BASIS OF DESIGN REPORT
(30% DESIGN)

FOR

THIRD STREET IMPROVEMENT PROJECT

NE ADAMS STREET TO NE JOHNSON STREET

CITY OF MCMINNVILLE

OREGON

Report prepared for:

City of McMinnville

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PROJECT OVERVIEW AND PURPOSE

The proposed Third Street Improvement project consists of rehabilitating nine blocks of the City of McMinnville's downtown area from the NE Adams Street intersection through the NE Johnson Street intersection, with surface and utility improvements throughout.

The purpose of this Basis of Design Report is to provide a summary of the basic assumptions, constraints, and design decisions made for the Third Street Improvement project. The consultant design team has been working closely with City of McMinnville (City) staff, the Technical Advisory Committee (TAC), and the Project Advisory Committee (PAC), as well as gathering input from the community. The project is currently at the 30% Construction Document (CD) level of design so although it's still in the relatively early stages of design, this report is intended to document the decisions and reasonings behind those decisions made to date.

JURISDICTIONS & STANDARDS

The project is located completely within the City of McMinnville with portions of the project within Oregon Department of Transportation (ODOT) right-of-way and Union Pacific right-of-way. Adams Street and Baker Street are ODOT right-of-way and existing railroad crossings located between Galloway Street and Irvine Street are Union Pacific right-of-way. It is expected the project will be federally funded and thus be held to additional design and construction standards.

The project is subject to comply with standards from the following jurisdictions and utility purveyors:

- City of McMinnville
- ODOT
- Federal Highway Administration (FHWA)
- Union Pacific
- McMinnville Water and Light
- McMinnville Fire
- NW Natural
- Access Board (Public Right-of-Way Accessibility Guidelines (PROWAG))
- Oregon Health Authority

The 30% design is the preferred approach based on the input from the City, TAC, PAC, and community. It is expected that some design exceptions will be required; those will be reviewed closer and pursued as the design is progressed through 60%, 90%, and final 100% CDs. ODOT and Union Pacific have also not yet reviewed the current design and coordination with these jurisdictions is intended to begin at the beginning of the 60% design phase.

STREETSCAPE DESIGN

The consultant design team was directed by the City to move forward with the assumption that Third Street will be re-classified as a local street with the goal of maintaining the appropriate pedestrian safety, traffic safety, and ambiance/mood of Third Street.

Typical Cross Section

The Third Street design includes wider sidewalks, on-street parallel parking spaces, intersection corner bulb-outs, mid-block extensions, and narrower travel lanes. Third Street has a consistent 60' right-of-way throughout and the typical section consists of a 12' wide sidewalk, 8' wide parallel parking (or mid-

block extension), two 10′ wide travel lanes, 8′ wide parallel parking (or mid-block extension), and 12′ wide sidewalk. The typical section does not apply east of the railroad tracks due to the requirement of a left turn lane when approaching Johnson Street from the west; however, a 12′ minimum sidewalk width is maintained.

Tree wells for new and existing trees and site furnishings are proposed within the 12′ wide sidewalk area but an 8′ wide clear pedestrian through-zone is maintained in most locations along Third Street. Where benches are located, there is a 7′ wide clear pedestrian through-zone. Due to the location of some existing trees intended for preservation, the clear pedestrian through-zone is narrowed but maintains a minimum 4′ width to comply with PROWAG standards.

At cross streets, typical cross sections match existing conditions after the corner bulb outs. Minimum 4′ wide pedestrian paths are maintained throughout.

Curbless Design

Curbless design was determine by the City as a potential option in July of 2024 as a way to increase the flexibility of Third Street and be more pedestrian friendly. Third Street is blocked off from vehicular traffic multiple times throughout the year and a curbless design allows the space to be used in more ways without a vertical curb creating a barrier and potential tripping hazard.

The consultant design team reviewed the curbless approach and presented the benefits and potential drawbacks of this approach to both the PAC and TAC in September 2024. Both the PAC and the TAC were in favor of moving forward with a curbless design and the City recommended the use of curbless streets along Third Street.

Per direction from the City, all nine blocks of Third Street and all intersections from Adams through Irvine Street have been designed to be curbless with raised roadways as this is the City's preference to provide continuity through the corridor. The raised and curbless condition ramps down and conforms to the cross streets (roadway grades and curb heights) after the pedestrian crossings in each cross street; the one exception is at the Johnson Street intersection where the raised roadway will ramp down to conform to existing within Third Street, prior to the intersection. Although the Adams and Baker Street intersections are proposed to be raised, it is unclear at this time if ODOT will allow this configuration within their right-of-way. This design will be presented to ODOT as the preferred approach during the 60% design phase for review.

Pedestrian safety is a concern with a curbless street and requires additional measures to protect pedestrians from vehicles. Bollards and other physical obstructions are proposed along Third Street and within the intersections to provide a barrier between the vehicular and pedestrian zones. 24-inch wide detectable warning surfaces are provided at all pedestrian crossing locations to meet PROWAG requirements. 24-inch wide delineator strips are provided at all other flush locations to delineate between vehicular and pedestrian zones. Delineator strips will be a different texture and color than both the adjacent pedestrian and vehicular zones to give a warning to pedestrians that they are leaving the pedestrian zone and to give drivers a visual cue for the limits of the vehicular zone.

Grading and Drainage

The consultant design team reviewed two main grading configurations for the curbless design of Third Street: crowned vs inverted crown. These options were presented to the TAC in meeting #10 to get initial feedback and the design team followed up with a recommendation to move forward with the crowned street section for the following reasons:

- Easier for maintenance- one travel lane at a time can be shut down and still allow vehicles to travel through
- Better for transitioning to side streets since the side streets are also crowned
- If ponding occurs in roadway, vehicles are able to move to the center of the roadway to get around the water instead of being forced to drive through
- Easier for directing stormwater to treatment placed under the parking/sidewalk
- Crowned roadways are more common so it will feel better/more familiar for people driving

The City agreed with the recommendation to move forward with a crowned street. The centerline of the roadway will be crowned with travel lanes sloping away from the centerline. Sidewalks and parking lanes will slope away from the buildings, towards the roadway. A concrete valley gutter is proposed at the roadway/parking limits to direct stormwater towards inlets for collection.

A minimum cross slope of 1% was held for the sidewalk grades per the City's Municipal Code section 12.04.100 and a maximum cross slope of 1.5% was held to meet accessibility requires, while allowing for construction tolerance.

Roadway grading was designed using a desired minimum cross slope of 1% and maximum cross slope of 5%, with an ideal maximum cross slope of 4% in mind. However, in order to stay under this 5% maximum cross slope, it was determined the roadway would not be able to maintain the crowned centerline approach in all locations. At the direction of the City, keeping a continuous crowned section throughout was preferred and the design team was directed to limit the roadway cross slopes as much as feasible to stay within the desired slope range and areas not conforming to the standards would be reviewed in more detail during future design phases. Between Adams and Baker and between Davis and Evans, there are locations where roadway cross slopes are between 5% and 7%; these areas will be evaluated further as the design progresses.

Existing back of sidewalk grades were maintained in most locations; however, in some instances, where adjusting the back of sidewalk grades helped maintain the 5% maximum roadway cross slopes, the back of sidewalk grades were adjusted. Grades were only adjusted if it was determined to not negatively impact the building thresholds. Back of sidewalk grades and building thresholds will be reviewed in more detail as the design progresses to confirm feasibility and provide increased accessibility where possible.

Parking Spaces

Parallel parking will be maintained along Third Street with all spaces being 8-feet in width. The Manual of Uniform Traffic Control Devices (MUTCD) provides a figure of "examples of on-street parking space markings" that indicates 22'-26' long parking dimensions but no dimension is given in the text on the MUTCD as a standard. Per direction given by the City during a meeting on 6/4/25, parking spaces along Third Street are to be 20-feet in length.

No accessible parking spaces have been located at this stage of design. With the curbless roadway section, there will be more opportunities to incorporate accessible parking along Third Street and side streets will also be used to accommodate accessible parking. Preferred locations for accessible parking will be determined in future design phases.

The MUTCD Chapter 3B.27 specifies parking be set back 20' from marked or unmarked pedestrian crossings at intersections. The FHWA Guide for Improving Pedestrian Safety at Uncontrolled Crossing Locations also recommends a 20-ft parking setback. This is a commonly used distance for ensuring

clear sightlines at uncontrolled crossings. The current layout does not maintain 20' between parking spaces and pedestrian crossing at all locations; this will be reviewed and rectified in the next phase of design to ensure requirements are met.

Vehicular Pavement Surface

The existing roadway pavement is in relatively good condition overall but due to the extents of the underground utility trenching and curbless design, the entire Third Street roadway surface within the project limits is planned for replacement.

Preliminary exploration by the Geotechnical Engineer Haley & Aldrich found an average 8" section of AC over PCC. They noted that the existing stabilization layer is a gravelly/cobbley mix which varies 3-6-inches. The City provided additional insight, noting that it is likely that much of Third Street has a minimum of 3-inches of concrete under the existing asphalt pavement, with little to no base rock. The City was unable to locate old construction drawings to confirm; this knowledge is anecdotal from various repair efforts along the corridor over the years. The City was not able to confirm if this is the case for the entirety of the project limits or just certain areas.

Asphalt pavement and vehicular concrete pavement options were reviewed for use as the new roadway pavement surface. At the direction of City staff and TAC members, concrete roadways are proposed at all curbless locations (Third Street up to Johnson Street intersection). Asphalt pavement is proposed at cross streets to tie into those existing asphalt roadways; this occurs after the crosswalks once the raised roadway ramps down.

Based on the preliminary conclusions of the Geotechnical Report, BKF recommends option six (6) from their report: 8" PCC over 6" aggregate base. This recommendation exceeds the City Municipal Code section 12.04.0909 which requires concrete pavement be not less than 7" in thickness. Haley & Aldrich also recommends the subgrade to be protected from moisture and that paving and subgrade stabilization are performed during dry weather and the use of a geotextile fabric is included below the aggregate base.

Pavement Markings

Lane Delineation

MUTCD Section 3B.02 has a threshold of 4,000 vehicle average daily traffic (ADT) and "collector or arterial" classification for warranting a continuous centerline. The existing traffic volumes are around 3,000 vehicles ADT, and Third Street is planned to be a "local" street classification. Although the MUTCD threshold is not met to require centerline striping, the manual does leave it open to state "Center line markings should also be placed on other traveled ways where an engineering study indicates such a need". ODOT's Traffic Line Manual Section 210 has a 3,000 vehicle ADT threshold, which is right where Third Street is at with existing volumes.

Although the City of McMinnville does not require centerline stripping on Third Street due to the local street classification, the Transportation Engineer team from Kittelson & Associates (Kittelson) recommends centerline striping at least 50-ft in advance of any signalized intersection approach (Baker, Davis, Ford), and in the blocks from Galloway to Johnson where the railroad crossing markings are located and where the lane configuration goes to three lanes for the turn lane at Johnson Street.

Given the narrow cross-section of the street, Kittelson expects that vehicles will tend to "shy" away from parked cars and the mid-block extension and may encroach into the oncoming lanes if a centerline is not provided.

It is recommended to include a continuous centerline from Adams to Johnson Street for project continuity and as a traffic calming measure due to the following reasonings:

- The project is right at ODOT's volume threshold for requiring a centerline
- In order to avoid a series of short segments of centerlines with small gaps in between
- In order to keep vehicles aligned in their lanes

30% design plans include centerline striping per Kittelson recommendations but this will be reviewed in future design phases to determine which pavement markings will ultimately be included in construction.

Parking Space Markings

It is not a requirement to provide pavement markings for parking spaced. Pavement markings indicating parking spaces along Third Street are included in the 30% design for reference but ultimately may not be marked in the field. This will be reviewed further in future design phases.

Railroad Crossing

Railroad crossing markings are required and included to replace the existing pavement markings. Railroad crossing markings are shown per ODOT and MUTCD standards.

Crosswalks

Nine-foot-wide crosswalks per ODOT and MUTCD standards are provided throughout the project. All intersection and midblock crosswalks will be marked with staggered continental crosswalk 2' white bar striping.

Existing Driveways

There are eighteen existing driveways located within the project limits either off of Third Street or the cross streets. The consultant design team evaluated all of these driveways based on the following criteria:

- Traffic patterns/current utilization
- Alternative access available
- Distance to intersection

Based on the above criteria, seven driveways are recommended to be reviewed further to determine feasibility of permanent closure, one driveway will be reviewed for relocation, and ten are suggested to remain.

No driveways are indicated for closure at this time but closures will be reviewed in more detail in future design phases and the City will work with property owners prior to any driveways being noted for permanent closure.

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 and have been incorporated into the design:

- High-visibility crosswalks
- Parking restrictions on crosswalk approaches
- Adequate nighttime lighting
- Curb extensions (bulb-outs)
- Alignment of crosswalks in relation to vehicular traffic

Pedestrian crossings have been included at all intersections from Adams though Johnson Street and at mid-block locations between Adams Street and the Railroad crossing. All pedestrian crossings will be perpendicular to the travel lanes, be nine feet wide and include continental striping as indicated in the Pavement Marking section of this report, as well as include 24-inch wide detectable warning surfaces prior to entering the roadway as indicated in the Curbless section of this report. Push buttons will be installed at intersection crosswalks when street light replacement is proposed.

With the exception of Johnson Street, all crosswalks will be located in the raised roadway due to the curbless design so no curb ramps are required at those locations. New curb ramps will be included at the Johnson Street intersection where required and will be designed to comply with City, ODOT, and PROWAG standards.

The southern pedestrian crosswalk at the Adams Street intersection is included at this stage of design but re-opening this crosswalk will require a formal request to the ODOT State Traffic-Roadway Engineer. In the future design phase, the project team will need to engage with ODOT Region 2 Traffic staff to explore re-opening the crosswalk and then prepare a request/study for approval.

Mid-Block Extensions

Mid-block extensions are included in the design to increase the pedestrian zones, allow for placement of additional trees and amenities, and provide increased visibility for pedestrians at mid-block crossings. Narrowing the vehicular zone is also intended to slow traffic.

The size of mid-block extensions impacts the amount of flexible pedestrian space as well and the amount of available parking spaces along Third Street. Two main size options were considered: the smaller 66′ mid-block extensions and the larger 85′ mid-block extensions. When compared to the larger option, the smaller mid-block extension has less permanent pedestrian space but increases the amount of parking by an average of two spaces per block. These additional two parking spaces per block may give the City increased flexibility as these possible “flex zones” could be an opportunity to allow the local businesses to use them in a semi-permanent manner with additional permits.

The PAC voted to recommend the smaller 66′ mid-block extensions instead of the larger 85′ mid-block extensions to City Council; PAC members preferred the smaller mid-block curb extension option due to flexibility of design.

Mid-block extensions on the same block were placed slightly offset from one another to better distribute the parking spaces along each block and allow for more uniform tree and light spacing, while still allowing pedestrian crosswalks to be perpendicular to the vehicular lanes.

Sidewalks

Sidewalks are designed to conform to PROWAG requirements at a minimum. Along Third Street, minimum 12′ wide sidewalks are proposed. Tree wells for new and existing trees and site furnishings are proposed within the 12′ wide sidewalk area but an 8′ wide clear pedestrian through-zone is maintained in most locations along Third Street. Where benches are located, there is a 7′ wide clear pedestrian through-zone. Due to the location of some existing trees intended for preservation, the clear pedestrian through-zone is narrowed but maintains a minimum 4′ width to comply with PROWAG standards. Along cross streets, a minimum of 4′ wide pedestrian paths are maintained throughout.

A minimum cross slope of 1% was held for the sidewalk grades per the City’s Municipal Code section 12.04.100 and a maximum cross slope of 1.5% was held to meet accessibility requires, while allowing for construction tolerance.

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. Based on feedback from the City, TAC, and PAC, the consultant design team is proposing concrete for the sidewalks to match the aesthetics of the surrounding downtown area while still being cognizant of costs and not creating too busy of an aesthetic. Red pavers are proposed within the mid-block extensions and at bike rack locations to add more character but still match the historic feel of the area. Where feasible, permeable pavers will be utilized in the mid-block curb extensions, refer to the Stormwater Treatment section of this report for additional information.

Signage:

MUTCD does not require the use of pedestrian warning signs at crosswalks and Kittelson recommends omitting these to avoid sign clutter. No pedestrian warning signs at crosswalks are included in the design.

Other project signage requirements will be reviewed as the design progresses and included in future design phases.

Trees

Existing Trees

Existing trees have been evaluated for removal or preservation using the 2024 Arborist Report and the current design configuration. With input from the City, the PAC, and the TAC, tree preservation criteria and a decision tree matrix were created with the following goal in mind: where feasible, preserve Third Street's existing street trees. The following criteria has been considered, and will continue 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

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 is constructed. 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.

New Trees

Prior to the curbless re-design, trees were placed in groves within the mid-block extensions and towards the intersections. This configuration was determined not to be ideal as it created pedestrian visibly concerns at mid-block crossings, conflicts with the lighting design, conflicts with utility services, and limited the flexibly of the mid-block extensions.

The current tree layout still includes a couple trees within each mid-block extension and towards the intersections, but moves some trees to be located in tree wells in the sidewalk adjacent to parking

areas. This design spaces the trees out more evenly throughout the project and allows tree placements to be adjusted to avoid pedestrian visibly concerns, conflicts with the lighting design, and conflicts with utility services. Tree grates are proposed for tree wells located in the sidewalk as this is preferred from a maintenance perspective, reduces tripping hazards, and allows for greater flexibility near trees.

When determining tree placement related to clearance from below grade utilities, street lights, utility poles, and driveways and alleys, the City Municipal Code section 17.58.090 was followed as much as feasible; there are some instances where the clearance requirements are unable to be met and design exceptions will be pursued in future design phases.

Proposed tree species were determined based on feedback from the City, PAC, and TAC. New trees proposed under existing overhead wires along the cross streets have been selected from the City's street tree list for trees that are located under/near wires.

The proposed design utilizes five tree species per block with potential for some variety block-to-block and includes the use of medium-canopied trees to achieve a similar tunnel effect created by the existing trees along Third Street.

Refer to the Streetscape Plan Report for additional information on the new proposed trees.

UTILITY INFRASTRUCTURE

The existing utilities have been evaluated for replacement based on age, condition, location, and planned future improvements noted by the City and/or utility purveyors. Each utility is broken out into its own section and discussed below. Utility design, including separation requirements, will follow City and utility purveyor standards and comply with Oregon Health Authority requirements for water lines.

Per the City Municipal Code, all public utilities are to be designed to maintain 10' of clearance from trees; there are some instances where the clearance requirements are unable to be met and design exceptions will be pursued in future design phases.

Sanitary Sewer

All existing sanitary sewer mains within the project limits between Adams and Irvine Streets are to be replaced due to age, condition, and/or location. Based on the City Sanitary Master Plan, 8" mainlines are recommended. The City recommends existing sanitary lines to be replaced are removed, rather than abandoned in place. For pipes with greater than 2.5' of cover, 3034 PVC is to be used. For pipes with cover from 2.5' to 2', C900 PVC is to be used. For pipes with less than 2' of cover, Ductile Iron is to be used.

Third Street Mains

The majority of Third Street between Adams Street and Johnson Street does not contain sanitary sewer mains as most lateral connections are located within the alleys behind the buildings. The two parallel sanitary sewer mains within Third Street between Evans Street and Ford will be replaced with one new sanitary sewer main due to the condition and age of the existing (clay tile) pipes. The sanitary sewer main within Third Street between Ford Street and the railroad tracks and between the railroad tracks and Irvine Street are proposed for replacement due to location per City direction; the new mains will be located within the roadway and no longer be located under sidewalks or curb alignments for ease of future maintenance.

Cross Street Mains

Existing (clay tile) sanitary sewer mains within Cowls Street and Evans Street will be replaced due to age

and condition from Third Street towards both Second Street to the south and Fourth Street to the north. At a minimum, these pipes will be replaced from manhole to manhole along Cowls Street and Evans Street. The sanitary sewer main within Galloway Street adjacent to the new improvements is proposed for replacement due to location per City direction; the new main will be shifted east to no longer be located under sidewalks for ease of future maintenance.

Laterals

All existing sanitary laterals are noted for replacement where sanitary sewer mains are to be replaced. All existing sanitary laterals within the right of way that are not air tight will be replaced.

Downstream Conveyance

The City of McMinnville Sanitary Sewer Conveyance System Master Plan was reviewed and no information concerning the system within the project limits or downstream appears to be mentioned. Per conversations with the City, there are no known sanitary sewer backup issues within this portion of the public system either.

Storm Sewer

All storm sewer infrastructure within project limits is proposed for replacement due to age, condition, and/or location. The City recommends existing storm sewer lines to be replaced are removed, rather than abandoned in place. For pipes with greater than 2.5′ of cover, 3034 PVC is to be used. For pipes with cover from 2.5′ to 2′, C900 PVC is to be used. For pipes with less than 2′ of cover, Ductile Iron is to be used.

The City of McMinnville Storm Drainage Design and Construction Standards (SDDCS) and ODOT Hydraulics Manual (Chapter 7) were used to design the proposed stormwater conveyance systems. The proposed conveyance system is sized to handle both the 10-year (City requirement) and 50-year (ODOT requirement) storm events using the rational method.

Per the City of McMinnville stormwater standards, the proposed project is classified as a "small and moderate pipe system" within the public right-of-way that serves an upstream watershed no more than 320 aces and is therefore required to accommodate the 10-year storm event. A portion of the system also contains sag curves within the ODOT right-of-way, and therefore a 50-year design event would be applied in those areas. Per the City's Storm Drainage Master Plan, existing downstream storm main deficiencies have been identified. To mitigate for potential downstream deficiencies, a hydraulic grade line (HGL) analysis was performed and applied to the conveyance design to ensure pipes would adequately convey the 50-year storm event, without backing up into any portions of the proposed surface improvements.

Based on this analysis, it was determined that all proposed storm mains from Adams Street to the railroad will need to be 18" in diameter in order to convey the required amount of runoff for the proposed development in the Third Street right-of-way, without backing up into the street for the selected storm event. From the railroad east to the connection point in Johnson Street, the storm mains will need to be 24" in diameter.

Refer to the Stormwater Report for additional information on storm sewer design, including all assumptions, calculations, and exhibits.

Third Street Mains

All existing storm sewer mains within project limits are proposed for replaced due to age, condition, and/or location. New storm drain pipes will be re-configured to be within the roadway and no longer

be located under sidewalks or curb alignments.

Cross Street Mains
Existing storm sewer mains within Cowls Street, Davis Street, and Ford Street (between 3rd Street and 4th Street) have been identified by the City to be in very poor condition, with portions of the pipes broken or missing, and are proposed to be replaced based on direction from the City.

Downstream Conveyance
Stormwater along Third Street between Adams Street and Johnson Street is routed to three separate discharge locations. All three stormwater conveyance routes have been reviewed using the City of McMinnville Storm Drainage Master Plan to determine if any known deficiencies exist downstream of the project site prior to these discharge locations. Two of the routes have known issues. Per Section 7a of the Master Plan, it is noted that downstream sections of existing storm line to the north of the project site within Fourth Street are undersized/deficient between Adams Street and Cowls Street as well as sections west of Adams Street near the discharge point. It is also noted that downstream sections of existing storm line to the south of the project site within First Street are undersized/deficient between Davis Street and Adams Street as well as a section within Adams Street south of First Street prior to the discharge.

No downstream pipes (aside from those noted above in the "cross streets" section) are currently proposed for replacement as part of this project but it is recommended the City evaluate this further to determine if the project scope should expand to include upgrades to these systems.

Inlets
Storm inlets will be located at low points along the valley gutters, not exceeding ODOT's maximum inlet spacing requirements. Stormwater routing will generally continue to follow the existing drainage patterns. The City has voiced a preference for catch basins rather that trench drains due to maintenance concerns but is open to considering for specific instances if design warrants their use. At this time, no trench drains have not been specified but this will be revisited in future design phases.

Inlet leads connect to the main at either blind connections or with a manhole and determination for each was provided on a plan markup from the City. Where blind connections occur, 3' between blind connections is used per City standards.

Water

Third Street Mains
Per McMinnville Water & Light direction, all existing cast iron water mains within the project area are to be replaced with new ductile iron pipe. The existing 14" cast iron water main from Adams Street to Ford Street will be replaced with a new ductile iron main. Between Ford Street and the railroad tracks, there are two existing parallel water mains: an 8" cast iron main and a 16" ductile iron main. The existing 8" cast iron main between Ford Street and the railroad tracks will be abandoned.

Cross Street Mains
Per McMinnville Water & Light direction, the existing cast iron mains at all cross streets are also to be replaced with new ductile iron pipe. Pipe replacements will occur within the intersections and extend 10'-20' past the project surface improvement limits to the north and south. Baker Street, Davis Street, Evans Street, Ford Street, and Irvine Street all have water mains shown for replacement.

Domestic Water Laterals
All existing water service laterals are to be replaced where water mains will be replaced and connected

to the new mains. All existing services off the parallel main that is the be abandoned will be replaced and connected to the existing 16" ductile iron main that is to remain.

Water laterals are to be installed perpendicular to the water main and maintain a minimum of 18" separation between connections to the water main. The public portion of the new water laterals between the main connection and the meter are to be perpendicular to the main and maintain 10' clearance from trees, but the private side after meter can be jogged and be closer to trees if required. Due to many of the laterals containing bends, it is recommended to install tracer wire on the private portion of the laterals.

Domestic Water Meters

All existing meter boxes will either be protected in place and be raised to finished grade or replaced and relocated depending on the specific configuration shown in the plans. Meters are placed outside of the path of travel wherever feasible but will be equipped with ADA compliant nonslip lids.

Fire Hydrants

Existing fire hydrants are being relocated based on the Fire Department standards and preferences. Fire hydrants will remain located near intersection corner bulb outs as it allows fire department greater accessibility. Where feasible, fire hydrants will be shifted to be located within curbed landscaping to provide protection from vehicles. A general rule of thumb is to allow 36" clear zone around fire hydrants for access.

Natural Gas

Natural gas in the area is provided by NW Natural. Per initial coordination, NW Natural has informed the design team that they will not be proactively installing any additional gas mains within the project area; however, if existing gas mains are in conflict, then theses mains would need to be relocated with the possibility of extending the gas mains at that time.

At this time, no gas mains are proposed for replacement/relocation. Based on the 30% design, it appears there will be some conflicts that will need to be resolved and the design team will continue to coordinate with NW Natural in future design phases to determine which mains to be relocated.

Electrical and Telecommunication

It is anticipated that new electrical lines will be required for the proposed street lights and potentially for the upgraded traffic signals; however, specific improvements to the existing electrical system have not yet been determined as the layout of these lights are still in flux. Similar to gas, if existing electrical or telecommunication lines are in conflict with the proposed design, then theses lines will need to be relocated. The design team will continue to evaluate these utilities as the design progresses.

STREET LIGHTING

New street lighting is required throughout the project limits. The McMinnville Water & Light Street Lighting Design Guide from July 2015 was reviewed as a reference. Although the lighting design approach is generally in line with the guidance in the Design Guide document, this Design Guide was not followed. This Design Guide gives recommendations for street lighting levels on Arterials and Collectors, but not Local Streets. It also defaults to a "medium" pedestrian conflict area classification. The Design Guide does however reference IES RP-8 lighting guidelines, which was used to set target lighting levels for the project. The lighting design also did use the light loss depreciation factor specified in the Design Guide.

Based on guidance received from the City, the consultant design team has designed the lighting to a "high" pedestrian conflict classification, and used the target lighting levels guidelines for local streets and intersections from IES RP-8. The City does not have a “dark sky” requirement and it’s the project team’s understanding that adequate light levels on Third Street are a community priority, therefor it was determined that the minimum pole layout outlined in the McMinnville Water & Light Design Guide would not be adequate for Third Street.

Based on feedback from the City, TAC, and PAC, existing pendant and acorn style poles and luminaries will be used in locations without spacing constraints. Lighted bollards will be used as supplemental corner lighting at intersections as well as at mid-block crossing locations to prevent conflict with tree canopies and preserve as many street trees as possible.

Refer to the Lighting Memo for additional information on street lighting.

STORMWATER MANAGEMENT

Stormwater Treatment

Stormwater treatment is required and proposed due to federal funding and portions of the project being within the ODOT right-of-way. Due to contaminated soils and possible high groundwater found during the geotechnical investigation, infiltration has been deemed infeasible.

The project team reviewed the various non-infiltration stormwater treatment options (soil cells, streetside planters, modular wetlands, and other proprietary filter treatment systems) with the City, TAC, and PAC. Streetside planters were not recommended as this would either reduce sidewalk areas and/or the amount of parking and limit the locations new trees could be planted. The City also prefers to avoid using proprietary options so soil cells were selected as the preferred option.

For the 30% construction documents, proprietary soil cell water quality treatment technology is proposed. The soil cells have been proposed in an effort to provide as much growing medium for large trees in the right-of-way as possible. Large trees are proposed throughout the proposed Third Street Improvements – soil cells provide room for large root systems to grow while also providing low impact storm water quality treatment. As infiltration is not recommended, the soil cell systems will be lined and include underdrains, allowing the stormwater to enter the outlet pipes once treated.

Where feasible, stormwater will enter the soil cell systems for treatment after being captured by inlets in the roadway or through permeable pavers in the mid-block extensions, located above the soil cell systems. Although the proposed project will be designed to treat all stormwater runoff before it enters the downstream public storm system, there are some locations where soil cells are not feasible and the specifics for treatment in those areas are still to be determined. This will be studied further in later stages of the design.

The City of McMinnville’s Storm Drainage Design and Construction Standards were used to design the proposed stormwater treatment facilities. For sizing the water quality treatment footprints, a 6% simplified sizing factor was used. The simplified sizing factor is being used for the preliminary water quality sizing only. Soil cells have been designated by the Washington Department of Ecology as being functionally equivalent to a bioretention facility.

Stormwater Detention

Per the City of McMinnville Storm Drainage Design and Construction Standards Appendix E, this project is not subject to stormwater detention requirements.