# City of Madison

DEPARTMENT OF


TRANSPORTATION

# East-West Bus Rapid Transit

West Side Routing

2020-01-27

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## 1. Goals and Objectives

The locally preferred west side alternative route, stations, and roadway changes will be selected based on the following objectives.

- Ability to serve employment centers.
- Ability to provide dedicated running way, which is an evaluation measure for a Small Starts Grant.
- Ability to provide access to BRT for other users of the Metro local system. This is provided by enabling convenient transfers.
- Ridership potential.

## 2. Alternative Description

Four route alternatives are currently under consideration for the section of the East-West BRT that spans from the intersection of Whitney Way to West Towne Mall. The following paragraphs describe each alternative.

A. Alternative 1: Mineral Point Road

Alternative 1 uses Mineral Point Road to access West Towne Mall. BRT vehicles would travel on new bus lanes on Whitney Way, and then travel on the existing bus lanes on Mineral Point Road to High Point Road. At this location the BRT buses would turn around for the return trip. Figure 2-1 illustrates this alternative.

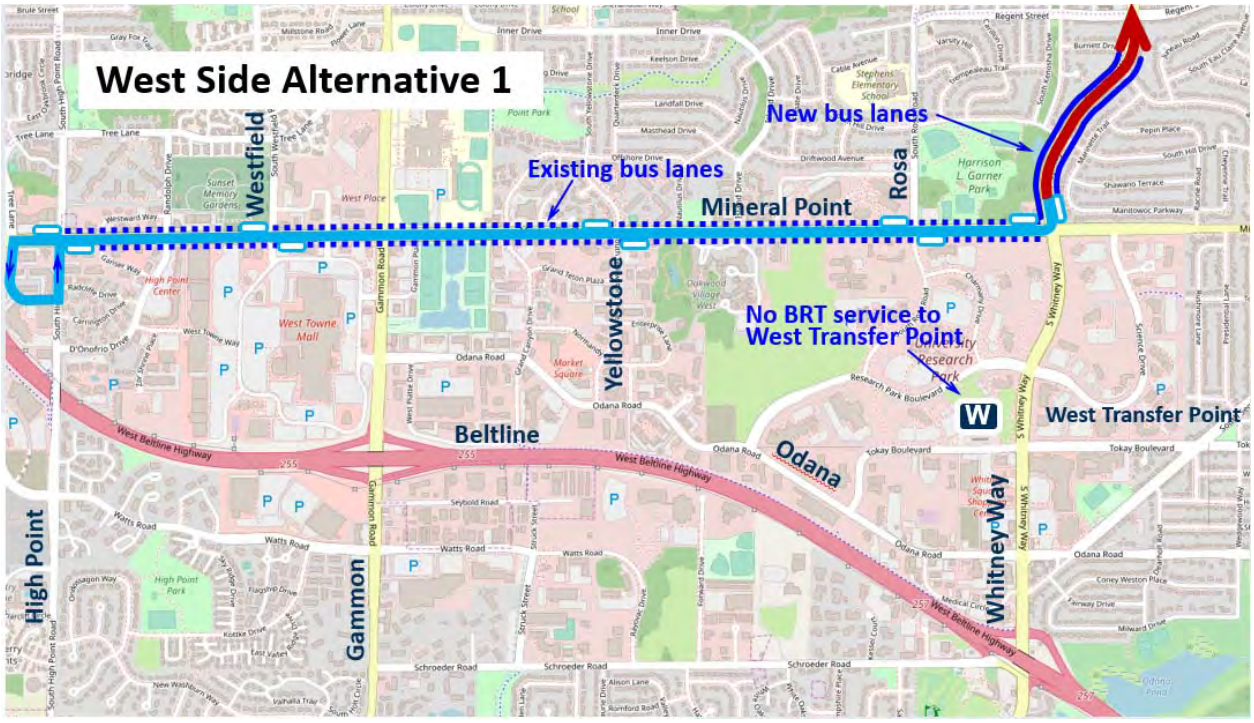


*Figure 2-1 West Side Alternative 1*

Mineral Point Road provides a fast and direct service to West Towne. The current cross-section of the street now includes a diamond lane (dedicated lane for buses, bikes, and right turning vehicles). This lane designation could be enhanced through the use of colored pavement, to provide better visibility for the BRT and other buses that will use it.

B. Alternative 2: Odana Road

Alternative 2 would have the BRT route travel further south along Whitney Way, serve Metro's West Transfer Point (at Whitney Way/Tokay Boulevard), and then head to West Towne using Odana Road. Because of the space constraints on Odana Road, BRT would be in mixed traffic.

Alternative 2 would serve West Town Mall through their internal road network before the route connects with Mineral Point Road at Westfield Road. The route then travels west to High Point Road where it follows the same alignment as Alternative 1.

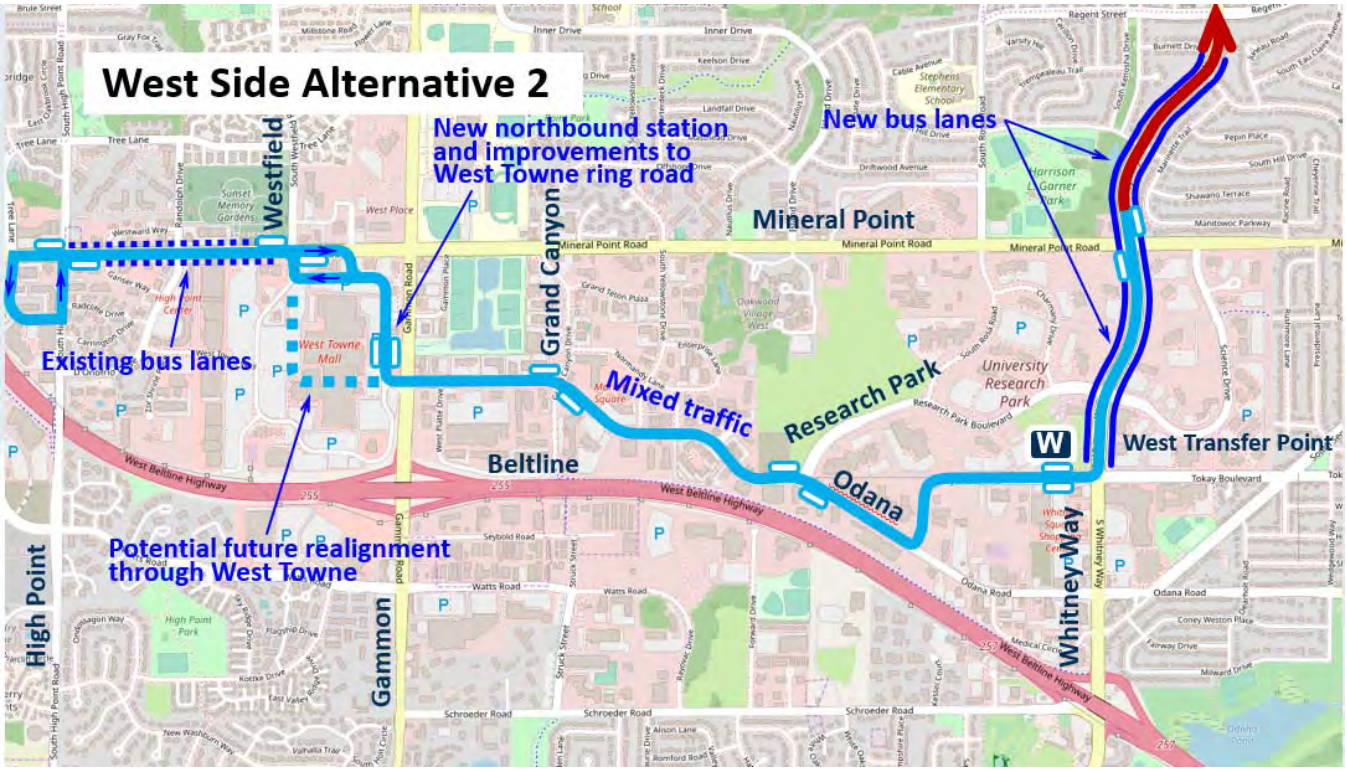


*Figure 2-2 West Side Alternative 2*

C. Alternative 3: Mineral Point Road via Rosa Road Extension

Alternative 3 is a hybrid of Alternatives 1 and 2 in that it uses Mineral Point Road for the majority of its routing, yet also connects to the West Transfer Point. Alternative 3 travels down Whitney Way and connects with the West Transfer Point, as in Alternative 2. Then it travels west on Tokay to a new Rosa Road extension, which would connect Rosa Road in University Research Park with Tokay Boulevard. Alternative 3 would be slightly longer than Alternative 1, as BRT buses would travel approximately one-half mile to the south to access the West Transfer Point, and then back to the Mineral Point Road corridor. Alternative 3 allows for the BRT route to take advantage of the diamond bus-only lanes on Mineral Point Road, while also capturing ridership at the West Transfer Point.

Alternative 3 would have a higher capital expense, due to the storm water management needs, land acquisition needs and the construction of a new roadway extension. The Rosa Road extension is currently owned by the University Research Park and leased to Ultratec.

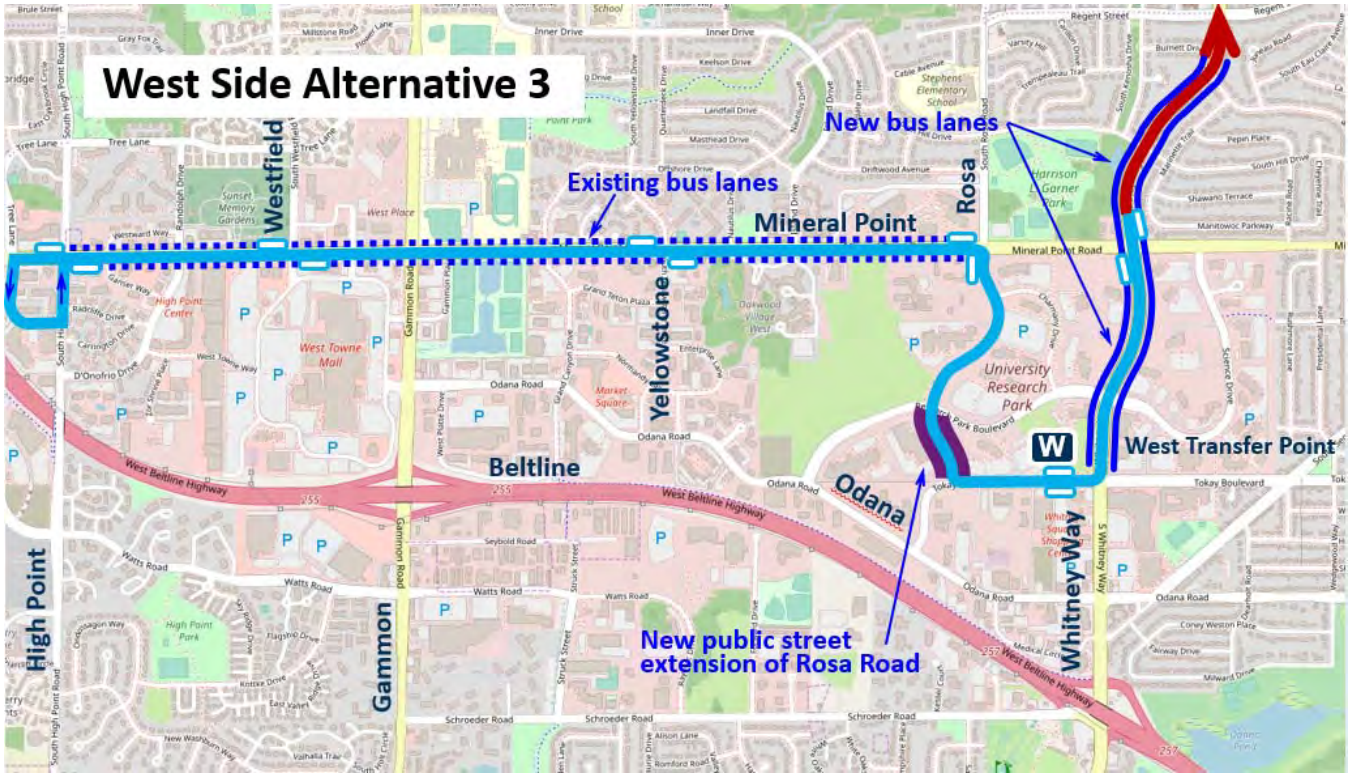


*Figure 2-3 West Side Alternative 3*

D. Alternative 4: Terminate at the Current West Transfer Point

Alternative 4 would terminate the west side service at the West Transfer Point. This alternative does not capture potential ridership of West Towne Mall and therefore is less desirable. But Alternative 4 would reduce operating costs which upon future analysis may be advantageous when applying for the Small Starts grant application.

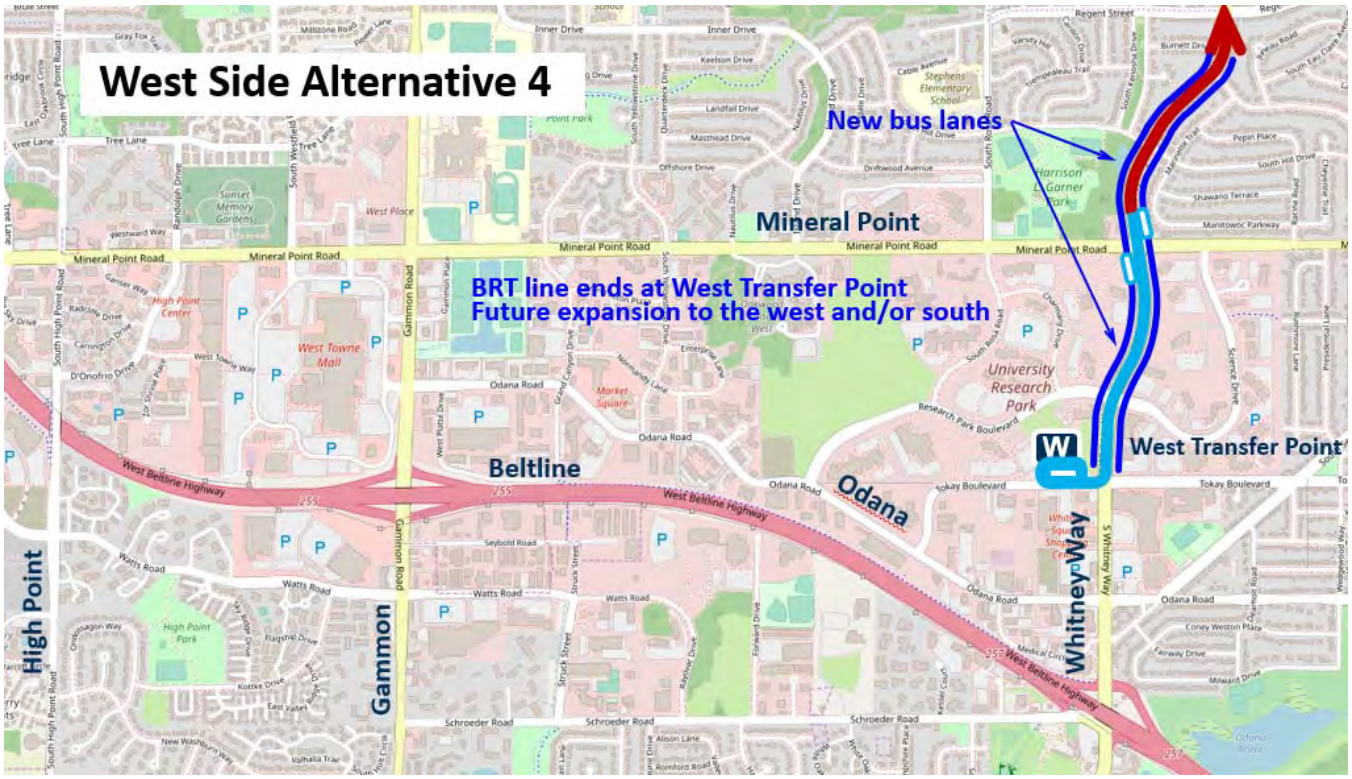


*Figure 2-4 West Side Alternative 4*

## 3. Evaluation

A. Ability to Serve Employment

Figure 3-1 illustrates the job density around the four alternatives as of 2016. The figure does not reflect recent development and employment that has since been approved within University Research Park. Generally the highest job density is associated with University Research Park and CUNA Mutual. Mineral Point Road contains established land uses that include employment and residential, with some commercial. It is likely that these land uses would not be redeveloped within the next 10 years. Odana Road consists mostly of low density land uses, such as several auto dealerships, strip malls, and 1 to 2 story employment buildings. It is possible that land uses along Odana Road could be redeveloped to support more employment, but this may not occur for several years and it is desirable to capture high ridership levels immediately when BRT opens. As land use changes in the future, transit service levels can be re-evaluated.

Alternative 1 serves the north portion of University Research Park and serves CUNA Mutual parcel, which has a large number of employees.

Alternative 2 serves the east and south portions of University Research Park, yet it does not serve the CUNA Mutual parcel.

Alternative 3 provides the highest level of employment access in that it serves the east, south, and travels through University Research Park, while also serving CUNA Mutual.

Alternative 4 provides the lowest level of employment access in that it only serves the east portion of University Research Park and does not serve CUNA Mutual.

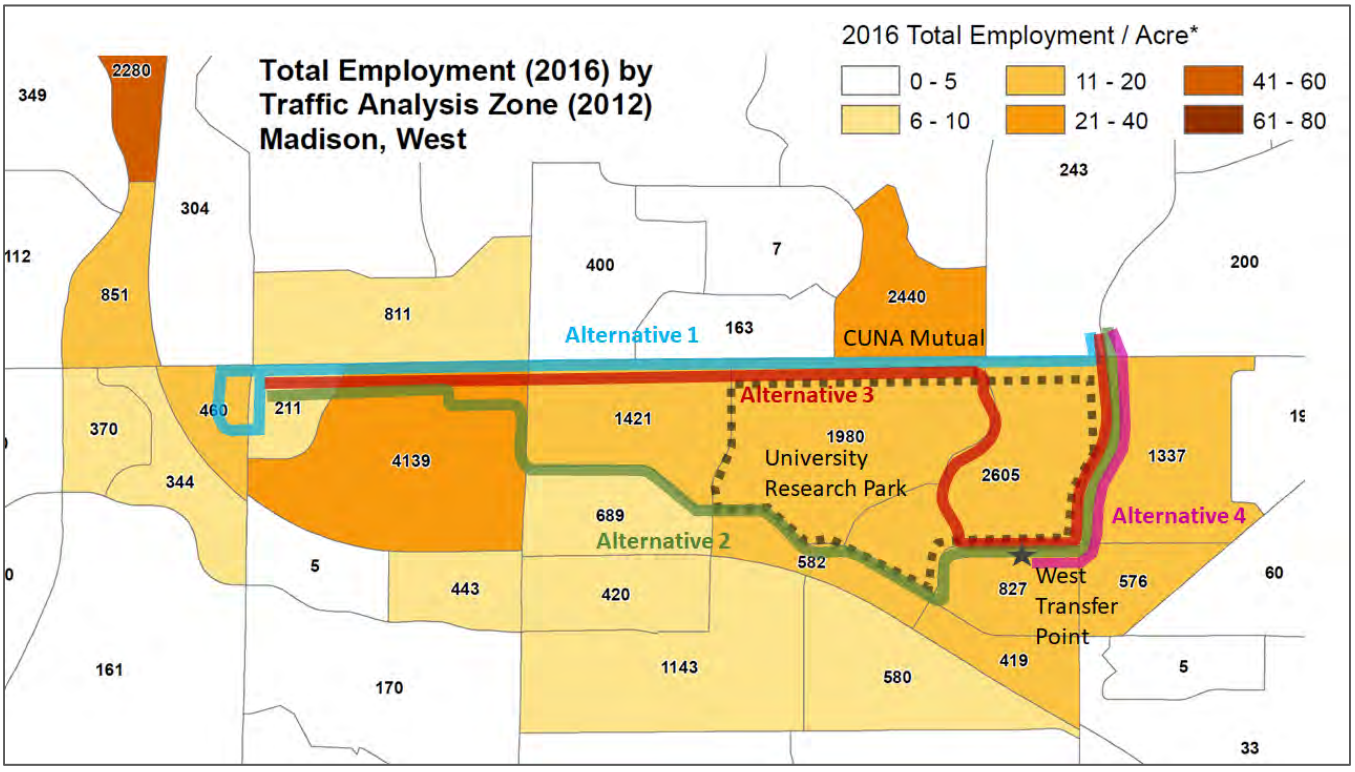


*Figure 3-1 Employment Density*

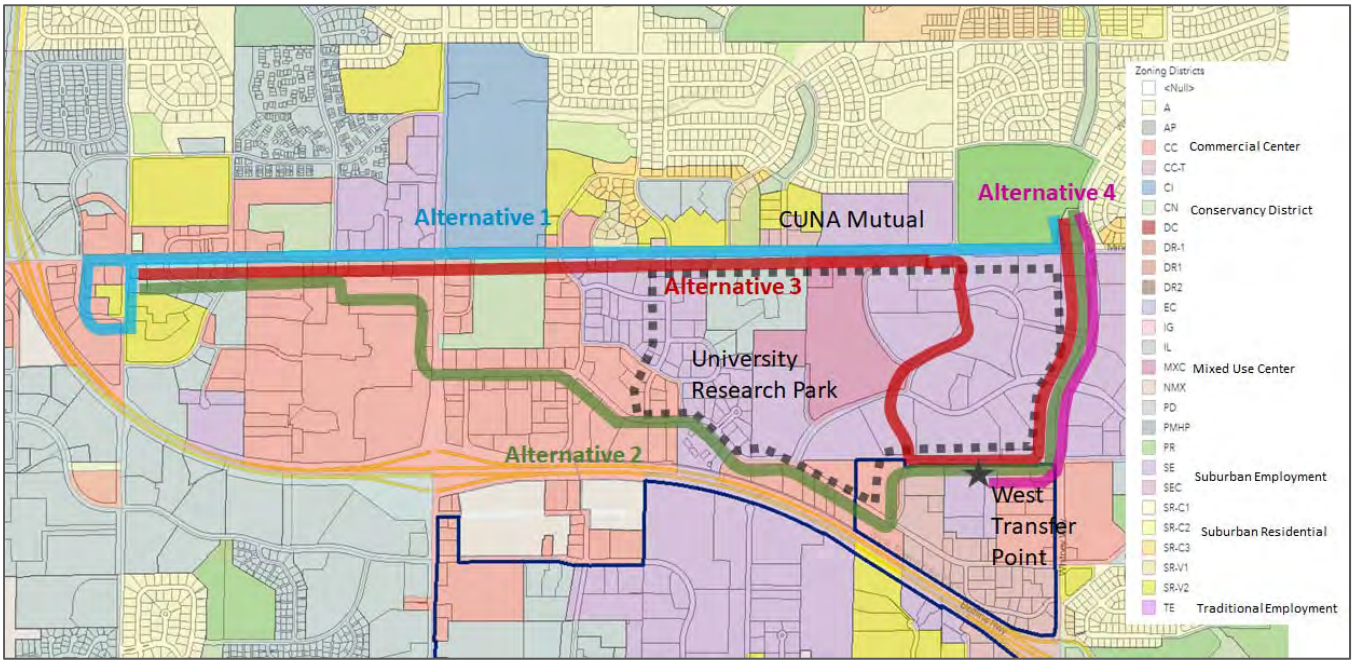


*Figure 3-2 West Route Zoning*

B. Dedicated Running Way

One evaluation criterion for a Small Starts grant is the amount of dedicated running way (bus lanes) the proposal has. For fixed guideway based systems in the Small Starts grant program, over 50 percent of dedicated running way is required. The reason for this evaluation criteria is the considerable advantage for bus travel times and reliability that a dedicated bus lane provides. In many systems, a dedicated bus lane provides greater reliability than a street car system that operates in mixed traffic.

Table 3-1 provides the amount of dedicated running way each alternative provides within the West Routing study limits.

*Table 3-1 Dedicated Running Way*

| | Alt 1 | Alt 2 | Alt 3 | Alt 4 |
|---|---|---|---|---|
| Percentage of Dedicated Running Way | 100% | 33% | 75% | 100% |
| Length of Alternative | 4.6 miles | 2.2 miles | 5.1 miles | 1.2 miles |

Alternative 1 would have the highest amount of dedicated running way, as it completely runs on Mineral Point Road.

Alternative 3 would have the next most dedicated running way, as the use of Whitney Way south to the West Transfer Point, as well as much of the Mineral Point Road corridor being used would be dedicated for buses.

Alternative 2 would have the least amount of dedicated running way. Odana Road does not have the ability to create a bus-only lane within that corridor, without significant right-of-way and cost impacts.

Alternative 4 stops at the West Transfer Point and does not travel onto West Towne Mall, so it is shorter but consists fully of dedicated running way.

C. Ability to Provide Access to the Local System

About 110,000 residents will be within a 10 minute walk of the East-West BRT line. Yet many areas of the City will be outside of what is considered a reasonable distance to walk. Many of those potential bus riders will need to connect to the BRT line by using a local bus connection. Throughout the City, and particularly people having destinations on the west and southwest sides of the City, the West Transfer Point connects to other local routes.

With Alternative 1, BRT buses would not connect to the West Transfer Point and not provide direct access to local bus routes serving the southwest and west sides of the City. The travel demand forecasting model showed that not connecting the BRT routes to the West Transfer Point could decrease BRT ridership by about 2,600 additional transit riders per day in 2050.

Relocating the West Transfer Point to the north, somewhere along Mineral Point Road might address this action, yet there are complications. Much of the available land where a Transfer Point could be located on Mineral Point Road has since been developed.[1] Relocating the Transfer Point would add an additional mile for routes serving the south and southwest sides, which would require a reduction in transit coverage on the west side if the current pulse system is maintained. For these service logistics and cost reasons, keeping the West Transfer Point in its current location has been recommended.

[1] The logical site for a relocated West Transfer Point (on the southwest side of Whitney Way and Mineral Point Road) is currently being developed and does not have additional land available.

Alternative 2 would connect with the West Transfer Point, and therefore provide access from local routes to the BRT. Demand modeling suggests that this could increase ridership by 2,600 boardings in 2050.

Alternative 3 also would connect with the West Transfer Point, and therefore provide access from local routes to the BRT, again increasing ridership by up to 2,600 boardings in 2050.

Alternative 4 would terminate at the West Transfer Point, and would not serve West Towne Mall. It would provide access to the local system through the West Transfer Point.

D. Ridership Potential

Ridership potential is closely linked to employment and residences. Alternative 1 serves the north portion of University Research Park and serves CUNA Mutual parcel, which has a large number of employees. It also serves the residential areas that line Mineral Point Road. However it does not connect with the West Transfer Point, reducing potential ridership by up to 2600 riders.

Alternative 2 serves the east and south portions of University Research Park, and it connects with the West Transfer Point, providing up to 2600 riders over Alternative 1. However, the route does not serve the CUNA Mutual parcel and does not serve the residential areas along Mineral Point Road.

Alternative 3 was not modeled for ridership, yet it likely provides the highest level of potential ridership in that it serves the east, south, and travels through University Research Park, while also serving CUNA Mutual and the residential uses along Mineral Point Road. It also connects with the West Transfer Point.

Alternative 4 also was not modeled for ridership. This alternative probably provides the lowest level of ridership in that it only serves the east portion of University Research Park and does not serve CUNA Mutual, which would reduce ridership. Alternative 4 also does connect to West Towne Mall and the trips this location would provide.

E. Evaluation Summary

Table 4-2 provides a summary of the evaluation criteria.

*Table 4-2 Evaluation Summary*

**Evaluation Summary**

5= Highly Favorable 4= Favorable 3= Neutral/Equally +/-
2= Mildly Unfavorable 1= Unfavorable

| ***EVALUATION CRITERIA*** | **Alternative 1: Mineral Point Road** | **Alternative 2: Odana Road** | **Alternative 3: Mineral Point Road (via Rosa Rd extension)** | **Alternative 4: Terminate at West Transfer Point** |
|---|---|---|---|---|
| **Ability to serve employment centers** | 3 | 2 | 4 | 3 |
| **Ability to provide dedicated running way (speed and reliability)** | 5 | 2 | 4 | 3 |
| **Ability to provide access to local transit system** | 1 | 4 | 4 | 4 |
| **Ridership potential** | 2 | 4 | 4 | 3 |

## 4. Recommendation

**Alternative 3 is recommended for BRT service to West Towne**. Reasons for this recommendation include:

- It provides the highest level of employment access, providing excellent service to both University Research Park and CUNA.
- It has the potential to serve residential uses along Mineral Point Road
- It uses the existing bus lanes (dedicated running way) on Mineral Point Road, helping to fulfill this Small Starts requirement and providing greater travel time reliability for BRT.
- By connecting to the West Transfer Point, it provides a good connection to local routes, opening up BRT access to more of the community.
- It provides up to 2600 more riders than Alternative 1, which bypasses the West Transfer Point.

If other reasons, such as reducing BRT operational costs, become a factor in BRT implementation, then Alternative 4 could serve as an interim measure until service is fully extended to West Towne Mall and Middleton.