



To: Becky Taylor and Sasha Vartanian, Lane County
From: Derek Abe, Grace Stainback, and Amelia Adams, Alta Planning + Design
Date: October 30, 2021
Re: Lane County Bicycle Master Plan – Implementation Strategy FINAL

Introduction

This memorandum provides a roadmap for achieving the vision and goals established at the beginning of this Plan, and includes the following elements:

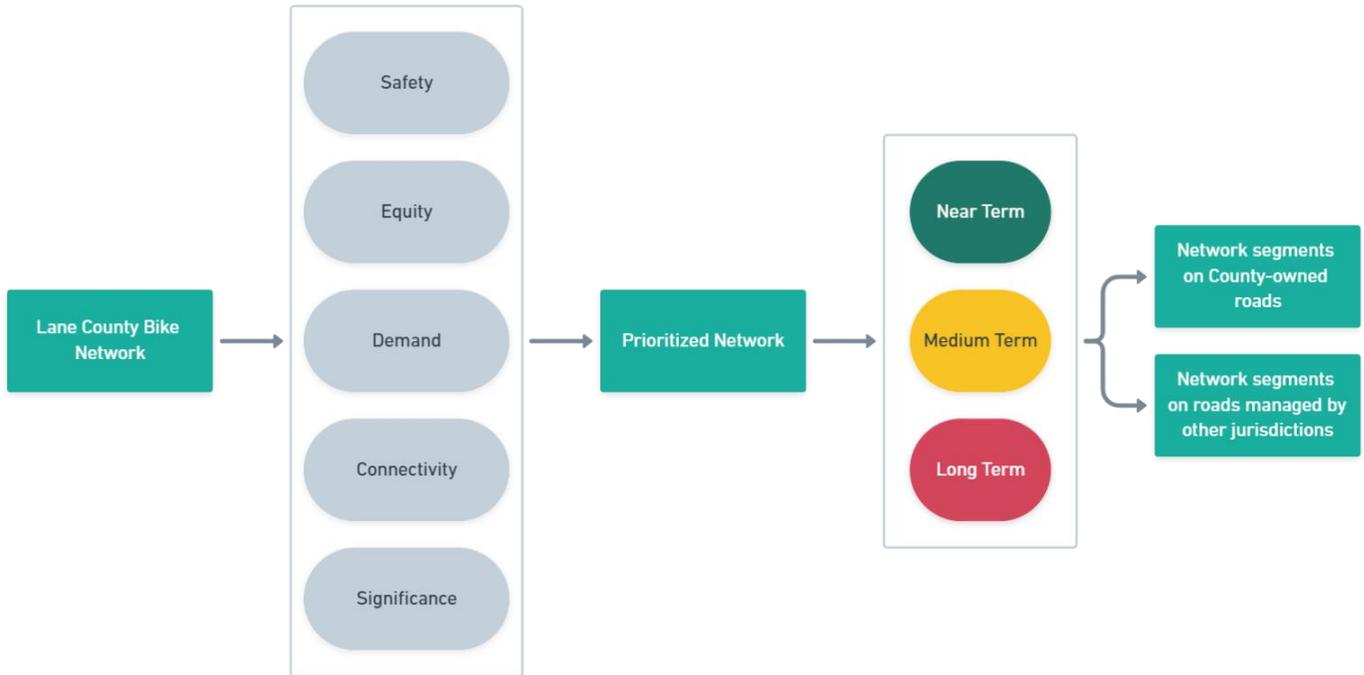
- **Prioritization Methodology:** Describes the process for evaluating project recommendations in order to help Lane County prioritize projects.
- **Implementation Costs and Available Resources:** Provides planning-level costs for bicycle facility improvements and maintenance, and outlines opportunities to fund them.
- **Implementation Action Plan:** Provides key actions that Lane County and its partners can take to move this Plan forward.
- **Performance Measures:** Outlines goal-based performance measures that the County can use to measure the success of implementation over time.

Prioritization Methodology

A prioritization framework enables the County to focus its investments and phase the implementation of projects over time. In order to assist Lane County in determining priority and phasing for proposed improvements, criteria were established to evaluate the Lane County Bike Network and ultimately assign them to three tiers: near, medium and long-term. Additionally, the network will be divided into two categories: those that are County-owned roads, and those that are on networks owned and managed by other agencies or jurisdictions. This is an important distinction to make; this planning process identified need for improvements on networks outside of the County-owned street network, and demonstrated that all Lane County bicycling networks are interdependent. The County should use this Plan as a platform to communicate the need for continued planning and coordination with project partners in regards to their own planning processes to support bicycling efforts.

Based on the project goals and on community, stakeholder, and agency input, the project team established five overarching prioritization criteria—safety, equity, demand, connectivity and significance—to prioritize potential improvements. This prioritization framework is outlined in Figure 1.

Figure 1. Prioritization Framework Overview



Each of the overall criteria will be measured using the specific sub-criteria and metrics shown in Table 1. The Lane County Bicycle Network will be divided at logical breakpoints for evaluation; these breakpoints include transitions from an urban to rural environment, a change in the proposed facility type, and shifts in the route designation from Primary to Secondary. Finally, improvements will be assigned into one of three prioritization tiers- Near-term, medium-term, and long-term- and differentiated by the relevant road authority.

Table 1. Prioritization Framework Criteria and Metrics

Criteria	Sub-Criteria	Metric or Definition
Safety	Addresses perceived safety and comfort	Segment located along roadway with a high LTS score based on LCBMP LTS Analysis*
	Addresses bicycle collisions	Segment located along corridor with documented bicycle collisions
Equity	Serves areas of high equity need	Segment located in an area of high equity need based on LCBMP Equity Analysis*
Demand	Serves areas of high demand for bicycling	Segment is within, or facilitates connections to, areas of high demand based on LCBMP Demand Analysis*



Connectivity	Addresses connectivity	Segment improves connections and transitions between rural and urban areas, or connections to other regional cycling routes and networks
Significance	Lane County Bike Network route classification	Preference given to segments classified as Primary on the Lane County Bike Network
	Addresses community-identified need	Improvement was identified by the local community in engagement events, and adheres to the local community's priorities.

*Refer to the Existing Conditions Memorandum for information on the methodology, data inputs and results of these analyses.

Implementation Costs and Available Resources

Capital Cost Estimates

Planning-level unit cost assumptions were used to develop estimated project construction costs. These unit costs are typical or average costs of infrastructure for Lane County Public Works. These cost assumptions do not factor in project-specific or location-specific details that may affect actual costs, such as acquisition of right-of-way, environmental permitting or relocation of infrastructure. For some projects, actual costs may differ significantly from the planning level estimates, which are listed in Table 2. Cost estimates are provided in 2021 dollars and due to annual inflation, cost estimates will increase in the future.

Table 2. Bicycle Facility or Improvement Planning Level Costs

Facility or Improvement	Unit	Cost Estimate (Low)	Cost Estimate (High)
Paved Shared Use Path	Per Mile	\$150,000	\$1,000,000
Buffered/Protected Bicycle Lane	Per Mile	\$10,000	\$50,000
Bicycle Lane	Per Mile	\$5,000	\$15,000
Shared Roadway Improvements (Pavement Markings/Signage)	Per Mile	\$11,000	\$15,000
Paved Shoulder Widening	Per Foot of Widening Per Mile	\$15,000	\$30,000



Public involvement process for capital projects

The public's involvement in the Lane County Bicycle Master Plan process will directly inform the identification and prioritization of bicycle improvement project recommendations. The project recommendations will be adopted as a formal amendment to the Lane County Transportation System Plan (TSP). The TSP establishes a network of facilities to meet overall transportation needs.

Implementation of the TSP involves a subsequent process known as project development which determines the precise location, alignment, and preliminary design of the improvements included in the TSP. Lane County has a strong policy commitment to public involvement in the capital project development phase through Lane Manual Chapter 15 which requires all projects (other than maintenance and bridges) to have design concepts approved as a Board Order by the Lane County Board of Commissioners. The process includes stakeholder identification and involvement, notices to abutting property owners, and a public hearing and recommendation by the Lane County Transportation Advisory Committee (TrAC). A written report documenting the process, public comments received, alternatives considered, and the recommended design concept is required to be provided as part of the Board Order.

Funding Resources

Lane County currently faces significant funding challenges, limiting the ability to construct needed transportation improvements. The majority of available funds are used to preserve and maintain the existing transportation system. Implementation of the BMP recommendations will require additional funding and resources, likely from diverse local, regional, state, and federal sources as well as coordination with multiple agencies. The majority of non-local public funds for bicycle and pedestrian projects are derived through a core group of federal and state programs. To facilitate funding efforts, this section presents an inventory of different funding sources and strategies.

Table 3 summarizes available funding resources and their potential relevance to the Lane County Bicycle Master Plan. In addition, the table notes relevant eligibility considerations and whether Lane County currently utilizes the resource for infrastructure development. This list is intended to capture the full range of possible funding sources at federal, state, regional, and local levels, recognizing that funding sources may derive (trickle down) from larger funding sources, and that project funding requirements and awards are largely dependent on respective funding streams.



Table 3. Funding Resources Matrix

Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
Federal	Surface Transportation Block Grant Program (STBG)- Urban	USDOT/LCOG	Surface Transportation Block Grant - Urban funds (STBG-U) are provided to the Central Lane MPO based on a population-based formula set by the Federal Government in the Fixing America's Surface Transportation (FAST) Act transportation bill. The MPO receives approximately \$4 million per year in these Federal Highway Administration funds, subject to Congressional budgeting.	STBG-U funds are available for all roads not functionally classified as local or rural minor collectors. Transit capital projects and bicycle-pedestrian projects area also eligible under this program. Projects are funded through a competitive selection process.	Yes- federal share is limited to 89.73%	Yes
Federal	Transportation Alternatives (TA)	USDOT/LCOG	Transportation Alternatives funds are allocated as a portion of STBG-U funds, and provide flexible funding for smaller scale projects that can include pedestrian and bicycle infrastructure, recreational trails, and safe routes to school projects. Central Lane MPO receives roughly \$200,000 in TA funds each year.	Projects are funded through a competitive selection process.	Yes -federal share is limited to 89.73%	Yes
Federal	Congestion Mitigation & Air Quality Program (CMAQ)	USDOT/LCOG	The Congestion Mitigation and Air Quality (CMAQ) Program is a funding source for transportation projects and programs that reduce traffic congestion and contribute to air quality improvements. Central Lane MPO receives roughly \$1.8 million each year from this fund, distributed through the state.	Bicycle and pedestrian improvements are eligible for this funding, and projects are funded through a competitive selection process.	Yes -federal share is limited to 89.73%	Yes



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
Federal	Better Utilizing Investments to Leverage Development (BUILD) Grant Program	USDOT	Funds projects that are very large, multi-modal, or multi-jurisdictional. Projects are expected to help achieve national objectives.	States and local jurisdictions, including municipalities, counties, port authorities, tribal governments, MPOs, or others	Urban areas: Federal share cannot exceed 80%; Rural areas: Federal share can account for 100% of project funds	Yes
Federal	Community Development Block Grant (CDBG) Entitlement Program	HUD	The Community Development Block Grant (CDBG) Program provides annual grants on a formula basis to states, cities, and counties to develop viable urban communities by providing decent housing and a suitable living environment (including street improvements), and by expanding economic opportunities, principally for low- and moderate-income persons. (At least 70 percent of CDBG funds must be used for activities that benefit low- and moderate-income persons)	Principal cities of Metropolitan Statistical Areas (MSAs); Other metropolitan cities with populations of at least 50,000; Qualified urban counties with populations of at least 200,000 (excluding the population of entitled cities)		Yes
Federal	USFS Secure Rural Schools	USFS	The Secure Rural Schools (SRS) program provides critical funding for schools, roads, and other municipal services to more than 700 counties across the U.S. and Puerto Rico. (Title I Funds road improvements). Absent Congressional renewal, the last authorized SRS payments will be made to counties in Spring 2021.	Counties		Yes



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
Federal	Federal Lands Access Program (FLAP)	USDOT FHWA	Funds improvements to transportation facilities that provide access to, are adjacent to, or are located within Federal lands. Funds are allocated among the States using a statutory formula based on road mileage, number of bridges, land area, and visitation.	The USFS, ODOT, and the WFL (jointly known as the Tri-Agency) administer distributions of Forest Highway Funds to participating jurisdictions and agencies through a call for projects.	Yes – 10.27% for Oregon (varies by state)	Yes
Federal	Local Highway Bridge Program (LHBP)	USDOT FHWA	Funds highway bridge replacement and rehabilitation projects on public roads. Projects must demonstrate cost savings through bundling two or more similar bridge projects with the same financial characteristics (funding category, federal share)	State DOTs in states with a population density of less than 100 people per square mile based on the 2010 census and a State’s total land area. (Oregon is included). Applications are limited to 3 per state and must be ranked by the state in order of priority.	Yes - 20% or sliding scale	Yes
Federal	National Historic Covered Bridge Preservation (NHCBP)	USDOT FHWA	Provides funding to assist the States in their efforts to preserve, rehabilitate, or restore the Nation's historic covered bridges (those listed or eligible for listing on the National Register for Historic Places).	Counties	Yes – generally 20%, but Oregon is eligible for a higher Federal share ¹	Yes
Federal	Federal Railway-Highway Crossings (Section 130)	USDOT FHWA	Provides funds for the elimination of hazards at railway-highway crossings. Funds are eligible for projects at all public crossings including roadways, bike trails and pedestrian paths.	The funds are apportioned to States by formula.	Yes - 10% match	Yes
Federal	Highway Safety Improvement Program (HSIP)	USDOT FHWA	HSIP is a federal program that provides funding to infrastructure and non-infrastructure projects to improve safety on all public roads. As part of this program, the FHWA also funds a High-Risk	To be eligible under HSIP, a project must be consistent with a State Highway Safety Plan (SHSP). HSIP requires that grantees use a data-	Yes – 10%, but Oregon is eligible for a	Yes

¹ This is based on 23 U.S.C. 120 (c)(1), which grants larger federal shares to states that contain large amounts of public lands.



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
			Rural Roads (HRRR) program that funds improvements on rural major or minor collectors or rural local roads.	driven approach and prioritizes projects in demonstrated problem areas	higher Federal share	
Federal	FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities Program	FTA/ODOT/LCOG	The program makes federal resources available to improve mobility for seniors and individuals with disabilities by removing barriers to transportation service and expanding transportation mobility options. 45% of funding is dedicated to “nontraditional” projects that can include improvements such as pathways to transit, accessible wayfinding, accessible pedestrian signals or other crossing features.	State or local government entity. Based on Census data, the formula funds are apportioned to each State based on the number of older adults and individuals with disabilities and allocated by area: o Large UZAs: 60% o Small UZAs: 20% o Rural: 20%	Yes – 20%	Yes
Federal	FTA Section 5311 Formula Grants for Rural Areas Program	FTA/LCOG	The Formula Grants for Rural Areas program provides capital, planning, and operating assistance to states and federally recognized Indian tribes to support public transportation in rural areas with populations less than 50,000. It also provides funding for state and national training and technical assistance through the Rural Transportation Assistance Program	Rural areas with populations less than 50,000.	Yes – 20%	Yes
State/ Region	State Transportation Improvement Program (STIP)	ODOT	ODOT's capital improvement program. Non-highway programs fund bicycle and pedestrian projects. Programs include Active Transportation Leverage, which adds walking or biking features to Fix-It projects, and ADA Curb Ramps, to boost accessibility of pedestrian infrastructure.	Proposals can be made to the state via regional offices. Projects must be in a local adopted Transportation System Plan. Projects included in the STIP are allocated into the five different ODOT regions. Funding is divided to each region based on the number of fatalities and serious injury crashes.		Yes



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
State/ Region	All Roads Transportation Safety Program (ARTS)	ODOT	ODOT's STIP process also funds safety improvement projects that reduce traffic related deaths and injuries through the All Roads Transportation Safety Program, which utilizes data collection and analysis to select projects that will maximize traffic safety benefits per investment dollar. Funding is data-driven relative to safety factors and based on cost benefit analysis.	See above.	Yes - 7.78% local match	Yes
State/ Region	Oregon Community Paths (OCP) Program	ODOT	This newly-established program will fund grants for project development, construction, reconstruction, major resurfacing or other improvements of multiuse paths that improve access and safety for people walking and bicycling. The OCP may also fund on-road improvements such as enhanced crossing infrastructure that support a path although the focus of the program is on projects outside of the road right-of-way. Projects must improve a critical link, regional path or path crossing of a roadway.	A city, county, state, regional government body, tribe, transit district, school district, special government body, or other unit of local government, a non-profit organization or other private entity with documented support from one of the affected governmental bodies.	Yes - 30% for state component, 10.27% for federal component (Generally, certified agencies will receive federal funds)	No
State/ Region	Transportation Growth Management (TGM)	ODOT and ODLCD	Supports planning for transportation and land use in a way that increases opportunities for transit, walking, and bicycling. These grants are generally awarded to projects that will lead to more livable, economically vital, transportation-efficient, sustainable, pedestrian-friendly communities. The grants are awarded in two categories: transportation system planning, and integrated land use and transportation planning.	Cities, counties, tribes, and transit districts. TGM grants are administered by ODOT and awarded on an annual basis.	Yes – minimum match of 12%, but this may vary by jurisdiction	Yes



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
State/ Region	TGM Quick Response (QR) program	ODOT and ODLCD	The Quick Response (QR) program helps cities find ways to implement transportation and land use plans and assists with multi-modal problem solving. QR projects are typically site specific, small scale, and short term.	Local jurisdictions can apply for a Quick Response project by sending a letter to TGM with a description of the proposed project.	See above.	Yes
State/ Region	SRTS Rapid Response Infrastructure Grant Program	ODOT	Funds infrastructure projects that are eligible for the Safe Routes to School Competitive Infrastructure Grant program but cannot wait for the next Safe Routes to School Competitive Infrastructure Grant cycle which runs every two years. Road authorities are encouraged to apply for projects that address barriers for students walking and biking to school. Funding gives priority to improvements serving Title 1 schools, and areas where a high crash rate or major safety issue has been identified	Cities, counties, tribes, transit districts, ODOT, and other road authorizes	Yes - 40% cash match is required and may be eligible for reduction to 20%.	Yes
State/ Region	SRTS Competitive Infrastructure (IN) Grant Program	ODOT	Funds safety projects that positively affect the ability of children to walk and bicycle to school. Projects must be within a public road right-of-way, consistent with jurisdictional plans, supported by the school or school district, within a one-mile radius of a school, and be able to be constructed within 5 years of the application. Funding will give priority to improvements serving Title 1 schools.	Cities, counties, tribes, transit districts, ODOT, and other road authorities	Yes - 40% cash match is required unless the project meets the population, equity, or safety criteria for reduced match of 20%.	Yes



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
State/ Region	SRTS Project Identification Program (PIP)	ODOT	The program provides a service to school communities to identify infrastructure projects that address barriers to students walking and biking to school in a newly-created local plan. Consultant services will be provided	Cities, counties, tribes, transit districts, ODOT, and other road authorities	No	Yes
State/ Region	Sidewalk Improvement Program (SWIP)	ODOT	State Highway Fund dollars are distributed to each region for bicycle and pedestrian projects on state roadways. Outside agencies (such as a local roadway authority) may be able to use some of the funds such as the Sidewalk Improvement Program, or SWIP, dollars for pedestrian and bicycle facilities on state highways via an Intergovernmental Agreement.	Cities, counties, tribes, transit districts, ODOT, and other road authorities		No
State/ Region	Statewide Transportation Improvement Fund (STIF)	ODOT	Walking and biking connections to transit are eligible under ODOT's STIF Discretionary and Statewide Network Program, a new fund for transit started in 2018.	Public Transportation Service Providers, including mass transit districts, transportation districts, Indian Tribes, or a city, county, special district, intergovernmental entity, or any other political subdivision or municipal or Public Corporation that provides public transportation services.	Yes – Varies from 10-20%	No
State/ Region	Small City Allotment Program (SCA)	ODOT / League of Oregon Cities	This program provides state funds for local transportation projects. Awarded projects are selected through an annual competitive process.	Cities with no less than 5,000 residents – cities are allowed two active projects though only one application may be submitted each funding cycle.	No	(Lane County is not eligible but can assist cities)
State/ Region	Oregon Parks and Recreation	Oregon Parks & Recreation	Recreational Trails Grants are national grants administered by the Oregon Parks and	Local government agencies that are obligated by state law to provide	Yes - 20%, or 40% for non-	



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
	Recreational Trails Program (RTP)		Recreation Department for recreational trail-related projects, such as hiking, running, cycling, off-road motorcycling, and all-terrain vehicle riding. Eligible projects include: construction of new trails, major rehabilitation of existing trails, development or improvement of trailhead or other support facilities, acquisition of land or easements for the purpose of trail development, and safety and education projects	public recreation facilities. (cities, counties, Metropolitan Service Districts, Parks and Recreation Districts, Port Districts)	motorized projects requesting \$250,000 or more	
State/ Region	Oregon Parks and Recreation Local Government Grant Program (LGGP)	Oregon Parks & Recreation	Funds for public outdoor park and recreation areas and facilities. These areas and facilities must be open and accessible to the public-at-large. Typically, the program awards over \$5 million annually to qualified projects.	Local government agencies that are obligated by state law to provide public recreation facilities. (cities, counties, Metropolitan Service Districts, Parks and Recreation Districts, Port Districts)	Yes - 20-50% depending on size of population	
State/ Region	Immediate Opportunity Fund (IOF)	ODOT	The IOF is a state discretionary fund that can be used for the construction and improvement of streets and roads that are needed to support primary economic development. Access to this fund is discretionary and the fund may only be used when other sources of financial support are unavailable or insufficient. Eligible projects include streets, sidewalks, and bike lanes.	Government agencies in charge of the roads where improvements are requested.	No more than 50% of project costs will be covered by this fund	
State/ Region	Travel Oregon Competitive Grants	Travel Oregon	This grant program, which has provided over \$8 million in funds over the past 11 years, supports projects that contribute to the development and improvement of local economies and communities throughout the state by means of the enhancement, expansion, and promotion of the visitor industry.	Projects must be for tourism purposes and demonstrate a direct tie to the mission of Travel Oregon.	Yes	



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
County	Lane County General Fund: Facilities, Lane County	Lane County Public Works	The General Fund is the County's primary operating fund which must support a multitude of the County's core services including public safety, public health and general government services. Given the constraints on these funds in service delivery, General Funds are typically not used to support transportation projects.	The majority of the resources available within the General Fund are discretionary and vary from year to year.	N/A	Yes
Local	People for Bikes Community Grants	People for Bikes	The People for Bikes Community Grant Program provides funding for projects that build momentum for bicycling in communities across the U.S. These projects include bike paths and rail trails, as well as mountain bike trails, bike parks, BMX facilities, and large-scale bicycle advocacy initiatives.	Applications are accepted from non-profit organizations with a focus on bicycling, active transportation, or community development, from city or county agencies or departments, and from state or federal agencies working locally.	No	
Local	AARP Community Challenge Grant	American Association of Retired Persons (AARP)	This grant program funds readily-implementable projects such as permanent infrastructure improvements, temporary demonstration projects, and innovative programming or services. Projects are judged on the degree to which their goals will make an immediate change that leads to a longer-term impact.	States and communities that have enrolled in the AARP Network of Age-Friendly States and Communities	No	
Local	System Development Charges (SDCs)	Local jurisdiction	SDCs are a one-time charge collected by a City when a development permit is issued. By law, SDCs are limited to use for capacity improvements necessary to accommodate new development. This funding is a common source of local match for other grant programs and is	Governmental jurisdictions with the authority to approve development permits.	N/A	No, Lane County's "capacity enhancement to accommodate



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
			particularly appropriate for projects that are not good candidates for other funding sources.			development” role is very limited; this is typically a city function.
Local	User Fees	Local jurisdiction	A user fee is added to a monthly utility bill or included in the annual vehicle registration to fund improvements, expansion, and maintenance of the surface street system.	Governmental jurisdictions with the authority to levy user fees.	N/A	No, Lane County attempted a local vehicle registration fee in 2015 which was not supported by voters.
Local	Street Utility Fees / Road Maintenance Fee	Local jurisdiction	The fee is based on the number of trips a particular land use generates and is usually collected through a regular utility bill.	Governmental jurisdictions with the authority to levy fees.	N/A	No
Local	Local Gas Tax	Local jurisdiction	In addition to the Oregon state gas tax, some cities and counties charge an additional gas tax to fund transportation improvements. For example, Multnomah and Washington Counties have county gas taxes. The City of Coburg also has a local gas tax.	Governmental jurisdictions with the authority to levy taxes	N/A	No



Level	Program Name	Agency	Short Description / Purpose	Who or what is eligible?	Match required?	Presently Utilized by Lane County?
Local	Exactions	Local jurisdiction	These are improvements that are obtained as conditions of development approval. Developers are required to improve their street frontage and, in some cases, provide off-site improvements depending upon the level of traffic generation and the impact to the transportation system. This has been a common method of funding sidewalk improvements within the city, but is a difficult funding source to plan for because exactions are highly variable and it's not easy to plan for future improvements accurately.	Governmental jurisdictions with the authority to approve development permits.	N/A	Yes

Implementation Action Plan

Implementation of the Lane County Bicycle Master Plan will require dedication and involvement from a wide range of community partners. This section outlines how these partners could work together towards implementation, and features resources and action steps to help move projects forward. Figure 2 illustrates the relationship between the County and its partners in the context of implementation of the Plan’s recommendations. Table 4 outlines specific implementation actions for the County to tackle, including implementation partners and additional details.

Figure 2. Key Partners and Roles in Implementation

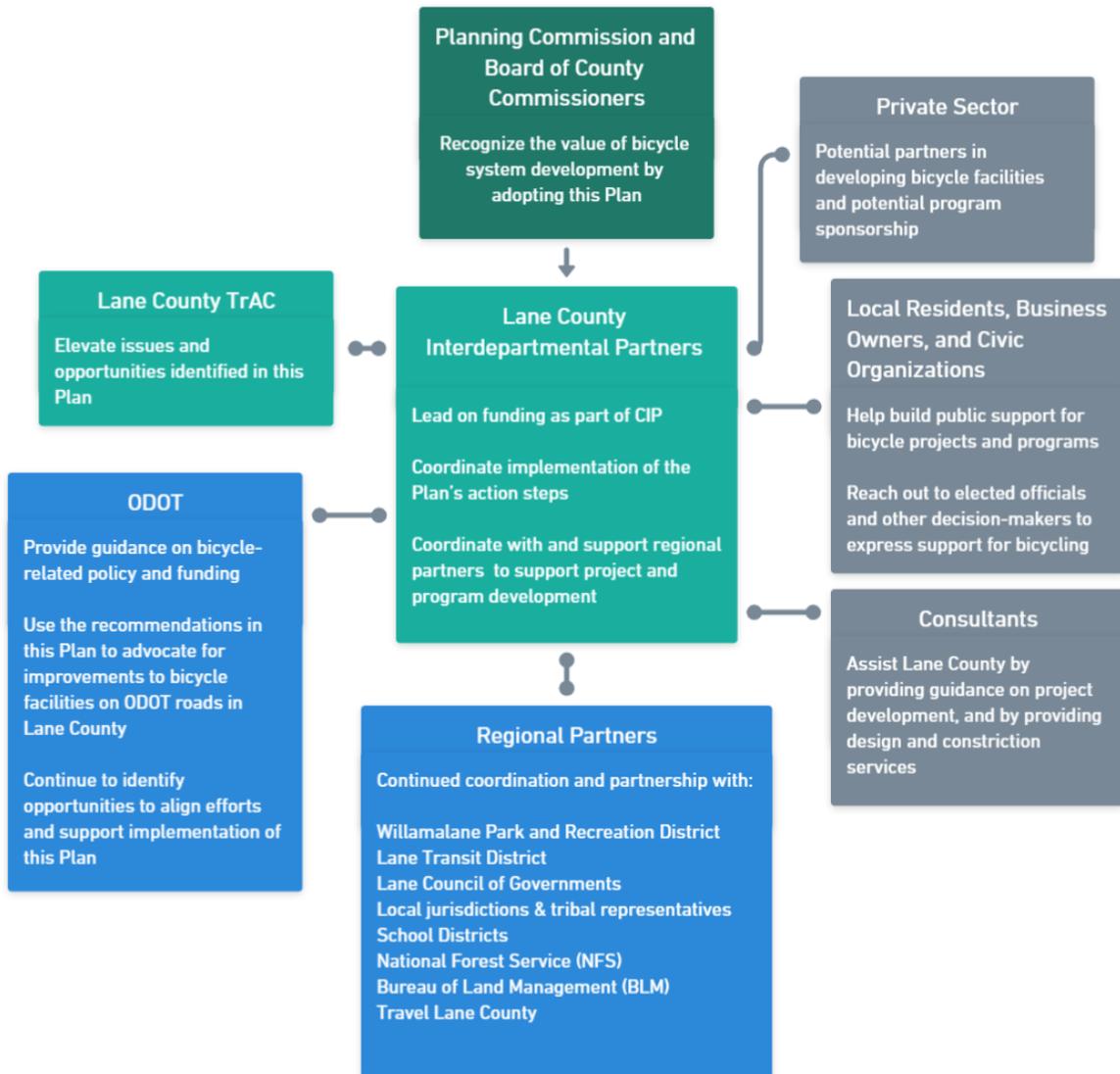




Table 4. Implementation Actions Matrix

Action	Implementing Partners	Notes/Considerations/Examples
1. Establish typical design standards to clearly identify urban/rural transition zones on County Roads.	Internal	Some roads will require greater or lesser accommodation for all modes, based on the surrounding land use context, and will vary in application throughout the County. Consult ODOT’s Blueprint for Urban Design (BUD) for guidance based on ODOT-designated urban, suburban and rural contexts.
2. Coordinate with partner agencies to identify alternative connections where on-street facilities are not feasible on County roads, and support them in their planning processes. Recommend the Parks Division create a Trails Plan addressing regional trail connectivity between parklands.	Oregon Department of Transportation (ODOT), Willamalane Park and Recreation District, local jurisdictions, National Forest Service (NFS), Bureau of Land Management (BLM)	This planning process identified need for improvements on networks outside of the County-owned street network, and demonstrated that all Lane County bicycling networks are interdependent. The County should use this Plan as a platform to communicate the need for continued planning and coordination with project partners in regards to their own planning processes to support biking. Consider a proposed bicycle facility’s importance in providing access to the Lane County Bicycle Network when recommending bicycle facilities on other networks for implementation.
3. Consider forest roads and gravel roads as opportunities for Lane County Bicycle Network development.	NFS, BLM, Willamalane Park and Recreation District, Travel Lane County	Work with partner agencies to encourage access, enhance routes and close network gaps on gravel and forest roads identified in the Lane County Bicycle Network.
4. Identify opportunities to enhance connections to off-road, recreational bicycling routes outside of the Lane County Bicycle Network, while clearly communicating the intended users for such routes.	NFS, BLM, Willamalane Park and Recreation District, Travel Lane County	See proposed amendment to TSP Policy 6-c. Specific actions include: <ul style="list-style-type: none"> • Partner with agencies that administer forest roads and park lands to encourage public access for walking and biking. • Identify opportunities to re-purpose right-of-way, including haul roads and abandoned rail lines, for off-road cycling



		<ul style="list-style-type: none"> Partner with other transportation and economic development agencies/organizations to coordinate and promote the development of county-wide recreational routes of regional significance.
5. Consider other safety interventions, including speed reduction and roadway redesign, when selecting appropriate facility designations on the Lane County Bicycle Network.		The recommended facilities on the Lane County Bicycle Network contained on this Plan are based on current roadway conditions, and are subject to revision over time. Safety and comfort for cyclists may also be enhanced by interventions such as speed reduction or roadway reconfigurations (i.e. road diets) that may inform a change in the recommended facility type.
6. Provide appropriate roadway surface type for bicyclists on newly constructed or reconstructed roadways, including temporary bicycle access during roadway construction or maintenance.	Internal	Considerations include providing a smooth, level path of travel, of generous width, physical separation, and clear instruction/signing through construction zones, and ensuring that on shoulder bikeways, rumble strips/strips and drainage grates are placed so as not to interfere with the bicycle path of travel. It also speaks to maintenance concerns about debris, loose gravel, rutting, etc. in the shoulder/bikeway which can pose a significant challenge for bicyclists.
7. Develop a consistent and intuitive regional wayfinding system on the Lane County Bicycle Network.	ODOT, local jurisdictions, Lane Transit District, Travel Lane County	<p>Establish a regional wayfinding system for bicycle routes and other points of interest throughout the region. After more of the longer distance routes are connected throughout the region, a wayfinding system is recommended to create a cohesive and easy-to-use platform for navigating the regional bicycle route system. The system should be designed so that it is flexible enough to be updated as new projects are completed, Coordinate with ODOT Scenic Bikeways wayfinding system, which already identifies many bikeways in Lane County.</p> <p>See NACTO’s guidance on wayfinding programs: https://nacto.org/publication/urban-bikeway-design-guide/bikeway-signing-marking/bike-route-wayfinding-signage-and-markings-system/</p>



<p>8. Consider the implications of e-bikes on medium and long-term Plan implementation.</p>	<p>ODOT, local jurisdictions</p>	<p>There are several considerations, including increased demand for longer-distance bicycling connections, and presence of bicyclists (including those of varying ability) on rural and/or more topographically challenging routes.</p>
<p>9. Improve access to and understanding of emerging technology that supports bicycling including e-bikes, bike share, and multimodal integrated trip planning (Mobility-as-a-Service).</p>	<p>Local jurisdictions, Lane Transit District</p>	<p>The purpose of this action is to expand the availability of emerging technology and shared travel options to smaller cities and neighborhoods in the region, many of whom may have interest in these applications but do not have the capacity to implement them. Lane County could support partner jurisdictions in areas such as determining feasibility of pilot programs such as bike share or promoting commercial services/amenities that support e-bikes.</p>
<p>10. Develop a bicycle count program to measure trip volumes on the Lane County Bicycling Network, and use metrics as a tool to inform both project prioritization and evaluation.</p>	<p>CLMPO</p>	<p>Bicycle facility usage data is needed to strengthen grant requests and influence policy and funding decisions. A lower-cost solution to a bicycle count program can include using Strava’s available metrics to understand trip volume and popular routes. See the Performance Measures section of this Plan for additional guidance.</p>
<p>11. Coordinate with public and private transit providers to leverage opportunities to incorporate options for bicycles, and prioritize projects that improve access to transit and offer first/last mile benefits.</p>	<p>Lane Transit District, Travel Lane County</p>	<p>Use the Demand Analysis prepared as a part of this planning process to inform this Plan, and/or rely on demand metrics provided by transit providers to determine need and prioritization.</p>
<p>12. Use the Equity Analysis metrics and public input provided in support of this Plan to prioritize improvements to the Lane County Bicycle Network in transportation disadvantaged communities.</p>	<p>Internal</p>	<p>See proposed amendment to TSP Policy 1-d, and also the Performance Measures section of this Plan for guidance on tracking this goal.</p>



<p>13. Expand bike share to other jurisdictions and areas beyond the Eugene-Springfield metropolitan area.</p>	<p>Local jurisdictions, ODOT, Cascadia Mobility</p>	<p>Bike share systems offer a number of benefits to the cities that choose to invest in them. Benefits can include getting more people on bicycles, improved community health, economic benefits, and synergies with public transit. Well-planned expansion can also lead to ridership increases and increased viability as a transportation option. Sponsorships are used to offset operating costs and private property owners can partner with the siting and installation of stations.</p>
<p>14. Develop bicycle parking requirements and encourage end of trip facilities.</p>	<p>Internal</p>	<p>Examples of support for end of trip facilities include: working with rural communities to develop lower density parking requirements, establishing bike parking requirements at County facilities, or strategizing around centralized rural “Mobility Hubs” with transit providers.</p> <p>Association of Pedestrian and Bicycle and Professionals’ Bicycle Parking Guidelines: http://c.ymcdn.com/sites/www.apbp.org/resource/resmgr/bpg_exec_summary_4-21-10.pdf</p>
<p>15. Develop a Request-a-rack program to address unmet demand for bicycle parking at businesses in unincorporated Lane County.</p>	<p>Local jurisdictions</p>	<p>A “Request-A-Rack” program can help address unmet demand for bicycle parking at existing businesses. City of Tucson Bicycle Parking Distribution Policy: https://www.tucsonaz.gov/files/bicycle/Bike_Rack_Distribution_Policy.pdf</p>
<p>16. Increase local capacity to execute and administer education and encouragement programs throughout Lane County.</p>	<p>Local jurisdictions</p>	<p>Local capacity may refer to County staff and program funding and/or funding provided to local jurisdictions or community organizations.</p>



<p>17. Support and increase the existing capacity of the Lane County Safe Routes to School (SRTS) program.</p>	<p>Lane County</p>	<p>While many schools and communities across the region have successfully engaged in these types of programs in the past, it is recommended that all schools and communities aim to increase the number of elementary and middle school students who safely walk and bike to school. See ODOT SRTS Program resources: https://www.oregon.gov/odot/Programs/Pages/SRTS.aspx</p>
<p>18. Incorporate bikeways into County transportation planning and project development.</p>	<p>Internal</p>	<p>For any development / redevelopment projects involving changes to County roadways, determine if those changes present an opportunity for timely or more cost-efficient implementation of Plan recommendations.</p>
<p>19. Develop an annual or semi-annual maintenance plan for County roads that includes the removal of potential hazards from bike lanes, shoulders and routes such as overgrown vegetation, debris, and snow.</p>	<p>Internal</p>	<p>As the existing system is refined and proposed recommendations are implemented, Lane County should establish a maintenance program and secure additional funding/resources for sweeping, pavement management, and weed abatement and eradication.</p>
<p>20. Develop a system for identification and tracking of new and recurring funding sources for bicycle infrastructure and programs including SRTS, Community Paths, bikeshare services for small communities, etc.</p>	<p>Internal</p>	<p>Up-to-date and easily accessible funding data can help transportation planners and engineers make better and more timely decisions, and be poised to take advantage of opportunities to implement Plan recommendations.</p>



Performance Measures

Measuring performance over time is essential to implementation. Tracking performance measures across the County will allow implementing agencies to understand progress, communicate successes and challenges, and motivate leaders to take further actions. The following performance measures were selected to track progress toward the goals of this plan. Implementation progress updates at County TrAC meetings could be an opportunity to share information about progress against these measures. Individual jurisdictional or agency partners may also be interested in tracking and reporting progress independently. Due to the difficulty in tracking all of these measures, suggestions for a select few that are more readily available are marked with an asterisk* below.

GOAL 1: Safety and Comfort

Bicyclist crash and fatality rates on Lane County Bicycle Network*

Bicycle crash and fatality rates can provide insight into the effectiveness of bicycle planning efforts in improving safety. Bicycle crash and fatality rates that trend toward zero would be indicative of successful bicycle safety planning efforts. A publicly facing dashboard that counts these rates can be informative as well as motivational for the County to make improvements.

Data and/or evaluation considerations:

- Bicycle crash rates can be measured as number of bicycle crashes per 10,000 people
- Bicycle crash severity rates can be ascertained by dividing the number of fatal and severe injury bicycle crashes by the total bicycle crashes
- Bicycle crash and fatality data is available from ODOT: <https://www.oregon.gov/odot/data/pages/crash.aspx>
 - ODOT TransGIS online viewer: <https://gis.odot.state.or.us/transgis/>
 - ODOT FTP site to download spatial crash data: ftp://ftp.odot.state.or.us/tdb/trandata/GIS_data/Safety/

Number of bicycle safety education opportunities offered through County departments and County-sponsored events

Bicycle safety education programs provided through County agencies and sponsored events can empower citizens to feel more comfortable about cycling, giving them the tools to navigate safely. Education opportunities can include events such as booths at community events, Safe Routes to School (SRTS) programs/events or safety demonstrations in partnership with local bicycle shops.

Data and/or evaluation considerations:

- Safety education opportunities can be tracked annually
- What constitutes a bicycle safety education opportunity should be identified by the County (for example, a definition may be that events need to last at least one hour, or include access considerations for transportation disadvantaged communities, i.e. offering information in multiple languages).

A measurement of the physical condition and state of repair of bicycle facilities (an inventory followed by tracked progress)

An inventory documenting the state of existing bicycle facilities in Lane County can give planners the framework to understand where there are deficiencies in the existing bicycle transportation system and by comparing this inventory year over year, can give planners a benchmark on the state of the system. Using this inventory, the County can identify key issues, challenges, opportunities, and progress. Establishing a standard for the state of repair of bicycle facilities denotes a minimally acceptable condition and can ensure ongoing maintenance and safety.

Data and/or evaluation considerations:

- Establish a standard state of repair for bicycle facilities and rate facilities in the inventory on whether or not they meet this standard.



- Examples of facilities that do not meet standard can include unrecognizable bike facilities, or damaged or missing wayfinding signs, and stripped bicycle repair stations,

Percent of bicycle network that serves all ages and abilities

While Lane County’s bicycle network may appear large, many facilities may not be suitable for certain groups such as individuals with disabilities or young children. Bicycle facilities that serve all ages and abilities can include slower streets with “sharrows” and protected bicycle lanes.

Data and/or evaluation considerations:

- The County can define a minimum standard for bicycle facilities that serve all ages and abilities, and a goal for the ratio of the Lane County Bicycle Network that serves all ages and abilities
- This network can be evaluated over time to assess progress in completing the network that functions as all ages and abilities.
- The Portland Bureau of Transportation (PBOT) has defined a “neighborhood greenway” network and expanded it over several years

GOAL 2: Regional Connectivity

Percentage of County roadways on Lane County Bicycle Network that have improved conditions for cycling (i.e., percentage of LCBMP projects completed)*

Improved conditions for cycling such as physical upgrades, signage, or maintenance can indicate how connected the bicycle network is throughout Lane County. Many agencies typically see large increases in the early years of network development and monitoring; however, these gains tend to level out as the network becomes increasingly complete.

Data and/or evaluation considerations:

- Third party aerial photography and street-level photo inventories can be used to collect bulk information more easily
- County roads that have undergone LCBMP projects can be considered as having “improved conditions”
- ODOT and cities in Lane County may have data regarding the state of bicycle facilities on their road networks that can inform improvements to the County network and lead to a more robust inventory of improvements

Bicyclist mode share

Bicycle mode share as a percentage of all commuters can serve as an indication of whether individuals are responding to improvements being made to the bicycle transportation system, particularly to/from employment centers.

Data and/or evaluation considerations:

- Data on commuting patterns can be acquired from the American Community Survey: <https://censusreporter.org/tables/C08301/>
- National Household Travel Survey data, can provide additional insights into travel patterns, related to bicycle mode, trip purpose, and distances.

Bicyclist counts

Bicycle count programs that are either manual or automated can help planners understand which facilities are being used. Additionally, bicycle counts can be used to establish baselines, evaluate before-and-after data on projects, and inform project prioritization.

Data and/or evaluation considerations:

- Coordinate with jurisdictions in the County that may have their own plans or goals to establish counting programs



Percentage of new roadway or roadway improvement projects built as Complete Streets (based on the surrounding land use context) with connectivity to surrounding destinations

Complete streets often offer a wide array of transportation options to road users benefiting bicyclists. It must be noted that the term “Complete Streets” can vary based on the surrounding land use context, and will vary considerably throughout Lane County.

Data and/or evaluation considerations:

- ODOT’s Blueprint for Urban Design (BUD) includes guidance for Complete Street standards based on ODOT-designated urban, suburban and rural contexts: <https://www.oregon.gov/odot/Projects/pages/project-details.aspx?project=HWY-UDI>
- Some cities such as Eugene already have Complete Street design guides. Coordinate with jurisdictions to identify where complete streets projects are occurring

Proportion of residences within a 2-mile biking distance to community destinations along a designated bicycle facility

This proportion can indicate the accessibility of community destinations for short bicycle trips. These short bicycle trips are especially important for those who are not serious cyclists. Community destinations can include places such as parks, places of worship, public libraries, transit centers, colleges, and schools.

Data and/or evaluation considerations:

- Once destinations are defined, the agency can determine the proportion of residences within biking distance of those facilities
- GIS analysis can be used to find this proportion of residences

GOAL 3: Equitable & Inclusive Access

Percent of transportation-disadvantaged population within 1/2-mile bicycling distance to designated bicycle facility*

Designated bicycle facilities can provide a transportation opportunity for transportation-disadvantaged populations. These groups can include low-income households, persons with disabilities, youth and seniors, minority populations, households without access to a vehicle, or single parent households. Lane County should explicitly understand the impact of bicycle infrastructure improvements on those with the least means, and those who rely on public infrastructure.

Data and/or evaluation considerations:

- The Equity Analysis completed for the LCBMP can support evaluation of this measure
- GIS buffers can be used to identify the percentage within ½ mile of designated bicycle facilities

Percentage of schools participating in bicycle safety education/encouragement programs

Schools offering bicycle safety education/encouragement programs provide valuable tools to children so they can travel by bicycle to community destinations such as school.

Data and/or evaluation considerations:

- Bicycle safety education/encouragement programs can include Safe Routes to School (SRTS) Programs
- The Lane County SRTS Program can be a potential partner in evaluating this measure

Geographic spread and distribution of bicycling projects and programs that improve access for all ages and abilities

The County can identify projects and programs that improve access for all ages and abilities and then work to understand where there are deficiencies in the County.

Data and/or evaluation considerations:

- A map can be created that shows where these programs and projects are occurring
- Deficiencies in the County can be identified through this approach and the County can work with jurisdictions to grow and expand these programs and projects in that area



GOAL 4: Economic Vitality

Number of bike events in region and corresponding economic impact*

The number of bike events in Lane County year over year can show how Lane County is becoming a destination for recreational cycling.

Data and/or evaluation considerations:

- Travel Lane County can be a potential partner in evaluating this measure

Return on investment measures such as job creation, small business development, tourism, home prices

Economic indicators can demonstrate the effectiveness of bicycle improvement programs and increase support for their upkeep. Investments in bicycle facilities often correlate to increased property values. Development impacts can be evaluated through changes in improved property value and investments. Tracking development proposals before and after a project is constructed can lend insight into the community's response to investment.

in evaluating this measure

Data and/or evaluation considerations:

- Data on performance from bike-related businesses including local bike manufacturers, tour companies, etc.
- Data on job creation can be provided by the Bureau of Labor Statistics
- Travel Lane County can be a potential partner in evaluating this measure

Number of visitors coming to region partially due to bicycling amenities and events

Visitors to Lane County may be motivated to visit by the existence of bicycle amenities and events. The number of visitors who indicate that they visited partially due to bicycling amenities and events can justify additional improvements to increase tourism.

Data and/or evaluation considerations:

- The County can work with Travel Lane County and/or hotels and other service operators to conduct surveys asking whether bicycle amenities or events were factors in their visit

GOAL 5: Environment and Quality of Life

Number of residents living within a half-mile of a trail, park, and/or on-street bicycle facility*

Trails, parks, and/or on-street bicycle facilities are places that can improve the quality of life for Lane County residents.

Data and/or evaluation considerations:

- The County can create an inventory of these facilities
- GIS buffers can be used to calculate the number of residents living within ½ mile of these facilities

Physical inactivity rates & obesity rates*

Availability of bicycle facilities can provide an opportunity for Lane County residents to recreate safely outdoors and can lead to increased physical activity. This trend may reflect in lower obesity rates in addition to the reduction of other preventable diseases as the bicycle network improves.

Data and/or evaluation considerations:

- Detailed assessments of minutes spent walking or bicycling may come from emerging sources of data collection, such as GPS-based fitness applications (i.e. Strava) that collect empirical data collection in real time.
- Upcoming national household travel surveys will include questions regarding physical activity
- Other data such as emergency room visits due to asthma, levels of childhood obesity, adult obesity, cardiovascular disease, diabetes, hypertension, and depression can be furnished from local, state or federal health agencies



- The Centers for Disease Control and Prevention (CDC) has a “PLACES” program which provides model-based population-level analysis and community estimates for a variety of health indicators in a GIS-friendly format: <https://www.cdc.gov/places/>

Reduction in transportation-related emissions from increase in bicycling trips

Tailpipe emissions are directly impacted by levels of driving and the transportation sector is a major contributor to greenhouse gas emissions (24% in Oregon). Travel demand models can be used to identify mode shift based on an increase in bicycling trips and calculate the resultant reduction in transportation-related emissions.

Data and/or evaluation considerations:

- Bicycle travel counts can be used to estimate the amount of bicycle travel that occurs within a certain geographical area
- Trip generation models can estimate the bicycle travel of residents living within a certain geographical area for different trip purposes

GOAL 6: Feasibility

Total funding devoted to the construction and maintenance of bicycle facilities*

The total funding devoted to the construction and maintenance of bicycling facilities each year can demonstrate the ability of County agencies to pursue projects and funding.

Data and/or evaluation considerations:

- The County can use the LCBMP Recommended Facilities Network to determine the recommended classification for bicycle facilities on the Lane County Bicycle Network, and understand how its ongoing pavement preservation and maintenance program contributes direct funding towards maintaining or improving the bicycle network
- Outside sources of funding can also be considered in this metric

Resource: Guidebook for Developing Pedestrian and Bicycle Performance Measures

This in-depth guidebook helps communities develop performance measures that can fully integrate pedestrian and bicycle planning in ongoing performance management activities. The guidebook outlines 30 performance measures, including information on:

- Goals related to each measure
- Context/performance measure application
- How to track each measure
- Data needs & sources
- Peers tracking each measure
- Additional notes on each measure

https://www.fhwa.dot.gov/environment/bicycle_pedestrian/publications/performance_measures_guidebook/