

**DRAFT**

**Milestone Report E – 1/14/08**

**Goals, Benchmarks and Performance  
Measures**

**Prepared as Background for the  
Washington State Bicycle Facilities and Pedestrian  
Walkways Plan**

DRAFT

## Table of Contents

<b>CHAPTER E.1 INTRODUCTION.....</b>	<b>5</b>
OVERVIEW.....	5
REQUIREMENTS OF THE STATE’S BICYCLE FACILITIES AND PEDESTRIAN WALKWAYS PLAN.....	5
PURPOSE OF GOALS, BENCHMARKS AND PERFORMANCE MEASURES.....	6
GOALS, BENCHMARKS AND PERFORMANCE MEASURES IN OTHER STATES.....	7
<b>CHAPTER E.2 NATIONAL PERFORMANCE GOALS .....</b>	<b>9</b>
FEDERAL HIGHWAY ADMINISTRATION (FHWA) .....	9
FEDERAL BENCHMARKING STUDY OF STATE DOTs.....	10
SAFE ROUTES TO SCHOOL .....	11
NATIONAL HIGHWAY TRAFFIC SAFETY ADMINISTRATION (NHTSA) .....	11
<b>CHAPTER E.3 WASHINGTON’S BICYCLING AND WALKING GOALS, BENCHMARKS, AND PERFORMANCE MEASURES.....</b>	<b>13</b>
LOCAL AND REGIONAL BICYCLE AND PEDESTRIAN PLANS .....	13
WASHINGTON STATE TRANSPORTATION COMMISSION .....	13
PEDESTRIAN AND BICYCLIST INVOLVED COLLISIONS.....	13
THE GOVERNOR’S MANAGEMENT, ACCOUNTABILITY AND PERFORMANCE PROGRAM .....	14
WASHINGTON STATE PATROL STRATEGIC PLAN (2007-2012) .....	14
THE WASHINGTON STATE STRATEGIC HIGHWAY SAFETY PLAN (SHSP): TARGET ZERO.....	14
THE WSDOT BUSINESS DIRECTIONS – STRATEGIC PLAN.....	16
WSDOT’S GRAY NOTEBOOK.....	16
2007 TRANSPORTATION POLICY REPORTING REQUIREMENTS.....	17
<i>New Policy Goals.....</i>	<i>17</i>
WASHINGTON STATE PHYSICAL ACTIVITY AND NUTRITION PLAN.....	18
GOVERNOR’S CLIMATE CHALLENGE.....	19
<b>CHAPTER E.4 EXAMPLES FROM OTHER STATES.....</b>	<b>21</b>
DIFFERENT LEVELS OF COMMITMENT TO BICYCLE AND PEDESTRIAN TRANSPORTATION .....	22
ESTABLISHING THE BEST STATE PERFORMANCE MEASURES.....	23
<b>CHAPTER E.5 ESTABLISHING GOALS, BENCHMARKS AND PERFORMANCE MEASURES .....</b>	<b>25</b>
GOALS.....	25
PERFORMANCE MEASURES, BENCHMARKS, AND IMPLEMENTATION STRATEGIES .....	25
<i>Safety.....</i>	<i>25</i>
<i>Mobility (Usage and Facilities).....</i>	<i>27</i>
<i>Education and Enforcement.....</i>	<i>29</i>
<i>Public Health and the Environment.....</i>	<i>30</i>
TIMEFRAMES, TARGETS AND IMPLEMENTATION .....	31

THIS DOCUMENT IS FORMATTED FOR DOUBLE SIDED PRINTING

DRAFT

## Chapter E.1 Introduction

### Overview

This report examines the current performance measures and benchmarks relating to bicycling and walking in Washington State. It summarizes these current measures and recommends possible future additions and changes. As the Plan is developed, additional data sources may be discovered and new analysis may be added to this Milestone Report E.

In addition to being an important element of the completed Plan, pedestrian and bicycle performance measures are used by the State to monitor the efficiency and effectiveness of its non-motorized projects and programs. Regular monitoring and evaluation of these performance measures helps ensure that pedestrian and bicycle modes are better integrated into daily operations. Benchmarking and performance measures also help document improvements in pedestrian and bicycle use, safety, and convenience throughout the State of Washington, providing data that can be used to describe progress towards the stated goals to the legislature and the general public.

The following information is discussed in detail in this memorandum:

- Characteristics of good, state-level pedestrian and bicycle performance measures;
- Examples of existing performance measures used in different states;
- Existing State of Washington pedestrian and bicycle performance measures; and
- Proposed pedestrian and bicycle performance measures.

### ***Requirements of the State's Bicycle Facilities and Pedestrian Walkways Plan***

Consistent with Washington State Law [Revised Code of Washington (RCW) 47.06.100] and federal guidance, the scope of this project includes:

#### **#1: Establishing a statewide strategy for addressing bicycle and pedestrian transportation.**

For bicycle and pedestrian modes to be viable choices for citizens, they should be included in all aspects of the transportation system—planning, project development, funding, implementation, and maintenance. This report examines the level of this inclusion. **#2: Integrating bicycle and pedestrian travel with other transportation modes.**

Bicycling and walking are ways people access buses, trains and ferries. For many people, non-motorized modes are the only way to access transit. Bus stops, park-and-ride

lots, and inter-modal stations will be analyzed for bicycle and pedestrian accessibility, including bicycle parking.

### **#3: Coordinating WSDOT and local municipalities, regional planning entities and transit agencies.**

To improve safety and mobility, planners and engineers at all levels of government should improve coordination. State, regional and local policies and operations are analyzed for coordination opportunities.

### **#4: Determining the role of bicycle and pedestrian transportation in reducing automobile congestion.**

Reducing congestion and resulting green house gas emissions requires giving people viable transportation choices. Sidewalks and accessible pedestrian routes get people from home to their destinations and to transit stations and stops. Trails and bicycle lanes allow people to ride a bike instead of drive for many trips, and provide another way to access transit. Bike and pedestrian connections are analyzed for gaps and opportunities.

### **#5: Assessing statewide bicycle and pedestrian needs (needs related to state, city and county routes).**

How much will it take to significantly improve the bike and pedestrian travel in Washington? Analyzing existing conditions will lead to an estimate of cost to build high-priority bike and pedestrian infrastructure.

## ***Purpose of Goals, Benchmarks and Performance Measures***

The overall objective of setting goals and collecting and evaluating data is to gauge continued progress toward improving bicycling and walking in Washington State.

The recommended performance measures are an expansion of an existing process in Washington State, to better enable Washington State to evaluate progress towards goals and objectives. As new performance measures are initiated, they should be regularly evaluated to determine if the measures are effective, or if modifications are needed. Regular evaluation of the performance measures should be based on the following questions:

- Are the findings from each performance measure useful for evaluating the States goals and objectives for bicycle and pedestrian travel?
- Are performance measures capturing outcomes, outputs or both?
- Are the resources required to collect the data for each performance measure reasonable, given the amount of information that they yield?
- Is the data for each performance measure reliable?

There may also be opportunities to improve the performance measures in the future using new national data. Changes to the census and other national transportation surveys have the potential to increase the amount and quality of available pedestrian and bicycle data. This may change the paradigm of bicycle and pedestrian data collection significantly in the future, and would also necessitate periodic reevaluation of Washington's performance measures.

## ***Goals, Benchmarks and Performance Measures in Other States***

This Report includes a discussion of pedestrian and bicycle performance measures in several other states. Building on previous work by FHWA and the Toole Design Group, we also find that many states do not currently measure performance for pedestrian and bicycle travel modes. In most states, the available data on pedestrian and bicycle use, facilities, and safety do not exist or have significant limitations, such as small sample sizes and inconsistencies in the way the data is collected and recorded.

This situation is slowly changing as more states begin to recognize the importance of pedestrian and bicycle modes of travel. In recent years, Florida, Illinois, Maryland, Massachusetts, New Jersey, New York, Oregon, Tennessee, Vermont and Wisconsin have established non-motorized transportation goals and performance measures. The performance measures in these states address different aspects of pedestrian and bicycle transportation, including safety, usage, facilities, education, enforcement, economic impacts, and institutionalization of non-motorized transportation issues within the transportation agencies and departments. The level of detail in these state performance measures varies.

Based on a review of the existing status of bicycle and pedestrian performance measures in other states and professional experience, Wilbur Smith Associates developed a list of characteristics of good state-level performance measures. Good bicycle and pedestrian performance measures for Washington State should:

- Help the state determine its progress toward meeting state and national goals;
- Be easily measured and graphed over time;
- Use appropriate, easily understood language;
- Infer the data that need to be collected;
- Use data that is readily available or can be collected cost- and labor-effectively on a one to three year cycle;
- Be reported at regular intervals, such as in an annual or biannual performance measures report;
- Serve as a benchmarking tool to measure how well practices match with stated policies or are working toward stated goals;
- Consider the end user as a one of the measuring tools (e.g., gather the opinions of pedestrians and bicyclists about non-motorized transportation); and
- Relate to outcomes (though there are often factors beyond government control that also influence the measured outcomes).

It is also recommended that when establishing pedestrian and bicycle performance measures, Washington:

- Use care in establishing measures, to make sure they do not require a significant amount of additional resources be spent on data collection;
- Expand existing data collection efforts currently focused on existing motor vehicle or public transit modes;
- Coordinate among agencies to determine what data are available and obtain accurate and meaningful data for pedestrian and bicycle transportation;
- Fully understand the quality and validity of the data used in the pedestrian and bicycle performance measures;
- Balance the need for data that are easy to collect and data that are meaningful for evaluating performance;
- Incorporate performance measures that are process-oriented (measure the direct implementation of policies and actions of the agency) as well as those that are outcome-oriented (measure the end results of policies and actions in relation to pedestrian and bicycle use, safety, health, economic benefits, etc.), even if it may be more difficult to obtain data for the outcome-oriented measures; and
- Understand and explain, as needed, other state, regional, and local influences on outcome-based performance measures, such as land use decisions, cultural attitudes, and socioeconomic trends.

## Chapter E.2 National Performance Goals

### ***Federal Highway Administration (FHWA)***

The FHWA established two goals through the 1994 *National Bicycling and Walking Study*:

- Double the percentage of total trips made by bicycling and walking in the United States from 7.9 percent to 15.8 percent of all travel trips; and
- Simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes.

In addition to these goals, the Study outlined a five-point State Action Plan that suggested activities for State agencies. These action items included:

- Organize a State Bicycle/Pedestrian Program
- Plan and Construct Needed Facilities
- Promote Bicycling and Walking
- Educate Bicyclists, Pedestrians, and the Public
- Enforce Laws and Regulations

In the FHWA's subsequent Design Guidance issued in 2000 (entitled *Accommodating Bicycle and Pedestrian Travel: A Recommended Approach*), the following statement is made:

Bicycle and pedestrian ways shall be established in new construction and reconstruction projects in all urbanized areas unless one or more of three conditions are met:

- Bicyclists and pedestrians are prohibited by law from using the roadway. In this instance, a greater effort may be necessary to accommodate bicyclists and pedestrians elsewhere within the right of way or within the same transportation corridor.
- The cost of establishing bikeways or walkways would be excessively disproportionate to the need or probable use. Excessively disproportionate is defined as exceeding twenty percent of the cost of the larger transportation project.
- Where scarcity of population or other factors indicate an absence of need. For example, the Portland Pedestrian Guide requires "all construction of new public streets" to include sidewalk improvements on both sides, unless the street is a cul-de-sac with four or fewer dwellings or the street has severe topographic or natural resource constraints.

- In rural areas, paved shoulders should be included in all new construction and reconstruction projects on roadways used by more than 1,000 vehicles per day, as in States such as Wisconsin. Paved shoulders have safety and operational advantages for all road users in addition to providing a place for bicyclists and pedestrians to operate.

Most recently, in 2006, Title 23 [23 U.S.C. 134/49 U.S.C. 5303(j)(7)(B) and 23 U.S.C.135/49 U.S.C. 5304(g)(4)(B)] was amended to require Metropolitan Planning Organizations, States and public transportation operators to track and publish a list(s) identifying all bicycle/pedestrian projects for which Federal funds were obligated in the preceding program year.

### ***Federal Benchmarking Study of State DOTs***

In 2003, the Federal Highway Administration funded a study of all states and their bicycle and pedestrian programs that was conducted on the National Center for Bicycling and Walking (NCBW). Washington met all pedestrian benchmarking standards and all but one bicycle benchmark, ranking Washington second nationally.

#### **Figure 1. WSDOT's Score on Federal Benchmarking Project**

##### **Eight Performance Benchmarks for State Departments of Transportation:**

- Bike/Ped Plan exists
- Bicycle Plan meets FHWA guidance
- Accommodates bicycles in highway projects
- Includes sidewalk in new urban highway projects
- Includes sidewalks in re-construction projects
- Sidewalks are generally included in urban projects
- Statewide Safe Routes Program
- Other Statewide programs

In developing the report, the NCBW interviewed 49 state DOT bicycle/pedestrian coordinators and reviewed planning documents they provided.

The study looked closely at four topics: statewide bicycle and pedestrian plans, accommodating bicycles in state highway projects, providing sidewalks for pedestrians in state highway projects located in urban areas, and implementing a statewide Safe Routes to School program. The NCBW reviewed federal legislation, regulations, polices, and guidance, as well as the policies and recommended practices of national organizations including the American Association of State Highway and Transportation Officials (AASHTO) and the Institute of Transportation Engineers (ITE). Using these sources, a set of benchmarks was identified and used to assess the current performance of each state DOT.

## ***Safe Routes to School***

The Federally-assisted Safe Routes to School (SR2S) program was created as part of the 2005 Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) transportation reauthorization. The program requires that between 10 and 30 percent of the SR2S funds must be used on non-infrastructure-related activities to encourage walking and bicycling to school (e.g., public awareness campaigns and outreach to press and community leaders; traffic education and enforcement in the vicinity of schools; student sessions on bicycle and pedestrian safety, health, and environment; and training volunteers and managers).

## ***National Highway Traffic Safety Administration (NHTSA)***

The general goal of NHTSA's pedestrian safety programs are: "Through education, enforcement, and outreach, NHTSA's pedestrian safety programs are directed toward reducing pedestrian injuries and fatalities. Walking is encouraged as an alternate mode of transportation to motor vehicle travel."

In 2000, NHTSA produced *National Strategies for Advancing Bicycle Safety*. This document summarized goals and strategies that were developed by a diverse group of bicycle advocates, injury prevention specialists, and government representatives. Goals that were generated included:

- Motorists will share the road.
- Bicyclists will ride safely.
- Bicyclists will wear helmets.
- The legal system will support safe bicycling.
- Roads and paths will safely accommodate bicyclists.

In 2001, NHTSA gathered a group of experts to establish goals for child pedestrian safety. The resulting document, *National Strategies for Advancing Child Pedestrian Safety*, outlines three general goals and the following six strategies:

- Enhance public awareness about the need to improve safety for child pedestrians while promoting the health and environmental benefits of walking.
- Modify the behavior and attitudes of both pedestrians and drivers to improve sharing the road.
- Modify the physical environment to better support pedestrian traffic.
- Develop and conduct effective safe-walking programs.
- Conduct research to address gaps in knowledge and to translate research findings into effective programs and public policy.
- Conduct surveillance to measure children's pedestrian injury rates, quantify the amount of walking that children normally do, and identify risk factors for injury.

DRAFT

## **Chapter E.3 Washington's Bicycling and Walking Goals, Benchmarks, and Performance Measures**

### ***Local and Regional Bicycle and Pedestrian Plans***

As part of the development of this Report, the project team conducted a review of local and regional non-motorized plans. Appendix A contains the review of Local Non-Motorized Plans in Washington). The review found that a large majority of local agencies, over 80%, have plans and policies addressing bicycle and walking. In some cases, these plans have been translated into design and development standards (i.e., Kirkland's Complete Streets Policy), and project specific priorities. Approximately 10% of local agencies have included policies in their plans that link bicycling and walking, public health, and the built and natural environment.

These local and regional plans, their measurable goals, and their project level priorities are critical and serve as the foundation that will allow Washington to establish a realistic and measureable state goal for improving conditions for bicycling and walking.

### ***Washington State Transportation Commission***

In 2003, the Washington State Transportation Commission adopted an original set of benchmarks to measure the performance of the state's transportation system. Benchmark development was guided by the requirements of the RCW47.01.012, which established policy goals in the areas of safety, pavement condition, bridge condition, traffic congestion and driver delay, per capita vehicle miles traveled, non-auto share of commute trips, administrative efficiency, and transit cost efficiency. With the exception of non-auto share of commute trips, these benchmarks have little to do specifically with bicycle and pedestrian safety. Share of non-auto commute trips data comes from the US Census and are readily available but only on an intermittent basis. Report B includes information from the most recent data set.

### ***Pedestrian and Bicyclist Involved Collisions***

The State of Washington through Washington State Patrol, local law enforcement and the Washington State Department of Transportation, currently tracks the number of bicycle and pedestrian collisions, both fatal and non-fatal, with motor vehicles. As part of the reporting, they track these collisions by age and gender of the victim, time of day, location (rural, urban, in crosswalk, out of crosswalk, etc.), route class and speed limit, and whether the pedestrian, bicyclist, or motorist was engaging in risky behaviors such as drinking or speeding. However, even with the existing efforts to accurately track bicycle and pedestrian crashes, a 2003 FHWA study of hospital emergency department data

suggests that from 40 to 60 percent of bicycle crashes are not captured in highway reporting data. This is often because the crashes are never reported to the police or take place off public roadways.

WSDOT has funded a list of research projects aimed at modeling the potential for pedestrian and bicyclist risk based on the various contributing factors and environmental circumstances tracked in the collision data. This research provides a number of suggestions and implications for performance measurement including:

- Tracking posted and operating speeds within urban areas and designated centers where walking and bicycling are being encouraged,
- Improving data collection tools to capture more information about the relationship of these collisions with transit and other roadway factors,
- Improving data collection tools to gather more information about speed of vehicles involved in collisions with pedestrians and bicyclists.

### ***The Governor's Management, Accountability and Performance Program***

Washington's Governor has established goals for State agencies to accomplish as part of the Management, Accountability and Performance Program. The Strategic Action Plan included the goal of reducing highway fatalities by 4 percent, in coordination with the Washington State Patrol, by December 2007. Work is now being done to determine whether this goal has been met.

### ***Washington State Patrol Strategic Plan (2007-2012)***

The Washington State Patrol (WSP) Agency Strategic Plan was designed by WSP to increase the agency accountability to the citizens of Washington State. The WSP is dedicated to increasing efficiency and accountability at every level of its operations. WSP's approach to accountability requires every division and district to regularly measure and report the effectiveness of the services they provide. Within WSP's Strategic Plan, they identify five goals to help the agency achieve its mission and vision. The first of the five goals, to reduce fatality and injury collisions on interstate and state routes by 4 percent, is related to traffic safety, but does not include measures specific to pedestrian and bicycle safety at this time.

### ***The Washington State Strategic Highway Safety Plan: Target Zero***

Washington's Strategic Highway Safety Plan: Target Zero (SHSP), developed with the cooperation of the Governor's office and numerous state agencies, departments, and commissions, is the primary document guiding the State on how to significantly

reduce traffic fatalities and disabling injuries. The goal of Target Zero is to achieve zero traffic fatalities and disabling injuries by 2030. To do this, the State must reduce the over 600 fatal crashes that occur each year in Washington. Between 2003 and 2006, data from the Fatality Analysis Reporting System (FARS) shows that 11 percent of people who died in traffic collisions were pedestrians and 2 percent were bicyclists.

In addition to the overarching safety goal, Washington's SHSP identifies a series of objectives to be met in the area of pedestrian safety and related actions to help move toward to broader goal of zero traffic fatalities over time. These include:

*A. Improve Pedestrian and Motorist Safety Awareness and Behavior*

1. Continue to provide education, outreach, and training
  - Distribute School Zone Safety Curriculum Kit and Resource Guide and the School Administrator's Guide to School Walk Routes and Student Pedestrian Safety
  - Improve pedestrian and motorists' safety awareness and behavior.
  - Focus education efforts on improving public understanding of Washington's crosswalk laws and the positive effects of targeted crosswalk enforcement
  - Expand the printed education materials to include multiple languages
  - Educate judges on pedestrian laws and targeted crosswalk enforcement projects
  - Continue to build partnerships designed to reduce the incidence of pedestrian fatalities
  - Use community traffic safety task forces to address pedestrian safety issues
  - Implement programs (engineering, enforcement and education) to influence impaired pedestrians. Solutions for improving the built environment should focus on appropriate zoning, crossing treatments and other safety improvements near high speed, high volume, multilane arterials
2. Expand enforcement campaigns.
  - Expand cross walk enforcement
  - Improve academy and in-service pedestrian safety education for law enforcement officers at State and local levels, including pedestrian collision investigation training

*B. Improve Pedestrian Facilities*

1. Update existing and develop new warrants, guides, and standards for the safe accommodation of pedestrians
2. Develop programs to improve pedestrian safety accommodations at intersections and interchanges.
3. Implement pedestrian safety programs targeting pedestrian crash concerns in major urbanized areas and select rural areas with the construction of additional pedestrian facilities
  - Provide safer crossings
  - Reduce pedestrian exposure to vehicular traffic

- Improve sight distances and/or visibility between motor vehicles and pedestrians
- Reduce vehicle speeds

#### *C. Improve Safety for Children Walking to School*

1. Maintain dedicated school zone safety funding and encourage enforcement of school zone traffic laws
2. Fully use WSDOT safe routes to school grant opportunities
3. Install computer controlled and timed school zone flashing lights at K-12 schools

#### *D. Improve Data and Performance Measurers*

1. Inventory existing pedestrian infrastructure and identify deficiencies

## ***The WSDOT Business Directions – Strategic Plan***

WSDOT's Business Directions Strategic Plan guides the agency's business directions for 2007 through 2011. It offers six strategies related to safety, maintenance, and rehabilitation of highway and bridge facilities, as well as on-time and on-budget delivery of capital improvement projects, performance reporting to the public, and maintaining its workforce. Under each of the six strategies identified in the Plan there is a list of specific performance measures. Several of the performance measures focus specifically on bicycle and pedestrian facilities and services including:

- Strategy: Evaluate un-marked/un-signed/un-lit pedestrian crossings
- Performance Measures:
  - Percentage reduction in pedestrian and bicycle collisions
  - Percentage reduction in pedestrian fatalities at crosswalks
- Strategy: Increase non-motorized trips in urban areas
- Performance Measures:
  - Miles of bike lanes completed
  - Miles of sidewalk completed
  - Reduce bike and pedestrian hazard locations

## ***WSDOT's Gray Notebook***

WSDOT's Measures, Markers and Mileposts, also called the [Gray Notebook](#), provides quarterly reports on agency and transportation system performance. The purpose of the Gray Notebook is to keep WSDOT accountable to the Governor, the Legislature, Washington State citizens, and transportation organizations.

Bicycle and pedestrian safety benchmarks and performance measures have been highlighted in six quarterly updates of the Gray Notebook since it started in 2002. The specific performance measures reported include:

- Pedestrian and bicycle fatality rates by State
- Most frequent factors in vehicle/pedestrian or bicyclist collisions on State Highways
- Funding dedicated to Safe Routes to Schools
- Percentage of pedestrian and bicycle fatalities compared to all traffic related fatalities
- Washington metro areas standing among large national metro areas for pedestrian fatalities
- Location of pedestrian fatalities (e.g., shoulder, crosswalk, off-roadway)
- Portion of pedestrian and bicycle fatalities occurring in urban vs. rural areas
- Pedestrian and bicycle fatalities by route class and speed
- Pedestrian and bicycle fatalities by at-risk age (Ages 0-14 and 71+)
- Pedestrian fatality rates by race and ethnicity.

**Report B** highlights the specific information presented in these updates.

### ***2007 Transportation Policy Reporting Requirements***

In 2005, a legislatively-created transportation audit board reviewed transportation statutes, benchmarks, and other investment criteria with the goal of simplifying WSDOT's numerous investment instructions and reporting requirements. These included nine Statewide Transportation Benchmarks, the Governor's Priorities of Government-based budgeting, Performance Auditing, Government Management Accountability Program ([GMAP](#)) reporting and legislatively mandated capital investment criteria.

The 2005 study recommended a model based on the state of Maryland, which requires a 20-year plan based on goals and objectives that are linked to an annual consolidated transportation plan. The annual plan includes six-year listing of programs and projects, and an annual report on the attainment of transportation goals and benchmarks.

### **New Policy Goals**

The 2007 Legislature implemented the study's recommendations, and repealed the existing nine transportation benchmarks and established five policy goals that did not codify specific benchmarks and performance measures. The state's policy goals for the planning, operation, performance of, and investment in, the state's transportation system are as follow:

**Preservation:** to maintain, preserve, and extend the life and utility of prior investments in transportation systems and services;

**Safety:** to provide for and improve the safety and security of transportation customers and the transportation system;

**Mobility:** to improve the predictable movement of goods and people throughout Washington State;

**Environment:** to enhance Washington’s quality of life through transportation investments that promote energy conservation, enhance healthy communities, and protect the environment; and

**Stewardship:** to continually improve the quality, effectiveness, and efficiency of the transportation system.

The legislation directs the Washington State Office of Financial Management ([OFM](#)) to establish objectives and performance measures for state transportation agencies for these goals, and submit an attainment report to the Legislature and the Governor. The initial set of objectives and measures for these five policy goals, and the first baseline report was published December 2007. This first version did not include specific performance measures focused on walking and bicycling.

### ***Washington State Physical Activity and Nutrition Plan***

Washington State Department of Health (DOH) produces Washington State’s Physical Activity and Nutrition Plan. The Plan finds that, at a minimum, adults need 30 minutes of moderate physical activity five or more days per week or 20 minutes of vigorous physical activity three or more days per week. In 2005 about two-thirds of Washington adults met these recommendations for physical activity. DOH studies find that many people want to get regular exercise, but the demands of work and family life, limited financial resources and other barriers may interfere with good intentions to live a healthier lifestyle.

The DOH Plan also finds that residents who walk and bicycle for recreation often use streets and roads. “Safety” is one of the most important attributes of a recreational setting, and motor vehicle traffic can be an intimidating and real threat to pedestrian and bicycle safety. The Plan notes that local trails and paths that are separated from traffic are safer than streets and roads.

DOH sets out several goals in the Physical Activity and Nutrition Plan that are related to bicycle and pedestrian transportation including:

Objective 1: Increase the number of people who have access to free or low cost opportunities for physical activity.

- Priority Recommendation A: Provide adequate funding for state and local recreational sites and facilities (e.g., paths and trails).
- Priority Recommendation B: Develop model policies to increase access to public facilities for physical activity.
- Priority Recommendation C: Increase the number of worksites including healthcare and school settings that have policies to enhance physical activity opportunities.

## **Governor's Climate Challenge**

Washington's Governor signed Executive Order No. 07-02 on February 7, 2007, declaring Washington's commitment to address climate change and setting goals for reducing greenhouse gas emissions, increasing clean energy jobs, and reducing expenditures on imported fuel. The Governor directed the Department of Ecology and other partners to recommend policies for meeting these goals as well as steps the state can take to prepare for the impacts of climate change and ensure all Washingtonians are informed and engaged around these issues.

The overarching goals in the Executive Order include:

- **Reducing Climate Pollution.** By 2020, Washington will reduce greenhouse gas emissions to what they were in 1990, and then reduce them by another 25 percent by 2035. By 2050, emissions from Washington will be 50 percent below our 1990 levels.
- **Growing the Clean Energy Economy.** Washington will continue to be a leader in the clean energy economy, with 25,000 jobs in this sector by 2020, a three-fold increase.
- **Moving Toward Energy Independence.** Washington will continue to grow our renewable fuel industry to help us move toward energy independence. Washington will reduce the amount we spend on imported fuel by 20 percent by 2020.

The Governor's Climate Challenge has also identified several goals focused specifically on bicycle and pedestrian transportation. The Transportation Working Group Report, written by the experts that focused on transportation as part of the Governor's Climate Challenge, states:

To succeed, policy initiatives to reduce automobile use and promote compact communities must be accompanied by policies and funding to make it easier to walk and bike. There is a growing body of research demonstrating that communities with traditional neighborhood design, connected pedestrian and bicycle networks, available transit and a rich mix of uses are strongly correlated with decreased automobile use.

One obstacle to success is that prior planning for local streets has often prioritized the movement and storage of cars over walking and biking. Another obstacle is that local governments do not have sufficient funding resources to maintain basic street infrastructure and invest in biking and walking.

Further, they recommend that, "the state explicitly prioritize funding for transportation facilities that support biking and walking, as well as provide significant new taxing authority for local government to support these priorities. This would be accompanied by

policies at the state and local level to require that projects are designed to encourage biking and walking needs (e.g., context sensitive design).

The Governor's Climate Challenge establishes the goal of "Increasing the bicycle and walking mode share (all trips) in Washington urban growth areas to 15 percent by 2020."

In order to accomplish this goal, the Transportation Working Group identified the following implementation mechanisms:

1. Acknowledge in state law the need to support local walking and biking trips as a critical strategy in solving regional and statewide transportation needs, and align transportation spending to support growth management revisions proposed in this set of recommendations.
2. Adopt Complete Streets as a policy for state roads.
3. Require, or provide incentives, to localities to adopt Complete Streets policies, including qualifications for funding for local improvements.
4. Revise Highway Design Manual to facilitate bicycle and pedestrian movement on and across state roads.
5. Provide localities with new taxing authority for local improvements and actions, including ADA transition planning and needs, mobility education, and improvements associated with maintenance projects and Complete Streets. Such taxes should encourage less driving, more efficient vehicles or both.
6. Fund State Bicycle and Pedestrian Programs at \$150 million in the first year, expanding in the future to meet the needs identified by a more robust bicycle and pedestrian planning process.
7. Elevate the status of the Bicycle and Pedestrian Advisory Board by having it appointed by the Governor.
8. Provide grants and technical assistance to localities taking growth under the Growth Management Act, to encourage good street design, fill in gaps in bicycle and pedestrian networks, and support building permitting decisions that support walking and biking (e.g., street design, bicycle parking and showers in buildings.)
9. Track trip modes, and the quality of the bicycle and pedestrian network, with support from RTPOs.

## Chapter E.4 Examples from Other States

With the increasing amount of federal spending on pedestrian and bicycle facilities and programs throughout the U.S. since the early 1990s, there have been more efforts at all levels of government to establish non-motorized transportation performance measures. While some state agencies have collected data on pedestrian and bicycle use and facilities to benchmark the progress of non-motorized transportation programs, the lack of performance measures for bike and pedestrian accommodation is a problem throughout state departments and agencies of transportation. The performance measures that do exist are often not routinely measured.

Non-motorized performance measures can be difficult to establish because they require data that does not currently exist. The most common data available to states are census journey-to-work data and police-reported crash data. Both of these sources have limitations. The census does not include non-motorized trips that are linked with transit, such as walking to the bus on the way to work, or non-motorized travel for recreational, social, or shopping purposes. Police-reported crash data are limited to collisions that are reported to the police and entered into police reports correctly. Some states have begun to address this problem; Vermont has instituted a new police crash report form that appears to be capturing more pedestrian and bicycle related information. However, under-reporting of pedestrian and bicycle crashes remains an important limitation nationally.

Historically, there have been few consistent, established methods of counting, surveying, and inventorying non-motorized facilities or their use around the country. This is finally changing as more consistent methods are being developed in several states, and the Federal Highway Administration has produced a report to share these methods and suggest strategies for improving data collection. Even with consistent methodologies, agencies often need to make significant initial investments to establish new pedestrian and bicycle data collection procedures that can be used to track performance measures over time.

*Bicycle and Pedestrian Data: Sources, Needs, and Gaps* (Bureau of Transportation Statistics 2000) recognizes the problems of underreporting pedestrian and bicycle trips. Underreporting is often the result of pedestrian and bicycle trips being shorter. Two of the most important needs identified in that report, which could be addressed with improved household transportation surveys, are:

- Overall indicators of usage and trends in usage, such as numbers of people who bicycle or walk; total numbers of bicycle or walk trips; mode shares; and miles of travel by non-motorized modes.
- Better data on characteristics of pedestrian and bicycle trips and tripmakers, including distributions of trips by distance, purpose, and time of day; distributions of travelers and trips according to demographic and socioeconomic characteristics.

States that have established pedestrian and bicycle performance measures and were reviewed for this document include: Arizona, Florida, Illinois, Maryland, Massachusetts, New Jersey, Oregon, Tennessee, Vermont, and Wisconsin. Several general observations can be made about the performance measures in these states.

### ***Different Levels of Commitment to Bicycle and Pedestrian Transportation***

The state performance measures that were reviewed can be classified into two categories.

The first category includes performance measures that state simply that pedestrian or bicycle use should “increase” or crashes should “decrease”. This is a weaker measure, as it does not set a measurable goal for the *amount* of increase or decrease. New Jersey DOT provides a good example of this type of policy; **Appendix B** provides more information on NJDOT’s performance measures. States like Washington and Vermont, may not use the words “increase” or “decrease” in their performance measures, but they are also included in this category because their measures imply that performance will be tracked over time and evaluated on an upward or downward trend.

The second category includes the very few states that have strengthened their policies and in a few cases their laws by specifying that non-motorized improvement should occur in specific types of transportation projects and/or within a specific time period. There are currently four states, Massachusetts, Oregon, Rhode Island, and most recently Illinois, that have state laws requiring the state department of transportation to accommodate bicycles and pedestrians into the design and construction of every project.

Tennessee DOT’s performance measures also fall into this category. They include statements such as (under Measure 2): “*Pedestrian Facilities: Sidewalks or walkways on one or both sides of roadway will be provided on 70 percent of all TDOT and local agency roads carrying more than 10,000 vehicles per day and in developed areas by 2010, 80 percent by 2015, and 90 percent by 2020.*” **Appendix B** includes a full list of Tennessee DOT’s performance measures.

Performance measures can address many different aspects of a state pedestrian and bicycle program. The states that were reviewed included performance measures in the following categories:

- *Safety.* Measures of pedestrian and bicycle crashes. Examples include the number of serious injury or fatal pedestrian or bicycle crashes within an area or the percentage of all crashes that involve pedestrians and bicyclists. Note that the best types of safety performance measures account for pedestrian and bicycle usage, or exposure.

- *Usage.* Measures that document how many people are bicycling and walking, or the percent of all trips that are made by pedestrian and bicycle modes. These are typically based on count, census, or survey data.
- *Facilities.* Measures of non-motorized facility provision. Examples are miles of roadway with sidewalks on both sides, miles of roadways with paved shoulders, miles of greenway paths, and percent of intersections with curb ramps or pedestrian signals.
- *Education/Enforcement.* Measures of the number of people educated on pedestrian and bicycle safety or behavior. Includes percentage of students taught in pedestrian and bicycle safety education classes, percent of bicyclists wearing helmets, or number of drivers cited for not yielding to pedestrians in crosswalks.
- *Land use.* Measures of land use development in relation to the location and quality of non-motorized facilities. Florida's Quality of Service is an example.
- *Institutionalization.* Measures that address operating procedures related to non-motorized transportation within organizations. Examples include the total amount spent on pedestrian and bicycle programs by the state DOT, the number of employees that are trained on pedestrian and bicycle design, the number of local governments that prepare pedestrian and bicycle plans, or the number of citizens that are members of pedestrian and bicycle advocacy groups.

### ***Establishing the Best State Performance Measures***

Based on the review of performance measures from several states, the best bicycle and pedestrian performance measures:

- Are related to the goals of the state bicycle and pedestrian plan;
- Provide a description of the data that need to be collected;
- Use data that can be collected cost-effectively;
- Are quantifiable and time-constrained (e.g., provide 50 additional miles of bike lanes on state-owned roads by 2010);
- Can be reported at regular intervals, such as in an annual bicycle performance measures report; and
- Serve as a benchmarking tool to measure how well the agency's practices match with its stated policies.

DRAFT

## Chapter E.5 Establishing Goals, Benchmarks and Performance Measures

### Goals

After conducting a review of federal guidance, and existing state, local and regional plans within Washington and in other states, common goals clearly emerge. Local and regional agencies, FHWA, the Governor's Climate Challenge, WSDOT's Business Directions Strategic Plan, Washington Department of Health's Physical Activity and Nutrition Plan, and Washington's State Highway Safety Plan – Target Zero all establish specific measures in pursuit of a shared goal and several call out the same goals:

- Double the percentage of total trips made by bicycling and walking in Washington from 6 percent to 15 percent of all travel trips; and
- Simultaneously reduce by 10 percent the number of bicyclists and pedestrians killed or injured in traffic crashes.

Washington should consider supporting this goal for improving conditions for bicycling and walking because of its comprehensive nature and pre-existing support at many levels of government. This simple goal also meets the recommended criteria for best practice in performance measurement outlined within this report. Possibly most importantly, this goal is consistent with the new Transportation Policy Goals established by the 2007 State Legislature (RCW 47.01.012). The goals should be refined however to establish a timeframe within which to accomplish the goal; 20 to 25 years is suggested as the maximum time allotted to achieving these goals.

### ***Performance Measures, Benchmarks, and Implementation Strategies***

In addition to establishing an overarching goal for improving conditions for bicycling and walking, a comprehensive list of existing and proposed benchmarks and performance measures have been identified to help Washington meet this goal. These existing and proposed benchmarks and performance measures are grouped into four primary categories, based on the six categories of performance measures identified from the review of other states, modified by the outcome of the public opinion survey and public hearings summarized in **Report A**.

### **Safety**

This category relates to the safety of pedestrians and bicyclists in Washington State. **Table E.5-1** presents suggested performance measures and associated benchmarks relating to safety. Tracking or continuing to track at least some of the following measures outlined in **Table E.5-1** will help Washington State understand how it is

moving toward the goal of reducing pedestrian and bicycle fatal and injury crashes by 10 percent over the suggested 20-year planning horizon.

**Table E.5-2** provides a list of implementation strategies that have been adopted as part of Washington's State Highway Safety Plan along with additional steps to move toward the 20-year goal.

**Table E.5-1. Pedestrian and Bicycle Safety Benchmarks and Performance Measures**

<i>Measure</i>	<i>Existing/ Proposed</i>	<i>Latest Date /Source</i>	<i>Summary Existing Conditions(2006)/Benchm ark</i>
Number of annual bicycle or pedestrian crashes.	Existing	400 average annual	0 by 2030
Number of annual fatal bicycle or pedestrian crashes.	Existing	88 average annual	0 by 2030
Washington's Rank Among State's for Bicyclist and Pedestrian Fatalities	Existing	2002 WSDOT	15th Lowest for Pedestrian Fatalities, and 11th Lowest for Bicyclist Fatalities / Lowest
Percentage of Pedestrian and Bicycle Fatalities of All Traffic Fatalities	Existing	2004 WSDOT	14% of All Traffic Related Fatalities - 6% of All Trips / Reduced by 4% per year
Washington Metro Areas Rank for Pedestrian Fatalities	Existing	2004 Mean Streets	2004 – Seattle-Tacoma-Bremerton 10 <sup>th</sup> Worst in the Nation with 18% of Traffic Fatalities that were pedestrians / Best
Pedestrian and Bicycle Fatalities For At-Risk Groups (Ages 0-14 and 71+)	Existing	2006 WSDOT	99-06- 27% of Pedestrian Fatal Collisions involved People in At-Risk Age Groups / O by
Percentage Reduction in Pedestrian Fatalities at Crosswalks	Existing	2004 WSDOT	15% in Crosswalk; 51% Where Marked Crossing not Available/ Reduced by 4% per year
Federal Funding Spent on Pedestrian and Bicycle Safety in WA	Existing – SAFETEA-LU Requires	2008 WA State Bike-Ped Plan	Currently N/A
Annual Funding for Safe Routes to Schools	Existing	2003 WSDOT	2005-06 - \$3 Million / 30% of SR2S Budget
Number of Cities and Counties with Adopted Bicycle Helmet Ordinances	Existing	2004 WSDOT	23 / 100%

**Table E.5-2. Potential Implementation Steps (Based on State Highway Safety Plan)**

<b>A. Improve Pedestrian, Bicyclist and Motorist Safety Awareness and Behavior</b>	
1. Continue to provide education, outreach, and training	
	<ul style="list-style-type: none"> <li>• Educate judges and law enforcement officials on bicycle and pedestrian laws and targeted enforcement efforts.</li> </ul>
	<ul style="list-style-type: none"> <li>• Institute Mobility Education Programs in place of Drivers Education Classes</li> </ul>
	<ul style="list-style-type: none"> <li>• Distribute School Zone Safety Curriculum Kit and Resource Guide and the School Administrator's Guide.</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve pedestrian, bicyclist and motorist safety awareness and behavior.</li> </ul>
	<ul style="list-style-type: none"> <li>• Focus education efforts on improving public understanding of Washington's crosswalk laws and the positive effects of targeted crosswalk enforcement.</li> </ul>
	<ul style="list-style-type: none"> <li>• Expand the printed education materials to include multiple languages.</li> </ul>
	<ul style="list-style-type: none"> <li>• Continue to build partnerships designed to reduce the incidence of pedestrian and bicycle fatalities.</li> </ul>
	<ul style="list-style-type: none"> <li>• Use community traffic safety task forces to address pedestrian and bicycle safety issues.</li> </ul>
	<ul style="list-style-type: none"> <li>• Implement programs (engineering, enforcement and education) to influence impaired pedestrians. Solutions for improving the built environment should focus on appropriate zoning, crossing treatments and other safety improvements near high speed, high volume, multilane arterials.</li> </ul>
2. Expand enforcement campaigns.	
	<ul style="list-style-type: none"> <li>• Expand targeted enforcement.</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve academy and in-service bicycle and pedestrian safety education for law enforcement officers at State and local levels, including pedestrian collision investigation training.</li> </ul>
<b>B. Improve Bicycle and Pedestrian Facilities</b>	
1. Update existing and develop new warrants, guides, and standards for the safe accommodation of pedestrians and bicyclists.	
2. Develop programs to improve pedestrian safety accommodations at intersections and interchanges	
3. Implement safety programs targeting pedestrian and bicycle crash concerns in major urbanized areas and select rural areas with the construction of additional facilities.	
	<ul style="list-style-type: none"> <li>• Provide safer crossings.</li> </ul>
	<ul style="list-style-type: none"> <li>• Reduce exposure to vehicular traffic.</li> </ul>
	<ul style="list-style-type: none"> <li>• Improve sight distances</li> </ul>
	<ul style="list-style-type: none"> <li>• Reduce vehicle speeds in urban areas and centers.</li> </ul>
<b>C. Improve Safety for Children Walking and Biking to School</b>	
1. Maintain dedicated school zone safety funding and encourage enforcement of school zone traffic laws.	
2. Expand Safe Routes to Schools grant opportunities.	
3. Install computer controlled and timed school zone flashing lights at K-12 schools.	
<b>D. Improve Data and Performance Measures</b>	
1. Improve data collection tools to collect additional information about motor vehicle speeds and pedestrian and bicycle collision contributing factors.	

**Mobility (Usage and Facilities)**

Because the amount of safe bicycling and walking that occurs in Washington State is dependent, in part, on the available facilities, the performance measure categories relating to usage and facilities is recommended to be combined into a single category focusing on the mobility. **Table E.5-3** presents potential performance measures relating to pedestrian and bicyclist mobility. **Table E.5-4** provides a list of implementation strategies that have been adopted as part of the Governor's Climate Challenge along with additional steps to move toward the 20-year goal. Tracking or continuing to track some or all of the following measures will help Washington State understand how it is moving toward the goal of increasing bicycling and walking from 6 percent of all trips to 15 percent of all trips over the 20-year planning horizon.

**Table E.5-3. Pedestrian and Bicycle Mobility Benchmarks and Performance Measures**

<i>Measure</i>	<i>Existing/ Proposed</i>	<i>Benchmark Date/Source</i>	<i>Summary Existing Conditions (2006)/ Benchmark</i>
			TBD / TBD
Miles of bike lanes constructed per year	Existing	2002 WSDOT	TBD / TBD
Miles of sidewalk constructed per year	Existing	2003 WSDOT	TBD / TBD
Total linear miles of designated bicycle facilities – bike lanes and shared use paths		WSDOT	TBD / TBD
Total linear miles of sidewalks on state routes in Regional Centers	Existing	WSDOT	TBD / = to number of miles of state routes
Total linear miles of sidewalks	Proposed	WSDOT	
Percent of state routes that are bicycle compatible as defined by WSDOT’s Bicycle Compatibility Index.	Existing	WSDOT	TBD / 100%
Number of Cities and Counties with Current Bicycle & Pedestrian plans	Proposed	2007 WSDOT	80% / 100%
Portion of State, Regional and Local Transportation Agencies with Adopted ADA Transition Plans/Implementing ADA Transition Plans	Proposed	2007 FHWA	0 / 100%
Percentage of students walking and bicycling to and from school for all schools in the State.	Proposed		TBD / TBD
Percentage of Students from Schools Participating in the Safe Routes to School Program Walking to School	Proposed	2007 WSDOT/DOH	TBD / TBD
Percentage of schools participating in the Safe Routes to School Program	Proposed		TBD / 100%
Percentage of State, Regional and Local Agencies or municipalities with Adopted Complete Streets Type Policy/Implementing Complete Streets concepts	Proposed	2008 Washington Bike-Ped Plan	TBD / 100%
Non-motorized counts on State Highways, Major Arterials and Trails in Urban Areas and Centers	Proposed	2008 Washington Bike-Ped Plan	TBD / TBD
Federal Funding Spent Annually on Pedestrian and Bicycle Mobility in Washington State	Existing – SAFETEA-LU Requires	2008 WA State Bike-Ped Plan	Currently N/A /TBD
Percent of completed construction projects that have incorporated appropriate pedestrian and bicycle accommodations.	Proposed	WSDOT	TBD / TBD
Percent of transit facilities that have bicycle parking and/or are bicycle and pedestrian accessible.	Proposed	WSDOT	TBD / 100%
Percent of appropriate transit vehicles that can accommodate bicycles.	Proposed	WSDOT	TBD / 100%
Percent of government buildings that have secure bicycle parking available.	Proposed		TBD / 100%

**Table E.5-4. Potential Implementation Steps (Governor’s Climate Challenge)**

1. Acknowledge in state law the need to support local walking and biking trips as a critical strategy in solving regional and statewide transportation needs, and align transportation spending to support growth management revisions proposed in this set of recommendations.
2. Adopt Complete Streets as a policy for state roads.
3. Require, or provide incentives, to localities to adopt Complete Streets policies, including qualifications for funding for local improvements.
4. Revise Highway Design Manual to facilitate bicycle and pedestrian movement on and across state roads.
5. Provide localities with new taxing authority for local improvements and actions, (including ADA transition planning and needs, mobility education, and improvements associated with maintenance projects and Complete Streets). Such taxes should encourage less driving, more efficient vehicles or both.
6. Fund State Bicycle and Pedestrian Programs at \$150 million in the first year, expanding to meet the needs identified by a more robust bicycle and pedestrian planning process.
7. Elevate the status of the Bicycle and Pedestrian Advisory Board by having it appointed by the Governor.
8. Provide grants and technical assistance to localities taking growth under the Growth Management Act, to encourage good street design, fill in gaps in bicycle and pedestrian networks, and support building permitting decisions that support walking and biking (e.g., street design, bicycle parking and showers in buildings.)
9. Track trip modes, and the quality of the bicycle and pedestrian network, with support from RTPOs.

### Education and Enforcement

In order to reach the goals of increased bicycling and walking with matching reductions in pedestrian and bicycle crashes, it will be necessary to provide greater education and encouragement to Washington State residents to walk and bicycle. **Table E.5-5** presents several performance measures that can be used to track how much education and encouragement is being offered in the state. Tracking or continuing to track some or all of the following measures will help Washington State gauge how much it is doing to educate residents on the skills and knowledge needed to walk and bike safely. **Table E.5-2** outlines several implementation steps that Washington State can take to increase the bicyclist and pedestrian education and encouragement.

**Table E.5-5. Education and Enforcement Benchmarks and Performance Measures**

<i>Measure</i>	<i>Existing/ Proposed</i>	<i>Benchmark Date/Source</i>	<i>Summary Existing Conditions (2006)</i>
Count of State, Regional and Local Transportation personnel receiving Universal Design Training	Existing	2004 WSDOT	TBD / TBD
Percentage of Schools Offering Mobility Education (High Schools, Middle Schools and Elementary Schools)	Proposed		TBD / TBD
Number students participating in pedestrian or bicycle safety education programs or events. (e.g., Safe Routes to School, Bike Smart, etc.)	Proposed		TBD / TBD
Percent of students receiving bicycle and/or pedestrian skill training or education.	Proposed		TBD / TBD
Safety program expenditures devoted to bicycle and pedestrian safety education and awareness.	Proposed		TBD / TBD
Level of funding spent on media or advertising that promotes bicycling and walking.	Proposed		TBD / TBD

## Public Health and the Environment

To track the impacts that bicycling and walking can have on public health and the environment is not a simple task. Several performance measures are presented here that can provide some related measures that can begin to give some idea of the impacts. Tracking or continuing to track the following measures outlined in **Table E.5-6** will help Washington begin to understand the relationship between movement toward the goal of increasing bicycling and walking from 6 percent of all trips to 15 percent of all trips and public health and the environment.

**Table E.5-7** provides a list of implementation strategies that have been adopted as part of the Washington’s Physical Activity and Nutrition Plan along with additional steps to move toward the 20 year goal.

**Table E.5-6. Pedestrian and Bicycle Health and Environment Benchmarks and Performance Measures**

<i>Measure</i>	<i>Existing/ Proposed</i>	<i>Benchmark Date/Source</i>	<i>Summary Existing Conditions (2006)/ Benchmark</i>
Health Impact Assessments Conducted as Part of Transportation Related Environmental Impact Statements	Proposed	2008 WA State Bike-Ped Plan	1 to date /TBD
The Number of People with Access to Free or Low Cost opportunities for Physical Activity.	Existing	2007 DOH	TBD / TBD
The Number of People Living within a walkable or bikable distance to goods and services.	Existing	2007 DOH	75% of Washington residents live within a 10-minute walk of one community destination (e.g. school, grocery store, bank, post office); 20% live close to six community destinations / TBD
Green House Gas/Emissions Reductions Attributed to Installation of Bicycle and Pedestrian Facilities (i.e., Bay Area Air Quality Management District, Performance Review of Selected TFCA Project Types. August 2006.)	Proposed	2008 WA State Bike-Ped Plan	TBD
Federal Funding Spent on Pedestrian and Bicycle Projects to Improve Public Health and the Environment	Existing – SAFETEA-LU Requires	2008 WA State Bike-Ped Plan	Currently N/A /TBD

**Table E.5-7. Potential Implementation Steps (Washington’s Physical Activity and Nutrition Plan)**

<b>Objective 1: Increase the number of people who have access to free or low cost opportunities for physical activity.</b>
Provide adequate funding for state and local recreational sites and facilities (e.g., paths and trails).
Develop model policies to increase access to public facilities for physical activity

## ***Timeframes, Targets and Implementation***

Each of the recommended performance measures should have performance targets established for five years in the future. Tables E.5-1, E.5-3, E.5-5, and E.5-6 show the existing conditions and the limited number of five year targets that can now be recommended for each of the performance measures.

In some cases, baseline data are still needed to establish specific performance targets. After the baseline data are collected, five-year performance targets should be set for the remaining measures. Collecting this additional data will take the collaborative effort of several state agencies as well as regional and local agency participation.

Note that the targets that are established do not necessarily need to show an increase or decrease. For example, a target could be set to maintain a certain percentage of pedestrian and bicycle facilities throughout the State at a constant level of quality.

Like other states, Washington is limited by the lack of data that are available from national data sources. However, there are currently efforts to improve these data sources. Proposals include revising the U.S. Census to include more questions about transportation other than journey to work trips and increasing the sample size of the NHTS (National Household Travel Survey) so that travel trends can be analyzed at the state level. In the long-term, Washington will continue to take advantage of improvements in national survey data to include other performance measures on pedestrian and bicycle use.

DRAFT

## Appendix A - Inventory of Local Bicycle and Pedestrian Plans

City Name	City has a Bicycle and Pedestrian Plan in Place	The Plan Includes Urban Planning Approaches that Support Physical Activity (GMA 2005)	The Plan Links Biking and Walking, Public Health and the Environment
Airway Hts	●		
Arlington	●	●	
Auburn	●		
Bainbridge	●		
Battle Ground	●	●	
Bellevue	●	●	
Bellingham	●	●	
Blaine	●		
Bonney Lk	●	●	
Bothell	●	●	
Bremerton	●	●	
Brier	●		
Buckley	●	●	
Burien	●	●	
Burlington	●		
Camas	●	●	
Castle Rock	●	●	
Centralia	●		
Chehalis	●		
Chelan	●	●	
Cheney	●		
Cle Elum	●		
Concrete	●	●	
Coulee City	●	●	
Covington	●	●	
Des Moines	●	●	
Dupont	●	●	
Duvall	●		
Edgewood	●	●	
Edmonds	●		
Ellensburg	●		
Enumclaw	●	●	
Everett	●	●	
Federal Way	●	●	
Ferndale	●		
Forks	●		
Friday Harbor	●		
Gig Harbor	●		
Issaquah	●		
Kenmore	●	●	●
Kennewick	●	●	
Kent	●	●	
Kirkland	●	●	●

## Appendix A - Inventory of Local Bicycle and Pedestrian Plans

City Name	City has a Bicycle and Pedestrian Plan in Place	The Plan Includes Urban Planning Approaches that Support Physical Activity (GMA 2005)	The Plan Links Biking and Walking, Public Health and the Environment
LaConnor	●	●	
Lacey	●	●	
Lk Forest Pk	●	●	
Lk Stevens	●	●	
Lakewood	●	●	
Langley	●	●	
Leavenworth	●		
Liberty Lk	●	●	
Long Beach	●		
Longview	●	●	
Lynden	●	●	
Lynnwood	●	●	
Maple Valley	●		
Marysville	●	●	
Mercer Is	●	●	
Mill Creek	●	●	
Moses Lk	●	●	●
Mt Vernon	●	●	●
Mountlake Terr	●	●	
Mukilteo	●	●	
Newcastle	●	●	
Normandy Pk	●		
North Bend	●	●	
Oak Hbr	●		
Olympia	●	●	
Orting	●	●	
Pasco	●	●	
Pt Angeles	●	●	
Pt Orchard	●	●	
Pt Townsend	●	●	
Poulsbo	●		
Pullman	●	●	
Puyallup	●	●	●
Rainier	●		
Raymond	●		
Redmond	●	●	
Renton	●	●	
Richland	●	●	
Ridgefield	●	●	
Sammamish	●	●	
Sea-Tac	●		
Seattle	●	●	
Sedro-Woolley	●	●	

## Appendix A - Inventory of Local Bicycle and Pedestrian Plans

City Name	City has a Bicycle and Pedestrian Plan in Place	The Plan Includes Urban Planning Approaches that Support Physical Activity (GMA 2005)	The Plan Links Biking and Walking, Public Health and the Environment
Selah	●		
Sequim	●	●	
Shelton	●	●	
Shoreline	●	●	
Skykomish	●	●	
Snohomish	●	●	
Snoqualmie	●		
Spokane	●	●	
Spokane Valley	●	●	
Steilacoom	●	●	
Sultan	●		
Sumner	●	●	
Sunnyside	●	●	
Tacoma	●	●	●
Tenino	●		
Toppenish	●		
Tukwila	●		
Tumwater	●	●	
Univ Place	●		
Vancouver	●	●	●
Wenatchee	●	●	
Woodinville	●	●	
Yakima	●	●	
Yelm	●		



## APPENDIX B: Example State DOT Performance Measures

### New Jersey Department of Transportation

#### *Goal 1. Build the Infrastructure*

- Percent of transportation improvement projects that have been reviewed for consideration of bicycle and pedestrian facilities.
- Percent of highways that are bicycle and pedestrian compatible as defined in NJDOT Roadway Design Manual (pending adoption).
- Percent of or total amounts of capital and/or resources devoted to managing the accommodations of bicycling and walking.
- Percent of built projects that have incorporated appropriate pedestrian and bicycle accommodations.

#### *Goal 2. Improve Access*

- Percent of transit and recreation facilities that have bicycle parking and/or are bicycle and pedestrian accessible.
- Percent of government buildings that have secure bicycle parking available.
- Total number or linear miles of designated bicycle/pedestrian facilities.

#### *Goal 3. Update Policies, Ordinances and Procedures*

- Percent of site plans that are reviewed for bicycle and pedestrian accessibility.
- Percent of major destinations that are bicycle and pedestrian accessible.

#### *Goal 4. Educate and Enforce*

- Percent of students receiving bicycle and/or pedestrian skill training or education.
- Safety program expenditures devoted to bicycle and pedestrian safety education and awareness.
- Percent of law enforcement officials that have received bicycle and pedestrian safety education and enforcement training.
- Number of jurisdictions with police on bikes programs.

#### *Goal 5. Foster a Pro-Bicycling and Walking Ethic*

- Number of bicycle and pedestrian groups or citizen advisory bodies that advocate bicycling and walking.
- Level of funding spent on media or advertising that promotes bicycling and walking.

Source: New Jersey Statewide Bicycle and Pedestrian Master Plan, Phase 2, 2004

## Tennessee Department of Transportation

### *Measure 1: Measuring Safety Improvements*

1. Collision Reduction: A 10 percent reduction in bicycle and pedestrian collisions on state and local roads by 2010, and a 20 percent reduction by 2020. Collision reductions should be measured by jurisdiction as a rate against the number of people walking or bicycling to work as a primary mode of transportation from the latest U.S. Census source.

### *Measures 2, 3, 4, and 5: Completion of Facilities*

2. Pedestrian Facilities: Sidewalks or walkways on one or both sides of roadway will be provided on 70 percent of all TDOT and local agency roads carrying more than 10,000 vehicles per day and in developed areas by 2010, 80 percent by 2015, and 90 percent by 2020.
3. Bicycle Facilities: Adopted regional and statewide bikeway routes on TDOT roads will be 50 percent complete by 2010, 75 percent complete by 2015, and 100 percent complete by 2020.
4. ADA Facilities: ADA improvements, such as curb ramps, will be included as part of all major TDOT construction and re-construction (including repaving) projects. TDOT will identify existing ADA deficiencies on TDOT roadways and program sufficient funds to complete the top 10 percent of projects annually.
5. Bicycle and Pedestrian Plans: Achieve a 25 percent completion rate of bicycle and pedestrian plans to specific standards by all regions and counties in the state by 2010, 50 percent by 2015, and 100 percent by 2020.

### *Measures 6 and 7: Increases in Bicycling and Walking*

6. Bicycle and Pedestrian Mode Shares: Achieve a 5 percent increase annually in the mode share for bicycling and walking for utilitarian trips, work trips, school trips, transit-linked trips, and discretionary trips.
7. Bicycle and Pedestrian Counts: Achieve a 5 percent increase annually in bicycle and pedestrian counts at 40 selected locations around the state, taken during times to be established in the State Bicycle and Pedestrian Plan. Require all local agencies receiving more than \$500,000 annually in bikeway or pedestrian funding to conduct annual counts within these parameters for 5 years and report the count data to TDOT.

### *Measure 8: Training*

8. Training of TDOT Staff: Offer in-classroom bicycle and pedestrian training to 5 percent of TDOT staff annually, with a goal of 20 percent staff being trained by 2010, 30 percent by 2015, and 50 percent by 2020. Offer Web-based and interactive CD training to all TDOT staff by 2010.

Source: Final Draft Bicycle and Pedestrian Plan element of Tennessee Long Range Plan, August 2005.

### **New York State Department of Transportation**

1. **Increase Mobility:** New York State will meet or exceed the State's share of the USDOT National Bicycling and Walking Study goal of doubling the amount of bicycling and walking in the U.S. by increasing New York State bike/ped commuter trips by 15% (from 7.2% to 8.5% of all work trips) by the year 2015, and by meeting or exceeding the national goal of 16% of all trips, including trips to school, shopping, and other travel destinations.
2. **Improve Safety:** New York State will work to improve the safety of bicyclists and pedestrians of all ages and abilities, and meet or exceed the USDOT National Bicycling and Walking Study goal of a 10% reduction in the rate of bicyclist/pedestrian injuries and fatalities.
3. **Provide Accessibility:** New York State will work to ensure accessibility of bicycle and pedestrian transportation to all destinations, including work sites, schools, shopping areas, parks and public transportation, by integrating bicycling and walking into the local, regional and statewide transportation infrastructure.

Source: New York State Bicycle and Pedestrian Plan, 1997

### **Wisconsin Department of Transportation**

*State of Wisconsin FFY 2004 Highway Safety Performance Plan*

Pedestrian, Bicycle & Pupil Transportation Safety:

1. To decrease pedestrian crashes to 1,440 and combined fatalities (K) and serious (A) injuries to 300 by 2004; and decrease to 1,200 crashes and 300 K-A injuries by 2007 and to 1,000 crashes and 264 K-A injuries by 2009 from 1994 Baseline of 2,059 crashes and 576 pedestrians killed or incapacitates
2. To decrease bicyclist crashes to 800 and combined fatalities (K) and serious (A) injuries to 100 by 2004; to 600 crashes and 75 K-A injuries by 2007 and to 400 crashes and 50 K-A injuries by 2009 from 1994 Baseline of 1,644 crashes and 285 bicycle riders killed or incapacitated.

*Wisconsin Bicycle Transportation Plan 2020 (1998)*

1. Increase levels of bicycling throughout Wisconsin, doubling the number of trips made by bicycles by the year 2010 (with additional increases achieved by 2020).
2. Reduce crashes involving bicyclists and motor vehicles by at least 10% by the year 2010 (with additional increases achieved by 2020)

*Wisconsin Pedestrian Policy Plan 2020 (2000)*

1. Increase the number and improve the quality of walking trips in Wisconsin.
2. Reduce the number of pedestrian crashes and fatalities.
3. Increase the availability of pedestrian planning and design guidance and other general information for state and local officials and citizens.

**Maryland Department of Transportation***Pedestrian Travel Performance Measures*

1. Percentage of trips to work that were made by walking (MDOT\*)
2. Percentage of State-owned roadway centerline miles within Priority Funding Areas that have sidewalks. (SHA)\*
3. Number and rate per 1 million population of pedestrian fatalities and injuries on State highways. (SHA)\*

*Bicycle Travel Performance Measures*

1. Number and rate per 1 million population of bicyclist fatalities and injuries on State highways. (SHA)\*
2. Percentage of State-owned roadway centerline miles with a bicycle level of comfort (BLOC) grade of “D” or better. (SHA)\*
3. Percent of appropriate transit vehicles that can accommodate bicycles. (MTA)
4. Center-line mileage of State-owned highways with marked bike lanes. (SHA)
5. Percentage of trips to work that were made by bicycling.

*Bicycle and Pedestrian Travel Performance Measures*

1. Number of local jurisdictions implementing local ordinances which support bicycling and walking (MDOT)
2. Dollars committed to bicycle and pedestrian projects in the Consolidated Transportation Program (MDOT).

Agencies responsible for collecting and reporting the data are shown in parentheses. Items with an asterisk are monitored in the Annual Attainment Report issued by MDOT.

MDOT = Maryland Department of Transportation

MTA = Maryland Transit Authority (contained within MDOT)

SHA = State Highway Administration (contained within MDOT)

***Source: Maryland Department of Transportation Twenty Year Bicycle & Pedestrian Access Master Plan (2002)***

### **California Performance Measures/Benchmarks:**

California's Transportation Plan 2025 keeps track of a number of performance measures to track progress towards its goals. Under the goal of improving mobility and accessibility one performance measure is the level of "Coordinated Transportation & Land Use." This is measured by available travel choices, transportation modes available in key corridors and transportation centers, the percent of workers within 15, 30, 40, 60 minutes of their job, modal split, jobs within quarter or half-mile of transit stop, the percent of the total population within quarter or half-mile of transit stop.

Under the goal of "Enhancing Public Safety and Security," safety is measured by the number of fatal and injury collisions and rate of collisions. Another performance measure related somewhat to bicycle and pedestrian use is under the goal to "Enhance the Environment" and is measured by the ratio of fossil fuel use to passenger miles traveled, and other measures are still under development.

**The San Francisco Bay Area Metropolitan Transportation Commission** has worked to measure bicycle and pedestrian collision trends for several cities under their jurisdiction. Each pilot city was evaluated over a three-year period, typically from 1999-2002. The analysis examined four types of data for both bicycle and pedestrian collisions. These measures are similar to what those tracked by Washington State.

- **Collisions:** This information includes an analysis of the major causes of each collision, the locations of collisions, and the seasonal variation of collisions.
- **Conditions:** Environmental conditions at or near the collision site at the time of each crash were examined. This included an analysis of weather conditions, lighting conditions, and types of traffic control devices present.
- **Demographics:** This included a determination, by gender and age, of collision rates for bicyclists and pedestrians.
- **Locations:** This portion of the analysis includes a citywide map of bicycle and pedestrian collisions and other spatial analysis of different collision types.

The Bay Area Air Quality Management District has taken an innovative approach to measuring the performance of Transportation Fund for Clean Air (TCFA) projects. The Transportation Fund for Clean Air (TFCA) is "a grant program funded by a \$4 surcharge on motor vehicles registered in the Bay Area. This generates approximately \$22 million per year in revenues.

The purpose of the TFCA program is to provide grants to implement the most cost-effective projects in the Bay Area that will decrease motor vehicle emissions, and thereby improve air quality. Projects must be consistent with the 1988 California Clean Air Act and the [Bay Area Ozone Strategy](#)."

In a report titled “Performance Review of Selected TFCA Project Types” they evaluated the emission reduction cost-effectiveness of the following types of TFCA projects: (only kept ones relevant to us).

- Bicycle lockers, racks, and parking stations
- Bicycle racks on buses
- Traffic calming and pedestrian facility improvements
- Bicycle paths, lanes, and routes

An analysis of 74 projects was completed to determine the cost-effectiveness of each measured in dollar spent per ton of vehicle emissions reduced. The types of data necessary to measure the cost-effectiveness of the above project types is listed below:

#### Bike paths, lanes, routes

Conduct an extensive survey of users to obtain the following information:

- Current travel mode(s) and number of days per week using that mode(s)
- Prior travel mode(s) before project completion and number of days per week using that mode(s)
- Total one-way trip length

#### Bike lockers

The following assumptions are made:

- Bicycle locker projects – the number of vehicle trips eliminated per day is equivalent to a project’s bicycle locker capacity
- Bicycle rack projects – the number of vehicle trips eliminated per day is equivalent to half a project’s bicycle rack capacity

A user survey, in combination with usage counts, should include questions on the user’s:

- One-way trip distance
- Number of days per week facility is used
- Current travel mode(s) and number of days per week using that mode(s)
- Prior travel mode(s) before facility installation and number of days per week using that mode(s)

#### Bike racks on buses

This was not actually done by the study due to lack of data and cost of doing a survey.

- Usage counts
- An extensive survey of users that would include questions on:
  - Number of days per week currently using the bicycle+bus mode
  - Other current travel mode(s) and number of days per using the mode(s)

- Prior travel mode(s) before bike rack installation and number of days per week using the mode(s)
- Total trip length

#### Traffic calming/pedestrian facility improvements:

The study noted that this type of analysis would be most difficult to do because although research shows positive correlation between these types of projects and pedestrian activity, projects studied cover a wide area and statistics are used to control for outside factors. Therefore it is difficult to pinpoint effects in a single location or project. If an analysis was done on these types of projects, could do usage counts and a user survey:

- One-way trip distance
- Current travel mode(s) and number of days per week using that mode(s)
- Prior travel mode(s) before project and number of days per week using that mode(s)

The document *Pedestrian and Bicycle Facilities in California: A Technical Reference and Technology Transfer Synthesis for Caltrans Planners and Engineers* (July, 2005) acknowledges that it is challenging to present an accurate picture of bicycling and walking trends at the state level due to the cost of collecting data and the lack of good data sources. To remedy this, Caltrans is currently partnering with UC Berkeley's Institute for Transportation Studies on a research project entitled *Estimating Pedestrian Accident Exposure*. This project seeks to examine new technology and establish a methodology for counting and estimating pedestrian volumes.

A secondary data problem is the lack of uniformity in reporting pedestrian and bicyclist injury accidents. Because of the large number of unreported injury accidents, fatalities are usually used as the main nonmotorized safety indicator. It would be useful to develop a methodology for counting or estimating non-motorized injuries to develop safety indices more directly comparable to those used for vehicular safety.

It's also unclear how much money California spends on bicycle and pedestrian programs it is grouped in with other transportation spending so unclear what percent goes to bicycle and pedestrian projects.

The lack of good data is one of the largest problems confronting the field of pedestrian mobility and safety [see USDOT's *Bicycle and Pedestrian Data: Sources, Needs & Gaps* (2000)]. Without data, it is difficult to establish meaningful program performance measures or conduct trend analysis.

**Vermont**

**Performance Categories and Performance Measures**

<b>Performance Category</b>	<b>Performance Measure</b>	<b>Timeframe for Establishing Measure</b>
Usage	1. Number of minutes per day the average Vermont resident spends doing pedestrian and bicycle activity.	Mid-Term
	2. Change in percent of all workers who commute to work by walking or bicycling.	Current
	3. Number of pedestrians and bicyclists observed in different parts of Vermont.	Current
Safety	4. Police-reported pedestrian and bicycle crashes per number of minutes spent walking and bicycling.	Mid-Term
Facilities	5. Miles of sidewalk on State-owned roadways.	Long-Term
	6. Miles of shared-use paths.	Long-Term
	7. Total number of VTrans funded bicycle and pedestrian projects and new facilities.	Current & <i>Strategic</i>
Training and Assistance	8. Total number of VTrans staff and consultants (including regional planning commissions) and local officials who participate in scheduled training sessions on pedestrian and bicycle accommodation and design.	Mid-Term
Education and Encouragement	9. Increase in walking and bicycling to and from school for schools participating in Safe Routes to Schools programs.	Current & <i>Strategic</i>
	10. Number of schools and students participating in pedestrian or bicycle safety education programs or events. (e.g., Safe Routes to School, Bike Smart, etc.).	Mid-Term
Economic Benefits	<i>NO ON-GOING PERFORMANCE MEASURE</i>	Mid-Term: Action Item SBP4