



## **M e m o r a n d u m**

**To:** Mayor Abernethy and City Council  
Andy Anderson, City Manager

**From:** Ken Fuller, Public Works Director  
Nick Arnis, Transportation Engineering Manager

**Subject:** Murphy Road Corridor Study  
Staff Recommendation on Preferred Corridor Alternative

**Date:** November 7, 2007

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### **Issue:**

This memo requests City Council endorsement of a staff recommendation to proceed with a three-lane cross section design along Murphy Road between 3<sup>rd</sup> Street and 15<sup>th</sup> Street. This cross section would be comprised of two travel lanes (one lane in each direction), a center lane for turning at intersections or throughout the corridor, and continuous on-street bicycle lanes and sidewalks on both sides of the road. Landscaping strips would be incorporated where feasible. The width of the cross section would vary between 60' and 80', depending on available right-of-way and existing constraints of the surrounding area. To maintain flexibility, staff recommends that a decision on specific intersection type at key intersections (roundabouts vs. signals) and the specific composition of the center lane (width, location of allowable turns) be deferred until the Murphy Road corridor project moves from the planning phase into design.

### **Background:**

The Murphy Road Corridor Study project limits include Murphy Road between SE 3<sup>rd</sup> Street and SE 27<sup>th</sup> Street. Murphy Road is classified as a Major Collector in the City of Bend's Transportation System Plan (TSP) and currently exists as a two-lane roadway from SE 3<sup>rd</sup> Street to Brosterhous Road. The Burlington Northern Sante Fe (BNSF) Railroad operates in a north-south direction through the project area, between Brosterhous Road and SE 15<sup>th</sup> Street. There are rock outcroppings in the area immediately east of the railroad tracks that have been designated by the City of Bend as an Area of Special Interest (ASI).

The City is also coordinating a study of the Murphy Road Overcrossing with the Oregon Department of Transportation (ODOT) and the consultants and representatives from WinCo foods. An update to Council about this process will occur in the near future. The two projects, Murphy Road Corridor and the Overcrossing, are being coordinated although the projects will likely have different timelines and funding strategies. Other

projects that are being coordinated with in regards to financing and timing include the SE Interceptor Study and the 16-inch Water Main from Murphy Pump Station to Timber Ridge neighborhood. There will be public meetings on the SE Interceptor Study starting in January 2008.

The planning study for the Murphy Road Corridor includes a needs assessment which identified east-west connectivity and ability to accommodate future (Year 2030) local and regional traffic as primary project goals. The project team then developed a total of five alternatives that address these project needs. These alternatives, which have been discussed with the Technical Advisory Committee (TAC), the public, and City Council, are described briefly below:

**Alternative A:** *Continuous Three-Lane Section, Consistent with City Design Standards*

- Minimum 80' right of way (two 14' travel lanes, one 16' center-turn lane, on-street bicycle lanes, planter strips and sidewalks (all 6') on both sides of Murphy Road.
- Requires 10' of right-of-way on both sides of Murphy Road (total of 20').
- Signals at Parrell Road, Country Club Road, and Brosterhous Road.

**Alternative B:** *Two-Lane Section with Increased Capacity at Key Intersections*

- Minimum 48' of right of way (two 12' travel lanes and on-street bicycle lanes and sidewalks (both 6') on both sides of Murphy Road.
- Fits within existing right of way.
- Left-turn pockets and signals would be installed at Parrell Road, Country Club Road, and Brosterhous Road.

**Alternative C:** *Two-Lane Section with Roundabouts at Key Intersections*

- Similar to Alternative B, except that roundabouts would be installed instead of signals at Parrell Road, Country Club Road, and Brosterhous Road.

**Alternative D:** *Reduced Width Three-Lane Section with Roundabouts at Key Intersections*

- Modified three-lane section to achieve safety and mobility benefits while being sensitive to existing right of way constraints
- Minimum 60' right of way (three 12' travel lanes (one in each direction and a center turn lane) as well as on-street bicycle lanes and sidewalks (both 6') on both sides of Murphy Road.
- Roundabouts would be installed at Parrell Road, Country Club Road, and Brosterhous Road.

**Alternative E:** *Reduced Width Three-Lane Section with Signals at Key Intersections*

- Similar to Alternative D, except that left-turn pockets and signals would be installed at Parrell Road, Country Club Road, and Brosterhous Road.

All five alternatives met the primary goals of accommodating future traffic and improving east-west connectivity in south Bend. Additional evaluation factors considered by the

project team and the TAC helped to differentiate amongst alternatives. These are described in the section below.

### **Analysis:**

The five corridor alternatives were evaluated against the following set of criteria:

- Congestion
- Connectivity
- Constructability
- Cost
- Environment (Built – Residential/Commercial)
- Environment (Natural)
- Multimodal Solutions
- Safety

The alternatives evaluation was not weighted and therefore top scoring alternatives were not intended to be the ones “chosen.” Rather, the evaluation process was intended to generate a discussion among agency and citizen stakeholders about the project tradeoffs. A summary of these tradeoffs is included below.

The project team found that Alternatives D and E presented the greatest benefit of the alternatives assessed. This is because these two alternatives achieved the mobility and safety benefits of having a center turn lane (to allow turning traffic to pull out of the travel lane), while avoiding the right-of-way impacts, environmental impacts, and higher costs associated with the wider cross section (Alternative A).

Alternatives D and E differ by intersection type – Alternative D has roundabouts at key intersections whereas Alternative E has signalized intersections. Alternative E scored higher by the project team than Alternative D because its smaller footprint minimized residential displacements at intersections. In fact, no displacements were associated with the signals at Parrell Road, Country Club Road, or Brosterhous Road. Up to seven displacements were associated with the roundabout concept, and in addition access issues were also of concern for local residents in the vicinity of Parrell Road. Roundabouts would also require a detour of traffic away from Murphy Road during construction.

However, the roundabouts in Alternative D provided mobility and safety improvements by reducing intersection delay (cars do not need to wait for a light to turn green) and reduces the number of potential conflict points at intersections.

Comments received from the public at the October 11, 2007 open house indicated support for the modified three-lane cross section associated with Alternatives D and E, and support for roundabouts as an intersection type (Alternative D). About eighty people attended the Open House. This was the third Open House held for the corridor plan. Those members of the public that voiced concerns with roundabouts pointed to the small inscribed radii of earlier roundabout designs and the need to accommodate emergency vehicles. The current project designs address these concerns, accommodate larger emergency vehicles, and have the support of Bend Fire and

Police. Public Works Transportation Engineering will continue to involve the Fire and Police Departments through the design stages of the project. In addition, staff received strong support in the Open House for a roundabout at the proposed Murphy Road and 15<sup>th</sup> Street intersection.

Following the open house a letter signed jointly by the Chairs of the Southwest, Southeast, and Old Farm Neighborhood Associations was received by the City of Bend. This letter urged the City to forward a three lane design for Murphy Road that consisted of two travel lanes (one in each direction) and a center landscaped median. Although the project team recognizes the potential difficulties of installing a curbed median along this corridor with its many driveways, it was felt that some portions of the corridor without driveways may be appropriate for such a treatment. In the second Open House held in April, 2007, staff received many comments in support of a center turn lane particularly in the section from 3<sup>rd</sup> Street to Country Club Road. This section includes numerous direct driveway accesses to Murphy Road.

Currently the project team is weighing the tradeoffs of community support for roundabouts with reduced impacts with signals including the idea for a roundabout at the Murphy Road and 15<sup>th</sup> Street intersection. Although some of the potential impacts associated with Alternative D may be minimized or avoided as the project is designed (by shifting the location of the roundabout, or reducing the inscribed radius), not enough information is known at this time to make this determination.

Both the consistency of the center lane and the intersection treatment are details that are difficult to address in the planning phase. Therefore, the staff recommendation is to forward both Alternatives D and E for the Murphy Road Corridor Study planning document, comprised of the following design elements:

- Extend Murphy Road eastward between Brosterhous Road and 15<sup>th</sup> Street, to include a new bridge over the BNSF railroad tracks
- Include a roundabout at the east end of Murphy Road with the intersection of 15<sup>th</sup> Street
- Build new section of Murphy Road consistent with City design standards (a total width of 80')
- Improve the existing section of Murphy Road to a three lane cross section between Parrell Road and Brosterhous Road
- Design improvements along existing segment of Murphy Road within existing 60' right of way
- Include continuous three lane section with on-street bicycle lanes and sidewalks on both sides of Murphy Road throughout corridor
- Incorporate landscaping strips or medians within corridor as feasible/appropriate
- Defer decision on intersection type (roundabouts vs. signals) to the project's design phase
- Defer decision on specific use of center lane (continuous turn lane or/and landscaped median between regular turn pockets) to the project's design phase

**Recommendation:**

Staff recommends project Alternatives “D” and “E” be forwarded as the recommended alignments for the Murphy Road Corridor Plan, and defer a decision as to specific intersection design and consistency of the center lane to the design phase.