## EXECUTIVE SUMMARY

The Ramsey City Council and Ramsey Economic Development Authority have identified the need to prepare for the development of a new business park within the City. The City is targeting a large area of privately owned green-field space located on the north side of Trunk Highway 10, west of Armstrong Boulevard, for a future Ramsey Business Park. The primary roadway system serving the area is Bunker Lake Boulevard and Puma Street.

This analysis included studying traffic impacts resulting from the future business park (along with other users), examining the feasibility of constructing supporting infrastructure, and developing preliminary design layout plans.

A portion of the public improvements required to serve the area were completed in 2011. The street and utility improvements completed at that time included construction of the north side of Bunker Lake Boulevard and extension of sanitary sewer and watermain into the area.

Future improvements required to serve the area include:

- Expansion of Bunker Lake Boulevard (west of Armstrong Boulevard) to a four lane section,
- Expansion of the west end of Bunker Lake Boulevard and Puma Street to three lane sections,
- Construction of right turn lanes at entrances,
- Extension of an 18-inch sanitary sewer line along Bunker Lake Boulevard and Puma Street,
- North of the Puma Street/Bunker Lake Boulevard intersection, construction a lift station,
- North of the lift station, extension of a 12-inch sanitary sewer gravity main,
- Extension of a 16-inch water main along Bunker Lake Boulevard and Puma Street,
- Use of regional rate control basins to maintaining existing flow rates into the COR,
- Installation of street lighting, trails/sidewalks, and landscaping consistent with City Policy, and
- Obtaining of ROW required for improvements during the platting process.

Total costs for all public improvements is approximately $6,752,000, assuming the project is constructed in three phases. The costs are considered project costs and include 30% contingencies and project development costs (administrative, engineering, and fiscal).

Costs related to trunk sanitary sewer and trunk watermain were assumed to be paid from City utility funds. The City will need to develop a funding strategy for the remaining $5,414,000 in public improvement costs. Several strategies for consideration are included in the report.

The information presented in this report is intended to allow for discussions with property owners and developers, as well as allow the City to begin considering funding options.

# Preliminary Report

# for

# Future Business Park

# City of Ramsey

# DRAFT

**August 19, 2015**

Prepared by: Bolton & Menk, Inc.

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## APPENDICES

## INTRODUCTION

The Ramsey City Council and Ramsey Economic Development Authority (EDA) have identified the need to prepare for the development of a new business park within the City. The City is targeting a large area of privately owned green-field space located on the north side of Trunk Highway 10, west of Armstrong Boulevard, for a future Ramsey Business Park. Currently, the City is in the process of rezoning this area to meet future land use goals. Figure 1 in Appendix A depicts the general area of the business park and study area.

The future business park is one component (about 92 acres) of a larger green-field area ready for development (about 350 acres). This larger green-field area includes areas for single-family residential development (about 118 acres), medium-density residential (about 31 acres) and room for a future private school campus (about 90 acres). In addition to green-field development, the City expects a portion of existing adjoining light-industrial space to be redeveloped into a traditional retail/commercial area (about 42 acres). See Figure 2 in Appendix A for future land use goals.

The City's future business park, and larger developable green-field area, will be served by the future Trunk Highway 10/Armstrong Boulevard (CSAH 83) interchange. Construction of this interchange began in the spring of 2015 and is expected for completion in the spring of 2017. The City expects the construction of this major interchange to increase the demand for development of this green-field area; and the future Ramsey Business Park.

The primary roadway system serving this developable area is Bunker Lake Boulevard and Puma Street. These roadways are both Municipal State-Aid (MSA) streets. This analysis includes studying traffic impacts resulting from the future business park (along with other users), examining the feasibility of constructing supporting infrastructure, and developing preliminary design layout plans and specifications.

## STUDY CONTENT

The primary purpose of this analysis is to determine minimum required infrastructure needs and costs associated with developing the green-field area. Roadways and intersections included in the study are as follows:

- Bunker Lake Boulevard from Armstrong Boulevard to Puma Street,
- Puma Street from Bunker Lake Boulevard to Alpine Drive,
- The Bunker Lake Boulevard/ Armstrong Boulevard intersection,
- The Bunker Lake Boulevard/ Puma Street intersection,
- The Puma Street/ Alpine Drive intersection, and

- The Armstrong Boulevard/ Alpine Drive intersection.

Figure 3 in Appendix A depicts the roadways and intersections included in this analysis.

Our analysis consists of four separate components that, when tied together, provide an overview of the corridor needs:

- **Traffic Impact Study** – Defines the needs of the roadways and intersections in the study area,
- **Regional Storm Water Analysis** – Defines conceptual storm water ponding needs,
- **Preliminary Design Layout** – Provides a graphical depiction of the roadways and intersections, and
- **Final Report** – Describes required infrastructure improvements, layouts and costs.

## INITIAL INFORMATION

Prior to the study, the City of Ramsey provided the following information and guidance for the study area.

- The City is not master-planning this entire developable area. It is unknown where internal driveways, roadways and curb-cuts will be needed. Therefore, the design of Bunker Lake Boulevard and Puma Street should not include any new curb-cut locations.
- Stubbing of sewer and water utilities along Bunker Lake Boulevard and Puma Street should be completed at regular intervals based on future land use needs.
- Cost estimations and design should include: roadway, trails/sidewalks, storm water management, street lighting, trunk water service and trunk sewer service.
- The intersection of Bunker Lake Boulevard and Armstrong Boulevard was constructed in 2011. Verification that this intersection was constructed to accommodate traffic demands must be completed.
- The City has adopted Comprehensive Sanitary Sewer and Water Plans. These plans should be reviewed and consulted as forecasting and design work is completed.
- Regional storm water considerations and solutions should be included in the study.

## GENERAL DISCUSSION

While the primary focus of the analysis is related to providing infrastructure to serve development, additional considerations can influence decision-making. The following items were considered throughout the course of the analysis.

**Right-of-Way Requirements**

While it is anticipated that most of the improvements will be development driven, and Right of Way will be secured through the platting process, understanding and documenting the potential needs will allow the City to plan in advance for acquisitions. The City can then provide that documentation to developers as they begin to consider options within the study area.

**Phased Improvements**

While there is a general understanding of the improvements required to ultimately serve the area, sequencing of the improvements will allow for planning and fiscal responsibility. Our understanding of the most logical phasing sequence includes:

- **Phase 1** – Complete construction of Bunker Lake Boulevard from Armstrong Boulevard to the westerly school property driveway. Sanitary sewer and water have already been extended to this point.
- **Phase 2** – Construction of Bunker Lake Boulevard from the Phase 1 limits to Puma Street. Construction of Puma Street from Bunker Lake Boulevard to the north. The northerly limits along Puma Street will be the approximate location of a lift station required to serve areas further to the north and west.
- **Phase 3** – Completion of improvements along Puma Street.
- **Future Phases** – We verified the improvements considered can service areas beyond Phase 3. For instance, the gravity sanitary sewer can serve areas west of Puma Street. No further work was completed beyond Phase 3 other these verifications.

Costs for each phase were developed to allow for the City to plan for the sequenced implementation of the improvements. The anticipated phasing is depicted on Figure 4 in Appendix A.

**Jurisdictional Authority/Approvals/Permits**

As the project moves from the planning stages to design and construction, permits will be required from various agencies. Understanding and planning for requirements associated with obtaining permits and approvals at this time will be critical to the ultimate success of the process. The following agencies will be permitting entities for considered improvements:

- Minnesota Department of Transportation State Aid: Bunker Lake Boulevard and Puma Street are State Aid routes,
- Minnesota Pollution Control Agency: NPDES Storm Water Permit,
- Minnesota Pollution Control Agency: Sanitary Sewer Extension Permit,
- Minnesota Department of Health (MDH): Watermain Extension and Dewatering,

- Anoka County: Work in Right of Way, and
- Lower Rum River Watershed Management Organization: Storm Water.

**Recent Improvements**

Improvements to the area were completed in 2011. The street and utility improvements completed at that time included:

- Extension of sanitary sewer along the west side of Armstrong Boulevard from just north of Sunwood Drive to Bunker Lake Boulevard,
- Extension of watermain from the east side of Armstrong Boulevard to the west side of Bunker Lake Boulevard,
- Extension of sanitary sewer and watermain in newly platted Bunker Lake Boulevard right-of-way,
- Development of a storm sewer system to service the street and right-of-way requirements,
- Extension of Bunker Lake Boulevard roadway,
- Paving of Puma Street, and
- Extension of a bituminous trail along Puma Street from Bunker Lake Boulevard to Alpine Drive.

All of the improvements completed at that time were consistent with the City's Comprehensive Plans.

## UNDERSTANDING PREVIOUS IMPROVEMENTS

Significant consideration and planning was completed prior to completion of the improvements constructed in 2011. Understanding the thoughts behind previous improvements can help avoid omissions when considering future improvements.

**Street and Trail Improvements**

Bunker Lake Boulevard

The previous improvements provided a two-lane roadway from Armstrong Boulevard to Puma Street. The roadway was designed to allow for future widening and expansion as development and other potential transportation improvements surrounding the area increased traffic on this roadway. It was anticipated that ultimate expansion of Bunker Lake Boulevard to two lanes in each direction with center turn lane would be required for future development along Bunker Lake Boulevard.

The Comprehensive Plan indicates that projected traffic on this roadway could be 11,000 ADT if the street is part of a future Mississippi River crossing. Without being part of a River crossing, the Comprehensive Plan provides 20-year projections of 5,000 ADT.

The roadway was located within the right-of-way to provide future flexibility in roadway expansion with minimal modifications to what will be constructed.

Puma Street

Improvements to Puma Street were evaluated because of the need to extend Bunker Lake Boulevard to Puma Street, a distance of about one-half mile.

Puma Street received only minimal improvements, being widened from 18 feet width to 24 feet and paved with 2 inches of bituminous over 6 inches of aggregate base. More significant upgrades to the roadway were anticipated, but not completed at that time.

The anticipated future requirements included a 32 foot wide street with curb and gutter with full base and pavement improvement.

Bituminous Trails

A 10-foot wide bituminous trail was constructed along the north side of the Bunker Lake Boulevard from Armstrong Boulevard to Puma Street and on the west side of Puma Street from Bunker to Alpine Drive.

Intersections

Bunker Lake Boulevard and Armstrong Boulevard was reconstructed to include turn lanes and signalization.

**Sanitary Sewer Improvements**

Sanitary sewer was extended north along the west side of Armstrong Boulevard from 146th Avenue/Sunwood Drive NW to Bunker Lake Boulevard. To meet the Comprehensive Sanitary Sewer Plan and serve additional areas beyond the study area, a 21-inch sewer main was constructed. It was intended to extend the 21-inch trunk sewer further to the north to service Fire Station No. 1 and the proposed future location of the water treatment plant.

In accordance with the Comprehensive Plan, an 18-inch sanitary sewer was extended westward along Bunker Lake Boulevard. This line will provide service to the study area, as well as future development that may occur on the south side of Bunker Lake Boulevard, and could be further extended in accordance with the Comprehensive Plan.

**Water Distribution and Supply Improvements**

Watermain was extended across Armstrong Boulevard from the main on the east side of Armstrong Boulevard. From there, the watermain was further extended westward in Bunker Lake Boulevard.

It was planned to extend this trunk watermain west to Puma Street and north to Alpine Drive via

Puma Street to provide future looping and provide water to un-serviced areas and future developments. Loops within future development would be utilized to promote reliability and functional flexibility as well as promoting fresh water moving throughout the system.

It was previously determined that the elevated storage for the City of Ramsey is adequate to provide fire flow to the study area. The distribution system was also found to be adequate to move the water from the City's three towers to the study area.

***Additional Consideration:***

*The right-of-way of Bunker Lake Boulevard could be utilized for a future route of a 30-inch raw watermain from a future intake on the Mississippi River to the proposed site of the water treatment plant, just south of Fire Station No. 1. Because the exact location of the intake and raw watermain alignment had not yet been determined, no provisions were made during the previous improvements.*

**Storm Water Management**

Drainage for the study area is essentially sheet flow to the center of the site to existing wetlands, and then easterly through the wetlands and through a culvert under Armstrong Boulevard. Runoff continues to flow into the actively developing COR area.

A storm sewer system was installed in Bunker Lake Boulevard to manage the storm water runoff within the right-of-way. We anticipate that this included considerations for the future widening and extension of Bunker Lake Boulevard as well.

Extensive hydraulic modeling was refined and detail added to represent preliminary storm water management conditions for future development scenarios.

## ADDITIONAL ANALYSIS

As a portion of this analysis, we completed traffic and storm water studies and reviewed City Comprehensive Plans for sanitary sewer and water main needs for the study area. The traffic study is included as Appendix B and the storm water study is included as Appendix C to this report. The following is a summary of results for the various analyses and reviews.

**Traffic Analysis**

The traffic analysis was completed to determine required lane geometry for Bunker Lake Boulevard and Puma Street, along with turn lane requirements at four intersections in the study area.

The Future Business Park development is proposed north of Trunk Highway (T.H. 10) and west of Armstrong Boulevard. Armstrong Boulevard is a critical north-south corridor for the City of Ramsey, Anoka County, and the region carrying traffic from T.H. 10 to surrounding areas. The Business Park development includes residential, business park, commercial, and institutional land uses. These land uses result in an increase of 18,500 to 23,300 trips per day into and out of the area at full build.

The traffic increase from both the background growth and the development results in a need for capacity improvements at individual roadways and intersections in the study area. The following concise summary of improvements should be completed based on the mitigation necessary to achieve acceptable operations. For the 2040 Full-Build scenario, operations can be improved, but will still be considered unacceptable at many of the intersections. This is due to the large amount of traffic entering and exiting on Bunker Lake Boulevard and Armstrong Boulevard. Short term improvements are intended to mitigate current safety or operations problems, mid-term improvements are needed to accommodate both development and background traffic growth, and long-term improvements are needed to handle the overall development to year 2040.

Exact timing for improvements will be based upon the actual development timing and background traffic growth. Short Term improvements can be considered as the minimum requirements based on projected traffic growth. Mid Term and Long Term improvements are considerations and may ultimately be required to serve the area.

Short Term Improvements

- Bunker Lake Boulevard (west of Armstrong Boulevard): Expand to a four lane section for development.
    - The eastbound approach should include a 300 foot left turn lane, two through lanes, and one right turn lane.
    - A full median should be provided to the west end of the commercial area.
    - A full access should be at least 845 feet from Armstrong Boulevard and a right in/right out access should be at least 470 feet from Armstrong Boulevard.
- Bunker Lake Boulevard (west of commercial section): Expand to a four lane section for development (two westbound through lanes, one eastbound through lane and one center left turn lane).
    - Right turn lanes (locations and lengths) will be determined based on development type.
    - Outside westbound through lane drops to a right turn lane into the school property.
- Puma Street: Expand to a three lane section for development (two through lanes and one center left turn lane).
    - Right turn lanes (locations and lengths) will be determined based on development type.
- Bunker Lake Boulevard & Puma Street: An all-way stop, two-way stop, or roundabout will operate adequately at this intersection for the 2040 Full-Build conditions. The roundabout option may offer better operations than the other two options at 2040 Full-Build.

Mid-Term Improvements

- Armstrong Boulevard & Alpine Drive: Add northbound and southbound left turn lanes. Modify eastbound and westbound lanes to include a thru/left and a right turn lane.
- Alpine Drive & Puma Street: Add a westbound left turn lane and eastbound right turn lane.
- Armstrong Boulevard & Bunker Lake Boulevard: Re-stripe southbound lanes to include a dual southbound left turn lane. A southbound double left turn lane will help reduce queues entering the COR development. Improvements were done in 2011 to this intersection and a future southbound left turn lane was designed, but not striped.

Long-Term Improvements

- Armstrong Boulevard & Bunker Lake Boulevard: Modify the southerly eastbound through lane to a through-right lane. Another option would be to keep the two through lanes and modify the right turn lane into a free right with an add lane that runs south to T.H. 10.

Alternative Improvements

At several locations along the corridor, opportunities exist for implementation of alternative alignments. These are depicted as options to consider based on development concepts. Alternative concepts are depicted at the intersection of Bunker Lake Boulevard and Puma Street (Figure 10) and the intersection of Puma Street and Alpine Drive (Figure 12). The alternatives are provided for future discussion and will not significantly impact project costs.

Figures 5 through 12 in Appendix A depict future roadway and intersection improvements in the study area.

**Sanitary Sewer and Water Main**

An 18-inch sanitary sewer main was extended west along Bunker Lake Boulevard as a portion of the 2011 improvements. Based on information contained in the Comprehensive Plan, The 18-inch line will be extended along Bunker Lake Boulevard and north along Puma Street. North of the Puma Street/Bunker Lake Boulevard intersection, grade becomes an issue and a sanitary sewer lift station is required to serve areas further north and west. Phase 3 costs include the lift station, valve vault and forcemain. North of the lift station, the Comprehensive plan indicates a 12-inch gravity main will be adequate to convey sanitary sewer flows from the area. For this analysis, we included an allowance for 8-inch service lines to be extended to properties along the corridor.

A 16-inch water main was extended west along Bunker Lake Boulevard as a portion of the 2011 improvements. The Comprehensive plan indicated that either a 12-inch or a 16-inch water main would be required along Bunker Lake Boulevard and Puma Street, depending on the final selected location of a

future water treatment plant to be constructed in this area. For our analysis, we assumed a 16-inch water main would be constructed, with hydrants and service lines extended to the properties.

Figures 13 through 15 in Appendix A depict sanitary sewer and water main improvements.

**Storm Water Management**

Storm water management concepts were developed to maintain existing drainage patterns and preserve the conveyance and flood storage capacity of the primary wetland corridor that bisects the area. This will restrict development along the wetland corridor and retain the pre-development flood capacity, thereby maintaining existing flow rates into the COR.

The study area can be segmented into three drainage districts, generally delineated by future land use. Figure 16 in Appendix A displays the drainage area breakdown and a general regional pond layout. The drainage area consists of a multi-use site (Area 1), residential area (Area 2), and commercial and industrial sites (Area 3). The watersheds were modeled under future land use conditions to generally size retention ponds to meet existing flow rates. The ponds were also located with respect to potential storm sewer depths, reductions in wetland impacts, maximization of developable area and potential aesthetic function.

The ponds depicted on Figure 16 in Appendix A depict areas that are best suited for regional rate control basins only. Additional design parameters and regional storm water management planning should be further refined as the areas begin to develop.

Cost estimates were not developed for the regional pond construction or internal site storm sewer conveyance. It is anticipated that costs associated with pond construction will be completed by the developer as a portion of the site grading. Also, it is assumed that internal site drainage will be accommodated by dry swales and ditch systems to reduce storm sewer costs.

**Street Lighting**

The costs included for street lighting were derived from recent projects within the City of Ramsey and are considered to be reasonable costs associated with providing street and pedestrian lighting along the corridors. Costs include conduit, wiring and the actual light fixtures to be installed. The density of the lighting fixtures is similar to the level provided along the recently constructed Riverdale Drive, east of Armstrong Boulevard. Our understanding is the spacing may be increased (decreasing the number of fixtures) for Phases 2 and 3. This may slightly reduce the costs associated with these phases. The costs provided are considered conservative for that reason and may be reduced depending upon the types of developments proposed.

**Trails/Sidewalks**

Existing trails were previously constructed along the north side of Bunker Lake Boulevard and the west side of Puma Street. Project costs were prepared which include trails along the south side of Bunker Lake Boulevard and the east side of Puma Street.

**Phase Transitions**

There is the potential for portions of the roadways to be constructed to wider sections than currently exist. If this occurs, the new roadways will need to taper to meet the existing roadway widths. The tapered sections will then be removed as the next phase of improvements is completed. Costs were included in each phase for these tapering sections.

**Right Turn Lane Additions**

The roadways depicted in the exhibits depict through lanes and left turn lanes. Right turn lanes will be required at each access off of Bunker Lake Boulevard and Puma Street. Individual access locations were not considered in this study, and so the locations and lengths of right turn lanes were not considered at this time. The actual access locations will be dependent upon the type of land use and internal site characteristics. We included allowances for the right turn lanes in each phase for budgeting purposes.

**Landscaping**

The base project includes a very utilitarian approach to the area. Bituminous trails and lighting were included, but other features, such as trees, shrubs, decorative features and monuments are not included in the estimated project costs.

**Right of Way and Easements**

Locations of right of way needs are depicted on the exhibits based on roadway and trail needs. The exact areas will need to be determined during the platting process. We assumed that the rights of way would be dedicated as a portion of the development process and no costs are included in the project costs for acquisitions.

**Timing of Improvements**

While the improvements discussed and depicted in the exhibits will be required to support the area, timing of the improvements will most likely be dependent upon each proposed development. For instance, the portions of Lot 8 (See Figure 17) that are within Phase 1 could potentially be developed without further public improvements being required immediately. Roadways and intersections are adequate to support development of this parcel and trunk sanitary sewer and trunk water have been extended through this area. In cases such as this, the properties would most likely be assessed at such time as the City determines the public improvements are necessary.

As individual developments are considered, the public infrastructure will need to be reviewed and determinations made as to its adequacy. As upgrades, extensions and improvements are determined to be necessary, funding strategies will need to be developed which may include full of partial assessments to benefitting properties.

## COST CONSIDERATIONS

Costs were developed based upon phased implementation. The phasing is as depicted on Figure 4 in Appendix A. All costs presented in the following pages are 2015 costs, with no allowance for inflation.

| Improvement Type | Phase 1 | Phase 2 | Phase 3 |
|---|---|---|---|
| Roadway | $ 1,427,000 | $ 1,383,000 | $ 1,626,000 |
| Trails/Sidewalks | $ 220,000 | $ 146,000 | $ 175,000 |
| Storm Water Management | $ 0 | $ 0 | $ 64,000 |
| Street Lighting | $ 143,000 | $ 104,000 | $ 126,000 |
| Trunk Water | $ 19,000 | $ 219,000 | $ 247,000 |
| Trunk Sanitary Sewer | $ 11,000 | $ 188,000 | $ 654,000 |
| Total Costs/Phase | $ 1,820,000 | $ 2,040,000 | $ 2,892,000 |

The above costs are considered project costs and include 30% contingencies and project development costs. Project development costs include administrative, engineering, and fiscal related costs.

The roadway costs include allotments for phase transitions associated with tapering pavements sections to match in-place sections where required, and subsequent removals of the transition areas. Right turn lanes are not depicted on the graphics, but will be required. The actual right turn lane locations and lengths will be determined by the entrance locations, land use and associated traffic impacts. Costs are included for right turn lanes in the roadway estimate.

Street lighting costs are based upon recent installations within the City of Ramsey.

For storm water management, costs were included for manholes, catch basins, and pipe within the street sections and included in the roadway costs. No costs for ponding were included for Phases 1, and 2. For Phase 3, ponding costs were included for excavation related activities. We assumed a ponding area would be acquired through the platting process, and ponding within a development site would be expanded to include volume for roadway drainage.

The Phase 2 limits are based upon the area that can be served by a gravity sanitary sewer system. The Phase 3 sanitary sewer costs include a lift station and forcemain.

## COST ALLOCATION ALTERNATIVES

The costs, or a portion of the costs, of the improvements are typically allocated back to adjacent properties through the use of assessments, fees and other methods. The costs are typically allocated in a way that is equitable to the properties benefitting from the improvements. Public improvements that will become City owned and maintained are typically constructed through a public process, while secondary improvements are constructed by the property owner. For our analysis, we assumed the following items would be constructed through the public process:

- Roadways, including storm water conveyance systems,
- Trunk Water Facilities,
- Trunk Sanitary Sewer Facilities,
- Trails, and
- Street Lighting.

While the street lights will most likely be installed by a private utility and the trails could potentially be constructed by the property owner, we have included these items as public improvements.

Other improvements were considered secondary and are typically the property owner's responsibility to install:

- Sanitary Sewer Service Extensions,
- Water Service Extensions,
- Natural Gas Lines to Buildings,
- Telephone Service to Buildings,
- Electric Service to Buildings,
- Site Grading,
- Site Landscaping,
- Site Storm Water Conveyance,
- Storm Water Ponding, and
- Easement Dedication.

These types of improvements are typically inspected by the City for conformity with applicable codes and standards, but are constructed by the property owner.

Figure 17 depicts the lots considered for this report and also provides additional information related to each lot. Similar information is presented in the following table:

| Identification Number | Zoning Classification | Gross Area (Acres) | Adjusted Frontage (Ft) |
|---|---|---|---|
| Phase 1 | | | |
| 8 | E-2 Employment District | 23.793 | 712 |
| 9 | B-2 Business District | 9.628 | 630 |
| 10 | COR | 7.507 | 631 |
| **Phase 1 Totals** | | **40.928** | **1,973** |
| | | | |
| Phase 2 | | | |
| 2 | E-2 Employment District | 11.021 | 369 |
| 3 | E-2 Employment District | 9.231 | 120 |
| 7 | R-2 High Density Residential | 3.000 | 537 |
| 8 | E-2 Employment District | 21.321 | 638 |
| **Phase 2 Totals** | | **44.573** | **1,664** |

| | | | |
|---|---|---|---|
| Phase 3 | | | |
| 1 | R-2 Medium Density Residential | 38.915 | 1,289 |
| 2 | E-2 Employment District | 28.612 | 958 |
| 4 | R-1 MUSA | 4.107 | 419 |
| 5 | R-1 MUSA | 30.508 | 683 |
| **Phase 3 Totals** | | **102.141** | **3,349** |
| Not Included in Calculations | | | |
| 6 | Public/Quasi-Public | 86.422 | 3,488 |
| **Totals all Phases** | | **274.064** | **10,474** |

The zoning classifications listed in the table above are based on anticipated future zoning for the study area. Gross areas and frontages are based on GIS information and will most likely be refined during subsequent phases of project development.

Several of the parcels were previously assessed for improvements constructed in 2011. The improvements made previously were in direct benefit to parcel 6 to allow for development. Although development did not occur at that time, no further improvements will be required to serve that parcel. Parcel 6 was therefor excluded from calculations that follow. A portion of the improvements will be paid by the City either through utility funds or other means. A list of assumptions is as follows:

- All trunk water and sanitary sewer system costs will be paid for through the City utility funds,
- Assessments will be made to benefitting properties as each phase is constructed,
- Three standard methods of assessments were analyzed including: Frontage, Area, and Per Lot.
- The City's existing assessment policy very closely matches the Frontage method, and
- Gross acreage was used in lieu of net developable acreage in the calculations below.

The table below depicts a distribution based on all costs being assessed to the benefitting properties. We have assumed for this analysis the costs would be assessed to properties benefitting from each phase of construction. For instance, properties directly benefitting from Phase 1 improvements would be assessed for Phase 1 costs at the time of Phase 1 improvements. Some lots benefit from more than one phase of construction and would be assessed as future phases are constructed.

Calculations were based on the areas and front footages (shown on page 12), along with the costs per phase (shown on page 10). Trunk sanitary sewer and trunk watermain were considered City costs and were not included in the calculations. For comparison, a summary of the unit costs used in the calculations is presented below:

| Phase | Frontage Method (Cost/FF) | Area Method (Cost/Acre) | Per Lot Method (Cost/Lot) |
|---|---|---|---|
| 1 | $ 907.25 | $ 43,735.34 | $ 596,700 |
| 2 | $ 981.37 | $ 36,636.53 | $ 408,300 |
| 3 | $ 594.51 | $ 19,492.66 | $ 497,800 |

Based on the above cost distribution, the potential assessments per lot per phase is depicted below:

| Identification Number | Frontage Method | Area Method | Per Lot Method |
|---|---|---|---|
| Phase 1 | | | |
| 8 | $ 645,900 | $ 1,040,600 | $ 596,700 |
| 9 | $ 571,600 | $ 421,100 | $ 596,700 |
| 10 | $ 572,500 | $ 328,300 | $ 596,700 |
| **Phase 1 Totals** | **$ 1,790,000** | **$ 1,790,000** | **$ 1,790,100** |
| Phase 2 | | | |
| 2 | $ 362,100 | $ 403,800 | $ 408,300 |
| 3 | $ 117,800 | $ 338,200 | $ 408,300 |
| 7 | $ 527,000 | $ 109,900 | $ 408,300 |
| 8 | $ 626,100 | $ 781,100 | $ 408,300 |
| **Phase 2 Totals** | **$ 1,633,000** | **$ 1,633,000** | **$ 1,633,200** |
| Phase 3 | | | |
| 1 | $ 766,300 | $ 758,500 | $ 497,800 |
| 2 | $ 569,500 | $ 557,700 | $ 497,800 |
| 4 | $ 249,100 | $ 80,100 | $ 497,800 |
| 5 | $ 406,100 | $ 594,700 | $ 497,800 |
| **Phase 3 Totals** | **$ 1,991,000** | **$ 1,991,000** | **$ 1,991,200** |
| **Total all Phases** | **$ 5,414,000** | **$ 5,414,000** | **$ 5,414,500** |

Previously, improvements were completed in the area and assessed to benefitting properties. At that time, the City assessed 40 percent of the costs and funded the remaining costs. The following table depicts the 40 percent of the costs presented in the table above.

| Identification Number | Frontage Method | Area Method | Per Lot Method |
|---|---|---|---|
| Phase 1 | | | |
| 8 | $ 258,400 | $ 416,200 | $ 238,700 |
| 9 | $ 228,600 | $ 168,500 | $ 238,700 |
| 10 | $ 229,000 | $ 131,300 | $ 238,700 |
| **Phase 1 Totals** | **$ 716,000** | **$ 716,000** | **$ 716,100** |
| Phase 2 | | | |
| 2 | $ 144,900 | $ 161,500 | $ 163,300 |
| 3 | $ 47,100 | $ 135,300 | $ 163,300 |
| 7 | $ 210,800 | $ 44,000 | $ 163,300 |
| 8 | $ 250,400 | $ 312,400 | $ 163,300 |
| **Phase 2 Totals** | **$ 653,200** | **$ 653,200** | **$ 653,200** |
| Phase 3 | | | |
| 1 | $ 306,500 | $ 303,400 | $ 199,100 |
| 2 | $ 227,900 | $ 223,100 | $ 199,100 |
| 4 | $ 99,600 | $ 32,000 | $ 199,100 |
| 5 | $ 162,400 | $ 237,900 | $ 199,100 |
| **Phase 3 Totals** | **$ 796,400** | **$ 796,400** | **$ 796,400** |
| **Total all Phases** | **$ 2,165,600** | **$ 2,165,600** | **$ 2,165,600** |

The information presented in this section of the report is been intended to allow for discussions with property owners and developers to be initiated. Refinement of the amounts presented is anticipated based on those discussions.

# APPENDIX A -

# FIGURES


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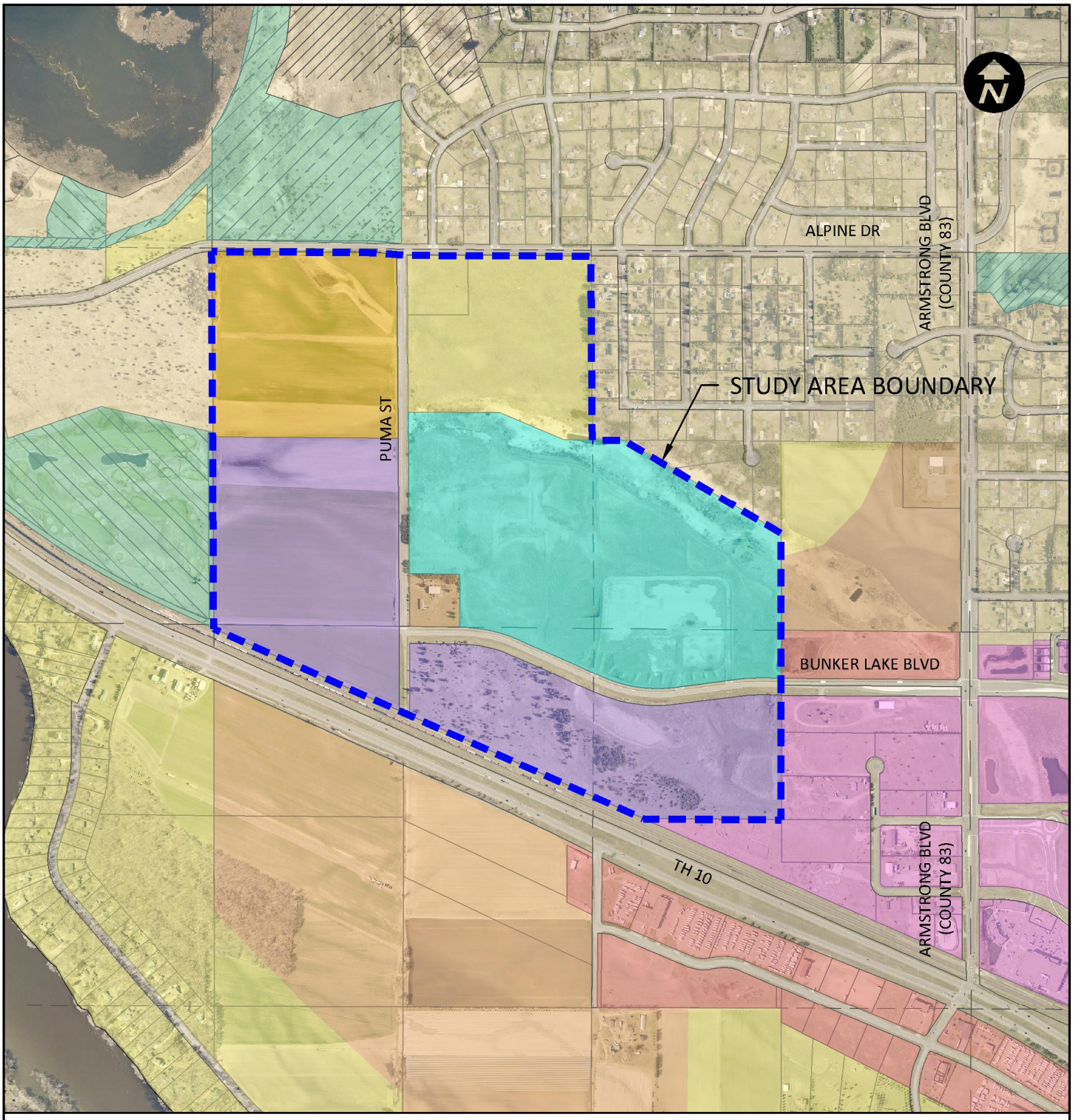
City of RAMSEY

# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 1 - STUDY AREA

July, 2015




LEGEND

- LOW DENSITY RESIDENTIAL
- MEDIUM DENSITY RESIDENTIAL
- HIGH DENSITY RESIDENTIAL
- OFFICE PARK
- COMMERCIAL
- MU
- BUSINESS PARK
- PUBLIC
- RURAL DEVELOPING
- RURAL PRESERVE
- PARK

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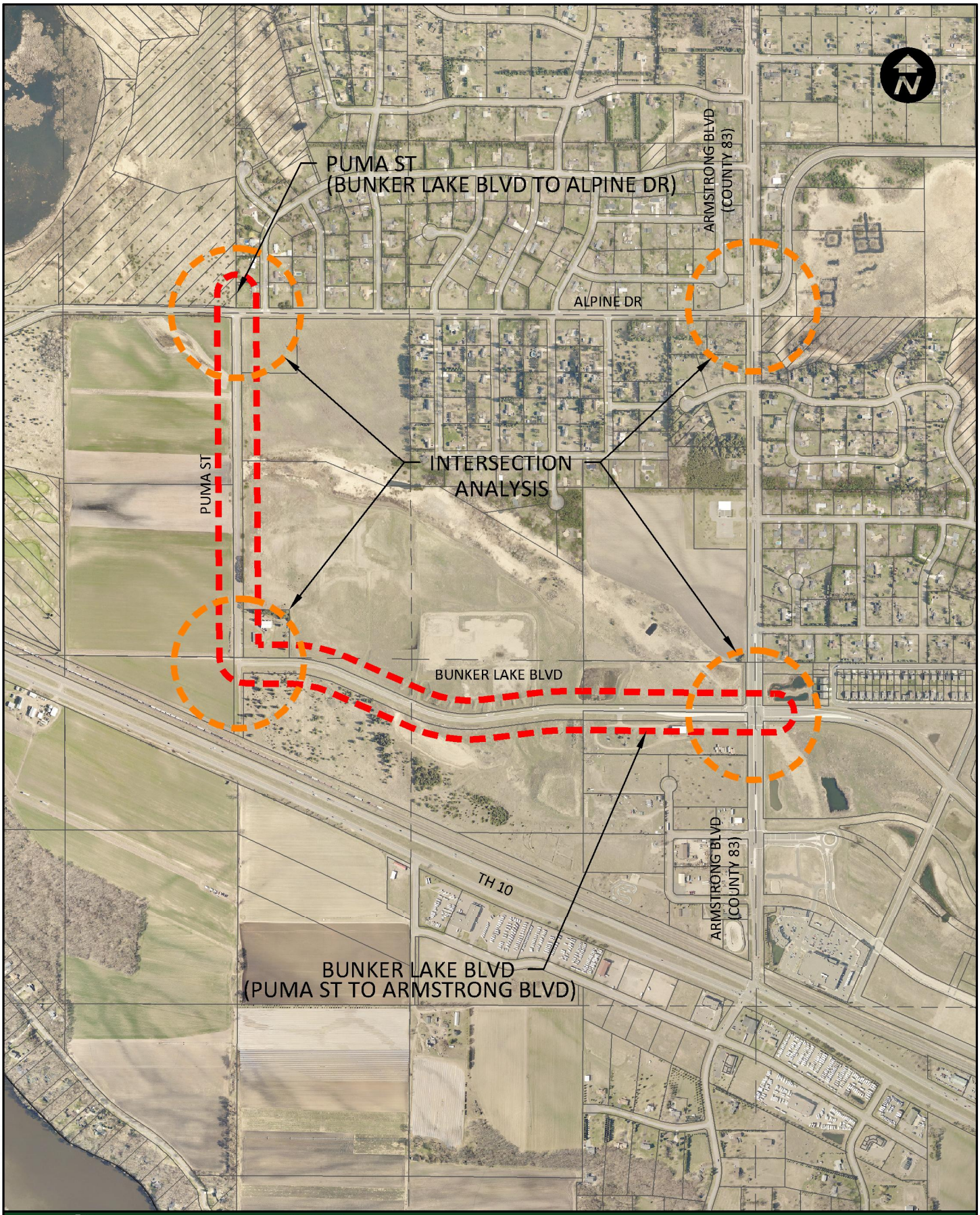
# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 2 - LAND USE

July, 2015

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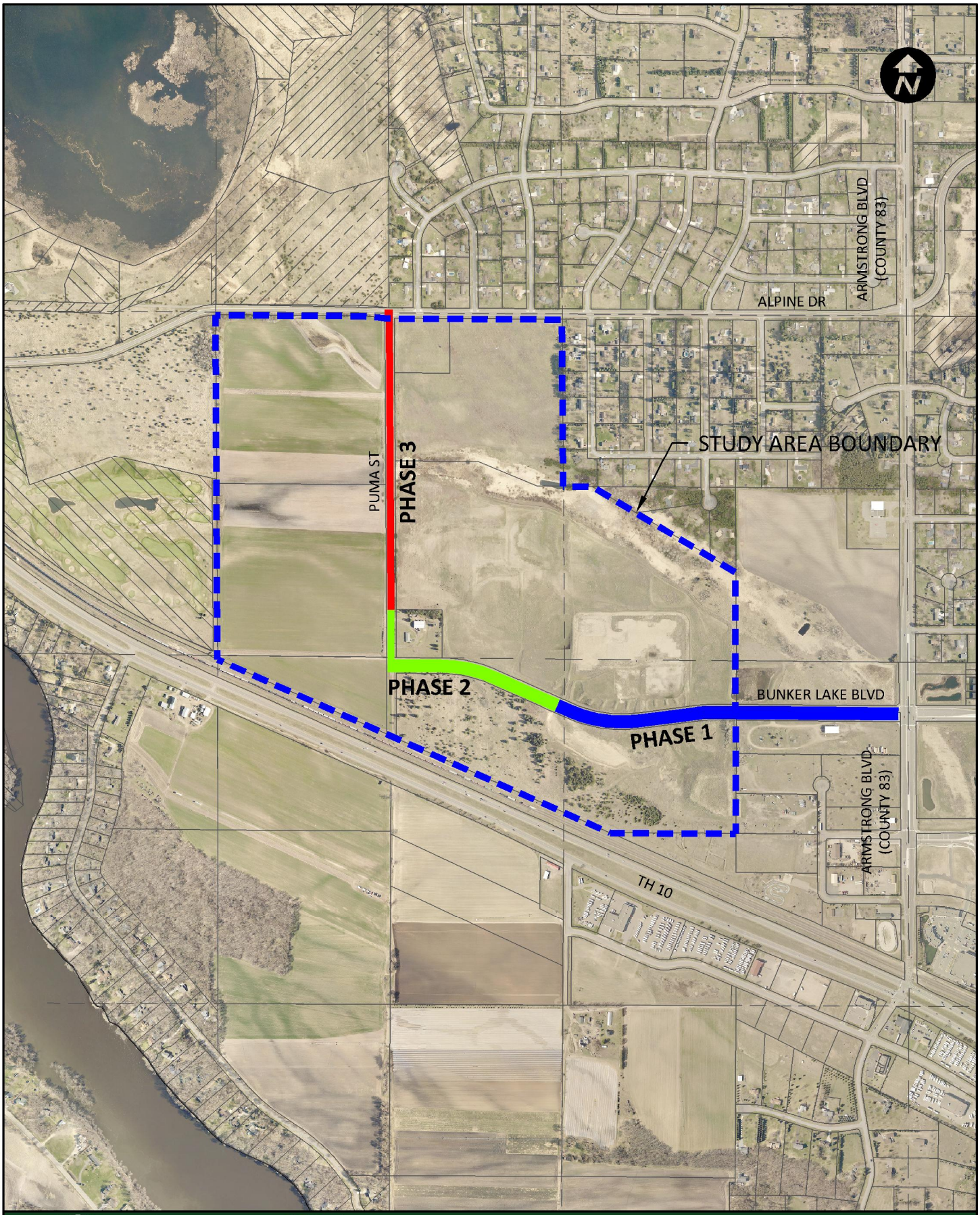
# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 3 - INFRASTRUCTURE ANALYSIS

July, 2015

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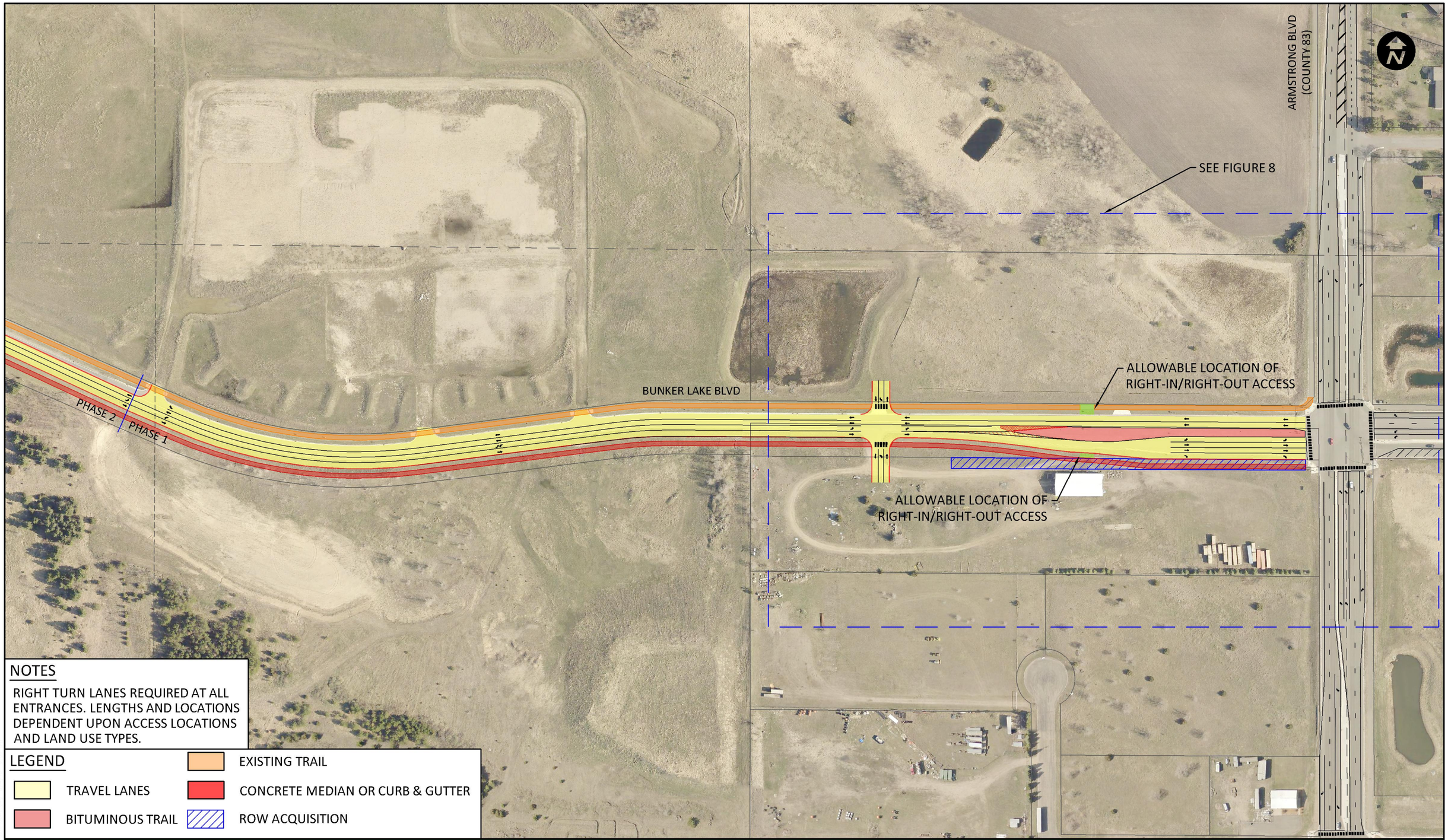
# CITY OF RAMSEY, MINNESOTA

FIGURE 4 - PHASING

July, 2015




NOTES

RIGHT TURN LANES REQUIRED AT ALL ENTRANCES. LENGTHS AND LOCATIONS DEPENDENT UPON ACCESS LOCATIONS AND LAND USE TYPES.

LEGEND

- TRAVEL LANES
- BITUMINOUS TRAIL
- EXISTING TRAIL
- CONCRETE MEDIAN OR CURB & GUTTER
- ROW ACQUISITION

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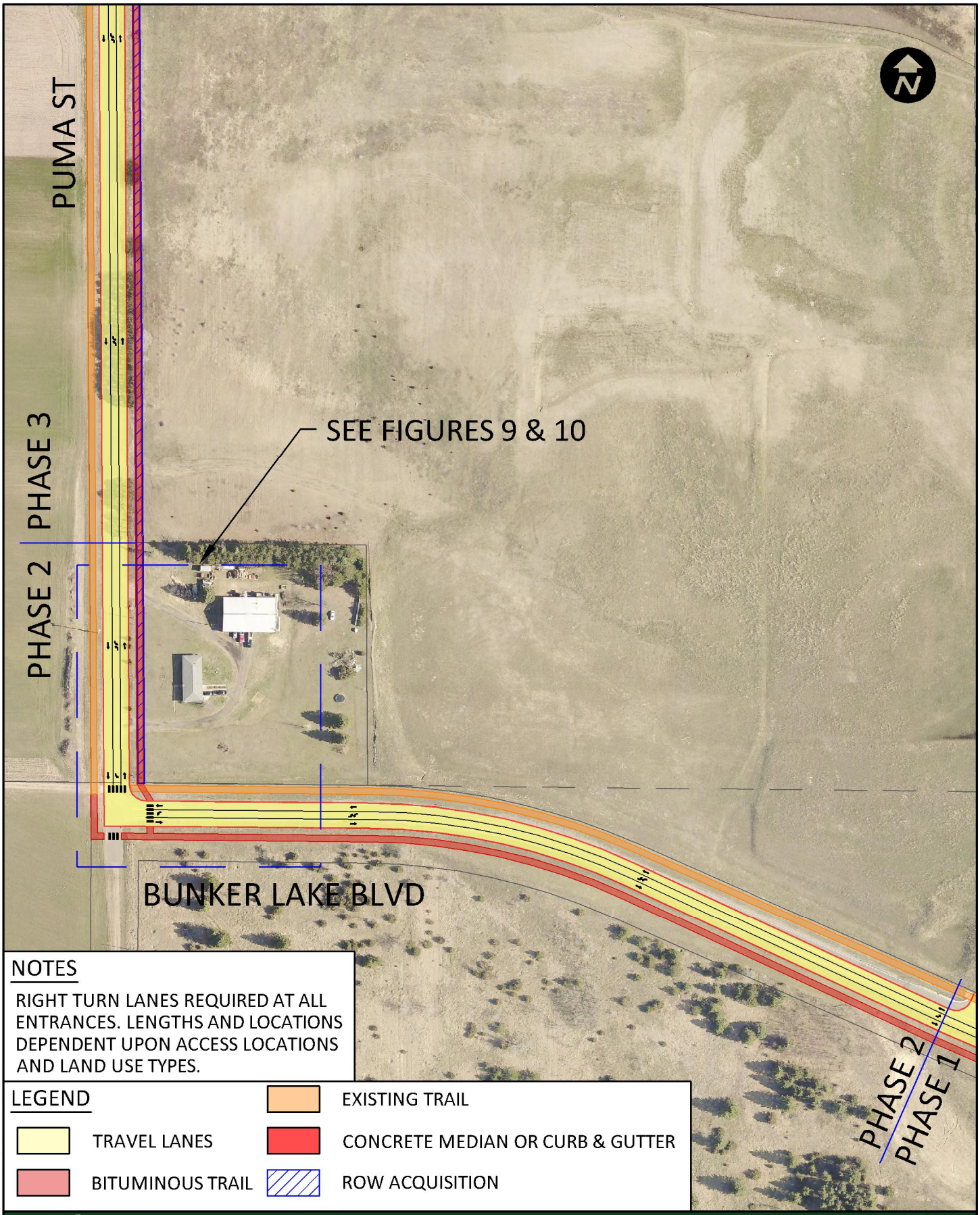
# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 5 - GEOMETRICS

July, 2015




NOTES

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LEGEND

- TRAVEL LANES
- BITUMINOUS TRAIL
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- CONCRETE MEDIAN OR CURB & GUTTER
- ROW ACQUISITION

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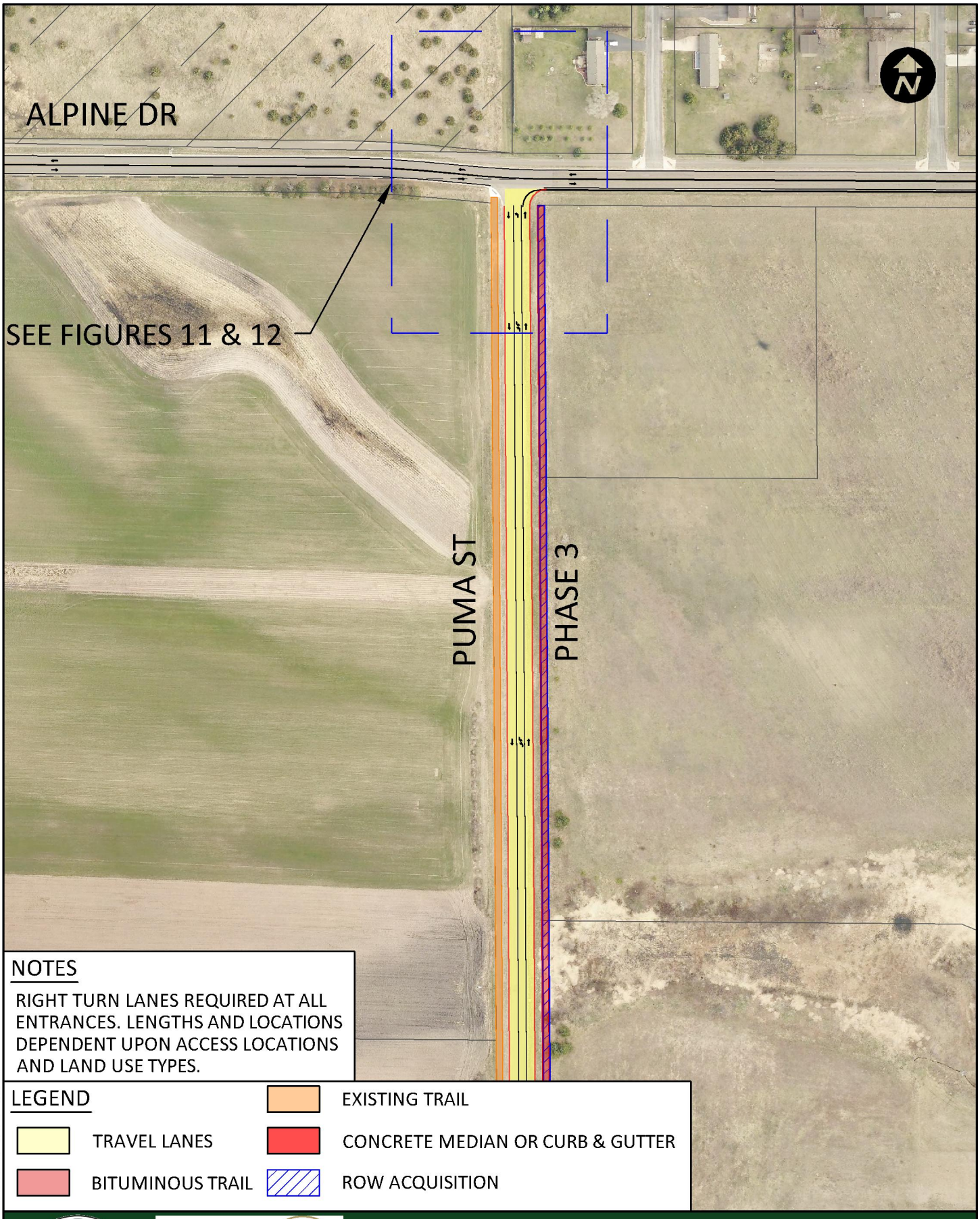
# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 6 - GEOMETRICS

July, 2015




NOTES

RIGHT TURN LANES REQUIRED AT ALL ENTRANCES. LENGTHS AND LOCATIONS DEPENDENT UPON ACCESS LOCATIONS AND LAND USE TYPES.

LEGEND

- TRAVEL LANES
- BITUMINOUS TRAIL
- EXISTING TRAIL
- CONCRETE MEDIAN OR CURB & GUTTER
- ROW ACQUISITION

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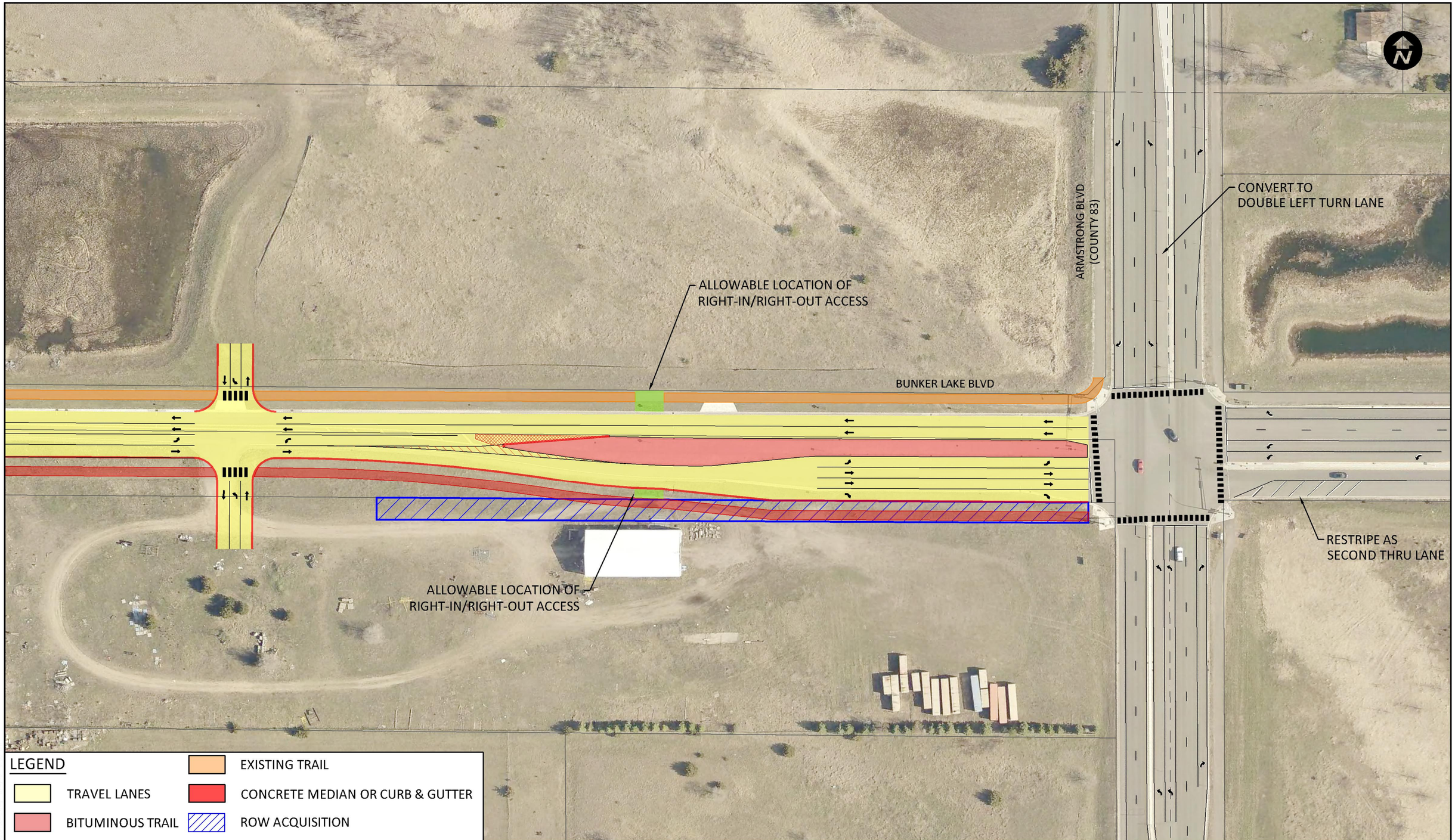
# CITY OF RAMSEY, MINNESOTA

FIGURE 7 - GEOMETRICS

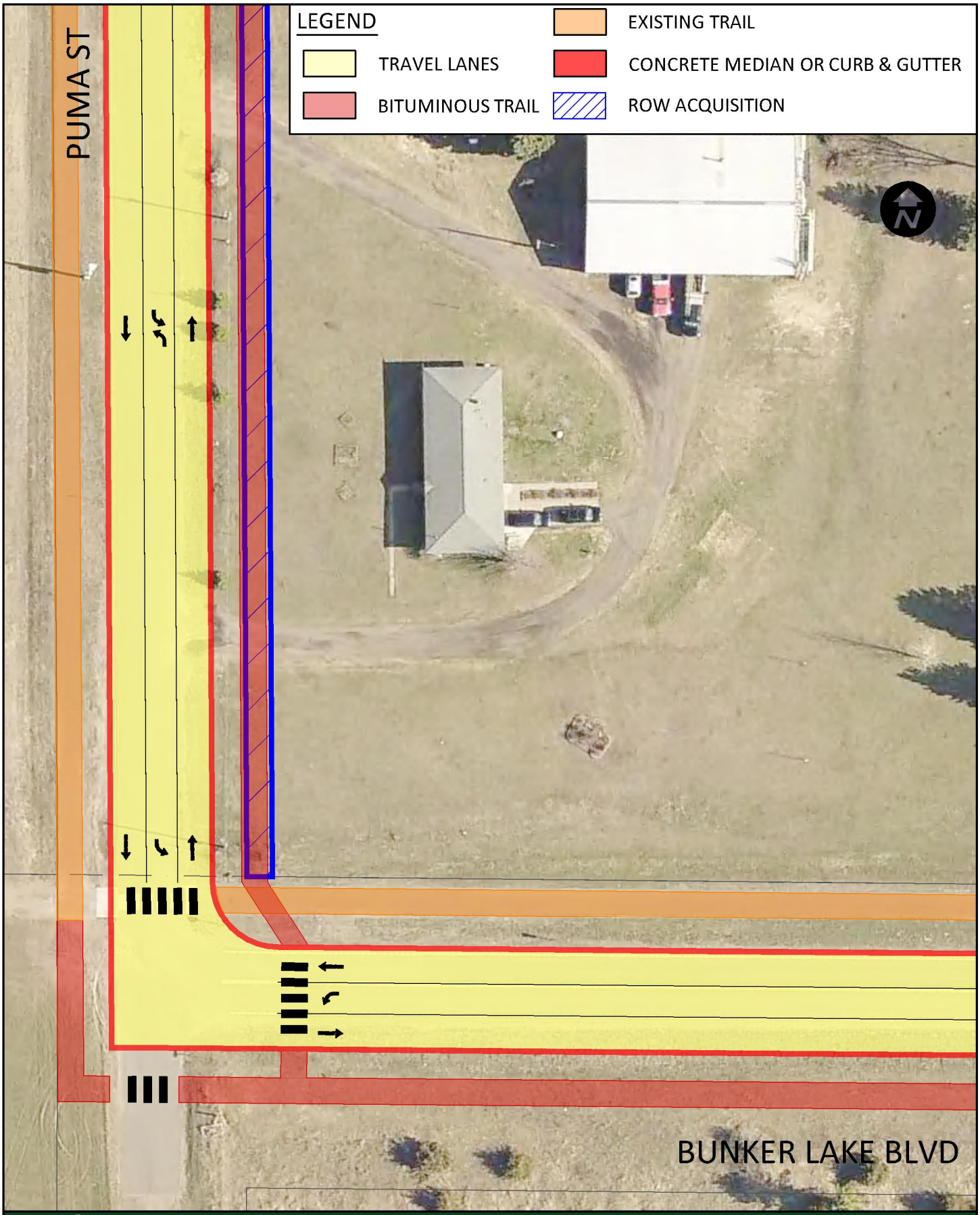
July, 2015




# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 8 - BUNKER LAKE BOULEVARD AT ARMSTRONG BOULEVARD

July, 2015

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# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 9 - BUNKER LAKE BOULEVARD & PUMA STREET

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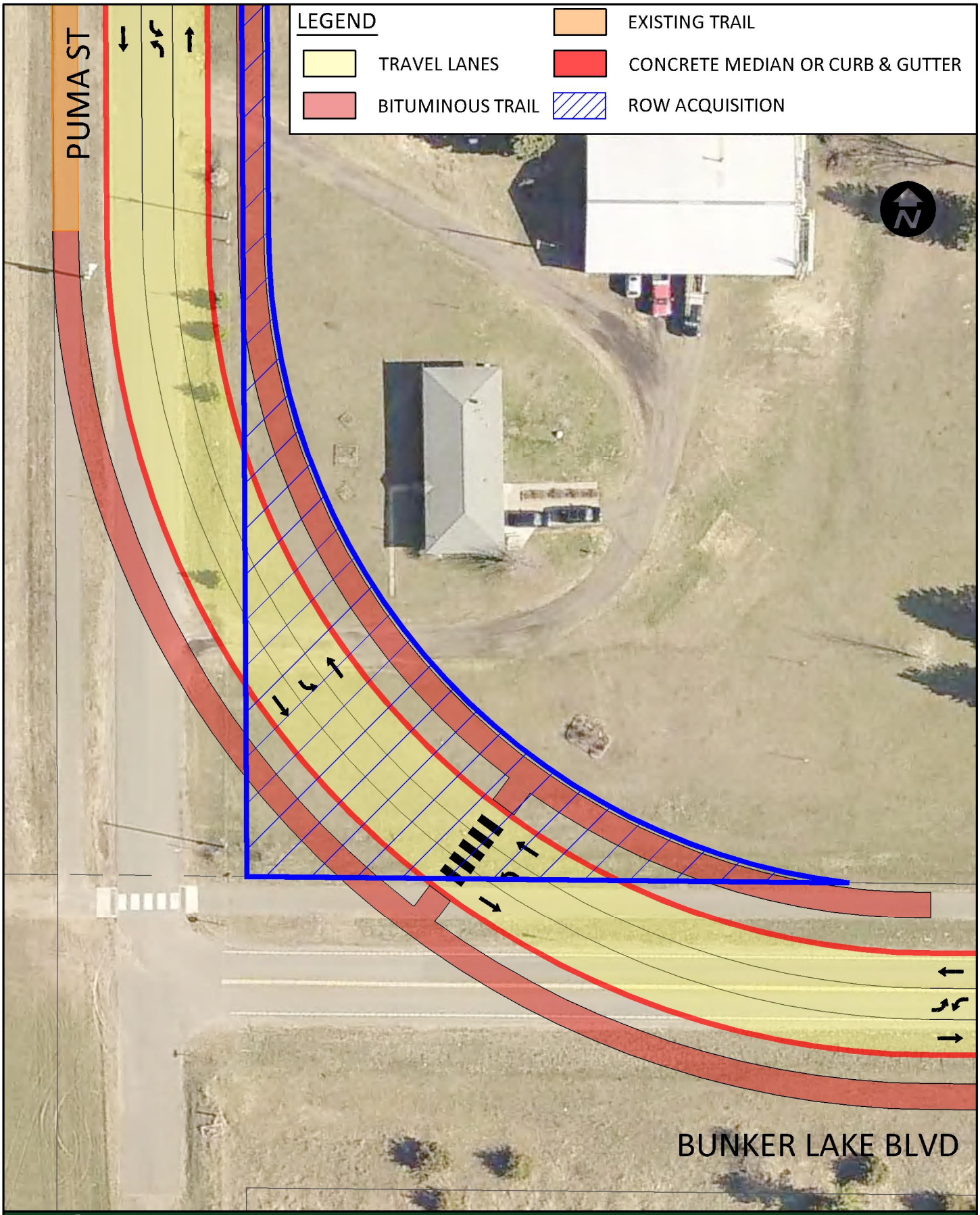


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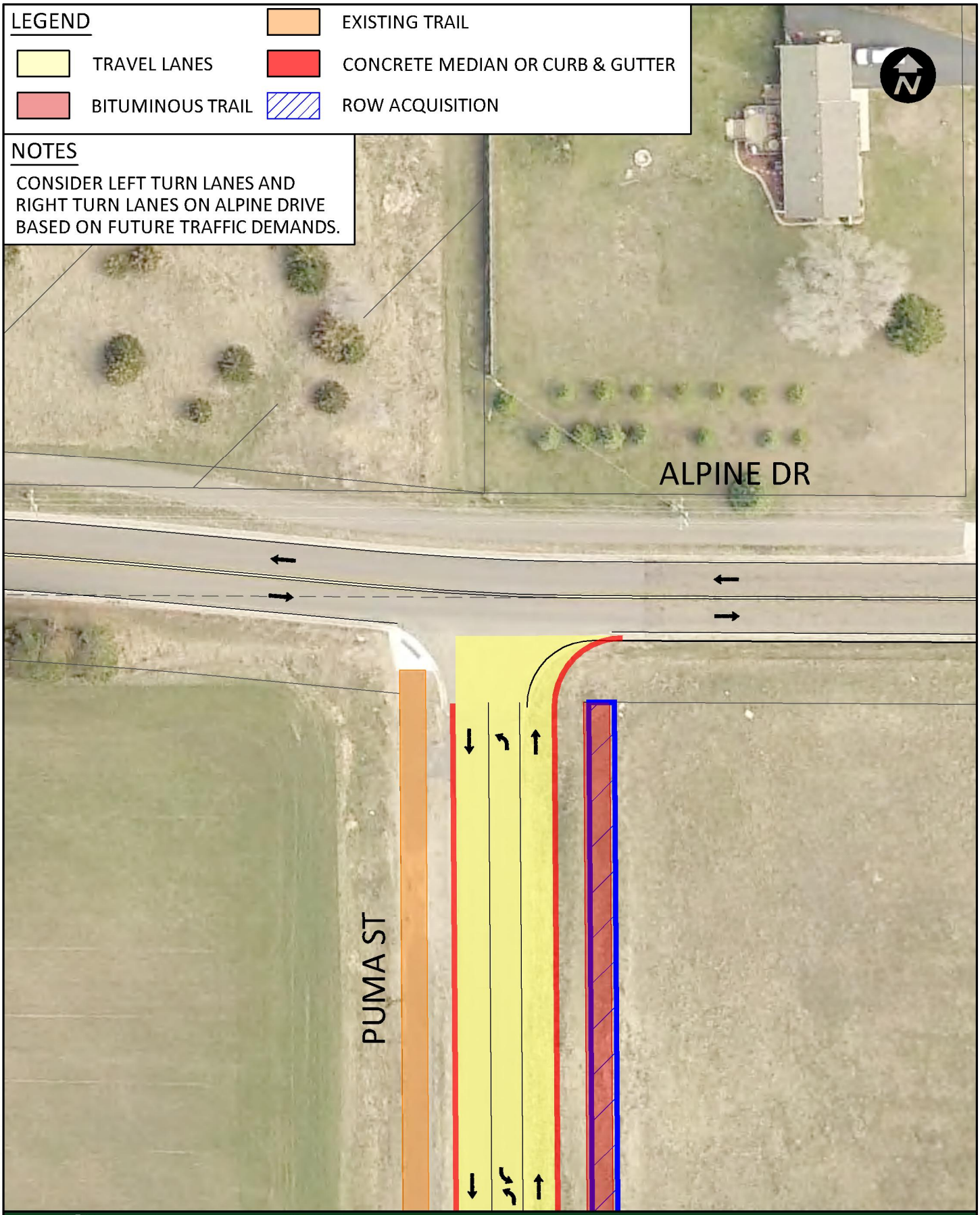
# CITY OF RAMSEY, MINNESOTA

FIGURE 10 - BUNKER LAKE BOULEVARD & PUMA STREET
ALTERNATIVE CONCEPT

July, 2015

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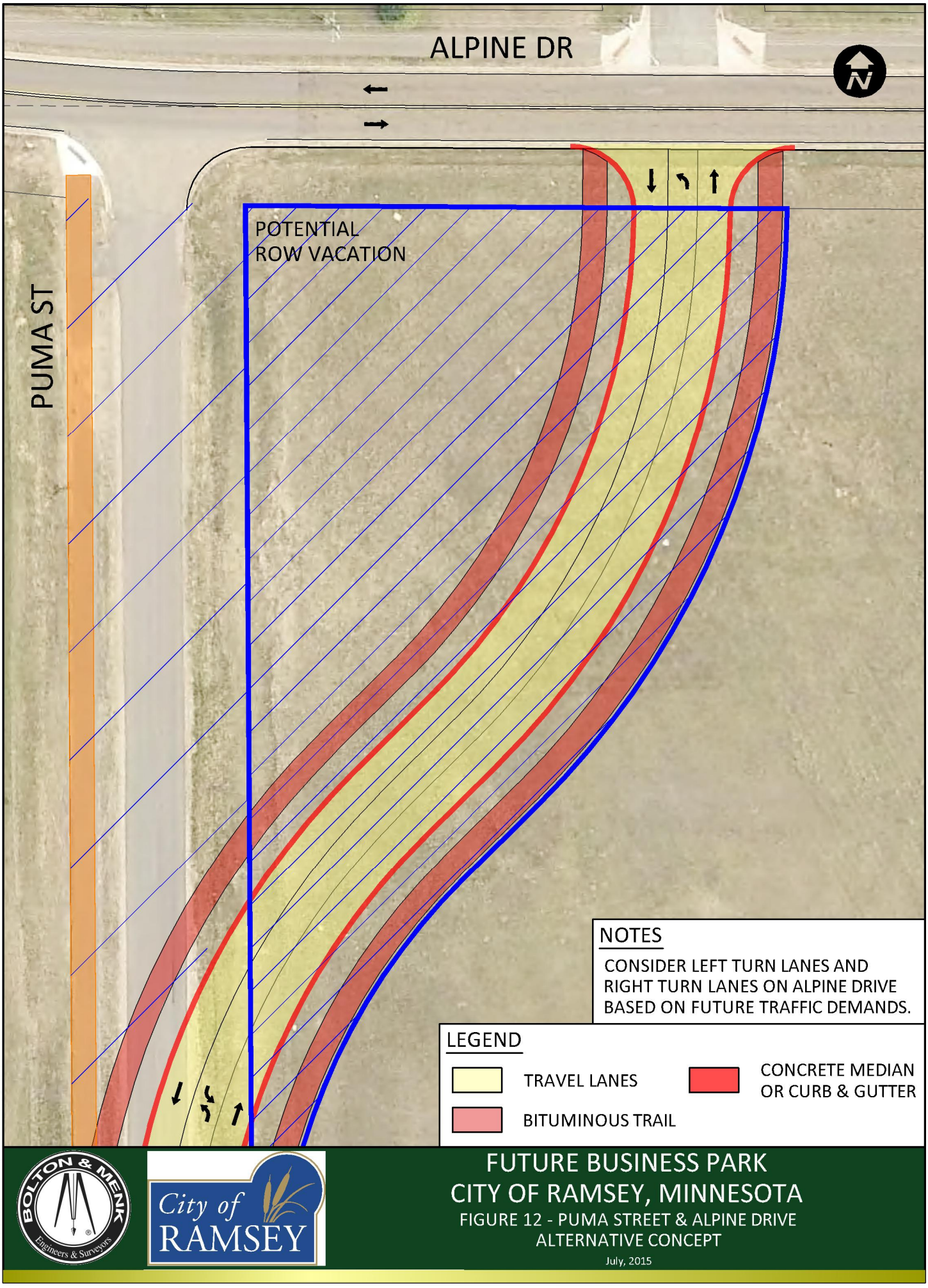
# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 11 - PUMA STREET & ALPINE DRIVE

July, 2015

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# CITY OF RAMSEY, MINNESOTA

FIGURE 12 - PUMA STREET & ALPINE DRIVE
ALTERNATIVE CONCEPT

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# CITY OF RAMSEY, MINNESOTA

FIGURE 13 - SANITARY SEWER AND WATER

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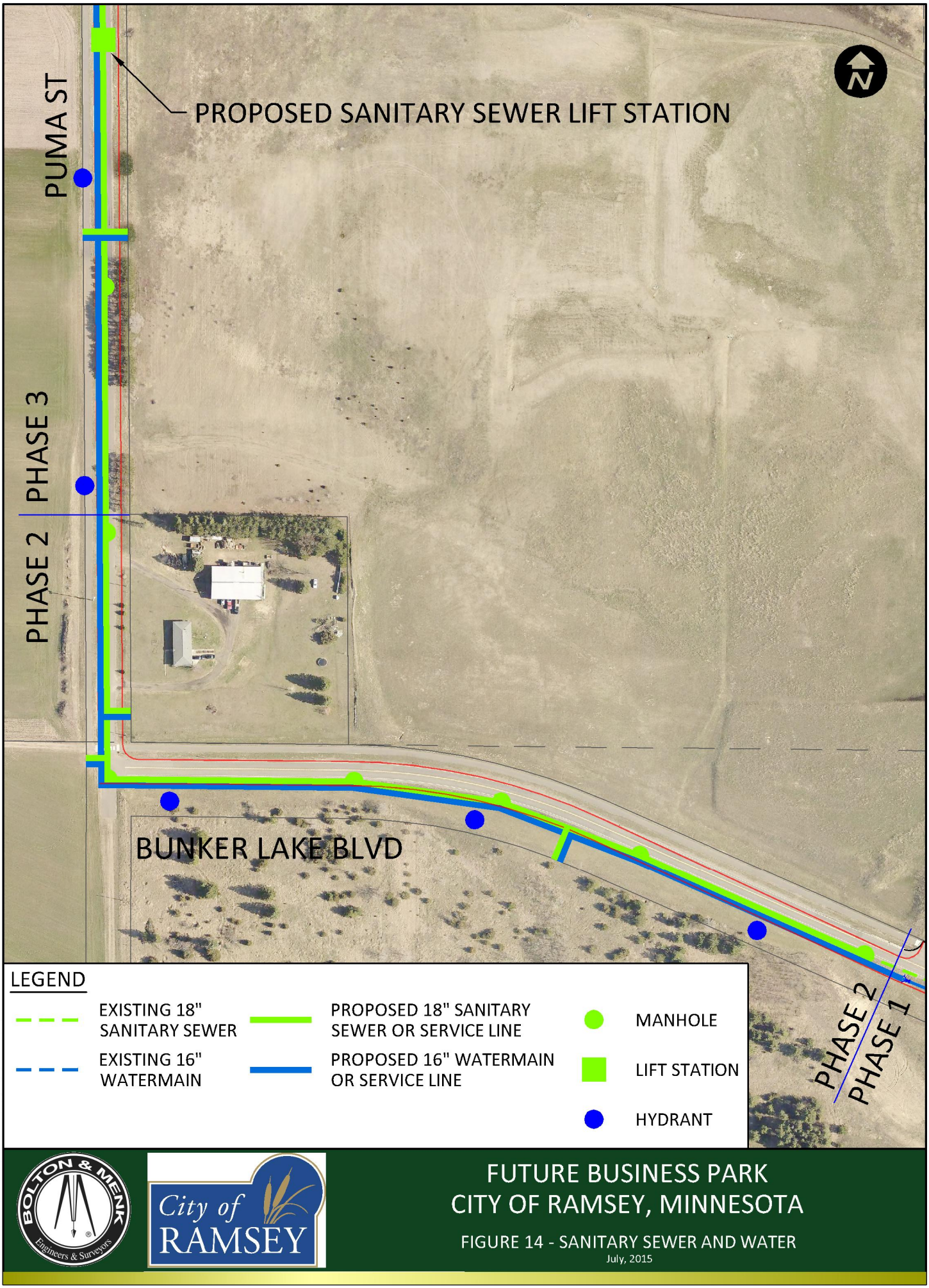


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# FUTURE BUSINESS PARK
# CITY OF RAMSEY, MINNESOTA

FIGURE 14 - SANITARY SEWER AND WATER

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FIGURE 15 - SANITARY SEWER AND WATER

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LEGEND

- STUDY AREA
- STUDY SUBWATERSHEDS
- SUBWATERSHEDS
- ANTICIPATED REGIONAL POND LOCATIONS
- DRAINAGE DIRECTION
- NWI
- ① PUBLIC/QUASI-PUBLIC
- ② MEDIUM DENSITY RESIDENTIAL
- ③ EMPLOYMENT DISTRICT
- DRAINAGE DIRECTION

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# CITY OF RAMSEY, MINNESOTA

FIGURE 16 - Regional Stormwater Considerations

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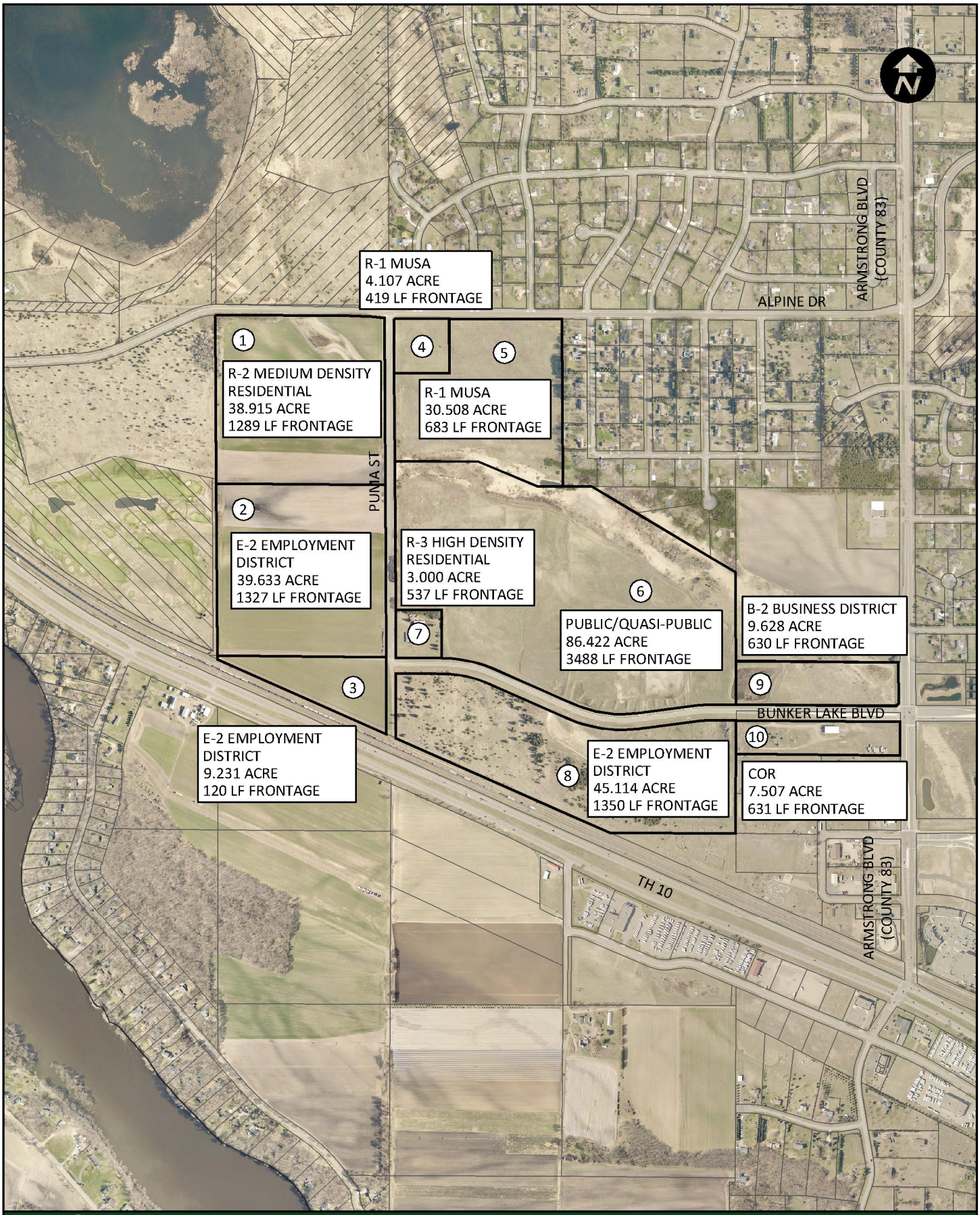


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# CITY OF RAMSEY, MINNESOTA

FIGURE 17 - LOTS

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