SOUTHWEST
Green Line LRT Extension

Draft
Preliminary Evaluation of Adjustments
Eden Prairie Alignment
Technical Issue #1

January 7, 2015

Revision 2

Southwest LRT Project Technical Report

METROPOLITAN COUNCIL

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Executive Summary

This technical memorandum evaluates alignment and station location adjustments for Technical Issue #1 – Eden Prairie Alignment / Stations in Eden Prairie of the Southwest Light Rail Transit (SWLRT) project in Hennepin County. The purpose of this memorandum is to document the decision process made by the Issue Resolution Team (IRT) to evaluate potential adjustments to the Locally Preferred Alternative (LPA) contained in the Draft Environmental Impact Statement (DEIS) with culmination in the Municipal Consent plans. A comparison between the LPA and adjustments to the LPA were completed in a number of areas, including technical feasibility, right-of-way (ROW) impacts, roadway access, station access, capital costs, operational performance, utility impacts, environmental, economic development, and other factors as indicated.

Note: Unique numbers were assigned to drawings used in this report that correlate to the CAD files. The unique numbers for alignment/adjustments in some instances may cover only a portion of a technical issue area, or cover the entire technical issue area, and in other instances span across multiple technical issue areas. The unique numbers may or may not be sequential depending on when they were developed during the technical evaluation process.

Technical Issue #1 extends from the western end-of-line station near Mitchell Road to approximately 1,000 feet north of the Valley View Road and Flying Cloud Drive intersection. During the comment period for the DEIS, the City of Eden Prairie made the following comments prompting the examination of the following adjustments to the DEIS LPA:

- "The City of Eden Prairie continues to support the preferred alternative as it serves the Major Center Area and Golden Triangle Area and provides the best opportunities for development, redevelopment, and economic development. This alternative could be further improved in these respects by moving the Town Center Station closer to the Town Center or the Eden Prairie Center."

- "In order to better serve the Eden Prairie Town Center and Eden Prairie Center, the feasibility of a more centrally located and walkable Town Center Station needs to be evaluated during the Preliminary Engineering Process."

In addition, through the IRT process, it was determined that the Mitchell Road Station, as identified in the DEIS, does not allow easy access from eastbound TH 212, and the alignment through Southwest Station did not allow for LRT to co-exist in an efficient manner with SouthWest Transit operations. Based on these comments on the DEIS LPA, adjustments to the alignment were analyzed. A three-tier process was developed to analyze the potential adjustments. Due to the length of the alignment, the study area was split into four segments: Western Terminus to Prairie Center Drive (west), Prairie Center Drive (west) between Southwest Station and Singletree Lane, Prairie Center Drive (west) to I-494, and I-494 to 1000 feet north of Valley View Road. The three tiers are described as follows:

- Tier 1 was a high level analysis that included evaluation of traffic impacts, ROW impacts, parking impacts, station and Park-and-Ride locations, environmental, and wetland impacts.

- Tier 2 further analyzed the adjustments carried forward from Tier 1 including a more in-depth analysis of traffic impacts, ROW impacts, parking impacts, economic development

potential, and input from local businesses and the public. One to two adjustments were carried forward in each segment for Tier 3 analysis.

- Tier 3 "linked" the segments together in order to analyze the potential adjustments as a whole. A total of four (4) adjustment combinations were analyzed, with all—including a western-most station west of Mitchell Road—terminating at Mitchell Station. In addition to the elements analyzed in the Tier 2 analysis, estimates for capital costs, as well as travel time for the light rail corridor, and the ridership, were developed. Other factors analyzed included a high level analysis of construction impacts and analysis of land use surrounding the Mitchell and Eden Prairie Town Center stations. The results of this analysis were used to develop a recommended final alignment adjustment for design advancement.

The four (4) adjustments analyzed in Tier 3, in addition to the LPA, included:

- *Locally Preferred Alternative (LPA)* – This alignment starts west of Mitchell Road just south of TH 5 / TH 212 and extends along TH 212 into Southwest Station. It then follows Technology Drive east to the Valley View Road and Flying Cloud Drive intersection. The LPA alignment contains three stations: Mitchell Road, Southwest Station, and Eden Prairie Town Center.
- *Option 1 – Mitchell Station: Technology Drive / Singletree Lane* – This alignment starts on Technology Drive between Wallace Road and Mitchell Road. It extends along Technology Drive into Southwest Station. It then follows south along Prairie Center Drive to Singletree Lane where it heads east to Flying Cloud Drive and on to Valley View Road. This adjustment contains three stations: at Mitchell Road, Southwest Station, and Town Center.
- *Option 2 – Mitchell Station: TH212 / Singletree Lane* – This alignment starts on Technology Drive between Wallace Road and Mitchell Road, similar to Option 1; however, it turns northward to the south side of TH 212, traversing through properties presently owned by Eaton Corporation. At the TH 212 right-of-way, the alignment turns eastward again and more or less follows the LPA alignment to the Southwest Station. Upon leaving Southwest Station this alignment follows the same alignment as Option 1. This adjustment contains three stations: at Mitchell Road, Southwest Station, and Town Center.
- *Option 3 – Mitchell Station: Technology Drive / Comp Plan* – This option is the same as Option 1 from the western terminus through Southwest Station. It also runs south along Prairie Center Drive, but turns east between Costco and Bachman's Garden Center, approximately 800 feet north of Singletree Lane. The alignment continues eastward toward Flying Cloud Drive, along Eden Road for portions of it and then north to Valley View Road. This adjustment contains three stations: at Mitchell Road, Southwest Station, and Town Center. The alignment between Prairie Center Drive and Flying Cloud Drive was defined so as to be consistent with the Comprehensive Guide Plan (Comp Plan) adopted by the Eden Prairie City Council and to provide transit to the Town Center area described in Section 8.1 of that document.
- *Option 4 – Mitchell Station: TH212 / Comp Plan* - Option 4 follows the same path as Option 2 from Mitchell Station to Southwest Station along the south side of the TH 212 right- of- way. From Southwest Station, this option climbs to an aerial crossing of Prairie Center Drive and on to the Comp Plan alignment described in Option 3 above.

Recommendation

The Tier 3 detailed evaluation of adjustments yielded a decision to recommend Option 3 as the preferred option to be advanced to Municipal Consent. This adjustment met the following goals:

- Moved the Town Center Station to a more proximate area to the Eden Prairie Town Center. This adjustment is also consistent with the *Comprehensive Guide Plan* (herein referred to as the Comp Plan) adopted by the Eden Prairie City Council.

- Moved the Mitchell Station off of Eaton's property and closer to Wallace Road, serving eastbound TH 212 traffic better. This location also allowed for access to one of the candidate Operations and Maintenance Facility (OMF) sites, Site 3/4.

It, however, did not address the many inefficiencies of co-existing with SouthWest Transit at Southwest Station. In Option 3, the tracks cross the dedicated bus-only ramps on/off TH 212 used by SouthWest Transit. It also did not allow for efficient transfers between SouthWest Transit and LRT operations. So, subsequent to the Tier 3 analysis of the Options discussed above, a design refinement was made to Option 3 to address this issue. The track crossings across the ramps were removed and cross-transfer platforms were designed side by side with SouthWest Transit operations. In addition, Site 3/4 was not chosen for the OMF, and this adjustment moved the Mitchell Station to the south side of Technology Drive onto Eden Prairie City Center property. The full description of the Option 3 - Refined adjustment is described below and shown in Figure 1.

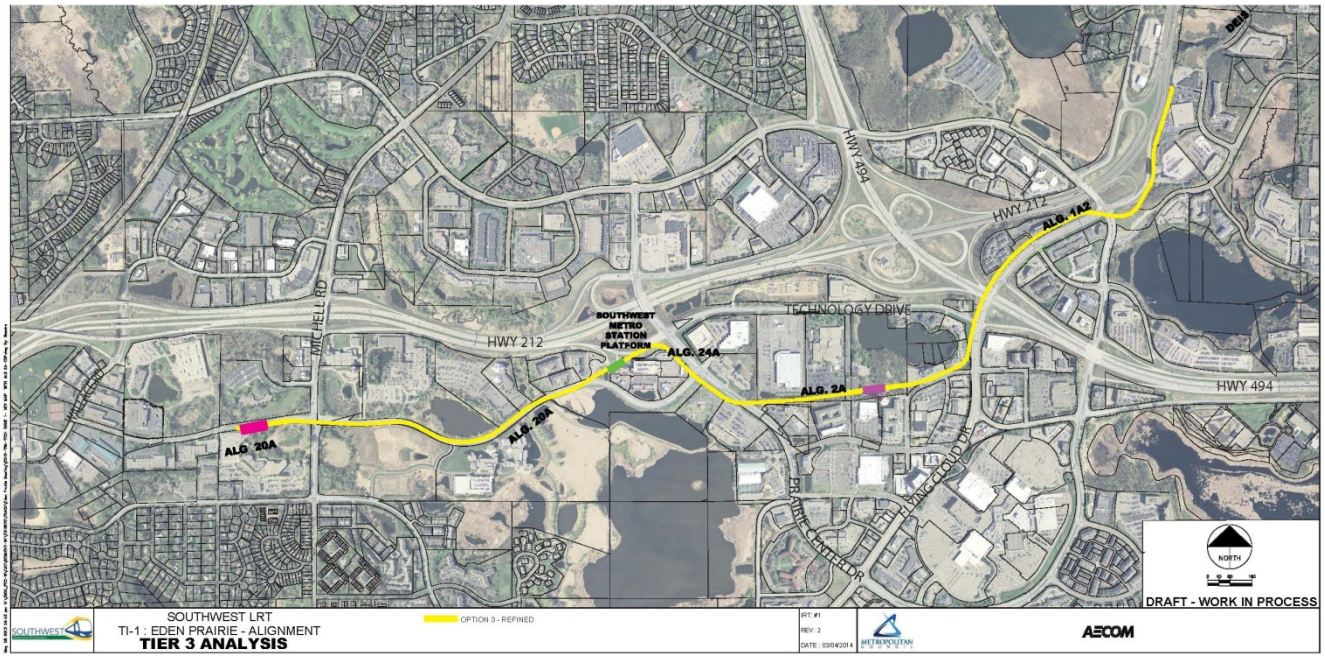

Figure 1: Adjustment Option 3 - Refined

The Option 3 – Refined adjustment begins at Mitchell Station and follows eastward along Technology Drive to Southwest Station and onto an aerial structure down the west side of Prairie Center Drive. The alignment remains on an aerial structure and crosses Prairie Center Drive onto the existing embankment between Costco and Bachman's Garden Center, approximately 800 feet north of Singletree Lane. The

alignment continues eastward toward Eden Road to a proposed Town Center Station just west of the Eden Prairie water tower behind Brunswick Zone Bowling Center. East of the station the alignment continues past the north side of the water tower and follows the north side of Eden Road crossing two signalized driveways at grade to Flying Cloud Drive. It continues on the west side of Flying Cloud Drive crossing I-494 on aerial structure toward Valley View Road and on to Golden Triangle Station. The segment of this alignment between Prairie Center Drive and Flying Cloud Drive was defined to be consistent with the Comp Plan and to provide transit to the Town Center area described in Section 8.1 of that document.

In summary, Option 3 – Refined is the preferred adjustment to the LPA due to the following:

- Moved the Town Center Station to a more proximate area to the Eden Prairie Town Center. This adjustment is also consistent with the Comp Plan..
- Moved the Mitchell Station off of Eaton's property to Eden Prairie City Center, with better access to both TH 5 and TH 212.
- Adjusted the alignment through Southwest Station to better co-exist with SouthWest Transit's operations, taking away the track crossings across the bus-only ramps to/from TH 212 and creating cross-platform transfer areas between bus and rail.

1 Background and Purpose

This technical memorandum evaluates alignment and station location adjustments for *Technical Issue #1 – Eden Prairie Alignment / Stations* in Eden Prairie of the Southwest Light Rail Transit (SWLRT) project in Hennepin County. The area evaluated begins near Mitchell Road, continues parallel to the Locally Preferred Alternative (LPA) as described in the Draft Environmental Impact Statement (DEIS), east across Prairie Center Drive, and crosses Flying Cloud Drive near its intersection with Valley View Road. During the comment period for the DEIS, the City of Eden Prairie made the following comments prompting the examination of the following adjustments to the DEIS LPA:

- "The City of Eden Prairie continues to support the preferred alternative as it serves the Major Center Area and Golden Triangle Area and provides the best opportunities for development, redevelopment, and economic development. This alternative could be further improved in these respects by moving the Town Center Station closer to the Town Center or the Eden Prairie Center."

- "In order to better serve the Eden Prairie Town Center and Eden Prairie Center, the feasibility of a more centrally located and walkable Town Center Station needs to be evaluated during the Preliminary Engineering Process."

The purpose of this memorandum is to document the decision process made by the Issue Resolution Team (IRT) to evaluate potential adjustments to the LPA contained in the DEIS. A comparison between the LPA and adjustments to the LPA was completed in a number of areas including technical feasibility, traffic impacts, right-of-way (ROW) impacts, roadway access, station access, capital costs, operational performance, utility impacts, environmental, economic development, and other factors.

The adjustments considered and issues evaluated for this analysis were developed and refined in a series of meetings with a Southwest LRT Project Office (SPO) Issues Resolution Team which was assembled and convened specifically for this area of Technical Issue #1. The Issue Resolution Team was led by the SPO and consisted of representatives from Hennepin County, the City of Eden Prairie, Riley-Purgatory Creek Watershed District, Minnesota Department of Transportation, and the SPO's preliminary engineering consultant.

The results of this analysis were used by the Metropolitan Council and project partners to determine how to proceed with these adjustments as the project progresses through Project Development.

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2 Initial Screening of Adjustments - Tier 1 and 2 Analyses

Through the course of the analysis of potential adjustments to the LPA alignment, multiple alignment adjustments were defined and evaluated to determine any fatal flaws that would prevent them from being considered for further detailed comparison with the LPA alignment. A three-tier process was developed to analyze the potential adjustments. Appendix A and B provide more comprehensive descriptions and analysis of the alignment adjustments considered in Tier 1 and Tier 2. This section provides a brief description of only the most viable alignment adjustments considered in Tier 2.

Tier 1 was a high level analysis that included evaluation of traffic impacts, ROW impacts, parking impacts, station and Park-and-Ride locations, and environmental and wetland impacts. Tier 2 further analyzed the adjustments carried forward from Tier 1 including a more in-depth analysis of traffic, ROW impacts, parking impacts, economic development potential, and input from local businesses and the public. One to two adjustments were carried forward in each segment for Tier 3 analysis.

Throughout the following paragraphs, the most viable variations considered in Tier 2 adjustments will be discussed along with references indicating whether and how each of these variations became a part of one of the four feasible Options analyzed in Tier 3. For Tier 3, the study area was split into four segments: Western Terminus to Prairie Center Drive (west), Prairie Center Drive (west) between Southwest Station and Singletree Lane, Prairie Center Drive (west) to I-494, and I-494 to 1000 feet north of Valley View Road.

2.1 Locally Preferred Alternative (LPA)

The LPA is as shown in the DEIS documents. From the western terminus at Mitchell Station, the LPA follows Trunk Highway (TH) 212 east to the existing SouthWest Transit facility. It then crosses under Prairie Center Drive through a tunnel and follows the south side of Technology Drive east to the Town Center Station. From the station, the alignment crosses to the north side of Technology Drive and continues to Flying Cloud Drive where it turns northeast and crosses diagonally on a bridge across I-494 to the east side of Flying Cloud Drive. From that point, the LPA runs parallel to Flying Cloud Drive and continues toward Valley View Road.

2.2 Alignment Adjustments: Western Terminus to Prairie Center Drive (west)

The adjustments to the DEIS LPA discussed below, and shown in Figure2, all begin at the western extent of the proposed route. The alignments discussed in the following sections extend to a previously considered Operations and Maintenance Facility (OMF) site near Wallace Road. All of them can be shortened to a point east of the Wallace Road site, as appropriate, and still provide a functional terminal station.

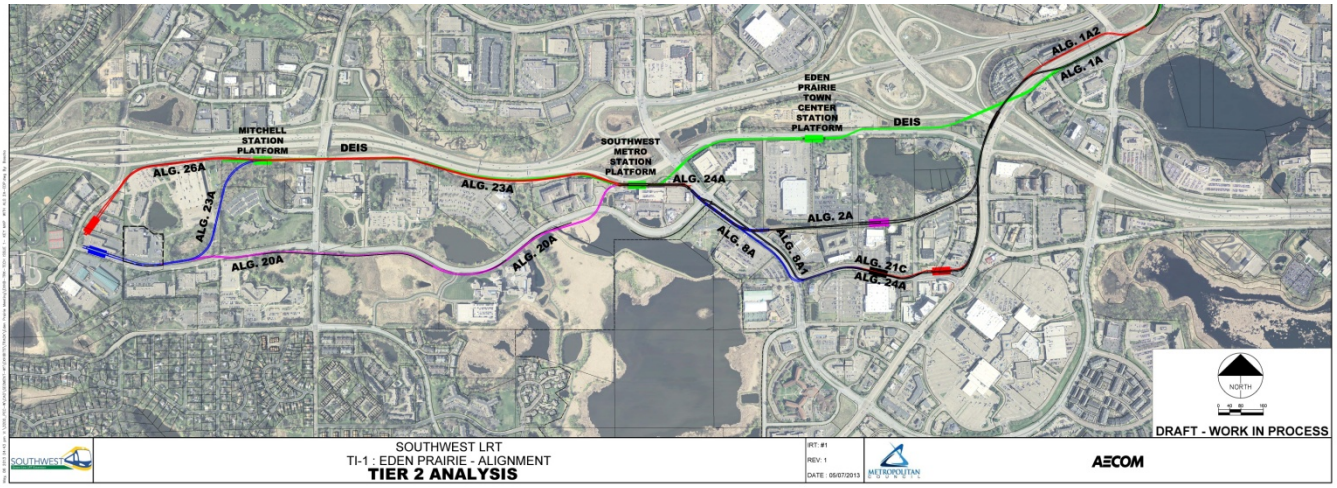


Figure 2: DEIS and Adjustments Overview

Alignment Adjustments along Technology Drive

There are several alignment adjustments that locate the route in this area along Technology Drive as opposed to the DEIS alignment, which is located in close proximity to the south side of the TH 212 ROW. These alignment adjustments vary mainly by where they are located within the street ROW and where/if they cross to the other side of Technology Drive.

Through the course of investigation, there were multiple alignment variations considered which proposed LRT tracks on the north side of Technology Drive, in an exclusive guideway down the center of Technology Drive, and on the south side of Technology Drive.

All of the alignments begin on the north side of Technology Drive in the vicinity of Wallace Road and follow Technology Drive to the east. Crossing points from the center-running or south side alignments varied from a location near the driveway of St. Andrew Lutheran Church, to Mitchell Road, to a point where a future extension of Hiawatha Avenue along the western boundary of the Eden Prairie City Center property would intersect Technology Drive.

<u>Pros / Cons</u>

The alignment adjustments that place the tracks down the center of Technology Drive has too great an impact to the roadway and access to properties. There is not sufficient space to reconfigure the roadway cross section for two through lanes and dedicated turn lanes without widening the entire roadway impacting wetlands and floodplains. Property access, for example Southwest Station Condominiums, would go from two full accesses to right-in/right-out only. In addition to the need to procure additional ROW, the soils along the south side of Technology Drive are particularly poor consisting of fat clays, peat and swamp deposits. The center-running adjustments require widening the roadway south into these poor soils.

Adjustments that place the tracks along the north side of the roadway for the full length of Technology Drive create the need for multiple at-grade crossings at uncontrolled driveway locations such as St.

Andrew Lutheran Church and the Southwest Station Condominiums. To retain the access, these driveways would need to be signalized. The number of traffic signals make corridor operations unmanageable. The cost, vehicular accessibility impacts, and safety considerations associated with those grade crossings make these adjustments less than desirable.

The adjustments that begin on the north side of Technology Drive near Wallace Road and then cross to the south side near the site of the future extension of Hiawatha Avenue are considered feasible, since the at-grade crossings could be protected with vehicular traffic signals that would eventually become part of the normal traffic control for that intersection. The adjustment places the alignment along the south side of Technology Drive near Purgatory Creek Park and requires the construction of track to be supported on piles in order to provide suitable bearing for the track loading. These structures represent additional capital costs that are not a part of the other adjustments being considered.

This south side adjustment was carried forward to Tier 3 as the western portion of **Option 1** and **Option 3**, which are described in more detail in Section 3 of this report.

Alignment Adjustments along TH 212

There were three alignment adjustments considered that more or less followed the LPA alignment. These alignment adjustments all follow the TH 212 alignment eastward similar to the DEIS alignment but contain slight changes in the way that the LRT tracks cross the bus access roads from TH 212 into the SouthWest Transit facility. These options adjusted the alignment to be farther from the Southwest Station Condominiums and adjusted the proximity of the alignment to adjacent property parcels along TH 212.

Hybrid Alignment Adjustments

There were three notable "hybrid" alignment adjustments considered which utilized portions of the DEIS and also incorporated sections along Technology Drive. These are discussed below and shown on the Tier 2 analysis map in Appendix B.

Transition from Technology Drive to Southwest Station

This alignment, referred to as Alignment Adjustment 20A, follows the south side of Technology Drive alignment option from Mitchell Station to Southwest Station where it then turns northward, crossing Technology Drive at grade. The alignment then continues through the existing SouthWest Transit bus circulation area before turning east and generally matching the LPA as it enters Southwest Station.

Adjustment Bisecting Eaton Properties

Alignment Adjustment 23A begins at Mitchell Station located on the north side of Technology Drive near Wallace Road and then immediately turns northward, running between two parcels owned by the Eaton Corporation and placing the LRT near the Eaton water tower. This alignment adjustment continues north to TH 212 where it turns east and follows the LPA alignment to Southwest Station.

Adjustment along Wallace Road

Alignment Adjustment 26A begins at Mitchell Station located along Wallace Road between Technology Drive and TH 212. From here, the alignment continues north, parallel to Wallace Road, then turns east to follow along TH 212 past the originally proposed (LPA) Mitchell Station location. From this point, it continues to follow the LPA alignment to Southwest Station. This alignment was

considered as a potential alternate path to a previously considered OMF site 3 / 4 at the intersection of Wallace Road and Technology Drive.

Pros / Cons

Transition from Technology Drive to Southwest Station

The adjustment transitioning the alignment from Technology Drive to Southwest Station Alignment Adjustment 20A is considered a technically acceptable configuration, and this transition is featured as a component of **Option 1** and **Option 3**. This adjustment has less impact to Southwest Station Condominiums than 23A or 26A, and it achieved the City of Eden Prairie's desire for a station with improved access to TH 212 west. It does, however, have potential floodplain concerns.

Adjustment Bisecting Eaton Properties

A variation of the LPA alignment beginning west of Mitchell Road near Technology Drive then transitioning through the Eaton properties toward TH 212 is considered a technically acceptable configuration. This Alignment Adjustment, 23A, is included as the western portion of **Options 2** and **4**. The main benefit is crossing Mitchell Road closer to TH 212 resulting in less impact to traffic than crossing at Technology Drive. However, this adjustment impacts private property (bisects Eaton property) and creates noise, vibration and visual impacts at the Southwest Station Condominiums.

Adjustment along Wallace Road

The Alignment Adjustment 26A along Wallace Road was developed as an alternate to the adjustment that bisected the Eaton properties, but this configuration created the need for an at-grade crossing of the Eaton building's Wallace Road entrance and provided a very tenuous connection to any future station or potential OMF facility. As such, this adjustment was dropped from consideration.

2.3 Alignment Adjustments: Prairie Center Drive (west) Between Southwest Station and Singletree Lane

The study of this particular section of the route generated the most potential alignment adjustments since the potential location for the Town Center Station varied between three different "corridors."

The LPA located the Town Center Station along Technology Drive approximately mid-way between Prairie Center Drive and Flying Cloud Drive. In its October 2009 *Comprehensive Guide Plan* (Comp Plan), the City of Eden Prairie identified, "a core area clustered between Singletree Lane and Lake Idlewild, identified as 'Town Center', should redevelop as a compact, walk-able district." The potential placement of a station at this proposed "Main Street" location—as well as the placement of a Town Center Station along Singletree Lane, rather than along Technology Drive—generated numerous options for adjustment to the LPA alignment.

Each of these LRT route adjustments crosses Prairie Center Drive near Technology Drive. Since Prairie Center Drive is a heavily traveled vehicular route and the alignments are in the immediate vicinity of the TH 212 interchange, the only alignment adjustments advanced are grade separated (on aerial structures over Prairie Center Drive, or in tunnels or open cut sections below the present street elevation) because at-grade adjustments caused either unacceptable traffic operation impacts or increased LRT travel times.

At-Grade Adjustments

Most of the at-grade alignment adjustments considered were limited to those which cross to the south side of Technology Drive at its intersection with Prairie Center Drive and are associated with the Singletree Lane location for the Town Center Station.

Due to the high volume of vehicular traffic, no adjustments that cross Prairie Center Drive at grade in the vicinity of Technology Drive or the TH 212 interchange in a direct east-west manner were advanced for Tier 2 analysis. Taking this into account, routes directed toward the LPA location of Town Center Station were all grade-separated. At-grade crossing options associated with the Comp Plan location of the Town Center Station were also not considered feasible due to the elevation gain of 50 feet higher above Prairie Center Drive.

The at-grade adjustments that cross Technology Drive ran along the west side of Prairie Center Drive as far as Singletree Lane. Most of the variations of these alignment adjustments cross Prairie Center Drive at the Singletree Lane intersection at grade, aligned either on the north side, center, or south side of Singletree Lane, depending on the variation. One variant includes a grade-separated crossing to the east side of Prairie Center Drive over Technology Drive, then returning to grade to run along the east side of Prairie Center Drive. That route continues southward, crossing multiple at-grade driveways until it turns eastward onto Singletree Lane.

Pros /Cons

The at-grade adjustments of the alignment along the east side of Prairie Center Drive create unacceptable impacts to the driveways of Fairview Health Services and Bachman's Garden Center. In addition, these alignments require an at-grade crossing at Prairie Center Drive to arrive at Southwest Station. As such, these alignments are not considered to be as feasible as other alignment adjustments. Similarly, the at-grade adjustments along the west side of Prairie Center Drive were found to create significant traffic impacts and unacceptable impacts to Purgatory Creek Park and the Flagship office building.

Alignment adjustments that place the LRT tracks at grade on the north and south sides of Singletree Lane were also dismissed, since the at-grade crossing of numerous driveways is considered unacceptable. However, locating the alignment at grade in the center of Singletree Lane was viable since vehicular traffic in the area is not estimated to be unduly affected by the adjustment. The at-grade adjustments along the center of Singletree Lane are included as a portion of **Options 1** and **2**.

Adjustments on an Aerial Structure

Several alignment adjustments that include an aerial crossing of at least a portion of Prairie Center Drive were considered. Alignments from the Southwest Station area all begin to gain elevation at the east end of the Southwest Station, then turn southward on an aerial structure. Due to grade issues, continuing east and crossing Prairie Center Drive immediately east of the Southwest Station on an aerial structure is not feasible.

For the Comp Plan location, the aerial structure crosses the northbound lanes of Prairie Center Drive then travels southward along the Prairie Center Drive median until the alignment turns eastward to the existing embankment just west of the proposed Town Center Station. For the Singletree Lane location, the aerial structure transitions back to grade in the median of Prairie Center Drive before reaching Singletree Lane. At Singletree Lane, the alignments turn onto the north side, center or south side of the roadway,

depending on the variation of the station position being considered.

Pros / Cons

All of the aerial adjustments to the LPA alignment provide some benefit in the form of decreasing impact on the area's vehicular traffic. The diagonal crossing from Southwest Station into the median of Prairie Center Drive is challenging, since the roadway would have to be reconfigured to provide the vertical clearance required beneath an LRT bridge overhead.

The aerial crossing of the alignment into the median of Prairie Center Drive south of Technology Drive is considered to be feasible, and an aerial adjustment of the alignment is included in **Options 1, 2, 3,** and **4**.

Adjustments Below Grade

There were four alignment adjustments considered that took the route through a tunnel and/or cut section between Southwest Station and Town Center Station.

The LPA proposed a tunnel beneath the intersection of Prairie Center Drive and the TH 212 south ramps/Technology Drive that brought the LRT to surface in the southeast quadrant of the intersection. A modified version of the LPA tunnel crossing was considered: the tunnel crosses the intersection to surface in the northeast quadrant of the intersection. The route then follows the north side of Technology Drive to a Town Center Station located along the north side of the roadway.

Another alignment adjustment considered the use of a tunnel crossing from Southwest Station diagonally to the southeast to the east side of Prairie Center Drive. The route then continues southward in an open cut along Prairie Center Drive and rises back to grade just north of Singletree Lane, where it turns at grade to a Town Center Station located along the north side of Singletree Lane.

Pros / Cons

The combination of the capital cost of the additional tunnel length, the below grade adjustments, and the fact that those adjustments would have placed the track below the existing water table elevation created conditions that were not feasible. In addition, there are significant traffic impacts in constructing the tunnels.

2.4 Alignment Adjustments: Prairie Center Drive (west) to I-494 Crossing

Multiple adjustments to the alignment were considered from Town Center Station to the point at which the alignment crossed aerially over I-494 in the vicinity of Flying Cloud Drive. These alignment adjustments differ considerably depending on whether the Town Center Station is placed along Technology Drive, along Singletree Lane, or at the Comp Plan location.

Adjustments to shift to the Comp Plan location

In order to address the goals of the Comp Plan, the DEIS track alignment is shifted south from Technology Drive to an alignment parallel to the LPA between Singletree Lane and Lake Idlewild. This alignment adjustment is at grade between Town Center Station and the I-494 crossing, and alignment adjustments were considered along the north side, center and south side of Eden Road near Flying Cloud Drive.

Pros / Cons

The adjustments along the center and south side of Eden Road necessitated at-grade crossing of Eden

Road near its intersection with Flying Cloud Drive that impacted vehicular traffic flow. The adjustment along the north side of Eden Road eliminated this traffic impact but requires an at-grade crossing at the driveway entrances to Redstone. The adjustment along the north side of Eden Road is included in **Options 3** and **4**.

Adjustments Along Singletree Lane

The center running alignment adjustment was preferred over the other adjustments (side-running) because traffic operations are more favorable with center-running operation because side-running results in certain movements needing to be restricted (No Right-Turn-On-Red). Even when no LRT vehicle is present, driveways are more impacted by either being closed or signalized, and trails and sidewalks adjacent to LRT are slightly more challenging to manage.

With the track alignment established in the center of Singletree Lane, adjustments to the alignment that varied the route to I-494 were considered. All of these adjustments assume that the alignment would transition from the center of the roadway to the north side at the intersection of Singletree Lane and Eden Road, equipped with a new traffic signal.

There were two adjustments considered along Singletree Lane. The first turns the alignment from Singletree Lane northward to run along Glen Lane, and the second adjustment follows Singletree Lane all the way to Flying Cloud Drive before turning north toward the I-494 crossing.

Pros / Cons

The adjustment that extends to Flying Cloud Drive before turning northward is seen as preferable to the other adjustments since it is has fewer property and traffic impacts. It also largely avoids the need to occupy existing traffic lanes, as would be required by the Glen Lane variation. The Glen Lane variation impacted every driveway to businesses in that area and introduced very tight curves off Singletree Lane onto Glen Lane, and off Glen Lane onto Eden Road and towards Flying Cloud Drive. The adjustment to turn northward along Flying Cloud Drive is included as part of **Options 1** and **2**.

2.5 Alignment Adjustments: I-494 to 1000 Feet North of Valley View Road

All of the alignments and adjustments being considered cross I-494 on an aerial structure along the west side of the existing Flying Cloud Drive bridge. Alignment adjustments were developed to vary the location of the guideway between the I-494 crossing and the LPA alignment location on the east side of Flying Cloud Drive north of Valley View Road.

Adjustments Along TH 212

There were adjustments considered that routed the alignment along the south /east side of the TH 212 corridor, rather than immediately adjacent to Flying Cloud Drive. The purpose of these adjustments is to try to minimize the number of at-grade crossings of private driveways for the hotels and businesses along Flying Cloud Drive.

Pros / Cons

These adjustments were not carried forward because of the high capital costs and difficulties traversing the area of the existing bridge carrying Valley View Road over TH 212 and the multiple entrance and exit ramps of TH 212. These also require tunnel sections, open cut sections, and probable reconfiguration of

the TH 212 interchange ramps at Valley View Road.

Adjustments Along Flying Cloud Drive

A number of alignment adjustments were developed along both sides of Flying Cloud Drive north of I-494. These adjustments included variations of aerial adjustments to minimize traffic impacts at Viking Drive and Valley View Road.

Adjustments along the east side of Flying Cloud Drive generally mimic the LPA and avoid running in front of two hotels, but they run at grade in front of the Crossroads Center strip mall and First Western Bank and Trust, and would be within about 300 feet of the Fox 9 television studio. Alignment adjustments on the west side of Flying Cloud Drive avoid interference with the Crossroads Center strip mall but require the alignment to cross the hotel driveways at-grade and cross over Flying Cloud Drive and Valley View Road to rejoin the LPA alignment north into the Golden Triangle area.

Pros / Cons

The adjustments in front of the Crossroads Center strip mall on the east side of the roadway were dismissed since they provided no improvements over the LPA alignment. They required at-grade crossings of Flying Cloud Drive, Viking Drive and Valley View Road, which created impacts to the vehicular traffic at those intersections. The at-grade crossing at Valley View Road requires significant improvements to the TH 212 interchange and other adjacent roadways and potentially impacts LRT and vehicular traffic. An aerial alignment adjustment along the east side of the roadway avoids the at-grade crossings but adds considerable cost to the project due to the extended length of the aerial structure.

An alignment adjustment along the west side of Flying Could Drive is considered viable. A single at-grade crossing of the Baymont Inn and Suites and Residence Inn shared driveway is feasible, and an aerial crossing of Flying Cloud Drive and Valley View Road provides a feasible means of minimizing the Valley View Road at-grade crossing traffic impacts through this area. The west side adjustment is included in **all Options** evaluated in Tier 3 analysis.

3 Description of Adjustments – Tier 3 Analysis

At the completion of the Tier 1 and Tier 2 analyses, there were four (4) alignment adjustments (identified as Option 1 through Option 4) and in addition to the LPA considered as potentially feasible (See Figure 3). These four alignments vary in two areas:

- The route between Mitchell Station to Southwest Station
- The route between Southwest Station and Flying Cloud Drive

Tier 3 "linked" the segments together in order to analyze the adjustments as a whole. In addition to the elements analyzed in the Tier 2 analysis, estimates for capital costs, as well as travel time for the light rail corridor, and the ridership were developed. Other factors analyzed included a high level analysis of construction impacts and analysis of land use surrounding the Mitchell and Eden Prairie Town Center stations. The results of this analysis were used to develop a recommended final alignment adjustment for design advancement.

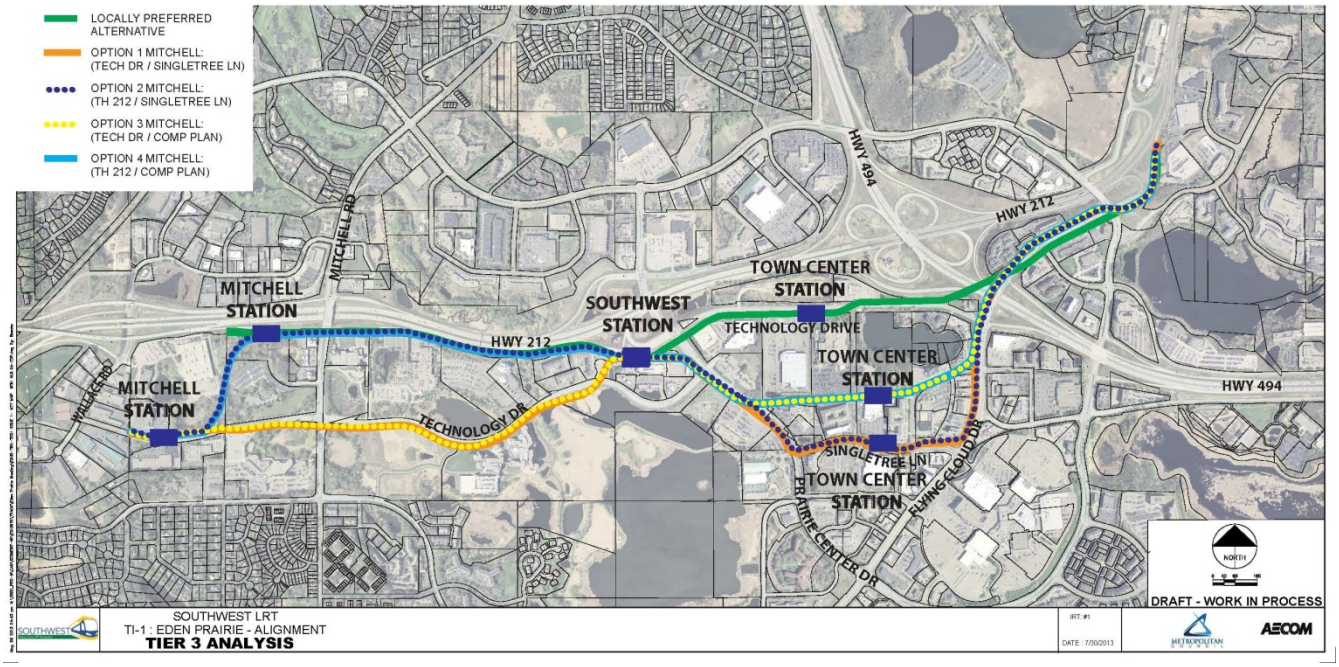


Figure 3: LPA and Adjustment Options 1 - 4

Each of these alignments is described in detail in the following paragraphs.

3.1 DEIS Locally Preferred Alternative (LPA)

The LPA alignment is as shown in the DEIS documents. The western terminus of the LPA is at Mitchell Station, located to the west of Mitchell Road immediately south of the exit ramp from eastbound TH 5 onto Mitchell Road. From that point eastward, the LPA alignment runs at grade parallel, and immediately adjacent to, the TH 212 corridor into the existing SouthWest Transit facility near the intersection of Technology Drive and Prairie Center Drive. Continuing eastward, the LPA alignment crosses Prairie Center Drive through a tunnel to the south side of Technology Drive where it returns to running at grade. The alignment then follows the south side of Technology Drive to the Town Center Station near the present Costco store. From the station, the alignment crosses at grade to the north side of Technology

Drive. Almost immediately, the alignment begins to climb on retained fill until approximately 700 feet from Flying Cloud Drive where it turns northeast and crosses on an aerial structure diagonally across I-494. The structure continues to carry the alignment to the east side of Flying Cloud Drive, and the alignment returns to grade on the east (north) side of Viking Drive. From that point, the LPA alignment runs parallel to Flying Cloud Drive, crosses Valley View Road at grade and continues toward Golden Triangle Station.

3.2 Option 1 – Mitchell Station: Technology Drive / Singletree Lane

This alignment adjustment begins at Mitchell Station located on the north side of Technology Drive between Mitchell Road and Wallace Road. The alignment follows the north side of Technology Drive eastward and then crosses diagonally to the south side of Technology Drive through a proposed signalized intersection with an extension of Hiawatha Avenue. By making the transition from north side to south side at this location, the adjustment avoids conflict with an existing wellhead on the north side of Technology Drive, and the crossing movement can be incorporated into the normal traffic signalization at the intersection. The alignment then follows the south side of Technology Drive, crossing Mitchell Road and two signalized driveways at grade, to the area of the SouthWest Transit Park-and-Ride. The alignment turns north at the SouthWest Transit westernmost driveway, crosses Technology Drive with a new signal and the gated TH 212 access and egress bus-only ramps, and enters Southwest Station at grade on the north side of the existing Park-and-Ride facility.

Once through the SouthWest Transit facility, the alignment runs southward and climbs onto an aerial structure to cross over Technology Drive and into the median of Prairie Center Drive. The alignment gradually returns to grade and turns eastward onto Singletree Lane at grade at the existing intersection. Once there, the adjustment remains at grade in the center of Singletree Lane to a proposed Town Center Station approximately mid-way between Prairie Center Drive and Flying Cloud Drive. The alignment continues east, and at Flying Cloud Drive it turns northward and runs at grade along the west side of Flying Cloud Drive, crossing I-494 on a new structure adjacent to the existing roadway bridge. Once on the north side of I-494, the alignment remains at grade on the west side of Flying Cloud Drive passing a gated access drive opposite of Viking Drive. It then transitions onto an aerial structure which carries the alignment to the east side of Flying Cloud Drive by crossing the Valley View Road intersection. Once past Valley View Road, the alignment generally follows the LPA alignment toward Golden Triangle Station.

3.3 Option 2 – Mitchell Station: TH212 / Singletree Lane

Like Option 1, this adjustment begins at Mitchell Station located on the north side of Technology Drive between Mitchell Road and Wallace Road. Once east of Mitchell Station, the alignment turns northward to the south side of TH 212 by traversing between properties presently owned by the Eaton Corporation. At the TH 212 right-of-way, the alignment turns eastward again and more or less follows the LPA alignment to the Southwest Station. Upon leaving Southwest Station this alignment follows the same alignment as Option 1.

3.4 Option 3 – Mitchell Station: Technology Drive / Comp Plan

This option begins at Mitchell Station located on the north side of Technology Drive between Mitchell Road and Wallace Road and follows the same route as Option 1 eastward along Technology Drive to Southwest Station and onto an aerial structure down the west side of Prairie Center Drive. The alignment remains on an aerial structure and crosses Prairie Center Drive onto the existing embankment to the east between Costco and Bachman's Garden Center, approximately 800 feet north of Singletree Lane. The alignment continues eastward toward Eden Road and stops at a proposed Town Center Station just west of the Eden Prairie water tower behind Brunswick Zone Bowling Center. Eden Road is extended to the west to provide vehicular access to the Town Center Station. East of the station, the alignment passes on the north side of the water tower and follows the north side of Eden Road crossing to signalized driveways at grade to Flying Cloud Drive, where it matches the route described in Options 1 and 2 toward Valley View Road and on to Golden Triangle Station.

The alignment between Prairie Center Drive and Flying Cloud Drive was defined so as to be consistent with the *Comprehensive Guide Plan* (Comp Plan) adopted by the Eden Prairie City Council and to provide transit to the Town Center area described in Section 8.1 of that document.

3.5 Option 4 – Mitchell Station: TH212 / Comp Plan

Option 4 follows the same path as Option 2 from Mitchell Station to Southwest Station along the south side of the TH 212 right-of-way. From Southwest Station, this option climbs to an aerial crossing of Prairie Center Drive and on to the Comp Plan alignment described in Option 3 above.

4 Detailed Evaluation of Adjustments – Tier 3

The Tier 3 analysis identified four (4) options for advancement for more detailed evaluation and comparison. The results of that detailed evaluation between the LPA and Adjustment Options 1 - 4 for the Eden Prairie alignments were completed and documented in Table 2.

Table 1: Eden Prairie Alignment Comparison of Adjustments

	LPA	OPTION 1	OPTION 2	OPTION 3	OPTION 4
	LPA – Mitchell Station Terminal	**Mitchell Station: Technology Drive/Singletree**	**Mitchell Station: TH 212/Singletree**	**Mitchell Station: Technology Drive/Comp Plan**	**Mitchell Station: TH 212/Comp Plan**
Alignment Description	DEIS 3A	20A-24A-1A2	23A-24A-1A2	20A-2A-1A2	23A-2A-1A2
Western Terminus Station	Mitchell Road	Wallace Road	Wallace Road	Wallace Road	Wallace Road
Capital Cost ($M) *	$230 -$235	$275 - $280	$275 - $280	$285 - $290	$285 - $290
Cost Factors					
Total Number of PnR Spaces (build)	**1450 ramp 400 surface**	**950 ramp 160 surface**	**950 ramp 160 surface**	**950 ramp 160 surface**	**950 ramp 160 surface**
Mitchell Road	800 spaces (400 ramp plus 400 surface)	950 ramp	950 ramp	950 ramp	950 ramp
Southwest Station	1325 ramp** (924 existing) (400 ramp)	924 ramp (existing; bus + LRT); assumes sharing of new and existing ramps by SouthWest Transit and SWLRT	924 ramp (existing; bus + LRT); assumes sharing of new and existing ramps by SouthWest Transit and SWLRT	924 ramp (existing; bus + LRT); assumes sharing of new and existing ramps by SouthWest Transit and SWLRT	924 ramp (existing; bus + LRT); assumes sharing of new and existing ramps by SouthWest Transit and SWLRT
Eden Prairie Town Center	650 ramp	160 surface	160 surface	160 surface	160 surface
ROW Impacts***	1 full 13 partial	2 full 28 partial	2 full 27 partial	2 full 22 partial	2 full 21 partial
Significant Utility Impacts	Dual box culverts west of SouthWest Transit Immediately adjacent to Eden Prairie Water Treatment Plant	Dual box culverts west of SouthWest Transit	Dual box culverts west of SouthWest Transit Immediately adjacent to Eden Prairie Water Treatment Plant	Dual box culverts west of SouthWest Transit	Dual box culverts west of SouthWest Transit Immediately adjacent to Eden Prairie Water Treatment Plant
Travel Time Differences					
Number of Signalized Intersections LRT runs through (existing and new)	3	11	9	8	6
Change in LRT Travel Time from LPA (minutes****)	0**	4.9 minutes	4.8 minutes	3.9 minutes	3.8 minutes
LRT Length (miles) - from 1000' east of Valley View	2.6 miles	3.3 miles	3.5 miles	3.1 miles	3.3 miles
Ridership Differences					
Change in Daily Ridership (YR 2030) from LPA	0	410	410	410	410
Change in Transit Dependent Riders (YR 2030) from LPA	0	90	90	90	90

	LPA	OPTION 1	OPTION 2	OPTION 3	OPTION 4
	LPA – Mitchell Station Terminal	**Mitchell Station: Technology Drive/Singletree**	**Mitchell Station: TH 212/Singletree**	**Mitchell Station: Technology Drive/Comp Plan**	**Mitchell Station: TH 212/Comp Plan**
Environmental Considerations					
Potential Wetland Impacts	+0.7 acres	+2.2 acres	+0.7 acres	+2.2 acres	+0.7 acres
Potential FEMA Floodplain Impacts	0 CY	60 - 2000 CY	0 CY	60 - 2000 CY	0 CY
Other Factors					
Construction Impacts	• PCD/Technology Drive Intersection - Tunnel • Technology Drive businesses	• Singletree Lane businesses • Flying Cloud Drive	• Singletree Lane businesses • Flying Cloud Drive	• Eden Road businesses • Flying Cloud Drive	• Eden Road businesses • Flying Cloud Drive
Traffic Impacts (Yr 2030) (Unmitigated) (Intersections at LOS E/F due to LRT)	• Flying Cloud/Valley View	• Technology Drive/Flying Cloud Drive • Mitchell Rd/ Technology Dr	• Technology Drive/Flying Cloud Drive • Mitchell Rd/ TH 212 S Ramp	• Technology Drive/Flying Cloud Drive • Mitchell Rd/ Technology Dr	• Technology Drive/Flying Cloud Drive • Mitchell Rd/ TH 212 S Ramp
Walkability @ Town Center Station	Poor	Very Good	Very Good	Good	Good
Walkability to City Center	Poor	Good	Good	Good	Good
Existing Land Use - Within 1/2 Mile of Town Center Station	-	-	-	-	-
Population	697	1467	1467	1350	1350
Housing Units	474	887	887	841	841
Employment	4422	7551	7551	6195	6195
Existing Land Use - Within 1/2 Mile of Mitchell Station					
Population	279	606	606	606	606
Housing Units	132	221	221	221	221
Employment	2442	2124	2124	2124	2124
Decision	Dismissed (included for comparison purposes)	Dismissed	Dismissed	Retained	Dismissed

*Capital Costs are YOE and include allocated and unallocated contingencies, ROW, and design costs.

** No LRT delay was assumed at traffic signals for the LPA in the DEIS

*** Partial acquisitions do not include those that may be necessary for roadway improvements

**** Based on Mitchell Station location at Eden Prairie Public Works Site

4.1 Technical Feasibility/ Constructability

All of the options appear to be technically feasible and constructible based on the preliminary level of design completed for this analysis. Specific feasibility/constructability issues for each alternative are described below.

4.1.1 LPA

West of Southwest Station the LPA alignment passes within 10 feet of the northeasterly building at the Southwest Station Condominiums. Additional measures will be needed during construction to minimize the potential impacts to this and other existing buildings.

The construction of the below-grade crossing of Prairie Center Drive will severely impact traffic during construction, and the maintenance of traffic along Prairie Center Drive will take a considerable effort. The cut and cover tunnel construction itself will be challenging, since the water table in the area is high and dewatering measures for the excavation will have to be carefully implemented. It is anticipated that some form of pumping will have to be continued as an ongoing maintenance item after completion in order to manage water infiltration into the tunnel.

The aerial structure crossing over I-494 is longer than the aerial structure proposed for Options 1 through 4. The proposed structure brings the alignment directly under the existing high voltage power transmission line at a location very close to the low point of the wires likely requiring the need to raise the elevation of the wires. Extraordinary efforts will be needed to both protect the utility and also safeguard the cranes that would be used for the construction of the SWLRT structure.

4.1.2 Option 1 – Mitchell Station: Technology Drive / Singletree Lane

One of the constructability concerns with the alignment in Option 1 is related to the maintenance of vehicular traffic. The need to maintain traffic flow along Singletree Lane and the maintenance of traffic during the construction of the aerial structure in the median of Prairie Center Drive will make construction access challenging.

A portion of the Option 1 alignment will be along the south side of Technology Drive. Existing poor soil conditions will require construction of a pile-supported track adjacent to Purgatory Creek. In that same area, the construction will have to be progressed in such a manner that impacts to Purgatory Creek are minimized.

4.1.3 Option 2 – Mitchell Station: TH212 / Singletree Lane

The location of the Option 2 alignment along TH 212 will eliminate many of the wetland concerns associated with Option 1. However, this alignment, like the LPA, will pass very close to the Southwest Station Condominiums and care will need to be taken to avoid impacts to the buildings. Like the LPA, construction will have to occur in a relatively limited strip between TH 212 and the adjoining properties. This may cause the need for a linear staging plan, and the removal of excavated materials and delivery of new materials will require a focused control of work site logistics.

The same traffic control and construction access concerns present in Option 1 along Prairie Center Drive and Singletree Lane will also be present in Option 2.

4.1.4 Option 3 – Mitchell Station: Technology Drive / Comp Plan

The same soils, wetlands, and floodplain concerns described for Option 1 along the south side of Technology Drive will be present for Option 3 as well. While the challenges of constructing an aerial crossing of Prairie Center Drive and the associated construction access issues will be present for Option 3, there will not be the need for the mitigation of traffic along Singletree Lane.

The Option 3 alignment will pass adjacent to an existing detention basin behind the Costco store. Maintaining the integrity of that detention basin during construction will be critical during SWLRT construction. Just south of the detention basin located on the northern property line of Bachman's is an existing retaining wall that will be impacted by this option. There will also be the need for considerable earthwork near the Town Center Station between the Costco Pond and existing Eden Road. This is due to the existing elevation difference between the north side of the SWLRT alignment and the existing parking lots on the south side since the elevation of the Town Center Station has been established similar to the parking lots on the south side as desired by the City of Eden Prairie.

An existing electrical transmission line is present in the area of the Town Center Station; however, vertical clearance appears adequate and the nature of the construction in that area should not require large cranes that could potentially foul the overhead wires.

4.1.5 Option 4 – Mitchell Station: TH212 / Comp Plan

This alignment, like the LPA and Option 2, will pass very close to the Southwest Station Condominiums, and care will need to be taken to minimize impacts to the buildings. Construction will have to occur in a relatively limited strip between TH 212 and the adjoining properties, which may cause the need for a linear staging plan and a focused control of work site logistics.

The constructability concerns discussed under Option 3 with respect to maintaining the integrity of a detention basin along the Comp Plan route are the same for the construction of Option 4. Like Option 3, this alignment option will also require the handling of a significant amount of earthwork.

4.2 Capital Costs

Preliminary capital costs were developed for the Tier 3 adjustments and compared with the LPA. All costs are total program capital costs including engineering, management, and contingency, escalated to the assumed midpoint of construction or year of expenditure (YOE) dollars and ROW costs.

Table 2: Capital Costs

Adjustment	Capital Cost ($M)	Change from LPA ($M)
LPA	$230 - $235	- $0 -
Option 1: Technology Drive/ Singletree Lane	$275 - $280	$40 - $45
Option 2: TH 212/Singletree Lane	$275 - $280	$45 - $50
Option 3: Technology Drive/ Comprehensive Plan	$285 - $290	$50 - $55
Option 4: TH 212/Comprehensive Plan	$285 - $290	$50 - $55

4.3 Travel Time and Ridership

Updated travel times were prepared for each of the options as input into the regional travel demand model and for use in generating the ridership estimates. At the regional travel demand level, each of the options with Mitchell Station does not vary enough in its location of the station to impact the ridership estimates based on station area access. Travel times were calculated using travel speeds matched to the alignment, intersection delay (at signalized intersections where priority is not assumed), and station boarding times. The travel time reported in the DEIS for the LPA did not assume any signalized intersection delay within this portion of the corridor. Travel times included in Table 3 are based on the Mitchell Station location at the Eden Prairie Public Works site. The maximum travel time variance of 1.1 minutes between all the options was considered to fall within the background travel time variance and, for the purpose of this exercise, could be considered equivalent when compared to the DEIS/LPA results.

Table 3: Travel Time and Ridership

Adjustment	Change in Alignment Length from LPA	Change in Travel Time from LPA	Change in Ridership from LPA
LPA	- 0 -	- 0 -	- 0 -
Option 1: Technology Drive/ Singletree Lane	0.7 miles	+4.9 minutes	+410
Option 2: TH 212/Singletree Lane	0.9 miles	+4.8 minutes	+410
Option 3: Technology Drive/ Comprehensive Plan	0.5 miles	+3.9 minutes	+410
Option 4: TH 212/Comprehensive Plan	0.7 miles	+3.8 minutes	+410

4.4 Utility/Other 3rd Party Impacts

A preliminary review of existing utilities was conducted along each alignment. The current level of alignment design does not permit a determination of the extent of relocation.

Utility impacts common to all options

There are utilities that are common to the LPA and all adjustments. They include an overhead high-voltage utility near Town Center Station which runs in an east-west direction just north of Technology Drive. A second overhead high-voltage utility, running in a north-south direction, crosses the alignment just east of Gander Mountain. However, it appears that these transmission lines will not be impacted by the LRT. Clearances between the transmission lines and the LRT catenary system are adequate. There is also a 6 foot by 10 foot box culvert crossing of Purgatory Creek at TH 212 and Technology Drive.

Watermain in the vicinity of proposed SWLRT construction ranges from 6" to 30" diameter. Existing watermain material is primarily ductile iron pipe (DIP) with an exception at Mitchell Road where a 24" pre-stressed concrete cylinder pipe (PCCP) crosses the proposed alignment. Impact complexity includes simple fire hydrant relocation, service reconnection, reconstruction of alignment crossings (to install casing around the watermain), and relocation of watermain running parallel to SWLRT alignment.

Sanitary/Storm Sewer in the vicinity of proposed SWLRT construction ranges in size from 6" to 24" in diameter (sanitary) and 12" to 36" in diameter (storm). Existing sanitary sewer material is comprised primarily of PVC. Storm sewer material is comprised mostly of RCP. Sanitary/storm impact complexities includes manhole adjustment (for grade and curb line), service reconnection, and relocation of sanitary/storm sewer running parallel with SWLRT alignment.

Multiple private utilities, including overhead and underground electric distribution and transmission lines as well as gas and communication lines, will be impacted by SWLRT construction. Impact complexity includes protect in place, adjust/reconstruct in place, and relocate.

Significant utility impacts

4.4.1 LPA

There are utility impacts which have been identified for the LPA alignment which have been classified as significant. These are existing twin 7 foot by 10 foot box culverts just west of Southwest Station that may be impacted. These box culverts may need to be replaced to accommodate LRT crossing them, and storm water ponds will be impacted. At the western terminus of the alignment the LRT is immediately adjacent to Eden Prairie Water Treatment Plant and it is anticipated that watermain diameters of 24" and 30" will be impacted.

4.4.2 Options 1 and Option 3

There are significant utility impacts with Option 1 and Option 3 to the twin box culverts just west of Southwest Station. The box culverts may need to be replaced to accommodate LRT crossing them and potentially extended due the LRT alignment. Storm water pond will be impacted by these options same as the LPA.

4.4.3 Options 2 and Option 4

There are significant utility impacts with Option 2 and Option 4 at the western terminus; the alignments are immediately adjacent to Eden Prairie Water Treatment Plant. The existing watermains will be impacted the same as the LPA. The twin box culverts just west of Southwest Station will also be impacted by these options same as the LPA.

4.5 ROW Impacts

The potential impacts on ROW for each of the alternatives have been evaluated based on the conceptual designs, including the potential for these impacts:

- Permanent impacts to existing structures/ROW acquisitions
- Temporary impacts to existing structures/construction easements

The following sections summarize the potential impacts on ROW for each alignment adjustment. For all alignments, and based on preliminary engineering conducted to date, ROW is assumed to be 84-feet wide based upon the width of the LRT Track cross section and wayside ditches. It is assumed that any properties required for construction of the SWLRT guideway, stations, systems facilities, or maintenance facilities will be purchased from the current property owner.

4.5.1 LPA

The DEIS did not indicate that there would be any significant property acquisition needed for the LPA alignment. However, the DEIS did indicate that 400 structured parking spaces would be needed at Southwest Station and 650 spaces at Eden Prairie Town Center. This would result in impacts to the existing parking structure or adjacent properties. In addition, portions of the LPA alignment will be located within existing public ROW and partial property acquisition will be needed where the alignment runs adjacent to private properties. There are impacts to the Eaton properties, the north end of the Costco property and the Crossroads Shopping Center at Valley View Road which will need partial acquisition. One property (Anchor Bank) was identified for full acquisition.

4.5.2 Options 1 - 4

Alignments west of Southwest Station

Option 1 and Option 3 begin at the Mitchell Station within existing city-owned property at the City Maintenance Facility. The alignments run along both sides of Technology Drive and would require the partial acquisition of ROW from adjacent property owners. Mitchell Station would require the construction of 900 structured parking spaces within the property. The alignment crosses Technology Drive twice at grade, once just west of the City Center and once just west of Southwest Station.

Option 2 and Option 4 also begin at the Mitchell Station located on City-owned property at the City Maintenance Facility. The alignments run east from the station along the north side of Technology Drive turning to the north bisecting the Eaton property continuing to the southern edge of the TH 212 ROW. It then follows along TH 212 to Southwest Station. Mitchell Station would require the construction of 900 structured parking spaces within the property.

Alignments from Southwest Station to the east

Similar to the LPA, this would result in impacts to the existing SouthWest Transit offices or adjacent properties in order to expand the existing parking structure. All four (4) of the options impact one parcel (Anchor Bank) which is identified for full acquisition.

One city-owned parcel (leased to a day care center) between Eden Road and Glen Lane on the north side of Singletree Lane, will require full acquisition for both Options 1 and 2. Both alignments follow along the west side of Flying Cloud Drive crossing Eden Road at grade. The remainder of the alignment is the same for all four (4) options crossing I-494 on a bridge staying on the west side of Flying Cloud Drive, eventually crossing Flying Cloud Drive/Valley View Road on an aerial structure continuing along the east side of the TH 212 ramps to the end of Eden Prairie Technical Issue #1.

One parcel at the northwest corner of Eden Road and Flying Cloud Drive (Eden Prairie Convenience Center) will require full acquisition for both Options 3 and 4. The remainder of the alignment for both of these options is the same as Option 1 and Option 2.

The combined ROW impacts for all options are detailed in Table 2 above. The detailed comparison of impacts to ROW did not include potential ROW impacts for roadway improvements.

4.6 Traffic and Access Impacts

The traffic and access impacts are more easily addressed by bisecting the alignment at Southwest Station. The two alignment options west of Southwest Station travel along either TH 212 (comparable to the LPA alignment) or Technology Drive. East of Southwest Station, there are three (3) alignment options: travel along either Singletree Lane, Eden Road extension (Comp Plan), or Technology Drive (LPA). In general, traffic would operate at an acceptable level for all of these alignments, although they would not all operate equally or require the same level of mitigation.

4.6.1 Alignments west of Southwest Station

TH 212 (Options 2, 4, and LPA)

The following is a summary of traffic and access impacts:

- Includes one at-grade crossing at Mitchell Road/TH 212 South Ramp
  - Crossing would require a second northbound and eastbound right-turn lane, since the right turn on red would be restricted
  - Prefer preemption at this crossing, but would need further evaluation to determine actual operations of LRT and vehicles
- LRT operations do not impact Technology Drive
- No new traffic signals are likely required
- No access or driveway closures or modifications are needed

In summary, this alignment segment results in acceptable level of traffic operations with mitigation. The traffic impacts are limited to the single crossing at Mitchell Road with no traffic impact to Technology Drive. This segment has fewer traffic impacts than the Technology Drive alignment.

Technology Drive (Options 1 and 3)

The following is a summary of traffic and access impacts:

- Introduction of LRT will result in noticeable change on Technology Drive with an increase in travel time along the corridor of 15 seconds
- One major crossing at Mitchell Road/Technology Drive makes it challenging, but can be mitigated, to find an acceptable balance of vehicle and LRT delay
  - In order to obtain an acceptable level of traffic operation, improvements are needed to both the intersection and Mitchell Road to provide additional capacity and vehicle storage
  - LRT will likely need to operate in priority mode through the intersection with average LRT delays of approximately 30 seconds
- Four (4) minor crossings of Technology Drive
  - Each crossing would require a new traffic signal at the future Hiawatha Avenue, Optum's west access, Optum's east access and Southwest Station western access (bus driveway)
  - Two of these minor crossings would be diagonal crossings of Technology Drive (Southwest Station west access and the future Hiawatha Avenue, although the latter would be eliminated if the westernmost station is located at City Center)
- One access closure at the Technology Drive/City Center East access
- Potential to combine MTS east access/St. Andrews west access with Optum east access

- Potential to relocate Optum west access to align with MTS west access

In summary, this alignment segment results in an acceptable level of traffic operation. With the higher traffic impacts for the at-grade crossing of Mitchell Road and the addition of four (4) traffic signals on Technology Drive to accommodate LRT, this segment was determined to have more traffic impacts than the TH 212 alignment.

4.6.2 Alignments east of Southwest Station

Technology Drive (LPA)

The following is a summary of the traffic and access impacts:

- Introduction of LRT will result in noticeable change on Technology Drive with an increase in travel time as a result of additional traffic signals
- One major roadway at-grade crossing of Valley View Road at the Flying Cloud Drive/TH 212 South Ramp intersection
  - LRT would likely operate in priority resulting in 30 to 45 seconds of LRT delay
- Three (3) minor at-grade crossings along Technology Drive will require traffic signals at Gander Mountain access/future Main Street, Costco west access and the Optum access, resulting in better side-street operations
  - LRT would operate in preemption resulting in no LRT delay
- Two driveway closures on Technology Drive at Rosemount-Emerson west access and Costco east access
- No traffic impacts to Prairie Center Drive or Flying Cloud Drive (except as noted above)
- May need to re-configure the Gander Mountain access

In summary, this alignment segment results in an acceptable level of traffic operation with mitigation. With the traffic impacts at the Valley View Road/TH 212 South Ramp and along Technology Drive, there are more traffic impacts than the Comp Plan alignment. With no traffic impacts on Flying Cloud Drive or Prairie Center Drive, there are fewer impacts than the Singletree Lane alignment.

Singletree Lane (Options 1 and 2)

The following is a summary of the traffic and access impacts:

- Introduction of LRT will result in noticeable change on Singletree Lane with an increase in travel time and access changes on the corridor (a 90 seconds trip in 2030 No Build would be increased by 15 seconds in the eastbound direction and 30 seconds in the westbound direction under the build condition)
- Reduction in the Singletree cross section from a 4-lane roadway (2 through lanes in each direction and no turn lanes) to a 3-lane roadway (through lane in each direction with a left turn lane at each full access)
- One major crossing at the intersection of Prairie Center Drive and Singletree Lane
  - LRT would operate in priority resulting in 20 to 30 seconds of LRT delay
- Three (3) major roadway crossings along Flying Cloud Drive at Eden Road, Technology Drive and Viking Drive

  - Viking Drive would require a traffic signal
  - Technology Drive would require additional turn lanes
  - LRT would operate in preemption resulting in no LRT delay
- Three (3) minor crossings; each would need a new traffic signal
  - Prairie Center Drive/Bachman's/Flagship Office building
  - Singletree Lane/Wal-Mart/Brunswick Zone
  - Singletree at Eden Road, which would be a partial diagonal crossing
- One (1) public street closure, Glen Road at Singletree Lane; and one (1) driveway closure on the north side serving Brunswick Zone and Lincoln Park Apartments
- Two (2) driveways restricted to right-in/right-out (Singletree Lane at Bachman's/Watertower Apartments driveway on the north side and the Jake's City Grille/Walmart driveway on the south side)

In summary, this alignment segment results in an acceptable level of traffic operation with mitigation. Due to the increase in travel time and access modifications on Singletree Lane and the direct LRT interaction with the Prairie Center Drive/Singletree Lane and the Flying Cloud Drive/Eden Road intersections which are unique to this alignment, this segment has more traffic impacts than either the Comp Plan or Technology Drive alignment.

Comp Plan (Eden Road extension) (Options 3 and 4)

The following is a summary of the traffic and access impacts:

- LRT operations do not impact Prairie Center Drive or the Flying Cloud Drive/Eden Road intersection
- Two major roadway crossings along Flying Cloud Drive at Technology Drive and Viking Drive
  - Viking Drive would require a traffic signal
  - Technology Drive would require additional turn lanes
  - LRT would operate in preemption, resulting in no LRT delay
- Two or three minor crossings with new traffic signals are needed at Eden Road with future Main Street, Redstone west access/Eden Road, and Redstone east access/Glen Road
  - LRT would operate in preemption, resulting in no LRT delay
- One driveway closure at Eden Road and Eden Prairie Convenience Center (this alignment would remove the building and direct access may not be needed)
- Eden Road from Prairie Center Drive to Future Main Street is a two-lane roadway which would become a three-lane roadway (one thru lane in each direction with a center left-turn lane) with right-turn lanes for movements across the LRT tracks

In summary, this alignment segment results in an acceptable level of traffic operation with mitigation. The traffic impacts are limited to the minor driveway crossings along Eden Road. This alignment has fewer traffic impacts than both the Singletree Lane and Technology Drive alignment.

4.7 Environmental and Other Considerations

A preliminary environmental screening of the proposed adjustments was performed to identify potential impacts and determine what level of additional environmental analysis and documentation might be required to advance the adjustments. In addition, the screening identified potential environmental issues that may be used to determine which adjustments are carried forward.

The alignments fall largely within Riley Purgatory Bluff Creek Watershed District (RPBCWD). The watershed district boundary generally occurs at the Flying Cloud Drive and Valley View Road intersection. As the adjustment travels east and north of this point, it is within Nine Mile Creek Watershed District (NMCWD) jurisdiction. RPBCWD is in the process of updating their rules. During discussions with RPBCWD, they have indicated that their rules are generally expected to align with NMCWD requirements. The City of Eden Prairie is the local governmental unit (LGU) responsible for administering the Wetland Conservation Act (WCA). Currently, the City is also responsible for administering its floodplain ordinance. However, RPBCWD will take over jurisdiction of floodplain requirements and wetland buffers. The City will remain the LGU for the WCA.

The wetland and floodplain impacts are listed in Table 2. The wetland impacts were based on the preliminary wetland delineations completed as a part of the Environmental Impact Statement. Final impacts and required mitigation will need to be quantified after the wetland delineations are approved.

Purgatory Creek is located within Federal Emergency Management Agency (FEMA) floodplain, designated Zone A as shown on Flood Insurance Rate Map (FIRM) 27053C0430E, effective September 2, 2004. The floodplain for Purgatory Creek was not included in the August, 2012 Flood Insurance Study (FIS) for Hennepin County. Per Minnesota Rules, any change that increases the 100-year FEMA floodplain by 0.5 feet or more requires Minnesota Department of Natural Resources (DNR) review. An increase of elevation by a foot or more requires Federal review as well. Also, RPBCWD requires 1:1 mitigation for **any** floodplain fill at the same elevation (+/- 1 foot) and within the floodplain of the same water body. At this stage, based on available data, floodplain impacts have been estimated for FEMA floodplain only (i.e., Purgatory Creek). RPBCWD is in the process of updating their hydrologic/hydraulic model. Once this is complete, the floodplain impacts for all water bodies will need to be calculated.

The existing 100-year high water level of Purgatory Creek on the south side of Technology Drive (downstream) is 824.0 based on RPBCWD 1996 Water Management Plan floodplain profile. The elevation between Technology Drive and TH 212 varies between 824 and 827, respectively. These elevations were used for estimating floodplain impacts. RPBCWD has indicated that they will be updating their floodplain elevations based on Atlas 14 precipitation estimates. Final floodplain impacts and mitigation will need to be quantified to account for Atlas 14, RPBCWD hydrologic/hydraulic model updates, and further refinement of the adjustments.

4.7.1 LPA

The estimated wetland impacts for the LPA are 0.7 acres. There are no wetland impacts to DNR waterbodies. It was assumed that the LPA adjustment would not necessitate extending the existing box culvert under TH 212. Therefore, there would be no wetland or FEMA floodplain impacts at Purgatory Creek. The LPA alignment crosses the existing Southwest Station bus ramps at grade. There will likely be impacts to the pond located east of the Southwest Station Condominiums from this alignment. However, based on the wetland delineations, this is a stormwater pond and will not require mitigation. Impacts to the flood storage of the pond will need to be mitigated. Noise and vibration impacts at the Southwest Station Condominiums will be evaluated as part of the FEIS.

4.7.2 Options 1 - 4

Option 1 and Option 3 have similar environmental impacts. The estimated wetland impacts along Technology Drive are 2.2 acres and they have the same impact to FEMA floodplain in Purgatory Creek of 60 cubic yards for the pile supported track. The City of Eden Prairie prefers to relocate the existing trail along the south side of Technology Drive further south to be located south of the SWLRT to avoid several trail crossings of SWLRT. The City also prefers that the trail be raised above the existing floodplain elevation. This would result in approximately 2000 cubic yards of floodplain impacts at Purgatory Creek for the trail relocation.

Option 2 and Option 4 have the same environmental impacts as the LPA. The estimated wetland impacts are 0.7 acres and there are no impacts to FEMA floodplains.

4.8 Tier 3 Conclusion and Refinement

The Tier 3 detailed evaluation of adjustments yielded a decision to recommend Option 3 as the preferred option to be advanced.

Subsequent to the Tier 3 analysis of the Options discussed above, a design refinement was made to Option 3. While not a completely independent alignment, the refinement was considered to be significant enough to revisit the earlier assessments. The feasibility and constructability for this refinement is essentially unchanged from the non-refined counterpart alignment. The refinement is discussed below.

4.8.1 Option 3 – Refined

This alignment option is identical to Option 3, "Mitchell Station: Technology Drive/Comp Plan," except that the western terminus was moved east to the south side of Technology Drive at the Eden Prairie City Center, and the location and bearing of the platform for Southwest Station was changed. The location of Mitchell Station corresponds to the present location of the Eden Prairie City Center offices and the potential extension of Hiawatha Avenue to Technology Drive.

The Tier 3 Analysis Refined matrix identifies that the primary difference between Option 3–Refined and Option 3 is the reduced length and the requirements for additional LRT ramp parking at Southwest Station. The refined option assumes that the LRT ramp parking at Southwest Station will be new structured parking spaces adjacent to the SouthWest Transit parking ramp. The alignment was also changed to facilitate a new station location just west of the existing parking structure. This resulted in the need for full acquisition of Culver's but it no longer requires a full acquisition of Anchor Bank.

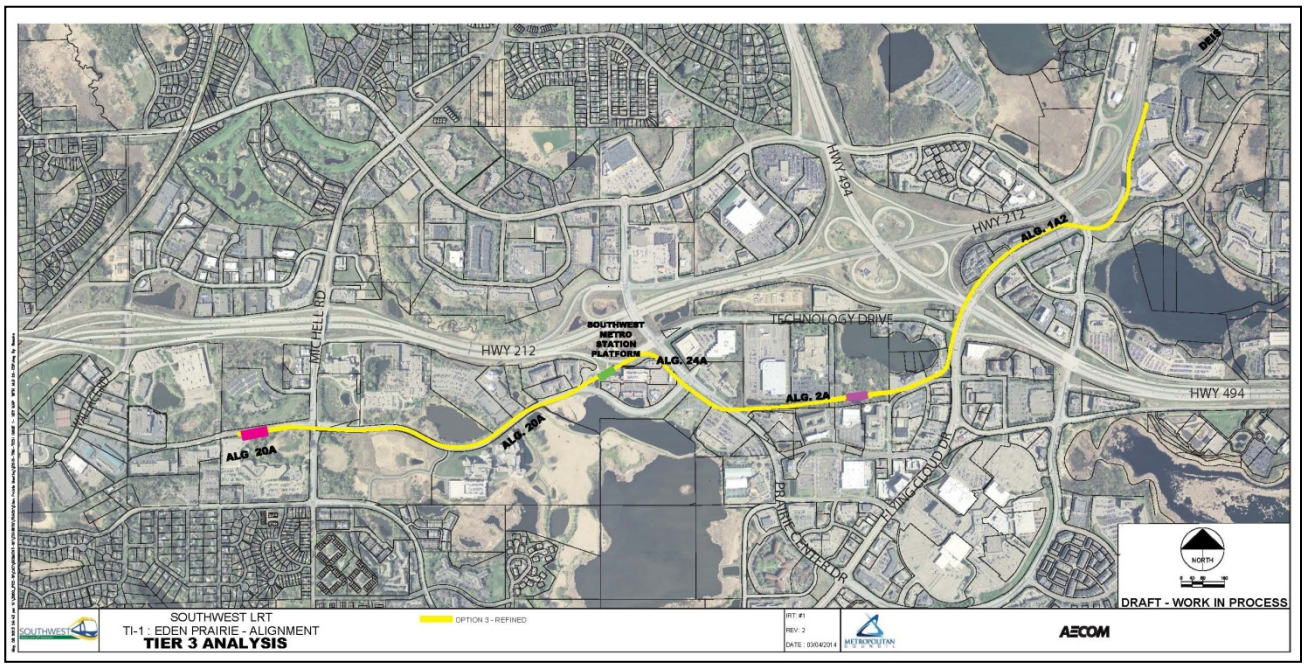


Figure 4: Eden Prairie Adjustment Option 3 Refined

More detailed illustrations of each adjustment, including conceptual Plan and Profile drawings, are shown in Appendix C. An evaluation between the LPA and Adjustment Option 3 Refined for the Eden Prairie alignments was completed and documented in Table 4.

Table 4: Eden Prairie Alignment Comparison of Refined Ajustments

	LPA	OPTION 3 - REFINED
	LPA – Mitchell Station Terminal	**Mitchell Station: Technology Drive/Comp Plan**
Alignment Description	DEIS 3A	20A-2A-1A2
Western Terminus Station	Mitchell Road	Mitchell Road at City Center
Capital Cost ($M)*	$230 - $235	$270 - $275
Cost Factors		
Total Number of Park and Ride Spaces (build)	**1450 ramp** **400 surface**	**1380 ramp** **160 surface**
Mitchell Station	800 spaces (400 ramp plus 400 surface)	900 ramp
Southwest Station	1325 ramp* (924 existing) (400 ramp)	450 ramp; assumes separate structure from SouthWest Transit (440 LRT spaces); assumes replacement of 10 existing parking spaces and 28 Kiss-and-Ride
Eden Prairie Town Center Station	650 ramp	160 surface
ROW Impacts***	1 full 16 partial	2 full 34 partial
Significant Utility Impacts	Dual box culverts west of Southwest Station Immediately adjacent to Eden Prairie Water Treatment Plant	Dual box culverts west of Southwest Station
Travel Time Differences		
Number of Signalized Intersections LRT runs through (existing and new)	3	7
Change in LRT Travel Time from DEIS LPA (minutes)	0**	3.4 minutes
LRT Length (miles) - from 1000' east of Valley View	2.6 miles	2.8 miles
Ridership Differences		
Change in Daily Ridership (YR 2030) from DEIS LPA	0	410
Change in Transit Dependent Riders (YR 2030) from DEIS LPA	0	90
Environmental Considerations		
Potential Wetland Impacts Potential FEMA Floodplain Impacts	+0.7 acres 0 CY	+2.2 acres 60 - 2000 CY
Other Factors		
Construction Impacts	• PCD/Tech Intersection - Tunnel • Technology Drive businesses	• Eden Road businesses • Flying Cloud Drive
Traffic Impacts (Yr 2030) (Unmitigated) (Intersections at LOS E/F due to LRT)	• Flying Cloud/Valley View	• Tech/Flying Cloud Drive • Mitchell Rd/Technology Dr
Walkability @ Town Center Station	Poor	Good
Walkability to City Center	Poor	Very Good
Existing Land Use - Within 1/2 Mile of Town Center Station	-	-
Population	697	1350

	LPA	OPTION 3 - REFINED
	LPA – Mitchell Station Terminal	Mitchell Station: Technology Drive/Comp Plan
Housing Units	474	841
Employment	4422	6195
Existing Land Use - Within 1/2 Mile of Mitchell Station		
Population	279	606
Housing Units	132	221
Employment	2442	2124

* Capital Costs are year of expenditure (YOE) and include allocated and unallocated contingencies, design costs and ROW.

** No LRT delay assumed at traffic signals for LPA in DEIS.

*** Include impacts for transportation improvements

Utility/Other 3rd Party Impacts

Watermain impacted by proposed SWLRT construction ranges in size from 6" to 24" diameter. Existing watermain material is primarily DIP with an exception at Mitchell Road where a 24" pre-stressed concrete cylinder pipe (PCCP) crosses the proposed alignment. Impact complexity includes simple fire hydrant relocation, service reconnection, reconstruction of alignment crossings (to install casing around the watermain), and relocation of watermain running parallel with the SWLRT alignment.

Sanitary Sewer impacted by proposed SWLRT construction ranges in size from 6" to 24" diameter. Existing sanitary sewer material is comprised primarily of PVC and RCP. Impact complexity includes manhole adjustment (for grade and curb line), service reconnection, and relocation of sanitary sewer running parallel with the SWLRT alignment. Storm Sewer impact includes twin 7-foot by 10-foot box culverts just west of Southwest Station.

Multiple private utilities, including overhead and underground electric distribution and transmission lines, gas, and communication lines, will be impacted by SWLRT construction. Impact complexity includes protect in place, adjust/reconstruct in place, and relocate.

ROW Impacts

Alignment west of Southwest Station

This alignment runs along the south side of Technology Drive and would require the partial acquisition of ROW from adjacent property owners. Mitchell Station is located within existing City-owned property at City Center and would require the construction of 900 structured parking spaces within the property. The alignment crosses Technology Drive at grade just west of Southwest Station. One property was identified for full acquisition and 16 properties were identified for partial acquisition for the alignment west of Southwest Station.

Alignment from Southwest Station to the east

The alignment at Southwest Station requires that 450 structured parking spaces be added (440 spaces for SWLRT). Similar to the LPA, this would result in impacts to the existing SouthWest Transit offices or adjacent properties in order to expand the existing parking structure. One property was identified for full acquisition and 18 properties were identified for partial acquisition for the alignment from Southwest Station to the east.

The combined ROW impacts for Option 3 – Refined from Mitchell Station to the end of Issue #1 to the east were two full acquisitions and 34 partial acquisitions. The ROW impacts take into account the traffic improvements needed on roadways and intersections that were not fully understood during the Tier 2 evaluation.

Environmental and Other Considerations

Alignment west of Southwest Station

The alignment along Technology Drive results in 2.2 acres of wetland impacts. A portion of the wetland impacts are to DNR water bodies including Purgatory Creek and the wetland (DNR ID 992W) in the southwest quadrant of Technology Drive and Mitchell Road.

There are also 60 cubic yards of floodplain impacts at Purgatory Creek for the pile-supported track. As described previously, the LRT will be on pile-supported structure through Purgatory Creek due to existing soils and to reduce floodplain impacts. The floodplain impacts are a result of the pile bents used to support the land bridge. The wetland impacts for the land bridge assume the entire width of the track, not just the pile bents. WCA does not require mitigation for bridge piers. However, due to the narrow separation between the bottom of the structure and the wetland, it was conservatively assumed that the entire track would require wetland mitigation. As described previously, the existing south Technology Drive trail is proposed on the south side of the track through Purgatory Creek. If the trail was placed at natural ground (elevation 822, below the existing floodplain elevation), there would be no floodplain impacts due to the trail. However, the City of Eden Prairie prefers that the trail be raised above the existing floodplain elevation. Thus, there would then be approximately 2000 cubic yards of floodplain impacts at Purgatory Creek for the trail. The trail embankment and proposed paving will result in 0.32 acres of wetland impacts that are included in the 2.2 acre total.

Alignment from Southwest Station to the east

This alignment adjustment results in no wetland or floodplain impacts east of Southwest Station. This is based on the assumption that there will be no permanent impacts to the detention pond behind Costco.

4.9 Summary and Conclusions

In summary, Option 3–Refined is the preferred adjustment to the LPA due to the following:

- Moved the Town Center Station to a more proximate area to the Eden Prairie Town Center, which is consistent with the City's Comp Plan.
- Moved the Mitchell Station off of Eaton's property to Eden Prairie City Center with better access to both TH 5 and TH 212.
- Adjusted the alignment through Southwest Station to better co-exist with SouthWest Transit's bus operations, taking away the track crossings across the ramps from TH 212 and creating cross-platform transfer areas between bus and rail.

Appendix A

TI-1 Eden Prairie Alignment – Tier 1 Review

FINAL DRAFT

TI-1 Eden Prairie Alignment - Tier 1 Review

Western Terminus to Prairie Center Drive (West)

Alignment	Adjustment Description	Decision	Rationale
DEIS 3A	Mitchell Road Station on west side of Mitchell Road and on the north side of the Eaton property. LRT follows the south side of Highway 212 to Southwest Station.	Retained	· DEIS / LPA Alignment
12A	North side running Technology from Wallace Road to future extension of Hiawatha Street then center running along Technology Drive to bus driveway at SW Station. At Purgatory Creek LRT rises to bridge over WB Technology Drive and remains aerial to cross the SW Station area just south of Southwest Transit Station parking deck (bisecting the property). The aerial structure continues over to the east side of Prairie Center Drive and connects to 21C.	Dismissed	· Substantial property impacts to Southwest Station businesses and Southwest condos; disrupts the functionality of the entire area · Required roadway widening on both sides of Technology Drive · Poor soils required deep excavation for removal and replacement of engineered fill (up to 45 feet) · Numerous utility relocations · Visual impacts for Southwest Station condos · Access impacts to Southwest Station Condos
5A	Same as 12A west-to Mitchell Road, then turns south and goes south through the private commercial property bounded by Anderson Lakes Parkway, Mitchell Road and Technology Drive, crosses Purgatory Creek on structure and passes between Flagship Corporate Center and Flagship Athletic Club facilities. Proposed station on the north side of Anderson Lakes Parkway. It can be aligned with either a north running or a center running alignment adjustment on Singletree Lane, crossing Prairie Center Drive on aerial structure.	Dismissed	· Environmental impacts and potential 4(f) across Purgatory Creek · Precluded having Southwest Station and moved the station to the north side of Anderson Lakes Parkway · Property owner south of Technology Drive not supportive of having the station on their property and sharing parking
20A	North side running of Technology Drive from Wallace Road to the future extension of Hiawatha Street where it crosses to the south side of Technology Drive at grade. It runs at-grade along the south side of Technology to the bus driveway at SW Station, then crosses Technology Drive at-grade to Southwest Station.	Retained	· Less roadway reconstruction along Technology Drive than center running (12A) · Less visual impact for the SW Station Condos that 12A · Less access impacts for the SW Station Condos that 12A
18A	Same as 20A west of Purgatory Creek, then turns south at Purgatory Creek to cross the creek on structure and passes between Flagship Corporate Center and Flagship Athletic Club facilities. It can be aligned with either a north running or center running alignment adjustment on Singletree Lane, crossing Prairie Center Drive on aerial structure. Includes several station options along Technology Drive.	Dismissed	· Environmental impacts and potential 4(f) across Purgatory Creek · Precluded having Southwest Station and moved the station to the west on Technology Drive · Property owner south of Technology Drive not supportive of having the station on their property and sharing parking · St. Andrews Church not supportive of a station and park-n-ride facility near their building · Requires closing the Bachman's / Watertower Apartments shared driveway
8A	Same as 20A west of St. Andrew Lutheran Church, then crosses Purgatory Creek to the south side of Technology Drive. Remains on the south side of Technology Drive adjacent to Purgatory Creek Recreational Area park to Prairie Center Drive (West).	Dismissed	· During the initial review, this adjustment followed the center line of Technology Drive, but was dismissed due to access impacts along Technology Drive, traffic impacts at the Prairie Center Drive / Technology Drive intersection and its undesirable track geometry. · Environmental impacts and potential 4(f) across Purgatory Creek pond · Impacts to Purgatory Creek Recreational Area park · Precluded having Southwest Station and moved the station to the west on Technology Drive
23A	North side running of Technology Drive from Wallace Road to the future extension of Hiawatha Street where it turns north through privately owned commercial property to the south side of Highway 212. Runs along the south side of TH 212 to SW Station similar to the DEIS.	Retained	· Achieves City of Eden Prairie desire for a Station with improved access to Highway 212 west while utilizing much of the DEIS alignment.
26A	East side running of Wallace Road from Technology Drive to TH 212, then it turns east to run along the south side to TH 212 to SW Station similar to the DEIS.	Retained	· Achieves City of Eden Prairie desire for a Station with improved access to Highway 212 west while utilizing much of the DEIS alignment. · Impacts property owner prefers this option over 23A. · Requires removal of one building on private property.

TI-1 Eden Prairie Alignment - Tier 1 Review

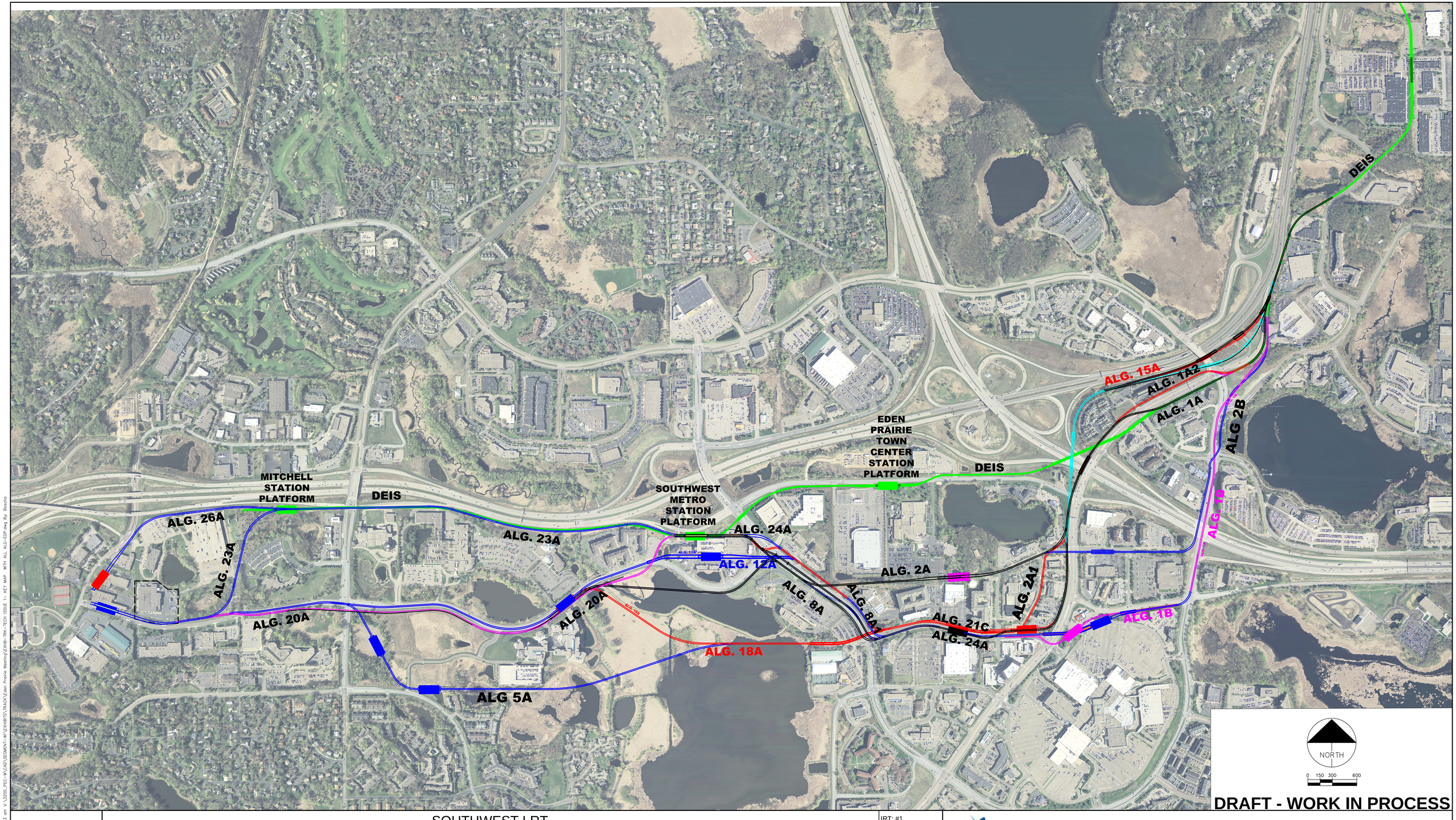
Prairie Center Drive (West) Between Southwest Station and Singletree Lane

DEIS 3A	From Southwest Station LRT follows the south side of Highway 212 eastbound off ramp and crosses under Prairie Center Drive to the south side of Technology Drive.	Retained	· DEIS / LPA Alignment
24A	Center running on Prairie Center Drive (West) with either below-grade or aerial crossing at Technology Drive.	Retained	· Minimum traffic impacts · Requires partial reconstruction of Prairie Center Drive (west) · During the initial review an at-grade option for crossing southbound Prairie Center Drive and Technology Drive at-grade was dismissed due to traffic impacts and LRT signal delay impacts at the Prairie Center Drive / Technology Drive intersection.
21C	East side running on Prairie Center Drive (West) with either below-grade or aerial crossing at Technology Drive. It either continues to the north side of Singletree Lane (21C) or crosses to the center of Singletree (24A).	Dismissed	· Property impacts to driveway impacts on the north side of Prairie Center Drive · Undesirable intersection and track configuration connecting to center running on Singletree (24A) · During the initial review an at-grade option for crossing Prairie Center Drive and Technology Drive at-grade was dismissed due to traffic impacts and LRT signal delay impacts at the Prairie Center Drive / Technology Drive intersection.
2A	West side running on Prairie Center Drive with an aerial crossing near the Flagship Corporate Center from the bluff to the east. Crossing at Technology Drive is aerial into SWT.	Retained	· Minimum traffic impacts
8A	West side running on Prairie Center Drive (West) with either at-grade or aerial crossing at Technology Drive and either at-grade or aerial crossing to the center of Singletree Lane to connect to 24A.	Retained	· Potential routing option to get to the west side of Prairie Center Drive and limit need for grade seperated crossing.
8A1	Center running on Prairie Center Drive (West) from center running on Singletree Lane (24A). Transitions to west side running on Prairie Center Drive at new signal between Singletree Lane and Technology Drive. At-grade crossing at Technology Drive.	Retained	· Potential routing option to get to the west side of Prairie Center Drive and limit need for grade seperated crossing.

Prairie Center Drive (West) to I-494

DEIS 3A	Follows the south side of Technology Drive crossing several private driveways. Diagonally crosses to the north side of Technology Drive at the eastern access to Rosemount Emerson. Follows north side of Technology Drive to I-494. Crosses I-494 on an aerial structure.	Retained	· DEIS / LPA Alignment
2A	Known as the "Comp Plan", this adjustment runs between Costco and Bachman's; and between Rosemount Emerson and Brunswick Zone, along Eden Road and continues north along the west side of Flying Cloud Drive. Station would be behind Brunswick Zone.	Retained	· Minimum traffic impacts · Alignment as shown in City of Eden Prairie's adopted Comprehensive Plan
21C	North side running along Singletree Lane and along the west side of Flying Cloud Drive. Station would be on Singletree Lane at Glen Lane.	Dismissed	· Maintains existing cross section of Singletree Lane compared to 24A · Access questions raised by Bachman's can be mitigated with full access from Prairie Center Drive (West); but access concerns of the shared access with Watertower Apartments can not be mitigated · Less compatible with Eden Prairie's Town Center walkability goals
24A	Center running along Singletree Lane, and crossing to the north side at Eden Road intersection and continuing on the west side of Flying Cloud Drive or continuing across Flying Cloud. Connects to either 1A or 1B. Station could be either in front of Brunswick or at Glen Lane	Retained	· More compatible with Eden Prairie's Town Center walkability goals than 21C but requires a reduced cross section from existing · Requires realignment of Glen Lane

TI-1 Eden Prairie Alignment - Tier 1 Review			
1B	Crossing Flying Cloud Drive below-grade, and runs on the south side of West 78th Street and the center of Prairie Center Drive (East). Below-grade station option on east side of Flying Cloud Drive	Dismissed	· Significantly higher LRT signal delays due to traffic and traffic signals on Prairie Center Drive (east) · Traffic impacts along Prairie Center Drive · Property impacts · Below-grade station · The Eden Prairie Center (Mall) ownership not supportive of having the station on their property and sharing parking
2A1	Center running or north side running Singletree from Prairie Center Drive (West) to an alignment following Glen Lane. Connects into west side running on Flying Cloud Drive north of Eden Road.	Dismissed	· Glen Lane only access for businesses along Flying Cloud Drive - would impact all of those · Insufficient right-of-way on Glen Lane for LRT, roadway, and pedestrian facilities. · Limits station location options to just in front of Brunswick
2B	From 2A between Prairie Center Drive (West) and Flying Cloud Drive crosses Flying Cloud Drive at-grade and runs along the south side of Leona Rd and along the west side Prairie Center Drive (East).	Dismissed	· Significantly higher LRT signal delays due to traffic and traffic signals on Flying Cloud Drive and Prairie Center Drive (East) · Impacts to traffic crossing Flying Cloud Drive and along Prairie Center Drive. · Property impacts
I-494 to 1000 Feet North of Valley View Road			
DEIS 3A	From Technology Drive crosses I-494, Flying Cloud Drive, and Viking Drive on a single aerial structure. To the north of VIking Drives follows the east side of Flying Cloud Drive with an at-grade crossing of Valley View Road.	Retained	· DEIS / LPA Alignment
1A	From I-494 runs on the north side of Flying Cloud Drive and crosses at-grade to the south side at Viking Drive. Valley View Road crossing is either at-grade or aerial.	Retained	· More favorable crossing of I-494 than DEIS alignment (shorter bridge) · North side of Flying Cloud Drive least imp active to utilities and traffic
1A2	From I-494 runs on the north side of Flying Cloud Drive and crosses aerial at the intersection of Valley View Road and Flying Cloud Drive to the south side of the TH 212 entrance ramp.	Retained	· More favorable crossing of I-494 than DEIS alignment (shorter bridge) · North side of Flying Cloud Drive least imp active to utilities and traffic · Less traffic impacts than 1A · Less LRT signal delay than 1A
1B	Runs along the center of Prairie Center Drive (East) and crosses Valley View Road at-grade at the intersection with Prairie Center Drive (East) and Valley View Road (East).	Dismissed	· Significantly higher LRT signal delays due to traffic and traffic signals on Prairie Center Drive (East) · Traffic impacts along Prairie Center Drive · Property impacts · Vibration impact concerns at Fox 9 Television
2B	Runs along the west side Prairie Center Drive (East), crosses to the east side at Viking Drive. It crosses Valley View Road at-grade.	Dismissed	· Significantly higher LRT signal delays due to traffic and traffic signals on Prairie Center Drive (East) · Traffic impacts along Prairie Center Drive · Property impacts · Need to lengthen the existing I-494 bridges over Prairie Center Drive (East)
15A	From I-494 follows the I-494 ramp to EB TH-212 and runs to the north of the Residence Inn and Hampton Inn along the TH 212 right of way. Crosses beneath the Valley View overpass of TH 212 and beneath the ramps.	Dismissed	· Need to lengthen the existing Valley View Road Bridge · Extensive retaining walls needed along TH 212 · Potentially significant traffic impacts to the Valley View Road and TH 212 interchange during construction



SOUTHWEST LRT
TI-1 : EDEN PRAIRIE - ALIGNMENT
TIER 1 ANALYSIS

IRT: #1
REV: 2
DATE : 05/07/2013

May, 07 2013 07:43 am V:\2000_PEC-W\047\SEGMENT-W\EXHIBITS\TRACK\Eden Prairie Meeting\EXHB-TRK-TECH ISSUE 1- KEY MAP WITH ALG-EDP.dwg By: Boscha

Appendix B

TI-1 Eden Prairie Alignment – Tier 2 Review

FINAL DRAFT

TI-1 Eden Prairie Alignment - Tier 2 Review

Western Terminus to Prairie Center Drive (West)

Adjustment	Adjustment Description	Status	Rationale
DEIS 3A	Mitchell Road Station on west side of Mitchell Road and on the north side of the Eaton property. LRT follows the south side of Highway 212 to Southwest Station.	Dismissed	· Noise, vibration, and visual concerns at Southwest Condos · Impacts to private property (right-of-way acquisition) · End of line station at Mitchell Road is difficult to access to/from the west on Highway 212 which is where majority of Park and Ride trips are from. · Modifications required to the TH 5 / 212 ramps at Mitchell Road · 20A preferred by stakeholders through committee process.
20A	End of line station at Eden Prairie City Center near future Hiawatha extension. It runs at-grade along the south side of Technology to the bus driveway at SW Station, then crosses Technology Drive at-grade to Southwest Station.	Retained	· Less impacts to SW Station condos (noise, vibration and right-of-way) than 23A or 26A · Achieves City of Eden Prairie desire for a Station with improved access to Highway 212 west · LRT travel times and ridership not substantially different than other alternative segments · Potential floodplain concerns · Through project development process, end of line station was moved from Wallace Road to Eden Prairie City Center. This location was preferred by the City.
23A	North side running of Technology Drive from Wallace Road to the future extension of Hiawatha Street where it turns north through privately owned commercial property to the south side of Highway 212. Runs along the south side of TH 212 to SW Station similar to the DEIS.	Retained	· Noise, vibration, and visual concerns to Southwest Condos · Impacts to private property (Bisects Eaton Property) · Modifications required to the TH 5 / 212 ramps at Mitchell Road
26A	East side running of Wallace Road from Technology Drive to TH 212, then it turns east to run along the south side to TH 212 to SW Station similar to the DEIS.	Dismissed	· Achieves City of Eden Prairie desire for a Station with improved access to Highway 212 west while utilizing much of the DEIS alignment. · Requires removal of one building on private property

Prairie Center Drive (West) Between Southwest Station and Singletree Lane

DEIS 3A	From Southwest Station LRT follows the south side of Highway 212 eastbound off ramp and crosses under Prairie Center Drive to the south side of Technology Drive.	Dismissed	· Located beyond the core of the City's Town Center area · Does not adequately serve City identified areas of potential growth · Limited TOD opportunities · Generates least number of LRT projected riders · Limited pedestrian connectivity to Eden Prairie Center · Conflicts with power transmission lines · Significant construction impacts due to tunnel construction Furthermore, to address process, the City made the following DEIS comments which prompted looking at adjustments to the LPA alignment: · "The City of Eden Prairie continues to support …the preferred alternative as it serves the Major Center Area and Golden Triangle Area and provides the best opportunities for development, redevelopment, and economic development…this alternative could be further improved in these respects by moving the Town Center Station closer to the Town Center or the Eden Prairie Center." · "In order to better serve the Eden Prairie Town Center and Eden Prairie Center, the feasibility of a more centrally located and walkable Town Center Station needs to be evaluated during the Preliminary Engineering process."
24A	Center running on Prairie Center Drive (West) south of Bachman's with aerial crossing of SB Prairie Center Drive to the West side near the park and aerial crossing of Technology Drive into the SW Station area.	Retained	· More temporary traffic impacts during construction than 2A · More property impacts than 2A · Requires partial reconstruction of Prairie Center Drive (West) · Below grade separation at Technology not feasible to do high ground water level · 2A preferred by stakeholders and public through committee process

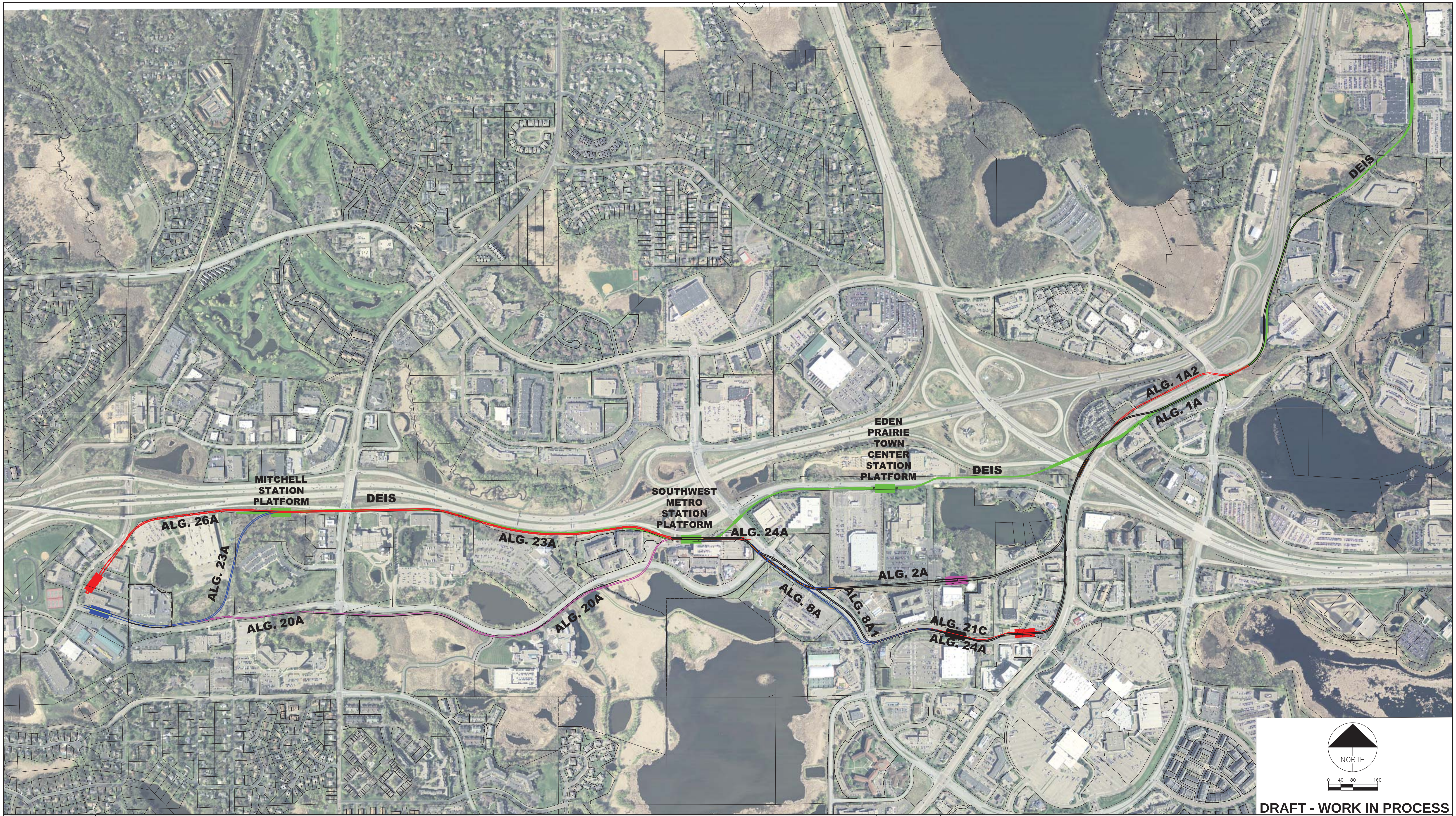
TI-1 Eden Prairie Alignment - Tier 2 Review

2A	West side running on Prairie Center Drive with an aerial crossing near the Flagship Corporate Center from the bluff to the east. Crossing at Technology Drive is aerial into SWT.	Retained	· Minimal traffic impacts · Less property impacts than 24A · Less roadway impacts than 24A · LRT travel times and ridership not substantially different than other alternative segments · 2A preferred by stakeholders and public through committee process
8A	West side running on Prairie Center Drive (West) with either at-grade or aerial crossing at Technology Drive and either at-grade or aerial crossing to the center of Singletree Lane to connect to 24A.	Dismissed	· Significant traffic and LRT signal delay impacts crossing Singletree/Prairie Center Drive intersection at-grade · Dismissed in favor of center running on Prairie Center Drive (8A1) · Driveway impacts to Flagship
	Center running on Prairie Center Drive (West) from center running on Singletree Lane (24A). Transitions to west side running on Prairie Center Drive at new signal between Singletree Lane and Technology Drive. At-grade crossing at Technology Drive.	Dismissed	· Requires partial reconstruction of Prairie Center Drive (West) · Significant combined traffic impacts to Prairie Center Drive due to the crossings at Singletree, at the new signal, and at Technology Drive.
	Prairie Center Drive (West) to I-494		
DEIS 3A	Follows the south side of Technology Drive crossing several private driveways. Diagonally crosses to the north side of Technology Drive at the eastern access to Rosemount Emerson. Follows north side of Technology Drive to I-494. Crosses I-494 on an aerial structure.	Dismissed	· Located beyond the core of the City's Town Center area · Does not adequately serve City identified areas of potential growth · Limited TOD opportunities · Generates least number of LRT projected riders · Limited pedestrian connectivity to Eden Prairie Center · Conflicts with power transmission lines · Significant construction impacts due to tunnel construction Furthermore, to address process, the City made the following DEIS comments which prompted looking at adjustments to the LPA alignment: · "The City of Eden Prairie continues to support …the preferred alternative as it serves the Major Center Area and Golden Triangle Area and provides the best opportunities for development, redevelopment, and economic development…this alternative could be further improved in these respects by moving the Town Center Station closer to the Town Center or the Eden Prairie Center." · "In order to better serve the Eden Prairie Town Center and Eden Prairie Center, the feasibility of a more centrally located and walkable Town Center Station needs to be evaluated during the Preliminary Engineering process."
2A	Known as the "Comp Plan", this adjustment runs between Costco and Bachman's on the bluff; and between Rosemount Emerson and Brunswick Zone, along Eden Road and continues north along the west side of Flying Cloud Drive.	Retained	· Minimum traffic impacts · Less property impacts than 24A · Less roadway impacts than 24A · Compatible with Eden Prairie's Town Center walkability goals · LRT travel times and ridership not substantially different than other alternative segments · 2A preferred by stakeholders and public through committee process
24A	Center running along Singletree Lane, and either crossing to the north side at Eden Road intersection and continuing on the west side of Flying Cloud Drive or continuing across Flying Cloud to connect to 1B.	Retained	· More compatible with Eden Prairie's Town Center walkability goals than 2A but requires a reduced cross section than existing · Access concerns to businesses during construction · Requires higher number of property impacts than 2A · Requires reconstruction of Singletree Lane · 2A preferred by stakeholders and public through committee process

TI-1 Eden Prairie Alignment - Tier 2 Review

I-494 to 1000 Feet North of Valley View Road

DEIS 3A	From Technology Drive crosses I-494, Flying Cloud Drive, and Viking Drive on a single aerial structure. To the north of VIking Drives follows the east side of Flying Cloud Drive with an at-grade crossing of Valley View Road.	Dismissed	· Significant structure over I-494 and Flying Cloud Drive · Aerial structure has high visual impact to businesses · More traffic impacts at Valley View Road than 1A2 · More LRT signal delay at Valley View Road than 1A2 · Conflicts with power transmission lines
1A	From I-494 runs on the north side of Flying Cloud Drive and crosses at-grade to the south side at Viking Drive. Valley View Road crossing is either at-grade or aerial.	Dismissed	· More traffic impacts than 1A2 · More LRT signal delay than 1A2 · Aerial structure has high visual impact to businesses
1A2	From I-494 runs on the north side of Flying Cloud Drive and crosses aerial at the intersection of Valley View Road and Flying Cloud Drive to the south side of the TH 212 entrance ramp.	Retained	· Less traffic impacts than 1A · Less LRT signal delay than 1A · Aerial structural has less visual impacts · LRT ridership not substantially different than other alternative segments · Noise and vibration concerns to existing businesses (Residence Inn and other hotels)



DRAFT - WORK IN PROCESS

SOUTHWEST LRT
TI-1 : EDEN PRAIRIE - ALIGNMENT
TIER 2 ANALYSIS

IRT: #1
REV: 1
DATE : 05/07/2013

AECOM

Appendix C

Traffic Memorandums

- TI-1 Traffic and Park-and-Ride Summary
- TH 5/TH212 Freeway Analysis

Memorandum

DATE: June 18, 2014

TO: Jim Alexander, Director of Design and Engineering

CC: Kim Proia, PEC West Project Manager
Don Demers, PEC West Civil Lead

FROM: Pat Corkle, PEC West Traffic Lead

SUBJECT: TI – 1 Traffic and Park-and-Ride Summary

1.0 INTRODUCTION

This technical memorandum summarizes the traffic operations modeling completed as part of the resolution of Technical Issue (TI) #1 (Eden Prairie Alignment). This technical issue area and the overall Southwest LRT alignment are shown in **Figure 1**.

The traffic modeling was conducted to support the development of the Southwest LRT design and to assist in defining the scope of the project for the Municipal Consent plans. This included identification of traffic mitigation measures planned to be part of the project. For Technical Issue 1, the following traffic analyses were completed and are summarized in separate sections of the memorandum:

- Initial Traffic Evaluation of Alignment Adjustments
- Alignment Adjustment Options for Detail Traffic Evaluation
- Park-and-Ride Traffic Evaluation
    - Eden Prairie Town Center
    - SW Station
    - Mitchell Road

The following sections document the traffic analysis assumptions, results, and findings for each analysis area.

2.0 INITIAL TRAFFIC EVALUATION

The initial preliminary traffic analysis was completed for many alignment adjustments and sixteen of them are included in this document. These alignment adjustments are shown in **Figure 2**, although a few of the adjustments analyzed have very minor differences from the adjustments shown on the figures. The traffic evaluation was completed to determine if the alignment adjustments had any fatal flaws from a traffic perspective, determine if significant improvements were needed to mitigate the build condition, provide comparison between the adjustments or provide feedback into the process.

Many of the traffic evaluations were completed in preliminary phases in the spring of 2013 and results are based on the information known at that time.

The analysis included a segment by segment approach to assist defining reasonable adjustments. A review of LRT at-grade crossings with roadways was completed to determine any impacts and potential mitigation strategies. At signalized intersections, the existing timing was reviewed to determine the compatibility with LRT and a high-level Synchro/Sim-Traffic analysis was completed. Each of the initial alignment adjustments represent specific geographic locations within TI-#1, summarized below.

Index of Initial Alignment Adjustments

2.1 Adjustment 1A (along Flying Cloud Drive, east end of TI#1)
2.2 Adjustment 1A2 (along Flying Cloud Drive, east end of TI#1)
2.3 Adjustment 1B (along Prairie Center Drive and W 78th St by Eden Prairie Center)
2.4 Adjustment 2B (along Prairie Center Drive and Leona Road)
2.5 Adjustment 15A (along TH 212, east end of TI#1)
2.6 Adjustment 2A (along Eden Road in Town Center area)
2.7 Adjustment 2A1/21C (along Glen Road and northside of Singletree Lane in Town Center area)
2.8 Adjustment 24A (along Singletree Lane in Town Center area)
2.9 Adjustment 8A (along westside of Prairie Center Drive between Singletree Lane and SW Station)
2.10 Adjustment 8A1 (center of Prairie Center Drive between Singletree Lane and SW Station)
2.11 Adjustment 18A (across wetland/pond complex to Technology Drive)
2.12 Adjustment 5A (across wetland/pond complex south of Optum Office Campus)
2.13 Adjustment 12A (southside of SW Station into center of Technology Drive)
2.14 Adjustment 20A (along southside of Technology Drive)
2.15 Adjustment 23A (along southside of TH 212)
2.16 Adjustment 26A (along southside of TH 212 to Wallace Road)

The assumptions utilized for the traffic modeling are summarized in the following sections. A number of assumptions regarding operations, design, and scope of the project have changed since this modeling was completed in March-July 2013, such as LRT headways being modified from 7.5 to 10 minutes in each direction. The design of the project has continued to be refined since the Issue Resolution Team (IRT) process, and therefore the exhibits or alignments referenced in the following sections are shown only as the basis for the simulation modeling and do not necessarily represent the current scope or design of the Southwest LRT project. All changes in project assumptions will be reflected in future modeling of the project, and will be documented as part of the Final Environmental Impact Statement for the project.

2.1 Adjustment 1A

2.1.1 Description

The alignment adjustment on the north end starts on the eastside of the Valley View Road/TH 212 South Ramp intersection shown in **Figure 2**. It would have an at-grade crossing at the intersection of Valley View Road/TH 212 South Ramp. The alignment would shift from the east to westside at the Flying Cloud Drive/Viking Drive intersection. This would be a diagonal at-grade crossing. The alignment would continue on the westside of Flying Cloud Drive passing by, but not directly impacting the I-494 North Ramp, and having at-grade crossings on the westside of Flying Cloud Drive at the Technology Drive/I-494 South Ramp and Eden Road/Leona Road intersections.

2.1.2 Assumptions

2.1.2.1 LRT Operations

- Automatic gates were assumed for the at-grade LRT crossings.
- The traffic signals along this alignment were assumed to operate in the following operations for analysis:
  - Valley View Road/TH 212 South Ramp was assumed to be in priority under all Build scenarios.
  - Flying Cloud Drive/Viking Drive (new signal) was assumed to be in preemption under all Build scenarios.
  - Flying Cloud/Technology Drive was assumed to in preemption under all Build scenarios.
  - Flying Cloud/Eden Road/Leona Road was assumed to in preemption under all Build scenarios.
- LRT operating speeds would vary significantly from 15 to 45 miles per hour (mph). The diagonal crossing at Viking Drive would be at 15 mph, while the stretch between Leona Road and Viking Drive could be 45 mph.
- All light rail vehicles assumed to include a 3-car consist, for a total length of approximately 290 feet.
- Headways of 7.5 minutes per direction were assumed during peak periods.
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.

2.1.2.2 Traffic Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing volume counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.1.2.3 Roadway Geometrics

- Flying Cloud Drive is a four-lane divided roadway. The four intersections were initially evaluated based on their existing traffic control and lane configurations, except Viking Drive which would require a traffic signal due to the project.

2.1.3 Findings

The preliminary evaluation results are shown below:

Valley View Road/TH 212 South Ramp

- Restrict Right Turn on Red (RTOR) for northbound Valley View Road and eastbound Flying Cloud Drive movements
- LRT compatible with eastbound Flying Cloud Drive thru and left-turn movement
- LRT and vehicles could operate acceptably, if accepting LRT delay
- LRT preemption should not be considered at the intersection, so LRT could expect on average 30-35 seconds of delay time during the pm peak hours

Flying Cloud Drive/Viking Drive

- New traffic signal
  - LRT would basically create an all-red phase for vehicles during the crossing. The duration of the crossing will be longer based on the slower LRT speeds into and out of the intersection.
- LRT and vehicles could operate acceptably
  - LRT preemption (modified; LRT detection west of Valley View Road and east of Technology Drive) should be considered at this intersection

Flying Cloud Drive/Technology Drive/I-494 South Ramp

- No RTOR for southbound Flying Cloud Drive and eastbound Technology Drive movements
- LRT would be compatible with the Flying Cloud Drive thru traffic (main movements)
- Traffic operations could be at unacceptable conditions, but mitigation is feasible such as adding an eastbound Technology Drive left-turn lane and/or a 2nd northbound Flying Cloud Drive left-turn lane
- LRT preemption would be possible, but will need mitigation improvements

Flying Cloud Drive/Eden Road

- No RTOR for southbound Flying Cloud Drive and eastbound Eden Road movements
- LRT would be compatible with the Flying Cloud Drive thru traffic (main movements)
- LRT and traffic operate acceptable
- LRT preemption is possible, but improvements may be needed, such as an eastbound Eden Road right-turn lane

2.1.4 Conclusions

The preliminary traffic evaluation shows this alignment is feasible with LRT operating in preemption with mitigation at Flying Cloud Drive/Technology Drive, although the Valley View Road/TH 212 South Ramp intersection should operate in priority.

2.2 Adjustment 1A2

2.2.1 Description

This alignment would cross diagonally from the east to west side of Flying Cloud Drive at the Valley View Road/TH 212 South Ramp intersection shown in **Figure 2**. It would have an at-grade crossing with Flying Cloud Drive/Viking Drive intersection on the west side. The remainder of the alignment would follow Adjustment 1A.

2.2.2 Assumptions

2.2.2.1 LRT Operations

- Automatic flashers and gates were assumed for all the at-grade crossings
- The traffic signals along this alignment were assumed to operate in the following operations for analysis:
  - Valley View Road/TH 212 South Ramp was assumed to be in preemption with the diagonal crossing under all Build scenarios.
  - Flying Cloud Drive/Viking Drive (new signal) was assumed to be in preemption under all Build scenarios.
  - .Flying Cloud/Technology Drive was assumed to be in preemption under all Build scenarios.
  - Flying Cloud/Eden Road/Leona Road was assumed to be in preemption under all Build scenarios.
- LRT operating speeds would vary significantly from 15 to 45 miles per hour (mph). The diagonal crossing at Valley View Drive would be at 15 mph, while the stretch between Leona Road and Valley View could be 45 mph.
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.2.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.2.2.3 Roadway Geometrics

- Flying Cloud Drive is a four-lane divided roadway. The four intersections were initially evaluated based on their existing traffic control and lane configurations, except Viking Drive which would require a traffic signal due to the project.

2.2.3 Findings

The preliminary evaluation results are shown below:

Valley View Road/TH 212 South Ramp

- LRT would basically create an all-red phase for vehicles during the crossing. The duration of the crossing will be longer based on the slower speeds into and out of the intersection. Only the two lowest volume movements could be accommodated during the crossing
- LRT and traffic would not operate acceptably with an at-grade crossing under any LRT operation and would expect long vehicle or LRT delays (if in priority). This alignment could only be a grade-separated crossing, if considered further.

Flying Cloud Drive/Viking Drive

- New traffic signal
- LRT would be compatible with the Flying Cloud Drive thru traffic (main movements)
- LRT and vehicles could operate acceptably
- LRT preemption could be considered at this intersection

2.2.4 Conclusions

A diagonal LRT movement at-grade through the Flying Cloud Drive/Valley View Road intersection would result in unacceptable operations for vehicle and long delays for LRT if in priority. The only mitigation improvement would be a grade-separation at this location.

2.3 Adjustment 1B

2.3.1 Description

The alignment would cross into the center of Prairie Center Drive at Valley View Road shown in **Figure 2**. At this point, it would remain center-running through the intersections of Viking Drive, I-494 North Ramp, I-494 South Ramp and then turn to the west at W78th Street. The alignment would be on the southside of W78th Street and eventually cross Flying Cloud Drive.

2.3.2 Assumptions

2.3.2.1 LRT Operations

- Automatic flashers and gates were assumed for all the at-grade crossings
- For this analysis, all traffic signals along this alignment adjustment and the comparison to Adjustment 1A were assumed to operate in “run with traffic signal” operation (except at Flying Cloud Drive/Viking Drive which would be preempted)
- LRT operating speeds would vary significantly from 15 to 45 miles per hour (mph) depending on the location
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.3.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the general area based on the Eden Prairie Comprehensive Plan.

2.3.2.3 Roadway Geometrics

- Prairie Center Drive is a four-lane divided roadway with traffic signals at the main intersections. For the purposes of this analysis, the existing roadway and traffic control were assumed.

2.3.3 Findings

The preliminary evaluation results are shown below:

- The alignment crosses six intersections. Three of these intersections (Prairie Center Drive/Valley View Road, Prairie Center Drive/W 78th Street and Flying Cloud Drive/Singletree Lane) have potential impacts to traffic delays and LRT travel times. While an intersection by intersection evaluation was completed, the main evaluation was a comparison in the LRT delays caused by traffic signal along Alignment Adjustments 1A and 1B. The assumption is that LRT would "run with the traffic signal", except under Adjustment 1A at Viking Drive where "modified" preemption would be used resulting in no to very minimal delay to LRT at this intersection.

Table 2.3.1: Estimate of LRT Travel Time Delays at Traffic Signals

Adjustment 1A	**Adjustment 1B**
Valley View – 35s	Valley View – 60s
Viking* – 0s	Viking – 25s
Technology – 15s	I-494 North Ramp – 5s
Eden/Leona – 10s	I-494 South Ramp – 15s
	W78th – 55s
	Flying Cloud - 45s
Total Delay – 60s	**Total Delay – 205s**

*Preemption (while described as modified would result in no additional delay to LRT)

2.3.4 Conclusions

LRT would be delayed by an extra 2.5 minutes at traffic signals on Alignment Adjustment 1B when compared to Alignment Adjustment 1A.

2.4 Adjustment 2B

2.4.1 Description

This adjustment was reviewed from a planning-level traffic evaluation (**alignment not shown**). The alignment follows Prairie Center Drive on the eastside across Valley View Road, makes a diagonal crossing from the east to the west side of Prairie Center Drive at Viking Drive. This alignment adjustment makes a 90 degree turn into the center of Eden Road/Leona Road and would have an at-grade crossing of Flying Cloud Drive. The alignment has three main challenging intersection crossings: Prairie Center Drive/Valley View Road eastside, diagonal crossing of Viking Drive and Flying Cloud Drive/Leona Road/Eden Road.

2.4.2 Assumptions

No detailed analysis was completed. However, a basic planning-level analysis and review of the existing timing plans were completed to determine if the intersection has the ability to accommodate the LRT without significant impacts to traffic or LRT travel times.

2.4.3 Conclusions

If further detailed traffic analysis were completed, the likely finding would have been the at-grade diagonal crossing at the Prairie Center Drive/Viking Drive intersection would result in unacceptable operations. Therefore, a grade-separation would have been needed. Anticipate a traffic analysis of an at-grade crossing of Prairie Center Drive/Eden Road/Leona Road would not allow for preemption and result in long delays for LRT or perhaps the need for a grade-separation.

2.5 Adjustment 15A

2.5.1 Description

This alignment adjustment was reviewed from a planning-level traffic evaluation as shown in **Figure 2**. The LRT would be grade-separated at the Flying Cloud Drive/Valley View Road/TH 212 South Ramp intersection continuing along the southside of TH 212 right of way. It would cross-over I-494 and then continue on a similar Alignment as Adjustments 1A and 1A2 starting at Technology Drive.

2.5.2 Assumptions

No detailed analysis was completed. However, a basic planning level analysis and review of the existing timing plans were completed to determine if the intersection has the ability to accommodate the LRT without significant impacts to traffic or LRT travel times.

2.5.3 Conclusions

The only at-grade crossing is Flying Cloud Drive/Technology Drive intersection and very similar to Alignment Adjustments 1A and 1A2. The crossing at this location would require mitigation, such as an eastbound Technology Drive left-turn lane and/or a second northbound Flying Cloud Drive left-turn lane.

2.6 Adjustment 2A

2.6.1 Description

The alignment has two intersection crossings (Eden Road/Glen Road and Eden Road/Redstone west access, and a potential future crossing at North-South Main Street) as shown in **Figure 2**. The first intersection crossing is in close proximity to Flying Cloud Drive. The alignment west of the Town Center Station would not have any at-grade crossings and result in grade-separations over Prairie Center Drive and Technology Drive.

2.6.2 Assumptions

2.6.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- Two new traffic signals at Eden Road at Glen Road and Eden Road (Redstone west access) would be included with the project. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings.
- LRT operating speeds would be 30 miles per hour (mph)
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.6.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.6.2.3 Roadway Geometrics

- Eden Road is currently a two-lane undivided roadway. With the project, the lane configuration would be changes to a two-lane with left-turn lanes and right-turn lanes for movements across the LRT tracks.

2.6.3 Findings

The preliminary evaluation results are shown below:

Flying Cloud Drive/Eden Road/Leona Road

- No direct impacts to intersection
- To minimize the opportunity for the eastbound Eden Road traffic approaching Flying Cloud Drive blocking the Eden Road/Glen Road intersection, three eastbound lanes of approach should be provided at Flying Cloud Drive with storage space maximized.

Eden Road/Glen Road/Redstone east driveway

- New traffic signal
- Restrict Right Turn on Red (RTOR) for westbound Eden Road and southbound driveway movement
- LRT would be compatible with the Eden Road thru traffic (main movements)
- LRT and vehicles could operate acceptably
- LRT preemption is possible and desired
- Intersection spacing between this intersection and Flying Cloud Drive would be approximately 350 feet. This is typically closer than desired for signalized intersections but could be mitigated by providing a left-turn lane, a thru lane and a right turn lane for the westbound approach at Glen Road and similar lane configuration on the eastbound approach at Flying Cloud Drive.

Eden Road/Eden Road/Redstone west driveway

- New traffic signal
- Restrict Right Turn on Red (RTOR) for westbound Eden Road and southbound driveway movement
- LRT would be compatible with the Eden Road thru traffic (main movements)
- LRT and vehicles could operate acceptably
- LRT preemption is possible and desired

Eden Road/Future Major North-South

- New traffic signal with North/South Roadway
- Restrict Right Turn on Red (RTOR) for westbound Eden Road
- LRT would be compatible with the Eden thru traffic (main movements)
- LRT and vehicles could operate acceptably
- LRT preemption is possible and desired

2.6.4 Conclusions

This alignment is feasible, if three lanes of approach are provided on Eden Road for the westbound approach to Glen Road and the eastbound approach to Flying Cloud Drive. Traffic signal would be provided for any movements across the LRT tracks.

2.7 Adjustment 2A1/21C

2.7.1 Description

This adjustment was reviewed from a planning-level traffic evaluation. The LRT would be at-grade following the 2A Adjustment, but turning south at Glen Road (2A1; **Figure 2**) instead of following Eden Road. At the Glen Road/Singletree Lane intersection, LRT would turn west and run along the northside of Singletree Lane (21C; **Figure 2**). The alignment would have several crossings with roadways and driveways.

2.7.2 Assumptions

No detailed analysis was completed. However, a basic planning-level analysis and review of the existing timing plans were completed to determine if the intersection has the ability to accommodate the LRT without significant impacts to traffic or LRT travel times.

2.7.3 Conclusions

The Alignment Adjustment has several intersection and driveway crossings. Most of these crossings are with minor roadways or driveways and would be able to operate under acceptable levels for traffic and LRT. One traffic requirement would be the inclusion of several traffic signals with eastbound left-turn lanes and westbound right turn-lanes across the LRT tracks.

2.8 Adjustment 24A

2.8.1 Description

The alignment has several crossings of driveways and roadways as shown in **Figure 2**. This alignment limits are from Flying Cloud Drive along Singletree Lane to Southwest Station along Prairie Center Drive. The alignment in mainly center running on Singletree Lane. LRT enters on the east end at Eden Road and continues in the middle of Prairie Center Drive where it becomes grade-separated at Technology Drive and enters the northside of Southwest Station.

2.8.2 Assumptions

2.8.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- Three new traffic signals at Singletree Lane/Eden Road, Singletree Lane/Wal-Mart and Prairie Center Drive/Bachman's/Flagship would be included with the project. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings, except at Prairie Center Drive and Technology Drive crossings.
- LRT operating speeds would be 30 to 35 miles per hour (mph)
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.8.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the general area based on the Eden Prairie Comprehensive Plan.

2.8.2.3 Roadway Geometrics

- Singletree Lane is a four-lane undivided roadway. The build project would result in a two-lane divided roadway with left-turn lanes. Prairie Center Drive is a four-

lane divided roadway. No modifications are expected, except to accommodate LRT and provide a new signalized intersection at Bachman's/Flagship access.

2.8.3 Findings

The preliminary evaluation results are shown below:

Singletree Lane/Eden Road

- New traffic signal
- Restrict Right Turn on Red (RTOR) for westbound Singletree and southbound Eden Road movement
- LRT would be compatible with the Singletree Lane eastbound thru traffic only
- LRT and traffic could operate acceptably
  - Does increase westbound traffic travel times
- LRT preemption is possible and desired
- Intersection spacing between this intersection and Flying Cloud Drive is closer than desired for signalized intersections, but did not observe any queuing issues from the modeling/analysis.
- Would desire a southbound Eden Road right-turn lane. This may not be possible without property/parking impacts

Singletree Lane/Wal-Mart and Brunswick access

- New traffic signal
- Singletree Lane would be a three-lane section (one thru lane in each direction and left-turn lanes)
- LRT would be compatible with the Singletree Lane traffic (main movements)
- LRT and traffic could operate acceptably
- LRT preemption is possible and desired

Singletree Lane/Bachman's and Jake's Access

- Evaluation was completed to either provide a traffic signal or provide right in/right out at this location and a new full access intersection for Bachman's onto Prairie Center Drive
- Singletree Lane would be a three-lane section (one thru lane in each direction and left-turn lanes)
- Main concern is that this intersection would need to be signalized if it remained a full access intersection. This intersection would be in close proximity (350 feet) to both the Prairie Center Drive intersection and the Wal-Mart/Brunswick intersection. From a preliminary evaluation, the eastbound queue has a high probability to spill back into Prairie Center Drive which is not desirable.
- If not a full signalized intersection, it would be converted to a right-in/right-out only access with a full access intersection along Prairie Center Drive for Bachman's.

Prairie Center Drive/Singletree Lane

- LRT would be compatible with the Prairie Center Drive southbound thru and left-turn, and Singletree Lane westbound right-turn traffic only. These are some of the heaviest movements in the intersection, except for the northbound Prairie Center Drive through movement. Therefore, LRT could be accommodated during the southbound left-turn phase.
- LRT and traffic could operate acceptably
- LRT preemption is possible, although more likely to run in priority

- Would require three westbound lanes (a left-turn lane, thru lane and a right-turn lane which is "over-lapped" with the southbound Prairie Center Drive left-turn phase) on Singletree Lane.

Prairie Center Drive/Flagship and Bachman's Access

- Evaluation was completed to either provide a new full access signalized intersection along Prairie Center Drive at the current Bachman's right-in/right-out, or retain the right-in/right-out and retain the full access intersection to Bachman's at its location on Singletree Lane.
- This new intersection should have little to no impact on existing intersections, nor add significant travel time to traffic on Prairie Center Drive.
- A negative is it would restrict the southbound left-turn storage length at the Prairie Center Drive/Singletree Lane intersection.
- Signalizing this intersection is better from a traffic perspective than signalizing the Singletree Lane/Bachman's/Jake's intersection, since it could have eastbound vehicle queues spill into Prairie Center Drive.

Prairie Center Drive/Technology Drive

- LRT is anticipated to be grade-separated at this location. LRT would be located in the center of Prairie Center Drive. This center location going to the westside of Prairie Center at-grade would be challenging because southbound Prairie Center Drive could not run concurrently with the LRT. The operational condition would likely result in poor intersection operations or longer delays for LRT.

Other driveways would be closed or restricted to a right-in/right-out including one city street being closed (Glen Road at Singletree Lane), but realigned to intersect Eden Road.

2.8.4 Conclusions

This alignment adjustment is feasible but would likely require several mitigations including:

- Singletree Lane modified from a four-lane undivided section to a three-lane divided section
  - Additional traffic delay along Singletree Lane, especially the westbound direction
  - LRT delays at the Prairie Center Drive/Singletree Lane intersection
- Grade separation at Prairie Center Drive/Technology Drive
  - Challenge to cross Prairie Center Drive at-grade diagonally
- Additional traffic signals along Singletree Lane
- Full or partial closure of some intersections including a public street at Singletree Lane/Glen Road

2.9 Adjustment 8A

2.9.1 Description

This adjustment crosses Prairie Center Drive at Singletree Lane as shown in **Figure 2**. On the eastside of Prairie Center Drive, the alignment is in the center of Singletree Lane as described in Adjustment 24A and continues east across the intersection. West of Prairie Center Drive, the alignment is along the westside of the roadway. This alignment adjustment has two main at-grade crossings: Prairie Center Drive at Singletree Lane and Technology Drive.

2.9.2 Assumptions

2.9.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- Three new traffic signals at Singletree Lane/Eden Road, Singletree Lane/Wal-Mart and Prairie Center Drive/Bachman's/Flagship would be included with the project. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings except at Prairie Center Drive and possibly Technology Drive.
- LRT operating speeds would be 30 to 35 miles per hour (mph)
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.9.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.9.2.3 Roadway Geometrics

- Singletree Lane is a four-lane undivided roadway. The build project would result in a two-lane divided roadway with left-turn lanes. Prairie Center Drive is a four-lane divided roadway. No modifications are expected, except to accommodate LRT and provide a new signalized intersection at Bachman's/Flagship access.

2.9.3 Findings

The preliminary evaluation results are shown below:

Prairie Center Drive/Singletree Lane

- Restrict Right Turn on Red (RTOR) for southbound Prairie Center Drive movement
- LRT would be compatible with the Singletree Lane eastbound thru traffic only which is a very light movement
- The resulting operation would be poor for traffic and longer delays for LRT, and not recommended

- Only potential mitigation would be additional thru lanes on Prairie Center Drive. This mitigation improvement was not tested

Prairie Center Drive/Technology Drive

- Restrict Right Turn on Red (RTOR) for eastbound Technology Drive and southbound Prairie Center Drive movement
- LRT would be compatible with Prairie Center Drive northbound and southbound thru traffic which are the heaviest traffic movements
- LRT preemption is unlikely and moderate LRT delays would be expected
- Would need to test for potential mitigation

2.9.4 Conclusions

The crossing at Prairie Center Drive/Singletree Lane would have traffic impacts and longer delays to LRT, neither of these impacts or delays maybe acceptable. Overall, it is challenging to cross Prairie Center Drive at-grade. Technology Drive could be crossed at-grade, but likely only in priority operation. Additional mitigation would need to be tested.

2.10 Adjustment 8A1

2.10.1 Description

The adjustment runs along the eastside of Prairie Center Drive from Singletree Lane to SW Station as shown in **Figure 2**. The alignment has two roadway crossings; one going from the center of Singletree Lane to the eastside of Prairie Center Drive and the other a diagonal crossing of Prairie Center Drive/Technology Drive. The alignment would cross other private driveways at-grade.

2.10.2 Assumptions

2.10.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- Three new traffic signals at Singletree Lane/Eden Road, Singletree Lane/Wal-Mart and Prairie Center Drive/Bachman's/Flagship would be included with the project. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings except at Prairie Center Drive.
- LRT operating speeds would be 30 to 35 miles per hour (mph)
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.10.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.10.2.3 Roadway Geometrics

- Singletree Lane is a four-lane undivided roadway. The build project would result in a two-lane divided roadway with left-turn lanes. Prairie Center Drive is a four-lane divided roadway. No modifications are expected, except to accommodate LRT and provide a new signalized intersection at Bachman's/Flagship access.

2.10.3 Findings

The preliminary evaluation results are shown below:

Prairie Center Drive/Singletree Lane

- The crossing of the westbound approach on Singletree Lane would not be expected to cause any significant traffic or LRT delays. However, it might be a challenge to provide reasonable stop bar geometry for westbound Singletree Lane traffic at the crossing.

Prairie Center Drive/Technology Drive

- An at-grade crossing operation does not allow for any of the major traffic movements to run with LRT and therefore would result in poor operations for traffic and long delays for LRT.

2.10.4 Conclusions

A diagonal at-grade crossing of Prairie Center Drive/Technology Drive would result in unacceptable intersection operations and high LRT delays, therefore the crossing of Prairie Center Drive would need to be grade-separated.

2.11 Adjustment 18A

2.11.1 Description

This adjustment goes between Singletree Lane and Technology Drive by providing a direct alignment across the Purgatory Creek reservoir as shown in **Figure 2**. LRT would in the center of Singletree Lane and have a major crossing of Prairie Center Drive. It crosses the Purgatory Creek reservoir and continues along the southside of Technology Drive following Alignment Adjustment 20A.

2.11.2 Assumptions

2.11.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- No new traffic signals. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings except at Prairie Center Drive.
- LRT operating speeds would be 30 to 35 miles per hour (mph)
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.11.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.11.2.3 Roadway Geometrics

- Singletree Lane is a four-lane undivided roadway. The build project would result in a two-lane divided roadway with left-turn lanes. Prairie Center Drive is a four-lane divided roadway. No modifications are expected, except an additional westbound turn-lane on Singletree Lane.

2.11.3 Findings

The preliminary evaluation results are shown below:

Prairie Center Drive/Singletree Lane

- LRT would be compatible with the Singletree Lane eastbound and westbound thru traffic which are very light movements
  - The result would be poor operations for traffic and longer delays for LRT, and not recommended
  - Only potential mitigation would be additional thru lanes on Prairie Center Drive. This mitigation improvement was not tested.

2.11.4 Conclusions

An at-grade crossing of Prairie Center Drive at Singletree Lane would result in poor operation for traffic and longer LRT travel times. A grade-separated crossing over Prairie Center Drive would result in conversation of the full access intersection of Singletree Lane/ Bachman's/Jake's to a right in/right out access. Further evaluation would be needed to consider a full access for Bachman's onto Prairie Center Drive.

2.12 Adjustment 5A

2.12.1 Description

This adjustment goes between Singletree Lane and Technology Drive by providing a direct alignment across the Purgatory Creek reservoir behind the existing Optum Campus as shown in **Figure 2**. LRT would in the center of Singletree Lane and have a major crossing of Prairie Center Drive. It crosses the Purgatory Creek reservoir, passes south of the Optum Campus near Anderson Lakes Parkway, then turns north and continues along the southside on Technology Drive following Adjustment 20A near Mitchell Road.

2.12.2 Assumptions

2.12.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- No new traffic signals. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings except at Prairie Center Drive.
- LRT operating speeds would be 30 to 35 miles per hour (mph)
- Automatic flashers and gates were assumed to operate per the requirements in the Minnesota Manual of Uniform Traffic Control Devices (MnMUTCD), which

includes approximately 50 total seconds from the time the flashers start until the gates are returned to the vertical position.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.12.2.2 Roadway Volumes
- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.12.2.3 Roadway Geometrics
- Singletree Lane is a four-lane undivided roadway. The build project would result in a two-lane divided roadway with left-turn lanes. Prairie Center Drive is a four-lane divided roadway. No modifications are expected, except an additional westbound turn-lane on Singletree Lane.

2.12.3 Findings

The preliminary evaluation results are shown below:

Prairie Center Drive/Singletree Lane
- LRT would be compatible with the Singletree Lane eastbound and westbound thru traffic which are very light movements
- The result would be poor operations for traffic and longer delays for LRT, and not recommended
- Only potential mitigation would be additional thru lanes on Prairie Center Drive. This mitigation improvement was not tested.

2.12.4 Conclusions

An at-grade crossing of Prairie Center Drive at Singletree Lane would result in poor operation for traffic and longer LRT travel times. A grade-separated crossing over Prairie Center Drive would result in conversation of the full access of Singletree Lane/ Bachman's and Jake's to a right in/right out access. Further evaluation would be needed to consider a full access for Bachman's onto Prairie Center Drive.

2.13 Adjustment 12A

2.13.1 Description

This is an alignment through the center of the Southwest Station properties as shown in **Figure 2**. The alignment would be grade-separated over Prairie Center Drive and Technology Drive. The LRT station would be on the southside of the existing SW Transit Park-and-Ride. The alignment west of the LRT station would be grade-separated going into the center of Technology Drive. The alignment continues in the center of Technology Drive to Mitchell Station.

2.13.2 Assumptions

No detailed analysis was completed. However, a basic planning-level analysis were completed to determine if the intersection has the ability to accommodate the LRT without significant impacts to traffic or LRT travel times.

2.13.3 Conclusions

The crossing over Prairie Center Drive would need to be grade-separated. The alignment would result in the SW Condos driveways being converted to right-in/right-only access. Further analysis would be needed of the internal site circulation of the SW Condos and Southwest Station properties. Further evaluation would be needed to evaluate LRT running in the center of Technology Drive.

2.14 Adjustment 20A

2.14.1 Description

This adjustment runs along the southside of Technology Drive from SW Station to Mitchell Station located to the north of Technology Drive as shown in **Figure 2**. This alignment adjustment has several driveway crossings, two crossings of Technology Drive (at SW Station west access and Hiawatha Avenue with the end-of-the-line located station located on the northside of Technology Drive) and one crossing of Mitchell Road.

2.14.2 Assumptions

2.14.2.1 LRT Operations

- Automatic flashers and bar signals were assumed for all the at-grade crossings
- Four new traffic signals would be installed along Technology Drive at SW Station west access, Optum east access, Optum west access and Hiawatha Avenue extension. While bar signals would be used, the intent would be that LRT would incur no delay at these crossings except at Mitchell Road.
- LRT operating speeds would be 30 to 35 miles per hour (mph)
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.14.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.14.2.3 Roadway Geometrics

- Technology Drive from Optum west driveway to the SW Station west access would be converted from a four-lane undivided roadway to a two-lane divided roadway with left-turn lanes and right-turn lane for any movements across the LRT tracks.
- Technology Drive at Hiawatha Avenue extension would include left-turn and right-turn lanes as needed to provide movements across the LRT tracks.

2.14.3 Findings

The preliminary evaluation results are shown below:

Technology Drive/Mitchell Road

- Convert eastbound and westbound Technology Drive left-turn phasing from protected permissive to protected only
- Restrict Right Turn on Red (RTOR) for eastbound Technology Drive and northbound Mitchell Road movements

- LRT would be compatible with the Technology Drive thru traffic (minor movements) and southbound Mitchell Road left turn to eastbound Technology Drive (major movement)
- Extension of the southbound left-turn lanes, including one beyond Lone Oak Road
- Revise southbound trap-lane at Scenic Heights Road from trap right-lane trap to the left-turn lane
- Extension of the northbound left-turn and right-turn lanes
- LRT and traffic should be able to operate acceptably with intersection improvements and with moderate LRT delays. This intersection would need more detailed analysis.
- Initial analysis suggested LRT preemption maybe possible, although after further analysis it is unlikely

Crossings of Technology Drive

- Any remaining full access driveways with movements crossing the tracks would require traffic signals. Several driveways would likely be preempted and result in minimal vehicle delays. To minimize traffic delays, some driveway intersections may require improvements.
- Technology Drive would likely be converted from a four-lane undivided roadway to a three-lane divided roadway with left and right-turn lanes for movements that cross the LRT tracks.

2.14.4 Conclusions

The crossing of Mitchell Road at-grade should be possible, but will require intersection improvements. The LRT would not likely preempt this intersection and result in moderate LRT delays. The alignment does cross several driveways and would result in four additional traffic signals along Technology Drive.

2.15 Adjustment 23A

2.15.1 Description

This adjustment runs along the southside of TH 212/TH 5 from SW Station to Mitchell Station with one crossing at Mitchell Road at the TH 5 South Ramp, and crossings of the two bus only ramps at SW Station as shown in **Figure 2**.

2.15.2 Assumptions

2.15.2.1 LRT Operations

- Automatic flashers and bar signals or gates were assumed for all the at-grade crossings depending on the operation being tested.
- No new traffic signals would be installed.
- LRT operating speeds would be 30 to 45 miles per hour (mph) depending on the crossing operation at Mitchell Road.
- All light rail vehicles were assumed to include a 3-car consist, and a total length of approximately 290 feet was assumed in the modeling.
- Headways of 7.5 minutes per direction were assumed during peak periods

2.15.2.2 Roadway Volumes

- High-level 2030 forecast traffic volumes were developed by increasing all existing counts by 30 percent. The value corresponds to the general expected growth in the area based on the Eden Prairie Comprehensive Plan.

2.15.2.3 Roadway Geometrics

- Roadway geometrics at Mitchell Road at the TH 5 south ramp were tested in the evaluation of the intersection. With the restriction of RTOR for the eastbound and northbound approaches, a 2nd ^{right}-turn lane would likely be required.

2.15.3 Findings

The preliminary evaluation results are shown below:

Technology Drive/Mitchell Road

- Restrict Right Turn on Red (RTOR) for eastbound TH 5 exit ramp and northbound Mitchell Road movement. This would require mitigation of adding a 2nd right-turn lane at each of these movements.
- LRT would be compatible with either the eastbound TH 5 exit ramp left-turn or southbound Mitchell Road left-turn movement. Neither of these are major movements. Further investigation would be needed to determine which vehicle movements could operate concurrently with the LRT crossing.
- LRT and traffic should be able to operate acceptably with the intersection mitigation improvements and with moderate LRT delays.
- Initial analysis suggested LRT preemption maybe possible, although with further analysis it is unlikely.

2.15.4 Conclusions

An at-grade crossing of Mitchell Road should be possible. The intersection will likely require improvements to mitigate traffic delays. At this point, it is unlikely that the intersection could be preempted and LRT would likely experience moderate delays.

2.16 Adjustment 26A

2.16.1 Description

This adjustment was reviewed from a qualitative evaluation for the Eaton Driveway crossing at Wallace Road. This adjustment runs along the southside of TH 212/TH 5 from SW Station to Mitchell Station with a crossing of Mitchell Road at the TH 5 South Ramp, Wallace Road at TH 212 South Ramp, and crossings of the two bus only ramps at SW Station. These crossing are similar to Alignment Adjustment 23A.

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2.16.2 Assumptions

No detailed analysis was completed at the Wallace Road/TH 212 intersection. The more detailed analysis for Alignment Adjustment 23A was used for the other intersection crossings.

2.16.3 Conclusions

An at-grade crossing of Mitchell Road should be possible. The intersection will likely require improvements to mitigate vehicle delays. At this point, it is unlikely that the intersection could be preempted and LRT would likely experience moderate delays. The crossing of the east driveway at the Wallace Road/TH 212 South Ramp intersection should be feasible.

3.0 ALIGNMENT ADJUSTMENT OPTIONS FOR DETAILED TRAFFIC EVALUATION

A more detailed traffic evaluation was completed on the most feasible options based on the IRT screening process. These alignment adjustment options are shown in **Figure 3**. From a traffic perspective, these were evaluated in slightly shorter sections split at SW Station, resulting in three adjustments in the Town Center area and two adjustments west of SW Station.

After the initial evaluation, four (4) adjustment options to the DEIS LPA were carried forward for further consideration:

- Locally Preferred Alternative (LPA) - DEIS
- Option 1 – Mitchell Station: Technology Drive / Singletree Lane
- Option 2 – Mitchell Station: TH212 / Singletree Lane
- Option 3 – Mitchell Station: Technology Drive / Comp Plan
- Option 4 – Mitchell Station: TH212 / Comp Plan

These alignment adjustment options received a more detailed evaluation to determine the trade-offs between them. This more detailed analysis included updated traffic volumes, more detailed analysis and additional peak periods evaluated. This allowed for a better traffic comparison between the adjustments.

3.1 Town Center Adjustments Options East of SW Station

3.1.1 LPA/DEIS (southside running on Technology Drive)

The LPA shows one major at-grade crossing of Valley View Road at TH 212, and a diagonal at-grade crossing of Technology Drive at the Rosemount-Emerson east driveway. In addition, three minor at-grade crossings are made at business driveways.

- Major at-grade crossings – One
  - Valley View Road/TH 212 South Ramp
- Minor at-grade crossings – Three with expected new traffic signals
  - Technology Drive at Costco west and east access' and Optum access
- Diagonal crossings – One
  - Technology Drive at Rosemount-Emerson east drive (location of Future North-South Main Street). Note that the driveway to the north at this location no longer exists since this parcel was redeveloped into a Gander Mountain.
- Driveway closures – One
  - Technology Drive at Rosemount-Emerson west access (realigned to connect to their east access)
- Impacts to Flying Cloud Drive – Moderate impacts (at-grade with Valley View Road)
- Impacts to Prairie Center Drive – None (grade separated at Prairie Center Drive)

- Increase in traffic travel time along Technology Drive with new traffic signals, although may reduce traffic delays for driveways
- Improvements
  - Re-configuration of the future Rosemount-Emerson east access (Future North-South Main Street)
- LRT Exposure Rate (2030) – 21,000 (Number of vehicles crossing/exposed to LRT tracks)

3.1.2 Singletree (Options 1 and 2)

This option has seven at-grade intersection crossings with the assumption that the Flying Cloud Drive/Valley View Road/TH 212 South Ramp and Prairie Center Drive and Technology Drive crossings are grade-separated. Two of the crossings are major at-grade crossings of Technology Drive at Flying Cloud Drive and the center to center crossing at the Prairie Center Drive/Singletree Lane intersection. These would likely operate in priority without improvements. The five minor crossings will have minimal impacts on traffic and LRT should be accommodated in Preemption mode.

The traffic impacts that will need further evaluation for the additional trips generated at the SW Station LRT Park-and-Ride. If SW Station is the end-of-the-line station, 800 to 1,025 additional parking spaces may be required to accommodate the Park-and-Ride demand. Many variables were under consideration and the exact size of the Park-and-Ride size was unknown at the time of the analysis. However, the additional Park-and-Ride trips will require an additional southbound left-turn lane from SW Station's eastern access at Technology Drive.

- Major at-grade crossings – Two
  - Flying Cloud Drive/Technology Drive
  - Prairie Center Drive/Singletree Lane
- Minor at-grade crossings – Five with Four new traffic signals
  - Flying Cloud Drive at Viking Drive and Eden Road
  - Singletree Lane at Eden Road, Wal-Mart/Brunswick and Bachman's/Jake's accesses
  - Prairie Center Road/Flagship Office
- Diagonal crossings – 0.5 (side to middle crossing)
  - Singletree Lane/Eden Road
- Roadway or Driveway Closures – Two
  - Glen Road at Singletree Lane (Glen Road realigned to connect to Eden Road)
  - Singletree Lane/ Apartment access
- Restricted to Right-in/Right-out – One
  - Singletree Lane/Bachman's and Jake's access
- Impacts to Flying Cloud Drive – Moderate, but mitigatable
- Impacts to Prairie Center Drive – Moderate, but mitigatable
- Impacts to Singletree – Moderately High, but mitigatable
- Mitigation Improvements
  - Flying Cloud Drive and Technology Drive include an eastbound left-turn lane and 2nd northbound left-turn lane
  - Re-construction of Singletree Lane between Prairie Center Drive and Flying Cloud Drive from a four-lane undivided roadway to a three-lane divided roadway with left turn lanes
  - Re-construction of the west-half of Prairie Center Drive from Technology Drive to Singletree Lane

- LRT Exposure Rate (2030) – 46,500 (Number of vehicles crossing/exposed to LRT tracks)

3.1.3 Comp Plan (Eden Road) (Options 3 and 4)

This option has one major and four minor at-grade intersection crossings with the assumption that the Valley View Road/Flying Cloud Drive/TH 212 South Ramp and Prairie Center Drive and Technology Drive crossings are grade-separated. At-grade crossings at Valley View Road would result in moderate LRT delays and at Prairie Center Drive would result in long traffic and LRT delays.

The four minor crossings will have minimal impacts on traffic. LRT should be accommodated in preemption mode, except at the Flying Cloud Drive/Technology Drive intersection which may need to operate in priority or need improvements to operate in preemption. The traffic impacts will need further evaluation for the additional trips generated at the SW Station LRT Park-and-Ride. If SW Station is the end-of-the-line station, 800 to 1,025 additional parking spaces may be required to accommodate the demand. Many variables were under consideration and the exact size and locations of the Park-and-Rides were unknown during this preliminary analysis.

- Major at-grade crossings – 1
  - Flying Cloud Drive/Technology Drive
- Minor at-grade crossings – 4
  - Flying Cloud Drive/Viking Drive
  - Eden Road at Glen Road, Eden Road and Future Main Street
- Driveway Closures – 1
  - Existing driveway access for the Eden Prairie Convenience Center parcel in the northwest quadrant of Flying Cloud Drive and Eden Road intersection (this parcel is shown as a full acquisition since the building would be removed with this alignment option)
- Impacts to Flying Cloud Drive – Moderate, but mitigatable
- Impacts to Prairie Center Drive – None
- Improvements
  - Flying Cloud Drive and Technology Drive include an eastbound left-turn lane and 2nd northbound left-turn lane
  - Re-construction of Eden Road between Eden Road (south) and Flying Cloud Drive
  - Three new traffic signals (if Main Street is constructed, it would be the fourth)
- LRT Exposure Rate (2030) – 17,000 (Number of vehicles crossing/exposed to LRT tracks)
- Park-and-Ride – Need to understand impacts of additional Park-and-Ride trip generation

3.1.4 Comparison of Town Center Options

The Town Center adjustments were compared from a traffic perspective. Besides the information above, traffic intersection Level-of-Service (LOS) and traffic travel times are shown in **Tables 3.1 and 3.2**.

Table 3.1: Year 2030 Intersection LOS – PM Peak (Preliminary)

Intersection	No Build	LPA/DEIS	Singletree	Comp Plan
Valley View/TH 212	D	-	-	-
FCD/Viking	-	-	-	-
Technology/Main	B	-	-	-
Technology/Costco East	-	-	-	-
Technology/Costco West	-	-	-	-
Technology/Optum	-	-	-	-
FCD/Technology	C	-	D	D
Eden/Glen	A	-	-	B
Eden/Eden	A	-	-	B
FCD/Eden	C	-	C	-
Singletree/Eden	B	-	D	-
Singletree/Wal-Mart	B	-	C	-
PCD/Singletree	D	-	D	-
PCD/Flagship	-	-	B	-

Note: Blank cells result in the specific alignment does not impact those intersections

Table 3.2: Traffic Travel Times – PM Peak (Preliminary)

Intersection	LPA/DEIS	Singletree	Comp Plan
Eden Road			
- 2030 No LRT	-	-	40sec
- 2030 Build	-	-	60sec
Singletree Lane			
- Existing	-	60sec	--
- 2030 No LRT	-	85sec	
- 2030 Build	-	100-115sec	-

3.1.5 Summary

From a traffic perspective, the three alignment adjustment options were ordered by preferences. In general, all of these could be made to operate under acceptable conditions, but are not equal.

3.1.5.1 Technology Drive (LPA/DEIS)

The following is a summary of the traffic and access impacts:

- Introduction of LRT will result in noticeable change on Technology Drive with an increase in traffic travel time as a result of additional traffic signals and the LRT diagonal crossing at the Rosemount-Emerson east driveway (Future North-South Main Street). Note that the driveway to the north at this location no longer exists since this parcel was redeveloped into a Gander Mountain.

- One major roadway at-grade crossing of Valley View Drive/TH 212 South Ramp
  - LRT would operate in priority resulting in 30 to 45 second delays

- Three minor at-grade crossings along Technology Drive each requiring a traffic signal at, Costco east and west access and the Optum access, which would result in better side-street operations
  - LRT would operate in preemption resulting in no additional LRT delay
- One driveway closures on Technology Drive at Rosemount-Emerson west access (realigned to connect to their east access)
- No traffic impacts to Prairie Center Drive or Flying Cloud Drive (except as noted above)
- May need to re-configure the Gander Mountain access

In summary this alignment segment results in acceptable traffic operation with mitigation. With the traffic impacts being moderately high at the Valley View Drive/TH 212 South Ramp and along Technology Drive, this option was determined to have more traffic impacts than the Comp Plan alignment. With the no traffic impacts on Flying Cloud Drive or Prairie Center Drive, it was determined to have fewer impacts than Singletree Lane alignment.

3.1.5.2 Singletree Lane (Options 1 and 2)

The following is a summary of the traffic and access impacts:

- Introduction of LRT will result in noticeable change on Singletree Lane with an increase in traffic travel time along Singletree Lane
- Singletree Lane will be modified from a 4-lane undivided roadway (2 thru lanes in each direction and no turn lanes) to a 3-lane roadway (thru lane in each direction with a left turn lane at each full access)
- Two major crossings at Prairie Center Drive/Singletree Lane and Flying Cloud Drive/ Technology Drive
  - Technology Drive intersection would require additional turn lanes to provide acceptable operations
  - Prairie Center Drive/Singletree Lane
    - LRT would likely operate in priority resulting in 20 to 30 second delays for LRT
- Five minor crossings, of which four would need a new traffic signal. The four crossings are Prairie Center Drive/Bachman's/Flagship, Singletree Lane/Wal-Mart/Brunswick's, Singletree Lane/Eden Road and Flying Cloud Drive/Viking Drive
- Two closures along Singletree Lane- Glen Road at Singletree Lane(Glen Road realigned to connect to Eden Road) the east driveway to Brunswick's
- Two driveways restricted to right-in/right-out - Singletree Lane at Jake's/Bachman's driveway and the Jiffy Lube on the southside)

In summary this alignment segment results in acceptable traffic operation with mitigation. Due to the increase in traffic travel time on Singletree Lane and the direct LRT interaction with the Prairie Center Drive/Singletree Lane and the Flying Cloud Drive/Eden Road intersections which are unique to this alignment, this segment was determined to have more traffic impacts than either the Comp Plan or Technology Drive alignment.

3.1.5.3 Comp Plan (Eden Road) (Options 3 and 4)

The following is a summary of the traffic and access impacts:

- Eden Road has lower traffic volumes than either Technology Drive (LPA/DEIS) or Singletree Lane
- LRT operations do not significantly impact Prairie Center Drive or Flying Cloud Drive
- One major roadway crossing at the Flying Cloud Drive and Technology Drive intersection
  - Technology Drive intersection would require additional turn lanes to provide acceptable traffic operations
  - LRT could operate in preemption, resulting in no LRT delay
- Three or four minor crossings with new traffic signals are needed at Flying Cloud Drive/Viking Drive, Redstone east access/Glen Road, Eden Road at Redstone west access/Eden Road, and potentially at Eden Road at the Future North-South Main Street
  - LRT would operate in preemption, resulting in no LRT delay
- One driveway closure along Eden Road for the Eden Prairie Convenience Center (this alignment would remove the building and direct access may not be needed)

In summary this alignment segment results in acceptable traffic operation with mitigation. With the traffic impacts being limited to the minor driveway crossings along Eden Road, this alignment was determined to have less traffic impacts than both the Singletree Lane (Options 1 and 2) and Technology Drive (LPA/DEIS) alignment.

3.2 Alignment Adjustment Options West of SW Station

3.2.1 Technology Drive (Options 1 and 3)

This is the westerly portion of Options 1 and 3. The Technology Drive alignment adjustment results in crossing Technology Drive twice; once at the eastern end at SW Station western bus only access and the other at the west City Center (location of future Hiawatha Avenue roadway extension) near the Mitchell Road Station. The option would have one major crossing at Mitchell Road and four other roadway crossings - two of them are diagonal crossings of Technology Drive and two are driveways. The Mitchell Road crossing will require intersection improvements to provide acceptable traffic operations and minimize delay for LRT. It is unlikely that the Mitchell Road intersection could be preempted. Additional analysis of the Mitchell Road crossing would be needed, but a better understanding of the proposed United Health Group parcel development, actual Mitchell Road Park-and-Ride location and size, Operations and Maintenance Facility (OMF) location, access to the Park-and-Ride, and operations of the traffic signal equipment, need to be determined in order to understand the full impacts and mitigations.

The following is a summary of the entire length of the Option:

- Major at-grade crossings - One
  - Mitchell Road/Technology Drive
- Minor at-grade crossings requiring new traffic signals – Four
  - Technology Drive at SW Station western bus only access, Optum east access, Optum west access and west driveway to City Center (future Hiawatha Avenue)
- Diagonal crossings – Two
  - Technology Drive at SW Station western bus only access and City Center (future Hiawatha Avenue)
- Driveway Closures – One
  - Technology Drive/City Center east access
- Impacts to Mitchell Road result in moderately-high traffic impacts, but mitigatable improvements:
  - Re-configuration and partial re-construction of Technology Drive from a four-lane undivided roadway to a three-lane divided roadway with left and right-turn lanes for movements across the LRT tracks
  - Mitchell Road/Technology Drive Intersection
    - Eastbound and westbound left-turn phasing becomes protected only, instead of protected/permissive
    - Eastbound and westbound add 2nd left-turn lanes
    - Northbound left-turn and right-turn lanes need to be lengthened to replace length removed by LRT tracks
    - Southbound left-turn lanes need to be lengthened including one of them to north of Lone Oak Road
    - Revise Mitchell Road south of Technology Drive to "trap" one of the southbound thru lanes as the left-turn lane and not the right-turn lane at Anderson Lakes Parkway/Scenic Heights Road
  - City Center west drive (future Hiawatha Avenue)/Technology Drive Intersection
    - Eastbound includes one lane for each movement
    - Westbound includes one left-turn lane and a thru-right lane
    - Northbound and southbound includes one left-turn lane and a thru-right lane
  - Optum east access could be combined with MTS east access
  - Optum west access could be left in its current location or relocated west to be combined with MTS west access
- LRT Exposure Rate (2030) – 95,000 (Number of vehicles crossing/exposed to LRT tracks)

3.2.2 TH 212 (Options 2, 4 and LPA/DEIS)

This segment is the westerly portion of Alignment Adjustment Options 2, 4 and LPA. This Option runs along the southside of TH 212 and results in one at-grade crossing at Mitchell Road/TH 212 South Ramp intersection. After the crossing, the alignment would end at the end-of-the-line station (Mitchell Road station). The Mitchell Road crossing will require intersection improvements to provide acceptable traffic operations and minimize LRT delays. The Mitchell Road intersection would need further evaluation to determine if preemption is feasible.

The following is a summary of the entire length of the Option:

- Major at-grade crossings – One
  - Mitchell Road/TH 212 South Ramp
- Minor at-grade crossings – One
  - Internal Eaton access road
- No impacts to Technology Drive
- Diagonal crossings – 0
- Driveway Closures – 0
- Impacts to Mitchell Road would be Moderate, but mitigatable
- Mitchell Road/TH 212 South Ramp Intersection Improvements
  - Eastbound 2nd right-turn lane
  - Northbound 2nd right-turn lane
- No new traffic signals
- LRT Exposure Rate (2030) – 53,000 (Number Number of vehicles crossing/exposed to LRT tracks)

3.2.3 Comparison of Options west of SW Station

The westerly alignment adjustments were compared from a traffic perspective. Besides the information above, traffic intersection Level-of-Service (LOS) and traffic travel times are shown in **Tables 3.3, 3.4 and 3.5**. The LRT was proposed to run in priority across Mitchell Road. All other locations LRT was anticipated to run in preemption. If LRT were to run with the Mitchell Road traffic signal, the increase to LRT travel times would be too long (60+) seconds. This is mainly due to the existing traffic signal timing and phasing which does not provide much green time to the phases compatible with LRT. Preemption is an unlikely alternative at Mitchell Road, as this would result in a negative impact on traffic operations. Therefore, the most reasonable operational alternative was to run the LRT in a priority condition across Mitchell Road. No improvements are included for the results shown in **Tables 3.3, 3.4 and 3.5.**

Table 3.3: Year 2030 Intersection LOS AM Peak – Preliminary Analysis

Intersection	No Build	LPA/DEIS	Technology Dr	TH 212
TH 212 N Ramp/Mitchell	C	-	D	C
TH 212 S Ramp/Mitchell	C	-	D/E	D(1)
Mitchell/Lone Oak	A	-	D	A
Technology/SW Station west access	A	-	B	-
Technology/Optum east access	A	-	B	-
Technology/Optum west access	B	-	C	-
Technology/Mitchell	C	-	D(1)	-
Technology/Hiawatha	A	-	C	C

(1) Analysis assumes Priority operation

Table 3.4: Year 2030 Intersection LOS PM Peak – Preliminary Analysis

Intersection	No Build	LPA/DEIS	Technology Dr	TH 212
TH 212 N Ramp/Mitchell	C	-	C	C
TH 212 S Ramp/Mitchell	B	-	B	C(1)
Mitchell/Lone Oak	C	-	C	C
Technology/SW Station west access	A	-	B	-
Technology/Optum east access	A	-	B	-
Technology/Optum west access	B	-	C	-
Technology/Mitchell	C	-	D(1)	-
Technology/Hiawatha	A	-	C	C

(1) Analysis assumes Priority operation

Table 3.5: Traffic Travel Times (Preliminary Analysis)

Intersection	TH 212 (1) AM Peak	TH 212 (1) PM Peak	Technology Dr (1) AM Peak	Technology Dr (1) PM Peak
Technology Drive				
- Existing	-	-	-	-
- 2030 No LRT	-	-	220sec	225sec
- 2030 Build LRT	-	-	235sec	235sec
Mitchell Road				
- Existing	-	-	-	-
- 2030 No LRT	150sec	210sec	150sec	210sec
- 2030 Build LRT	170sec	220sec	250sec	215sec

(1) Analysis assumes Priority operation at Mitchell crossing

3.2.4 Summary

From a traffic perspective, the two options were ordered by preferences. In general, all of these could be made to operate under acceptable conditions, but are not equal.

3.2.4.1 TH 212 (Options 2, 4, and LPA/DEIS)

The following is a summary of the traffic and access impacts for this alignment segment:

- Includes one at-grade crossing at Mitchell Road/TH 212 South Ramp
  - Crossing would require 2nd northbound and eastbound right-turn lane, since the right turn on red would be restricted
  - Prefer preemption at this crossing, but would need further evaluation to determine actual operations of LRT and traffic
- LRT operations do not impact Technology Drive
- No new traffic signals are required
- No access or driveway closures or modifications are needed
- Options 2 and 4 have one minor internal crossing of an Eaton access driveway

In summary this alignment segment results in acceptable traffic operation with mitigation. With the traffic impacts being limited to a single crossing at Mitchell Road with no traffic impact to the Technology Drive corridor, this segment was determined to have less traffic impacts than the Technology Drive alignment.

3.2.4.2 Technology Drive (Options 1 and 3)

The following is a summary of the traffic and access impacts:

- Introduction of traffic signals to accommodate LRT will result in noticeable change on Technology Drive with an increase in traffic travel time along Technology Drive
- One major crossing at Mitchell Road/Technology Drive which will be challenging to find acceptable balance of traffic and LRT delay.
  - In order to obtain acceptable traffic operations, improvements are needed to the intersection and to Mitchell Road to provide additional capacity and vehicle storage.
    - Eastbound and westbound 2nd left-turn lanes with protected phasing
    - Northbound left-turn and right-turn lanes need to be extended
    - Southbound left-turn lanes need to be extended with one beyond Lone Oak Road
    - Revise Mitchell Road south of Technology Drive to "trap" one of the southbound thru lanes as the left-turn lane and not the right-turn lane at Anderson Lakes Parkway/Scenic Heights Road
  - LRT will need to operate in priority mode through the intersection and average LRT delays of approximately 30 seconds should be anticipated
- Four minor crossings of Technology Drive
  - Each crossing would require a new traffic signal at City Center west access (future Hiawatha Avenue), Optum's west access, Optum's east access and SW Station western bus only access
  - Two of these minor crossings would be diagonal crossings of Technology Drive (SW Station west bus only access and City Center west access (future Hiawatha Avenue)
- One access closure at the Technology Drive/City Center east access
- Potential to combine MTS east access with Optum east access
- Potential to combine Optum west access with MTS west access

In summary this alignment segment results in acceptable traffic operation with mitigation. With the traffic impacts being higher crossing Mitchell Road and the addition of four traffic signals on Technology Drive to accommodate LRT this segment was determined to have more traffic impacts than the TH 212 alignment.

4.0 PARK-AND-RIDE TRAFFIC EVALUATION

4.1 Eden Prairie Town Center Station

4.1.1 Description

A Park-and-Ride analysis was completed for the Eden Prairie Town Center Station. The exact location has not been identified and will likely result in a lease with one of the existing property owners or a new lot. The size is considered to be less than 200 spaces. At one time during the project process, no Park-and-Ride was being considered. This was to mainly deter additional traffic in the Eden Prairie Town Center Area as the City of Eden Prairie envisions this as a walkable area. However, concerns were shared about park-and-hide occurring at existing business parking lots. A 160 space Park-and-Ride is the current plan, but exact location has not been identified. Access and connections to the Park-and-Ride is important. Further analysis will consider where the Park-and-Ride patrons are coming from and the ability to influence their route to the Park-and-Ride facility. An objective is to minimize the amount of vehicle traffic at key intersections in the Town Center area.

4.1.2 Assumptions

The assumptions utilized for the traffic modeling are summarized in the following sections. A number of assumptions regarding operations, design, and scope of the project have changed since this modeling was completed in March-July 2013. All changes in project assumptions will be reflected in future modeling of the project, and will be documented as part of the Final Environmental Impact Statement for the project.

4.1.2.1 Park-and-Ride Trip Generation

All Build scenarios also included volumes generated by the construction of a 160-space park and ride facility. The park and ride facility was assumed to generate 80 trips in both the AM and PM peak hours, based on initial trip generation data collected at other Twin Cities park and ride facilities. The DEIS/LPA identified a 650 Park-and-Ride at this location. This was also evaluated.

4.1.2.2 Park-and-Ride Direction of Approach

Direction of approach is shown in the *Park-and-Ride Trip Generation* memo. At the time these were prepared, this location was not determined to have a Park-and-Ride. This is dependent on the end-of-the-line station, which is currently proposed at Mitchell Road. This Park-and-Ride would primarily serve Park-and-Ride patrons from the south and west. The routing will depend on the actual location of the Park-and-Ride and what access is provided.

4.1.2.3 Roadway Volumes

Roadway volumes were not evaluated since the Park-and-Ride would be small and the exact location has not been identified. The Park-and-Ride generated trips are not expected to impact intersection or roadway operations.

4.1.2.4 Roadway Geometry

The actual Park-and-Ride location is unknown at this time, although it would be proposed to be located near the station. It could be the leasing of an existing parking lot or building a new lot. Shared use of the facility would be desired, as the Park-and-Ride for transit use would mainly be during the weekdays from 6am to 6pm.

The exact Park-and-Ride access is unknown at this time. At this point, Eden Road would be extended from Eden Road to the Station (approximate location of the future North-South Main Street). Consideration has been discussed about potentially building future North-South Main Street from the station north to Technology Drive or to the south to Singletree Lane or both. The connections would influence Park-and-Ride use and routing patterns.

Eden Road would be a two-lane roadway with left-turn lanes and right-turn lanes across the tracks. A future North-South Main Street would be a two-lane roadway.

4.1.3 Findings

Finding of this analysis include the following:

- A preferred Park-and-Ride location has not been identified
- A 160 space Park-and-Ride should not generate enough trips to impact intersection operations
- Access to the Park-and-Ride will determine how trips route into the Town Center area. Selective access may better route traffic in this area.
- Preliminary analysis of a larger Park-and-Ride of 650 spaces (not preferred)
  - If only access to Singletree Lane
    - Singletree Lane operation starts to decline, if the LRT alignment is on Singletree Lane with a three-lane section
    - Requires Park-and-Ride patrons from the west to traverse the three key intersections (expected to operate poorly in 2030) along Prairie Center Drive
    - Prefer additional access points to other roadways
  - Overall prefer multiple access points with one being to Technology Drive
    - This requires Park-and-Ride patrons to only traverse two of the key intersection along Prairie Center Drive and pulls traffic out of the Town Center area
  - Leona Road at Flying Cloud Drive would need an eastbound right-turn lane

4.1.4 Conclusions

Park-and-Ride has been established at 160 parking spaces. However, the actual Park-and-Ride location has not been identified. This 160 space Park-and-Ride should not have any traffic impacts to intersections. Once the Park-and-Ride location is identified, will need to consider access and how Park-and-Ride trips might route through the Town Center area

4.2 SW Station

4.2.1 Description

The Park-and-Ride would be located in the same vicinity as the existing SW Transit Bus Facilitates. The size of the Park-and-Ride is dependent on if this is the end of the line station if the end of the line is at Mitchell Road. Independent of this decision, the internal circulation and location of the Park-and-Ride within the site will be a challenge, in particular if this is the end of the line station. The site needs to accommodate the existing bus Park-and-Ride, bus circulation, layover and Kiss-and-Ride, serving the businesses and the additional function of serving the LRT patrons. At this point, the end of the line station is destined for Mitchell Road reducing the size of the Park-and-Ride at SW Station.

4.2.2 Assumptions

The assumptions utilized for the traffic modeling are summarized in the following sections. A number of assumptions regarding operations, design, and scope of the project have changed since this modeling was completed in March-July 2013. All changes in project assumptions will be reflected in future modeling of the project, and will be documented as part of the Final Environmental Impact Statement for the project.

4.2.2.1 Park-and-Ride Trip Generation

Two build scenarios were evaluated. The Build analyses include volumes generated by the construction of a 440-space or 1,025-space Park-and-Ride facility. The park and ride facility was assumed to generate 200 and 500 trips, respectively, in both the AM and PM peak hours, based on initial trip generation data collected at other Twin Cities park and ride facilities.

4.2.2.2 Park-and-Ride Direction of Approach

Direction of approach is shown in the *Park-and-Ride Trip Generation* memo. The direction of approach is different depending if SW Station is the end-of-the-line station. If SW station is the end-of-the-line, a significant number of additional patrons come from the west on TH 212 or TH 5. With the end of the line at Mitchell Road, the west and south are the primary SW Station Park-and-Ride service areas.

4.2.2.3 Roadway Volumes

- Existing traffic volumes were collected in spring/summer of 2013
- Future volumes are based on the City's Comprehensive Plan. The area is expected to redevelop and trips increase in the area.

4.2.2.4 Roadway Geometry

- The Park-and-Ride would be located somewhere on the existing SW Transit site. This site is shared with a number of businesses. The actual location will take effort to site.
- The site has three access points onto Technology Drive
  - Eastern access is a full signalized access with two lanes
  - Middle access is a right-in/right-out
  - Western access is a full access for buses only with one lane

  - Technology Drive is a four-lane roadway transitioning from undivided to divided. The eastern SW Station access includes left and right-turn lanes.
- These access points will need to be evaluated depending on the number of additional Park-and-Ride spaces and where the new Park-and-Ride facility is located. Will need to address bus operations and circulation, business circulation, pedestrian movements, Park-and-Ride access and circulation, Kiss-and-Ride facilities and drop-off/pick-up areas and parking.

4.2.3 Findings

Finding of this analysis include the following:

- Expected routing is being documented in a *Park-and-Ride Trip Generation* memo and *Finalize End of Line Park-and-Ride Distribution* memo. It will review the routes based on expected travel time and delays.
- A significant amount of the traffic comes from the west; this would be even more prevalent if SW Station is the larger end-of-the-line station.
- No issues are expected in the morning, although the southbound right-turn lane on Prairie Center Drive at Technology Drive should be extended to be as long as possible
- Lunch and evening operations result in queuing in the site and challenging internal circulation. This was based on the traffic model and actual observations.
- Under 2030 Build volumes with the 1,025 new Park-and-Ride spaces and existing roadway conditions, except for the addition of a 2nd southbound left-turn lane at the east access at Technology Drive:
  - Expect delays at internal intersection (entrance to the parking structure) to be around 30 seconds per vehicle. This is a long delay internal to a parking lot.
  - 95^{th} percentile queues will extend from Technology Drive to the existing parking structure entrance
  - 95^{th} percentile queues will extend into/near Technology Drive from the first internal intersection. This is caused by any vehicles trying to turn left to the business at the center of the site.
  - Overall, would consider this level of operation unacceptable

4.2.4 Conclusions

SW Station east access/Technology Drive intersection should include a 2nd southbound left-turn lane. Site access from Technology Drive would have multiple entries and exists with longer throats. Another full access should be provided to the parking facilities which could be accomplished by converting the middle access from a right-in/right-out to a full access. The internal site circulation should attempt to separate transit users and business patrons and the heavy movements should not cross. The parking facilitates should be integrated. The existing bus service circulation should be maintain or improve.

4.3 Mitchell Road Station

4.3.1 Description

The Mitchell Road station would be the largest Park-and-Ride built for the SWLRT. The location for this facility has been shown in many locations and was somewhat dependant if the OMF (Operation Maintenance Facility) was located at the end-of-the-line. At this time, the OMF is being located near the Shady Oak station in the middle of the line. The currently proposed Park-and-Ride location is on the existing Eden Prairie City Center parking lot located on the westside of the property.

4.3.2 Assumptions

The assumptions utilized for the traffic modeling are summarized in the following sections. A number of assumptions regarding operations, design, and scope of the project have changed since this modeling was completed in March-July 2013. All changes in project assumptions will be reflected in future modeling of the project, and will be documented as part of the Final Environmental Impact Statement for the project.

4.3.2.1 Park-and-Ride Trip Generation

All Build scenarios also included volumes generated by the construction of a 905-space park and ride facility. The park and ride facility was assumed to generate 440 trips in both the AM and PM peak hours, based on initial trip generation data collected at other Twin Cities park and ride facilities.

4.3.2.2 Direction of Approach

Most Park-and-Ride patrons come from the west from TH 212 and TH 5 with the others coming from the south. Routing of Park-and-Ride trips is completed under a separate memo and takes into account travel times and delays along TH 212 and TH 5 and Technology Drive

4.3.2.3 Roadway Volumes

Existing traffic volumes were collected in spring/summer of 2013. Future volumes are based on the City's Comprehensive Plan. The area is expected to redevelop and trips increase in the area.

4.3.2.4 Roadway Geometrics

The current Park-and-Ride location is proposed on the Eden Prairie City Center site over the existing parking lot on the westside of the property. Other locations have been considered including the LPA's identified location on the Eaton Property, the existing Eden Prairie Public Works site, and east of Mitchell Road.

The primary access to the proposed Eden Prairie City Center site would be the existing west driveway/Technology Drive. The west driveway maybe extended north and/or south to complete a future Hiawatha Avenue extension. At this point, this extension is not included in the project. This intersection would be improved adding left-turn lanes on Technology Drive, an eastbound right-turn lane, an additional northbound lane and a traffic signal.

4.3.3 Findings

Finding of this analysis include the following:

- For the preliminary analysis, the assumption was that LRT could be crossing Technology Drive at the City Center west driveway. This would result in a signalized intersection with additional turn lanes.
- The current City Center west access/Technology Drive intersection would result in eastbound having one lane for each movement, westbound with a left-turn lane and thru-right lane and northbound having two turn lanes of 250 feet in length. This should likely be controlled by a traffic signal.
- The Park-and-Ride generated trips from TH 5 and the south use the Technology Drive/Mitchell Road intersection. This results in needed additional turn lanes and/or lengthening existing ones. The main improvements related to the Park-and-Ride are the eastbound left-turn movement that would be used by exiting Park-and-Ride patrons headed west to TH 5, the northbound left-turn lane which should be lengthened to accommodate the increased traffic and LRT removing storage, and the eastbound right-turn movement which will have the right-turn-on-red restricted due to the LRT crossing.
- Further investigation will be needed along Technology Drive and Wallace Road to the west of the site. The actual routing will be updated based on expected travel times and intersections delays and on the actual Park-and-Ride sizes for both Mitchell Road and SW Station. This was completed under the SW Station and Mitchell Road Station Routing traffic memo.
- A comparison was made between a Park-and-Ride on the east or west side of Mitchell Road, the following were the findings of that analysis:
    - An intersection geometric solution at Mitchell Road/Technology Drive is feasible to improve operations, although nearing capacity
    - A Park-and-Ride east of Mitchell Road would result in worse operations in the AM Peak hour than west of Mitchell
    - A Park-and-Ride east of Mitchell Road may result in more operational challenges with higher intensity land use
    - A Park-and-Ride east of Mitchell Road results in no LRT delays or impact at Mitchell Road (LRT would not need to cross Mitchell Road)
    - A Park-and-Ride east of Mitchell Road results in fewer improvements at Mitchell Road and Technology Drive
    - Impact to Technology Drive is dependent on a number of factors (access, station location, pedestrian connection, LRT crossings, future development)

4.3.4 Conclusions

Technology Drive/Eden Prairie City Center west access intersection provide additional turn lanes including an eastbound left-turn and right-turn lane, a westbound left-turn lane and two northbound turn lanes leaving the site. Technology Drive and Eden Prairie City Center west access intersection would need to be signalized if LRT crosses the intersection to the Mitchell Road Station or by 2030 with the Park-and-Ride located on the City Center site, but may not needed at year of opening without the LRT crossing. Further review might suggest that the peaking nature of a Park-and-Ride might require the traffic signal. Park-and-Ride trip generation does impact some movements at Technology Drive/Mitchell Road intersection and potentially along Wallace Road

SWLRT PE Technical Issues

REV 02: FEB 1, 2013

PEC West

PEC East

Joint PEC West/PEC East

Technical issues:

1. Eden Prairie Alignment
2. Nine Mile Creek Crossing
3. Golden Triangle Station
4. Shady Oak Road Crossing
5. City West Station and TH 212/TH 62 Flyover Bridges
6. Opus Station
7. Minnetonka/Hopkins Bridge
8. Shady Oak Station

9. PEC West/PEC East Interface Point

10. Hopkins Station
11. Excelsior Blvd. Crossing
12. Blake Station
13. Louisiana Station
14. Wooddale Station
15. TH 100
16. Beltline Station
17. West Lake Station
18. Kenilworth Corridor
19. Bassett Creek Valley Corridor
20. Royalston Station/Interchange Project Connection
21. Freight Rail Co-location/Relocation Alternatives

System-wide technical issues (not shown):

22. Traction Power Substation and Signal Bungalow Locations
23. OMF Location
24. Park & Ride, Kiss & Ride and Bus Layover Locations
25. Trails and LRT Interface Coordination

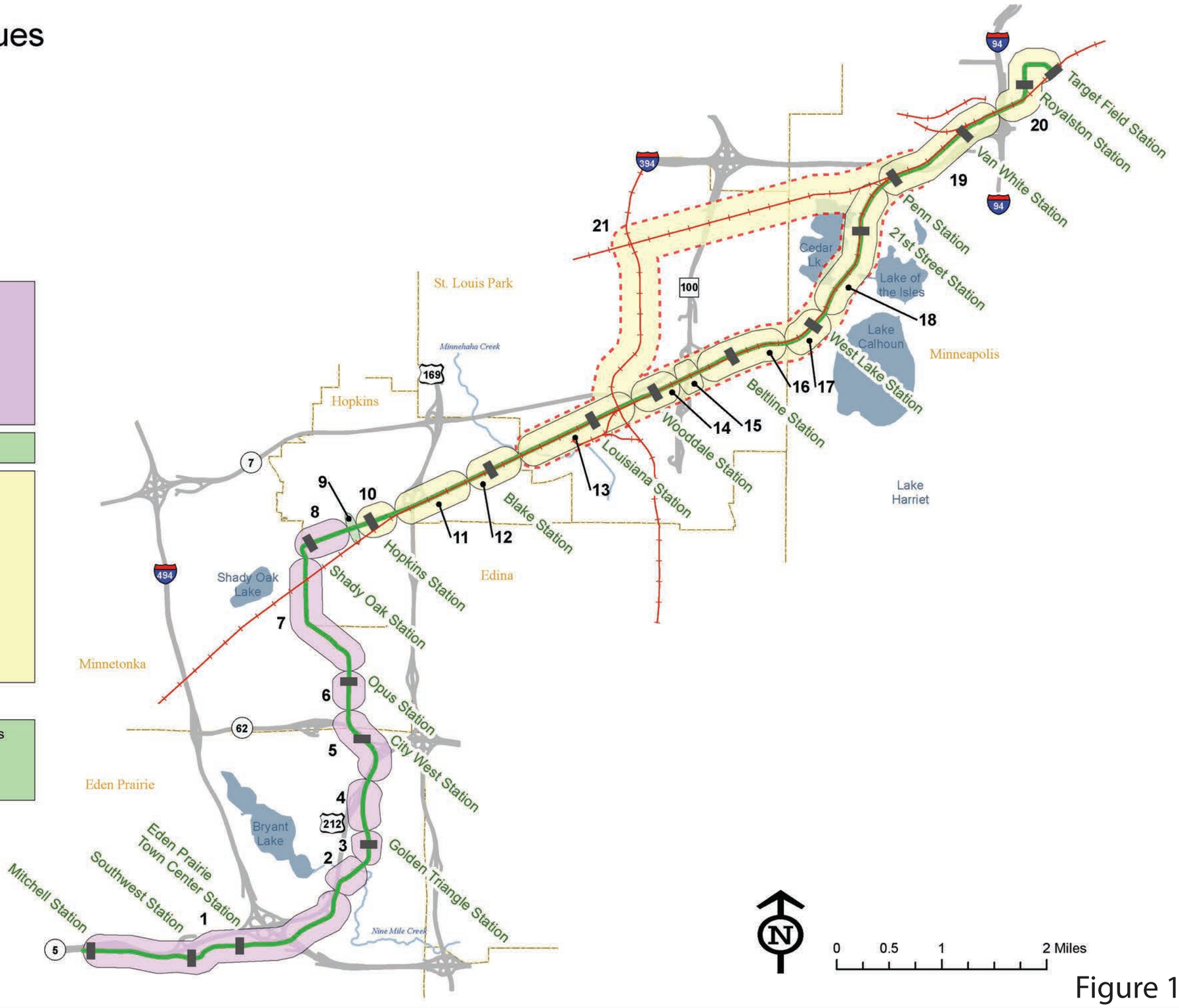

Figure 1

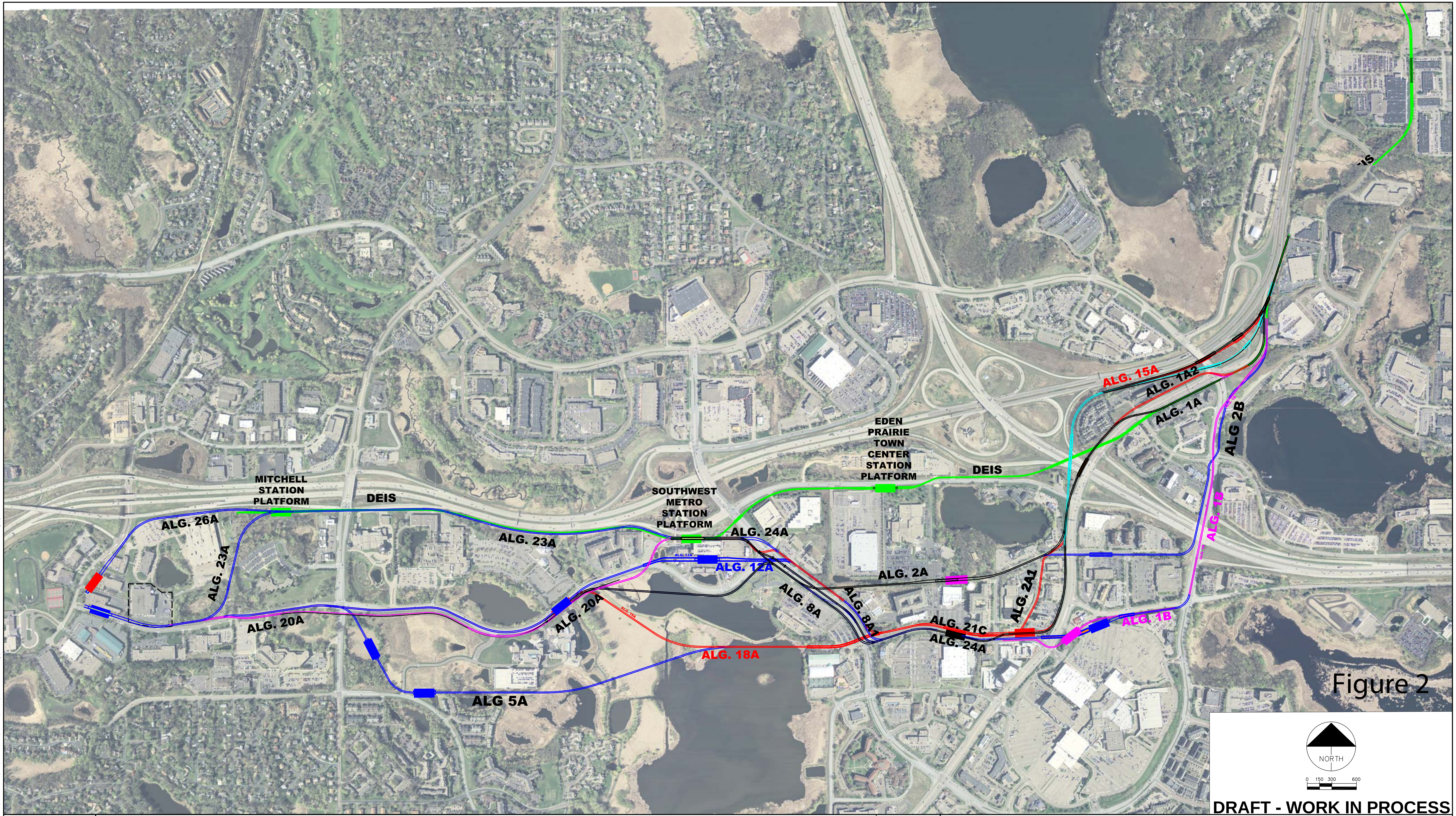

Figure 2

SOUTHWEST LRT
TI-1 : EDEN PRAIRIE - ALIGNMENT
TIER 1 ANALYSIS

IRT: #1
REV: 2
DATE : 05/07/2013

METROPOLITAN COUNCIL

AECOM

LOCALLY PREFERRED ALTERNATIVE

OPTION 1 MITCHELL: (TECH DR / SINGLETREE LN)

OPTION 2 MITCHELL: (TH 212 / SINGLETREE LN)

OPTION 3 MITCHELL: (TECH DR / COMP PLAN)

OPTION 4 MITCHELL: (TH 212 / COMP PLAN)

MITCHELL RD

HWY 494

HWY 212

MITCHELL STATION

SOUTHWEST STATION

TOWN CENTER STATION

TECHNOLOGY DRIVE

HWY 212

TOWN CENTER STATION

HWY 494

WALLACE RD

MITCHELL STATION

TECHNOLOGY DR

SINGLETREE LN

TOWN CENTER STATION

FLYING CLOUD DR

PRAIRIE CENTER DR

Figure 3

NORTH

0 40 80 160

DRAFT - WORK IN PROCESS

SOUTHWEST LRT

TI-1 : EDEN PRAIRIE - ALIGNMENT

TIER 3 ANALYSIS

IRT: #1

DATE : 7/30/2013

METROPOLITAN COUNCIL

AECOM

May, 06 2013 04:43 pm V:\2200_PEC-WC\CAD\SEGMENT-W\EXHIBITS\TRACK\Eden Prairie Meeting\EXHIB-TRK-TECH ISSUE 1- KEY MAP WITH ALG 2A-EDP.dwg By: Bosche

AECOM

SOUTHWEST
Green Line LRT Extension

Memorandum

DATE: August 5, 2014

TO: Jim Alexander, Director of Engineering and Design

CC: Kim Proia, PEC West Project Manager
Don Demers, PEC West Civil Lead

FROM: Pat Corkle, PEC West Traffic Lead
Josh Maus, PEC West Freeway Engineer

SUBJECT: TH 212/TH 5 Freeway Analysis Traffic Summary

1.0 INTRODUCTION

This technical memorandum summarizes the freeway operations modeling completed as part of the resolution of Technical Issue (TI) #1 Eden Prairie Alignment completed in May 2013. This technical issue area and the overall Southwest LRT alignment are shown in **Figure 1.**

The freeway modeling was conducted to support the development of the Southwest LRT design and to assist in defining the scope of the project for the Municipal Consent plans. For TI #1, a freeway analysis was completed for westbound TH 212/TH 5 between I-494 and Wallace Road.

The following sections document the assumptions, results, and findings of the freeway analysis..

2.0 TH 212/TH 5 FREEWAY ANALYSIS (TI - #1)

2.1 Description

During the issue resolution team meetings, discussion occurred about ending the line at Southwest (SW) Station and eliminating Mitchell Road Station. In this scenario, Park-and-Ride demand from the Mitchell Road Station is mainly transferred to SW Station resulting in the increasing the additional spacing from 450 to approximately 830 spaces SW Station. The 830 spaces were the best estimate at the time. The actual number of spaces would be an additional 1,025 based on current (July 2014) work, although the current project's end of the line is the Mitchell Station. The additional 195 spaces would not impact the findings of the analysis. A majority of the patrons for this facility would be destined to the west using TH 212 or TH 5 and would potentially utilize the Prairie Center Drive westbound on-ramp onto TH 212 and TH 5 for access to the freeways. This analysis was completed to determine if the additional traffic associated with a larger Park-and-Ride facility at SW Station would have any adverse impacts on the ramp or freeway mainline. It should be noted that the end-of-the-line station in the Municipal Consent Plan is located at Mitchell Road.

The primary issue is the weave required of traffic entering the freeway system at the Prairie Center Drive on-ramp and destined for westbound TH 212. With the TH 212 and TH 5 split just downstream of the westbound Prairie Center Drive on-ramp, a driver destined for TH 212 is required to make two lane changes in approximately 2,700 feet.

2.2 Assumptions

The assumptions utilized for the traffic modeling are summarized in the following sections. The analysis for this work was completed in the Spring of 2013 and the assumptions are based on what was known at that time.

2.2.1 SW Station Build Assumptions

- New parking spaces of 830 (The current estimate would be 1,025 spaces, but in May 2013 the analysis was based on 830 additional spaces. The 195 spaces would not impact the findings of this analysis or conclusions).
- Trip generation for PM Peak – 350 trips exiting and 50 trips entering.
- Trip distribution is based on information from the Metropolitan Council Travel demand Model and the Metro Transit Park-and-Ride model.
    - 43% of the new Park-and-Ride generated trips would use the Prairie Center Drive westbound on-ramp (includes both TH 212 and TH 5 destinations, approximately 67% of these are destined for TH 212).

2.2.2 Freeway Analysis

- Use Corsim Model (approved MnDOT software for freeway analysis).
- PM Peak Hour analysis (one hour).
- Westbound direction only.
- Model limits on TH 212/TH 5 are from I-494 to just west of Wallace Road interchange.
- Includes the Prairie Center Drive interchange with TH 212/TH 5 and assumes all traffic demand on Prairie Center Drive can access the freeway. This assumption would likely require improvements in the Prairie Center Drive interchange area. These improvements were not identified or evaluated as part of this freeway analysis.

2.2.3 Roadway Volumes

- Existing traffic volumes from April 2013 include MnDOT loop detector data for ramps and freeway mainline and Prairie Center Drive/TH 212/TH 5 interchange turning movement counts.
- Future forecast volumes for 2030 include:
    - Freeway background volumes annual increase of 0.75 to 1 percent based on the TH 212/Shady Oak Road interchange project's travel demand forecasting.
    - Interchange ramp volumes for Prairie Center Drive, Mitchell Road, Wallace Road from the SWLRT project traffic forecasting effort.
    - These volumes were assumed to reach these modeling limits and not restricted by any upstream bottlenecks.

2.2.4 Freeway Geometrics

- TH 212/TH 5 westbound is a three-lane freeway at the Prairie Center Drive Bridge. The Prairie Center Drive westbound on-ramp is an add lane creating a four-lane freeway section. 2,700 feet from this add lane, the freeway becomes a 2-2 split, with 2 right most lanes for TH 5 and two left most lanes for TH 212.

2.3 Findings

The findings of the Corsim modeling and data analysis are shown in the following:

- Based on MnDOT's congestion map from spring of 2012, westbound TH 212/TH 5 from I-494 to the split is not considered congested.
- Reviewing the twelve (12) Tuesday, Wednesday and Thursday's in April of 2013 during the pm peak period, four (4) days showed congestion for approximately a half-hour to one hour as shown in **Figure 2**.
- The results of the analysis are shown in **Figure 3** and summarized below:
    - The existing freeway analysis shows the freeway is operating at LOS C and D conditions.
    - The freeway under 2030 No-Build forecast volumes (volumes without the additional Park-and-Ride trips) show the freeway would operate at LOS F.
    - To improve the 2030 No-Build operations a potential improvement was identified and evaluated. This improvement modifies the TH 212/TH 5 split from a 2-2 to a 3-2. This is accomplished by converting the second (outside) TH 5 lane to a decision lane for either TH 212 or TH 5. Downstream of the TH 212/TH 5 diverge point; TH 212 would merge back to two lanes. With this improvement, the 2030 No-Build operations are improved to LOS D and E.
    - The 2030 Build analysis also resulted in acceptable LOS D and E operations with this improvement. The additional Park-and-Ride traffic did result in a marginally measureable increase in density/decrease in speed, but insignificant to the overall operations. The right-most two freeway lanes to the west of the Prairie Center Drive on-ramp were furthered analyzed to identify any operational impacts in those lanes and again the results were measurable, but not significant.

2.4 Conclusions

An additional 830 parking spaces (or if increased to 1,025 spaces) at SW Station would not significantly impact westbound TH 212/TH 5 pm peak hour freeway operations in 2030. Even if the number of spaces were increased by over 200 more spaces, the freeway operation would not be significantly impacted by the Park-and-Ride generated trips. The existing freeway operations are acceptable, although the volumes west of Wallace Road on TH 5 and TH 212 are reaching capacity. Potential solutions, which are not caused by the SWLRT project and therefore not proposed as part of the SWLRT project, include the following:

1. Include an "escape lane" creating a 3-2 Split at TH 212 and TH 5. The escape lane could be approximately 2,700 feet (merged by the Wallace Road Bridge) nearly doubling the weave distance for the westbound Prairie Center Drive on-ramp to TH 212.
2. Continuation of the "escape lane" further west to provide an auxiliary lane, as needed.
3. Consideration of using the concept of a "dynamic shoulder", allowing the shoulder to become a general purpose lane just during the peak hour(s).
4. Further preliminary engineering and operational analysis would be needed to determine the feasibility of these improvements.

SWLRT PE Technical Issues

REV 02: FEB 1, 2013

- PEC West
- PEC East
- Joint PEC West/PEC East

Technical issues:

1. Eden Prairie Alignment
2. Nine Mile Creek Crossing
3. Golden Triangle Station
4. Shady Oak Road Crossing
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9. PEC West/PEC East Interface Point

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11. Excelsior Blvd. Crossing
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20. Royalston Station/Interchange Project Connection
21. Freight Rail Co-location/Relocation Alternatives

System-wide technical issues (not shown):

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23. OMF Location
24. Park & Ride, Kiss & Ride and Bus Layover Locations
25. Trails and LRT Interface Coordination

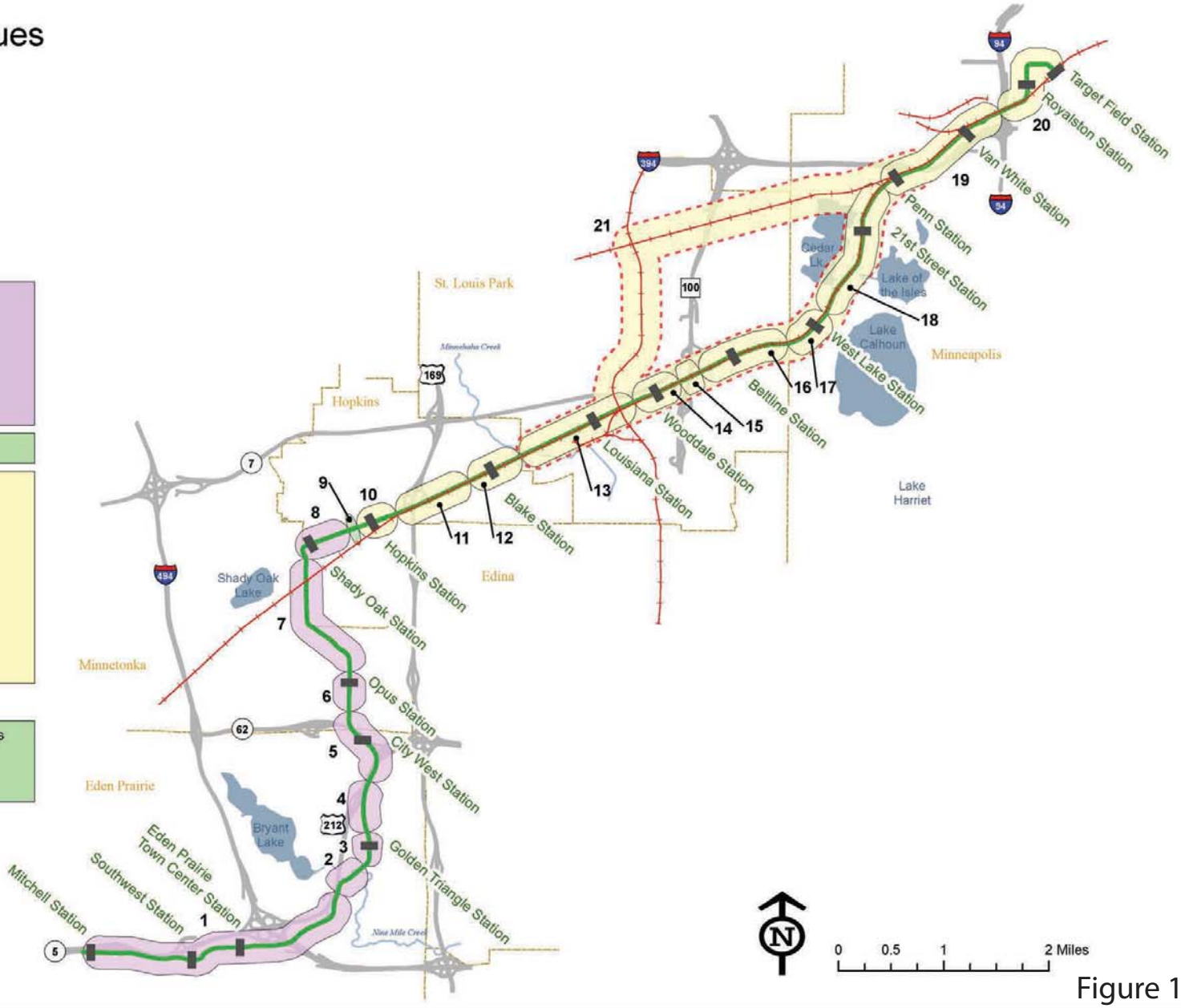
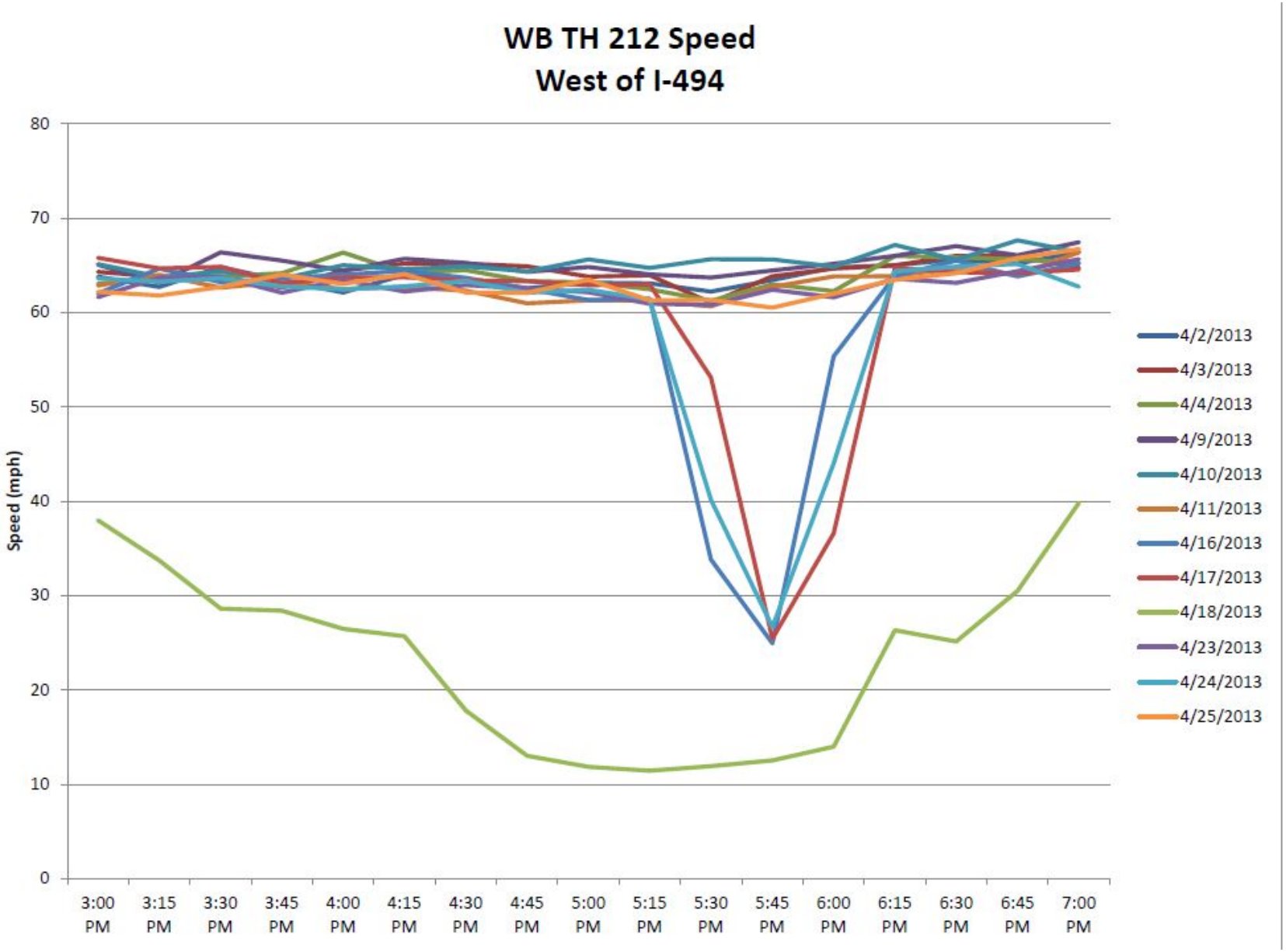


Figure 1


WB TH 212 Speed
West of I-494
Speed (mph)
80
70
60
50
40
30
20
10
0
3:00 PM
3:15 PM
3:30 PM
3:45 PM
4:00 PM
4:15 PM
4:30 PM
4:45 PM
5:00 PM
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4/17/2013
4/18/2013
4/23/2013
4/24/2013
4/25/2013

Figure 2

Westbound TH 212 Freeway Analyses
PM Peak Hour CORSIM Operations Analysis Results

	Existing Conditions (2013)			No Build (2030)			No Build with Improvements* (Year 2030)			Build with Improvements* (Year 2030)		
WB TH 212 Segment	**LOS**	**Density (vphpl)**	**Speed (mph)**	**LOS**	**Density (vphpl)**	**Speed (mph)**	**LOS**	**Density (vphpl)**	**Speed (mph)**	**LOS**	**Density (vphpl)**	**Speed (mph)**
Prairie Center Drive Off Ramp to Prairie Center Drive On Ramp	D	30	61	F	75	26	E	35	59	E	35	59
Prairie Center Drive On Ramp to Mitchel Road Off Ramp	C	28	60	F	74	25	D	34	57	D	35	57
Mitchel Road Off Ramp to TH 5 Off Ramp	C	26	58	F	64	25	D	32	54	D	33	53
West of Wallace Road On Ramp	D	33	63	F	83	33	D	28	64	D	29	64

* Assumes the westbound auxiliary lane on TH 212 west of Wallace Road.

Figure 3

Appendix D

Plan & Profile Drawings

- LPA (DEIS)
- Option 3 - Refined

BEGIN SEGMENT LRT 3
STA. 100+00

MATCH LINE STA 130+00
SEE SHEET 2

TH 5

RELOCATE RAMP

RETAINING WALL

MITCHELL RD

RETAINING WALL

RELOCATE RAMP

TH 5

WB LRT

15 MPH

105+00

110+00

115+00

120+00

125+00

130

MITCHELL RD P&R STATION

PARK AND RIDE

20 MPH

MITCHELL RD GRADE CROSSING

PROPOSED TPSS #16

EB LRT

RETAINING WALL

FENCE

RETAINING WALL

45 MPH

EB LRT

PROPOSED TPSS #15

WB LRT

EXISTING LIGHTING

N

910

900
890
880
870
860
850
840
830
820

PROPOSED PROFILE

STATION
Grade = −0.3%

MITCHELL RD
GRADE CROSSING

Grade = −1.2%

EXISTING GROUND

10'
100'

100+00 105+00 110+00 115+00 120+00 125+00 130+00

NO	DATE	BY	CKD	APPR	REVISION

...\SWT_HDR_KS_LRT_3_sht01_051810.dgn

HORIZONTAL 0' 100' 200'
VERTICAL 0' 10' 20'

PRELIMINARY
DRAFT
NOT FOR
CONSTRUCTION

HDR Engineering, Inc.

Hennepin

SOUTHWEST transitway

DRAWN BY
DESIGNED BY
CHECKED BY
COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

LRT ALTERNATIVE SEGMENT 3
PLAN AND PROFILE
STA: 100+00 - 130+00

SHEET 1 OF 15

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31/2010 11
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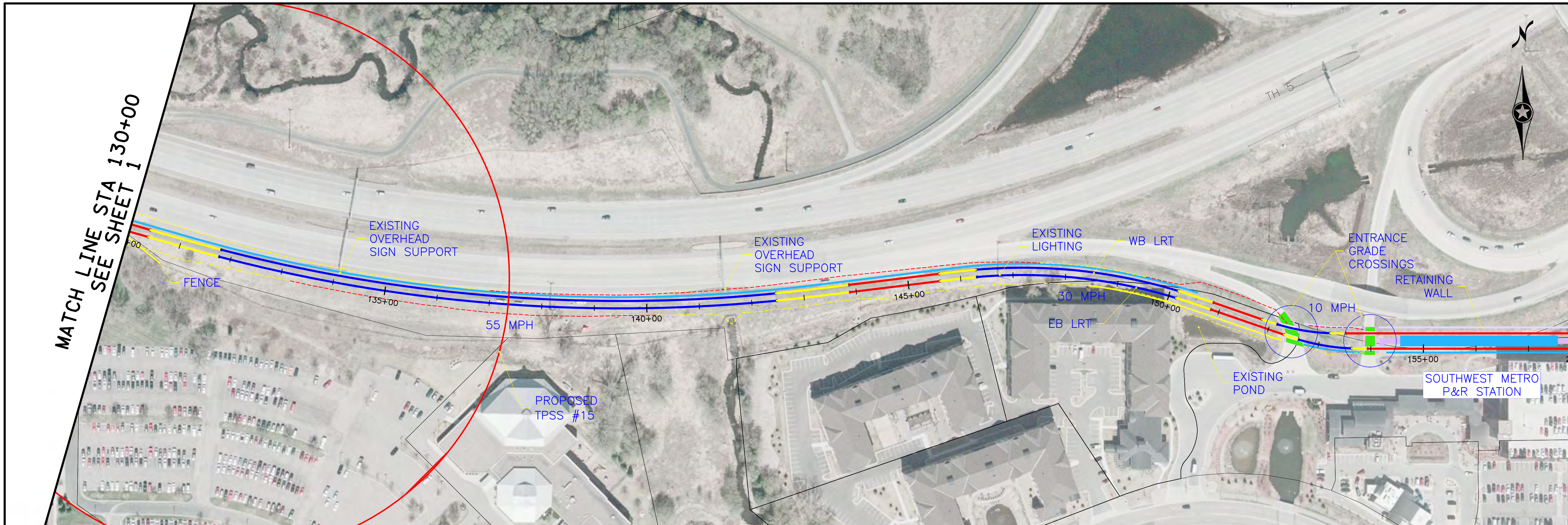

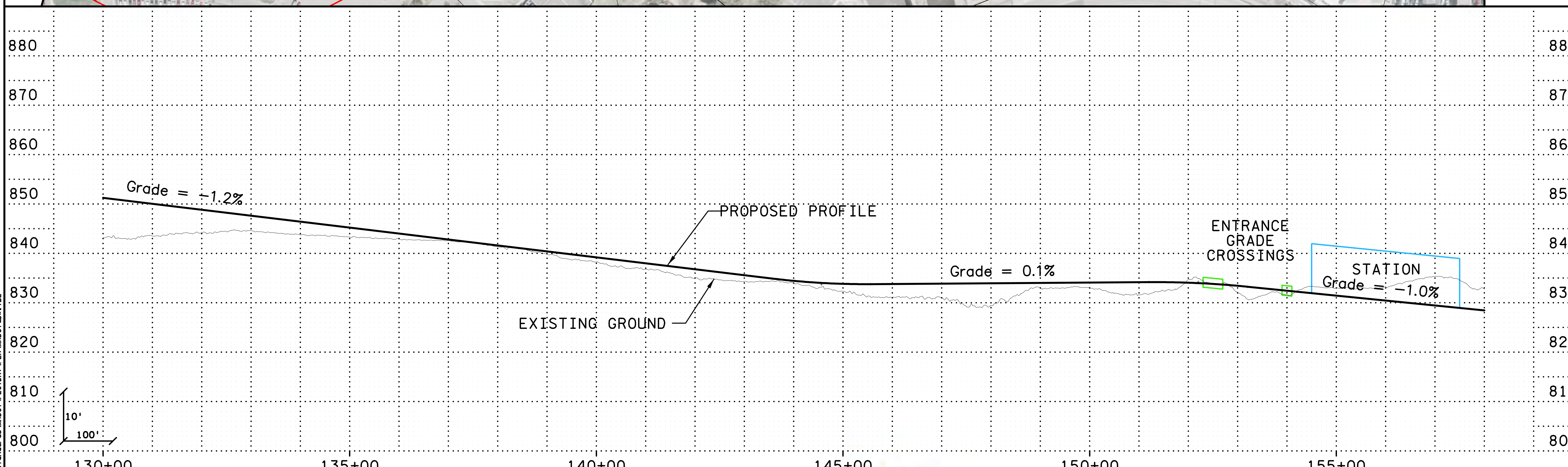

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VERTICAL 0' 10' 20'

PRELIMINARY DRAFT NOT FOR CONSTRUCTION

HDR
HDR Engineering, Inc.

Hennepin

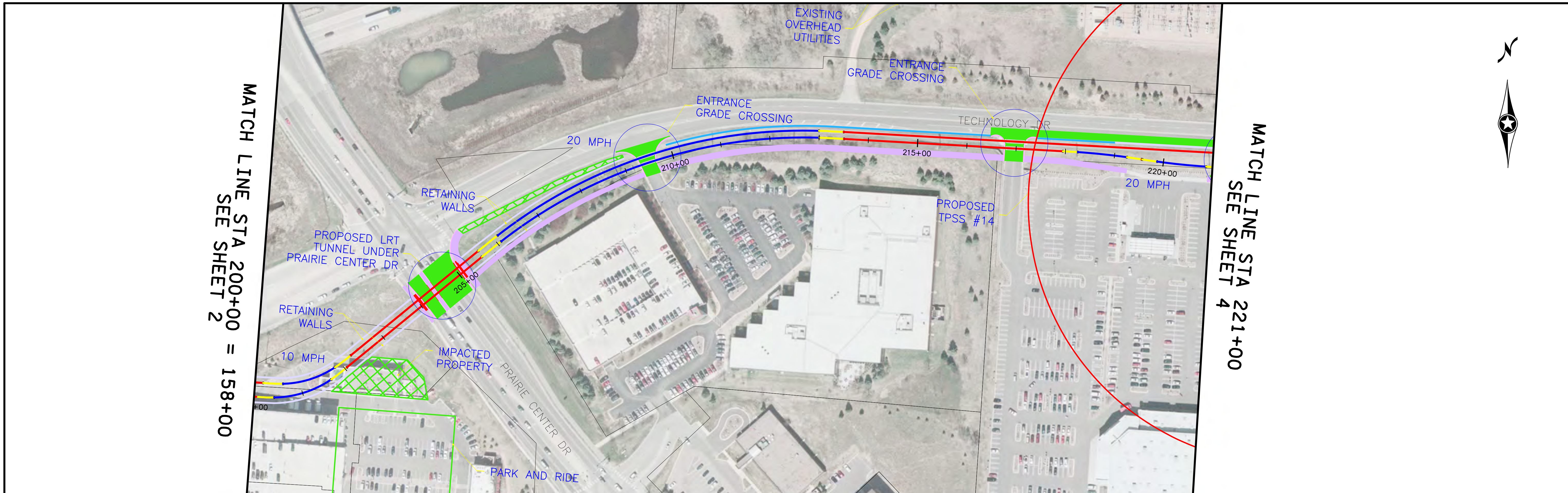
SOUTHWEST transitway

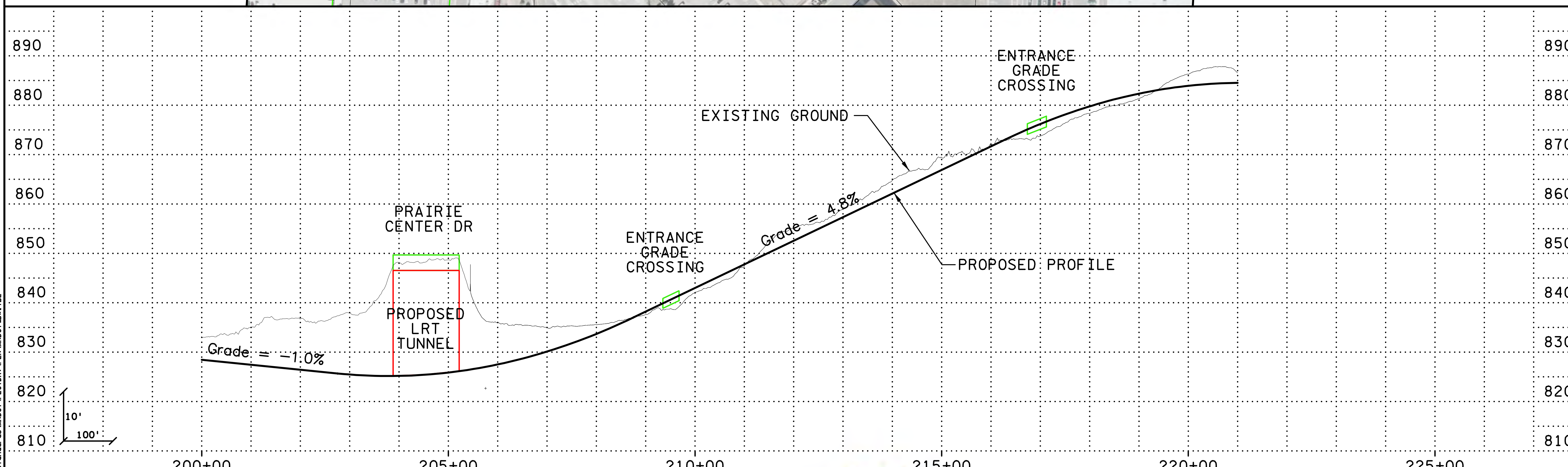
DRAWN BY
DESIGNED BY
CHECKED BY
COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

LRT ALTERNATIVE SEGMENT 3
PLAN AND PROFILE
STA: 130+00 - 158+00

SHEET 2 OF 15





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VERTICAL 0' 10' 20'

PRELIMINARY DRAFT NOT FOR CONSTRUCTION

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Hennepin

SOUTHWEST transitway

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CHECKED BY
COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

LRT ALTERNATIVE SEGMENT 3
PLAN AND PROFILE
STA: 200+00 - 221+00

SHEET 3 OF 15

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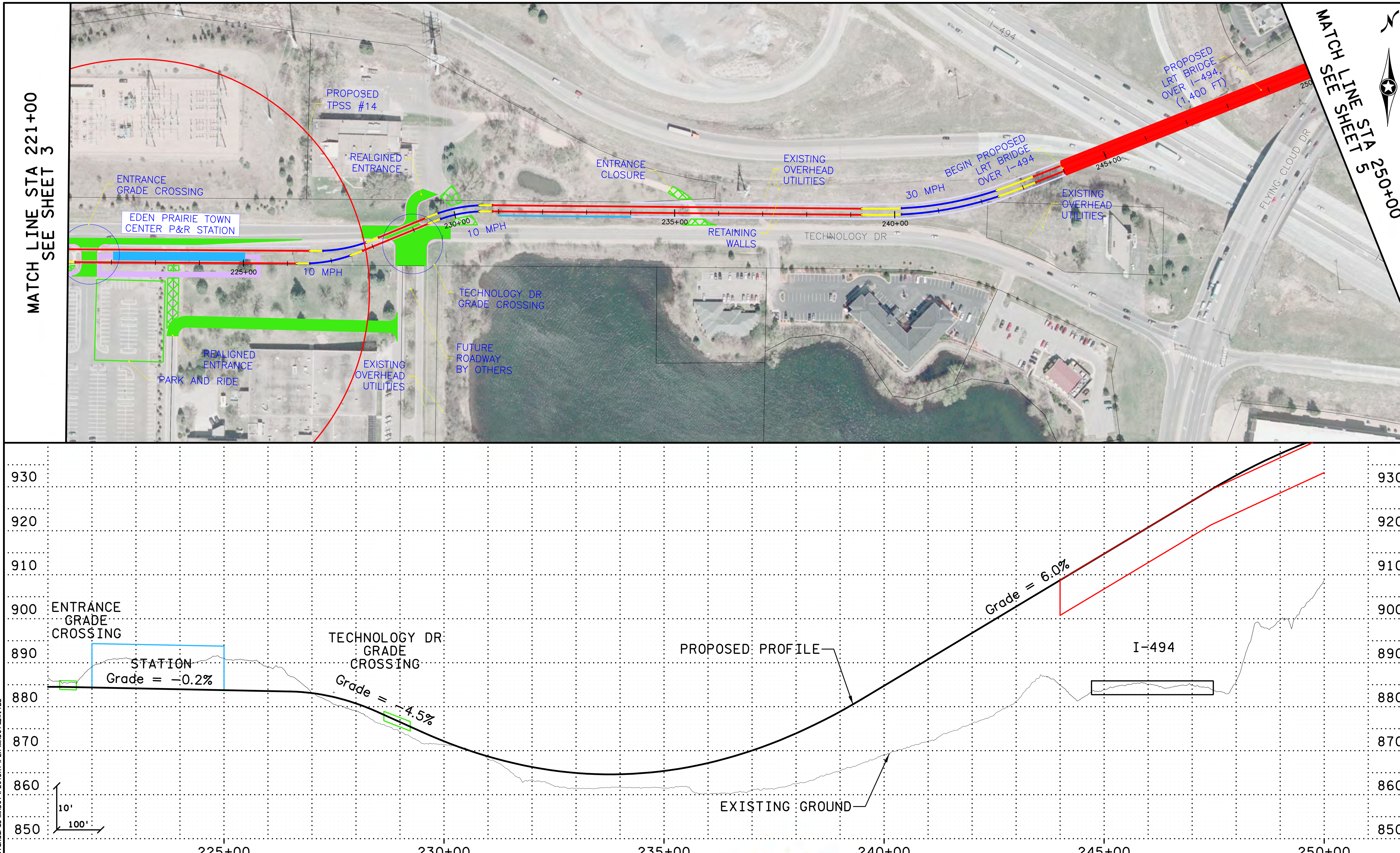

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PRELIMINARY DRAFT NOT FOR CONSTRUCTION

HDR Engineering, Inc.

Hennepin

SOUTHWEST transitway

DRAWN BY
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CHECKED BY
COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

LRT ALTERNATIVE SEGMENT 3
PLAN AND PROFILE
STA: 221+00 - 250+00

SHEET 4 OF 15

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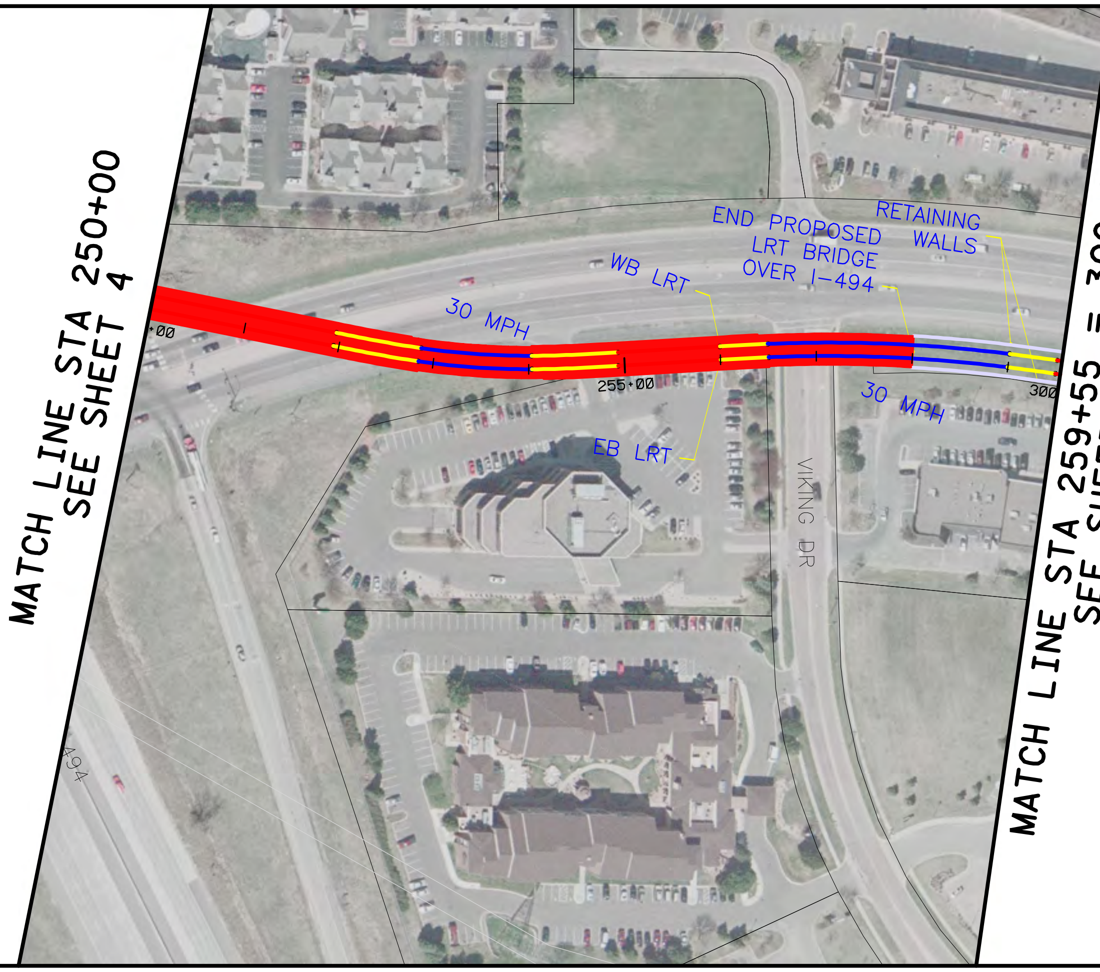

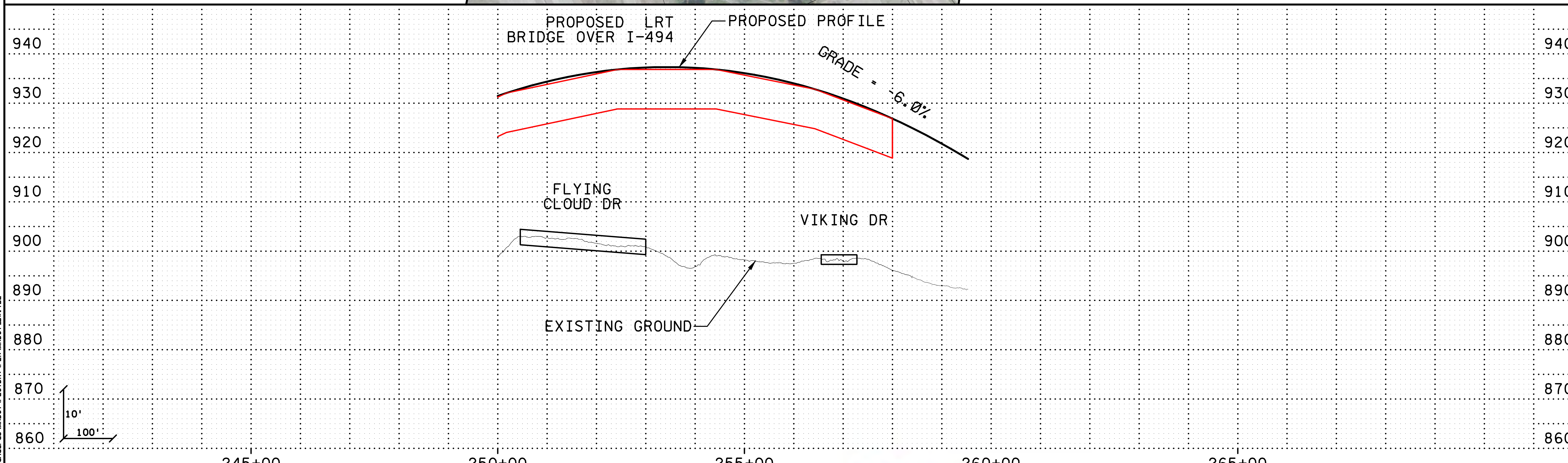

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HDR
HDR ENGINEERING, INC.

Hennepin

SOUTHWEST transitway

DRAWN BY
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CHECKED BY
COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

LRT ALTERNATIVE SEGMENT 3
PLAN AND PROFILE
STA: 250+00 - 270+61

SHEET 5 OF 15

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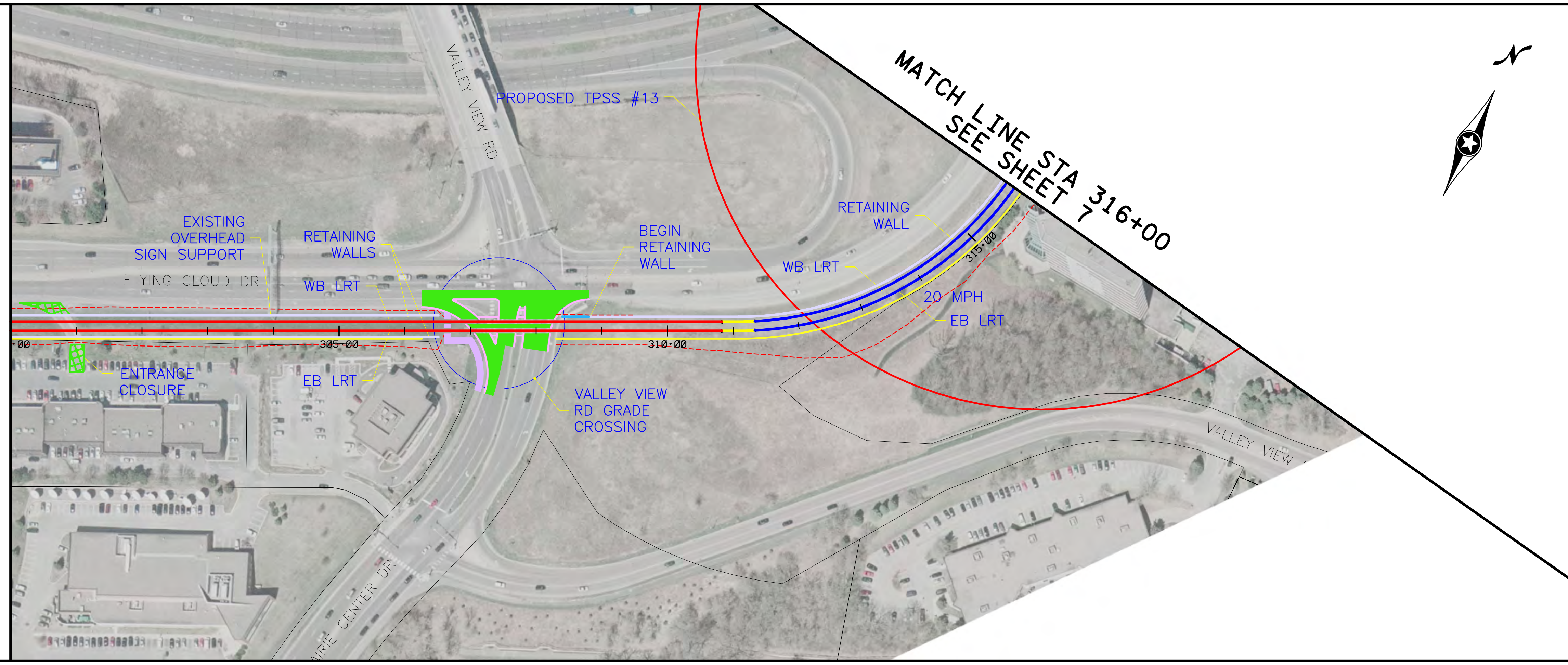
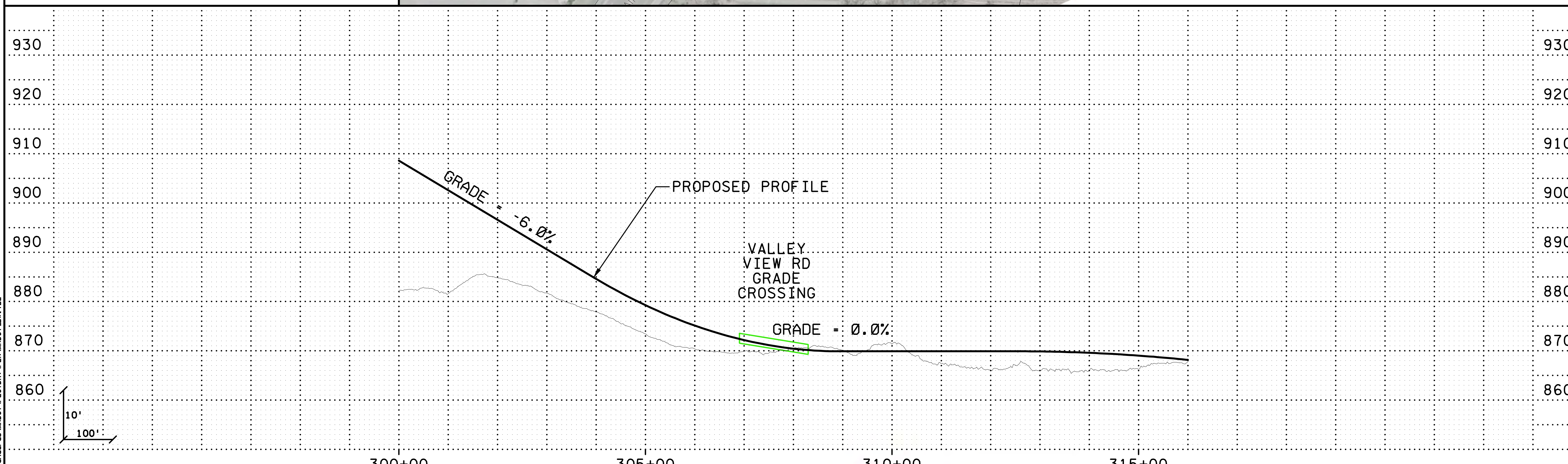
MATCH LINE STA 259+55 = STA 300+00
SEE SHEET 5





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HDR ENGINEERING, INC.

Hennepin

SOUTHWEST transitway

DRAWN BY
DESIGNED BY
CHECKED BY
COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

LRT ALTERNATIVE SEGMENT 3
PLAN AND PROFILE
STA: 300+00 - 316+00

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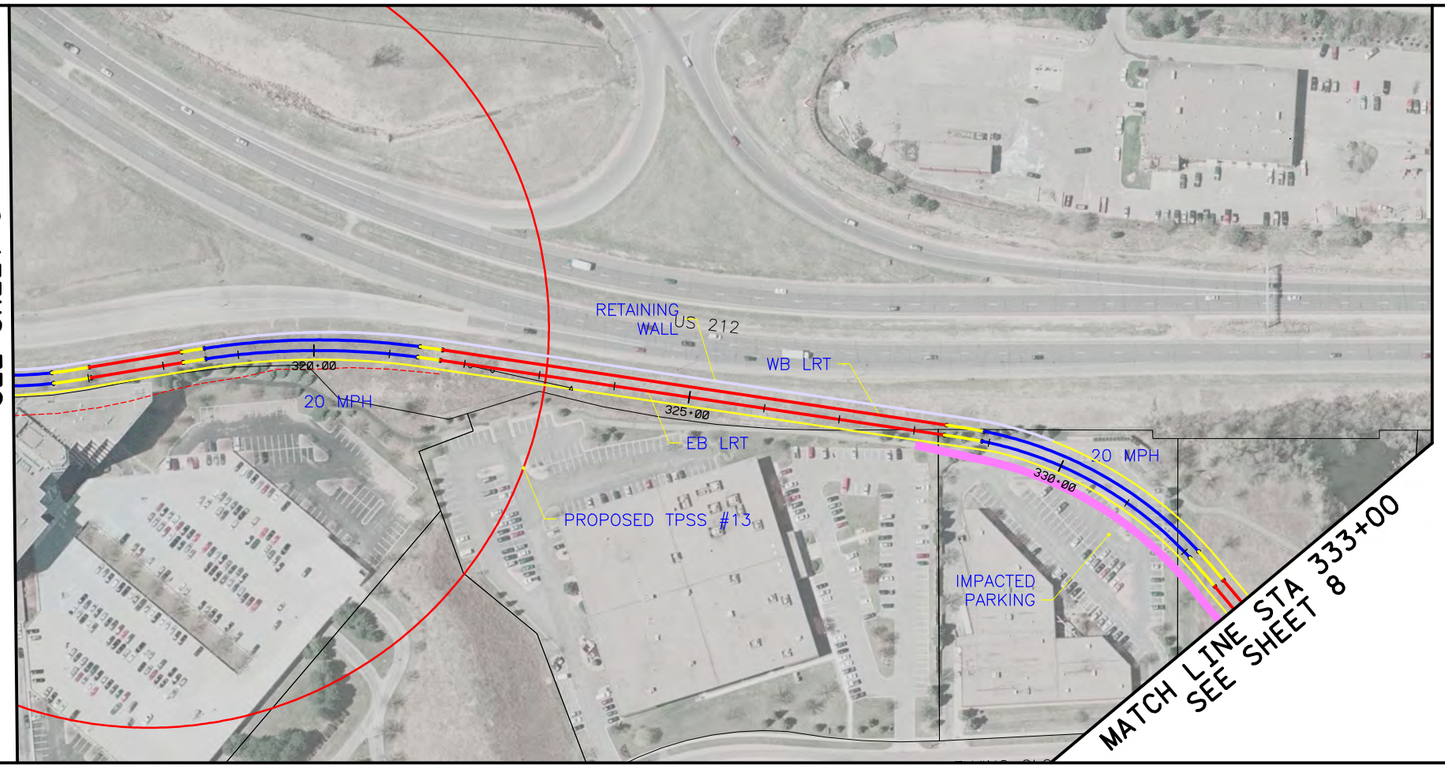

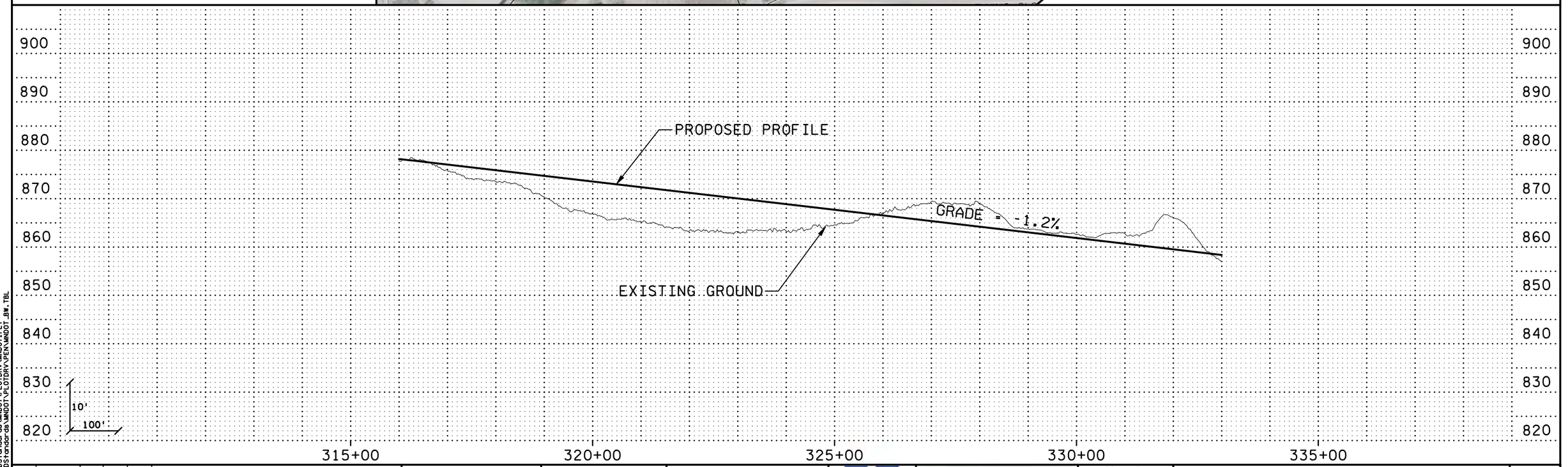

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HDR ENGINEERING, INC.

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COMM. NO.

SOUTHWEST TRANSITWAY CONCEPTUAL DESIGN

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PLAN AND PROFILE
STA: 316+00 - 333+00

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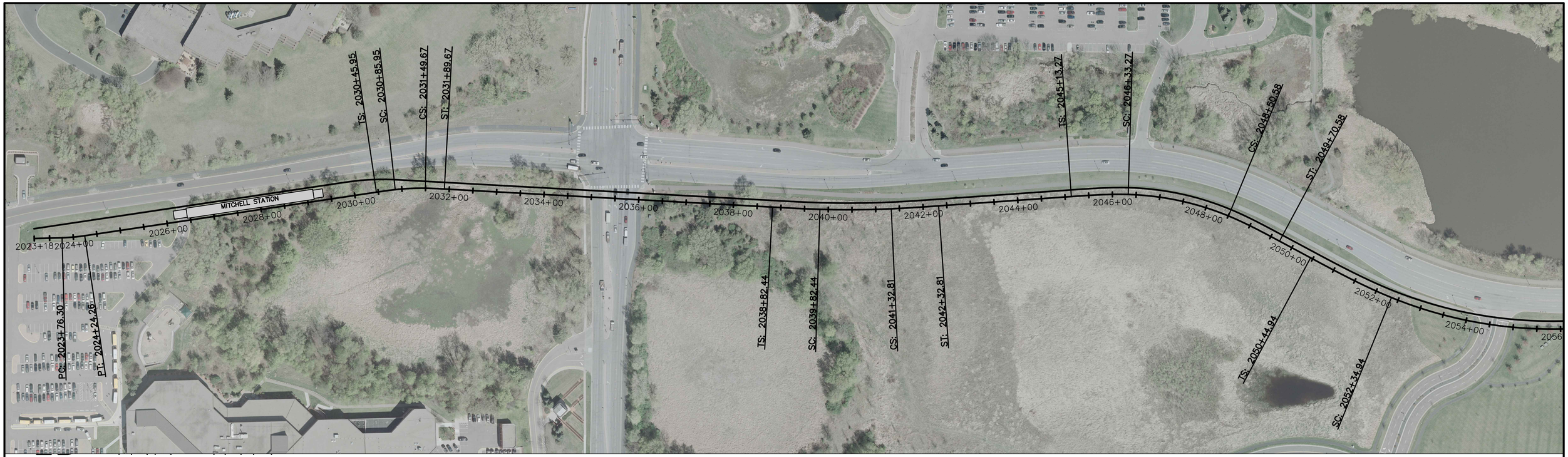
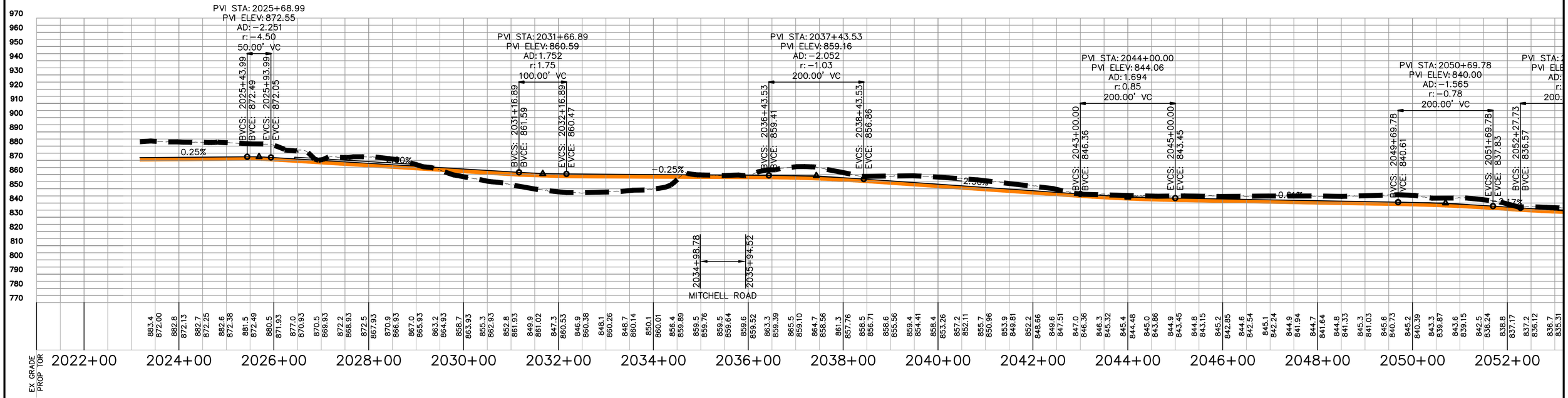




DRAFT-WORK IN PROCESS

SOUTHWEST
Green Line LRT Extention

SOUTHWEST LRT

OPTION 3 - REFINED

IRT: #1

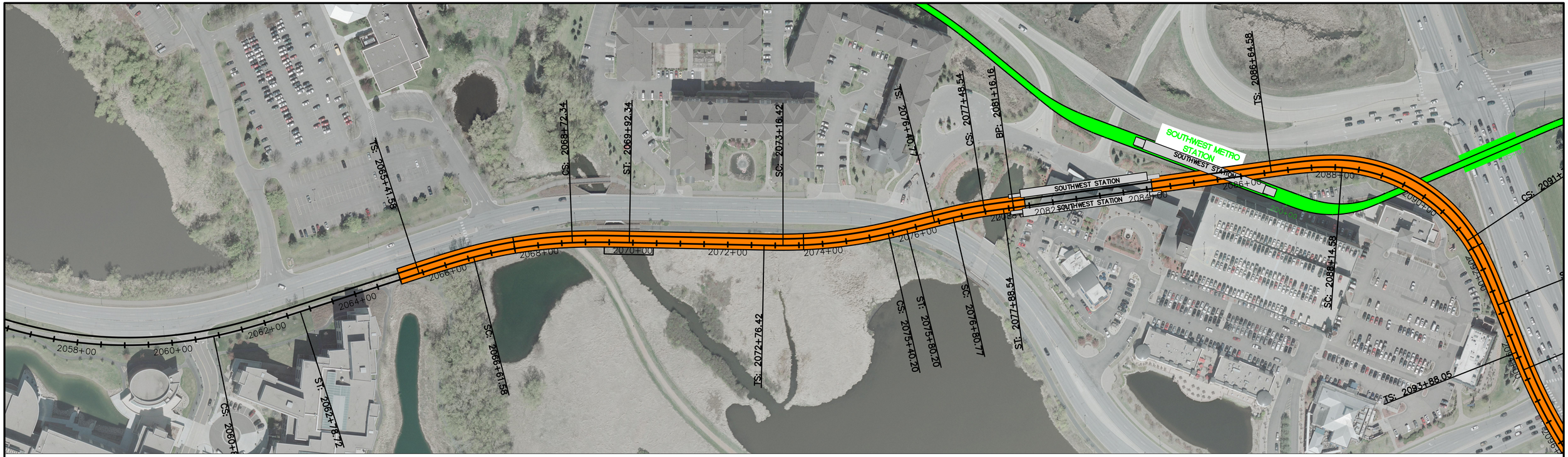
REV: 0

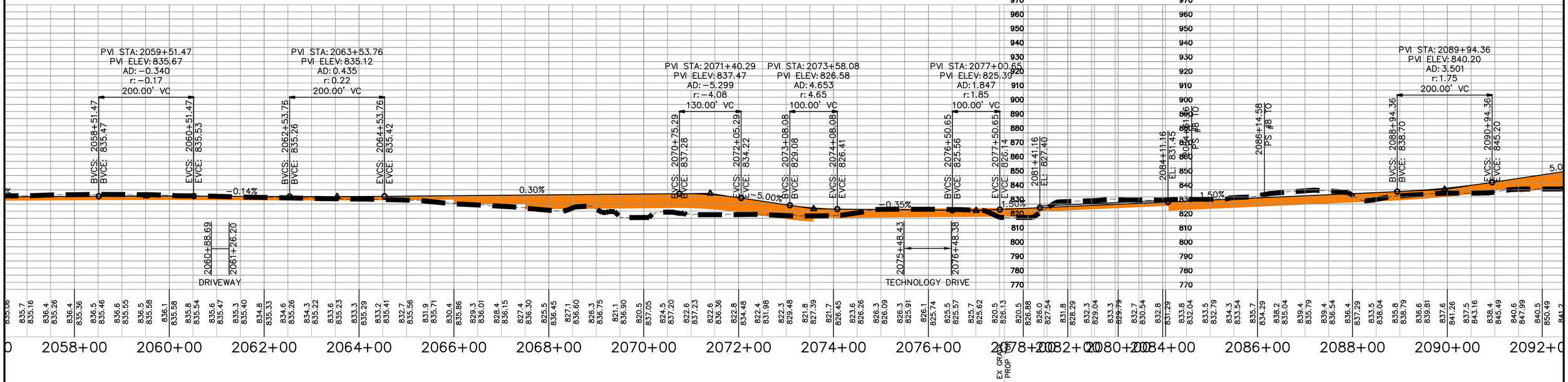
DATE : 02/28/2014

NORTH

0 50 100 200

METROPOLITAN COUNCIL





DRAFT-WORK IN PROCESS

SOUTHWEST
Green Line LRT Extention

SOUTHWEST LRT

OPTION 3 - REFINED

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NORTH

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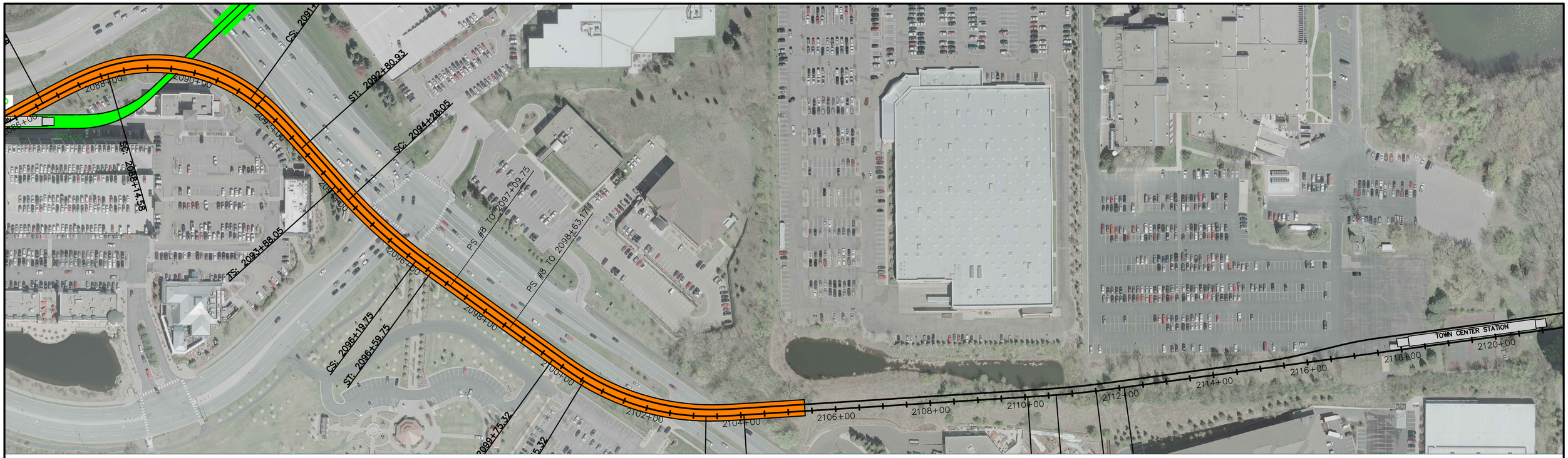
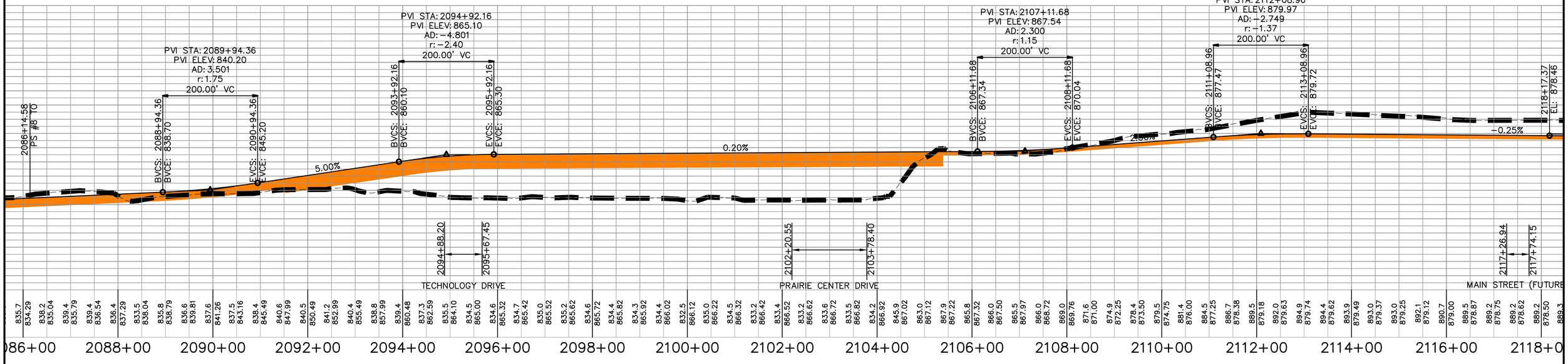




DRAFT-WORK IN PROCESS

SOUTHWEST
Green Line LRT Extention

SOUTHWEST LRT

OPTION 3 - REFINED

IRT: #1

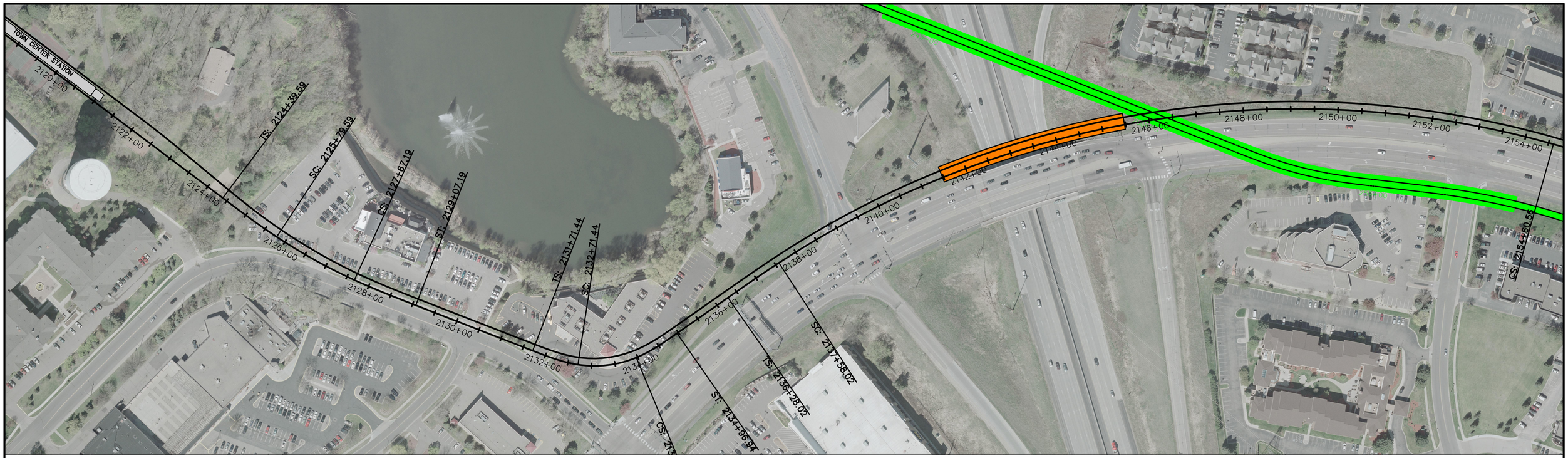
REV: 0

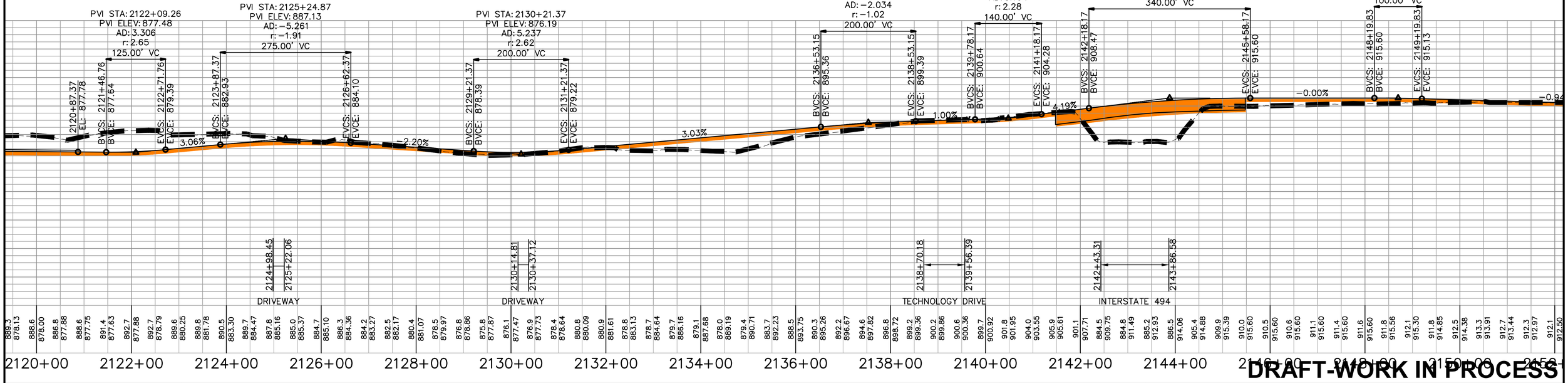
DATE : 02/28/2014

NORTH

0 50 100 200

METROPOLITAN COUNCIL





DRAFT-WORK IN PROCESS

SOUTHWEST LRT

OPTION 3 - REFINED

IRT: #1

REV: 0

DATE : 02/28/2014

NORTH

0 50 100 200

SOUTHWEST Green Line LRT Extention

METROPOLITAN COUNCIL

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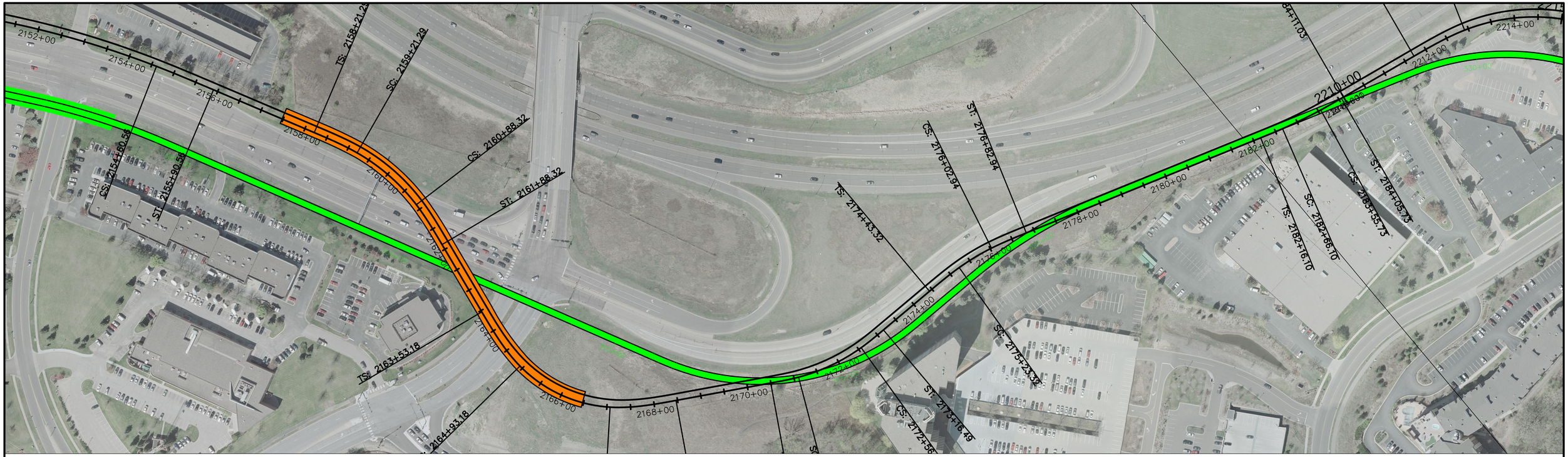

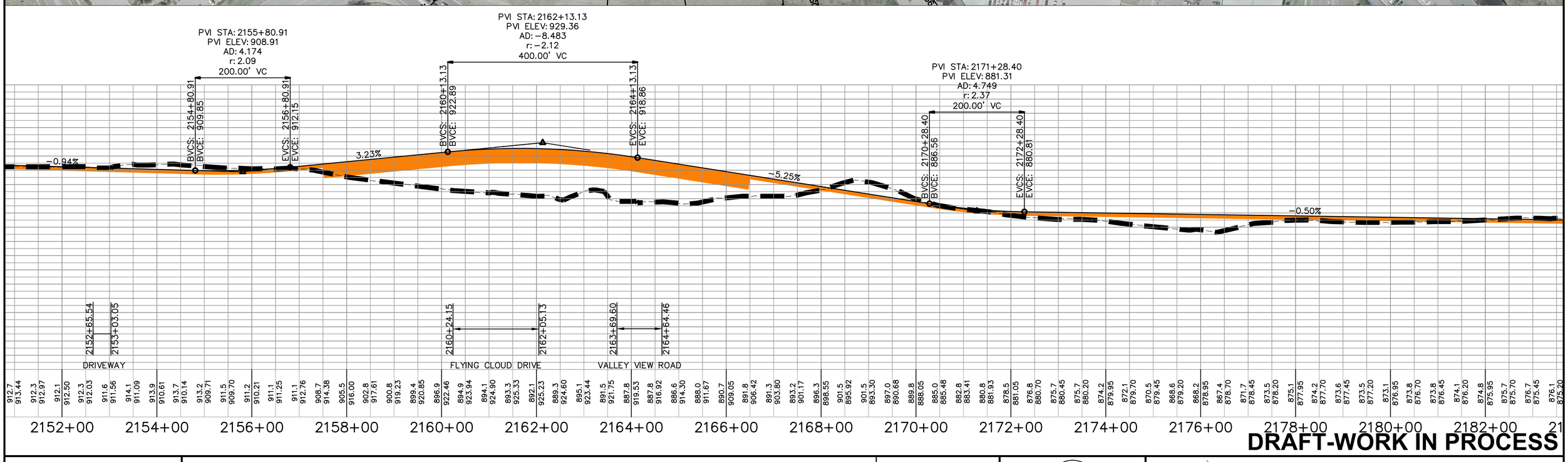

DRAFT-WORK IN PROCESS

SOUTHWEST
Green Line LRT Extention

SOUTHWEST LRT

OPTION 3 - REFINED

IRT: #1

REV: 0

DATE : 02/28/2014

NORTH

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METROPOLITAN COUNCIL

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Appendix E

Meeting Minutes

Meeting Title: Eden Prairie Issue Resolution Team Meeting #1

Date: 01 FEB 2013 **Time:** 2:00 PM **Duration:** 1.5 hour

Location: SPO – Conference Room A

Meeting called by: Jim Alexander – SPO

Attendees: See Attendance Sheet

Purpose of Meeting: Eden Prairie Issue Resolution Team Meeting #1

Discussion Topics
1) Introductions
2) IRT Approach and Process
3) Station Discussion - Issue 4: Shady Oak Road Crossing - Issue 3: Golden Triangle Station - Issue 1: Eden Prairie Alignment
4) Future Meetings

Meeting Notes:

Issue 1 Eden Prairie Alignment:

- Providing grade separation at Valley View Rd is seen by the City as a priority. SPO will be evaluating this intersection (1A and 2A). The City has previously studied options to alter this interchange area and suggested that the LRT project should not preclude their ability to implement their desired option in the future.
- Alternatives (1A, 2A, 3A and 4A) now show the alignment going down Flying Cloud Drive (versus going down Prairie Center Drive – 1B), since the City had expressed concerns about traffic and didn't view that alignment as a priority at the last meeting. The question of whether to pursue that option was discussed, and while the City feels that it is important to get close to Eden Prairie Center Mall, the Flying Cloud Drive option was still preferred. However, it was decided that SPO should continue to study the Prairie Center Drive alignment to see how viable it is before a decision is made.
- The City and SPO discussed a connection to Eden Prairie Center Mall. The Mall has told the City that they do not want a station on their property, but it was agreed that the project should still study a station close to the Mall to understand its potential. All of the presented alternatives include a station in the City's Area A, since this area is a priority for the City. It was discussed that SPO should continue to look at that location and look at how a station in Area A might also serve the Mall.
- Alternative 1A shows LRT along the east side of Prairie Center Drive, on aerial structure over Prairie Center Drive and coming down to grade along Technology Drive before the signalized entrance to SW Transit. It would be difficult to locate a station between the Technology Drive/Prairie Center Drive intersection and the Optum site because of existing horizontal curvature of the road. There is not enough tangent on Technology Drive to effectively accommodate a station (approximately 450' of tangent track is required at a station). Additionally, this alternative will most likely have a slower running time due to horizontal curvature along Technology Drive. SPO will continue to explore this alternative since the City would like to evaluate a station to serve the travelshed north of and at the Optum site.
- Alternative 5A extends across Purgatory Creek Park with a potential station on the south side of Optum. Alternative 7A extends across Purgatory Creek with a potential station within the Optum campus. The City did not prefer these options and anticipate that Optum also would not prefer them.
- The City said it may be possible to extend the line over the water as shown in two of the alternatives (4A and 5A). However, that may adversely impact views from the adjacent townhomes. The Purgatory Creek Conservation Area is thought to be a 1,500 acre park. SPO will research the boundary. The city advised that the existing pedestrian bridge and memorial within the park should be avoided.
- Alternative 4A includes LRT extending southward along Flying Cloud Drive before turning onto Regional Center Road and crossing the water on a bridge. However, there is limited right-of-way along Flying Cloud Drive due to the new office complex (Windsor Plaza) between Singletree Lane and Regional Center Road. Additionally, this alternative has a tight curve at Flying Cloud/Regional Center Road Intersection and was not considered viable for further study.

- The City has concerns about how future traffic growth from expansion of the Optum campus and an LRT park and ride would impact the Technology Drive and Mitchell Road intersection.
- Alternatives 9A-1 and 9A-2 are variations of Alternative 1A that bring LRT over/under Prairie Center Drive to the LPA alignment and station platform at SW Transit. It was agreed that the alternative 12A that crosses the parking area, immediately south of SW Transit station would not be pursued due to the high level of ROW impacts anticipated.
- It was determined that Alternative 4A is not a priority for the City. The City is more interested in the alternative that goes over the water and follows the existing path heading to the north and connecting to Technology Drive (although not shown on the map this would be alternative 6A). It was noted that this alternative may negatively impact the run time, but SPO will explore this alternative.
- The City stressed that it is important for them to know where the end of the line is in order to better understand the alternatives. The City would like the end of the line to be somewhere between Wallace Road and Mitchell Road in order to capture more potential riders from points west that are currently using TH 5 and TH 212.
- Possible OMF sites presented in the DEIS were discussed. The City has mentioned that the existing city garage located on Technology Drive west of Mitchell Road may be a possibility for an OMF site. The SPO is conducting a programming study to understand the OMF requirements for the project and will then develop site criteria and identify potential OMF sites along the line.
- After the preferred alternatives are determined SPO will need to determine what impacts those have on train speeds, ridership and cost.

Issue 3 Golden Triangle:

- The City views the LPA station location as having a more long term potential than if the station is moved closer to the freeway. However, the City understands that there might be some cost/time savings in moving the station closer to the freeway and that might offset potentially negative impacts to travel time if a slower route is pursued under Issue #1.
- Super Value has voiced some concern to the City if the Station moves from the LPA location.
- SPO will look evaluate both station/alignment locations to see what that means for the overall project.

Action items:	Person responsible:	Deadline:
Eden Prairie to provide Valley View/212 interchange study to SPO	Randy Newton	
SPO to research the park land boundary of the Purgatory Creek Conservation Area	Nani Jacobson	
Eden Prairie to discuss the alignment options with the mall.	Dave Lindahl	
SPO to develop a map showing the alternatives identified for further consideration	PEC West	

Sign-In Sheet

SWLRT Issue #1 Kick-Off -- City of Eden Prairie

	Friday 1 FEBRUARY 2013	SPO
	2:00 to 3:30 pm	6467 Wayzata Blvd, St. Louis Park

Please Initial Here	First Name	Last Name	Agency	e-Mail	Phone
DL	David	Lindahl	City of Eden Prairie	dlindahl@edenprairie.org	952-949-8484
	Farveh	Makhssous	City of Eden Prairie	fmakhssous@edenprairie.org	
JJ	Janet	Jeremiah	City of Eden Prairie	jjeremiah@edenprairie.org	952-949-8529
	Leslie	Stovring	City of Eden Prairie	lstovring@edenprairie.org	
	Mary	Krause	City of Eden Prairie	mkrause@edenprairie.org	
	Mike	Franzen	City of Eden Prairie	mfranzen@edenprairie.org	
	Mike	McGarvey	City of Eden Prairie	mmcgarvey@srfconsulting.com	
	Regina	Rojas	City of Eden Prairie	rrojas@edenprairie.org	
RE	Robert	Ellis	City of Eden Prairie	rellis@edenprairie.org	952-949-8310
KW	Katie	Walker	Hennepin Co.	katie.walker@co.hennepin.mn.us	
AT	Aaron	Tag	MnDOT/SPO	aaron.tag@metrotransit.org	
	Todd	Stevens	MnDOT/SPO	todd.stevens@metrotransit.org	
	Bill	Norquist	PEC WEST	bill.norquist@metrotransit.org	
DAD	Don	Demers	PEC WEST	don.demers@metrotransit.org	
	Joe	Ebsen	PEC WEST	joe.ebsen@metrotransit.org	
	Kim	Proia	PEC WEST	kimberly.proia@metrotransit.org	
	Laura	Amundson	PEC WEST	laura.amundson@metrotransit.org	
	Pat	Corkle	PEC WEST	pat.corkle@metrotransit.org	
	Todd	Hubmer	PEC WEST	thubmer@wsbeng.com	
BM	Bojan	Misic	SPO	bojan.misic@metrotransit.org	
	Chris	Weyer	SPO	chris.weyer@metrotransit.org	
	Dan	Pfeiffer	SPO	daniel.pfeiffer@metrotransit.org	
	Darren	Nyquist	SPO	darren.nyquist@metrotransit.org	
JRA	Jim	Alexander	SPO	jim.alexander@metrotransit.org	
KMH	Kathryn	Hansen	SPO	kathryn.hansen@metrotransit.org	
	Marla Jean	Huisman	SPO	marlajean.huisman@metrotransit.org	
NJ	Nani	Jacobson	SPO	nani.jacobson@metrotransit.org	
	Randy	Newton	SPO	randy.newton@metrotransit.org	
	Robin	Caufman	SPO	robin.caufman@metrotransit.org	
RK	Ryan	Kronzer	SPO	ryan.kronzer@metrotransit.org	
SO	Sam	O'Connell	SPO	sam.oconnel@metrotransit.org	
SG	Sarah	Ghandour	SPO	sarah.ghandour@metrotransit.org	
TT	Tats	Tanaka	SPO		
TGD	Thomas	Domres	SPO	thomas.domres@metrotransit.org	
	Tom	Hillstrom	SPO	tom.hillstrom@metrotransit.org	
	David	Jacobson	SW Transit		
	Matt	Fyten	SW Transit		
	Chris	Weyer	SPO	Darrell Washington SPO	
	Rick	Getschow		Adrian Succio -SPO	
	Janet	Jeremiah	EP		

JOE SUTHERLAND

Meeting Notes

Meeting Title: Eden Prairie Issue Resolution Team Meeting #2

Date: 15 FEB 2013 **Time:** 10:00 AM **Duration:** 2 hours

Location: SPO – Conference Room A

Meeting called by: Jim Alexander – SPO

Attendees: See Attendance Sheet

Purpose of Meeting: Eden Prairie Issue Resolution Team Meeting #2

Discussion Topics
1) Technical Issue 1: Eden Prairie Alignment
2) Next Steps

Meeting Notes:

Technical Issue 1-Eden Prairie Alignment:

- The City requested an 11x17 layout plan that shows the LRT alignments alternatives currently being considered plus a "zoomed-in" area around Eden Prairie Town Center. They will need this for a 2 pm meeting on Tuesday, which SPO will be participating.
- 3D images of the proposed LPA I-494 Flyover are forthcoming along with the image of a potential structure over Purgatory Creek Conservation Area.
- SPO presented possible alignment/station alternatives, with a goal of narrowing the number of alternatives to be considered for further study. The City noted that walkability to stations is important.
- Alignment 1B, which runs at-grade through Prairie Center Dr and W. 78th St with a potential station at the mall, is still a viable alternative, although it is reported that the Mall ownership has some concerns with locating a station on their property. If this alternative was pursued, the city would be interested in reconstructing/combining W. 78th/Flying Cloud and Singletree Ln./Flying Cloud intersections.
- Alternative 1A with the track alignment crossing from the south side of Flying Cloud Dr. to north side at Viking Dr. has a potential station platform across from the W. 78th St./Flying Cloud Dr. intersection. The platform parallel to Flying Cloud may have some impacts to businesses, but the alignment is still a viable option. A station parallel to Flying Cloud Drive might preclude the ability of the City to realign the 78th Street and Singletree intersection. SPO will create typical cross-sections in this area to investigate feasibility and impacts of this alignment (but without a station parallel to Flying Cloud Dr). SPO will investigate shifting this station west to either the daycare area or near the Brunswick Zone (as suggested through the TSAAP charrettes). The City feels that redevelopment of the Brunswick Zone parcel offers the opportunity for up to 150 parking spaces adjacent to a station.
- Alignment 2A is still a viable option but with the station platform located behind Brunswick Bldg. SPO will investigate if having the station in this area is feasible. The City noted this alternative is still in the City's Policy Documents.
- Alignment 15A runs under the Valley View ramps and overpass and follows the I-494 ramp to EB TH 212 alignment behind Residence Inn and joins Alternative 2A. Additional studies are needed to investigate impacts to Valley View Bridge over TH 212.
- Alternative 2A1 has an at-grade crossing on Eden Rd, which is problematic from a traffic point of view, and runs along Eden Glen Ln. This will impact Eden Glen Ln and access to each business in this area (drives connect to Eden Glen Ln) and the strip mall north of Eden Dr. This option might be viable if LRT runs through the Discount Tire, KFC and Dollar General properties with a station platform at the daycare site.
- The City has a strong preference to locate a station along the north side of Singletree Ln. as it would provide pedestrian access to the nearby shops and mall.
- The City is interested if a station could be located along the north side of Singletree Ln. adjacent to Brunswick Zone across from Walmart. In this case the street would have to be flattened (shifted south) to provide enough tangent for the platform, but not to encroach into Walmart's parking. Also, Singletree has 6% grade further to the west which is too steep for an ADA compliant platform. 1% is preferred with 2% maximum grade for the station platform.

- SPO will create typical cross-sections on Singletree Ln to investigate feasibility of having a platform adjacent to Brunswick Zone across from Walmart.
- Alternative 3A, which runs along the center of Prairie Center Dr between Singletree Lane and Technology Dr, and the center of Singletree Lane and ties at-grade into Alternative 1A, has been eliminated due to traffic impacts. The City noted the Prairie Center Drive/Singletree Lane intersection is the City's second highest intersection for crashes.
- Alternative 9A1, which runs along the east side of Prairie Center Dr and either crosses over or under Prairie Center Dr onto Southwest Metro station, might be technically infeasible because of the grade differential between the street and the station. For the alternative to cross over Prairie Center Dr, the alignment might require an aerial station platform and extension of LRT on structure to the west of the Southwest Metro Station, landing in Technology Drive. It was also noted that east-bound left turn access into Southwest Transit from Technology Drive might need to be grade separated from LRT.
- The City is not supportive of the LPA alignment west of Southwest Metro as long as other alternative alignments are viable.
- If LRT and Southwest Transit end up sharing the lot, parking requirements would have to be evaluated.
- SPO to investigate station platforms at Southwest Metro Station (adjacent to and south of the ramp) and at the DEIS location of the Southwest Station. The City noted they are planning to shift the driveway into Purgatory Creek Park further west to the signalized intersection at the entrance to Southwest Metro.
- Alternative 1A, which runs along Technology Dr, could have a station adjacent to Optum property (owned by United Health Group), located south of roadway and the St. Andrews Church to the north. The City will be meeting with St. Andrews Church next week.
- Soil under Technology Dr. has been replaced up to 45 feet below the grade from the Purgatory Creek bridge east, but the area outside of the roadway prism still contains unsuitable material. The desirable cross section to accommodate LRT on Technology Drive would be to reduce the roadway to one lane in each direction in order to fit the LRT Guideway in the footprint of replaced soil (within existing curb lines).
- Alternative 5A and 18A, which run across Purgatory Creek, are still viable only with a grade separation over Prairie Center Drive.
- The City and SPO met with a United Health Group representative about Alternative 5A and feedback was requested.
- The City inquired if the end of line parking structure near Wallace Road (City Maintenance Facility Site) could be "stacked" over the OMF? SPO will investigate. The City also feels that the Metro Machine and Manufacturing is a good site for either parking or the OMF.
- The City expressed their comfort with presenting these alignment alternatives to the joint BAC/CAC meeting on Feb 21, with the following changes:
    - Eliminate the station platform option on Flying Cloud Drive in Area "A".
    - Add station options at Southwest Transit (at DEIS location and south of parking ramp)
    - Potentially straighten out Singletree Lane.

Action items:	Person responsible:	Deadline:
SPO to provide 11 x 17 plans to the City	Kim Proia	Feb. 18
The City to provide feedback for UHG on Alternative 5A	City Staff	Feb. 21

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

	Friday 15 FEBRUARY 2013			SPO	
	10:00 a.m. - 12:00 p.m.			6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	**Last Name**	**First Name**	**Agency**	**e-Mail**	**Phone**
DL	Lindahl	David	City of Eden Prairie	dlindahl@edenprairie.org	952-949-8484
FM	Makhssous	Farveh	City of Eden Prairie	fmakhssous@edenprairie.org	
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	Stovring	Leslie	City of Eden Prairie	lstovring@edenprairie.org	
	Krause	Mary	City of Eden Prairie	mkrause@edenprairie.org	
	Franzen	Mike	City of Eden Prairie	mfranzen@edenprairie.org	
	Rojas	Regina	City of Eden Prairie	rrojas@edenprairie.org	
RE	Ellis	Robert	City of Eden Prairie	rellis@edenprairie.org	952-949-8310
	Walker	Katie	Hennepin Co.	katie.walker@co.hennepin.mn.us	
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NS	Succio	Nikrae			
	~~Jeremiah~~				
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DJ	Jacobson	Dave	SWT	djacobson@swtransit.org	952-974-3110
	Johnson	Tom	Hennepin Co		
	Rue	Rod			

Meeting Notes

Meeting Title: Eden Prairie - Issue Resolution Team Meeting No. 3

Date: 22 FEB 2013 **Time:** 10:00 am **Duration:** 2 hours

Location: SPO - Conference Room A

Meeting called by: Jim Alexander - SPO

Attendees: See sign-in sheet

Purpose of Meeting: To discuss TI-1 (Eden Prairie Alignment) and TI-4 (Shady Oak Road Crossing)

---- Agenda Topics ----	
1.	TI-4 Shady Oak Road Crossing (Horizontal Alignment and Profile)
2.	TI-1 Eden Prairie Alignment (BAC/CAC Joint Meeting Debrief)
3.	Next Issue Resolution Team (IRT) meeting agenda

TI-4 Shady Oak Road Crossing (Horizontal Alignment and Profile):

- SPO is considering an underground and aerial alternative over Flying Cloud Dr. and Shady Oak Road.
- Based on the recent boring results, the underground alternative has a profile 5 feet below the existing water table. In addition, minimum height of the tunnel is 16 feet, but SPO would prefer to have at least 17 feet. The tunnel alternative would have to mitigate underground water.
- Aerial alternative would span 25 feet above Shady Oak Rd with 4% grade. The structure would be longer than the tunnel and may have to continue on structure all the way to TH-212 crossing. To minimize the length of the structure, LRT could stay on the west side of TH-212 and cross it closer to Shady Oak Interchange instead of the current crossing just south of TH-62. The City noted they could lower Shady Oak Road profile about 1 foot with shallower beams for the bridge over TH 212.
- SPO would have to investigate a cost differential between LPA and either of the two alternatives across Shady Oak Road.
- It is anticipated that the City will be constructing the Shady Oak roadway improvements in advance of the SWLRT project. Discussion is needed between SPO and the City to coordinate these activities.

TI-1 Eden Prairie Alignment:

- SPO outreach group will provide meeting notes from the 02/21/13 BAC/CAC joint meeting.
- In Alternative 1A the track alignment currently crosses from the south side of Flying Cloud Dr to north side at Viking Dr. This alternative could be altered with the tracks crossing Flying Cloud Dr from the south side to north side at Valley View Rd on structure. If traffic studies at Valley View at-grade crossing prove unsatisfactory, the structure might resolve this problem.
- As Alternative 1A crosses I-494 and Technology Dr, the guideway encroaches into the strip mall parking lot on the north side of Eden Rd. A retaining wall would be required to minimize impact to parking, but the owners have raised visibility concerns. SPO will provide more information on the number of impacted parking spots as well as on a visual impact. As part of mitigating for the lost parking, this lot could potentially connect with the I-Hop lot. SPO will also look at reducing the lane widths on Flying Cloud to see if that decreases the impact on parking.
- The City and Hennepin County have a project to replace storm and sanitary sewer around the strip mall. The City and Hennepin County will provide plans to SPO.
- Once Alternative 1A crosses Eden Rd, a retaining wall would be required to minimize impacts to parking at Discount Tires location. Current cross-section with a wall height of 6 to 7 feet shows no impacts to parking at this location. However, farther south LRT encroaches feet into Bremer's parking with the retaining wall being about 10 feet high. SPO will finalize the number of impacted parking spots.
- As the 1A track alignment turns west onto Singletree Ln, one option is to have a station platform located between two driveways currently serving Brunswick Zone. The driveway to the east would be impacted (closure of this drive would likely be necessary).

- Placing LRT to the side of Singletree Ln has the advantage of not having to follow the grade of the road. LRT would follow road's profile only until Old Chicago in order to attain 2% allowed longitudinal slope on the platform. After Old Chicago, Singletree Ln. profile becomes steeper in which case the entrance to Bachman's may be impacted.
- Alternative 1A design has Singletree Ln flattened (shifted south) to provide enough tangent for the platform with no impact to Walmart's parking. The design would modify Walmart's driveway and increase its grade to about 5%. The other driveway leading to Jake's City Grille would increase to about 7%.
- West of the Old Chicago building area, LRT would cross the Bachman's driveway at grade with LRT (Alternative 1A) along the north side of Prairie Center Dr or at grade across Prairie Center Drive (Alternative 18A), but it would require closure of Bachman's driveway if LRT were to bridge over Prairie Center Dr and across the pond (Alternative 18A) .
- Station platform in Alternative 1A could also be located around the daycare area, but in this case Eden Glenn Rd would have to be re-routed or terminated in a cal-du-sac.
- Both potential locations for station platform on Singletree Ln would have to be evaluated to determine pros and cons for each.
- Alternative 2A is not a viable option since it is not as serviceable as Alternative 1A. IRT will not pursue it again unless other options show fatal flaws.
- Alternative 18A with tracks going over the pond impacts one of Bachman's driveway (Alternative 1A affects both), but unless it improves LRT's running time compared to Alternative 1A, it would not be pursued any further due to 4(f) evaluation concerns.
- Alternative 5A is also out of consideration unless Optum property shows interest in it. This alternative has no clear advantage over the others.
- Alternative 12A with the tracks and station platform in the center of Southwest Transit station would have to be elevated because if at-grade it would disrupt the functionality of the entire area. The aerial option of this alternative would potentially miss Ruby Tuesday's but impact Culver's.
- Alternative 9A1, which runs along the east side of Prairie Center Dr and either crosses over or under Prairie Center Dr onto Southwest Metro station, has to be elevated because of the grade differential between the street and the station. Also, LRT would need to be extended on structure to the west of the Southwest Metro Station, landing on Technology Drive around the SW Station Condo housing area. This alternative would impact Anchor Bank as well as provide visibility problems for the SW Station Condo housing.
- Portion of Alternative 1A that runs along the east side of Prairie Center Dr and crosses it over onto Technology Dr impacts Fairview clinic southern driveway. SPO will provide cross-sections to show the impacts to the driveway and confirm if there are any visual obstructions to the building.
- It was noted that the current lane configuration on Technology Dr would have to be preserved starting at the intersection with Prairie Center Dr and going all the way past the entrance to Southwest Metro Station.
- Upon further discussion, it was determined that the portion of Alternative 1A on Technology Dr would have visual and aesthetic impacts to the area. In addition, with the

slow running time and disruptions to traffic circulation, this alternative may not be a viable option.

- Alternative 15A that runs under the Valley View ramps and overpass and follows the I-494 ramp to EB TH 212 alignment behind Residence Inn would need to be studied further to determine its viability.
- Alternative 2A that runs along the north side of Flying Cloud Dr is eliminated because compared with other alternatives it is not very practical and has approximately similar running time.

Next Steps:

- Robert Ellis to talk with Eden Prairie City Council to present alternatives developed to date. SPO to provide graphic.
- Next meeting will be on March 8, 2013.
- SPO to attend the next Shady Oak Rd project meeting on March 6th.

Action Items	Person Responsible	Deadline
Determine the number of impacted parking spots	SPO	
The City and Hennepin County to provide sanitary storm and sewer plans to SPO	Eden Prairie and Hennepin County	
Provide cross-sections to show the impact to Fairview Clinic and area near SW Station and condos.	SPO	
Provide alternative graphic to Eden Prairie for City Council discussions	SPO	

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

	Friday 22 FEBRUARY 2013		SPO		
		10:00 a.m. - 12:00 p.m.		6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	Last Name	First Name	Agency	e-Mail	Phone
DL	Lindahl	David	City of Eden Prairie	dlindahl@edenprairie.org	952-949-8484
	Makhssous	Farveh	City of Eden Prairie	fmakhssous@edenprairie.org	
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	Stovring	Leslie	City of Eden Prairie	lstovring@edenprairie.org	952-949-8327
	Krause	Mary	City of Eden Prairie	mkrause@edenprairie.org	952-949-8315
	Franzen	Mike	City of Eden Prairie	mfranzen@edenprairie.org	
	Rojas	Regina	City of Eden Prairie	rrojas@edenprairie.org	
RwR	Rue	Rod	City of Eden Prairie	rrue@edenprairie.org	952-949-8314
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	Fyten	Matt	Southwest Transit	mfyten@swtransit.org	

Hubmer Todd
Coddington Ryan MnDOT Th
Ryan.Coddington@state.mn.us 651-234-7841

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 4
Date:	08 MAR 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment) and TI-4 (Shady Oak Road Crossing)

---- Agenda Topics ----
1. TI-4 Shady Oak Road Crossing (Debrief From March 6 Meeting)
2. TI-1 Eden Prairie Alignment • Single Tree Lane • Technology Drive
3. Next Issue Resolution Team (IRT) meeting agenda

TI-4 Shady Oak Road Crossing (Debrief from March 6 Meeting):

- SPO is considering an underground and aerial option to cross Flying Cloud Dr. and Shady Oak Road. A technical recommendation for the Shady Oak Road crossing is anticipated by mid-April. Based on the technical recommendation, the City would either lower the profile (aerial option) for Shady Oak Road or leave the profile at its current elevation (underground option).
- Based on the recent soil boring results, the tunnel option has a profile approximately 5 feet below the existing water table which would not only increase the construction cost but a long term maintenance cost as well. On the other hand, any aerial structure would have a longer span than the tunnel, but it would have less impact on constructability of Shady Oak Interchange. SPO will create a cost analyses for both alternatives.
- LRT is proposed to go through the ditch section on the north side of Shady Oak Road and will need to address the drainage impacts of this alignment. There is also a need for storm drainage to cross the tracks (east to west) on the north side of Shady Oak Road.
- Both design teams will review and advance their respective drainage designs over the next week or two.
- Next meeting between SPO and the Shady Oak Interchange project personnel will take place on March 20, 2013.

TI-1 Eden Prairie Alignment:

- The City of Eden Prairie held numerous meetings with business owners around the proposed LRT alignment. David Lindahl presented a summary.
    - Hampton Inn and Residence Inn are concerned with LRT running in front of their buildings. They prefer Adjustment 15A that runs along the back side.
    - First Western Bank is concerned with Adjustment 1A being close to their building.
    - Fox News 9 has concerns with electromagnetic interference resulting from Adjustment 1B alignment being too close to the building.
    - Cub Foods is concerned that customers' access to their property will be impacted in Adjustment 1B. Target, on the other hand, is open to having a station platform on the south side W. 78th St (east of Flying Cloud Dr) near the mall.
    - The owner of the strip mall located at Flying Cloud Dr/Eden Rd intersection raised visibility concerns.
    - Bremer has concerns with parking and access to their property if a station platform is located around the daycare area. This adjustment requires closing Eden Glen Rd. Two thirds of their customers access Bremer's parking lot from the north side, Bremer leases part of the southern parking area to Bobby & Steve's and also leases space for valet parking..
    - Water Tower Apartments support the station behind Brunswick Zone, but have concerns with parking if the station is located on the north side of Singletree Ln. The City is still to meet with Brunswick Zone.
    - Lincoln Parc Apartments support the alignment and a station on Single Tree Ln.
    - Bachman's have access concerns if LRT is located on the north side of Singletree Ln.
    - The owner of the strip mall at Southwest Transit station and Santorini prefer Adjustment 9A that runs along the north side of the station.

  - Flagship Office has no concerns with the adjusted alignments. They have plans to build more parking on the north side of their building.
  - Optum and MTS prefer the LRT alignment and a station platform on Technology Drive over the LPA.
  - St. Andrew Church has concerns with a station in front of their building but has no problem with LRT being on Technology Dr.
- The open space by the piers and abutments on the south side of the Valley View overpass doesn't have enough room to accommodate Adjustment 15A. This adjustment is altered to have LRT cross under the Valley View Rd ramps and overpass farther south. However, the length of these cut-and-cover tunnels may not be very practical. This adjustment may be revised to have the alignment running along the south side of Flying Cloud Dr freeway access ramps (along adjustment 1A) and then cross it over at Valley View Rd to connect with Adjustment 15A.
- LRT could run either along the north side of Singletree Ln or along the center line.
- LRT side running along Singletree requires a signal control at Eden Rd, Brunswick Zone and Bachman's, which may improve walkability.
- Having LRT on Singletree Ln may push more traffic onto Regional Center Rd.
- LRT center line running along Singletree may have less impact to businesses, but it may impact traffic operation as one through lane would be provided in each direction.
- If LRT were to run along the center line of Technology Dr, both sides of the street would need to be widened to accommodate one lane in each direction. To accommodate turn lanes, the street would require additional widening.
- The LRT alignment 9A or 12A would have to be 25 feet above the existing Southwest Transit station to clear the bus access. This would visually impact Southwest Station condos. In addition, the condos would have only a right in/right out access.
- St. Andrew Church would have full access, and its driveway could be aligned with the existing driveway to United Healthcare properties.
- Side running has more access impacts. This could be mitigated with consolidating driveways.
- Next IRT meeting would focus more on access impacts along Technology Dr and Singletree Ln.
- Next meeting is scheduled for March 15, 2013.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

8 MARCH 2013 10:00 a.m. - 12:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	**Last Name**	**First Name**	**Agency**	**e-Mail**	**Phone**
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	Jeremiah	Janet	City of Eden Prairie	jjeremiah@edenprairie.org	952-949-8529
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	Rojas	Regina	City of Eden Prairie	rrojas@edenprairie.org	
RwR	Rue	Rod	City of Eden Prairie	rrue@edenprairie.org	952-949-8314
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Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 5
Date:	15 MAR 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander – SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
1. TI-1 Eden Prairie Alignment and Traffic Review
2. Next Issue Resolution Team (IRT) meeting agenda

Eden Prairie Alignment Traffic Review (TI-1)

SPO presented initial preliminary traffic analysis results for several intersections in which the traffic and LRT impacts of at-grade LRT crossings were evaluated. The traffic analysis presentation is summarized as follows:

- The analysis completed was a high level review of traffic signal operations. No detailed traffic modeling was performed so system impacts are difficult to identify.
- The analysis tried to identify the range of potential impacts to both vehicular traffic and LRT. Preemption which would likely result in the highest impacts to vehicular traffic but no delay to LRT was one end of the spectrum. Running with the signal which should have minimal impacts to vehicular traffic but results in LRT delays is the other end of the spectrum. Priority operation would fall somewhere in middle of this spectrum.
- Highway 212 East Ramp/ Flying Cloud Drive / Valley View Road
  - Due to the close spacing of signals along Valley View Road and Prairie Center Drive this intersection is an unlikely candidate for a LRT preemption operation.
  - Estimated average delays for LRT running with the traffic signal are approximately 30 seconds with a range of delay between 0 and 100 seconds.
  - Priority operation with a diagonal crossing of the intersection is not anticipated to be workable as it would impact vehicular operations while also having average LRT delay of approximately 60 seconds.
  - Priority operation with a south running LRT may be workable. More detailed analysis will be needed.

- Flying Cloud Drive / Viking Drive
  - Preemption of this intersection was evaluated and is expected to operate at LOS D or better in both 2018 and 2030.
  - A diagonal grade crossing of this intersection appears workable. More detailed analysis will be needed.
  - Signal control of this intersection may improve turning access as this intersection.
- Flying Cloud Drive / Technology Drive
  - Preemption of this intersection with west side running was evaluated and is expected to operate at LOS D or better in both 2018 and 2030.
  - Estimated average delays for LRT running with the traffic signal are approximately 15 seconds with a range of delay between 0 and 70 seconds.
  - A grade crossing of this intersection appears workable. More detailed analysis will be needed.
- Flying Cloud Drive / Eden Road
  - Preemption of this intersection with west side running was evaluated and is expected to operate at LOS D or better in both 2018 and 2030.
  - Estimated average delays for LRT running with the traffic signal are approximately 10 seconds with a range of delay between 0 and 50 seconds.
  - A grade crossing of this intersection appears workable. More detailed analysis will be needed.
- Prairie Center Drive / Singletree Lane
  - Preemption of this intersection was evaluated and is expected to operate at LOS D/E or better in both 2018 and 2030.
  - Estimated average delays for LRT running with the traffic signal are approximately 30 seconds with a range of delay between 0 and 105 seconds.
  - A grade crossing of this intersection may be workable. More detailed analysis will be needed.
- Prairie Center Drive / Technology Drive
  - Due to the close spacing of signals along Prairie Center Drive near the interchange this intersection is an unlikely candidate for a LRT preemption operation.
  - Estimated average delays for LRT running with the traffic signal in either a center to center or center to south configuration is 60 seconds with a range of delay between 0 and 140 seconds.
  - Priority operation is not anticipated to be workable due to the large LRT delays and the limited ability to improve the delays without impacting traffic. Additional detailed analysis will be needed.

Discussion on the traffic analysis review included the following:

- Eden Prairie asked who has jurisdiction over the traffic signals in the future. SPO indicated that Metro Transit does not operate traffic signals so operation would likely remain with the existing jurisdiction (MnDOT, Hennepin County, City of Eden Prairie).
- Eden Prairie indicated that they will need to see how the system is impacted by the potential grade crossings and LRT operations.

- Hennepin County indicated that some thought will need to be given to how the intersections operate in the holiday season.

Eden Prairie Alignment – Alignment Review (TI-1)

SPO reviewed the current Eden Prairie alignments adjustments under consideration. The alignment adjustment review is summarized as follows:

- It was indicated that Adjustment 15A would impact the Valley View Road bridge abutment. This adjustment also requires a significant amount of retaining wall on the back side of the Hampton Inn and Residence Inn properties. A slight variation of this adjustment pulls the alignment slightly to the east resulting in a tunnel under Valley View Road. This adjustment results in three tunnels in a relatively short section to cross the Highway 212 ramps and Valley View Road. Another modification to the 15A adjustment is to stay on the east side of the Highway 212 ramps and then diagonally cross Valley View Road and Flying Cloud Drive either above, below or at-grade.
- The above 15A adjustments all have a significant amount of structure and potentially a lot of construction impact compared to the 1A adjustments running along Flying Cloud Drive. As a result is was agreed to set aside the 15A adjustments for now. In doing so Eden Prairie did request that a summary of costs and construction impacts be provided for use in discussing the removal of these adjustments.
- Graphics depicting the potential impacts to the Bremer Bank building parking were shown for two scenarios. One with a Singletree west station and one with a station on the City owned property to the east of Eden Road. In this discussion it was mentioned that the potential closure of Glen Lane as well as the city owned property might provide an opportunity for additional replacement parking. The net loss of parking could be up to one-third of the existing parking capacity.
- A graphic depicting potential impacts to the convenience center parking in the northwest corner of the Flying Cloud Drive / Eden Lane intersection was also shown. It is anticipated that the net loss of parking to this site will be less than 10.
- With the 1A Adjustment no additional parking impacts are anticipated between Eden Road and the Bremer Bank building.
- A center roadway layout for Singletree was shown which provided a through lane and a bike lane in each direction. Traffic signals and turn lanes were also shown at full access locations. It was discussed that additional analysis will be needed before determining the appropriate number and location of access points along Singletree Lane.
- The City requested a side by side comparison of the Singletree west and City owned property station locations.
- The City also asked how the parking needs at this station will be addressed.
- SPO presented two new adjustment options that provide an at-grade station on the north side of Southwest Station. One option was east side running on Prairie Center Drive and one option was center running on Prairie Center Drive. Both options pass under Prairie Center Drive in a tunnel

to enter the Southwest Station site. Both adjustments are expected to impact the bank in the northeast corner of the Southwest Station site.

- SPO presented a new adjustment option that follows the LPA alignment west from Southwest Station past Mitchell Road. The alignment then curves south between the two Eaton owned parcels ending with a station in the vicinity of the Eden Prairie street maintenance facility. The City indicated concern with the MTS truck access on the north side of their building. Potential future improvements to Highway 212 between the Highway 5/212 merge and I-494 were also discussed. Additional information and discussion with MnDOT is needed regarding this potential improvement.

Next Meeting

Next Meeting is scheduled for Friday March 22, 2013 at 10:00 AM
Focus of meeting will be on the Eden Prairie Alignment (TI-1)

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

15 MARCH 2013	SPO
10:00 a.m. - 12:00 p.m.	6465 Wayzata Blvd, St. Louis Park, Minnesota

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	Coddington	Ryan	MnDOT		

KATIE WALKER
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co.hennepin.mn.us

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 6
Date:	22 MAR 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander – SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
1. TI-1 Eden Prairie Alignment and Traffic Review
2. Next Issue Resolution Team (IRT) meeting agenda

Eden Prairie Alignment Traffic Review (TI-1)

Dave L provided a summary of the past week's meetings with area businesses:

- General Growth Properties continue to state they do not support a station on the Eden Prairie Mall property. Dave requested that they provide letter stating this. Analysis on adjustment 1B will be suspended based on this feedback.
- SW Transit is concerned with the large (2000 +/-) park and ride facility being discussed anywhere west of their facility and the effect it will have on their service. SW Transit shared a preference to move their express bus service from SW Station to TH 169 and Pioneer Trail. Eden Prairie concurred with SW Transit's preference.
- Crossroads Center is not supportive of adjustment 1A "in their front yard", but this property may be sold in the near future.

SPO presented initial preliminary traffic analysis results for several intersections in which the traffic and LRT impacts of at-grade LRT crossings were evaluated. The traffic analysis presentation is summarized as follows:

- The analysis completed was a high level review of traffic signal operations. No detailed traffic modeling was performed so system impacts are difficult to identify.
- The analysis tried to identify the range of potential impacts to both vehicular traffic and LRT. Preemption which would likely result in the highest impacts to vehicular traffic but no delay to LRT was one end of the spectrum. Running with the signal which should have minimal impacts to

vehicular traffic but results in LRT delays is the other end of the spectrum. Priority operation would fall somewhere in middle of this spectrum.

Adjustment 1B (Prairie Center Drive (East) to 78th Street to Flying Cloud Drive)

- Prairie Center Drive (East) / Valley View Road (East)
  - Due to the close spacing of signals along Valley View Road and Prairie Center Drive this intersection is an unlikely candidate for a LRT preemption operation.
  - Estimated average delays for LRT running with the traffic signal are approximately 60 seconds with a range of delay between 0 and 140 seconds.

- Prairie Center Drive (East)/ Viking Drive – center running
  - Preemption of this intersection was evaluated and is possible.
  - Estimated average delays for LRT running with the traffic signal are approximately 25-30 seconds with a range of delay between 0 and 90 seconds.
- Prairie Center Drive (East) / I-494 North Ramp – center running
  - Preemption of this intersection is a good candidate.
  - Estimated average delays for LRT running with the traffic signal are approximately 5 seconds with a range of delay between 0 and 30 seconds.
  - More detailed analysis would be needed.
- Prairie Center Drive (East) / I-494 South Ramp – center running
  - Preemption of this intersection with center running has potential.
  - Estimated average delays for LRT running with the traffic signal are approximately 15-20 seconds with a range of delay between 0 and 80 seconds.
  - SB left turns would be impacted. More detailed analysis would be needed.
- Prairie Center Drive (East)/ 78th Street – center to south
  - Preemption of this intersection is unlikely
  - Estimated average delays for LRT running with the traffic signal are approximately 55 seconds with a range of delay between 0 and 130 seconds.
  - Traffic impacts would be high..

Summary Comparison of 1B (Prairie Center Drive East) to 1A (Flying Cloud Drive): 1B total estimated delay of 160 to 205 seconds versus a total estimated delay of 60 seconds with 1A. Since the analysis for 1B identifies a much higher impact to LRT and Traffic than 1A , along with lack of support from General Growth for a station near the Eden Prairie Mall property, attendees agreed to “freeze” adjustment 1B.

Adjustment 1A (Singletree Lane to Prairie Center Drive (West) to Technology Drive)

- Singletree Lane/ Eden Road – north to center running
  - No impacts anticipated to Flying Cloud Drive intersection
  - LOS C or better is anticipated
  - A more detailed analysis will be needed to test back to back LRT events.

- Assumed that Glen Lane access is rerouted to Eden Road. City asked if this could remain open. SPO to investigate if this is feasible.

- Singletree Lane/ Walmart/Brunswick – center running
  - Preemption of this intersection is possible.
  - Estimated average delays for LRT running with the traffic signal are approximately 10 seconds with a range of delay between 0 and 45 seconds.
  - Some traffic impacts are anticipated. A more detailed analysis will be needed.

- Singletree Lane/ Bachman's/Jake's City Grill – center running
  - Preemption of this intersection is possible.
  - Estimated average delays for LRT running with the traffic signal are approximately 10 seconds with a range of delay between 0 and 45 seconds.
  - Some traffic impacts are anticipated. A more detailed analysis will be needed.

- Prairie Center Drive (West) / Singletree Lane – center to south running (center to center presented at last week's IRT meeting)
  - Preemption of this intersection is unlikely.
  - Estimated average delays for LRT running with the traffic signal are approximately 55-60 seconds with a range of delay between 0 and 140 seconds.
  - Some traffic impacts are anticipated. A more detailed analysis will be needed.

- Prairie Center Drive (West) / Technology Drive – west side running (center to south presented at last week's IRT meeting)
  - Preemption of this intersection is unlikely.
  - Estimated average delays for LRT running with the traffic signal are approximately 25 seconds with a range of delay between 0 and 90 seconds.
  - Some traffic impacts to the southbound right turn are anticipated. A more detailed analysis will be needed.

The overall estimated delay for the two variations (center to center at Singletree with center to south at Technology versus center to south at Singletree with west side at Technology) is approximately the same at 85 seconds. The City requested that SPO continue to explore options for the Prairie Center Drive (West) to include East side running, center running and West side running along with grade separation at Singletree and Technology for the options that have higher traffic impacts.

Mitchell Road

- Adjustment 20A – south side running at Technology Drive
  - Preemption of this intersection is possible.
  - Estimated average delays for LRT running with the traffic signal are approximately 30 seconds with a range of delay between 0 and 80 seconds.

- Some traffic impacts are anticipated. A more detailed analysis will be needed.
- Results are similar for center and north running along Technology Drive.

- Adjustment 23A – south side running at TH 212/5 ramps
  - Preemption of this intersection is possible.
  - Estimated average delays for LRT running with the traffic signal are approximately 30 seconds with a range of delay between 0 and 90 seconds.
  - Some traffic impacts are anticipated to the northbound right turn onto the entrance ramp. A more detailed analysis will be needed.

Eden Prairie Alignment – Alignment Review (TI-1)

SPO reviewed the current Eden Prairie alignment adjustments under consideration. The alignment adjustment review is summarized as follows:

- 9A, north side running, over PCD to SWT station near LPA station, if off ramps for bus removed because express bus function no longer serving SWT station, could platform reach grade in time before reaching the condo building?
- 8A, on south of PCD, city mentioned the need for full and signalized access at Bachman's and Flagship office building.
- 1B, under FCD, station would be on mall side of FCD and be +/- 20 feet below grade in open air trench. This route will only receive a tier 1 analysis (see further discussion in traffic – 1B).
- City mentioned need to re-evaluate an elevated station at the LPA station site at SWT, with center running PCD then rising over Technology/PCD intersection heading to the LPA station location at SWT. This adjustment could either continue on the LPA alignment or head back to technology Dr westward. SPO to analyze.
- City mentioned that, if having a station at SWT station is a city goal, stopping the alignment at SWT station should be considered given impacts to cost and runtime. Could bus slip ramp be re-purposed/realigned for auto access into the parking structure? This site has the capacity to add the needed parking for end of the line demand. There would need to be a double cross over east of the platform on the elevated portion. City has no desire for a station near MTS/Optum with a station at SWT.
- 2A, water tower route, will stay on adjustment map in case there is a fatal flaw 1A on Single Tree Lane.
- 20A, South side running on Technology is preference east of Mitchell Rd. Center running is no longer being considered. Alignment currently shown to jog to north side running at a Hiawatha Street future extension. Driveways would need to be consolidated here.
- The following routes will only receive a tier 1 analysis: 1B, 1A north side running on Single Tree, 2A, and 18A (across Purgatory Creek from Singletree Lane).
- Further discussion will need to take place between SWT, Met Council and SPO in relation to express bus service at SWT station.
- OMF siting needs further analysis by SPO.

- City will meet with Eaton again to discuss LRT adjustment options to get to an end of line park and ride at the City Maintenance Facility location.
- TI#1 will be presented to TPAC in mid-April.

Next Meeting

Next Meeting is scheduled for Friday March 29, 2013 at 10:00 AM.
Focus of meeting will be on the Golden Triangle Station (TI-3) and Shady Oak Crossing (TI-4).

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

22 MARCH 2013	SPO
10:00 a.m. - 12:00 p.m.	6465 Wayzata Blvd, St. Louis Park, Minnesota

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	Corkle	Pat	SPO		
	Crockett	April	MnDOT		

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 7
Date:	29 MAR 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment), TI-3 (Golden Triangle), and TI-4 (Shady Oak Road Crossing)

---- Agenda Topics ----	
1.	TI-4 Shady Oak Road Crossing
2.	TI-3 Golden Triangle Station
3.	TI-1 Eden Prairie Alignment
4.	Next Issue Resolution Team (IRT) meeting agenda

TI-4 Shady Oak Road Crossing:

- The Shady Oak design team evaluated storm water ponding options for the project. Based on the evaluation a pond in the southeast corner of the interchange (current Southwest Transit Park and Ride lot) is the preferred location. This pond eliminates the need for a pond on Flying Cloud Drive to the north of Shady Oak Road.
- SPO presented three versions of the below grade crossing at Shady Oak Road with varying profile elevations.
- Two out of three options have track alignment below the water level. One of these two profiles doesn't provide enough cover for a 30" storm sewer pipe carrying water into the pond in the southeast corner of the interchange.
- The third underground option has a tunnel under Flying Cloud Dr and Shady Oak Rd in which case the LRT profile would be above the underground water level.
- SPO also presented an aerial option at Shady Oak Road.
- Technical recommendation is currently scheduled for late April after SPO performs cost analyses.
- Nine Mile Creek Watershed District noted that wetland mitigation should be included into the project cost analyses.
- SPO evaluated drainage options for the below grade crossing and developed two possible scenarios. One option is to connect to the existing 54" culvert that crosses Highway 212 just north of Shady Oak Road interchange and carry the water south towards Golden Triangle station in a new 72 inch pipe along LRT to a wetland mitigation site. Liberty Mutual site was one of the potential wetland mitigation sites, but this location is still designated for future development. A second site adjacent to Nine Mile Creek is also being explored.
- The second option would divert existing 54" culvert that crosses Highway 212 just north of Shady Oak Road along the west side of Highway 212 through the Shady Oak Road project. This option would likely require wetland / flood storage mitigation in the area north of MnDOT maintenance facility.

TI-3 Golden Triangle Station

- Resulting from some DEIS comments concerning the LRT run time, SPO investigated half a dozen alignment adjustments around Golden Triangle Station. Two of the adjustments were explored further (center running on TH 212 and a flyover at TH 212 and Shady Oak Drive) with a potential station in between Flying Cloud Drive and TH 212. However, the alignment and station location were not very practical and serviceable.
- SPO is considering eliminating the horizontal curve proposed in the DEIS alignment just north of Golden Triangle Station and placing the station next to the existing parking lot currently on the north side of Supervalu (Lot C).
- Golden Triangle Station requires 300-360 parking spaces by 2030 and 240-290 by the opening day. There are four potential locations for parking at this station, but only two (Lot C and Lot D) are within the desired 1000' walking radius.
- Lot C could handle about 115 spaces and Lot D about 200.

- Future development in the area has not been determined yet, so potentially a temporary parking could be utilized to accommodate projected opening day needs.
- Project would need to address storm water for parking areas.

TI-1 Eden Prairie Alignment:

- The following alignment adjustments will be further explored:
  - **a.** Adjustment 1A with the track alignment crossing from the south side of Flying Cloud Dr to north side at Viking Dr at-grade
  - **b.** Adjustment 1A2 with the track alignment crossing from the south side of Flying Cloud Dr to north side at Prairie Center Dr on structure
  - **c.** Adjustment 24A with the track alignment crossing to the center of Singletree Ln at Eden Rd. Station platform is either going to be at the daycare site or in front of Walmart
  - **d.** Adjustment 24A with the track alignment running along the center of Prairie Center Dr and crossing to Southwest Transit station at Technology Dr either at-grade or on structure. Station platform would be at grade. This adjustment would impact Anchor Bank and possibly Ruby Tuesday. This station would require additional 1200 parking spots for the LRT users. If Southwest Transit continues operation they would need 400 spaces less than their current requirement
  - **e.** Adjustment 8A1 with the track alignment running along the center of Prairie Center Dr and crossing to the west side at Bachman's driveway. Access to the Flagship Office building would be aligned with the access to Bachman and regulated with a traffic light
  - **f.** Adjustment 20A with the track alignment crossing Southwest Transit station and running along the south side of Technology Dr. The track alignment crosses from the south side of Technology Dr to north side west of Mitchell Rd
  - **g.** Adjustment 23A starts at Southwest Transit station and continues south along TH 212 before it turns south and bisects Eaton property
  - **h.** Adjustment 26A continues running along TH 212 and turns south at Wallace Rd

- The City of Eden Prairie noted that Eaton prefer adjustment 20A. They are not opposed to adjustment 26A even though it impacts Eaton's parking.
- Eaton has concerns with adjustment 23A that bisects their property.
- Next meeting is scheduled for April 5, 2013.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

29 MARCH 2013	SPO
10:00 a.m. - 12:00 p.m.	6465 Wayzata Blvd, St. Louis Park, Minnesota

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EE Evans, Earth

Meeting Notes

Meeting Title: Eden Prairie - Issue Resolution Team Meeting No. 9

Date: 12 APR 2013 **Time:** 10:00 am **Duration:** 2 hours

Location: SPO - Conference Room A

Meeting called by: Jim Alexander - SPO

Attendees: See sign-in sheet

Purpose of Meeting: To discuss TI-1 (Eden Prairie Alignment), TI-2 (9-Mile Creek Crossing), TI-3 (Golden Triangle Station), TI-4 (Shady Oak Road Crossing) and TI-5 (City West Station)

---- Agenda Topics ----
1. TI-2 Nine Mile Creek Crossing
2. TI-3 Golden Triangle Station • Feedback from City planning
3. TI-4 Shady Oak Road Crossing
4. TI-5 City West Station
5. TI-1 Eden Prairie Alignment • Update on Property Owner Comments • Traffic/Roadway Update • Typical Sections on Flying Cloud Drive
6. Next Issue Resolution Team (IRT) meeting agenda

TI-2 Nine Mile Creek Crossing:

- The LPA crosses Nine Mile Creek at the existing Flying Cloud culvert crossing. SPO proposed adjusting the LPA to minimize some of the 4(f) issues and increase LRT speed. The adjusted track alignment crosses over the pond closer to TH 212 and before it crosses Flying Cloud Dr north of the existing Flying Cloud culvert crossing.
- The adjusted track alignment needs to be evaluated for potential wetland impacts.
- The soil in this area may require that LRT is on some sort of structure.
- The adjustment could be further refined to continue north on tangent past the Access Genetics parking lot to avoid impact to that property.

TI-3 Golden Triangle Station:

- Out of the four potential Park and Ride locations presented during the March 28 IRT meeting, locations C and D are still feasible and preferable to the City for surface parking, and location B could be joint use structured parking, but the final decision may depend on what happens with the development in this area.
- The City proposed to take the location A off the table since this location has an approved development plan in place.
- The DEIS station platform was too close to the loading docks. Straightening the track alignment and moving the station north would be preferable. However, the wetland impacts would have to be quantified before the final decision is reached.
- Station workshop scheduled for May 3, 2013 would provide more in-depth analyses of the station platform location.

TI-4 Shady Oak Road Crossing:

- SPO presented criteria for Shady Oak Road Crossing evaluation. It included project cost, maintenance and life cycle consideration, construction coordination with Shady Oak project, aesthetic and visual impacts, utilities, environmental and OMF. SPO will send the criteria to the City for their input.
- SPO presented a visual rendering for the aerial option. The City commented that if this option is recommended, they would be interested in placing a city logo on the bridge.
- The City noted that their emergency and fire representatives would prefer the aerial option.
- SPO will finalize evaluation metrics and recommend one alternative in next week or two.

TI-5 City West Station:

- Park and Ride at City West Station can accommodate up 168 surface spaces as shown. This is slightly under the maximum 189 spaces shown in the Park-and-Ride analysis for 2030.
- At-grade station platform (at approximate proposed UHG finish floor) would work with the tracks either below or above TH 62.
- The City noted that UHG prefers the station platform at-grade and had no interest in contributing funds for a pedestrian crossing across TH 62. Also, they prefer the tunnel option below TH 62.
- SPO is trying to locate MnDOT right-of-way to finalize the location of the retaining wall and drainage improvements.
- SPO will coordinate with the City's project currently in design to improve 62nd street.

TI-1 Eden Prairie Alignment:

Update on Property Owner Comments:

- Dave Lindahl noted that Hampton Inn owners are concerned with noise and vibrations effects on their building and their guests. They also raised concerns over the access to their property and noted that they prefer a signalized intersection.

- The owner of the Cross Roads Center strip mall across the street from Hampton Inn raised similar concerns and noted that they prefer a signalized intersection as well.

Typical Sections on Flying Cloud Drive:

- SPO presented typical sections at the Eden Prairie Convenience Center strip mall on the northwest side of Flying Cloud Dr/Eden Rd intersection. There were two alternatives: one with and one without the trail. The City noted that they are not ready to eliminate the trail yet.
- Flying Cloud Dr falls under Hennepin County State Aid design criteria which do not allow the reduction of 12 foot through lanes. The turn lanes could be reduced from 14 to 13 feet and the curb reaction could be reduced from 4' to 2'. The reduction still impacts parking at the strip mall. Hennepin County noted that there may be some leeway in the criteria to allow 11 foot through lanes.
- LRT profile cannot be lowered due to proximity to Technology Drive and Eden Road grade crossings. Current design has some visual impacts to the businesses at the strip mall.
- The City prefers a fence design that allows the drivers on Flying Cloud Dr to see the strip mall. However, the fence would still need to prevent pedestrians from encroaching onto the tracks.
- SPO will provide a few fence design alternatives in the future.

Traffic/Roadway Update:

- SPO presented traffic updates at Prairie Center Dr/Technology Dr intersection and on Prairie Center Dr. The following is the summary:
    - **a.** Prairie Center Dr/Technology Dr intersection
        - i. 0.9 volume to capacity ratio in 2030 with the existing configuration
        - ii. 5 seconds delay and 0.95 volume to capacity ration in 2030 with a single northbound left turn
        - iii. No delay and 0.95 volume to capacity ration in 2030 with a dual northbound left turn and/or an additional southbound through lane
    - **b.** Prairie Center Dr Base
        - i. Base scenario includes a right in/out on Singletree Ln (Bachman's), Prairie Center Dr (the existing Bachman and Flagship Office driveways), traffic signal at Prairie Center Dr/Singletree Ln intersection and a grade separation at Prairie Center Dr/Technology Dr intersection.
        - ii. Prairie Center Dr center running to Singletree center running is a good candidate for an at-grade crossing and with preemption it reduces LRT's running time by 40 s. Intersections operate at LOS D. Further evaluations needs to be done for a priority situation.
    - **c.** Scenario A
        - i. Scenario A includes right in/out on Singletree Ln (Bachman's), traffic signal (at Prairie Center Dr/Singletree Ln intersection and at the existing Bachman and relocated Flagship Office driveway) and grade separation at Prairie Center Dr/Technology Dr intersection.
        - ii. This scenario did not significantly impact Prairie Center Dr and maybe able to work under all LRT operations. However, it limits the ability to lengthen southbound left turn lane at Singletree.
    - **d.** Scenario B
        - i. Scenario B includes traffic signals at Prairie Center Dr/Singletree Ln intersection and on Singletree Ln, right in/out on Prairie Center Dr (the existing Bachman and

Flagship Office driveways, and grade separation at Prairie Center Dr/Technology Dr intersection.

ii. This scenario may not significantly impact Singletree Ln, but east bound queues at the Bachman's intersection could spill into Prairie Center Dr. At this point there is no significant difference between scenario A and B.

e. Scenario C1/C2

i. Scenario C includes right in/out on Singletree Ln, traffic signal at Prairie Center Dr/Singletree Ln intersection (signal C1 and pre-emptive C2), at the existing Bachman driveway and Prairie Center Dr/Technology Dr intersection.

ii. C1 could have potential queues spilling back from Singletree Ln and potential queues spilling back to Technology Dr.

iii. C2 is not a good candidate for pre-emption.

f. Scenario D

i. Scenario D includes right in/out on Singletree Ln, and traffic singles at Prairie Center Dr (the existing Bachman driveway), Prairie Center Dr/Singletree Ln and at Prairie Center Dr/Technology Dr intersection. In this scenario LRT crosses both directions of Prairie Center Dr at Singletree Ln.

ii. This scenario requires an additional phase (increase in delays) but has minimal track blockage potential.

g. Eden Prairie noted that they were not interested in any alternative that crosses both northbound and southbound Prairie Center Drive at-grade.

Next Steps:

- Next meeting is scheduled for April 19, 2013 at 10 am.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

12 APRIL 2013 10:00 a.m. - 12:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	**Last Name**	**First Name**	**Agency**	**e-Mail**	**Phone**
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Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 10
Date:	19 APR 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment), TI-4 (Shady Oak Road Crossing) and TI-5 (City West Station)

---- Agenda Topics ----
1. TI-5 City West Station Workshop
2. TI-1 Eden Prairie Alignment • Roadway Update • Typical Sections on Flying Cloud Drive
3. TI-4 Shady Oak Road Crossing
4. Next Issue Resolution Team (IRT) meeting agenda

TI-5 City West Station Workshop:

- SPO and the City met with United Health Group (UHG) to discuss track alignment adjustments. UHG would like to see more separation between proposed kiss-and-ride and their office space.
- The City believes the parking demand at this station will be higher than the analysis has projected so question if the park-and-ride area is going to be large enough.
- Park-and-ride cuts into the hill which poses visual concerns for UHG.
- One option is to circulate the kiss-and-ride vehicles through the park-and-ride lot. However, this may create traffic problems during peak times and illegal U-turns to access kiss-and-ride.
- Another option is to use a few park-and-ride spaces for kiss-and-ride.
- The third option is provide only ingress to the kiss-and-ride through the park-and-ride facility. There would be a right-out onto W 62nd St from the kiss-and-ride.

TI-1 Eden Prairie Alignment:

- SPO presented alignment adjustments that are going to be carried forward for more in-depth analyses. They are as follows:
  - **a.** Locally Preferred Alternative: This alternative runs along TH 212 and terminates just west of Mitchell Rd with a station platform.
  - **b.** Wallace Terminal—Technology Drive: The track alignment crosses from the south side of Flying Cloud Dr to north side at-grade at Viking Dr or at Valley View Rd on structure. The track continues running on the west side of Flying Cloud Dr, turns onto the north side of Singletree Ln and then crossing to the center of Singletree Ln at Eden Rd. The track alignment continues along the center of Singletree Ln and Prairie Center Dr and crosses to Southwest Transit station at Technology Dr on structure to an at-grade platform. The track alignment crosses Southwest Transit station and runs along the south side of Technology Dr, and then crosses from the south side of Technology Dr to north side west of Mitchell Rd at the location of the future extension Hiawatha Lane. This adjustment ends at Wallace Rd.
  - **c.** Southwest Terminal: This adjustment follows Wallace Terminal-Technology Dr alignment but stops at Southwest Transit station.
  - **d.** Wallace Terminal—Comprehensive Plan: This adjustment follows Wallace Terminal—Technology Dr adjustment, but instead running on Singletree Ln, the tracks turn west on Eden Rd and run past the water tower, behind the Brunswick building and then crosses to the west side Prairie Center Dr on structure.
  - **e.** Wallace Terminal—TH 212: This adjustment follows Wallace Terminal-Technology Dr adjustment up to Southwest Transit station. From there, the track alignment continues west along TH 212 before it turns south and bisects Eaton property and ends at Wallace Rd.
- SPO presented a typical section for Wallace Terminal—TH 212 adjustment near Eaton property (23A). LRT would be approximately 169 feet away from their building, but the driveway would have to be protected with gates.

- The City noted that open property east of the Eaton building might be set aside for future development. However, the alignment could be adjusted to minimize the impact to the property.
- SPO presented typical sections if the track alignments continues west along TH 212 past the main entrance to the building and turns south at Wallace Rd (26A). This adjustment would take some parking and the tracks would be 20 to 25 feet away from the building. The City is going to meet with Eaton and present the adjustments.
- SPO noted that the track alignment around MTS has been adjusted to avoid impacting their loading docks and are greater than 52 feet away from the dock.
- SPO presented typical sections on Flying Cloud Dr near Valley View Rd, Residence Inn and Crossroads Center.
- SPO presented truck turn findings for Bachman's driveway using a WB-50 truck, minor adjustments to the medians in the parking lot may be needed for this size truck. This study will be refined once the City confirms the size of the trucks that use the driveway.

TI-4 Shady Oak Crossing:

- SPO is still fine tuning the cost evaluation matrix for Shady Oak Crossing. Even though the aerial alternative is somewhat more expensive, SPO prefers that alternative since it eliminates the schedule conflict with Shady Oak Interchange project.
- Shop NBC has some concerns with the bridge option.
- The City will consider whether to proceed with an aerial or underground option.

Next Steps:

- Next IRT meeting is scheduled for Friday, April 26, 2013.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

19 APRIL 2013 10:00 a.m. - 12:00 p.m.			SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota		
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	Jeremiah	Janet	City of Eden Prairie	jjeremiah@edenprairie.org	952-949-8529
	Krause	Mary	City of Eden Prairie	mkrause@edenprairie.org	952-949-8315
	Lindahl	David	City of Eden Prairie	dlindahl@edenprairie.org	952-949-8484
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	Rue	Rod	City of Eden Prairie	rrue@edenprairie.org	952-949-8314
	Stovring	Leslie	City of Eden Prairie	lstovring@edenprairie.org	952-949-8327
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CROCKETT APRIL

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 11
Date:	26 APR 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment), TI-5 (TH 62 Crossing), and TI-23 (OMF Location)

---- Agenda Topics ----
1. TI-5 TH-62 Crossing
2. TI-1 Eden Prairie Alignment • Traffic Update • Roadway and Track Update • Prairie Center Dr/Technology Dr Bridge Visualization
3. TI-23 OMF Location
4. Next Issue Resolution Team (IRT) meeting agenda

TI-5 TH-62 Crossing:

- SPO presented an evaluation metrics for TH 62 crossing. The evaluation considers the cost differential between the bridge and the tunnel alterative. The following will be part of the evaluation: costs, constructability, staging, maintenance of traffic, maintenance and life cycle, right-of-way, local street impacts, station impacts, aesthetic impacts, utility impacts, and environmental. The metrics will be posted in e-Builder.
- Soil borings have been performed in this location and the findings should be available soon.

TI-1 Eden Prairie Alignment

- SPO presented preliminary detailed traffic analysis for the track adjustments 23A and 20A between Southwest Transit and Mitchell/Wallace station. The analyses don't incorporate the travel time on Mitchell Rd between Martin Dr and Scenic Heights Rd.
- Build analysis for Adjustment 23A includes dual right turns in both directions on Mitchell Rd. LRT pre-emption does not seem feasible.
- Build analysis for Adjustment 20A includes modifying left-turn phasing and shortening northbound left-turn lanes which are already short. LRT pre-emption seems feasible.
- Next step would be to evaluate the entire LRT travel time on both alignments and redo the evaluation with additional park-and-ride trips.
- The City noted that emergency vehicles and the fire department are concerned with even 30 second of delay since they typically try to respond within 5 minutes. MnDOT will be providing actual emergency pre-emptions to help evaluate this issue.
- The City also noted that the left turn movement from northbound Technology Dr to Prairie Center Dr is heavy with busses and should be taken into consideration.
- SPO presented a layout for both station location alternatives on Singletree Ln that would provide 68 street parking spaces and a 16 foot wide sidewalk. Both options require closing Eden Glenn Rd. The City noted that Bremer Bank might be concerned with the loss of access to their property from Singletree Ln. However, maintaining the existing access would require a traffic signal at Eden Glen Rd/Singletree Ln intersection which is not a feasible solution. SPO and the City will meet with Bremer Bank to present the current mitigation plan that connects Eden Glenn Rd with Eden Rd. The layout also presents some parking mitigation for the Bremer property.
- Further investigation would be required to provide more details on impacts to the nearby businesses.
- SPO presented a more detail track layout for the comprehensive plan adjustment (2A). The track alignment crosses Eden Rd and turns west through Discount Tires. It also requires closing Glen Ln. The City noted that that they would prefer Glen Ln to remain open. SPO will investigate north side running option on Eden Rd that would allow Glen Ln to remain open.
- The parking area between Brunswick Zone and Watertower apartments would serve as an access to the station platform. To make the station platform accessible, 10 to 15 feet of cut would be required. Parking impacts are approximately 70 parking spaces.

- SPO presented visualization for Prairie Center Dr/Technology Dr Bridge. The structure and its abutments partially obscure Ruby Tuesday and the rest of the businesses in the strip mall. SPO will try to extend the bridge to allow for more visibility. The City and SPO will meet with Ruby Tuesday in the future to discuss visual and aesthetic impacts.

TI-23 OMF Location:

- SPO presented three conceptual OMF site locations in Eden Prairie.
- OMF site 3A-2 at Wallace Rd/Technology Dr intersection could potentially have park-and-ride and OMF as either two separate facilities or stacked on top of each other.
- The combined configuration has a three level park-and-ride facility on top of the OMF.
- The second location 6A-1 is along Technology Dr on United Health Group campus and provides only an OMF. The existing roadways in the vicinity are not impacted.
- The third OMF location 8-1 is along Shady Oak Rd on the existing farm site. The surrounding area could be potentially used for development. SPO will attempt to redesign the tracks leading into the OMF to provide the site more suitable for development.
- The City requested SPO to investigate another potential OMF site just north of the farm site – the mini-storage parcel, restaurant parcel, and parking lot.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

26 APRIL 2013	SPO
10:00 a.m. - 12:00 p.m.	6465 Wayzata Blvd, St. Louis Park, Minnesota

Please Initial Here	Last Name	First Name	Agency	e-Mail	Phone
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TB	RICHARD BICKNELL	TIM	SPO		

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 12
Date:	10 MAY 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment), TI-2 (Nine Mile Creek Crossing), TI-3 (Golden Triangle Station), and TI-4 (Shady Oak Rd Crossing)

---- Agenda Topics ----
1. TI-3 Golden Triangle Station Workshop • Traffic Update
2. TI-1 Eden Prairie Alignment • City Council Meeting Debrief • Alignment Update for Flying Cloud Dr Between Technology Dr/Singletree Ln
3. TI-2 Nine Mile Creek Crossing • Nine Mile Creek Crossing Update • Traffic Update
4. TI-4 Shady Oak Rd Crossing • TH-212/Shady Oak Rd Bridge Adjustment
5. Next Issue Resolution Team (IRT) meeting agenda

TI-3 Golden Triangle Station Workshop:

- SPO reviewed three alternatives for a platform location at Golden Triangle station. The three alternatives include the DEIS, middle and north location.
- SPO and the City noted that Liberty Mutual is open to discussing shared parking for transit purposes. Liberty Mutual also noted that they would prefer to have two access points into the parking structure.
- The station design needs to accommodate two Southwest Transit circulatory bus routes and a potential BRT route along 70th Street. The existing cul-de-sac could possibly be used for their services.
- The station design needs to provide a convenient way for pedestrians to walk from the parking structure to the street.
- David Lindahl noted that ideally the station platform could be as close as possible to Shop NBC because that site could be used for future hotel development. By the end of the meeting, the group collectively decided the ideal platform location would be just north of 70th Street.
- Additional study of the track alignment and access roadways and walks need to be done to finalize the station platform location.
- SPO will perform an additional study to review the impacts on the nearby wetlands.
- SPO presented a preliminary traffic analysis at Golden Triangle station and 70th St. There is a minimum impact to the existing operation and a 12 second delay for future operations with a 400-foot queue. At-grade option works, but safety at the crossing needs further evaluation.

TI-1 Eden Prairie Alignment:

- The City of Eden Prairie Council Work session meeting was held on May 7, 2012. The question of Southwest Transit remaining in its current location on Prairie Center Dr at TH 212 needs to be resolved. A possibility of ending the line at the station is still on the table. Also, parking at Town Center station is a concern with no Park-and-Ride facility proposed at this time.
- City Council would like to see 3D renderings of the structure spanning over Technology Dr to Southwest Station with a view from Technology Dr looking towards the park.
- SPO investigated moving the trail to the west side of the tracks along Flying Cloud Dr. However, this option would prevent pedestrians from directly crossing Singletree Ln at Flying Cloud Dr. Instead, the pedestrians would have to continue to Eden Rd to cross Singletree Ln and get back onto Flying Cloud Dr.
- In addition, moving the trail to the west of the tracks would widen the typical section and impact more parking spots.
- The City asked if it's possible to provide a view from the Eden Prairie Convenience Center (strip mall) looking towards Flying Cloud Dr.
- The City noted that the structure over Flying Cloud Dr/Viking intersection should not preclude any future flyovers that might be part of the Valley View Road and TH 212 Interchange Study (2010).
- The City asked if SPO had explored center running along Flying Cloud Dr from TH 212 to Singletree Lane. SPO will perform a high level traffic test.

TI-2 Nine Mile Creek Crossing:

- SPO noted that the water level at the existing culvert is higher than originally anticipated which makes crossing Flying Cloud Dr at-grade challenging. Bridge might be a more technically feasible option.
- Another option is to design a short span bridge and cross Flying Cloud Dr at-grade near the existing culvert. In this case the culvert would have to be replaced.
- SPO presented a preliminary traffic analysis at Nine Mile Creek crossing. Year 2030 projected operations show an 8 second delay with a 75 to 250 feet queue. At-grade option works, but safety at the crossing needs further evaluation.

TI-4 Shady Oak Rd Crossing:

- The track alignment between Shady Oak Rd and TH-212/TH-62 interchange could run on a 3,500 foot long structure. Some adjustments might be possible if the OMF site in this location is dropped from further consideration.
- SPO presented another crossing option that would bridge Shady Oak Rd and TH-212, landing on the north-west side of the interchange. This structure would be about 2,100 feet in length.
- SPO will prepare 3D renderings of the 2500' structure option over Shady Oak Rd and TH-212.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

10 MAY 2013	SPO
10:00 a.m. - 12:00 p.m.	6465 Wayzata Blvd, St. Louis Park, Minnesota

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	EVANS, FARAH		SPO	michael.larson@metc.state.mn.us	

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 13
Date:	17 MAY 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment), TI-2 (Nine Mile Creek Crossing), TI-3 (Golden Triangle Station), TI-4 (Shady Oak Rd Crossing) and TI-5 (TH 62/City West Station)

---- Agenda Topics ----
1. TI-2 Nine Mile Creek • Updated Plan/Profile (need sight distance, wetland and 4(f) impacts)
2. TI-3 Golden Triangle Station • Updated Station Plans from Workshop (modify track alignment to push platform as far south as possible to just north of 70th – need to know wetland impacts of all options)
3. TI-4 Shady Oak Road Crossing • Rendering of bridge with adjustment 51 (BB)
4. TI-5 TH 62/City West Station • City West Station Plans – updated from workshop
5. TI-1 Eden Prairie Alignment • Comp plan alignment adjustment workshop
5. Next Issue Resolution Team (IRT) meeting agenda

TI-2 Nine Mile Creek:

- SPO updated the track alignment through the Nine Mile Creek crossing in order to minimize wetland and 4(f) impacts. The track alignment follows TH-212 and either bridges the pond and Flying Cloud Dr or bridges the pond and crosses Flying Cloud Dr at-grade.
- The first option is a 1,600 foot long bridge that goes over the pond and Flying Cloud Dr. The road and the existing culvert are not impacted.
- The second option is a shallow structure built on piles that goes over the pond and crosses Flying Cloud at-grade at an improve crossing angle than the LPA. The road could be realigned and pushed closer to the school. In this case, the existing culvert would need to be replaced and school's access would need to be rebuilt and moved away from the culvert to maximize sight distance.
- Safety still needs to be evaluated for the LRT at-grade crossing and the entrance to the school.
- The City noted that the school plans to use area between the parking lot and the road for a playground.

TI-3 Golden Triangle Station:

- SPO updated Golden Triangle Station based on the last week's workshop comments. Two options were refined with the platform located north of 70th Street with a park-and-ride on the east side.
- The City noted that 70th Street is planned to be constructed by the opening day.
- Depending on the track alignment option, park-and-ride would have either 121 or 204 parking stalls.
- Kiss-and-ride drop offs are either on 70th Street or on the west side of the platform along the possible connection road to the future Liberty Property parking.
- Southwest Transit has noted that they do not need turnarounds.
- The City will confirm with Liberty Property the size of the parking structure and whether they need two access points to their parking structure.

TI-4 Shady Oak Road Crossing:

- SPO presented 3D renderings of the 2500' structure option (adjustment 51) over Shady Oak Rd and TH-212. Still shots will be available in e-Builder.
- Bridge over Shady Oak Rd and TH-212 has 150 foot spans and 190 foot spans over Shady Oak Rd.
- The City asked if it is possible to show cross-sections at the office buildings on the west side of TH 212.
- SPO is going to advance the bridge crossing alternative over Shady Oak Rd. NEPA process is not compatible with the city's environmental process and furthermore the underground water is a long term problem for the tunnel option.

TI-5 City West Station and TH 62 Crossing:

- SPO presented two options for the park-and-ride at City West Station.

- One option is to circulate the kiss-and-ride vehicles through the park-and-ride lot.
- The second option is to have a two story park-and-ride structure. Kiss-and-ride would have an in and out access from W 62nd St.
- SPO received geotechnical evaluation for the potential TH 62 tunnel crossing. The results show ground water to be 5 to 10 feet below the base of the tunnel.
- With staging, construction of the tunnel would last about two years and with a full highway closure one construction season. The City noted concerns with a full closure due to the traffic increases of the UHG development.

TI-1 Eden Prairie Alignment:

- SPO presented updates to the Comp Plan alignment with LRT running either along the north or the south side of Eden Rd.
- The north side running adjustment has a station platform located either behind Brunswick Zone, or behind water tower or adjacent to Glen Ln. In either case, the track alignment would run through the Eden Prairie Convenience Center (strip mall), run west along Eden Rd. in front of Red Stone. The track alignment would have some impacts to Red Stone's parking.
- Access to Red Stone would be limited to the existing southwest driveway, which would be signalized. The existing access adjacent to Glen Ln would be closed off.
- In this adjustment Glen Ln would stay open with some impacts to Discount Tire's parking lot.
- The south side running adjustment has a station platform either behind Brunswick Zone, behind water tower or adjacent to Glen Ln. In either case, the alignment track would cross Eden Rd. through Discount Tire and run west along Eden Rd.
- In this adjustment, the Eden Prairie Convenience Center (strip mall) would not be impacted. Eden Rd would be transformed into a signalized T-intersection which would impact some parking for Red Stone.
- In this adjustment Glen Ln would not stay open.
- The City noted that preferably Glen Ln would stay open while maintaining two access points to Red Stone.
- Comp Plan profile becomes more challenging as the station platform moves further west.
- SPO presented preliminary traffic analysis for the Comp Plan adjustment. The model assumed that Glen Ln/Eden Rd intersection was signalized. The results show 150 feet of queue on eastbound Eden Rd at Flying Cloud Dr and 100 foot of queue on westbound Eden Rd at Glen Ln. Distance between Flying Cloud Dr and Glen Ln is about 350 feet.
- Traffic signal at Eden/Glen intersection is not preferred, but the traffic should operate acceptably but would leave little opportunity for other improvements if operations became problematic.
- Exclusive turn lanes for movements crossing the LRT track and at least two eastbound lanes of approach at Flying Cloud Dr would be needed.

- Dave Lindahl noted that Champps had issues with increased traffic and noise. They would like to see cross-sections and 3D renderings next to their restaurant.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

17 MAY 2013	SPO
10:00 a.m. - 12:00 p.m.	6465 Wayzata Blvd, St. Louis Park, Minnesota

Please Initial Here	Last Name	First Name	Agency	e-Mail	Phone
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Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 14
Date:	24 MAY 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
4. TI-1 Eden Prairie Alignment • Eden Prairie Town Center Station Workshop • Traffic Update ○ Mitchell Rd ○ Technology Dr
5. Next Issue Resolution Team (IRT) meeting agenda

TI-1 Eden Prairie Alignment:

Eden Prairie Town Center Station Workshop:

- SPO adjusted the side running track alignment on the north side of Eden Rd in order to keep Glen Ln open and still provide access to the Eden Prairie Convenience Center (strip mall). The track alignment was straightened and moved closer to the pond. David Lindahl asked if the station platform could be located on the strip mall property. The initial response was that this location would not be compatible with the city's Comp Plan. SPO will study this option further.
- The south running option and station platform locations east of Eden Rd have been taken off the table since they require closing Glen Ln and create impacts to Champps parking.
- The outcome of the workshop was to have a station platform between Eden Rd and Main St. Also, the priority for designing the track alignment is to have minimal impacts to parking and at the same time keep Glen Ln open. The best location for parking seems to be on Rosemount's property at the northeast corner of the future Main St and Eden Rd extension.
- Unless the track alignment can completely avoid the strip mall, the project would have to buy the entire property. The access being from public right-of-way is not a primary concern.
- Suggestion was made that the parking could be provided on the street and the track alignment could run along the center line of Eden Rd. SPO will study both options.
- SPO should refine the Main St typical section to be consistent with the Major Center Area Streetscape Master Plan which may help minimize impacts to parking at Brunswick Zone and Watertower apartments.

Traffic Update:

- SPO presented initial preliminary traffic analysis for a center running option on Flying Cloud Drive. The conclusion was that the track alignment is not feasible with the existing configuration of Flying Cloud Dr/Singletree Ln intersection. It would require the reconstruction of Flying Cloud Dr.
- SPO presented traffic assumptions for Eden Prairie park and ride locations. The model assumed the worst case scenario with no park and ride at any other location.
- The following is the summary of the assumptions:
    - City West Station assumes parking demand for 190 spaces with most demand (54%) coming from TH 62 east of Shady Oak Rd
    - Golden Triangle assumes parking demand for 360 spaces with most demand (71%) coming from TH 169 south of I-494
    - Town Center assumes parking demand for 160 spaces with most demand coming (52%) from TH 212 east of Prairie Center Dr (this demand only identified for the 15 park and ride scenario)
    - Southwest Station assumes parking demand for 830 additional spaces with most demand (55%) coming from TH 212 east of Prairie Center Dr. Current Southwest parking capacity is approximately 970 vehicles

- Mitchell Rd assumes parking demand for 1210 spaces with most demand coming from TH 212 south of TH 5. The demand is mostly in the morning.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

24 MAY 2013 10:00 a.m. - 12:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	**Last Name**	**First Name**	**Agency**	**e-Mail**	**Phone**
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SG GHANDOUR SARAH

Meeting Notes

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 15
Date:	31 MAY 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
4. TI-1 Eden Prairie Alignment • Traffic Update ○ Mitchell Rd • Comp Plan Alignment
5. Next Issue Resolution Team (IRT) meeting agenda

Eden Prairie Alignment:

Traffic Update:

- SPO presented initial preliminary detailed intersection analysis at Mitchell Rd (Adjustment 23A on the south side of TH 212/TH5 and Adjustment 20A on the south side of Technology Dr) and traffic analysis for Adjustment 20A along Technology Dr (east and west of Mitchell Rd).

LRT track Adjustment 23A at Mitchell Rd

- Findings recommend adding northbound and eastbound dual right-turn lanes and restricting the north bound and east bound right-turn-on-red movements.
- With the above improvements, priority at this intersection should work well, but with pre-emption LRT gains 50 seconds.

LRT track Adjustment 20A at Mitchell Rd/Technology Dr Intersection

- Findings recommend restricting the east bound and west bound right-turn-on-red movements and converting the left turn phasing to protected only.
- With the above improvements, pre-emption decreases LRT's travel time by 80 seconds.

LRT track Adjustment 20A along Technology Dr East of Mitchell Rd

- Traffic analysis for Adjustment 20A along Technology Dr show that vehicular travel times are not significantly impacted by the LRT traffic signals.

LRT track Adjustment 20A along Technology Dr West of Mitchell Rd

- SPO investigated future Technology/Hiawatha intersection. Analysis show that at-grade LRT crossing works acceptably. 2030 operations show LOS B with a quick recovery after an LRT event.
- Analysis show a 300-400 foot maximum queue along the east bound Technology Dr at Mitchell Rd as well as along the west bound Technology Dr before the track crossing.
- This option will need to include future park and ride traffic.

Eden Prairie Comp Plan Alignment:

- SPO presented an update to the comp plan adjustment for north side running that showed parking on Eden Rd (30 spaces on the west bound near the station platform and 17 additional spaces along the east bound). This adjustment impacts (net loss) of 12 parking stalls at Redstone; and 15 stalls at Champp's to accommodate on-street parking near Champps'.
- Eden Rd would be widened to five lanes between Glen Ln and Flying Cloud Dr.
- SPO needs to determine potential right-of-way implications of a full taking versus partial taking of the strip mall property.
- SPO presented a center running Comp Plan alternative. As presented, this option impacts (net loss) 37 parking stall at Red Stone, 15 stalls at Champps and 17 stalls at Discount Tire property but allows the strip mall property to be better utilized.
- The center running option has the LRT tracks crossing the west bound Eden Rd lanes very close to the intersection with Flying Cloud Dr.
- SPO will continue to further study this option.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

31 MAY 2013 10:00 a.m. - 12:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	**Last Name**	**First Name**	**Agency**	**e-Mail**	**Phone**
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Darnell Chuck HennCo

Meeting Notes

Meeting Title: Eden Prairie - Issue Resolution Team Meeting No. 16

Date: 07 JUNE 2013 **Time:** 10:00 am **Duration:** 2 hours

Location: SPO - Conference Room A

Meeting called by: Jim Alexander - SPO

Attendees: See sign-in sheet

Purpose of Meeting: To discuss TI-1 (Eden Prairie Alignment) and TI-5 (TH-212 Crossing)

---- Agenda Topics ----
1. TI-1 Eden Prairie Alignment • Comp Plan Alignment • End of the Line/Wallace Station/OMF
2. TI-5 TH-212 Crossing • Sections along the track alignment north of TH-212
3. Next Issue Resolution Team (IRT) meeting agenda

TI-1 Eden Prairie Alignment:

- The City of Eden Prairie held numerous meetings with business owners around the proposed LRT alignment. David Lindahl presented a summary:
    - Kraus-Anderson, who owns four buildings in the north-west quadrant of Shady Oak Rd Interchange, has concerns with the LRT tracks running close to their buildings. In addition, the bridge may obstruct the view. SPO will create 3D renderings in this area.
    - Milestone AV Technologies has no concern with the tracks. They asked if it's possible to connect their building with City West Station via pedestrian/bike trail that would follow the track alignment.
    - If park and ride were to be located on Rosemount's property, they asked for fencing to prevent people from entering their property. Also, they asked if it's possible to use structured parking to minimize the right-of-way impacts.

Comp Plan Alignment:

- SPO presented an updated north running Eden Rd option that included the total of 38 on-street parking stalls and the adjustments to the Main St road alignment (moved east to avoid parking impact to Watertower Apartments). This option keeps Glen Ln open and provides a dual access to Red Stone. It impacts the strip mall but could still provide enough space for either development or parking. Parking impacts are as following: 12 spots to Red Stone, 9 spots to Discount Tires, 5 to Watertower Apartments and 69 to Brunswick Zone.
- SPO presented two center running options (crossing at Glen Ln and crossing near Flying Cloud Dr), but the conclusion was that both of them impact parking and provide unfavorable track alignment and road geometry.
- SPO presented a station platform on the strip mall property with no proposed park and ride. This option was eliminated.
- The need for park and ride at Town Center Station still has to be determined.
- SPO presented preliminary detailed traffic analysis for north and center running Comp Plan alignments.
- The north running option is preferred from traffic operation perspective. Right turns across the tracks could pose potential safety problems.
- The center running option with an at-grade crossing at Glen Ln has a short westbound left turn lane and could potentially queue the west bound lane to Flying Cloud Dr.
- The center running option with an at-grade crossing near Flying Cloud Dr may increase delays at Flying Cloud/Eden intersection and is generally more complicated to operate. SPO will refine the center running and north side running.
- SPO will look at reducing impacts to the apartments and having Brunswick take on most of the parking impacts from the extended Main Street (potentially by others).

TI-5 TH-212 Crossing:

- SPO presented typical sections for Adjustment 51A (Shady Oak Rd/TH-212 Bridge) along the west side of the highway. The view from the office buildings closer to the interchange maybe obstructed. If the potential OMF site is eliminated, the track profile could be lowered.

- SPO will create 3D renderings in this area.

End of the Line/Wallace Station/OMF:

- SPO presented layouts for three OMF options:
  - Wallace Station—Stacking option (park and ride above the OMF building)
  - Wallace Station—Open station option (station platform, OMF and park and ride at-grade at Wallace/Technology intersection)
  - Mitchell Station—Park and ride and station platform on the City of Eden Prairie property on the south side of the Technology Dr.
- The stacking option takes up less right-of-way but it is six stories high.
- Open station has larger foot print but impacts wetlands and requires piles. This option could work with either Adjustment 23A or 20C.
- Mitchell Station could work only if the track alignment runs along Technology Dr.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

7 JUNE 2013 10:00 a.m. - 12:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
Please Initial Here	**Last Name**	**First Name**	**Agency**	**e-Mail**	**Phone**
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Meeting Notes

Meeting Title: Eden Prairie - Issue Resolution Team Meeting No. 17

Date: 14 JUNE 2013 **Time:** 10:00 am **Duration:** 2 hours

Location: SPO - Conference Room A

Meeting called by: Jim Alexander - SPO

Attendees: See sign-in sheet

Purpose of Meeting: To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
1. TI-1 Eden Prairie Alignment • LPA • Traffic (Park and Ride)
3. Next Issue Resolution Team (IRT) meeting agenda

TI-1 Eden Prairie Alignment:

LPA:

- The IRT conducted a workshop for potential Town Center Station platform locations on Technology Dr between Flying Cloud Dr and Prairie Center Dr.
- Placing the platform adjacent to Xcel's substation might be physically possible but it's not an ideal location from visual standpoint. Also, it may require utility relocation.
- The consensus was to study the following three locations for a station platform and park and ride:
    - the area adjacent to Gander Mountain. Portion of their parking lot may need to be acquired.
    - the area between Costco and Emerson. This option requires modifying the access to the Emerson Process Management property and studying traffic impacts on Costco's traffic circulation and their access.
    - on Flying Cloud Dr between I-494 and Valley View Rd. One potential site could be adjacent to the strip mall just west of Valley View Rd.

Traffic:

- SPO presented traffic analysis for potential park and ride locations in Eden Prairie at:
    - Golden Triangle Station
    - Combined Southwest and Town Center Station
- 2030 parking demand at Golden Triangle Station is assumed to be about 360 parking spots. Majority (64%) of traffic comes from TH-169. The conclusion was that the existing 70th/Shady Oak Rd intersection could handle the future demand. At Shady Oak/Valley View intersection, the southbound left turn movement causes longer delays/queues during the pm peak. A signal or a roundabout could be used as potential solutions.
- Traffic impacts of a single large park and ride at Southwest Station are not overly significant, however the following should be noted:
    - In 2030 TH 212/TH 5 interchange would operate poorly in the PM Peak under No Build
    - Potential improvements to the roadway system are needed to get the interchange area to operate acceptable in 2030 No Build. These improvements should not impact the Prairie Center Drive Bridge
    - Internal site circulation still needs further evaluation
- There is not a significant difference in traffic impacts if Park and Ride demand is shared between Southwest Station and Town Center. Ultimately, in all scenarios, traffic must traverse the capacity constrained intersections at the Prairie Center Dr/TH-212 interchange.
- A larger park and ride at Town Center Station should have multiple access points and one of them should be from Technology Dr. A single Park and Ride access to Singletree Lane is not recommended.
- Southwest Station Park and Ride location has the advantage of having additional access to TH 212/TH 5 via Technology Dr at Mitchell Rd or Wallace Rd., which is considered as an advantage.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

14 JUNE 2013 10:00 a.m. - 12:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
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Meeting Notes

Meeting Title: Eden Prairie - Issue Resolution Team Meeting No. 18

Date: 21 JUNE 2013 **Time:** 10:00 am **Duration:** 1 hour

Location: SPO - Conference Room A

Meeting called by: Jim Alexander - SPO

Attendees: See sign-in sheet

Purpose of Meeting: To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
1. TI-1 Eden Prairie Alignment • LPA Station Location (Workshop Update) • LPA Traffic Analysis near Costco • Potential Meeting with Business Owners at Town Center Station
2. TI-4 Shady Oak Rd Crossing • Debrief from Shady Oak Rd Aesthetics Meeting
3. Next Issue Resolution Team (IRT) meeting agenda

TI-1 Eden Prairie Alignment:

LPA Adjustment and Station Location on Technology Dr.

- The City staff has met with Discount Tires to discuss impact to their parking (losing 9 spots under the Comp Plan option). Discount Tires noted that ideally they would prefer not to lose any parking. SPO believes that there may be room for 5-6 spots on the west side of the building.
- Eaton has concerns with the size of the building if park and ride is above OMF. Also, they have concerns with both track alignments that run near their property.
- Flagship Office and the building located at 800 Prairie Center Dr prefer Adjustment 2A because it's less impactful.
- Red Stone likes full signalized access to their property. The loss of parking could be potentially mitigated on the east side if the project fully acquires the Eden Prairie Convenience Center (strip mall).
- SPO presented an adjusted LPA bridge alignment over TH-494. The bridge could be approximately 1,200 feet shorter. The track alignment could cross Flying Cloud Dr at-grade either at Viking Dr or near westbound off-ramp and then bridge over the highway onto the north side of Technology Dr.
- SPO presented three potential station platform locations for Town Center Station under the adjusted LPA alignment. The three locations are: Gander Mountain, Emerson Rosemount, and the Crossroads Center strip mall on Flying Cloud Dr north of TH-494.
- The station platform location on the north side of Technology Dr at Gander Mountain would impact the access to their property. It could potentially be a full take with enough space for a park and ride (390 parking spots).
- The track alignment could continue running on the north side and go under Prairie Center/Technology intersection or it could cross Technology Dr near Optum and go under Prairie Center Dr. The first option would require a full closure of Prairie Center/Technology intersection to construct. The second option would keep Technology Dr open but close access to Prairie Center Dr south to construct.
- A potential park and ride site with 120 parking spaces could be on Emerson Rosemount's property to the north of the building with a station between their property and Costco. This requires some adjustments to their access.
- The station platform location on Flying Cloud Dr at the Crossroads Center strip mall would be just west of Prairie Center Dr (it could either cross Prairie Center Dr at-grade or on structure).
- A suitable site for park and ride would depend on the demand in this area. The City prefers not to have a commuter park and ride. Instead, they would prefer park and ride to be more locally oriented.
- Xcel Energy has noted that they have plans to expand the Eden Prairie substation. More information is forthcoming.

Traffic:

- SPO presented preliminary traffic analysis on Technology Dr around the two potential station locations. Weekday AM and PM data has been collected. For weekend data, the PM peak was increased by 50%. The analysis also assumed that intersections are signalized and that the roadway would have one through and one turn lane.
- 2030 Build analysis show the increase in travel time on Technology Dr and the need for longer turn lanes for all movements crossing the tracks. Costco access would need to maintain two lanes, although Saturday peak counts would need to be collected to confirm the analysis results.
- Overall estimate is that LRT could operate on the south side.

TI-4 Shady Oak Rd Crossing:

- SPO met with the Shady Oak design team to discuss project coordination. Depending on bridge pier locations, a gas line and a water main may need to be relocated. Also, the staff noted that currently some piers are impacting the proposed trail On Shady Oak Rd and the right shoulder on the south bound TH-212 off ramp. SPO will provide more detailed pier location as the design advances further.
- Two projects also discussed aesthetics. There were no major issues, but coordination is still necessary.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

21 JUNE 2013 10:00 a.m. - 11:00 p.m.				SPO 6465 Wayzata Blvd, St. Louis Park, Minnesota	
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Meeting Notes

Meeting Title: Eden Prairie - Issue Resolution Team Meeting No. 19

Date: 21 JUNE 2013 **Time:** 10:00 am **Duration:** 2 hour

Location: SPO - Conference Room A

Meeting called by: Jim Alexander - SPO

Attendees: See sign-in sheet

Purpose of Meeting: To discuss TI-1 (Eden Prairie Alignment)

---- Agenda Topics ----
1. FEIS Update
2. TI-1 Eden Prairie Alignment LPA • LPA Station Location (Workshop Update) • Southwest Station Site Design Traffic • Park and Ride • Mitchell/Technology
3. Next Issue Resolution Team (IRT) meeting agenda

FEIS Update:

- Leon Skiles gave an overview of Section 4(f), noting that it is a federal requirement for projects funded by the US Department of Transportation and that it's done in conjunction with NEPA.
- Properties that fall under 4(f) are publically owned and publically accessible parks and recreations areas with local significance. Typically projects try to avoid using parks and recreation land unless it's unfeasible.
- SPO will coordinate with the City to outline 4(f) properties in Eden Prairie.
- David Lindahl noted that Ace Daycare leases the property from the City. SPO would like to get a copy of the lease agreement.

TI-1 Eden Prairie Alignment:

LPA:

- It was noted that access to Optum and Costco needs to stay open if the tracks are on the south side of Technology Dr. North side running might be a better option since there are no driveways on the north side. In this case the tracks would cross Technology Dr west of Optum or at their driveway with a signal regulating the traffic.
- The tunnel under Prairie Center Dr could be constructed by building temporary pavement and switching the traffic between the east and west side of Prairie Center Dr. This could have minimal traffic interruptions.
- Crossing diagonally under Prairie Center Dr/Technology Dr intersection requires closing the intersection to construct the tunnel. The intersection would not be operational for one season which could create potential traffic problems throughout the city.
- Park and ride on Technology Dr could only be located at Gander Mountain or Costco.
- Station platform could potentially be located just east of Gander Mountain with some impact to their parking.
- Southwest Transit noted that their legal counsel has determined that their commission can choose to not allow LRT on their property at Southwest Station. Negotiations between the Southwest Transit Commission and Metro Council regarding LRT and/or Southwest Transit express bus service at Southwest Station are on-going.
- SPO presented various options for parking expansion at Southwest Transit station.
- If expanded to the east, parking could be accommodated with a four story structure with either 560 or 620 spots. The first option would not physically impact Ruby Tuesday, but their visibility would be diminished as their building would be in between bridge piers on the east side and the parking structure on the west. 620 parking spaces structure physically impacts the restaurant.
- If expanded to the north, parking could be accommodated with a four story structure holding either 276 or 384 spaces. The top three levels would be cantilevered over the tracks.
- If expanded to the south, parking could be accommodated with a four story structure holding 528 spaces but would impact visibility to the businesses to the south.

- If expanded to the west, parking could be accommodated with a four story structure holding 480 spaces.

Traffic:

- SPO presented preliminary traffic analysis for the following:
    - LRT crossing north of Prairie Center Dr/I-494 North ramp
    - updated Southwest Station park and ride analysis, and
    - Detailed analysis at Mitchell Rd crossing.

FCD Crossing:

- Crossing Flying Cloud Dr at I-494 North Ramp works at grade with preemptions. It assumes that left turn off-ramp can run concurrent with train.
- This crossing is potentially better from a traffic standpoint than Viking Drive because it has a simple intersection phasing and heavy vehicle movement could run with the LRT.

Southwest Station Park and Ride:

- As the previous analysis showed, both No-Build and Build alternatives require potential improvements to the roadway system.
- Updated traffic analysis for 800 additional park and ride spaces works with improvements.
- Impacts to Flying Cloud Dr/Prairie Center Dr and Mitchell/Technology intersections are minimal.

Mitchell Road Crossing:

- The limits of the analysis for Mitchell Dr Crossing are between Martin Dr and Scenic Heights Rd.
- LRT delays are greater with south alignment – potentially double or more.
- Traffic impacts are greater with south alignment.
- South alignment has challenging AM Peak operation – additional southbound through lane may be an improvement/mitigation.
- It's easier to add capacity at South Ramp than at Technology Dr
- LRT-vehicle crossing exposure is 50% to 100% higher on south alignment.

Action Items	Person Responsible	Deadline

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

28 JUNE 2013
10:00 a.m. - 12:00 p.m.

SPO
6465 Wayzata Blvd, St. Louis Park, Minnesota

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Stewart SKILES

Jeff LEON

PEC WEST SPO

Meeting Title:	Eden Prairie - Issue Resolution Team Meeting No. 21
Date:	23 AUG 2013 **Time:** 10:00 am **Duration:** 2 hours
Location:	SPO - Conference Room A
Meeting called by:	Jim Alexander - SPO
Attendees:	See sign-in sheet
Purpose of Meeting:	To discuss Eden Prairie SWLRT technical issues

---- Agenda Topics ----
1. Municipal Consent Schedule – 10 min
2. Town Center Station (TI-1) – 15 min • Potential for Parking North of Brunswick Zone • Park-and-Ride Locations • Sidewalk Connections
3. Highway 212 Freeway Analysis (TI-1) – 10 min
4. Southwest Station Circulation (TI-1) – 15 min
5. Traffic Analysis Update (TI-1) – 20 min • LRT Operating Assumptions • Mitchell Road Crossing Analysis
6. City Center Parking Structure Renderings (TI-1) – 5 min
7. End of Line Adjustments (TI-1) – 45 min

Meeting Notes:

Municipal Consent Schedule:

- Met Council is seeking municipal consent by the end of December 2013. The municipal consent plans are currently scheduled for the end of September. SPO has asked the City to consider potential City Council hearing dates that would accommodate this schedule.

Town Center Station:

- Per the City's request, SPO presented a potential plan to provide a parking lot with 70 spaces on the north side of Brunswick Zone to mitigate lost parking from Brunswick Zone if the North-South Main Street is constructed from the Town Center Station to Singletree Lane.
- To accommodate the parking lot the track alignment has to be shifted north which results in a net loss of 239 spaces on the Emerson property and in additional acquisition of their park property.
- The City requested SPO to explore another option for a smaller lot north of Brunswick Zone (for employee parking) that would retain the current "Comp Plan" LRT and Eden Road alignments.
- Park-and-Ride at Town Center Station requires approximately 160 spaces. The intention is to lease the spaces, but the location is to be determined after the municipal consent. The City asked whether another municipal consent would be needed to approve the potential sites. SPO said it would not.
- A sidewalk could potentially connect Singletree Lane and Town Center Station. The sidewalk would follow the future Main Street extension along the west side of Brunswick Zone and would have no impact on parking. However, it would require easements since that property does not belong to the City.

Highway 212 Freeway Analysis:

- SPO presented freeway traffic analysis for 2030 No Build alternative for westbound Prairie Center merge onto TH 212. Model limits spanned between I-494 and west of Wallace Rd and included Prairie Center Dr interchange intersections.
- Freeway volumes from April 2013 were used to model the analysis. It was assumed that the Southwest Station Park and Ride would add approximately 800 spaces.
- The model concluded that 2030 No Build alternative would operate in a congested state with LOS F. Potential improvements (not related to the SWLRT project) could include an "escape lane" onto TH 212 at the TH5 split and continuing the "escape lane" to provide auxiliary lane to 101 and 41.
- The additional Park and Ride trips were modeled with an "improved" WB TH 212 and the analysis concluded the additional Park and Ride trips would not have an impact to the freeway operations.

Southwest Station Circulation:

- It's still undecided whether LRT would be able to share existing parking with Southwest Transit. A shared structure would eliminate the need for acquiring additional property and impact less businesses.
- If LRT cannot share existing parking, a separate parking structure could be located just east of the existing Southwest Transit parking ramp. The structure would have 480 spaces with 120 spaces per level. The ground level would be designated for retail parking, in addition to the 480 structured spaces.

- The new parking structure would require several improvements to maintain traffic circulation. The access by Santorini would have to be a two lane in and a two lane out with one lane having shared left and right turn. The other access next to Culvers would need to have full access at Technology Drive with one lane in and one lane out with shared left and right turn. This intersection could potentially be signalized.

Traffic Analysis Update:

- LRT crossings operate with either gates or bar signals. Their use depends on speed. Gates are typically utilized with LRT speeds greater than 35 mph and at mid-block locations.
- Currently, SPO has preempted gated crossings at Viking Dr/Flying Cloud Dr and Technology Dr/Flying Cloud Dr intersections. The rest of the intersections are proposed with preempted bar signals except for Mitchell Rd/Technology Dr intersection, which would have a priority bar signal.
- SPO presented detailed traffic analysis at Mitchell Road crossings. The following were the findings for the three evaluated scenarios:

Optum/Eaton-Park and Ride West of Mitchell

  - A sensitivity analysis that used higher intensity land use at Optum and Eaton compared to the City's 2030 Comprehensive Plan.
  - AM peak is a primary issue, and even though it currently works, it operates near capacity.
  - By adding left turn lanes on eastbound and westbound Technology Dr and converting the eastbound right turn lane to right turn only, and extending the left turn lanes on Mitchell Road the intersection's operation would be improved with an average LRT delay of approximately 35 seconds.

Eden Prairie Comprehensive Plan-Park and Ride West of Mitchell

  - AM peak is a primary issue.
  - By adding left turn lanes on eastbound and westbound Technology Dr and converting the right turn lane on eastbound into a right turn only, and extending the left turn lanes on Mitchell Road the intersection's operation would be improved with an average LRT of approximately 30-35 seconds.
  - Although Measure of Effectiveness is similar to the Optum/Eaton scenario, the intersection does not operate at full capacity.

Eden Prairie Comprehensive Plan-Park and Ride East of Mitchell

  - AM peak is still a primary issue, athough the problem is exacerbated with a park and ride east of Mitchell Rd.
  - By adding left turn lanes on eastbound and westbound Technology Dr and converting the eastbound right turn lane to right turn only, and extending the left turn lanes on Mitchell Road the intersection operation improves with no LRT delays or impacts at Mitchell Rd. However, Technology Dr impacts are dependent upon a several factors.

City Center Parking Structure Renderings:

- SPO presented 3-D renderings of a Mitchell Station parking structure at City Center. The renderings showed a structure with 1200 parking spaces (maximum amount in case Southwest Station is eliminated).
- If the Southwest station remains within the project's scope, the City Center parking structure would be designed for 900 spaces.

End of Line Adjustments:

- SPO presented plan layout for eight Technology Drive/Comp Plan alignment adjustments. They are as following:
    - Comp Plan through Southwest Station and ending at Wallace Rd
    - Comp Plan ending at Southwest Station
    - Comp Plan through Southwest Station and ending at City Center
    - Comp Plan bypassing Southwest Station and ending at City Center
    - Comp Plan through Southwest Station and ending near MTS
    - Comp Plan bypassing Southwest Station and ending near MTS
    - Comp Plan through Southwest Station and ending near Optum
    - Comp Plan bypassing Southwest Station and ending near Optum
- The City noted that by bypassing Southwest Station Met Council may lose some riders. Also, they noted that that the station would lose its inter modal characteristics since Southwest Transit busses, BRT and LRT have been envisioned to support each other's operations.

Sign-In Sheet

SWLRT City of Eden Prairie -- Issue Resolution Team Meeting

23 AUGUST 2013
10:00 a.m. - 12:00 p.m.

SPO
6465 Wayzata Blvd, St. Louis Park, Minnesota

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