



PRIORITIZATION PROCESS

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To: Project Management Team

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Project: Clackamas County Transportation System Plan Update

Subject: Prioritization Process

The purpose of this memorandum is to outline the proposed approach for prioritizing potential projects on the Refined Master Project List for the Clackamas County Transportation System Plan (TSP) update.

The Project Management Team (PMT) and Clackamas County staff worked collaboratively to identify a project prioritization approach to determine which projects will be in the fiscally constrained plan, the preferred plan and the vision plan, and which projects will be recommended for removal. The proposed seven-step prioritization process is designed to evaluate projects based on the degree to which they support each TSP goal. The seven steps, described in detail on the following pages, are as follows:

Step 1: Identify top countywide goals *OR* Identify top local goals

Step 2: Establish a scoring system and score each project

Step 3: Weight the TSP goals

Step 4: Calculate the initial weighted score

Step 5: Account for project synergies and additional analysis

Step 6: Screen for project urgency

Step 7: Compare prioritization outcomes

Questions for the Public Advisory Committee (PAC) to consider are in boxes with text in ***bold italics***.

BACKGROUND

The projects on the Refined Master Project List are from three basic sources:

1. Previously planned projects;
2. Projects suggested by the public (including PAC members and the community); and
3. Projects suggested by the consultant to address remaining gaps and deficiencies.

These three groups of projects were mapped, summarized in tables, evaluated to confirm their need, and discussed with the TSP Technical Advisory Committee (TAC), PAC, and Geographic Area Projects (GAPS) groups.

The next step is to prioritize the projects on the Refined Master Project List.

PRELIMINARY ACTIVITIES TO FACILITATE PRIORITIZATION

The following four organizational and analysis activities need to be accomplished to prioritize the projects on the Refined Master Project List:

1. Define project categories based on project type;
2. Categorize projects;
3. Develop planning level cost estimates for projects; and
4. Assess available funding in total and by funding eligibility.

The following provides additional information on each of these activities.

1) Define Project Categories and Categorize Projects

Currently, projects on the Refined Master Project List are loosely categorized based on the road user or system the project benefits or impacts (e.g., bicycle project, pedestrian project, transit project). To facilitate longer-term implementation and near-term activities such as cost estimating, relating projects to the overall TSP goals and identifying funding sources to build projects, we propose the following project categories.

- **Urban Upgrade** – Projects within the Urban Growth Boundary (UGB) that add sidewalk, bicycle lanes and vehicle capacity. Examples include adding intersection turn lanes or adding a center two-way left-turn lane to a roadway that does not have active transportation facilities.
- **Urban Upgrade: Active Transportation Only** – Projects within the UGB that add sidewalk and/or bicycle lanes to an existing roadway.
- **Urban Upgrade: Vehicle Capacity Only**– Projects within the UGB that add vehicle capacity to an existing roadway or intersection (and require the reconstruction of any existing sidewalks and/or bicycle lanes).
- **Rural Upgrade** – Projects outside of the UGB that add paved shoulders and vehicle capacity to a roadway that does not have active transportation facilities.

- **Rural Upgrade: Active Transportation Only** – Projects outside of the UGB that add paved shoulders to an existing roadway.
- **Rural Upgrade: Vehicle Capacity Only**– Projects outside of the UGB that add vehicle capacity to an existing roadway or intersection. Examples include adding intersection turn lanes or installing a traffic signal (and require the reconstruction of existing paved shoulders, sidewalks, and/or bicycle lanes).
- **Safety** – Projects or studies specifically focused on reducing crashes and/or the risk for crashes, including railroad crossing projects.
- **New Roadway** – Projects that identify the need for a new roadway or roadway extension.
- **Multiuse Paths** – Projects that identify the need for a new multiuse path or multiuse path extension.
- **Bridges** – Projects that identify a need for constructing, replacing or upgrading an existing bridge.
- **Intelligent Transportation Systems (ITS) Projects** – Projects that incorporate ITS treatments such as coordinated signal systems.

2) Categorize Projects

The consultant team will place each project on the Refined Master Project List within the appropriate category.

3) Develop Planning Level Cost Estimates

The consultant team will develop planning level cost estimates for the projects on the Refined Master Project List. The planning level cost estimates are critical for being able to determine which projects are ultimately placed within the fiscally constrained plan and to provide the decision-makers and public with a better understanding of the necessary transportation infrastructure costs under the currently defined performance measures and development regulations.

- To estimate the majority of the urban and rural upgrade and capacity enhancement projects, we will use the planning level unit cost estimates based on County roadway standards (see Attachment B for Planning Level Unit Costs).
- For intersection improvements such as turn lanes, traffic signals and roundabouts, we will use unit costs and the collective project team experience (consultant and County) to develop a reasonable estimate.
- For safety projects and studies, we will rely more on the collective project team experience to determine a reasonable estimate based on the size and scope of the project and study.

4) Assess Available Funding

Clackamas County staff outlined the anticipated future funding available for capital transportation improvement projects in a Funding Forecast memo. The memo outlines:

- Total funding available over the entire planning horizon as well as near-, mid- and long-term;
- Funding available by project location (urban or rural); and
- Shortfalls in funding available (overall and urban or rural).

This assessment defines how much funding is available for projects in the fiscally constrained plan. A critical consideration for identifying funding available by project category is the constraints placed on some specific funding sources. By identifying funding shortfalls, we are laying the foundation to identify additional funding sources.

PROPOSED PRIORITIZATION FRAMEWORK

The TSP goals will be used as the basis for scoring and rating the projects on the Refined Master Project List. Below is the proposed framework for scoring, rating and ranking projects.

Step 1A: Identify Top Countywide Goals

PAC Question 1A. What are the top countywide goals?

Does the PAC think that the TSP goals should be weighted to reflect the County's top countywide goals for improvements? For example, based on our understanding of the County's vision, we identified the following top countywide goals:

1. *Improving Safety* – Establishing a safety culture and reducing severe injury and fatal crashes on roadways within the County.
2. *Job Creation and Economic Growth* – Facilitating economic growth and increased employment opportunities within the County.
3. *Cost Effective Investments* – Investing in improvements that provide the greatest benefit relative to their cost.

Step 1B: Identify Top Local Goals (Alternative to Step 1A)

PAC Question 1B. As an alternative to Step 1A, would you prefer to identify high priority TSP goals by geographic sub-area instead of identifying them at a countywide level?

Different sub-areas within the County may have different needs or place a higher priority on different TSP goals. This step, which is an alternative to Step 1A, creates the opportunity to identify the top TSP goals by geographic sub-area. High priority goals will either be identified and applied universally countywide **OR** high priority goals will be identified and applied for each of the five geographic sub-areas: Clackamas Regional Center/Industrial Area, Greater McLoughlin Area, East County, Southwest County and Northwest County.

Step 2: Establish a Scoring System for the Goals and Score Each Project

PAC Question 2. Do you agree with the scale of the scoring system for the Goals and how it relates to each goal?

Within each goal, we would establish a scoring system (-1,0,1 or 2) and score each project. Each project would have an initial score that reflects the existing and future conditions analysis. These scores would be refined after the project team completes the following ongoing alternative analyses.

A sample proposed scoring system for each goal is shown in Table 1. The potential metrics shown in Table 1 reflect our efforts to identify measures that are applicable to projects, reflect the intent of each goal, and do not duplicate measures used for other goals. The proposed scoring will only be used to evaluate projects. Overall, the goals and their objectives will be met by the set of projects, policies, programs, pilot projects and studies that are ultimately recommended for inclusion in the TSP. Therefore, the proposed measurements do not address all of the objectives under each goal, but reflect what we believe to be key features/attributes of each goal related to projects.

Cost Effectiveness Factor

A Cost Effectiveness (CE) factor is proposed for evaluating Goal 6: Fiscally Responsible. The Cost Effectiveness factor is calculated as follows:

$$\text{CE} = (\text{Adjacent AADT}/1000) * [1 / (\text{Planning Level Cost} / \$100,000)]$$

The CE factor is defined as a measure of cost per vehicle trip on the roadway that would potentially benefit from the project. It inherently values smaller projects on high volume roadways. Projects will receive a -1, 0, 1 or 2 based on how their CE factor compares to other projects.

- Projects in the 90th percentile or above would receive a score of 2.
- Projects in the 70th to 90th percentile would receive a score of 1.
- Projects in the 50th to 60th percentile would receive a 0.
- Projects below the 50th percentile would receive a score of -1.

Project scores will be reviewed based on their totals before and after the addition of the Goal 6 score to see how significantly the CE Factor influences the score. This will be reviewed at the PAC meeting.

Goals	Potential Metrics (Contained in Survey)	Scoring Scale				Resources for Determining Score
		-1	0	1	2	
Goal 1: Sustainability (environmental benefits only; other sustainability benefits are dealt with under goals 3 and 6)	<ol style="list-style-type: none"> Does the project increase the potential for walking, biking or taking transit? Does the project impact identified environmentally sensitive areas? 	Degrades non-motorized travel, negatively impacts the environment, increases vehicle emissions, and/or decreases network connectivity. <i>Example:</i> Enhances motorized vehicle capacity without providing pedestrian or bicycle facilities.	No impact. <i>Example:</i> None.	Indirectly improves non-motorized travel, decreases vehicle emissions and/or increases network connectivity. <i>Example:</i> Projects aimed at reducing vehicle crashes.	Directly improves non-motorized travel, decreases vehicle emissions and/or increases network connectivity. <i>Example:</i> Constructing pedestrian and bicycle facilities.	<ul style="list-style-type: none"> Pedestrian Network Map Bicycle Network Map Activity Centers Map Transit Service Map Land Use Zoning Map Environmentally Sensitive Areas Map
Goal 2: Local Businesses and Jobs	<ol style="list-style-type: none"> Is the project located in or near an existing or future employment area? Does the project create a direct connection from a highway or higher order facility to an employment area? 	Degrades access and/or mobility to existing or future employment areas. <i>Example:</i> Capacity enhancement without providing pedestrian or bicycle facilities.	No impact. <i>Example:</i> Capacity enhancement not related to an employment area.	Indirectly improves access and mobility to existing or future employment areas. <i>Example:</i> Projects aimed at reducing vehicle crashes.	Directly improves access and mobility to existing or future employment areas. <i>Example:</i> Capacity or active transportation enhancement project to or within an employment area.	<ul style="list-style-type: none"> Pedestrian Network Map Bicycle Network Map Activity Centers Map Transit Service Map Land Use Zoning Map
Goal 3: Livable and Local	<ol style="list-style-type: none"> Does the project increase connections between residential areas and commercial areas or to daily needs and services? Does the project reduce the potential impacts of flooding? Does the project help implement a local land use or development plan? 	Degrades neighborhood connectivity and/or access to daily needs or services. <i>Example:</i> Capacity enhancements that divide a contiguous neighborhood.	No impact. <i>Example:</i> None.	Indirectly improves neighborhood connectivity and/or access to daily needs or services. <i>Example:</i> Providing sidewalk access to an activity center but not connecting to a residential area.	Directly improves neighborhood connectivity and/or access to daily needs or services. <i>Examples:</i> <ul style="list-style-type: none"> Pedestrian or bicycle facility connecting residential to commercial areas or daily needs and services. Roadway improvements to prevent flooding on key roadway connections in rural areas. 	<ul style="list-style-type: none"> Pedestrian Network Map Bicycle Network Map Activity Centers Map Transit Service Map Land Use Zoning Map
Goal 4: Safety and Health	<ol style="list-style-type: none"> Does the project improve a safety focus intersection, a candidate road safety audit corridor or an ODOT Safety Priority Index System (SPIS) site? Does the project have the potential to reduce emissions near schools or densely populated areas? 	Degrades health and/or increases the likelihood of crashes. <i>Example:</i> Increases vehicle emissions within 500 feet of a school.	No impact. <i>Example:</i> Enhancing capacity on an existing roadway with pedestrian and bicycle facilities that is not within 500 feet of a school or densely populated area.	Indirectly improves health and/or decreases the likelihood of crashes. <i>Example:</i> Constructing safety improvements at an intersection or on a corridor that are not part of a safety focus intersection or road safety audit.	Directly improves health and/or decreases the likelihood of crashes. <i>Example:</i> Constructing a safety improvement (e.g., single-lane roundabout, realign intersection) at a safety focus intersection or on a candidate road safety audit corridor.	<ul style="list-style-type: none"> Highway Safety Manual Pedestrian Network Map Bicycle Network Map Activity Centers Map Safety Focus Intersections Candidate Road Safety Audit Corridors
Goal 5: Equity	<ol style="list-style-type: none"> Is the project located in a transportation disadvantaged area and does it increase transportation options for that disadvantaged community? Does the project increase access for transportation-disadvantaged populations to daily needs and services such as schools, medical services, jobs and groceries? 	Degrades transportation options, facilities, and/or community for transportation disadvantaged populations. <i>Example:</i> Constructing a freeway or highway through a transportation disadvantaged area.	No impact. <i>Example:</i> Enhancing rural capacity in an area that is not classified as transportation disadvantaged.	Indirectly improves transportation options and/or facilities for transportation disadvantaged populations. <i>Example:</i> Providing sidewalk access to an activity center that is not within a transportation disadvantaged area.	Directly improves transportation options and/or facilities for transportation disadvantaged populations. <i>Example:</i> Providing sidewalks to transit stops within an area with a high percentage of transportation disadvantaged population.	<ul style="list-style-type: none"> Transportation Disadvantaged Population Map Activity Centers Map Pedestrian Network Map Bicycle Network Map Transit Network Map
Goal 6: Fiscally Responsible	<ol style="list-style-type: none"> What is the estimated cost effectiveness of the project? Is the project located within an area prone to landslides? 	Cost effectiveness factor is in the lower 50 th percentile, indicating it is not a cost-effective project. Project is in area prone to landslides.	Cost effectiveness factor is in the 50 th to 60 th percentile.	Cost effectiveness factor is in the 70 th to 90 th percentile.	Cost effectiveness factor is in the 90 th or above percentile.	Cost effectiveness factor calculations described in Step 5.

Step 3: Weight the TSP Goals

PAC Question 3. Do you want to weight the TSP goals to reflect the high priority goals identified in Step 1A or Step 1B or do you want to treat each goal with equal weight?

In this step, weighting factors could be assigned to each goal based on how it relates to County goals. An example of weighting factors is listed below. The key consideration is the relative difference between the factors.

- Goal 1 Sustainability: 10
- Goal 2 Local Businesses and Jobs: 20
- Goal 3 Livable and Local: 10
- Goal 4 Safety and Health: 30
- Goal 5 Equity: 10
- Goal 6 Fiscally Responsible: 20

Step 4: Calculate the Initial Weighted Score

Calculate an initial weighted score. The initial weighted score would be calculated using the following equation:

Initial Weighted Score = (Goal 1 Score)(Weight 1)+(Goal 2 Score)(Weight 2)+(Goal 3 Score)(Weight 3)+(Goal 4 Score)(Weight 4)+(Goal 5 Score)(Weight 5)+(Goal 6 Score)(Weight 6)

Step 5: Account for Project Synergies and additional analysis

Synergies are defined as the condition where projects benefit from other projects or have special conditions that make them unique. Project scoring based on goals and priorities may not sufficiently capture the nuances of potential synergies that could be gained from implementing specific projects or groups of projects. As a result, the prioritization scores will be adjusted based on a need to enable economic development/job creation in a specific area and/or to address or avoid a long-standing public health issue or to address the unique aspects the project contributes to sustainability. Below is an example of how this is planned to be integrated into the project prioritization process.

Example: Desire to favor projects that could serve as a catalyst for economic development.

Process for identifying such projects:

- Organize projects into three colored bins based on their scores
 - Fiscally Constrained (100% of available funding) - green
 - Preferred Plan (200% of available funding) - yellow

- Vision Plan (more than 200% of available funding) - red
- Map the projects in each bin by color
- Overlay key economic development information on the maps
 - Economic development priorities
 - Freight routes
 - Transit service
 - Pedestrian and bicycle facilities
- Identify projects that could serve as catalysts for economic development

A similar approach may be taken to focus on health, equity or other issues impacted by transportation.

In this step, the additional transportation modeling analysis work conducted in the Clackamas Regional Center/Industrial Area using Dynamic Traffic Assignment (DTA) will be incorporated. DTA is being used to evaluate the effectiveness of different projects within the Clackamas Regional Center/Industrial Area (e.g., Sunnybrook Extension). The purpose of this analysis is to identify the most effective project or set of projects to address future forecasted delay in the sub-area and enable continued economic development.

Once the specifically desirable projects are identified, adjustments will either be made numerically to the project score and/or adjusted through a qualitative assessment that brings select projects onto the fiscally constrained list.

Step 6: Screening for Project Urgency

Project scoring and screening for synergies may not capture the urgency for a project based on current system performance or near-term funding opportunities. This step prioritizes the projects needed in the near-term based on their relative urgency for improvement. As a result, an additional adjustment to the prioritization scores will be made based on how soon a project or set of projects is needed.

The Global Slower Growth Analysis will be used to screen for project urgency. This analysis assumes that by 2035 Clackamas County will have realized 70% of the current population and employment growth currently forecasted. The purpose of evaluating this scenario is to identify the highest priority vehicle capacity projects within Clackamas County.

Below is an example of how this could be integrated into the project prioritization process.

Example: Favor projects needed in the near-term.

Process for identifying such projects:

- Use the results from the Existing Conditions Analysis to identify the projects that address the existing deficiencies and gaps needed in the near-term. Assign an additional weighting factor (e.g., 1.2) to each project's score to increase its relative priority.

- Use the results from the Slower Growth (70%) Global Analysis to identify projects needed in the mid-term to address vehicle capacity improvement projects. Assign an additional weighting factor (e.g., 1.1) to each project's score to increase its relative priority.
- The remaining projects would be considered needed in the longer-term. No additional weighting factor would be applied to those projects.

Step 7: Compare Prioritization Outcomes

Based on the outcomes from the steps above, the projects will be ranked in several different ways to clearly identify well-performing projects that consistently rise to the top:

- Project category;
- Geographic area; and
- Rural or Urban.

There are likely to be obvious strong projects that consistently rise to the top and which, based on available funding, may determine the fiscally constrained plan. Differentiating vision plan projects from preferred plan projects will likely require more County input and conversation about what is reasonable within the planning horizon. Projects that seem to stretch beyond the planning horizon will be placed in the vision plan.

SAMPLE FORMAT OF THE PRIORITIZATION INFORMATION

Table 2 illustrates a sample format for organizing the project prioritization information. The format shown would be primarily for project team use. Columns could be hidden and/or a different format used to communicate the results to different project stakeholders.

STAKEHOLDER REVIEW AND FEEDBACK PROCESS

The intent of this process is to provide a reasonable number of opportunities for County staff, TAC, PAC and the broader community to provide input on which projects should be included in the fiscally constrained plan, preferred plan and vision plan, and which projects should be removed from consideration. This review and feedback process is being developed.

