



TECHNICAL MEMORANDUM

Date: April 12, 2024 **BKF Job Number:** 20221310

Deliver To: City of McMinnville (City)

From: BKF Engineers

Subject: Third Street Improvement – Alternative Analysis

The purpose of this memorandum is to provide information from the consultant design team to the City on various options considered for the Third Street Improvement Project from NE Adams to NE Johnson. Although the project team will continue to analyze various alternatives as the project design progresses and construction methods are discussed, this memorandum covers the following:

- Preservation of Street Trees
- Pavement Surface
- Pedestrian Crossings
- Stormwater Management

Preservation of Street Trees

With input from the City, the Project Advisory Committee, and the Technical Advisory Committee, tree preservation criteria and a decision tree were created with the following goal in mind: where feasible, preserve Third Street's existing street trees. To plan Third Street Improvements with a 50-year design life in mind, the following criteria is to be considered when evaluating whether or not Third Street's existing trees can be preserved:

- Compromised Health
- Lifted Roots
- Conflict with Critical Infrastructure
- Conflict with Agency Standards

Compromised Health:

The existing street trees along Third Street have been tagged and studied for overall health and condition by a certified arborist. Currently, a 2019 street tree survey has been used for initial review but an updated street tree survey is underway to reflect current conditions which will be used as the design progresses. Each tree is being evaluation with the following question in mind: Is the existing tree in Poor or Very Poor health or is the existing tree's health demonstrably declining (as determined by the project's Consulting Arborist)?

Lifted Roots:

Some existing street trees along Third Street have lifted roots that are lifting the sidewalks and creating accessibility and drainage issues. Each tree is being evaluation with the following questions in mind: Are the existing tree's roots lifting the sidewalks? Would the roots need to be significantly trimmed / removed in order to rebuild the new sidewalk to meet ADA standards and building entrances? (Would the existing tree survive if its roots were shaved / cut / trimmed back?)

Conflict with Critical Infrastructure:

Existing trees are being evaluated for preservation by reviewing if there are conflicts with critical infrastructure such as utilities, traffic signals, streetlights, accessible path clearances, and accessible curb ramps. Where conflicts occur and there is no clear option for the concept design to be modified, trees have been marked for removal. Trees having conflicts with critical infrastructure where there may be opportunity to modify the design and preserve these trees have been marked for preservation at this time and will be evaluated further as design progresses. Each tree is being evaluation with the following question in mind: Will the existing tree conflict with proposed infrastructure / improvements (either above or below ground)?

Conflict with Agency Standards:

Existing trees are being evaluated for preservation by reviewing if there are conflicts with agency (City, Fire, McMinnville Water & Light, etc.) standards. Where conflicts occur and there is no option for the concept design to be modified or to receive a design exception from the agency, trees have been marked for removal. Each tree is being evaluation with the following question in mind: Will preserving the existing tree cause conflicts with standards set by the City's Engineering or Fire Department or by McMinnville Water & Light? And can exceptions be made in order to preserve existing trees?

Continued Evaluation:

Existing trees are currently evaluated only on health of the tree per 2019 tree survey. Tree preservation/removal status is still under review pending completion of an updated 2024 tree survey. After completion of the 2024 tree survey, tree preservation and modifications to current overall layout will be reevaluated using the aforementioned criteria.

Existing street trees intended for preservation will continue to be evaluated as the design progresses and the chances of trees surviving disturbances during construction will also be reviewed with the project arborist based on the final design. All trees will be studied for their proximity to the future improvements. It is critical that the root systems of each tree be as minimally impacted as possible in order to justify the stability for the tree after the project. Any trees that will have excavation under their canopy, particularly close to the trunk, will be studied to see what adjustments could be made to preserve the tree while maintaining the overall goal of the project. Where critical excavation cannot be avoided, these trees will be evaluated with input from the project arborist.

Pavement Surface

Pedestrian Surfaces:

Different pavement surface options have been evaluated to consider factors such as durability, aesthetics, cost, and sustainability. The suitability of various materials, including concrete, permeable pavers, standard pavers, and other potential surface treatments has been assessed. The design team is currently proposing concrete for the pedestrian surfaces to match the aesthetics of the surrounding downtown area while still being cognizant of costs.

Vehicular Surfaces:

The existing roadway pavement is in relatively good condition overall but due to the extents of the underground utility trenching and revised curb alignments proposed, the roadway surface is planned for replacement. A considerable amount of trenching will occur for underground improvements which



will create butt joints that will need to be addressed for longevity of the pavement surface.

Asphalt pavement and vehicular concrete pavement options have been reviewed and the design team is proposing the use of asphalt pavement for the vehicular surfaces. Asphalt pavement is the more economical choice, is easier for maintenance and upkeep, and matches the surrounding streets. With the project design life in mind, a full pavement section replacement is proposed rather than a pavement overlay option. An optimal pavement section will be determined with input from the City, traffic engineer, and geotechnical engineer as the design progresses.

Pedestrian Crossings

A major aspect of this project is pedestrian safety and mobility. In order to create safer passage for pedestrians along Third Street, clear and accessible crossings are important. The following countermeasures were studied for the unsignalized and mid-block crossings:

- High-Visibility crosswalks
- Parking restrictions on crosswalk approaches
- Adequate nighttime lighting
- Crosswalk warning signs
- Curb extensions (bulb-outs)
- Alignment of crosswalks in relation to vehicular traffic
- Raised crosswalks at mid-block crossings (*not incorporated at this time*)

The countermeasures listed above are being incorporated into the design apart from the raised crosswalks, which are still being evaluated. Although the traffic engineer has noted that raised crosswalks are preferred for pedestrian safety, the team is still evaluating if this is necessary given the other safety measures being implemented. The raised crosswalks will be studied further, also taking into consideration the grading and drainage impacts and cost implications.

Stormwater Management

Appropriate stormwater management practices and design elements are being evaluated to ensure compliance with regulatory standards and minimize environmental impact. The extents of stormwater management requirements are unknown at this time but it is anticipated that some form of management will be required if the project receives federal funding.

Due to contaminated soils and possible high groundwater found during the geotechnical investigation, the placement of standard infiltration stormwater treatment planters along Third Street does not appear feasible. The option to install lined stormwater planters is also not recommended as this would either reduce sidewalk areas and/or the amount of parking and limit the locations new trees could be planted. Per the aforementioned reasons, the design team is proposing no stormwater management within the project limits at this time. If stormwater management is required, the project team expects this to occur downstream of the project site and/or utilize in-lieu treatment. Stormwater management options will be evaluated in more detail as the design progresses and funding sources are determined.

