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- B Plan and Policy Review
- C Existing Conditions
- D Future Conditions
- E Alternatives Development and Evaluation
- F Updated Traffic Analysis Future Build Scenarios
- G City Zoning and Development Code Modifications

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1 INTRODUCTION

The Cottage Grove Downtown Revitalization and Refinement Plan addresses key transportation issues in the City of Cottage Grove (City), located in Lane County, Oregon (see Figure 1). The plan focuses on two adjacent areas of the City: the Main Street/State Highway 99 (OR 99)/10th Street/Oregon Central & Pacific Railroad intersection area (intersection area) and the downtown segment of Main Street. The goal of the project is to improve the function, safety, and aesthetics of both areas, with an emphasis on pedestrian movement and bicycle travel and preserving the historic character of downtown.

Plan Components

The plan consists of the following components:

- Traffic and safety analysis of the Main Street/OR 99 and the Main Street/10th Street intersections, including the Oregon Central & Pacific Railroad crossing
- Intersection plan focusing on improving sight distance, safety, functionality, access management, and connectivity
- Plan for bicyclists, pedestrians, vehicles, and public transportation in the intersection area
- Streetscape improvements for the intersection area and Main Street focusing on the gateway to the Historic District, Trailhead Park, and the future interpretative center on 10th Street
- Code recommendations for implementing proposed refinements to the streetscape and topics related to downtown revitalization and historic preservation such as site and building design standards

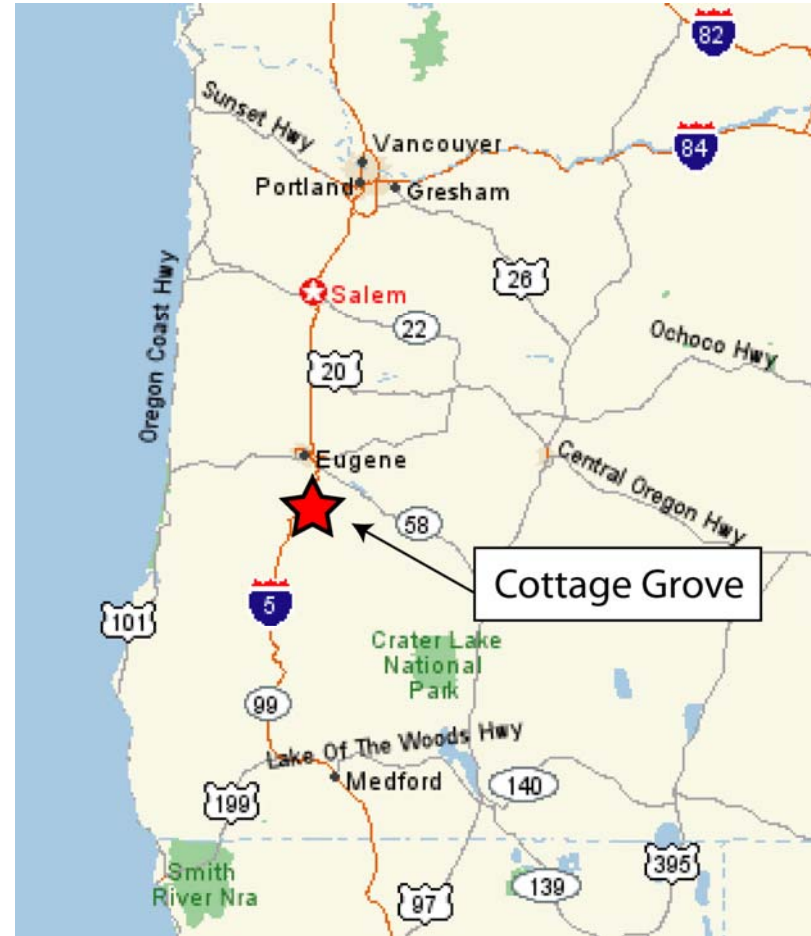


FIGURE 1
Regional Area Map

The plan was funded by a grant to the City from the Oregon Transportation and Growth Management (TGM) program and in-kind contributions from the City. With the City's approval, the TGM program hired the consulting team of CH2M HILL, Alta Planning + Design, and Angelo Eaton & Associates to prepare the plan.

Planning Process

PROJECT MANAGEMENT

A project management team (PMT) consisting of the consultants and staff from the City of Cottage Grove and the Oregon Department of Transportation (ODOT) provided guidance and policy direction for this plan.

PUBLIC INVOLVEMENT

The active participation of City community members, stakeholders, and other interested parties was a key component of the plan. Public involvement was achieved through meetings of an appointed advisory committee (AC) made up of local community members and interested agency representatives, and a public open house. The AC met three times (May and September 2004 and January 2005) to review existing conditions and to review and discuss proposed alternatives (Figure 2). A public open house (September 2004) allowed the review of the draft alternatives by interested parties not included on the AC. In addition, the City mailed a survey describing the project and proposed alternatives to project stakeholders in November 2004. The survey included a space for written comments. Documentation of the public involvement process is included in Appendix A.

PLAN AND POLICY REVIEW

At the beginning of the planning process, the consultant team reviewed city, county, and state plans and policies for the jurisdictions that own, regulate, or provide public services on the public roadways and adjacent lands in the Cottage Grove study area. The purpose of this review was to help ensure that proposed changes were consistent with these documents, and to aid in the development of implementing ordinances for the plan. Results of the plan and policy review are included in Appendix B.

GOALS AND EVALUATION CRITERIA

Using the grant application and the statement of work for the project, the consultant team developed draft goals and evaluation criteria for the project, which the AC reviewed and approved. The goals and evaluation criteria create a framework to ensure that the plan responds to the goals and desires of the community (see Table 1). The draft alternatives were evaluated using these criteria.



FIGURE 2
Advisory Committee Meeting

TABLE 1
Goals and Evaluation Criteria

Goals	Evaluation Criteria
<p>1. Improve function, safety, and aesthetics of Main Street/OR 99/10th Street/Railroad intersection for all modes (<i>City and ODOT standards apply</i>)</p>	<p><i>Vehicle safety is improved</i></p> <p><i>Vehicle operations are improved, consistent with standards</i></p> <p><i>Highway accesses are consolidated or better delineated while preserving access to businesses</i></p> <p><i>Adequate vehicle parking is provided</i></p> <p><i>Pedestrian movements, including crossings, are safer and more convenient</i></p> <p><i>Safe and convenient bicycle facilities are provided</i></p> <p><i>Opportunities for linkages between modes are improved</i></p> <p><i>Aesthetics of intersection are improved through landscaping, gateway features, etc.</i></p> <p><i>Pedestrian and bicycle access to Row River trailhead is improved</i></p> <p><i>Historic resources are not adversely affected</i></p>
<p>2. Improve function, safety, and aesthetics of downtown streetscape while preserving historic character (<i>City standards apply</i>)</p>	<p><i>Encourages safe pedestrian movements and crossings</i></p> <p><i>Provides adequate bicycle facilities, including parking</i></p> <p><i>Provides adequate on-street parking opportunities</i></p> <p><i>Roadway and roadside changes encourage vehicles to travel at posted speeds</i></p> <p><i>Provides opportunities for street furniture (e.g., benches, trash receptacles)</i></p> <p><i>Provides opportunities for landscaping (e.g., street trees, planters)</i></p> <p><i>Changes support downtown's historic character</i></p>
<p>3. Provide solutions that are cost-effective and implementable</p>	<p><i>Solutions are cost-effective to design and construct</i></p> <p><i>Sufficient detail is provided to qualify for engineering and construction funds</i></p> <p><i>City and ODOT maintenance costs are affordable</i></p> <p><i>If changes to city code are recommended, City officials and other stakeholders support such changes</i></p>

EXISTING AND FUTURE CONDITIONS REVIEW

Prior to the first AC meeting, the consultant team reviewed and documented existing and anticipated future land use and transportation conditions in the project area. The review was based on existing documents, traffic operations and impacts analysis, and a field review (March 2004) conducted with the assistance of local, county, and state representatives. The existing and future conditions reviews are included in Appendixes C and D, respectively.

DEVELOPMENT AND EVALUATION OF ALTERNATIVES

Following the review of plans and policies, development of goals and evaluation criteria, and review of existing and future conditions, the consultant team developed alternatives to respond to the project purpose and goals. The following were key steps in the alternatives development process:

- Develop a range of alternatives that seek to meet project goals and evaluation criteria.
- Present draft alternatives to PMT for preliminary review and to ODOT for review against ODOT policies and standards (August 2004).
- Revise initial draft alternatives as necessary in response to PMT and ODOT comments, and conduct an initial evaluation.
- Present alternatives to AC and the general public (September 2004). Discuss consultant evaluation of alternatives and recommendation of a preferred alternative.
- As needed, modify the preferred alternative to incorporate input and discussion from AC and the general public.

Documentation of the alternatives development and evaluation process is included in Appendix E.

2 RECOMMENDATIONS

The discussion of recommendations that follows is divided into two primary sections: the Intersection Area and the Downtown Streetscape.

Intersection Area

SUMMARY

The intersection area includes the Main Street/OR 99/10th Street/railroad intersection. The preferred alternative for the intersection area is illustrated in Figures 3 and 4 and includes the following key features:

- Enhance the marked crosswalks on all legs of the Main Street/OR 99 and Main Street/10th Street intersections.
- As feasible, adjust signal timing to increase the “green time” for east/west pedestrian movements across OR 99 on Main Street.
- Provide wider sidewalks with landscaping where space allows.
- Add bike lanes to roadways in the intersection area.
- Consider installing gateway monuments on undeveloped corners of the Main Street/OR 99 intersection.
- Relocate the existing bus stop in the intersection area.
- Introduce a slight curve on OR 99 north of Main Street to increase sight distance and reduce intersection skew at Main Street/OR 99.
- Retain existing median on OR 99 south of Main Street.
- Improve the Main Street/10th Street intersection in two phases:

- In the short term (0 to 10 years), install a raised pedestrian island on the west side of the Main Street/10th Street intersection to improve pedestrian safety and comfort and to restrict left turns from 10th Street. Placement of the pedestrian island is subject to approval by the ODOT Rail division.
 - Over the long term (approximately 20 years), replace the pedestrian island at Main Street/10th Street with a traffic signal to provide enhanced pedestrian safety, restore full access at the intersection, and help regulate traffic queues at the railroad and the Main Street/OR 99 intersection. Because of the proximity of a signal at 10th Street to the railroad tracks and the existing traffic signal at Main Street and OR 99, this new signal would be subject to further operational analysis and approval by ODOT, ODOT Rail, and the Central Oregon & Pacific Railroad.
- Install a cul-de-sac on Lane Street and close the connection of Lane Street to Main Street (cul-de-sac design would still allow fire access). Maintain access to Lane Street from the north.
 - Over the long term, as part of property redevelopment and/or roadway reconstruction, consolidate driveways on properties in the intersection area.

These recommendations are discussed in further detail in the subsections below.

PEDESTRIAN, BICYCLE, AND STREETScape

Enhance Pedestrian Crossings

The preferred alternative for the intersection area includes marked pedestrian crossings for all legs of the Main Street/OR 99 intersection and the Main Street/10th Street intersection (see Figure 3). Although most of these crossings are already marked (the exception is the west

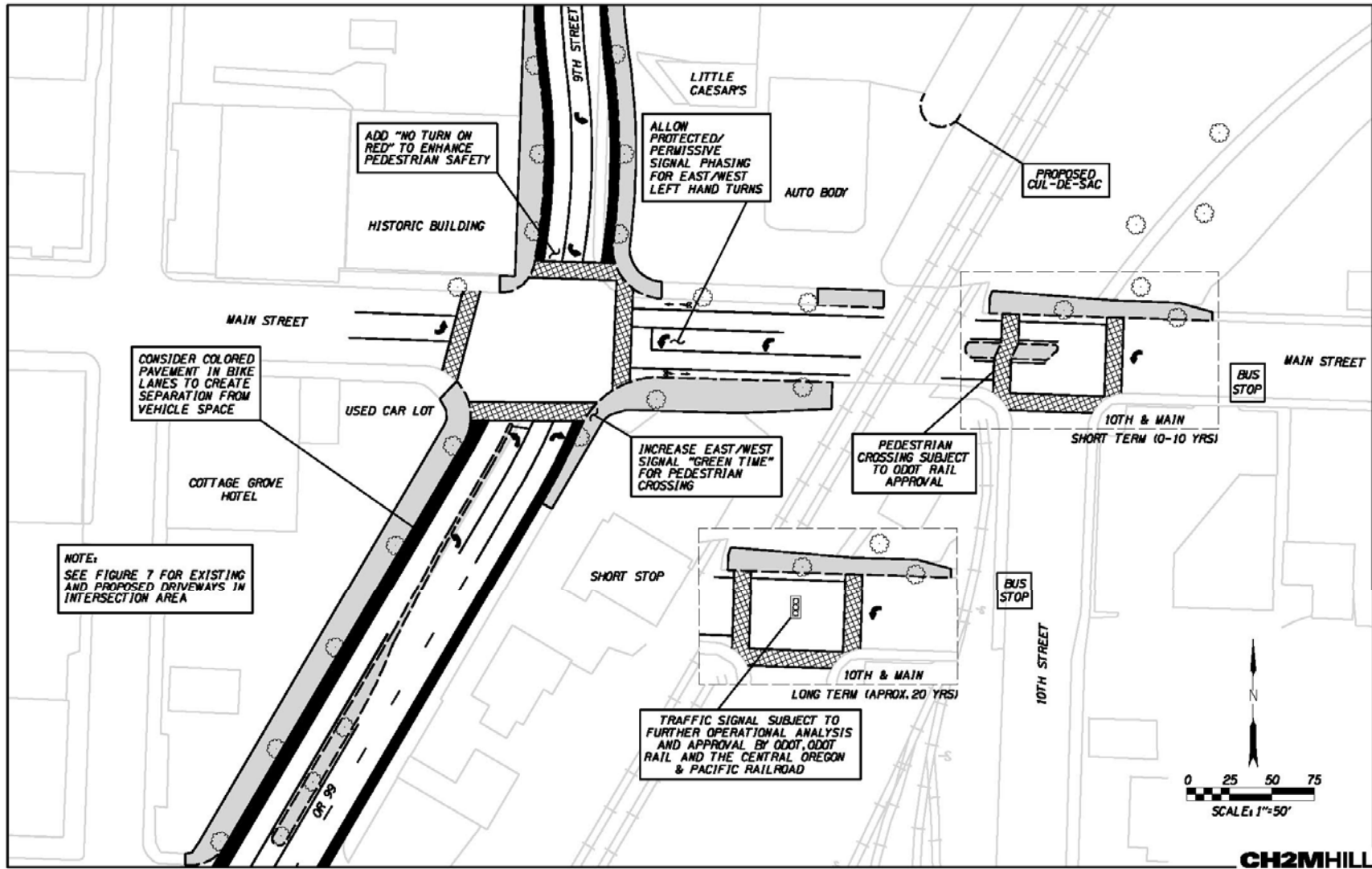


FIGURE 3
Intersection Area Preferred Alternative

side of the Main Street/10th Street intersection), the crossings should be enhanced with additional white paint or thermoplastic in a continental or ladder-bar pattern and possibly with the addition of dyed asphalt. (See additional discussion of crosswalk markings in the Downtown Streetscape section.)

The south crossing of OR 99 on Main Street is one of the key pedestrian movements in the area. Users report that the “green time” is too short. The signal timing should be reviewed to see if additional green time can be added to this phase. Doing so would be a significant improvement for pedestrian safety, comfort, and convenience.

Construct Narrower Lane Widths

As shown in Figure 4, 11-foot through lanes and 12-foot left-turn lanes are recommended for OR 99 in the intersection area. Standard lane widths for this facility would be 12-foot travel lanes and 14-foot through lanes. The narrower widths are recommended as a compromise to support the goals of enhancing the pedestrian and bicycle environment, while maintaining vehicle access and safety. Narrower lanes are appropriate in this location given the relatively slow posted speed (25 mph) in the intersection area, the buffering effect of the proposed 5-foot bicycle lanes/shoulders, and the limited space (public right-of-way) available for additional facilities. These reduced lane widths are subject to approval by ODOT.

Add Bicycle Lanes

Striped bicycle lanes should be added to the intersection area, as shown in Figures 3 and 4. The bicycle lanes on Main Street would connect with existing lanes to the east and with proposed and existing lanes to the west (see Downtown Streetscape section).

On OR 99, the bicycle lanes are essentially a shoulder for the roadway. Because the lanes would continue only as far as the proposed roadway improvements (about one block in each direction) due to

space constraints, these lanes should not be marked specifically for bicycles (e.g., diamond marking) until such a time as they extend farther on the highway. To further identify the bike lanes as separate from the vehicle lanes, the bike lanes could be colored red in the intersection area (see Figure 3).

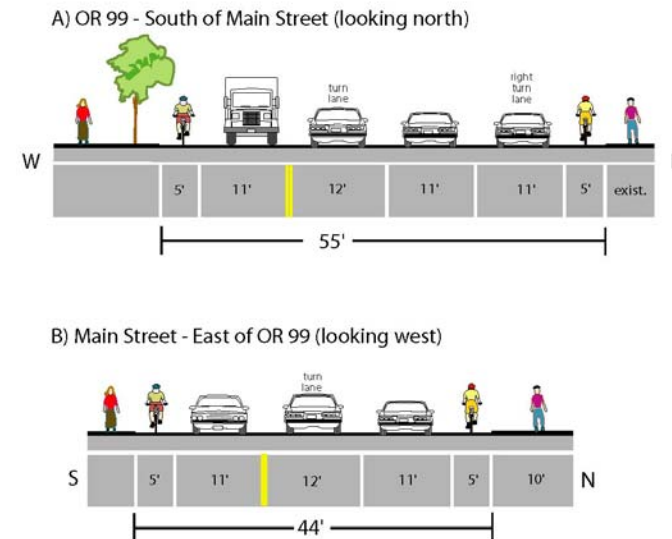


FIGURE 4
Proposed Cross Sections—Intersection Area

Add Landscaping

As shown in Figure 3, the changes in the intersection area allow several possibilities for additional landscaping to improve the aesthetics of the area. These include the west side of OR 99 (north and south of Main Street) and the south side of Main Street between OR 99 and the railroad, where the existing LTD bus stop is located. These improvements could be accomplished largely or fully within the existing public roadway right-of-way. Additional landscaping could

be accomplished with the cooperation of adjacent private property owners.

Consider Gateway Treatments

The intersection of Main Street and OR 99 is a key entrance or gateway to the City of Cottage Grove. Undeveloped parcels at two of the four corners of the intersection provide a potential opportunity for the placement of physical monuments or gateway treatments to accentuate this entrance and provide an aesthetic enhancement. Examples could include a water feature (Figure 5) or a pocket park (Figure 6).

Relocate Bus Stop

The existing LTD bus stop on Main Street at the southeast corner of the Main Street/OR 99 intersection should be relocated away from the intersection area. The primary benefits of this are to:

- Reduce the number of conflicts, movements, and confusion in the intersection area
- Shorten the pedestrian crossing distance across Main Street
- Provide additional space for pedestrian facilities and landscaping



FIGURE 5
Water Feature Gateway Concept (Main Street and Highway 99)



FIGURE 6
Pocket Park Gateway Concept (Main Street and Highway 99)

The bus stop should be relocated as close to the existing location as possible. Figure 3 suggests a possible solution, which would be to install on-street bus stops on 10th Street just south of Main Street and on Main Street just east of 10th Street.

LTD staff have indicated willingness to work with the City to further develop this solution (e.g., exact locations of future bus stops) and to ensure that it meets both City goals and the needs of transit riders.

Additional Pedestrian Recommendations

The following additional changes – all of which are discussed in greater detail in subsequent sections – are recommended to improve the pedestrian environment in the intersection area:

- Add a median to the Main Street/10th Street intersection.
- Close Lane Street at Main Street and consider other access management changes as part of future redevelopment or road construction.
- Add a curve to OR 99 north of Main Street to improve sight distance and pedestrian-vehicle visibility.
- Replace the second southbound through lane on the west side of OR 99 in the block south of Main Street with a wider sidewalk and landscaping.
- Do not add additional lanes to Main Street or OR 99 in the intersection area.

MAIN STREET/OR 99 INTERSECTION DESIGN

The key recommendations for the design of the intersection area with respect to traffic operations and safety are illustrated in Figure 3. Figure 4 shows proposed roadway cross sections and lane widths (see

discussion under Pedestrian, Bicycle, and Streetscape regarding narrower lane widths).

Introduce Curve North of Main Street

To improve sight distance and to reduce the skew of the intersection, the introduction of a curve in the highway north of Main Street is recommended. This will particularly improve sight distance for drivers traveling southbound on OR 99. This relatively modest change is recommended over more major changes that would have resulted in alteration and/or removal of the historic building in the northwest corner of the intersection.

Reduce Conflicts and Delineate Intersection

The preferred alternative shown in Figure 3 includes a number of features to reduce potential conflicts in the intersection area and provide better delineation of the travel space. These include:

- Relocate existing LTD bus stop. This would eliminate conflicts with vehicles and pedestrians from buses pulling in and out.
- Replace second southbound through travel lane on west side of OR 99 in the block south of Main Street with a wider sidewalk and landscaping. Removing the travel lanes for this one block will reduce the vehicle capacity for this segment of the highway. However, because the traffic signal at OE 99 and Main Street meters the flow of traffic into the lane, the reduced capacity is not expected to be a concern.
- Close connection of Lane Street to Main Street. Maintain Lane Street access from the north.

TRAFFIC OPERATIONS

A future traffic operations analysis was conducted for the proposed changes to the intersection area to assure that the intersections would

meet applicable standards for up to 20 years in the future. The analysis is presented in general in Appendix D and in detail in Appendix F. If no improvements are provided at OR 99 and Main Street, the intersection would no longer meet operational standards (volume to capacity [V/C] ratio) by year 2024.

The results of the traffic analysis demonstrate that modifying the signal phasing at Main Street and OR 99, adding a turn restriction or future signal at the Main Street/10th Street intersection (see below), and maintaining the single left-turn lane from eastbound Main Street to southbound OR 99 that exists today would be adequate to meet the operational standards in year 2024. This assumes ODOT support for modifying the signal phasing so that left-turn movements from Main Street to OR 99 (eastbound and westbound) are allowed on a green light (not provided today) as well as a green arrow (provided today). This change, called permissive/protected signal phasing, appears to be appropriate based on the traffic volumes and posted speed and would increase the effective capacity of the intersection, while reducing the vehicle queue lengths. If ODOT did not approve permissive/protected signal phasing, the proposed change at Main Street/10th Street (turn restriction or future signal) would still improve future operations compared with doing nothing at all.

Either scenario – allowing the permissive/protected signal phasing or allowing the V/C ratio to be exceeded – creates the opportunity to enhance the intersection for pedestrians and bicyclists and to improve aesthetics with landscaping while still allowing for safe and adequate vehicle operations.

Another option, providing an additional westbound left-turn lane on Main Street at OR 99, would eliminate the signal phasing issue and reduce the V/C ratio. However, implementing this option would result in greater pedestrian crossing widths, right-of-way impacts to adjacent properties, and a reduction in opportunities for landscaping

and other aesthetic improvements, in conflict with the City's goals for this area. For these reasons, the single left-hand turn lane configuration shown in Figure 3 is recommended.

Main Street/10th Street/Railroad Intersection

The traffic analysis also shows that future traffic operations at Main Street and 10th Street would be adequate without the addition of a signal (see Appendix F). Currently, the heaviest side-street movement at the intersection is the right turn from northbound 10th Street to eastbound Main Street, but the left turn from this approach experiences the highest V/C ratio and a longer delay. Although this approach meets operational standards, drivers (especially left-turning drivers) experience a noticeable delay. Given the proximity of 10th Street to the railroad tracks and to OR 99, eliminating this turn movement (placement of median island) from the intersection has a number of benefits on safety and traffic flow on Main Street. The median also provides a pedestrian refuge. ODOT Rail staff have expressed concern about the proximity of this median and pedestrian crossing (on the west side of the 10th Street intersection) to the railroad tracks. Installation of the median would require their approval.

At some point in the future (about 20 years, based on current growth projections), the Main Street/10th Street intersection may no longer meet operational standards, thus requiring a signal or another solution. A preliminary warrant analysis for a traffic signal at this location shows that the intersection minimally meets the warrants in the design year 2024, based on traffic volumes. This result suggests that in the absence of other factors that might cause additional traffic growth (such as new large-scale development in the area), a signal at 10th Street and Main Street would not be warranted for almost 20 years. Significant traffic growth could cause a signal to be warranted sooner. An example might be the future development of the Bohemia

Mining Days interpretive center at the southeast corner of Main Street and 10th Street. This development would bring additional pedestrian and vehicle traffic to the area.

Installation of a signal at 10th Street would require the review and approval of ODOT, ODOT Rail, and the Central Oregon & Pacific Railroad. Because of the proximity of 10th Street to the railroad crossing and the existing traffic signal at OR 99 and Main Street, a new signal at 10th Street would need to be interconnected with the existing highway signal and rail crossing signal and the interconnected signals would need to function safely and adequately as a system. The timing for this signal system would be complex and requires further analysis than can be provided by this planning study.

Vehicle Queuing

Because of the proximity of the OR 99 and Main Street intersection to the railroad tracks and to 10th Street, the length of left-turning vehicle queues backing up to the east from OR 99 was reviewed. Modifying the signal timing at OR 99 and Main Street to allow for east and westbound protected/permissive signal timing would significantly reduce the vehicle queues for all entering approaches, especially in the westbound direction. For instance, the vehicle queue for the westbound left-turn movement is expected to be approximately 390 feet with no improvements. If the signal modification at OR 99 and Main Street is performed and a northbound left-turn restriction is placed at 10th and Main, then the westbound left-turn vehicle queue would be reduced to approximately 285 feet. This would help to ensure that vehicles are not queued across the railroad tracks.

The analysis shows that the installation of a signal at 10th Street would affect traffic at the Main Street/OR 99 intersection in that it would help regulate the traffic flow into "platoons," thus shortening traffic queues (in particular the left-turn queue) between the Main Street/OR 99 and Main Street/10th Street intersections. A traffic

signal at Main Street/10th Street could also be a solution to pedestrian safety and would enhance the crossing of Main Street between key destinations (the Row River Trail trailhead and future Bohemia Mining Days interpretive center, for example). Again, however, a signal at this location is not warranted in the near future.

Recommendations and Phasing

Given the discussion above, the following recommendations for the preferred alternative apply:

- Short term (0 to 10 years): Construct the short-term improvements shown in Figure 3, namely place a median at 10th Street. In addition, relocate the LTD bus stop as shown and pursue application of the access management criteria.
- Long term (about 20 years): Replace the median at 10th Street with a traffic signal. The combined issues of traffic growth, vehicle queue length, and vehicle and pedestrian safety suggest the need for a signal within 20 years. The signal could be warranted sooner based on land use changes or new development. The signal warrant should be reevaluated as part of the Bohemia Mining Days interpretive center development. Because of the proximity of 10th Street to the existing railroad and OR 99 signals, a signal at 10th Street would be subject to further operational analysis and approval by ODOT, ODOT Rail, and the Central Oregon & Pacific Railroad.

ACCESS MANAGEMENT

The existing Main Street/OR 99 intersection area is confusing and presents hazards to drivers and other users because of the many public road and private property driveway accesses. Few of the properties in this area comply with current state standards for driveway spacing and placement.

The presentation at the September 23, 2004, meeting included review of existing accesses in the intersection area and discussion of criteria for combining or relocating accesses (Table 2). The participants in the meeting generally were in favor of pursuing access management strategies over the long term and were supportive of the criteria as proposed. The

key criterion would be to pursue closing or combining access on properties where at least one access is very close to the intersection and multiple (duplicate) accesses exist. Such changes typically would be recommended at a time when the property is being redeveloped or the adjacent roadway is being modified or reconstructed.

TABLE 2
Proposed Criteria for Modifying Accesses

Proposed Criteria		
If: There are multiple accesses to a property	And one of the accesses: Is close to an intersection, or Causes traffic stacking or congestion, or Causes a safety concern, or Is across from a raised median...	Then: Consider closing or restricting the access in question.
If: There are multiple accesses to a property	And one of the accesses: Is on a local street and the other access(es) is on the state highway and the local access is safe...	Then: Consider closing or restricting the access on the state highway.
If: There is only one access to a property	And: The access can be combined with an adjacent property (for example, along the property line) or Access can be provided in another way (for example, an easement across the property to an adjacent property)...	Then: Consider closing or restricting the access in question.

Assumptions

The purpose of making access changes is to improve safety and traffic flow while maintaining and supporting existing businesses and other property uses.

Access to all properties will be maintained.

Changes to private properties (for example, constructing a shared access with an adjacent property) must be approved by the property owner or owners.

Potential locations for access changes are illustrated in Figure 7. The recommendations include consolidating driveways on properties that are nearest to the Main Street/OR 99 intersection. The recommendations also include closing Lane Street with a cul-de-sac and

eliminating the corresponding access onto Main Street (the cul-de-sac design would still allow fire access). Access to Lane Street would continue to be provided from the north end of the street.

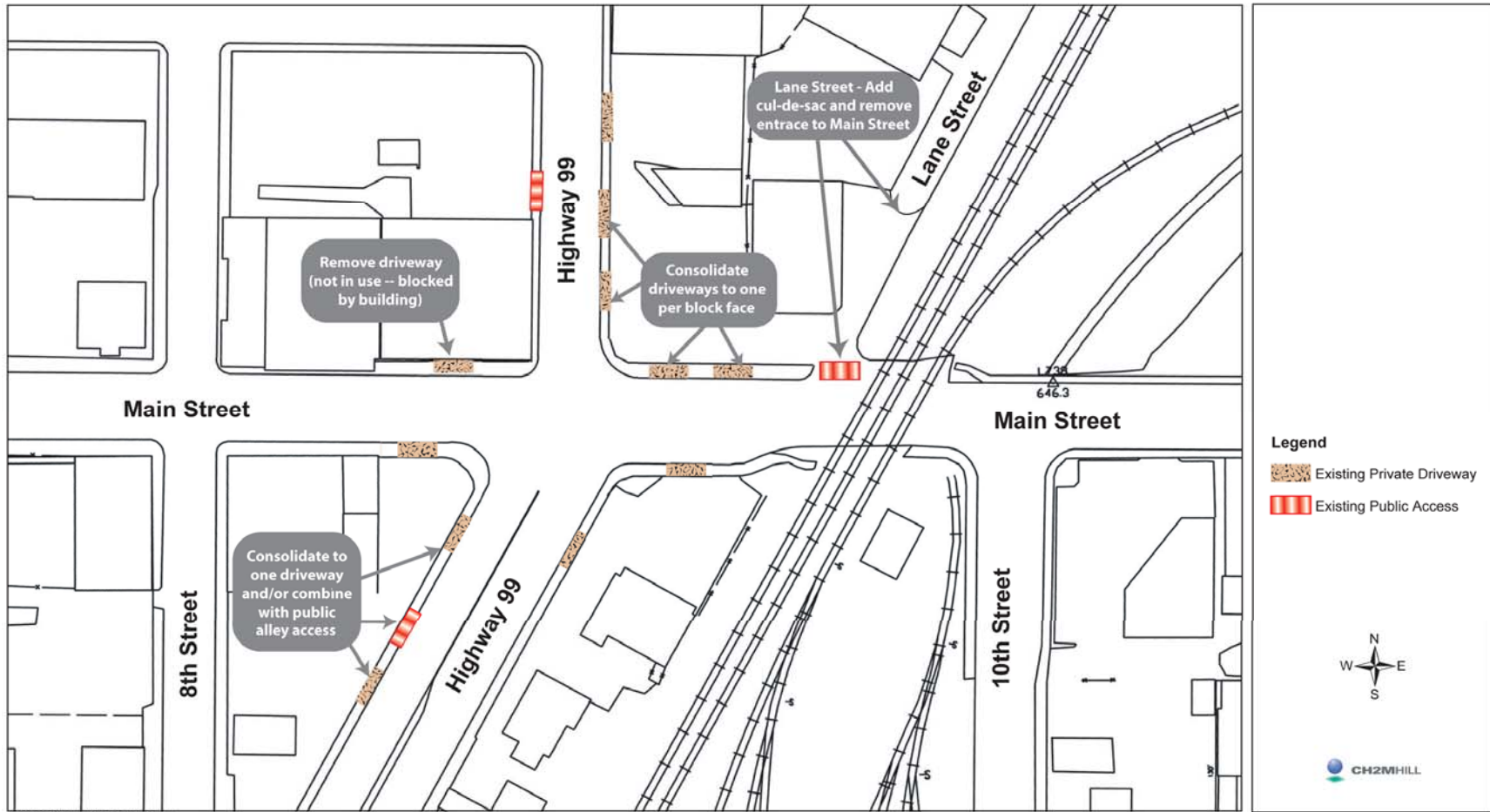


FIGURE 7
Long-Term Access Management Recommendations

Downtown Streetscape

The downtown streetscape recommendations apply to Main Street between OR 99 and River Road. Recommendations for the downtown streetscape area are described below. Key bicycle, pedestrian, and streetscape improvements are illustrated in Figure 8.

MAIN STREET STREETScape IMPROVEMENTS

Add Landscaped Median

~~Main Street should be reconstructed to include a landscaped center median for the length between OR 99 and the river (Figure 9). The median would include breaks at intersections so as not to obstruct access. The median should be planted with street trees that are appropriate for downtown. Over time, the street trees in the center median will create a canopy that could reduce the need for trees on the sidewalks where space is constrained, allowing increased space for pedestrians and street furniture. Construction of the median advances multiple goals for Main Street including improved aesthetics, traffic calming, and increased pedestrian space.~~

~~The cross-section for this segment of Main Street is illustrated in Figure 4. The 12 foot travel lanes function as a shared lane for vehicles and bicycles. This is appropriate given the slow posted speed (25 mph) on Main Street and the anticipated slowing effect of this new street design on traffic.~~

Add Curb Extensions

Curb extensions (bulb-outs) are recommended at intersections along Main Street between 5th Street and 8th Street (Figures 8 and 9). Curb extensions provide better sight distance for pedestrians, shorten the crossing distance, and also provide more space for street amenities. Because parking is currently not allowed near the intersections, installation of corner curb extensions would not be expected to result in any parking space loss. Based on a review of the current uses and existing markings along Main Street, it appears that there is also adequate space to provide mid-block curb-extensions without losing parking space. Mid-block curb extensions should be located between 6th and 8th Streets, as shown in Figure 8.

Add Marked Crosswalks

Currently, a pair of painted parallel lines marks each crosswalk on Main Street. These crosswalks could be enhanced through the use of additional paint and stamped or dyed asphalt. Patterned or stamped markings would better define the crosswalks and improve the aesthetics of the street. Marking crosswalks for an entire intersection would also help slow down traffic. Recommended locations for crosswalk markings are shown in Figure 8.

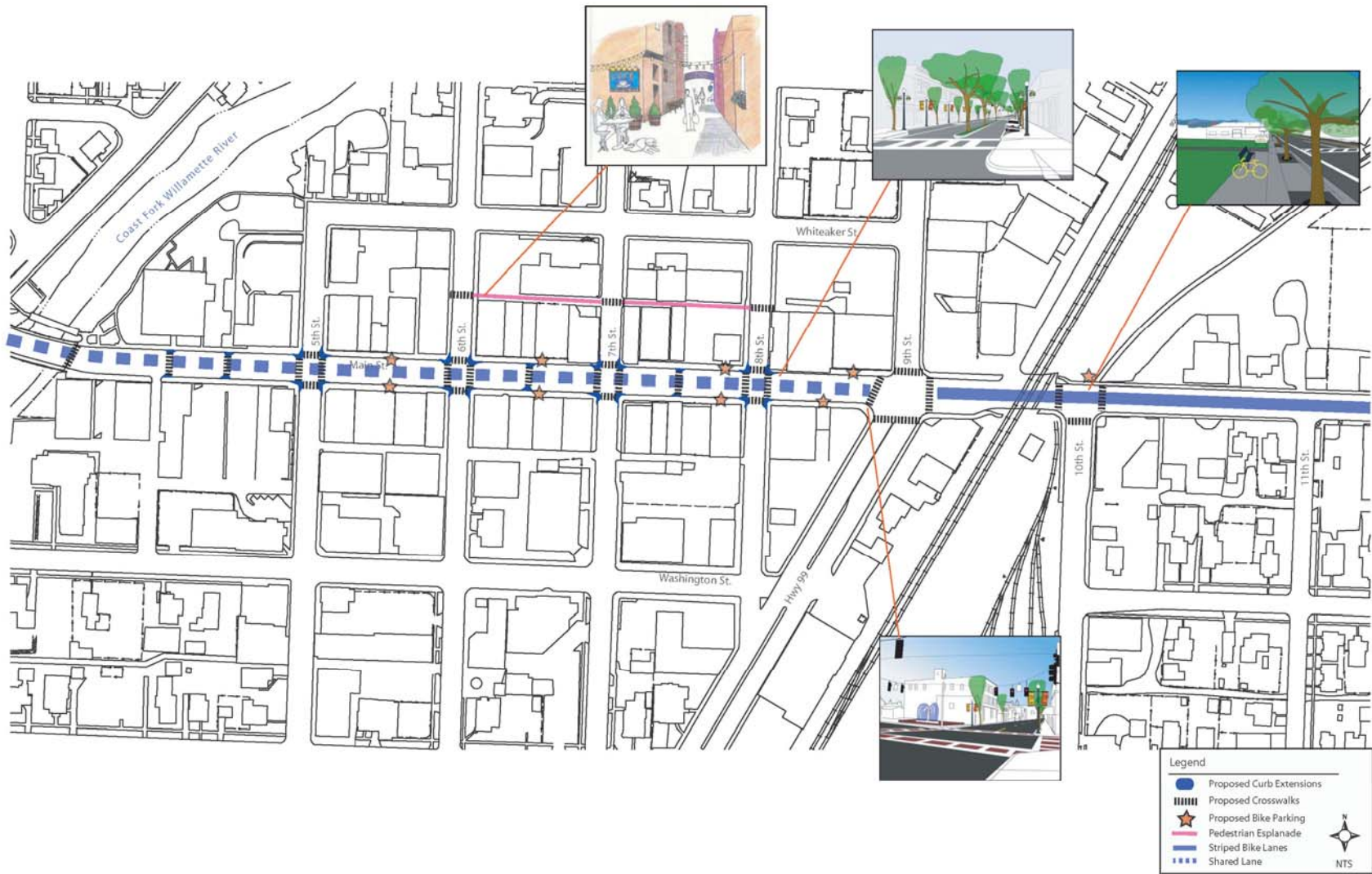


FIGURE 8
Bicycle, Pedestrian, and Streetscape Improvements



FIGURE 9
Main Street Streetscape (Downtown)

Sample crosswalk marking types are shown in Figure 10. Each crosswalk has its own merits; those installed in Cottage Grove should reflect the character and desired image of Cottage Grove, while also being cost-effective and functional. The most visible crosswalk markings include the use of white striping. It is important to ensure that crosswalk markings are visible to motorists, particularly at night. While bricks or cobblestones are examples of materials that are aesthetically pleasing, they may become slippery when wet or be difficult to cross by pedestrians who are visually impaired or using wheelchairs. Although initially more costly than paint, inlay tape and thermoplastic are more cost-effective in the long run. Both inlay tape and thermoplastic are more visible and less slippery than paint when wet. Inlay tape is recommended for new and resurfaced pavement, while thermoplastic may be a better option on rougher surfaces.

A surface treatment of the asphalt can be used to color the surface, as shown in Figure 11. This would provide a more aesthetically pleasing crosswalk. Raised intersections, where the entire area of the intersection is raised approximately to the level of the sidewalk, could be used at one or two key intersections (e.g., 7th Street) as an additional method of calming traffic and emphasizing pedestrian movements.

Add Curb Extensions

~~Curb extensions (bulb outs) are recommended at intersections along Main Street between 5th Street and 8th Street (Figure 8). Curb extensions provide better sight distance for pedestrians, shorten the crossing distance, and also provide more space for street amenities (Figure 10). The construction of the curb extensions may require the removal of one to two parking spaces per block. However, because parking is currently not allowed near the intersections, installation of corner curb extensions would not be expected to result in any parking~~

~~space loss. Based on a review of the current uses and existing markings along Main Street, it appears that there is also adequate space to provide mid-block curb extensions without losing parking space. Mid-block curb extensions should be located between 6th and 8th Streets, as shown in Figure 8.~~

Expand Tree Wells and Add Tree Well Grates

Currently, the tree wells along Main Street are as small as 2 feet by 2 feet, which is substandard and endangers the health of the trees. These tree wells could be enlarged to 4 feet by 4 feet and ornamental tree well grates installed so as not to interfere with the existing usable sidewalk space. The grates would protect the tree and soil from compaction while allowing air and water to circulate to the root system.

Consider Removing Parking Space Markings

Parking studies show that parking spaces are typically used more efficiently when the spaces are not marked. Removing parking space markings on downtown streets could increase the total parking capacity downtown. would at minimum offset any parking space lost due to the addition of curb extensions and could increase the total parking space supply.

Replace “Cobra-Head” Lighting with Ornamental Street Lighting

The street lighting on Main Street consists of a mix of ornamental lighting at the intersections and cobra-head style lighting at mid-block locations. Cobra-head fixtures often produce glare and light pollution. The aesthetics of the street would be improved (during both the day and night) if the cobra-head light fixtures are replaced with well-designed ornamental lighting. The new light fixtures should complement the existing ornamental light fixtures along Main Street.



Painted Geometric Patterns



Typical "Zebra" Crosswalk



Embedded Pavement Lighting



Textured Crosswalk with Pavers



Patterned Concrete Crosswalk



Colored Intersection and Crosswalk

FIGURE 10
Crosswalk Marking Types



FIGURE 11
Ladder-Bar Crosswalk with Colored Asphalt

Install Bike Parking Racks

With the extra space on the sidewalk curb extensions, additional bike parking racks could be provided. To provide the most benefit, bike parking should be located adjacent to destinations that generate bicycle traffic. Figure 8 shows recommended locations for additional bike parking racks. Figure 12 illustrates the most inexpensive and suitable type of bike racks that could be placed on the sidewalks, close (and parallel) to the roadway.

Add Bike Lanes East of Main Street

From Main Street east to 10th Street, bike lanes should be added to create continuity with the existing bike lanes to the east of 10th Street, the proposed shared lane downtown, and the existing bike lanes west of the river (Figure 13). Together these changes will improve bicycle

route connectivity east and west of Main Street, including better connecting the Row River Trail with downtown (Figure 8).

Hitching Post or Staple Racks

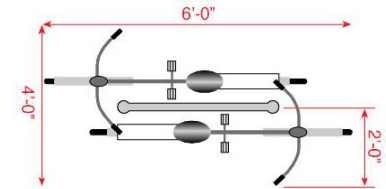


FIGURE 12
Hitching Post or Staple Bicycle Racks

PEDESTRIAN ESPLANADE

A new pedestrian walkway could be provided in one of the alleyways parallel to Main Street (Figure 14). This would require the cooperation of private building owners and businesses in Cottage Grove. This concept was presented at the September 2004 public open house and received considerable support. The alleyways north and south of Main Street run between 5th and 9th Streets. They vary from about 7 to 15 feet wide. Any improvements to the alleys would need to accommodate their present functions (e.g., garbage service, service deliveries). This could be accomplished by moving these services to the side streets.

While the alleyways both north and south of Main Street would be suitable for pedestrian esplanades, the alley north of Main Street provides more opportunities for enhancement. This is because of its consistent width, the available space near intersections, and the existence of complementary adjacent businesses. A phased approach should be taken to improve the alleyways, in order to focus attention on improvements in an organic fashion. The most appropriate location for the first phase of the esplanade would be in the alley between Main Street and Whiteaker, between 6th and 8th Streets (Figure 8).



FIGURE 13
Main Street Streetscape (Looking East from Highway 99)



FIGURE 14
Pedestrian Esplanade

3 IMPLEMENTATION

Construction Cost Estimates

Costs to design and construct the various projects were estimated at a planning level (Table 3). Based on the conceptual design of each project or element, a 30-percent contingency has been included in the construction cost estimate to account for potential unknowns typically identified during preliminary and final design. The estimates include engineering design fees and right-of-way costs but do not include potential environmental permitting or utility relocation costs.

TABLE 3
Construction Cost Estimates

Project/Element	Estimated Cost (2005 dollars)
OR 99/Main Street/10th Street	
Preferred Alternative—Short-Term (All improvements except for signal at 10th and Main)	\$760,000
Preferred Alternative—Long-Term (Remove median and add signal at 10th and Main)	\$320,000
Main Street (OR 99 to River)	
Trees, tree wells and grates (selected locations), ornamental street lights, crosswalk striping and pavement treatment, bike lane striping ¹	\$390,000

¹ Because the alleyway esplanade could be implemented in phases and to varying degrees, cost estimates are not included at this time.

Funding

A variety of local, state, and federal funding sources can be used to improve the transportation system in Cottage Grove. Most of the federal and state programs are competitive, and involve clear documentation of the project need, costs, and benefits. Local funding for the projects in this transportation plan typically would come from the City and potential future bond or other local revenues. Other local funding sources might include grants and private funds.

Table 4 summarizes potential public funding sources for bicycle, pedestrian, and roadway improvements in Cottage Grove. Some of these funds are restricted to the type of improvements that qualify for assistance. Typically, state and federal funds require projects to comply with current ADA guidelines for accessibility.

City Zoning and Development Code Modifications

Early in the planning process, the city zoning and development code was reviewed to identify potential areas that should be modified to improve transportation conditions and to preserve and support the downtown historic district. Appendix G includes two types of recommendations with respect to the city zoning and development code: (1) modifications necessary for implementing new streetscape policies, standards, and designs that have resulted from the downtown planning process, and (2) a discussion of additional downtown revitalization topics including site and building design standards for the central business district. These recommendations are in the form of code concepts or sample ordinance language, rather than actual code modifications.

TABLE 4
Potential Funding Sources

Source	Description	Eligible Projects	Funding Cycle
Oregon State Transportation Improvement Program (STIP)	Administered by Oregon Department of Transportation (ODOT). The STIP provides funding for capital improvements on federal, state, county, and city transportation systems. Projects must be regionally significant.	Roadway, public transportation, bicycle, pedestrian, air, freight, bridge	4 years
Transportation Enhancements	Must serve transportation need.	Bike/pedestrian/trail	2 years
Oregon Bike/Pedestrian Grants	Administered by ODOT's Pedestrian and Bicycle Program. Must be in public right-of-way.	Bike/pedestrian	2 years
System Development Charges (SDCs)	Fees on new construction allocated for parks, streets, and public improvements. Where available, funds can be used for right-of-way acquisition and trail construction.	Bike/pedestrian/roadway	Varies
Local/County Bond Measures Approved by Voters	Funds can be used for right-of-way acquisition, engineering, design, and construction.	Bike/pedestrian/roadway	Varies
Local Improvement Districts	Districts typically are created by local property owners, imposing a "new tax" to fund improvements. Funds can be used for right-of-way acquisition and construction.	Bike/pedestrian/roadway	Varies
State Parks Recreational Trails Fund	Construction funds for trail projects.	Off-roadway bike/pedestrian	Annual