lincoln/Lancaster County joint committee study, the percent of adults who are classified as obese has doubled since 1990 to 2004, and now represents 23 percent of the national and state's population, 21 percent of the county's population. The number of children and
adolescents who are overweight are at risk for being overweight has now increased to 1 in 3. (Lincoln/Lancaster County Board of Health, 2005, p. 3). Chronic diseases such as heart disease, stroke, cancer, and diabetes are the most common in the United States and are all can be caused by lack of physical activity. However, all of these diseases can be prevented and the easiest prevention strategy is increasing people's physical activity levels. Researchers and local agencies have been studying what would get more people to increase their physical activity levels. A report within Nebraska Department of Health and Human Services Division of Public Health have compiled statistics about adult's levels of physical activity, obesity, high blood pressure, high cholesterol, cardiovascular and stroke statistics in Nebraska. The statistics show that there is a problem within adults in Nebraska that is hard to ignore.

- 1 in 3 Nebraska adults do not meet the recommended guidelines for physical activity.
- 2 in 3 adults are overweight or obese.
- 1 in 3 children aged 10-17 years is overweight or obese.
- 1 in 4 (27%) Nebraska adults have been diagnosed with high blood pressure.
- Approximately 1 in 4 (26.1%) Nebraska adults have not had a blood cholesterol screening in the past five years. Of those that reported ever having a blood cholesterol screening, more than 1 in 3 (37.4%) reported being diagnosed with high blood cholesterol.
- 1 in 10 Nebraska adults has been diagnosed with diabetes.
- Among Nebraska adults, diabetes is about seven times more likely among those who are obese compared to those of normal weight.

(Source: Nebraska DHHS, 2011)

Nebraska is not the only state struggling with these chronic diseases, the entire United States is experiencing these diseases along with a high level of physical inactivity. With the high number of Americans who are not getting enough exercise, the health care costs are also rising. How can we reverse this trend of physical inactivity? Is it necessary to
use laws, ordinances, and policies as tools to help encourage and facility development of communities that promote active, healthy lifestyles for all types of people? The answer is yes, and it starts with healthy planning.

Physical activity starts with simple activities such as walking. Incorporating walking is an important way to become more active and stay healthy. The people that can't afford gym memberships or have access to recreation facilities need to have the ability to participate in moderate physical activity. Promotion of non-motorized transportation options can benefit many people, especially the socioeconomically disadvantaged, people with disabilities, and older generations. Planning for non-motorized transportation such as pedestrians can really benefit all people regardless of their social status in their communities.

Section 3.2: Planning Strategies to Support Walking

Health and well-being are influenced by communities where people live, work and play through the interplay of a community’s physical, social, and cultural environment. Researchers, planners and community members have identified created built environments that support healthy living as a strategy for good health. The built environment is broadly defined as manmade surroundings that include buildings, public resources, land use patterns, the transportation system and design features (Bartuska, 1994). Research has been demonstrating links between the built environment and activity behaviors. Specific community factors, such as the availability of parks and walking trails and the walkability of neighborhoods, appear to have an influence on the choices people make in their daily lives. However parks, trails and pedestrian-friendly neighborhoods are not always available across all communities. Decisions made by government, businesses,
and institutions have an important impact on shaping the conditions in the built environment. Some examples include policies and practices related to transportation and land use, investments in commercial and residential developments, and the location of schools and worksites ultimately influence the distances people travel to work, and the safety and attractiveness of neighborhoods for walking and accessing parks. The rising awareness of pedestrian issues in transportation planning has brought with it a new era of planning. Planning strategies range from a small scale (such as a study to improve pedestrian access to a neighborhood bus stop) to a large scale (such as a regional or statewide master plan for walking and bicycling). Planning in conjunction with design and engineering helps to ensure that appropriate facilities for pedestrians are provided throughout the built environment (PBIC, 2011). The focus here is on large scale planning projects to improve the overall health of a community. A couple pedestrian plans have been chosen to be evaluated for the purpose of this research. These communities include: Boulder, Colorado; Minneapolis, Minnesota; Portland, Oregon; San Francisco, California and Seattle, Washington. Analyzing the components of each of the plans can show what the strengths of each of these plan are. These five pedestrian plans were chosen based on various reviews from the Walk Score website and other walkability websites such as Walking Info and America Walks.

**Section 3.3: Lincoln's Plans**

The City of Lincoln has several plans set in place to help encourage and guide development. The Lincoln/Lancaster County 2040 Comprehensive plan mentions the importance of having multiple transportation options, whether it be modal or non-modal transportation. However, since this is a comprehensive plan, it is very broad in its
explanation of the goals and objectives. The transportation component of the 2040 Comprehensive Plan includes a section exploring the existing pedestrian and bicycle facilities which mention the 1,500 miles of existing sidewalks. It explains that sidewalk rehabilitation has really been challenging due to the lack of funding. The program for sidewalk rehabilitation cannot continue without increased funding.

The 2040 Comprehensive Plan does state that there isn't anything set up for stand-alone pedestrian planning. "There is currently not a single clearinghouse for pedestrian planning, design, and engineering in the Lincoln MPO. Various departments are addressing pedestrian activity with varying perspectives as part of other job assignments" (LPlan 2040, 2011, p. 10.7). Lincoln does offer a multi-use trail system that serves numerous bicyclists and pedestrians. "The trail system has been developed based on the right of way of abandoned railroad corridors. Other are built along streams in the floodplain, along the side of major arterial streets, or as part of residential development. The Lincoln Parks and Recreation Department, Public Works and Utilities Department, and the Lower Platte South Natural Resources District are primarily responsible for trail development in Lancaster County" (LPlan 2040, 2011, p. 10.8). The City of Lincoln does not have a stand-alone plan for these trails therefore other agencies/departments are taking the lead on the planning and development of the trail system in Lincoln and throughout Lancaster County.

**Section 3.3.1: Lincoln's Multi-Modal Transportation Study**

In 2004, the City of Lincoln put together a Multi-Modal Transportation Study where they could study the needs and desires of alternative modes of travel and mobility. The study incorporates the two subjects of multi-modal transportation and community-
wide mobility review into a single planning effort. "It focuses on realistic means for expanding travel, mobility, and accessibility opportunities within the City and County by supporting and promoting alternative modes of transportation. The study is designed to enhance the policies and strategies contained in the adopted City-County Comprehensive Plan and Long Range Transportation Plan. The goal of the study is to define mean for furthering the usage of a wider range of travel modes to meet the Comprehensive Plan and the Long-Range Transportation Plan's vision for enhancing multi-modal opportunities." (Multi-Modal Transportation Study Task Force Final Report, 2004, p. v)

The study was set up to analyze city travel trends over a one year period with six different phases. Each phase consisted of gathering data, analyzing transportation trends, policy review, implementation recommendations, and plan review. The final report is set up based on study background and processes, existing conditions and trends, then a community survey on multi-modal transportation issues, completed by citizens of the city and county. The report is broken down in major chapters that include:

- Public Transportation
- Multi-Use Paths/Pedestrians/Bicycles
- Land Use/Development
- Administration/Management

This Multi-Modal Transportation plan is just one step in meeting the mobility goals contained in the Comprehensive Plan and Long Range Transportation Plan. The data was complied and the final report was put together to form the Multi-Modal Transportation plan. "This plan is a combination of practicality and vision. It offers both broad policy guidance and specific actions for improving mobility options for all residents of Lincoln. "The plan is viewed as a dynamic document, requiring continued
This section of the report explains the importance of having a connected system for pedestrians and that this system is inviting and safe. Improving existing infrastructure so people can take advantage of pedestrian walkways and sidewalks will provide opportunities for residents of all ages to reach recommended amount of physical exercise. With improved pedestrian routes, increased levels of physical fitness can occur in safe and pedestrian friendly environments. However, according to the Multi-Modal Transportation plan, "the city's neighborhoods and commercial developments are not designed to be pedestrian or bicycle friendly." Connections need to be made in the current system and sidewalks need continued repair. The main areas that need to be addressed:

- Pedestrian connections
- Rehabilitation
- Amenities (increased signage, activity centers)

**Section 3.3.2: College View Mobility Audit**

On a smaller scale, the City of Lincoln did a mobility audit in the College View Neighborhood in southeast Lincoln. The purpose of the study was to improve transportation options for pedestrians, bicyclists, people who ride the bus and drivers. The report identifies the strategies and initiatives to improve the neighborhood by making College View more walker-biker-driver friendly. "The goal of the study was to develop a "multi-modal" strategic plan for the College View neighborhood that effectively integrates vehicular, pedestrian, bicycle and transit systems and identifies achievable
project initiatives and improvements for the neighborhood." (College View Neighborhood Mobility Audit, 2007, p. 1) This study stems from the Lincoln-Lancaster County Comprehensive Plan/Long Range Transportation Plan which encourages various transportation options. "The College View neighborhood was chosen because of its diverse group of neighborhood stakeholders, which included residents, students, businesses, and institutions." (College View Neighborhood Mobility Audit, 2007, p. 1) The public involvement process was a major component of this study. Background information was collected and meetings with various members of the neighborhood were held to discuss what their desires were. "Also a mobility audit was conducted by neighborhood volunteers and city staff to compile inventory of existing conditions, challenges, and opportunities for each mode of transportation in the neighborhood." (College View Neighborhood Mobility Audit, 2007, pg 1). The findings of the stakeholder meetings and the mobility audit were used to prioritize improvements and efforts for each mode of travel. "The city brought in a graphic designer to help with design concepts and ideas to come up with solutions for the College View neighborhood." (College View Neighborhood Mobility Audit, 2007, p. 1).

**Section 3.3.3: Lincoln Downtown Master Plan**

The Downtown Lincoln Master Plan is the other document that have pedestrian topics that could be considered pedestrian plans to a degree. The Downtown Master Plan primarily focuses on making Lincoln's downtown more vibrant to enrich Lincoln's economic, social, and cultural foundations. This plan has been amended into the Lincoln-Lancaster County Comprehensive Plan as an official subarea plan. This plan is set up to include a short term plan for providing direction for immediate private and public
investment opportunities, as well as a long term plan providing guidance for actions and decisions that will shape downtown and Lincoln for the next 20 to 30 years (Downtown Master Plan, 2005). The planning process began with obtaining existing conditions and mapped out areas so the base maps could be used to develop framework alternatives. The pedestrian environment was observed to determine store fronts and sidewalk usage. The city had a supplemental study effort to include existing transit and bicycle facilities as well. The Opportunities and Constraints section of the plan explains that there are opportunities to improve streets and streetscapes to be more pedestrian friendly. It also mentioned some of the pedestrian barriers as being constraints that need to be addressed.

The land use portion of the plan describes the mixed-use of the entire downtown area and how shops and restaurants should be on ground level for people to notice and walk to. All of the land uses however are intended to be compact, walkable, street-oriented and active. The plan includes improving the public realm of downtown Lincoln which is important because it sets up design ideas on how to make downtown more inviting to people. Downtown is currently the crossroads for regional traffic and tends to be congested therefore improving and expanding the pedestrian environment is very important. "The downtown public realm framework establishes a system of streets, promenades, greenway "park blocks" and open space that knit the downtown into a coherent whole. The public realm framework provides a blueprint for the improvement and creation of new street amenities and open spaces throughout downtown" (Downtown Master Plan, 2005, p. 43). The key elements in the public realm section includes the addition of a public square that would be used for gathering and also festival/event spaces which could be used for various activities. Primary and secondary retail streetscapes as
well as parks and open spaces provide for a pedestrian-friendly off the street area in downtown. All of the elements that are proposed in the plan are displayed on clear, colorful maps along with photos and sketches showing the proposed ideas.

The City of Lincoln realizes that the importance of pedestrians in downtown will help with the economy since most people downtown walk to shops and restaurants. The University of Nebraska's City Campus is adjacent to downtown therefore the student population accessed downtown shops, bars, and restaurants by walking. According to the plan, streetscapes are intended to complete a network of pedestrian connections, tying retail streetscapes, districts and open spaces together.

Section 3.4: Other Cities in Study Area

Other cities in this research are based on the their recognition of their high walkability rates. Each of the cities are assumed to have pedestrian plans in place which may be the reason of the high walkability rates.

- Boulder, Colorado
- Minneapolis, Minnesota
- Portland, Oregon
- San Francisco, California
- Seattle, Washington

Section 3.5: Research Methods

Plan evaluation was the most significant method used, partly due to the significance of plans in the practice of urban planning. For plan evaluation, all municipal pedestrian plans will be coded by a coding protocol developed by the University of North Carolina Physical Activity Policy Research Center which will assess plan content and quality. Some of the elements in the coding worksheet also came from the Federal
Highway Administration's Pedestrian Safety Strategic Plan. The process will include examining each city's plan and marking down on the worksheet which components are included in each plan and which aren't. Based on this evaluation, I can see what the different strengths and weaknesses are in each of the plans. Also, I will be using the Pedestrian and Bicycle Information Center (PBIC) website to also use as a guide for planning solutions and whether they are mentioned in the municipality's plans. The purpose of using a coding tool for the evaluation of pedestrian plans is to see the variations in plan quality between cities. The coding will be done by myself, while checking all plans so the results will be consistent. The coding worksheets are displayed in the next chapter. The coding worksheets are set up with the plan elements on the left-hand side of the sheet, then the city's plans listed in columns on the right-hand. If a plan did include an element that was listed, it received an 'x' in its column. The totals for each city are listed at the bottom of each section. Below is an example of how the worksheet is set up.

Example Table:

<table>
<thead>
<tr>
<th>Table X: &quot;Component&quot;</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedestrian Plan</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Element</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>x/x - X%</td>
<td>x/x - X%</td>
<td>x/x - X%</td>
<td>x/x - X%</td>
<td>x/x - X%</td>
</tr>
</tbody>
</table>

**Section 3.6: Pedestrian Plan Elements**

A majority of pedestrian plans are clear-cut, they plan for non-motorized travel, pedestrian safety, set goals and implementation strategies. Most plans strive to meet the needs of the citizens in the community while promoting healthy living. However, what
constitutes as a "good" pedestrian plan? Research has been done by the North Carolina Physical Activity Policy Research Center in determining what is a "high quality" pedestrian plan. They have identified principles that can serve as criteria for determining what makes a admirable plan. They feel it's important to identify key features because future plans, and plan updates could benefit greatly from the information. (Rodriguez, 2007, p. 2) The components of high quality plans should include:

- Presentation of Plan Contents
- Vision, Goals and Policies
- Information Base and Content
- Plan Proposals
- Implementation

Federal Highway Administration's Pedestrian planning guide had similar key elements that need to be included in a pedestrian plan. The Federal Highway Administration's guidance makes the following key elements for pedestrian planning:

- Vision and goal statements and performance criteria
- Assessment of current conditions and needs
- Identification of activities required to meet the vision and goals
- Implementation of pedestrian elements in a statewide MPO transportation plans and TIPs
- Evaluation of progress using performance measures
- Public involvement as required by Federal transportation legislation and FHWA/FTA planning regulations
- Transportation conformity requirements for air quality, where necessary

(Source: FHWA, 2006, p. 2)

Both documents stated that pedestrian plans need to have elements that contain relevant background information that pertains to multimodal transportation. Existing pedestrian conditions should be mentioned to show a comprehensive picture of the successes and opportunities for improvement. This can be used to help guide policymaking and the
selection and prioritization of future pedestrian improvements. These five criteria is also used for plan evaluation. For the purpose of this project, the plan evaluation will be comparative, but looked only at the plan document, not at the plan outcomes.

First off the presentation of plan contents consist of comprehensible maps and tables. These maps and tables need to be clear, readable and should convey current and proposed conditions without the need to read accompanying text. A sidewalk map may be useful when looking for missing segments and also show the importance of various infrastructure.

The second key element that should be in pedestrian plans is the Vision, Goals, and Policies element. These are categorized together, but the each hold important weight within the plan itself. First off, the vision or visions should be one of the first things you see in a pedestrian plan. These visions provide a graphic, inspirational view of what citizens want their community to be in the future. Visions can refer to a future state of affair of residents or the community, such as improved well-being, livability or safety. They can refer to encourages citizen to be more active. Secondly, clear and straightforward goals which can include long and short range goals should be stated. The goals need to have a way of being measurable and how they can be achieved. "Goals can be initially identified as parts of visions, but can be followed up by more in-depth analysis of needs and aspirations" (Rodriguez, 2007, p. 3). Goals should be numbered so they can be used as indicators to assess whether they are being achieved in a timely manner. They often will be labeled as 'objectives'. All the goals in a pedestrian plan should be reasonable achievable with the policies proposed in the plan.
The third key element that should be included into pedestrian plans is having a strong information base. Pedestrian plans should always review and discuss any previous pedestrian planning efforts that have been documented. They should also review the events, individuals, and group that prompted action toward the plan's creation and completion. Public participation and consulting strategies that are undertaken are also important information. Other critical information that needs to be included in a pedestrian plan is the current land use of the city. This will help planners identify areas where pedestrian travel activity can concentrate. Examples of these areas are schools, health or employment centers, parks, shopping centers, and residential areas. Existing pedestrian facilities (on and off road), which include cross-walks, pedestrian signals, curb extensions, cross warning signs, and ramps should be listed in the planning document. These pedestrian facilities should be evaluated for ADA compliance and identified on a map (Rodriguez, 2007, p. 5). Reviewing existing plans which include local, regional and state levels allows for identifying interdependent actions that can affect, and be affected by the pedestrian plan (Rodriguez, 2007, p. 6). Pedestrian plans should also follow design standards and include cost estimates.

The forth key element that is recommended to be in a high quality pedestrian plan is plan proposals. Plan proposals should list of the improvements, policies and guidelines to address the deficiencies. "The plan should identify policies that may be hindering pedestrian activity and focus on the actions needed to alter the policies. The actions should contain an implementation horizon (short, medium or long-term) corresponding to the urgency and funding available. Actions also should be tied spatially to corridors,
areas or distinct spots" (Rodriguez, 2007, p. 7). Pedestrian plans could focus on special areas and they could result in complementary investments in pedestrian facilities.

The final key element would be implementation. A pedestrian plan should prioritize among the recommended actions identified in the plan. The plan should also identify partners that are interested in implementing specific actions. These partners could include land use planners, park and recreation planners, state agencies (State Department of Transportation, State Health and Human Services), federal agencies (Centers for Disease Control and Prevention or US Department of Transportation), non-profits, private organizations, and advocacy groups. The role of partners in the implementation of specific actions, and their timeline, should be provided. (Rodriguez, 2007, p. 8). Once the groups are identified for implementation, then the cost and feasibility of the recommended actions should be listed. Finally, the pedestrian plan should explain how plan-based follow up will occur. Examples would be when the plan update would occur, who is responsible for calculating and updating the indicators of achievement?
Chapter IV: Results

This chapter includes the analysis and findings based on the methods mentioned in the previous chapter. The evaluation of the pedestrian plans were assessed based on plan content. A brief background of each city will be discussed to explain why these cities were chosen for the plan review. The following tables are the coding results and the explanation of each of the city's results will be discussed following the tables.

Table 1: Plan Components/Current Conditions and Land Use

<table>
<thead>
<tr>
<th>Pedestrian Plan</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maps of current on/off road pedestrian facilities</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Maps of major land use and trip attractors (parks/schools)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Maps of motorized transportation facilities (roads/freeways)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
<tr>
<td>Discusses community's transit system</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
</tr>
</tbody>
</table>

Plan provides an inventory, assessment, or analysis of the following:
- Existing pedestrian facilities on-road and off-road (sidewalks, intersection improvements, crosswalks, trails)
- Shows connectivity between major trip origins & destinations
- Shows barriers or obstructions to connectivity (cul-de-sacs, unconnected development, terrain, water)
- Adherence to current design standards for facilities (ADA)
- Description/analysis of current pedestrian demand

| Totals      | 6/9.67% | 7/3.78% | 9/9.10% | 1/9.12% | 5/9.56% |

Table 2: Transportation Analysis

<table>
<thead>
<tr>
<th>Pedestrian Plan</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Location of roads identified</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Pedestrian facilities in relation to roads discussed</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Locations of major transit routes and stops identified</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Pedestrian access to and from transit stops discussed</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Open space plans mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicycle plans mentioned</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Comprehensive land use plans mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Neighborhood, subdivision or area-level plans mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Capital improvement plans mentioned</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other transportation plans mentioned (regional trans. Plans)</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Road improvements/corridor plans mentioned</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Transit plans mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Pedestrian plan discusses integration with transportation plan</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
</tbody>
</table>

| Totals      | 9/13.69% | 10/13.77% | 5/13.38% | 5/13.38% | 10/13.77% |
Table 3: Planning Process and Public Participation

<table>
<thead>
<tr>
<th>Pedestrian Plan</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Describes history of stakeholder involvement prior to development of the plan</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Description of the public participation process</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Public meetings used</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Surveys/questionnaires used</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Online surveys used</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Focus groups used</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Website blogs used</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Map mark-up used</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other strategy used</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Publicly circulated preliminary draft</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Totals</td>
<td>5/10-50%</td>
<td>5/10-50%</td>
<td>5/10-50%</td>
<td>4/10-40%</td>
<td>6/10-60%</td>
</tr>
</tbody>
</table>

Table 4: Plan Goals and Objectives

<table>
<thead>
<tr>
<th>Pedestrian Plan</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Contains vision statement or &quot;mission&quot; statement</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Contains clear statement of goals</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Procedural goals identified (ie: establishing new task force, Advocacy group, etc)</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Contains a time horizon for goals or objectives</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>3/4-75%</td>
<td>4/4-100%</td>
<td>2/4-50%</td>
<td>3/4-75%</td>
<td>3/4-75%</td>
</tr>
</tbody>
</table>

Table 5: Policies and Proposals

<table>
<thead>
<tr>
<th>Pedestrian Plan</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Policies that may hinder pedestrian activity discussed</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Traffic calming initiatives mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transit interface enhancements mentioned</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pedestrian infrastructure policies: maintenance of pedestrian facilities</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Retrofitting or upgrading existing pedestrian facilities</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Building new sidewalks/trails/greenways</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>New pedestrian development</td>
<td>x</td>
<td>x</td>
<td></td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Encouraging workspaces or firms to enhance access to facilities</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Encouraging &quot;Complete Streets&quot;</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policies or projects that specifically address equity/social justice</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Land development/Land use policies to encourage development that is pedestrian friendly</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>State requirements/guidelines for pedestrian facilities</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Federal requirements and guidelines (ADA) mentioned</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Street design guidelines mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Incentive programs mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Commuter alternative programs mentioned</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cultural, recreational and health-related programs</td>
<td>x</td>
<td>x</td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>On-going promotional activities/encouragement programs</td>
<td>x</td>
<td></td>
<td></td>
<td></td>
<td>x</td>
</tr>
<tr>
<td>Totals</td>
<td>13/19-68%</td>
<td>14/19-74%</td>
<td>9/19-47%</td>
<td>15/19-75%</td>
<td>12/19-63%</td>
</tr>
</tbody>
</table>
Table 6: Implementation

<table>
<thead>
<tr>
<th>Pedestrian Plan</th>
<th>Boulder</th>
<th>Minneapolis</th>
<th>Portland</th>
<th>San Francisco</th>
<th>Seattle</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicators of goals provided</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Indicators for specific population subgroups mentioned</td>
<td></td>
<td>x</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indicators for other specific issues identified (safety)</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Specific actions, tasks, or recommendations to motivate implementation of the plan discussed</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Evaluation plan for measuring progress mentioned</td>
<td></td>
<td>x</td>
<td>x</td>
<td>x</td>
<td>x</td>
</tr>
<tr>
<td>Totals</td>
<td>3/5-60%</td>
<td>5/5-100%</td>
<td>4/5-80%</td>
<td>4/5-80%</td>
<td>4/5-80%</td>
</tr>
<tr>
<td>GRAND TOTALS</td>
<td>39/60-65%</td>
<td>45/60-75%</td>
<td>34/60-75%</td>
<td>27/60-45%</td>
<td>40/60-67%</td>
</tr>
</tbody>
</table>

Section 4.0: Boulder, Colorado Transportation Master Plan

Boulder, Colorado

Background

Boulder is a close-knit community full of residents who embrace an active outdoor lifestyle and who are committed to natural resource conservation. Combine all of that with 300 days of sunshine per year, and it's clear why Boulder is one of the best outdoor destinations in the country. Boulder keeps cropping up on lists of best places to live according to various magazines. According to the Best of Boulder website, the city has been listed in the following magazines in previous years: "Healthiest Town in the U.S" (Ranking #2) Men's Health (January 2010); "America's Top 25 Towns to Live Well" (Boulder ranked #1), Forbes.com (May 2009); "Top 10 World's Greener Cities", Urban Land Green magazine (Spring 2008); and there are several others that mention the city's bicycle-friendly atmosphere. Other awards include Best Practice Award from the Transportation Planning Council for the City of Boulder's Transportation Master Plan (2004) and the 2002 AIA Colorado --Downtown Boulder Pedestrian Mall award (City of Boulder, 2011). With this being said, this is one of the reasons Boulder was chosen to
look at for their pedestrian plan. A community that is encouraging a healthy lifestyle, there are pedestrian elements that are encouraging walking. According to the City of Boulder, the pedestrian element of the Transportation plan supports:

- Providing a continuous network so that pedestrians are not stranded short of their destination or forced into difficult or potentially dangerous situations.
- Ensuring a safe walking environment through adequate maintenance, snow removal, vegetation trimming and lighting.
- Creating a pedestrian-oriented environment through high quality urban design and pedestrian amenities.
- Providing routine education and enforcement on the rights and responsibilities of pedestrians, bicyclists, and vehicle drivers.

(City of Boulder, 2011)

The city has become very involved with the citizens of the community and have included them in most of the planning processes. In the Fall of 2002, the Transportation Advisory Board and staff included community representatives to help identify solutions to better accommodate walking and bicycling as a safe and convenient transportation option. The public process associated with the Bicycle and Pedestrian System Plan updated was comprised of two components:

Transportation in Boulder Series: GO Walk and Bike sessions and Bike and Pedestrian Workgroup made up of select community representatives. The GO Walk and Bike focus was to inform citizens of the proposed planning enhancements. Input obtained through the GO Walk and Bike public process forum has assisted staff in development proposed objectives and action strategies for the Transportation Master Plan. The Bicycle and Pedestrian Workgroup Committee selected members to assist the planning staff in refining elements of the Bicycle and Pedestrian Systems Plans. The workgroup sessions offered the opportunity for information exchange. Staff informed workgroup members of
current practices and requested input on how to achieve the overall goals and objectives of the Bike and Pedestrian System plans. The focus areas are comprised of five E’s (Engineering, Education, Enforcement, Encouragement and Evaluation) which are addressed through facility enhancements and maintenance, programs and overall trends.

A task for members of the Transportation Master Plan update bike and pedestrian workgroup was to ride/walk an existing route, complete a survey to rate the bikeability/walkability of the route, and discuss the barriers they encounter on their trip. Staff utilized the completed surveys to make planning decisions for the Pedestrian/Bicycle component of the Transportation Master Plan.

**Section 4.0.1: Coding Results and Key Findings**

Coding Results: 39/60 (65%)

*Key Findings*

Boulder's Pedestrian Plan is a component from the original 1996 Transportation Master Plan which had been updated in both 2003 and 2008. All three plans were examined to find what elements were included in the pedestrian section. Boulder's Transportation Master Plan was mildly challenging to code since the plan wasn't only focused on pedestrian goals. However, it discussed four focus areas which included important multimodal corridors, regional travel, transportation demand management, and funding. All four of these areas are important to pedestrian planning, therefore this plan wasn't going to be dismissed from this research.

Boulder's Transportation Master plan contained goals, objectives, policy guidance and an overview of the strategies and investment programs that the city and the community intend to accomplish by the year 2025. The results from coding the plan did
show that the city did good job of showing main routes of transportation by automobile and transit routes. For pedestrians, the plan was able to point out existing pedestrian facilities and had a map showing where the areas of improvement are proposed. Boulder's Transportation plan emphasized the usage of public transportation and how it should be accessible to pedestrians and bicyclists. Improvements that needed to be made were the pedestrian facilities to transit stops.

Boulder's goals and objectives were clear and were relevant to the city's vision of reducing traffic congestion. It really focused on making Boulder a more "multimodal" community for transportation whether it be walking, bicycling or using public transportation. The focal point was to reduce traffic congestion and improving air quality by implementing some design standards and policies to help reduce automobile usage. Boulder's plan wasn't a standalone pedestrian plan which may have skewed some of the coding results. Boulder scored 39/60 and since this was a overall transportation master plan, it focused on all forms of transportation. This transportation master plan was able to discuss a lot of the current and existing road conditions which give the readers a good idea of what is going on in the community. It didn't discuss current or future land uses, so it forces readers to go back to the comprehensive plan to find that information.

The public participation section of the plan was really informative because it described how the involvement of stakeholders and the public which is beneficial to the development and updates to the plan. A Transportation Advisory group was formed for the development of the Transportation Master plan and public forums would be held to provide opportunity for the public to learn about the progress on updating the plan.
The policies and proposals section covered a majority of the elements in the coding worksheet. Infrastructure policies were discussed throughout the plan and they covered everything from the maintenance and upgrading of facilities, building new sidewalks, and encouraging that development is pedestrian friendly. Since automobile infrastructure was a main component in this plan, the development of "Complete Streets" was mentioned and proposed to be implemented in the near future. Various design guidelines (including ADA requirements) were discussed when the various proposals were discussed. Specific actions and tasks were identified with the plan goals to implement actions. Funding strategies were also mentioned in the Action Plan. The Action Plan represents the next best steps toward reaching the community's transportation goals if additional funding becomes available. The Transportation Master Plan's website has a Transportation Use Measurements page which are complied with reports on citizen's opinions and transportation trends are in Boulder. With the adoption of Boulder's Transportation Master Plan, the city commits itself to the strategies contained in the current funding program and to actively pursue the funding needed to implement the plan.

Overall Boulder's strong components are on the transportation analysis, policies, and implementation. Since this pedestrian plan was a component of the Transportation Master Plan, it had a strong focus on making Boulder a less traffic congested city. The important of using public transportation and access to public transit stops were more prominent in this plan than in any of the other plans. The background information on transportation analysis was easily accessible since it was all a part of the same plan.
Section 4.1: Minneapolis, Minnesota Pedestrian Master Plan

Background

Minneapolis is the artiest town on the prairie, with all the trimmings of progressive prosperity. Minneapolis was given high marks for being eco-friendly with the city providing funds for innovative eco-projects, the building of the Midtown Greenway and other projects that make the city bike and pedestrian friendly. The Minneapolis Pedestrian Program helps those who live and work in the city use their feet as a low polluting, cost-effective, and healthy way to travel. According to the Public Works department in Minneapolis, "Over 92% of streets in Minneapolis have sidewalks on both sides, resulting in nearly 1,800 miles of sidewalks in the city" (City of Minneapolis, 2011, p. 2). Minneapolis is home to the Bike Walk Ambassadors as well as popular walking destinations such as Nicollet Mall, the Stone Arch Bridge, the Grand Rounds, and Milwaukee Avenue. In October, 2009, the Minneapolis City Council adopted the city’s first Pedestrian Master Plan. The City’s Pedestrian Advisory Committee consists of 15 community members, as well as staff from city departments and partner agencies, who advise the Mayor and City Council.

The Walk Friendly website has announced that Minneapolis is designated as a Gold-level Walk Friendly Community. A Walk Friendly Community is a city or town that has shown a commitment to improving and sustaining walkability and pedestrian safety through comprehensive programs, plans and policies. Communities can apply to the program to receive recognition in the form of a Bronze, Silver, Gold or Platinum designation. The Walk Friendly website cited Minneapolis’ excellent planning policies, high level of staff commitment to pedestrian safety, and pedestrian campaigns and events.
as reasons for the Gold-level recognition (Walk Friendly Communities, 2011). A few of the other elements that were recognized in the award include:

- City of Minneapolis has a large amount of staff dedicated to pedestrian issues
- Extensive sidewalk network which include sidewalks on over 90% of the streets in the city
- Complete Streets policies that encourage walking and promoting sidewalk aesthetics
- Pedestrian-oriented campaigns and events to educate and encourage walking
- The city conducts pedestrian counts
- Pedestrian street lighting provides a safe walking environment
- Parking standards are working toward creating a more pedestrian friendly environment
- Crosswalk practices push for safety by designating midblock crosswalks with overhead flashing beacons and high visibility striping.

(Source: Walk Friendly Communities, 2011)

Section 4.1.1: Coding Results and Key Findings

Coding Results: 45/60 (75%)

Key Findings

Minneapolis's Pedestrian Master plan covered a majority of the major elements that are necessary for a high quality pedestrian plan. Minneapolis's plan was very easy to navigate through since everything was included in the plan. The other plans that were coded would cover the goals and implementation strategies, but would leave out what is currently going on in the city. Minneapolis had excellent maps of current pedestrian and transportation facilities. The maps also showed areas of improvements, traffic crashes maps, speed limits, population, multiple transit maps, sidewalk repair and the list goes on. Minneapolis really did a nice job of going into detail on existing conditions that are occurring in the city. The transportation analysis scored high in the coding results since
all the maps with existing roads and sidewalks were included. Road improvements and corridor plans were mentioned in relation to where pedestrian facilities would be.

The plan discussed how its public participation process worked and how stakeholders and city residents were invited to participate in a discussion about the goals and objectives of the plan. An open house was used and residents were broken into geographic areas based on where they lived (i.e. Downtown, North, South, Southwest, St. Paul, and Suburbs). A presentation was given and afterwards an open comment forum was held. The residents were invited to share their comments to provide insight to the most pressing pedestrian-related issues within Minneapolis from the public's perspective. Of greatest concern among residents were the issues of snow removal, the relationship between bicyclists and pedestrians, and safety with the respect to pedestrians. Interactive exhibits were also used at the open houses and the attendees were asked to mark their answers to "yes/no" question or state their preference on scales that ranged from "strongly agree" to "strong disagree" or "very important" to "very unimportant". The plan showed the results of the community surveys in an appendix of the plan. Out of all five plans, Minneapolis was the only plan that included the public's results and comments.

The plan purpose makes it clear to the readers that this plan is going to be used for a guide to make Minneapolis a great walking city. The Minneapolis Pedestrian Master Plan lists seven goals that it would like to reach in the near future. These goals are followed by implementation strategies to help reach the goals. However there isn't a clear time horizon mentioned since a lot of these goals will take time to accomplish. Indicators on safety and funding are listed with the goals therefore implementation strategies can be developed along with the goals.
It talks about policies that relate to pedestrians which include the maintenance of pedestrian facilities, building new sidewalks and trails, encouraging new development to be pedestrian friendly, and following the ADA guidelines. The plan also discusses some of the current state requirements and guidelines for pedestrian facilities as well as street design guidelines. Various health and recreational programs are used to promote walking in the community. Proper safety education is also used for pedestrian and bicycle safety throughout the city.

Overall Minneapolis's plan was the most complete pedestrian plan out of all the plan analyzed. It contained almost all of the major elements in the coding sheets. Minneapolis's strongest area is the maps and background information on the city. The other strong areas not only included the current conditions and land use, but also the goals and objectives section followed by the implementation section.

**Section 4.2: Portland, Oregon Pedestrian Master Plan**

*Background*

Portland, Oregon is a unique city that is located in the Pacific Northwest that is the largest city between San Francisco and Seattle. The city is noted for its scenic beauty, a lively music scene, and its ecofriendly urban planning policies. It has the feel of a relaxed small town atmosphere but it is still growing rapidly. In recent years Portland's growth has started to catch up with the city, with some of the worst traffic congestion in the west. Due to the increased traffic, planners have taken the lead on incorporation environmentally friendly practices such as having an extensive public transportation, bicycle, and pedestrian system. Other progressive city planning practices have made Portland unique. This includes an urban growth boundary which has made Portland a
relatively compact community. Portland has been known as one of the best walking cities in the United States. This may come from its compact city limits, however the transportation planning department does a good job of keeping sidewalks and walkways in good condition. Also planners have made it a priority to keep the mass transit available everywhere so it makes walking more feasible. The City of Portland’s *Pedestrian Design Guide* is an excellent resource for pedestrian planning. It provides detailed, practical instructions for designing and implementing pedestrian facility improvements and policies that support pedestrian travel.

Section 4.3.1: Coding Results and Key Findings

Coding Results: 34/60 (57%)

*Key Findings*

The city of Portland was chosen due to its high walk score on Walk Score website and its reference as good pedestrian planning on other sites such as PBIC and the EPA's website. The coding results did show that the Pedestrian Master Plan did a good job of showing existing pedestrian facilities such as sidewalks, trails, and crossings. The city wants to design an environment that promotes walking. The plan didn't mention existing plans or future land uses and didn't mention anything about were residential, major commercial, and where schools were located. This plan focused on improvements the pedestrian environment and getting the community engaged in the Pedestrian Master Plan. A list of pedestrian needs and improvements make up an entire chapter of the Pedestrian Master Plan. A project list with maps is composed in the following chapter, followed by a funding plan.
Community involvement is an ongoing support system to updating and implementing plans. By getting the community engaged in the topic of pedestrian planning, The Portland Bureau of Transportation created a Pedestrian Advisory Committee (PAC). "The PAC advises the City of Portland, particularly the Bureau of Transportation on matter that encourage and enhance walking as a means of transportation, recreation, wellness and environmental enhancement" (Portland Bureau of Transportation, 2012). The PAC does reviewing and can make recommendations on planning documents, projects, funding priorities and plan updates that all relates or affect pedestrians.

Portland's Pedestrian Master Plan does include policies that does affect pedestrians. Land policies have been mentioned to encourage development that is pedestrian friendly. Guidelines have been developed to integrate a wide range of design criteria and practices into a coherent set of new standards. Then over time, this guidelines will promote an environment conducive to walking. (Portland Pedestrian Master Plan, 1998, p. 13). The American's with Disabilities Act (ADA) was used when creating design standards, and some city codes included elements that apply to the pedestrian realm. Principles for Pedestrian Design include safety, accessibility, connectivity, improved pedestrian environments, and economical improvements (Portland Pedestrian Master Plan, 1998, p. 15).

Overall Portland's Pedestrian Plan focused on laying a foundation for pedestrians. The plan's strong area is focusing on improvements and how to prioritize the improvements. It set up project lists on what improvements were going to take place, when they would be completed, and how the improvement would be funded. This plan
was unlike a lot of others since the city knew exactly what they wanted to do and when. Other plans focused on the general outlook on making their city more walkable.

**Section 4.3: San Francisco, California Better Streets Plan**

*Background*

The City of San Francisco is one of the most visited cities in the world and it is well known for its rich culture and distinguished for its hilly terrain. San Francisco is also known for its eclectic mix of architecture and famous landmarks that include the Golden Gate Bridge and Chinatown. The city's neighborhoods are rich in history while being tightly knit within the rolling hills of the city. The dense setting of San Francisco makes this community a very walk friendly community. San Francisco was awarded a "Gold-level" award from Walk Friendly Communities due to the city's outstanding planning practices, community pedestrian events, and focus on providing a pedestrian friendly environment (Walk Friendly Communities, 2011). This award acknowledges San Francisco's Better Streets Plan which was used for this research. They stated that: 

"San Francisco's Better Streets Plan is a set of implementation strategies and goals to provide and maintain a better streetscape and pedestrian environment. The plan seeks to balance the needs of all street users, with a particular focus on the pedestrian environment and how streets can be used as public space." The plan also carries out the Better Streets Policy of San Francisco's intent to plan street for pedestrian-oriented and multi-modal designs" (Walk Friendly Communities, 2011).

Other elements mentioned in the award include:
• San Francisco's WalkFirst Project which identifies key walking streets throughout the City and develops a criteria to prioritize pedestrian improvements for creating a better walking environment
• Sunday Street events which closes off the road to motorists and creates a space for pedestrians to recreate, exercise, and socialize with other residents
• The city created pedestrian friendly sidewalk networks which includes repair programs and pedestrian friendly street landscaping
• San Francisco provides multiple training opportunities for staff and law enforcement on pedestrian safety
• Pavement to Parks program is used to create temporary parks and public plazas to unused public spaces
• The San Francisco Department of Public Health's Program has developed several Health Impact Assessment tools to provide insight on future pedestrian planning needs

(Source: Walk Friendly Communities, 2011)

Section 4.3.1: Coding Results and Key Findings

Coding Results: 27/60 (45%)

Key Findings

The coding results of San Francisco's Better Streets plan showed that the strongest areas of the plan included the goals/objectives, the policies/design and implementation sections. The Better Streets Plan had a strong vision for a walkable community, where walking is safe, accessible, convenient, and fun. The plan goals were clearly laid out and considered people of all ages, demographics and those with disabilities. Public transit has always been an important element within the city since the cable-car days in the late 1800s. The first cable-operated street rail was the Clay Street Hill Railroad, which was opened on August 2, 1873. Since then, the cable car has been a icon for the city of San Francisco and public transportation has been used by one-third of the city's residents (San Francisco Beautiful, 2007). Pedestrian improvements to all public transit centers and stops should continually be improved and accessible by all.
Pedestrian design standards and policies were mentioned along with the goals in the plan, which makes it easier for the reader to find everything related to the goals and objectives all in one place. "The goals describe what streets ought to become and the policies establish a framework for making decisions about design and management for the pedestrian realm." (Better Streets Plan, 2010, p. 37)

The Better Streets Plan describes ideas on how to implement street and pedestrian improvements. These included identifying priorities, maintenance, funding, education and enforcement. Each of these would be used as implementation strategies to moving forward on some of the goals outline in the plan. The Walk Friendly Gold Award that San Francisco received honored them on their enforcement activities.

Out of the many differences in all the plans, San Francisco's Better Streets Plan did not include any current conditions sections throughout the plan. It did mention other transportation plans such as regional transportation and transit plans.

Overall San Francisco's Better Street's plan really focuses on making streets more accessible to all people. This was a different approach to pedestrian planning, making it focus on all modes of transportation. It laid out an excellent goals and objectives chart and what policies will help achieve those goals and objectives. The plan in general scored the lowest in the coding worksheets, however the awards it has received and the recognition of the city was being extremely walkable made this city's plan worth evaluating.
Section 4.5: Seattle, Washington Pedestrian Master Plan

Background

Seattle is the largest city in the northwestern portion of the United States and is known for its hub for "green" industry and a model for sustainable development. Over a dozen Seattle neighborhoods have Neighborhood Service Centers, originally known in 1972 as "Little City Halls" and even more have their own street fair and/or parade during the summer months. "The largest of the city's street fairs feature hundreds of craft and food booths and multiple stages with live entertainment, and draw more than 100,000 people over the course of a weekend" (Crowley, 1999). Getting people out and about for these events is one of the reason's Seattle is known for a great walking community.

Seattle as also obtained a platinum-level award from Walk Friendly due to the top-notch planning and engineering, outstanding outreach and education, and strong enforcement and evaluation practices (Walk Friendly Communities, 2011). Some of the other elements that were acknowledged with the award were:

- Trends in pedestrian travel
- Successful Pedestrian Master Plan with clear establishment of goals and measurable performance indicators
- Parking Management
- Tree planting program for sidewalk buffer zones
- Safe Routes to School program for safe walking practices for youth
- Establishment of a community-based walking program designed to get older adults active and experiencing the benefits of regular exercise
- Establishment of Summer Streets, which is are car-free days to open up streets to bicycling, walking, and playing
- Right of Way Improvement Manual, a design and accessibility manual on understanding ordinances and regulations
- Neighborhood Traffic Calming program
- Set up red light cameras and mobile speed enforcement cameras for safety
- Blockwatch program to prevent crime in neighborhoods
• Established an Aggressive Driver Response Team to target aggressive and dangerous drivers and protect pedestrian safety

(Source: Walk Friendly Communities, 2011)

Section 4.4.1: Coding Results and Key Findings

Coding Results: 40/60 (67%)

Key Findings

Seattle's Pedestrian Master Plan was coded and yielded high scores in most of the categories. Seattle's plan did a nice job of explaining current conditions with maps and tables, however it was similar to San Francisco's plan and left out what the existing and future land uses are. The State of the Pedestrian Environmental Report provides an overview of existing opportunities and constraints to walking. The report provides a table listing all of the existing pedestrian facilities in the city. This includes anything from sidewalks to crosswalks. The maps showing the existing conditions are very beneficial to the report since the maps covered all aspects of walking. The transportation analysis was very prominent in the pedestrian plan because it discusses right of way improvements, traffic calming initiatives, and traffic enforcement cameras.

Public participation was a major component to getting this pedestrian plan in place. The public was very involved in the planning process by attended public meetings and forming focus groups. The public's interest is what fuels some of the actions that are taking place. People want safer streets, to be more active, and less car dependent.

Development of the Pedestrian Master Plan was guided by direction from the Mayor's Office and the City Council’s Special Committee on Pedestrian Safety and the Transportation Committee. Project staff relied on the involvement of a range of partners,
including various agency teams—the SDOT Executive Steering Committee, the Inter-Agency Team, and the SDOT Pedestrian/Bicycle Work Group and the Pedestrian Master Plan Advisory Group (PMPAG) (Seattle Pedestrian Master Plan, 2010). The planning process had many steps that were taken in the development of the plan.

Seattle's Pedestrian plan has very clear objectives and it also discusses the policies and procedures that go with some of the pedestrian needs. The objectives were created to help achieve one or more of the plan goals which included safety, equity, vibrancy, and health. The Pedestrian Master Plan includes an "Implementation Matrix." This matrix, or table, provides the full list of actions that address the plan's focus on programs and policies that make it easier to walk in Seattle. Measurable indicators were set up so planners can see the progress made in implementing the plan. Each year, the information will be shared with the public, the Advisory Board, the Mayor's office, and City Council. Seattle established baseline measurements, performance targets, and data collection processes to improve walkability (Seattle Master Plan, 2010).

Overall Seattle's Pedestrian Plan touches on all the elements that should be included in a high quality pedestrian plan. The strong areas that stick out in the coding worksheet include the transportation analysis and also the goals and objectives components. The plan is geared directly making the city as a whole be more pedestrian conscious.

Section 4.5: Other Observations

Each of the five city plans that were reviewed, there were varying results between all five. Every one of the plans are very different so the coding results are inconsistent. All five cities are known as being pedestrian friendly communities, however the plans
that are in place didn't have all the elements listed in the coding worksheet. This section explains the elements that are commonly found in a majority of the plans, then the elements that are not found.

The elements that are found most often in the five plans include:

- Maps
- Pedestrian facilities
- Previous transportation plans
- Public Participation
- Mission Statement
- Goals and Objectives
- Policies
- Preventative safety measures
- Improvements (for pedestrian facilities and roadways)

Most the elements that are commonly found are known as the "base" elements to a high quality pedestrian plan. Without most of these elements, then there would be major holes in the pedestrian plan. Public participation was found in all plans and it is very successful in all the cities studied. The type of public participation that was used varied, but overall it was a large component to the development of the plans. Maps, previous transportation plans and pedestrian facilities locations give the plan the backbone it needs to state what is currently in place for a particular community. A strong mission statement, goals and objectives give the plan direction on where a community needs to go. Policies help guide the plan to go in the right direction and improvements make the current pedestrian situations in a community better.

The elements that are sometimes found in the five city's plans include:

- Connectivity maps
- Public transit information
- Street design guidelines
• State guidelines for pedestrian facilities
• Health programs

These elements were sometimes found in plans and sometimes weren't. Public transit is a large component to cities like Boulder and San Francisco, but they aren't in Minneapolis and Seattle. San Francisco's plan was titled "The Better Streets Plan" therefore it focused more on 'Complete Streets' and street design. However other communities focused more on sidewalks and trails, therefore it resulted in varying differences in the coding scores.

The elements that rarely show up in the five city's plans include:

• Obstruction maps
• Pedestrian demand
• Previous plans (open space, park, sub-area plans)
• Encouragement programs

These elements mentioned in one or two of the plans studied. These elements are good to have, but obviously aren't necessary for a plan to be successful.
Chapter V - Recommendations

After analyzing pedestrian plans for this project, it can been seen that the most successful pedestrian plans revolve around the people in the community. Transportation planning can be responsive to people and not just the data that the planners can gather from doing the research on crash rates and lack of pedestrian infrastructure. Data can be collected on the availability of pedestrian facilities and it can prove that problems do exist. However, these thresholds do not necessarily reflect the values or the experiences of transportation system users. Workshops and public meetings can inform planners and engineers what walking is like in a neighborhood or community. With public input and planner's research on the statistics that relate to safety, traffic and policies, they can collaborate on what would be an ideal plan for the community. Once planners and stakeholders together talk about what is necessary in a pedestrian plan, then planners and engineers can design an ideal plan for their community.

Planners can place a high priority on short and long term planning methods and policy-making that incorporate and support non-motorized transportation. Planning so that pedestrians, bicyclists, and motorists alike can travel safely and harmoniously is somewhat a challenge but positive benefits reaped by a comprehensive transportation plan are overwhelming. By establishing quality multimodal planning choices, it enables a community to become proactive rather than reactive in addressing concerns about pedestrian access, mobility, safety, and aesthetics (PBIC, 2011). There are a variety of planning levels and these practices can be large scale (such as a regional or statewide master plan for walking) or a small scale (such as improving walkability in a neighborhood). Planning in conjunction with design and engineering helps to ensure that
appropriate facilities for pedestrians are provided throughout the built environment (PBIC, 2011).

Section 5.0: Key elements that should be included in a Pedestrian Plan

The previous chapter analyzed five different city's pedestrian plans and pointed out some of the key elements that made their plans successful. By incorporating these key elements into a pedestrian plan it can be used as an outline on setting up a pedestrian plan. The contents of a pedestrian master plan presented here represent best practice content gleaned from pedestrian plans of cities like the ones analyzed in the previous chapter since they are recognized as being exemplary. This section presents best practice content in a sample plan outline format, elaborating on key elements of the plan. The key components are listed below followed by an explanation of each.

- Introduction
- Existing Pedestrian Conditions
- Public Involvement
- Vision and objectives
- Review, revise, and recommend transportation and land use policies
- Include engineering design standards and procedures
- Prepare plans that meet federal requirements
- Implementation

Introduction

The introduction can be used to explain some of the benefits of walking and how it can help the community. This area is also an appropriate location to provide background on the pedestrian planning process in the community and for the purpose for the pedestrian plan.
**Existing Pedestrian Conditions**

*Purpose*

The purpose of this section is to present a comprehensive picture of the existing pedestrian facilities such as the successes and opportunities for improvement. This can be identified to help guide policymaking and the prioritization of future pedestrian improvements. Typically the existing conditions data comes from three key sources: a survey of existing street conditions, pedestrian collision data, and community outreach. This section would ideally include:

- Map and descriptions of key pedestrian facilities and centers of pedestrian activity
- Data on walking rates if available
- Results from surveys of existing sidewalk and crossing conditions
- Analysis of pedestrian collision data

"Documenting the presence and status of these facilities allows agencies to identify and prioritize locations where improvements are needed. Knowing where current or potential pedestrian use is high also enables agencies to focus planning efforts on areas where the benefits would be maximized" (PBIC, 2011). Infrastructure that should be documented should include:

- Sidewalks
- Crosswalks
- Street lights
- Signage (which includes crosswalks location signs or school related signs)
- Road facilities (local streets, arterials, highways)

Not only knowing about the locations of these facilities, it is important to know what kind of condition they are in and how often they are replaced. A really good way to record and store this information is by using GIS (Geographic Information Systems) so it is easily accessible and displays nicely on maps. Crash rates and other safety statistics can be
found at the local police department, which could be mapped to show high concentration of crash rates.

Walking rates are also useful data to provide and display in this section of the plan if it is available. A lot of communities that are new to pedestrian planning will not have this data available and there are different methods that can be used to study current pedestrian activity. Walkability audits have been conducted in some cities and these basically measure how much pedestrian activity is actually taking place in a neighborhood or community. A walkability audit is an unbiased examination/evaluation of the walking environment. It can record everything from pedestrian counts, quality of the walking environment and conditions of the pedestrian facilities. These audits can have useful information on what areas need more attention than others. However, not all communities have the funding or resources to do these audits therefore they have found innovate approaches to reduce the cost of collecting data through volunteer labor or including it in with motor vehicle data collection programs (PBIC, 2011).

Public Involvement

Purpose

The people in a community provide the wisdom to create a great community. Who are these people? The everyday citizens who live, work, and engage in leisure pursuits are the people most affected by the plan. Public involvement in any planning activity is extremely important because it helps planners and public officials know what residents want. Ideas generated from public meetings, online surveys, focus groups and so on can create measurable results and valuable insights for community leaders. Successful public involvement is not simply measured by the number of people who
attend a meeting or how many surveys are mailed or filled out online, but it is the quality of the input and valuable opinions. A more recent way of getting the public input is through online websites that are set up for creating a plan. Topics regarding pedestrians are set up so people in the community can comment on them with their ideas.

Vision, Goals and Objectives

Purpose

A pedestrian plan should always contain a vision or visions of what pedestrian activity would be in the future. The visions can create alternative futures that can be achieved through planning and policy (PBIC, 2011). These visions can lead to creating goals and objectives that reflect the residents' engagement and values. Goals that are created can be long or short term which include ways that these goals can be measured. "Numerical indicators of goals should be presented so it can be used to assess whether goals are being achieved in a timely manner. Often these indicators are labeled 'objectives'. Goals should be reasonably achievable with the policies proposed in the plan" (Rodriguez, 2007). Goals and objectives vary from plan to plan, however common goals that are seen include:

- Connectivity
- Accessibility
- Safety
- Efficiency
- Multi-Use Environment

Connectivity is extremely important because pedestrian networks should provide continuous direct routes and convenient connections between destinations. Direct routes in the past have been lost due to inconsistent development patterns and now design
standards and policy changes are allowing streets and sidewalks to be continuous. A seamless transportation system with reliable opportunities to use more than one mode in a single trip provides a wider range of cost-effective travel options. Accessibility means that all users regardless of age and ability have the opportunity to walk on sidewalks, pathways, and crosswalks without having any issues. Safety is an obvious goal to have so users don't have to worry about being hurt during their walking experience. Efficiency is important because communities want their transportation systems to be efficient and economical. Improvements need to be designed to achieve maximum benefit for their cost. Another major goal is the multi-use environment which means that pedestrian environments should provide good places for people to conjugate. These can include open spaces such as plazas and courtyards, or building facades that give shape to the space of the street. Other pleasing aesthetics include street furniture, public art, and plantings that give the area a sense of place. Additional ways to make the pedestrian environment a multi-use area is by encouraging commercial activities such as dining, vending, and advertising as long as they don't interfere with safety and accessibility (Portland Pedestrian Master Plan, 1998).

**Pedestrian Design Guidelines and Engineering**

*Purpose*

This section of the pedestrian plan (sometimes created as a separate design guidelines document) is intended to identify and communicate the design elements important to improving pedestrian safety and walkability. Arming designers, engineers, developers and others with these guidelines will help ensure that new and improved pedestrian facilities reflect the policies, goals and objectives of the plan, and
consequently maximize safety and walkability. According to the Pedestrian and Bicycle Information Center (PBIC) website, proper engineering solutions can be used to improve the quality of pedestrian network which includes:

1. Roadway and Pedestrian Facility Design--this covers roadway and width issues, raised medians, street conversions, sidewalks, curb ramps, and other pedestrian-focused facilities.

2. Trail Design--which included various types of trails and trail design and development issues.

3. Street Crossings--includes issues and solutions for improving safety at street crossings, which include crosswalks, curb radius reduction, right-turn slip-lane design, signals and signs, and other crossing enhancements.

4. Traffic Calming--describes various ways to design streets, using physical measures, to encourage people to drive more slowly.

5. Traffic Management--includes traffic control devices such as diverters and street closures that manage volumes and routes of traffic.

6. On-Street Parking Enhancements--discusses ways to improve and manage on-street parking.

7. School Zone Improvements--covers engineering issues, facilities, operations, and signage as applied specifically to areas near schools.

8. Designing for Special Pedestrian Populations--discusses the physical needs and abilities of pedestrians with disabilities and older pedestrian populations and the related design and engineering responsibilities.

(Source: PBIC, 2011)

All of the pedestrian plans previously evaluated, including Lincoln's Downtown Master Plan included various design standards. San Francisco's Better Streets Policy focuses on the best practices in pedestrian-oriented, multi-modal street design. "The Better Streets Policy recognizes that San Francisco's streets constitute a large portion of the City's public space. Implementation of the Better Streets Policy will ensure that such streets will
continue to be corridors for all modes of transportation, organizes the City's development pattern, and provide a safe, usable public spaces” (City of San Francisco, Better Street Policy Ordinance). Both Seattle and Boulder are implementing Complete Streets policies, which are improving road conditions and adding in sidewalks and bicycle trails. Parking management has been a big issue in a lot of cities in the United States. Seattle has removed parking minimum standards in its downtown area by creating parking spots only inside, behind, or beside buildings (Walk Friendly Communities, 2011). Other improvements are those around schools, where Safe Routes to School programs are being implemented to improve safety to young school kids. Many communities are doing this around the United States regardless if there is a pedestrian plan in place or not. Also improvements to pedestrian facilities to meet proper ADA standards are important especially with the current aging population

**Prepare plans that meet Federal requirements**

*Purpose*

The government has been supporting improving conditions to bicycling and walking in the United States. Efforts to plan for bicycle and pedestrian mobility were given a tremendous boost by the Intermodal Surface Transportation Act of 1991 (ISTEA) and subsequent transportation legislation that has had a continuing emphasis on multimodal transportation. As a result of this legislation, States and metropolitan planning organizations (MPOs) are required to address bicycle and pedestrian needs during the transportation process. States and MPOs are required to incorporate appropriate provisions for bicycling and walking into the State transportation improvement program (STIP) and transportation improvement programs (TIPs).
The Federal Highway Administration (FHWA) and Federal Transit Administration (FTA) have issued technical guidance for bicycle and pedestrian planning at the State and MPO levels in order to meet Federal requirements.

This guidance makes the following key points relevant to State and metropolitan area transportation planning for bicycles and pedestrians. Plan elements should include goals, policy statements, and specific programs and projects whenever possible.

- The plan should identify financial resources necessary for implementation.
- Bicycle and pedestrian projects may be on-road or off-road facilities. Off-road trails that serve valid transportation purposes as connections between origins and destinations are considered eligible projects consistent with the planning process.
- Any regionally significant bicycle or pedestrian project funded by or requiring an action by FHWA or FTA must be included in the metropolitan TIP.
- Bicycle and pedestrian elements of transportation plans should include:
  - Vision and goal statements and performance criteria.
  - Assessment of current conditions and needs.
  - Identification of activities required to meet the vision and goals.
  - Implementation of the bicycle and pedestrian elements in statewide and MPO transportation plans and TIPs.
  - Evaluation of progress using performance measures.
  - Public involvement as required by Federal transportation legislation and FHWA/FTA planning regulations.
  - Transportation conformity requirements for air quality, where necessary.

(Source: FHWA, 2006)

Implementation

Implementation is one of the most important elements in a pedestrian plan. This section pin points partners that are interested in the implementation of specific actions. Partners can include local, state, or federal agencies, non-profits, private organizations, and advocacy groups to help achieve the plan's objectives (Rodriguez, 2007). An example of good implementation would be a plan requiring new streets to include
sufficient space and adequate lighting for pedestrian safety. To achieve this objective, new standards or street design regulations may be needed. There needs to be someone dedicated to making sure this is accomplished. In most plans, the goals are stated then it is followed by objectives and strategies.
Chapter VI - Conclusions

Multi-modal transportation is becoming a lot more popular with the rise of fuel costs and the impacts the automobile has on the atmosphere. In recent years, walking and bicycling have become important elements in the transportation system and planning for these other modes of transportation has been very popular throughout the United States. However, not every community has adopted a pedestrian plan and most of the communities that have, had great success.

The City of Lincoln, Nebraska could easily adopt a pedestrian plan if there was enough interest to do so. After examining Lincoln's plans, it is obvious that the city recognizes pedestrians and that Lincoln has potential to be a walkable city. Funding is an issue for the city and commitment from the public may be low, however if future land use codes were designed to be more pedestrian friendly, then more people may feel comfortable walking. Educating the public on the benefits of walking could also improve commitment to walking as well. However, any community big or small can plan for pedestrians. It just needs the right resources, commitment from the public, and a pedestrian plan guideline to get it started.

Communities are more than just roads and buildings. They are about the people that live there and the quality of life that they have in those communities. With rising rates of chronic diseases and obesity rates, educating people on the benefits of walking could help turn around these epidemics. The communities profiled in this paper offer successful examples of how local leaders and residents envisioned their own walkable communities and took specific steps to make them more walkable. Some focused on the nuts-and-bolts design of streets, others launched bold public awareness campaigns, and
others used regulatory reforms. Altogether these cases offer a "walkable tool box" and a starting point for a community's brainstorming process. Whether communities take a big step or a small step forward in their pedestrian planning process, it is moving the community in the right direction for its resident's health and well-being.
References


Appendix A - Walk Friendly Awards
Walk Friendly Communities Profile

NAME OF COMMUNITY
Minneapolis, Minnesota

LEVEL OF DESIGNATION
Gold

BACKGROUND
POPULATION: 382,578
AREA: 58 square miles
POPULATION DENSITY: 6,596 per square mile

PEDESTRIAN PLAN:
http://www.ci.minneapolis.mn.us/pedestrian/pedestrian-masterplan.asp

PEDESTRIAN PROGRAM WEB SITE:
http://www.ci.minneapolis.mn.us/pedestrian

COMMUNITY HIGHLIGHTS

Minneapolis is designated as a Gold-level community due to the city’s excellent planning policies, high level of staff commitment to pedestrian safety, and pedestrian campaigns and events. Highlights of Minneapolis’s application include:

✓ Minneapolis has a large amount of staff dedicated to pedestrian issues. Through the Public Works Department employing staff to maintain and repair sidewalks, the Minneapolis Public School System employing full time staff to work on Safe Routes to School, and several ambassador programs promoting walking and working towards creating a welcoming pedestrian environment throughout the City, Minneapolis has a multitude of opportunities for pedestrian issues to be addressed.

✓ Minneapolis’s extensive sidewalk network is an example of how the City is devoted to providing pedestrian facilities. Over 90 percent of streets in Minneapolis have complete sidewalks and over 80 percent of streets have sidewalks on both sides of the street. The City’s Sidewalk Inspections Office conducts an annual sidewalk and curb ramp repair program that replaces any
defective sidewalks and curb ramps on a regular basis. Minneapolis also promotes the walking environment by providing pedestrian facilities on bridges throughout the City. Currently, all bridges have sidewalks on at least one side and all new bridges must provide pedestrian facilities.

✓ Minneapolis's **Complete Streets policies** (http://www.ci.minneapolis.mn.us/public-works/transport-plan/Citywide_CouncilFinal_Ch4_071709.pdf) encourage walking by promoting sidewalk lighting, pedestrian improvements, street furniture and landscaping, and other street design improvements. Many of the objectives of the Complete Streets policy work towards completing the goals set up by the Pedestrian Master Plan of Minneapolis, enhancing the City's walking environment.

✓ Minneapolis has a number of **pedestrian-oriented campaigns and events** to educate and encourage residents to walk.

  o **Safe Routes** (http://bikewalktwincities.org/ambassadors/ambassador-programs/safe-routes) is a collection of educational lessons for various school grades on pedestrian and bicycle safety.

  o **BikeWalkMove** (http://bikewalkmove.org/) is part of a public service campaign conducted by BikeWalk Twin Cities and the City of Minneapolis Department of Health and Family Support in North Minneapolis to provide educational messages and awareness messages about bicycling and walking in a variety of public spaces including newspapers, bus boards, and radio ads.

  o **Bike/Walk to Work Week** (http://bikewalkweek.org/) is an event **meant to showcase** the advantages of commuting to work in alternate ways.

  o **Open Streets** (http://openstreetsmpls.com), based on the Colombian ciclovia, is a walking and cycling event for all in the City. By **closing** the street to motorists, residents are able to recreate and explore their City without the presence of automobiles.

✓ Minneapolis conducts **pedestrian counts** through several different methods and agencies to help provide an accurate depiction of the pedestrian activity within the City. The Department of Public Works (http://www.ci.minneapolis.mn.us/pedestrian/pedestrian-counts.asp) has conducted pedestrian counts around the City every September from 2007 on. Since 1958, the City of Minneapolis has conducted counts of all modes of transportation through its periodic Downtown Cordon Count (http://www.ci.minneapolis.mn.us/council/2004-meetings/20040227/docs/11_cordon_count_report.pdf), the most recent being in 2003. The third instance of pedestrian counting is conducted as part of the periodic intersection turning movement counts conducted by the Department of Public Works (http://www.ci.minneapolis.mn.us/public-works/traffic-counts.asp).
The pedestrian street lighting in Minneapolis provides a safe walking environment for pedestrians during the hours when visibility is limited. Nearly all arterial and non-arterial streets have lighting on one or both sides of the streets making walking at night safer.

Minneapolis's parking standards are representative of working towards creating a more pedestrian friendly environment. All zoning districts in Minneapolis have maximum parking standards and no minimum parking standards. The City has a number of priced parking spaces in garages and metered spaces as well as a large number of park and ride spaces with bus service to the downtown area. Ground floor parking garages must have commercial, residential, office, or hotel uses between the parking garage and public sidewalks to foster a better walking environment.

The crosswalk practices in Minneapolis are indicative of the City's push for a safe walking environment. All designated midblock crosswalks have overhead flashing beacons and use high visibility striping. Marked crosswalks are provided at all signalized intersections throughout the City.

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**Walk Friendly Communities Profile**

NAME OF COMMUNITY  
San Francisco, California

LEVEL OF DESIGNATION  
Gold

BACKGROUND  
POPULATION: 805,235

AREA: 46.7 square miles

POPULATION DENSITY: 17,243 per square mile

PEDESTRIAN PLAN:  

PEDESTRIAN PROGRAM WEB SITE:  
http://www.sfmta.com/cms/whome/homepeds.htm

**COMMUNITY HIGHLIGHTS**

San Francisco is designated as a Gold-level community due to the city’s outstanding planning practices, community pedestrian events, and focus on providing a pedestrian friendly environment. Highlights of San Francisco’s application include:

- San Francisco’s Better Streets Plan ([http://www.sf-planning.org/ftp/BetterStreets/index.htm](http://www.sf-planning.org/ftp/BetterStreets/index.htm)) is a set of implementation strategies and goals to provide and maintain a better streetscape and pedestrian environment. The Plan “seeks to balance the needs of all street users, with a particular focus on the pedestrian environment and how streets can be used as public space.” The Better Streets Plan carries out the Better Streets Policy ([http://www.sf-planning.org/ftp/BetterStreets/docs/better_streets_policy_ordinance.pdf](http://www.sf-planning.org/ftp/BetterStreets/docs/better_streets_policy_ordinance.pdf)) of San Francisco’s intent to plan streets for pedestrian-oriented and multi-modal designs.
San Francisco’s WalkFirst Project (http://www.sf-planning.org/index.aspx?page=2568#downloads) identifies key walking streets throughout the City and develops a criteria to prioritize pedestrian improvements for creating a better walking environment. The WalkFirst Project will have produced citywide map of pedestrian zones, a draft general plan relating to walking, walking strategies for the San Francisco Transportation Plan, concept designs, a criteria for prioritizing pedestrian improvements, and a list of recommended pedestrian improvements.

San Francisco holds Sunday Streets events (http://www.sundaystreetssf.com/) on the second Sunday of every month from April to October. The Sunday Streets event, based off the Colombian Ciclovia, creates a temporary public space by closing the road to motorists and creating a space for pedestrians and bicyclists to recreate, exercise, and socialize with fellow residents. The events for 2010 saw over 20,000 participants.

San Francisco has a model pedestrian signaling system. Over 70 percent of all signalized intersections have pedestrian countdown signals. The guidelines for the installation of pedestrian signals state that all signalized intersections without pedestrian signals should be updated and all pedestrian countdown signals should be installed at new signalized intersections. The guidelines also state that Accessible Pedestrian signals should be provided with countdown signals to aid in the crossing of the visually and hearing impaired and intersections should be prioritized for new installations. Currently, 10.5 percent of signalized intersections have accessible pedestrian signals.

San Francisco has worked to create a pedestrian friendly sidewalk network. The Department of Public Work’s Sidewalk Inspection and Repair Program evaluate sidewalks each year, make note of those in need of repairs, and work with property owners to make the repairs. Also, the City has a Newsrack Ordinance (http://www.sfdpw.org/index.aspx?page=371) that was created to help reduce the amount of occupied space on sidewalks associated with free standing news racks and make sidewalks more pedestrian friendly. San Francisco also provides street landscaping to visually enhance the sidewalk to pedestrians.

The enforcement activities of San Francisco emphasize the importance of pedestrian safety. The City conducts crosswalk stings using pedestrian decoys, progressive ticketing, speed feedback signs, and media campaigns on enforcement.

San Francisco provides multiple training opportunities for staff and law enforcement on pedestrian safety. Principals, teachers, and school staff participate in an annual professional development day about the Safe Routes to School program and how to incorporate the program’s goals into education lessons. The staff at the Municipal Transportation Agency and Planning
Department are provided a multitude of opportunities through trainings, webinars, and conferences to learn about pedestrian safety and apply the information to the City.

- San Francisco’s streets and public rights-of-way make up fully 25 percent of the City’s land area, more space even than is found in all of the City’s parks. San Francisco’s “Pavement to Parks” looks to reclaim unused public spaces and turn them into temporary parks and public plazas. During the temporary closure of the space, the success of the plazas and parks is evaluated to what changes can be permanently made and what other solutions are possible. Residents and businesses can also apply for parking spaces in front of their properties to be turned into “Parklets,” (http://sfpavementtoparks.sfplanning.org/) which are mini parks the length of one or two parking spaces repurposed to be for pedestrians.

- The San Francisco Department of Public Health’s Program on Health, Equity, and Sustainability developed several Health Impact Assessment tools to provide insight on future pedestrian planning needs. The HIA tools are the Pedestrian Environmental Quality Index (PEQI) (http://www.sfphes.org/HIA_Tools_PEQI.htm), the Vehicle-Pedestrian Injury Forecasting Model (http://www.sfphes.org/HIA_Tools_Ped_Injury_Model.htm), and the Healthy Development Measurement Tool’s Safe and Sustainable Transportation Element (http://thehdmt.org/objectives/view/8). Several specific HIAs in San Francisco include the Treasure Island Community Transportation Plan (http://www.sfphes.org/comm_ti_bicycle_ped.htm), an HIA of Traffic in Southeastern SF (http://www.sfphes.org/HIA_PODER.htm), and an ongoing HIA of Road Pricing (http://www.sfphes.org/HIA_Road_Pricing.htm).

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Walk Friendly Communities Profile

NAME OF COMMUNITY
Seattle, Washington

LEVEL OF DESIGNATION
PLATINUM

BACKGROUND
POPULATION: 616,669

AREA: 92 square miles

POPULATION DENSITY: 6,703 per square mile

PEDESTRIAN PLAN:
http://www.seattle.gov/transportation/pedestrian_masterplan/

PEDESTRIAN PROGRAM WEB SITE:
http://www.seattle.gov/transportation/pedestrian.htm

COMMUNITY HIGHLIGHTS

Seattle is designated as a Platinum-level community due to top-notch planning and engineering, outstanding outreach and education, and strong enforcement and evaluation practices. Highlights of Seattle’s application include:

- Seattle is a leading example of positive evaluation practices and has developed an outstanding reputation as a walkable city due, in large part, to the understanding of trends in pedestrian travel. This understanding comes from significant pedestrian counts [http://www.downtownseattle.com/content/businesses/PedCount.cfm] that have been occurring biannually since 2006. Data is collected during the peak summer and winter periods and analyzed for seasonal and time of day impacts on walking volumes.

- One of the main reasons Seattle’s Pedestrian Master Plan is such a successful document is the clear establishment of goals and measurable performance indicators [http://www.seattle.gov/transportation/pedestrian_masterplan/]. With the objective of becoming the country’s most walkable...
city, Seattle established baseline measurements, performance targets, and data collection processes to improve walkability. These indicators fit into the four main goals of the plan: Safety, Equity, Vibrancy, and Health and contain such examples as reaching ten new schools a year with outreach and increasing pedestrian volumes in selected count locations.

- **Managing parking** is one of the keys to promoting a safe and enjoyable pedestrian environment. Beginning in 1986, Seattle abolished parking minimum standards for the downtown, opting instead to implement a 1 space per 1,000 square feet of non-residential development. Further, parking must be inside, behind, or beside buildings and any parking requirements can be waived if sited along a designated pedestrian corridor. The City also provides incentives for large development programs, including parking cash out, shared parking, and park-and-ride.

- There are many benefits of buffer zones on sidewalks and Seattle’s recognition of this through a tree-planting program is noteworthy. In addition to requiring street trees in all new development, the City also recently planted more than 800 trees in rights-of-way and also provided free trees to residents in a number of neighborhoods.

- Understanding that fostering good walking practices in children is essential, Seattle’s **Safe Routes to School** program sets a high standard. The Seattle School Traffic Safety Committee, composed of representatives from Seattle Public Schools, Seattle Police Department, and Seattle Department of Transportation, creates walking route maps for every public elementary school in Seattle. The DOT also works with Feet First, a local pedestrian advocacy group, to conduct walkability audits at several schools a year. Seattle schools perform regular counts of how children get to school and, in one case, found a 49% increase in walking to school after the completion of a SRTS infrastructure project.

- The Seattle Parks and Recreation department shows its commitment to walkers of all ages through a volunteer-supported walking program for adults age 50 and up called **Sound Steps** ([http://www.seattle.gov/parks/seniors/SoundSteps.htm](http://www.seattle.gov/parks/seniors/SoundSteps.htm)). Sound Steps is a free, community-based walking program designed to get older adults active and experiencing the benefits of regular exercise. It is a year-round program that provides connection to other walkers, tools to measure progress, a number of weekly walks from various locations, monthly hikes, and training for longer events.
In 2008, Seattle piloted Car Free Days to open up streets to bicycling, walking, and playing. The City renamed it Celebrate Seattle Summer Streets (http://www.seattle.gov/transportation/summerstreets.htm) in 2009 and made extensive efforts to involve local businesses, farmers markets, parades, art walks, and more. In 2011, there will be Summer Streets events on four different streets through the summer, as well as Bicycle Sundays (http://www.seattle.gov/parks/bicyclesunday/) almost every Sunday from May to September.

Seattle’s Rights of Way Improvement Manual (http://www.seattle.gov/transportation/rowmanual/manual/) is a leading example of how good design and accessibility can improve understanding of ordinances and regulations. The interactive online manual presents a standard streetscape with dynamic, clickable elements beneath the image. These elements, like curb radius or street trees, highlight the element in the image and direct the user to the pertinent section of code where the standards are explained. This provides transparency and clarity for regulations and makes it more approachable to citizens.

The neighborhood traffic calming program (http://www.seattle.gov/transportation/neighborhoodtraffic.htm) in Seattle is impressive, particularly the neighborhood traffic circle element (http://www.seattle.gov/transportation/trafficcircles.htm) of the program. These mini-circles have been found to reduce motor vehicle crashes by an average of 90 percent in Seattle. Over the past 30 years, Seattle has installed over 1,000 traffic circles and has now instituted a formal process for proposal, as there is still enormous demand. There are criteria for proposal evaluation and detailed information about the process available through the City’s website, allowing access for neighborhoods to explore this option.

Studies show that red light cameras are an effective measure in preventing fatal crashes that occur as a result of running red lights. Seattle has 30 red light cameras at 21 different intersections around the city. The City also has mobile speed enforcement cameras that focus on enforcing speed limits in school zones. These effective enforcement measures have led to a vast reduction in fatal crashes involving pedestrians.

The US Justice Department’s National Institute of Law Enforcement and Criminal Justice recognized Seattle’s Blockwatch program as an “exemplary project” just seven years after it began in 1972. The program, which includes over 3,800 blocks citywide, represents roughly 30 percent of Seattle neighborhoods, compared to a national average of 8-11 percent.
The Seattle DOT uses crash data, including pedestrian collisions, extensively in reviewing safety concerns. In 2007, the City formed a special traffic unit called the Aggressive Driver Response Team to target aggressive and dangerous drivers and protect pedestrian safety. The team is extensively trained and targets areas that are known for aggressive driving and also works chronic community traffic complaints, school zone violations, and conducts pedestrian emphasis operations.

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