

## MEMORANDUM

December 15, 2023

To: Scott Hoelscher, Karen Buehrig, and Joe Marek

Organization: Clackamas County

From: Perrin Falkner and Talia Jacobson, Toole Design

Project: Walk Bike Clackamas

### Re: Cost Estimate Methodology

For the Walk Bike Clackamas Tier 1 prioritized projects list, Toole Design will be producing linear (per foot) and/or point costs for each of the projects. The methodology employed will be similar to the 2013 Clackamas County TSP methodology with a few changes in assumptions for the different project types we will be cost estimating. We have made the following assumptions for this methodology:

- The unit costs for each bid item will be pulled from Region 1 or, if not available, Region 2 or 3 cost data from the 2022 ODOT Average Bid Prices. A linear (per foot) treatment cost will be composed of individual bid items and their associated unit cost. For point treatment costs, the total cost will also be composed of individual bid items and will be totaled for a per each basis. For projects that contain both linear costs and point costs, both will be summed to get the the total project cost.
- The total project costs will be estimated based on length and specific point treatments as provided in the project list/project descriptions.
- A 5% maintenance of traffic and 10% mobilization cost will be added to each treatment cost.
- A 30% contingency will be added to each treatment cost.
- Treatment costs will be escalated to 2024 dollars.
- Cost options will not be developed for the projects (i.e., a low-cost and high-cost option).

Items that will not be included in the cost estimates:

- » No roadway widening (other than adding shoulder bike lanes), turn lanes, or full roadway reconstruction
- » Driveways and private drives
- » The costs for vertical and horizontal realignment
- » Wetland impacts and sensitive area mitigation
- » Costs will not be provided when there is a lack of adequate information to estimate. This will be noted next to the applicable project.
- » Estimates will not include full traffic signal retrofit work, irrigation, culvert crossings, retaining walls, or sound walls.
- » Costs for installing or retrofitting public or franchise utilities (water, sanitary sewer, power, natural gas, cable, or telephone).
- » Aerial utility relocation costs

- » Utility service connections/reconnections
  - » Right of way acquisitions will not be included.
- Stormwater facilities (water quality or detention facilities) will be included as 30% of the total construction costs for projects with 5,000 SQFT or more of new impervious surface.
  - Traffic calming will be assumed to be speed humps installed every 250' o.c. for the purposes of this cost estimate.
  - RRFB, HAWK, bike signal, and roundabout install will be based on available past project costs which may or may not have similar site conditions; costs may be much lower or higher in actuality, depending on infrastructure needs.
  - Bike/ped bridge locations and lengths will be measured from Google Earth images.
  - Striping assumes thermoplastic materials.
  - Signing frequency will be set at 200' o.c. in urban areas and 400' o.c. in rural areas.
  - Excavation will be based on respective section needs for multi-use path (Standard Drawing S690), sidewalk (Standard Drawing S690), and shoulder bikeway (Standard Drawing C100).
  - Shoulder bikeways will be assumed to be installed on both sides of the roadway. Existing paved shoulder is assumed to be a 2' in width, existing gravel shoulder is assumed to be 6' in width. Shoulder bikeways will include a new 8' paved shoulder (2' existing + 6' new) and new 6' gravel shoulder.
  - "Bikeways" projects will be evaluated in Google Earth to determine whether standard, buffered, or protected bike lanes should be installed (unless the project description specifies) and will be installed on both sides of the roadway. Standard bike lanes will be assumed have a 6' width. Buffered bike lanes will be assumed to have a 2' buffer width, 6' bike lane width. Protected bike lanes will be assumed to have a 2' buffer width, flex posts centered in buffer 20' o.c., and 6' bike lane width. All bike lanes will be striped with ODOT Standard Drawing TM500 W-2 (8" White Line), 20' of GRN (Green Supplemental Bicycle Lane Solid Line (green)) at the approach to each intersection, and assumed to have ~~50'-40'~~ of BLE-G (Green Supplemental Bicycle Lane Dotted Line Extension (green)) and one BS (Bike Lane Standard Stencil (white)) every ~~200' in urban areas and every 400' in rural areas~~500'.
  - For the purposes of this cost estimate, "Pedways" will be assumed to comply with Standard Drawing S960 and will include a landscape strip (5-ft width determined per Standard Drawings C110-140).
  - Multi-use paths will have an unobstructed width minimum of 10' (assuming 14' total width) and will be constructed of concrete (since under County jurisdiction).

Sincerely,

**Perrin Falkner, PE, M.ASCE** | Project Engineer I/Civil Practice

**TOOLE DESIGN**

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