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COMPLETE STREETS

Executive Summary

This Complete Streets White Paper is intended to inform a broad audience of the concepts behind the COMPASS Complete Streets policy and model, enabling the reader to grasp the relevance of Complete Streets within their community.

Part I of this document provides an introduction and definition of a multimodal context, including discussion of the policy basis for Complete Streets from the perspective of the federal and regional levels. The enactment of the COMPASS Complete Streets Policy is presented as an important milestone towards regional coordination and implementation of Complete Streets. Following the policy, background information regarding Complete Streets spanning from 2009, explores the process of software model selection and staff responsibilities performing Complete Streets analysis to date. Finally, the section explaining Complete Streets Level of Service Methodology details the regional attributes, qualities, and data used as inputs for the software as well as the types of results derived in the form of maps.

Part II of the document shifts the discussion to exploring the future of Complete Streets based on policy and planning trends from a national, state, and regional perspective. The upcoming and most recent version of the regional long-range planning document from COMPASS, Communities in Motion 2040, also offers several important insights into priorities and considerations concerning Complete Streets from a regional standpoint. A section devoted to perceived benefits and challenges, addresses the positive attributes and complexities pertaining to Complete Streets, providing an appropriate transition into the analysis of the COMPASS Complete Streets policy. The final portion of Part II concludes with next steps, pointing to financial and other relevant aspects to be considered, regarding the implementation of Complete Streets within the purview of federal, state, and local budgets.
PART I

Introduction

What are Complete Streets?

Complete Streets are street designs that consider all transportation modes including pedestrians, bicyclists, motorists, and public transportation, focusing on the operation of safe and accessible streets for all users. Complete Streets are for everyone regardless of age or ability, enabling multimodal transportation for all users, whether they are commuting by bicycle to work, walking to school, or just crossing the street.¹

The design of a Complete Street will vary throughout the Treasure Valley, depending on the context of the community. Some elements of a Complete Street include sidewalks and safe crossing opportunities for pedestrians, bicycle lanes (or wide shoulders), and accessible bus stops with benches or shelters. As a Complete Street will look different in urban settings versus rural settings, the overall theme emphasizes safety, accessibility, and convenience for all users.¹

Why Complete Streets?

Complete Streets promote a variety of benefits:

- Safety for all users
- Physical health
- Multimodal efficiency and accessibility
- Support economic development and placemaking

The COMPASS Complete Streets policy includes the following objectives:

- Identify how all users will be served when designing new or reconstructed roadways.
- Provide opportunities for involvement with stakeholders throughout the planning process.
- Consider context of existing and planned land uses.
- Provide practical and affordable solutions which balance user needs, construction costs, and environmental benefits.
- Network transportation modes to optimally connect homes, jobs, schools, shops, families and friends.
- Include appropriate access management practices for safe and efficient movement of users.
- Promote a visually appealing environment to improve the transportation experience.

(Adopted 8/17/09)

¹ http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals
COMPASS Complete Streets Policy

COMPASS adopted a Complete Streets policy in August 2009 to promote roadways with an appropriate balance for motorists, bicyclists, transit, and pedestrians of all ages and abilities. By considering all users of roads, communities can increase their safety, efficiency, and economic vitality.

The COMPASS Complete Streets Policy Vision Statement is:

We envision a Treasure Valley where roadways are designed to be safe, efficient, and viable and provide an appropriate balance for all users including, motorists, bicyclists, transit, and pedestrians of all ages and abilities. ²

The entire Complete Streets policy can be found at: http://www.compassidaho.org/documents/prodserv/reports/dmr/COMPASS%20PolicyFinal.pdf

Included in Part II of this document, an analysis of the COMPASS Complete Street policy is provided.

Relationship to Long Range Transportation Plan

The COMPASS Communities in Motion 2035 long range transportation plan, identifies two key issues related to Complete Streets:

- Issue 2: Transportation Choices/Shorter Commute Distances
- Issue 3: Connectivity through Higher Densities and Less Land Developed

The COMPASS Complete Streets policy and underlying principals support the expansion of transportation choices and enhance connectivity with additional infrastructure improvements to support all modes of transportation including bicycle, pedestrians, and transit users.

Additionally, Chapter 6 - Expanding Transportation Choices within the Communities in Motion 2035 plan continues to elaborate on Issue 2 above by identifying the challenges and opportunities to public transportation, bikes and pathways, and Safe Routes to Schools.

Federal Relevancies: Policy Statements and Guidance

Over the past two decades the United States Department of Transportation (U.S. DOT) prescribed a more balanced transportation system with the Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991 and the Transportation Equity Act for the 21st Century (TEA-21) in 1998. Following the passage of these acts, the U.S. DOT issued a series of policy statements to bolster the integration of

pedestrian and bicycle facilities. In the U.S. DOT policy statement titled, *Updated Bicycle and Pedestrian Accommodation Regulations* (2010) the statement advises state DOT’s to:

- Treat walking and bicycling as equals with other transportation modes
- Ensure convenient access for people of all ages and abilities
- Go beyond minimum design standards
- Collect data on walking and biking trips
- Set a mode-share target for walking and bicycling
- Protect sidewalks and shared-use paths the same way roadways are protected
- Improve non-motorized facilities during maintenance projects

Despite the enactment of a Complete Streets policy at the federal level, the parallels of the above principals, to the elements of the COMPASS Complete Streets policy and related plans is apparent. Coordination of policies from a regional perspective is an important aspect towards the implementation of Complete Streets and will be discussed further in the section addressing the Future of Complete Streets.

**Background**

In 2006, the *Communities in Motion Regional Long Range Transportation Plan 2030*, highlighted many key aspects that would later embody the COMPASS Complete Streets vision discussed above. Some of the commonalities include:

- a vision of a multimodal transportation system
- providing options for safe access and mobility for transit, walking, and biking
- increasing inter-jurisdictional coordination and acknowledging future needs
- minimizing transportation impacts to people, cultural resources, and the environment

During 2008 and 2009 two proposed bills were introduced in the United States Congress titled, *S. 2686: Complete Streets Act of 2008* (U.S. Senate) and the *H.R. 1443: Complete Streets Act of 2009* (U.S. House of Representatives); although neither bill was enacted. As the Metropolitan Planning Organization (MPO) for the Treasure Valley, COMPASS initiated a Complete Streets Work Group as part of the Regional Technical Advisory Committee in 2008-09. The work group, comprised of member agencies, crafted guiding principles and vision statements toward the creation of the COMPASS Complete Streets policy.

In August 2009, the adoption of the COMPASS Complete Streets Policy increased the priority of Complete Streets to a programmatic service offered by the MPO with formal ties to the strategic plan and long range plans. Since 2009, many member

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3 [http://www.ipa.udel.edu/healthyDtoolkit/completestreets/sectionPDFs/chapter5.pdf](http://www.ipa.udel.edu/healthyDtoolkit/completestreets/sectionPDFs/chapter5.pdf)

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5 T:\FY09\700 Services\705 Transportation Liaison\ACHD\Complete Streets\Legislation
agencies consisting of municipal governments, state and local highway/road jurisdictions, and the local transit authority, have supported the Complete Streets policies (or similar) as part of their design considerations. For example, Ada County Highway District enacted a Complete Streets Policy in 2009, which the City of Boise adopted and currently references as a service standard for community planning purposes. Further discussion of regional and statewide Complete Streets policies and related efforts will be provided in section of this document, The Future of Complete Streets.

Within the past two years momentum regarding Complete Streets has increased throughout the region. In 2011, as part of the American Recovery and Reinvestment Act (ARRA), the Idaho Department of Health and Welfare applied for and received a federal grant through the Center of Disease Control (CDC) that aided five Idaho communities with the implementation of Complete Streets related policies, taskforces, partnerships, and education. Idaho Smart Growth assisted with project management on these projects as highlighted in their report, Idaho Smart Growth Complete Streets Case Studies (2012). Additionally, in 2011 the New Partners for Transportation, Planning, and Health Workshops engaged a consortium of regional representatives, focusing on an integrated perspective regarding to health, planning, and transportation.

Beginning in 2012, COMPASS prioritized the multimodal analysis of every principal arterial, selected minor arterials, and expressways within the Treasure Valley based on the Functional Street Classification Map, created as a cooperative effort between Ada and Canyon Counties for the Communities in Motion 2035 plan. See http://www.compassidaho.org/documents/prodserv/func/2035%20FunClass%20Planning%20Map.pdf for a direct link to the map. The goal of the Complete Streets analysis is to identify a level of service (LOS) for pedestrian, bicycle, and transit modes of transportation, displaying current and future roadway conditions. Since local and regional automobile LOS methodologies have been successfully developed and are currently in use, COMPASS has not pursued additional automobile LOS analysis.

Two software programs have facilitated the scoring of roadways at COMPASS, the first is the Multimodal Level of Service (MMSLOS) software toolkit, developed by Kittleson and Associates and the second is the Quality/Level of Service (Q/LOS) planning software from the Florida Department of Transportation (FDOT). The use of the MMLOS software signified an important step towards the first objective of the COMPASS Complete Street to identify how all users will be served when designing new or reconstructed roadways, analyzing current and future conditions. This preliminary analysis focused on Linder Road and State Street and results were presented to the Transportation Model Advisory Committee (TMAC) at COMPASS as well as included within a combined presentation as part of a Transportation

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7 http://pds.cityofboise.org/media/151829/Blueprint_0.pdf, pds.cityofboise.org/media/151839/bb_chapter_2.pdf
9 http://www.compassidaho.org/prodserv/func-maps.htm
Both programs have been effective in the multimodal scoring of roadways and are based on the same methodology; although the time requirements and level of detail of the MMLOS software resulted in the use of the tool specifically for individual roadways and/or gauging the effects of large-scale developments. Therefore, the Q/LOS software is the current primary method of Complete Streets analysis, as it is more effective in identifying regional level priorities (and planning implications) of applicable roadways for current and future scenarios. Leveraging the capabilities of both software applications, COMPASS is also developing a proprietary Complete Streets analysis tool for use in ArcGIS applications, this project is currently in process.

As of mid 2013, COMPASS completed an initial analysis of the principal arterials, minor arterials and select collector roadways within the region using the Q/LOS software. These results were presented to a Transportation Modeling and Advisory Committee (TMAC), as well as a Planning Team Committee meeting, where progress and applicability was acknowledged. A more specific description of the Q/LOS software process is presented in the following section on Complete Street Level of Service Methodology.

**Complete Street Level of Service Methodology**

This section of the document introduces the reader to the Q/LOS program by providing fundamental definitions (and misconceptions) to the quality and level of service components, which represent the overarching themes Q/LOS software. Next, the structure and functionality of the software is presented along with the input variables to the Q/LOS software, describing the relationships among the variables. Finally, an analysis detailing the LOS methodology for each mode (pedestrian, bicycle, and transit), factors affecting the modes, and results in the form of maps, illustrate current conditions throughout the region and offer suggestions to forecasting future conditions.

**Quality and Level of Service Concepts**

The Quality/Level of Service (Q/LOS) software is directed towards engineers, planners, and policy makers in the development and review of roadway capacity and quality/level of service for planning and preliminary analysis. This functionality of the software is designed for signalized arterials and is based on the Highway Capacity Manual 2010 (HCM 2010) and the Transit Capacity and Quality Service Manual (TCQSM). 10 The software functionality enhances preliminary engineering, also known as conceptual planning which can determine:

- The design concept and scope for a roadway facility (e.g., 4 thru lanes with a raised median and bicycle lane)

• Conducting alternative analyses (e.g., 4 thru lanes undivided vs. 2 thru lanes with a two-way left turn lane)
• Determining needs when a generalized planning approach is not sufficient

In reference to COMPASS, these functions characterize the efforts to define current levels of service (including alternative scenarios) as well as providing a novel qualitative and quantitative analysis for multimodal types of transportation.

Quality of service (QOS) is a traveler-based perception of how well a transportation service or facility operates. Level of service (LOS) is a quantitative stratification of quality of service into six letter grade levels (A-F). Since the Q/LOS software deals with the overall quality of user satisfaction and its quantitative breakdown, it is labeled as the Quality/Level of Service or LOS analysis. Figure 1 below illustrates examples of LOS for various modes throughout the Treasure Valley:

![Level of Service Diagram]

Figure 1: Local Images of LOS, COMPASS, 2013

Level of Service (LOS) Misconceptions

Four common misconceptions about LOS analysis include:

- The relationship between quality and other dimensions of mobility
- LOS is applicable only to automobile analysis, while QOS is related to the non-automobile modes
- LOS letter A-F grades are comparable to American school letter grades
- LOS grades are comparable across modes

Addressing the first misconception, quality (as defined above) is a traveler-based perception of how well a transportation service or facility operates. In the case of automobiles, the perception of quality is typically related to the number of other vehicles on the road. Nevertheless, a roadway containing additional lanes and more favorable signal progression can accommodate a larger number of vehicles, and potentially increase quality. When viewing quality for bicycles and pedestrians, these user perceptions often relate to the presence of the infrastructure itself, in the form of dedicated bicycle lanes and sidewalks.

The second bullet points out the misconception that tends to label automobile LOS as containing specific quantitative results/analysis and non-automobile modes pertaining only to qualitative results/analysis. This misconception is refuted by the rigorously developed and tested methods of the Transportation Research Board (TRB) as stated in the National Cooperative Highway Research Program Report 616: Multimodal Level of Service for Urban Streets, noting that, The LOS models are ideal for evaluating the benefits of “complete streets” and “context sensitive” design options because the models quantify the interactions of the modes sharing the same street right-of-way. Further, the TRB also recognizes the FDOT Q/LOS Handbook as a professional manual that is often referenced by public agencies when analyzing multimodal LOS.

A third misconception identifies the incorrect comparison of American school letter grades to LOS grades. LOS is only similar to the school letter grades in that an A is the best and an F is the worst. An LOS grade of A in the transportation realm is most often not financially feasible and is not considered a desirable goal from a transportation or societal perspective. As well, a LOS of F, does not indicate failure, it may represent a temporary peak hour condition that only lasts for 15 minutes.

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The final misconception points out that the LOS grades are not comparable across modes. Related to the example above, an automobile level of service of D may often be an “acceptable” LOS to a transportation professional, with a common understanding of the LOS scale (developed for automobile and bus modes). On the other hand, bicycle and pedestrian LOS’s (derived from the general public), often interpret a LOS of D, more closely to school grading systems. For that reason, an LOS of D does not have a common meaning across modes and users of Q/LOS should be cautious of comparing LOS’s across modes.

Overall, LOS is only one way to measure Complete Streets, though other measurements exist. Other measurements for non-automobile modes include:

- safety and health of users
- number of users and ability to conduct user surveys
- connections to other facilities
- accessibility (ease to which people can connect to the transportation system)
- impacts on commerce

Configuration of Analysis: Points, Segments, Sections, and Facilities

The Q/LOS software tool is based upon the primary highway system structure of the Highway Capacity Manual (HCM) as seen in Figure 2 below, where the analysis techniques of the Q/LOS are central to the facility level.

![Generalized HCM Highway System Structure](image)

Figure 2: FDOT Quality/LOS Handbook, p.17, 2009

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COMPASS has conducted the analysis of the LOS scores of individual segments (or links).

**Inputs, Tool Sensitivity, and Result Output**

The Q/LOS software contains a series of general and mode specific input tabs, which are linked to results based on LOS. The input screens include the roadway properties, intersection characteristics, and variables for the multiple modes of transportation (automobile, transit, pedestrian, and bicyclist). The procedure for data input requires the utilization of a variety of transportation data sources and interactive maps or imagery that will be demonstrated within the following sections of this document. Regarding the sensitivity of input variables, the Q/LOS program allows for the calibration of a roadway facility to a local or regional context.

The input variable types are based upon general roadway variables, traffic variables, and roadway controls (signalization). The key input variables for the Q/LOS program include:

- Area type, number of thru lanes, left turn lanes, paved shoulder/bicycle lane sidewalks, annual average daily traffic (AADT), planning analysis hour factor (K), directional distribution factor (D), bus frequency, signalized intersection spacing, and thru effective green ratio (g/C).

The overall relationships of inputs for all modes are illustrated in Figure 3 below:

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**Figure 3: FDOT Quality/LOS Handbook, p.22, 2009**
The LOS results are based on the interactions of the input variables above and produces ranked scores (A-F) for each designated roadway segment as well as a score overall for one direction of traffic. Specific model factors affect each mode of transportation and are described in the forthcoming sections of the document. For example, one factor affecting transit LOS is the ease of access to transit based on the pedestrian level of service, representing connection between the pedestrian and transit infrastructure as seen above in the pink bordered “sidewalk” box.

**Pedestrian LOS Model**

**Quick Facts:**

Increased safety is one of the main positive attributes in favor of the implementation of Complete Streets. The Centers for Disease Control and Prevention (CDC) states:

- In 2010 4,280 pedestrians were killed in traffic crashes and another 70,000 pedestrians were injured in the United States.
- Additionally, pedestrians are 1.5 times more likely than passenger vehicle occupants to be killed in a car crash on each trip.
- Older adults and children are most at risk of injury and death.  

The United States Census conducts several surveys that ask questions related to commuting such as means of transportation to work and travel time to work. Estimates from the American Community Survey for the Boise-Nampa MSA include:

- Approximately 1-2% of workers are pedestrian commuters, representing anywhere from 2,400 to 6,400 individuals based single year and multi-year estimates between 2006 and 2011.

Pedestrian LOS in the Q/LOS software is based on four primary variables, ranked in order of relative importance:

- Existence of a sidewalk
- Sidewalk/roadway separation
- Motorized vehicle volumes
- Motorized vehicle speeds

The Pedestrian LOS applies to sidewalks that are adjacent to the roadway, nearby roadside environments such as a shared use path, or a nearby exclusive pedestrian facility, and does not include paved roadway shoulders.

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21 http://www.cdc.gov/motorvehiclesafety/pedestrian_safety/factsheet.html
22 http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml
23 T:\FY13\700 Services\710 Complete Streets\CSLOS\Research\2009FDOTQLOS_Handbook.pdf (p.28)
24 T:\FY13\700 Services\710 Complete Streets\CSLOS\Research\2009FDOTQLOS_Handbook.pdf (p.63)
Physical barriers also provide pedestrians with sidewalk/roadway separation in the form of trees and planters, streetscape lighting or furniture, as well as the presence of on street parking. As a result, Q/LOS enables users to select the width of the sidewalk/roadway separation and existence of a physical barrier.

Other secondary variables include a pedestrian crossing factor, the width of the outside automobile travel lane (closest to a sidewalk), and the width of a bicycle lane. The pedestrian crossing factor is classified in three ways by a restrictive median, non-restrictive median, or no median. FDOT states that the restrictive median provides a much safer mid-block crossing and can also be in the form of a pedestrian refuge, such as a raised grass area between 5-10 feet in width.

The following figures represent the Q/LOS pedestrian results for the entire study region and select city centers, using ArcGIS mapping software. The maps demonstrate the pedestrian LOS (scored on an A-F basis) for one side of the road, traveling one direction, depending on the peak direction specified in the property tab of the software. Overall, current estimates account for over 4,000 miles of sidewalk infrastructure throughout the region, which may account for one or both sides of the road.
Figure 4, captures the entire region and the visible roads on the map include the major arterials from the previously mentioned Functional Classification Map as well as select minor arterials and collector roads. This bird’s eye view of the region identifies major trends, such as the prevalence of LOS rankings within the A and B range, in proximity to city centers. This is a logical conclusion, since city centers often focus on pedestrian scale environments that attract visitors, contain the largest number of employees, and contain other historical, cultural, or arts amenities that may be within walking distance of each other.

A closer look at Nampa and Bois reaffirms the assumption of more favorable LOS. Within pedestrian scale environments, inherent tradeoffs are apparent, for example automobiles, busses, and bicycles may experience a lesser or unfavorable LOS score due to shorter distances between signalized intersections and lower speed limits.
Bicycle LOS Model

Quick Facts:

As cycling continues to gain popularity throughout the United States, the multitude of benefits originating from this mode of transportation include:

- Increased physical health and social well-being
- A form of recreation for all ages
- An alternative mode for commuting to work or other destinations
- Decreased automobile congestion and pollution

By law, bicyclists possess the same rights and responsibilities as motorized vehicles and in many instances reach comparable speeds; consequently safety is a key concern. The National Highway Traffic Safety Administration’s Traffic Safety Facts for bicyclists in 2011 stated:

- 677 cyclists were killed and an additional 48,000 were injured in motor vehicle traffic crashes, representing 2% of all motor vehicle traffic fatalities and injuries for the year
- 69% of these crashes occur in urban areas, 59% are at non-intersection locations, and the highest percentage (30%) is during 4 to 8pm
- Alcohol involvement was reported in more than 37% of all fatal cyclist crashes - either driver or cyclist
- In Idaho, 0 cyclists were killed in 2011, compared to 7 in 2009, representing 3.1% of all traffic fatalities in the year

In 2010, according to a COMPASS Performance Monitoring Report (PMR), almost 5% of roadway miles were accompanied by a bikeway.

The FDOT created the Bicycle LOS model to explain how bicyclists perceive their experience on arterial roadways based on safety, comfort, and travel efficiency. Building on prior models of segment and intersection levels of service, the FDOT utilized an innovative approach for entire arterials using the Ride for Science (2005) field data collection event and video simulations. The study represented a wide cross section of individual needs related to age, gender, riding experience, and residency. The Bicycle LOS model is based on the geometric and operational aspects of arterial roadways and has been successfully applied to over 200,000 miles of roadways within the United States.

27 http://trb.metapress.com/content/j78137220138w684/
28 T:\FY13\700 Services\710 Complete Streets\CSLOS\Research\2009FDOTQLOS_Handbook.pdf (p.26)
The Bicycle LOS in the Q/LOS software is based on five variables, ranked in order of relative importance:

- Average effective width of the outside (automobile) thru lane
- Motorized vehicle volumes
- Motorized vehicle speeds
- Heavy vehicle/truck volume (based on a percentage entered by user)
- Pavement condition

Given the close proximity of bicyclists and automobiles on the roadway, Bicycle LOS within the Q/LOS software is heavily dependent on the roadway cross section. The model is not applicable to off-street facilities, such as shared use paths or sidewalks. Therefore, a strong relationship exists between bicycle and automobile LOS; FDOT explains the relationship in the following statement:

*The bicycle LOS drops dramatically as motorized vehicle volumes initially rise, but then tends to deteriorate more slowly at higher volumes. Another example is the effect of motorized vehicle speed. At low speeds, the variable is not as significant in determining bicycle LOS; however at higher speeds it plays an ever increasing role.*

The existence and condition of a paved shoulder or dedicated bicycle lane is an important safety and efficiency aspect to bicycle LOS. A dedicated bicycle lane is defined as a portion of a roadway, at least 4 feet in width, which has been designated by striping, signing and pavement markings for the preferential or exclusive use of bicyclists. Within Q/LOS, the user has the ability to select the presence of a paved shoulder or bike lane as well as the bicycle pavement condition. The three classifications of pavement condition that the cyclist experiences are desirable (new or recently resurfaced), typical (most common and default value), and undesirable (noticeable cracks, broken pavement, ruts, or the presence of grates).

Where a paved shoulder or dedicated bicycle lane does not exist, the average effective width of the outside (automobile) thru lane is also an important in the determination of the bicycle LOS. The Q/LOS user specifies the width of the outside lane within the four classifications (excluding the gutter) of narrow (10 ft.), typical (12 ft.), wide (14 ft.), and custom (user defined).

Overall, the two most important variables in the Q/LOS software regarding bicycle LOS is the presence of a bicycle lane and the number of motorized vehicles. With regards to the presence of bicycle lanes in the Treasure Valley, the most prominent example is the Ada County Highway District (ACHD). ACHD has created more than 220 miles of on street bicycle lanes, and is currently implementing a Bike Facility Pilot Project for shared lane markings and green colored/painted bicycle lanes.

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29 T:\FY13\700 Services\710 Complete Streets\CSLOS\Research\2009FDOTQLOS_Handbook.pdf (p.28-32)
The following figures represent the Q/LOS bicycle results for the entire study region, using ArcGIS mapping software. The maps demonstrate the bicycle LOS (scored on an A-F basis) for one side of the road, traveling one direction, depending on the peak direction specified in the property tab of the software.
Figure 5 captures the entire region and the visible roads on the map include the major arterials from the previously mentioned Functional Classification Map as well as select minor arterials and collector roads. This bird’s eye view of the region identifies major trends, such as the prevalence of most favorable bicycle LOS rankings at the periphery of the region and the relative uneven dispersion of favorable LOS rankings throughout the center of the region as well as the city centers of the region.

The higher ranking LOS scores at the periphery exist because of the low volumes of vehicles that occur in the rural or rural developing locations, most likely not including a dedicated bicycle lane; although may contain a paved shoulder.

A closer look at city centers in the region show that Boise and Nampa contain a majority of A-D LOS scores, relatively few E LOS scores, and lack F LOS scores. As a reminder, these scores are calculated based on user perceptions of the roadway. Additionally, tradeoffs exist between modes, where pedestrian orientated environments may be contrary to roadway objectives of bicycle and automobile modes.
Transit LOS Model

Public transportation plays a key role for a wide range of individuals, providing affordable access to destinations and services that would otherwise not be achievable from a lack of a personal vehicle. Public transportation is seamlessly integrated into the concept of Complete Streets, where the pedestrian or bicyclist requires accessible and safe infrastructure to reach a transit stop. Within Idaho, the primary form of public transportation is the bus; although alternative forms other than single occupied automobiles include ridesharing, carpooling, and vanpooling. Within the Q/LOS software, public transportation only applies to buses.

Quick Facts:

American Public Transportation Association:

- In 2011, Americans took 10.2 billion trips on public transportation
- Public transportation is a $54 billion industry that employs more than 400,000 people
- 83% of older Americans acknowledge public transit provides easy access to things they need in everyday life
- Every $10 million in capital investment in public transportation yields $30 million in increased business sales
- Public transit is a vital link for the more than 51 million Americans with disabilities
- Americans living in areas served by public transportation save 785 million hours in travel time and 640 million gallons of fuel annually in congestion reduction alone
- Public transportation use saves the equivalent of 900,000 automobile fill-ups every day

Idaho Department of Transportation, Fact Book 2012 & 2013 (Transit Statistics):

- 56% of Idahoans possess access to transit
- 75% of Idaho residents live in areas with easily accessible public transportation
- 57 Public Transportation providers exist in Idaho

The Transit Capacity and Quality of Service Manual (TCQSM) authored by the Transportation Research Board, is the fundamental reference document for public transit practitioners and policy makers. The manual provides a framework for measuring transit availability and quality of service from the passenger point of

31 http://www.publictransportation.org/news/facts/Pages/default.aspx
view. The Q/LOS software uses the TCQSM techniques, supplemented by FDOT’s proprietary Transit Level of Service (TLOS) software to evaluate bus LOS at the operational level. In the Q/LOS software, the primary factor that determines bus LOS is service frequency.

As the primary factor of the bus LOS, the following figure illustrates the service frequency LOS thresholds from the user perspective:

<table>
<thead>
<tr>
<th>Level of Service</th>
<th>Adjusted Service Frequency (Vehicles/hour)</th>
<th>Headway (minutes)</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>&gt;6.0</td>
<td>&lt;10</td>
<td>Passengers don't need schedules</td>
</tr>
<tr>
<td>B</td>
<td>4.01 to 6.0</td>
<td>10 to 14</td>
<td>Frequent service, passengers consult schedules</td>
</tr>
<tr>
<td>C</td>
<td>3.0 to 4.0</td>
<td>15 to 20</td>
<td>Maximum desirable time to wait if transit vehicle missed</td>
</tr>
<tr>
<td>D</td>
<td>2.0 to 2.99</td>
<td>21 to 30</td>
<td>Service unattractive to choice riders</td>
</tr>
<tr>
<td>E</td>
<td>1.0 to 1.99</td>
<td>31 to 60</td>
<td>Service available during hour</td>
</tr>
<tr>
<td>F</td>
<td>&lt;1.0</td>
<td>&gt;60</td>
<td>Service unattractive to all riders</td>
</tr>
</tbody>
</table>

Figure 6: FDOT Quality/LOS Handbook, p.30, 2009

The service frequency and headway (time between buses at a bus stop) relate to the level of service for the rider, noted in the last column above that provide a range of service from numerous busses per hour, to less than one bus per hour at a designated stop.

Secondary factors also contribute to the level of service in the Q/LOS program, which include:

- Bus stop amenities (poor, fair, good, and excellent)
- Bus stop type (none, typical, or major)
- Passenger load factor

Bus stop amenities are comprised of benches, shelters, and ADA accessible features available at a bus stop. The bus stop type and load factor are aspects of bus use that contribute to the rider experience. The bus stop type relates to the ease of bus stop identification communicated to the user, where the passenger load factor relates to the number of persons or crowding present on the bus.

34 T:\FY13\700 Services\710 Complete Streets\CSLOS\Research\2009FDOTQLOS_Handbook.pdf (p.29)
35 T:\FY13\700 Services\710 Complete Streets\CSLOS\Research\2009FDOTQLOS_Handbook.pdf (p.30, 39, 40)
FDOT notes that pedestrian considerations are an important determinant of bus LOS for a transit route segment or facility. To accommodate this consideration, three factors are built into the Transit LOS Model of the Q/LOS software; pedestrian LOS, roadway crossing difficulty (traffic signal density, crossing length, and motorized vehicle volume), and obstacles to bus stops (fences or swales), determining an adjusted bus frequency.

The following figures represent the Q/LOS bus results for the entire study region, using ArcGIS mapping software. The maps demonstrate the bus LOS (scored on an A-F basis) for one side of the road, traveling one direction, depending on the peak direction specified in the property tab of the software. Q/LOS scores the bus LOS based on the bus frequency and other factors mentioned, weighted by the distance of the segment lengths.

Figure 7 (following page) provides a view of the regional bus LOS that concentrates favorable scores in proximity to city centers and major bus routes. The inter-county circulation is accomplished by the I-84 interstate as well as State Highway 44 routes, enabling residents on opposite ends of the Treasure Valley the ability to reach work or services, given limited schedules and frequencies. In viewing the bus LOS within downtown Boise. Valley Regional Transit (VRT), the regional public transportation authority, designates this geographic area as the Transit Mall. The most favorable LOS scores (A-C), highest bus frequencies, and relative proximity of routes are apparent from this point of view.
PART II

The Future of Complete Streets

National Trends and Policy

The future of Complete Streets is predicated on the acknowledgement to consider the safety of users regardless of age, ability, or modal type in the planning and design of roadways within our communities. Complete Streets policies have been gaining momentum, as the following excerpt describes; nevertheless their implementation typically requires intergovernmental coordination and the commitment of funding sources.

In 2012 nearly 130 communities adopted new Complete Streets policies... At the end of 2012, there were 488 Complete Streets policies in place nationwide, at all levels of government. Statewide policies are in place in 27 states as well as the Commonwealth of Puerto Rico and the District of Columbia. Forty-two regional planning organizations, 38 counties and 379 municipalities in 48 states now allow everyone, no matter how they travel, to safely use the roadway.36

The Transportation Research Board (TRB), who sponsors the National Cooperative Highway Research Program (NCHRP), authored the NCHRP Report 616: Multimodal Level of Service Analysis for Urban Streets in 2008. This report and other reports assisted in forming many of the chapters of the 2010 Highway Capacity Manual (HCM 2010). As Report 616 formed a basis for addressing multimodal level of service analysis, this is a notable shift from the HCM 2000 standalone approach (which were separate chapters) to address pedestrian, bicycle, and transit modes of transportation.37 Because the TRB is the major research institution for transportation academics and professionals, the significance of this integrated multimodal approach creates a new benchmark for the future planning, design/engineering, and analysis of roadways.

On October 1, 2012, President Barack Obama signed into law the Moving Ahead for Progress in the 21st Century Act (MAP-21), which replaced the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). MAP-21 is the first long-term highway authorization enacted since 2005.38 As mentioned in the Background section of this document, two separate Complete Streets Act bills (2008 and 2009) were not approved by congress, though specific programs of MAP-21 address many of the concerns of Complete Streets. The Transportation Alternatives Program (TAP) replaces the funding of from pre-MAP-21

38 http://www.fhwa.dot.gov/map21/
programs including Transportation Enhancements, Safe Routes to School, and Recreational Trails programs, combining them into a single funding source. The TAP defines Transportation Alternatives as:

- Construction, planning, and design of on-road and off-road trail facilities for pedestrians, bicyclists, and other non-motorized forms of transportation
- Construction, planning, and design of infrastructure-related projects and systems that will provide safe routes for non-drivers, including children, older adults, and individuals with disabilities to access daily needs
- Conversion and use of abandoned railroad corridors for trails for pedestrians, bicyclists, or other nonmotorized transportation users

The funding authorization for fiscal year 2013-14 is $809 and $820 million dollars, respectively. These apportionments are determined from each State’s proportionate share of FY2009 Transportation Enhancements, based on federally required programs and metropolitan planning functions and are distributed as seen below:

What does this mean for Idaho or the Treasure Valley? For example, concerning the Safe Routes to School Program, Idaho receives approximately $1 million per year for Safe Routes to School projects. Funds are awarded through a competitive application process. Training and support are available for all funded and non-

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39 http://www.fhwa.dot.gov/map21/tap.cfm
40 http://www.fhwa.dot.gov/map21/guidance/guidetap.cfm
funded projects. 41 Regarding the Treasure Valley, COMPASS tracks these funds as they transpire into projects or the provision of support roles, such as the painting of crosswalks, the construction of sidewalks, or hiring a Safe Routes to School coordinator. 42

The fields of community and regional planning and public health are making strides involving Complete Streets as referenced in the local 2011 workshop related to health, planning, and transportation. In a recent article in the Journal of Public Health Management and Practice, Diffusion of Complete Streets Policies Across US Communities, three variables were significant predictors of Complete Streets policy adoption:

- State obesity rates
- Percentage of people who bike or walk to work in the state
- Presence of a border community with a Complete Streets policy 43

As two-thirds of U.S. adults and one-fifth of U.S. children are obese or overweight, the support of the public health sector bolsters the benefits of Complete Streets for communities. 44 In Idaho, the figure for children is greater than the national average, where 30.5% of students in grades 1-11 are overweight or obese. 45 Many programs that do not specifically advocate Complete Streets may indirectly support the overall principals of multimodal infrastructure as a link to community health and safety.

Overall, national trends and policy seem consistent with goals of incorporating a more integrated multimodal approach to transportation, despite a specific national policy directed towards Complete Streets. Therefore, the prioritization of Complete Streets from the disciplines of planning, transportation, and health suggest optimism looking towards the future. Additionally, as discussed further (in the upcoming benefits and challenges section of this document) the National Complete Streets Coalition states that Complete Streets possess benefits such as spurring private investment and raising property values. This type of research also seems consistent for future policy adoption and implementation of Complete Streets, by generating economic benefits for a community.

State and Regional Policy and Trends

Complete Streets policy in Idaho and the Treasure Valley has gained momentum since 2009, as well as through the indirect promotional efforts of bicycle, pedestrian, or transit plans throughout the region. The following table summarizes formal policy actions within Idaho, noting the local governments or agencies that have adopted Complete Streets policies:

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41 http://itd.idaho.gov/sr2s/program/program.htm
44 http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5807a1.htm
45 http://www.healthandwelfare.idaho.gov/?Tabid=177
<table>
<thead>
<tr>
<th>Govt./Agency</th>
<th>Policy</th>
<th>Level</th>
<th>Year</th>
<th>Population</th>
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<tbody>
<tr>
<td>ACHD</td>
<td>Resolution No. 895</td>
<td>County</td>
<td>2009</td>
<td>392,365</td>
</tr>
<tr>
<td>COMPASS</td>
<td>Complete Streets Policy</td>
<td>Region</td>
<td>2009</td>
<td>n/a</td>
</tr>
<tr>
<td>Coeur d'Alene</td>
<td>Complete Streets Policy</td>
<td>City</td>
<td>2009</td>
<td>44,137</td>
</tr>
<tr>
<td>Hailey</td>
<td>Ordinance No. 1116</td>
<td>City</td>
<td>2012</td>
<td>7,960</td>
</tr>
<tr>
<td>McCall</td>
<td>Resolution 11-20</td>
<td>City</td>
<td>2011</td>
<td>2,991</td>
</tr>
<tr>
<td>Sandpoint</td>
<td>Resolution</td>
<td>City</td>
<td>2010</td>
<td>7,365</td>
</tr>
</tbody>
</table>

Figure 9: Complete Streets Policy Actions within Idaho

Within the Treasure Valley, the Ada County Highway District (ACHD) adopted a *Livable Streets Design Guide* in addition to enacting a Complete Street Policy, while coordinating with other internal plans and policies such as the *Roadways to Bikeways Plan* as well as the Access Management Policy.  

Another notable stride that contributes to the promotion of multimodal forms of transportation is the *Valleyconnect* plan from Valley Regional Transit (VRT) that supports a multitude of alternatives to driving alone, such as: transit service, vanpools, carpools, vehicle sharing, and biking and walking. In addition, VRT has bike racks on all transit vehicles, encourages bike lock facilities at major bus stops, and calls for increasing coordination between road and transit agencies to improve sidewalks near bus stops to increase accessibility.

Smaller communities can also benefit from Complete Streets as demonstrated in the following article from the Community Transportation Association of Idaho:

*Hailey, Idaho is one such success. When the federal government released TIGER II funding Hailey partnered with Idaho Transportation Department, Mountain Rides Transportation Authority, Blaine County Recreation District, College of Southern Idaho and others to garner $3.5M in funds for the Woodside Boulevard Complete Streets Initiative. Prior to the project, Woodside Boulevard, the thoroughfare through the densest part of town, offered little in the way of pedestrian and bicycle amenities, exposing riders and walkers to fast-moving traffic on the narrow street. Drivers were challenged by the lack of traffic signals enabling access to the state highway.*

*Now sidewalks line both sides of the street, bike lanes allow riders to safely maneuver through the neighborhood, and cars and buses are able to make protected turns onto the state highway. This project and others across Idaho prove that Complete Streets projects are safer, promote economic vitality, are more convenient and offer transportation choices by not singling out one mode as more important than others.*

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48 [http://www.valleyregionaltransit.org/Portals/0/valleyconnect/valleyconnect.pdf](http://www.valleyregionaltransit.org/Portals/0/valleyconnect/valleyconnect.pdf)
Non-governmental groups and community organizations throughout the state and region, also indirectly or directly advocate Complete Streets principals. The Idaho Transportation Department (ITD) lists national, statewide, and local organizations on their website http://www.itd.idaho.gov/bike_ped/resources.htm, relating to bicycles and pedestrians including:

- ACHD Bicycle Advisory Committee (Local)
- Boise River Trails Coalition (Local)
- Community Transportation of Idaho (Statewide)
- Idaho Pedestrian and Bicycle Alliance (Statewide)
- Idaho Smart Growth (Statewide)
- Nampa Bicycle & Pedestrians Citizens Advisory Group (Local)
- Treasure Valley Cycling Alliance (Local)
- Treasure Valley Cycling Club (Local)

In a final example, the statewide organization Idaho Smart Growth recently produced the publication *Complete Streets: Case Studies from Five Idaho Communities*, made possible with a federal grant provided to the Idaho Department of Health and Welfare, and additional support from Blue Cross of Idaho. Overall, the collective influence and burgeoning capacity of these organizations and groups are invaluable for sustaining the short and long-term future of Complete Streets within the Treasure Valley.

**Communities in Motion 2040 and Complete Streets**

During 2011 and 2012 COMPASS engaged its member agencies and hundreds of stakeholders in a scenario planning process that produced the *Communities in Motion 2040* Vision, serving as a basis for the regional long-range transportation plan’s preferred growth scenario. Updated every four years for Ada and Canyon Counties, the *Communities in Motion 2040* plan is set to be completed by September 2014. The plan leverages elements of the current *Communities in Motion 2035* plan such as land use and transportation, embracing additional sustainability elements that were included as part of the scenario workshops such as: housing, community infrastructure, health, open space, farmland, and economic development.

The *Communities in Motion 2040 Vision* originated from a three step process, incorporating facilitated workshops, public participation and comments, and the development of a preferred scenario. Collectively, the vision is illustrated in four ways, by a Vision Description, Vision Map, Forecasted Population, Job, and Household Data, and Geographical Information Systems (GIS) Data.

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51 http://www.compassidaho.org/prodserv/cim2040_scenarioplanning.htm  
52 http://www.compassidaho.org/prodserv/cim2040.htm
With consideration to Complete Streets, the following portion of the Vision Description states:

*This vision would support high capacity transit for State Street (Highway 44) and a route parallel to Interstate-84, as well as multimodal infrastructure and services throughout the region.*

**Benefits and Challenges**

The following section highlights potential benefits derived from the presence and use of Complete Streets within communities, as well as the challenges relevant to the implementation of Complete Streets. These benefits and challenges are not exhaustive of all roadway environments and primarily focus on the design elements of arterial roadways. Significant variation exists among jurisdictions throughout the Treasure Valley concerning the prioritization of Complete Streets, such as differences that exist between urban and rural settings.

**Community and Regional Benefits**

The following benefits of Complete Streets represent findings that are consistent with previous sections of this document, based on conclusions from a variety of national research outlets and consider local conditions:

- **Safety** - increases safety for all users, regardless of ability or age. Examples include the Department of Transportation’s Safe Routes to School program and the American Association of Retired People (AARP) publication, *Planning Complete Streets for an Aging America*.

- **Accessibility and Convenience** – Consistent with the *Communities in Motion 2035* regional long range transportation plan, Complete Streets expand and promote transportation choices for all users enhancing the mobility and equity for all roadway users. Idaho Smart Growth states that approximately one-third of Idahoans do not drive, such as children, elderly, and the disabled. Complete Streets assist in providing access to goods and services.

- **Personal Health** - Increases health benefits and reduces obesity by providing an opportunity for physical activity during many activities such as recreation, commuting to work or school, or while purchasing goods or services.

- **Environment** - Lessens automobile dependence, reduces traffic congestion and emissions, and provides a partial solution to mitigigating the effects of climate change.

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53 http://www.aarp.org/home-garden/livable-communities/info-08-2009/Planning_Complete_Streets_for_an_Aging_America.html  
58 http://download.journals.elsevierhealth.com/pdfs/journals/07493797/PIIS074937970800682X.pdf
• Job Creation – A 2011 study by the Political Economy Research Institute at the University of Massachusetts studied 58 public works projects from 11 cities, revealing that for every $1 million dollars spent within the state:
  o Cycling projects created 11.4 jobs
  o Pedestrian only projects created 10 jobs
  o Road-only projects created 7.8 jobs

• Economic Development - Complete Streets demonstrate the strong connection between transportation and economic development, highlighting the importance of livability within communities. The creation of pedestrian and bike-friendly environments, with access to transit provides many benefits including:
  o Attracting businesses and residents to a community
  o Raising property values and spurring private investment
  o Stimulating local economies and sparking economic revitalization

• Regional Benchmark – The analysis of bicycle, pedestrian, and public transit levels of service serves as a point of reference, for current and future targets in support of various modes.

Community and Regional Challenges

The following challenges are based on assumptions concerning potential barriers to Complete Streets based on national research, considering local conditions, and the identification of current limitations to analysis techniques:

• Policy to Implementation – Adopting a Complete Streets policy or enacting a law is a necessary first step; although several other steps such as project prioritization and impact assessment are needed for implementation.

• Transportation Planning Processes – Traditional approaches of transportation planners are based on the demands of roadway capacity, expansion, and repair. Therefore, they may lack the knowledge or training to design facilities for bicyclists, pedestrians, and public transportation; balancing the needs of all users.

59 http://www.peri.umass.edu/236/hash/6da34bab6a183a2fc06fd212875a3ad/publication/467/
60 http://www.fhwa.dot.gov/livability/fact_sheets/transandeconomics.pdf
62 http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/factsheets/economic-revitalization
63 http://www.planning.org/pas/quicknotes/pdf/QNS5text.pdf
• Multiple Jurisdictions – The coordination of multiple jurisdictions poses challenges for the Treasure Valley. For example, the implementation of a Complete Street may contain: state and local highway jurisdictions, urban renewal agency sidewalks, city building setback ordinances, and coordination with the local public transit authority.

• Perceived Costs – The variation between planning cultures, community preferences, and past successes are overarching determinants related to the implementation of Complete Street projects. At the TRB 2013 Annual Meeting, the Charlotte Department of Transportation presented research noting that fluctuations in construction costs play a more significant role in the costs of a project than do the costs for incorporating Complete Streets. Adding Complete Street elements (sidewalks and bike lanes) only slightly increased the cost of a project (6-8%), compared to fluctuations in construction costs (varying up to 20%).

• Changing Human Behavior – Many national and local figures presented throughout this document illustrate low public transportation use or low bicycle commuting patterns, while obesity for all ages is on the rise. To combat these issues, a city transportation director in New Haven, Connecticut described their approach, “instead of focusing solely on regulations, we are addressing human behavior as the central focus of the campaign and then complementing education with physical improvements.” Education, outreach, and training for citizens as well as public sector transportation professionals contain the potential for mutually beneficial outcomes.

• Development Patterns and Land Use – Over the past two decades the Treasure Valley has virtually doubled in population, experiencing more greenfield (or sprawl) than infill development. The corresponding infrastructure network that typically accommodates patterns of sprawl may pose accessibility concerns for individuals in areas that lack connectivity to necessary goods and services and heighten maintenance and repair costs.

Analysis of the COMPASS Complete Streets Policy

The adoption of a Complete Streets policy is an imperative first step for a city, MPO, or state to acknowledge the inclusion of all users and modes within the transportation framework of their respective jurisdiction. The creation of this policy can be attributed to the influence of a combination of factors such as the shared vision of the region, MPO members representing the needs of constituencies, transportation and planning related research, and federal priorities and programs. As a Complete Streets policy establishes a starting point towards implementation, the elements of the policy comprise the parameters that decision makers consider during prioritization, design, and construction of roadways.

The National Complete Streets Coalition (NCSC), a subset of Smart Growth America, is currently the foremost organization in the U.S. providing resources towards Complete Streets policy. The NCSC produces a *Complete Streets Local Policy Workbook* as well as a *Complete Streets Policy Analysis Document*, which tracks and evaluates policies at the local, regional, and state levels. The American Planning Association (APA) partnered with the National Complete Streets Coalition to prepare a publication, *Complete Streets: Best Policy and Implementation Practices*, which incorporated NCSC’s ideal elements of a Complete Streets policy. The National Policy and Legal Analysis Network to Prevent Childhood Obesity (NPLAN), another project partner, also developed model resolutions and ordinances that are included in the appendix of the report. ⁶⁸

This section will present the NCSC’s ideal elements and provide analysis with regards to the score given to COMPASS’s Complete Streets policy. The scoring system analyzes each element, allocating potential points when an aspect of the ideal element is satisfied or directly mentioned in the policy. Each policy is given an overall score between 0 and 100; the Compass Complete Streets Policy received a combined score of 34. ⁶⁹ The COMPASS Complete Streets Policy can be viewed at: [http://www.compassidaho.org/documents/prodserv/reports/dmr/COMPASS%20PolicyFinal.pdf](http://www.compassidaho.org/documents/prodserv/reports/dmr/COMPASS%20PolicyFinal.pdf). The ideal elements, confirmation of the element (yes or no), and the points obtained by the COMPASS policy are provided below:

1. Vision and intent: The policy outlines a vision for how and why the community wants to complete its streets.  
   *Yes. Score 1.2, (Possible 6)*

2. All users and modes: The policy specifies that “all users” includes pedestrians, bicyclists, and transit passengers of all ages and abilities, as well as trucks, buses and automobiles.  
   *Yes. Score 16 (Possible 20)*

3. All projects and phases: Both new and retrofit projects are subject to the policy, including design, planning, maintenance and operations, for the entire right-of-way.  
   *Yes. Score 7.2 (Possible 12)*

4. Clear, accountable exceptions: Any exceptions (to Complete Streets) are specified and must be approved by a high-level official.  
   *No. 0 Points (Possible 16)*

5. Network: The policy encourages street connectivity and creates a comprehensive, integrated and connected network for all modes across the network.  
   *No. 0 Points (Possible 2)*

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⁶⁸ [http://www.planning.org/research/streets/](http://www.planning.org/research/streets/)

6. Jurisdiction: All other agencies can clearly understand the policy and may be involved in the process. 
   No. 0 Points (Possible 8)

7. Design: The policy recommends the latest and best design criteria and guidelines, while recognizing the need for flexibility in balancing user needs. 
   Yes, 1.6 Points (Possible 4)

8. Context sensitivity: Community context is considered in planning and design solutions. 
   Yes. 8 Points (Possible 8)

9. Performance measures: Performance standards with measurable outcomes are included. 
   No. 0 Points (Possible 4)

10. Implementation: Specific next steps for implementing the policy are described. 70
    No. 0 Points (Possible 20)

As the COMPASS Complete Streets policy is defined by a single vision statement and seven concise objectives, it would require additional depth in the specific element categories developed by Smart Growth America and the National Complete Streets Coalition to receive a more favorable score.

Opportunities for improvement based on this rating system include:

- Developing exceptions and accountability measures to support the planning for Complete Streets (in reference to #4).

- Providing a more detailed discussion of a connected, integrated network. Where the COMPASS policy states, network transportation modes to optimally connect homes, jobs, schools, shops, families and friends, this lack of points seems open to interpretation (in reference to #5).

- Specifically stating that projects receiving money passing through COMPASS are expected to follow a Complete Streets approach (in reference to #6).

- Including performance measures within the Complete Streets policy (in reference to #9). COMPASS currently produces a robust Performance Monitoring Report (PMR), which has been referenced in this document, detailing the metrics such as miles of bike lanes or accessibility to transit. If these multimodal considerations were contained within the Complete Streets Policy, it would be considered exemplary.

Incorporating the element of implementation into the policy (in reference to #10), is described by four key steps:

- Restructure or revise related procedures, plans, regulations and other processes to accommodate all users on every project.
- Develop new design policies and guides or revise existing to reflect the current state of best practices in transportation design. Communities may also elect to adopt national or state level recognized design guidance.
- Offer workshops and other training opportunities to transportation staff, community leaders and the general public to help everyone understand the importance of the Complete Streets vision.
- Develop and institute better ways to measure performance and collect data on how well the streets are serving all users.

Next Steps

The next steps for Complete Streets within the Treasure Valley will require an integrated, comprehensive, and long-term approach; such as the perspective provided by the Communities in Motion 2040 plan.

This section will discuss the roles of: COMPASS Personnel and Committees, regional considerations, performance measurements, and aspects of implementation. As Complete Streets will be achieved on an incremental basis, short-term strategies and programs are also presented as an integral component because they are supportive of long-term goals.

Committee Recommendations

Cited in the background section of this document, COMPASS has allocated increasingly more resources towards the analysis of Complete Streets, since the creation of the policy in 2009. The recent completion of scoring the current conditions of specific roadways within the Treasure Valley, establishes a benchmark based on the Q/LOS software. To date, these results and the underlying Q/LOS methodology have been presented to the following COMPASS committees:

- Transportation Model Advisory Committee
- Communities in Motion 2040 Leadership Team
- Communities in Motion 2040 Planning Team
- Public Participation Committee

The evaluation, feedback, and guidance of these and other pertinent committees in the future, is a necessary and valuable component for the next steps of Complete Streets.
Regional Sensitivity

A current topic of discussion voiced at a recent committee meeting, questioned the regional sensitivity of the Q/LOS software for the Treasure Valley, asking what opportunities exist to further calibrate and validate the results for the study area. This question addresses an important concern, in terms of applying Complete Streets principals to our region.

Transit LOS scores were redefined based on Valley Regional Transit discussion and local context to apply a more meaningful level of service in the region. This is represented in the LOS of “F” representing demand response services rather than fixed route services that have long headways. Other Transit LOS scores were also adapted accordingly.

Defining the regional context is a continual process that will take shape with the incorporation of Performance Measures, which allows for the analysis of Complete Streets by specific data and metrics, as discussed below.

Performance Measurement

As COMPASS continues to prioritize Complete Streets, aspects of performance measurement encompass the success of the Complete Streets Policy. The NCSC policy analysis guide poses questions relevant to performance measurement such as:

- What performance measures are important for our community?
- What are the implications of specific short-term measurements such as bike lane miles, versus non-specific long-term measurements such as air quality and obesity?
- What member agencies and organizations can help with data collection and benchmarking? 71

The NCSC local policy workbook lists the following items as effective measurement indicators, pertaining to the questions above:

- Linear feet of new or reconstructed sidewalks
- Miles of new or restriped on-street bicycle facilities
- Number of new or reconstructed curb ramps
- Number of new or repainted crosswalks
- Number of new street trees/percentage of streets with tree canopy
- Percentage completion of bicycle and pedestrian networks within city plans
- Efficiency of transit vehicles on routes
- Percentage of transit stops with shelters
- Percentage of transit stops accessible via sidewalks and curb ramps
- Multimodal Level of Service (MMLOS)
- Auto Trips Generated (ATG)

• Decrease in rate of crashes, injuries, and fatalities by mode
• Transportation mode shift: more people walking, bicycling, and taking transit
• Rate of children walking or bicycling to school
• Vehicle Miles Traveled (VMT) or Single Occupancy Vehicle (SOV) trip reduction
• Satisfaction levels as expressed on customer preference surveys

These measurements fit into a larger context of community and regional needs, prioritizing projects, assessing impacts, and evaluation processes. The APA guide to Complete Streets, lists the following performance measurement components and examples:

• Needs Assessment – Assessment of multimodal conditions and problem spots in the planning process. Examples include scoring systems, indexes, street typologies, and annual mobility scorecards.
• Project Prioritization – Comparison of projects with respect to severity of problem and potential impacts.
• Impact Assessment – Forecast of potential impacts of proposed projects, examples include new or revised LOS standards.
• Project Evaluation – Measurement of multimodal conditions before and after implementation of a project. Examples include tracking mode shifts, volumes, speed, crashes, and other goals and measures.

Currently, COMPASS is within the Needs Assessment portion of the process because of the efforts described thus far, as well as the significant overlap that exists between the Performance Monitoring Report (PMR) and the performance measures applicable to Complete Streets. The PMR tracks and evaluates how communities and government agencies are doing in implementing the Communities in Motion 2035 plan. The five key issues addressed in the plan include:

• Balance between jobs and housing
• Choices in housing
• Choices in transportation
• Connectivity
• Preservation of open space and farmland

Choices in transportation represents the most appropriate link to Complete Streets performance measurements; although the other key issues also provide noteworthy measurements valid to Complete Streets. Furthermore, the PMR contains GIS based maps, providing a geographic representation for many of these measurements. The PMR is located at: http://www.compassidaho.org/prodserv/gtsm-perfmonitoring.htm

Below are some of the measurements and figures from the key issues:

72 http://www.smartgrowthamerica.org/documents/cs-local-policy-workbook.pdf (p.38)
73 http://www.planning.org/pas/brochure/pdf/report.pdf (Adapted from Table 5.1, p.56)
74 http://www.compassidaho.org/prodserv/cim2035.htm (p.55)
- Choices in Transportation: peak hour travel time, transit revenue minutes per capita, Park & Ride spaces per capita, vanpools per capita, sidewalks per roadway mile, and bikeways per roadway mile
- Choices in Housing: amount of housing in transit-supportive neighborhoods
- Connectivity: proximity of employment and housing to existing transit

Notable similarities exist between the measurements of the NCSC and the COMPASS PMR, exemplified by the Choices in Transportation. Also contained within the PMR is a list containing the incremental accomplishments of local governments and agencies towards the key issues of Communities in Motion 2035, coinciding with the prioritization, assessment, evaluation components recommended by the APA.

Moving forward, COMPASS personnel will continue to collaborate and incorporate the feedback of COMPASS committees; with regards to the vision and preferences of Complete Streets identified in Communities in Motion 2040. Performance Measurement is a crucial Next Step that COMPASS currently utilizes for tracking the implementation of Communities in Motion, which may also be adapted for Complete Streets. Complete Streets implementation will require the components of the APA including needs assessment, project prioritization, impact assessment, and project evaluation. The final section of this document presents considerations for the implementation of Complete Streets projects for the region.

Implementation

The implementation of a Complete Street, requires the acknowledgment of many interdependent components, either working for or against a multimodal designed roadway. This section describes the most essential components, involving an integrated perspective toward the implementation of Complete Streets.

Many of the obstacles to implementing Complete Streets were listed as Community and Regional challenges on page 39, in a previous section of this document. Below is a summary of the Community and Regional Challenges:

- Moving from policy to implementation (requiring needs assessment, project prioritization, impact assessment, and project evaluation)
- Acknowledging the viewpoint of traditional transportation planning processes that focus on capacity and expansion for automobiles
- Coordinating Complete Streets objectives among multiple jurisdictions
- Overcoming perceptions regarding the costs of Complete Streets
- Changing human behavior and habits that lean towards single driver automobile use or counter sedentary lifestyles through education, outreach, and training
- Guiding development patterns and land use through planning and zoning mechanisms (contrary to sprawl and poorly connected development)

Building off these challenges, other potential Complete Streets implementation steps include:
1. The creation of a Complete Streets Plan
2. Current and future federal, state, and local funding
3. Project scope and cost differences between bicycle, pedestrian, and transit improvements
4. Utilizing integrated development approaches such as Transit Orientated Development (TOD), offering seamless transitions from transit stops to bicycle and pedestrian infrastructure

Conclusion

The construction of transportation infrastructure for automobiles transformed the landscape of our nation throughout the 20th Century. Roads support a variety of needs from commerce to recreation. The success of automobiles, roadways, and highways transformed land development patterns in urban and suburban environments.

Legislation could accelerate the prioritization of Complete Streets, such as the proposed Safe Streets Act of 2013 (H.R. 2468) introduced in June 2013. The act would require that each state and MPO adopt a Complete Streets policy within two years, ensuring that all new federally funded transportation projects accommodate the safety and convenience of all users. 75

Overcoming objections concerning the total cost and measurable benefits of Complete Streets continue to be a challenge; although as more projects are finished they establish valuable benchmarks and instill community support. Analysis from Charlotte, North Carolina shows that the incremental cost of Complete Streets ranged from 2.5% to 8%, less than the variation of construction costs, which can be as high as 20%. 76

The COMPASS Complete Streets policy is not at cure-all for multimodal transportation issues; however the use of current assessment methods (software and mapping) stands to aid prioritization, design, and evaluation of roadways. Further, the Complete Streets policy and related efforts appear to be seamlessly integrated into the bicycle, pedestrian, or transit plans of COMPASS member agencies.

As Complete Streets are an integral component of Communities in Motion 2040, there exists an opportunity for the additional training and education of planners, engineers, policy makers, and the general public. This is due to the unique requirements and trade-offs between each mode regarding the safety, accessibility, and connections to the transportation network.

Ultimately, realizing the vision of Complete Streets throughout particular areas of the Treasure Valley will require complementary policies among intergovernmental actors and regional collaboration for implementation. Complete Streets present one

75 http://blogs.planning.org/policy/2013/06/21/house-bill-proposes-national-complete-streets-policy-standards/
aspect of livable communities and provide insight to the larger relationship between land use and transportation.
Complete Streets Resources

National

National Complete Streets Coalition:
Reports, Articles, Presentations, Fact Sheets, and Design Guidance
(Over 50 useful links)
http://www.smartgrowthamerica.org/complete-streets/complete-streets-fundamentals/resources

American Planning Association:
Complete Streets Resource List
http://www.planning.org/research/streets/resources.htm

State and Local

Idaho Transportation Department:
Bicycle and Pedestrian Resources, National, Statewide, and Local Organizations
(Over 50 Useful Links)
http://itd.idaho.gov/bike_ped/resources.htm

Transit, Bicycle, and Pedestrian Mobility Funding Guide
http://www.itd.idaho.gov/bike_ped/Funding%20Guide.pdf

Ada County Highway District:
Livable Streets Design Guide and Complete Streets Policy
http://www.achdidaho.org/departments/PP/TLIP.aspx

Other

Boston Complete Streets:
http://bostoncompletestreets.org/

North Carolina DOT Complete Streets:
http://www.completestreetsnc.org/

Complete Streets for Canada:
http://www.completestreetsforcanada.ca/