

Executive Summary

Overview of the Process

The City of Edmonton undertook a comprehensive multi-modal mobility assessment for the planned re-zoning of lands within five Priority Growth Areas (PGAs) including 124 Street, Wihkwêntôwin, 156 Street, Stony Plain Road, and University – Garneau. These PGAs represent a critical component of the City's strategy to accommodate projected growth as outlined in *The City Plan* (2020). The PGAs are located along established nodes and corridors intended to accommodate higher-density, mixed-use development and facilitate a modal shift away from single-occupancy vehicle travel.

To align the technical analysis with City policies and current best practices, the quantitative mobility assessment uses both traditional Level of Services (LOS) measures that focus on motor vehicle moving capacities and Multi-Modal Level of Service (MMLOS) measures. Historically, the traditional LOS framework used for transportation planning has quantitatively reviewed vehicle travel and qualitatively considered the safety and experience of other road users such as pedestrians, cyclists, and transit users. The MMLOS framework quantitatively considers the needs and experiences of all transportation users and allows planners and engineers to contextualize the assessment to match the character of the street and supporting policy objectives. This combined approach reflects the City's broader objective of creating a vibrant, sustainable, and connected urban environment that prioritizes the movement of people over vehicles. The application and results of these different approach is highlighted in **Figure E-1**.

The mobility assessment focused on identifying the impacts of proposed land use intensification allowed by PGA re-zoning, evaluating existing mobility infrastructure, and recommending context-sensitive improvements to ensure that each PGA can support its long-term vision for growth.

Existing Conditions and Operations

The assessment of existing conditions revealed that infrastructure quality and user experiences varied considerably across the PGAs. In many areas, neighbourhood renewal programs had recently been completed, contributing to improved sidewalk conditions and pedestrian environments. However, arterial corridors and some collector streets continued to feature narrow sidewalks or missing segments altogether, particularly outside of recently renewed areas.

Cycling infrastructure was unevenly distributed. While areas like University-Garneau and portions of the 124 Street and Wihkwêntôwin areas benefit from protected bike lanes and shared-use pathways, other PGAs – especially the 156 Street area and portions of the Stony Plain Road area – lack adequate connectivity for cyclists of all ages and abilities. Furthermore, gaps were identified between existing and planned facilities, suggesting the need for more continuous networks to support safe and convenient cycling, not just within each PGA, but across the City.

Transit accessibility was generally strong in areas served by light rail transit (LRT) and high-frequency bus corridors. However, the quality of transit infrastructure, including bus shelters, transit priority measures, and signal coordination, varied widely. In many locations, transit service operates in mixed traffic without dedicated lanes or signal priority, reducing reliability and overall user experience. The importance of transit reliability on increasing transit ridership speaks to the benefit of projects such as the Valley Line West LRT expansion and the planned implementation of the bus rapid transit (BRT) system, with B1 and B2 routes expected to run through several of the PGAs evaluated as part of this assessment.

Vehicle operations were characterized by medium to high congestion levels on arterial roadways, particularly during peak periods. This was most notable in corridors close to the downtown core and around the University of Alberta. The qualitative assessment, supported by peak-hour Google Maps congestion data, confirmed that travel conditions on these routes often deteriorated during the busiest parts of the day.

Post-pandemic travel trends were also taken into account. Compared to 2016-2017, peak-hour vehicle volumes in 2024 were consistently lower, reflecting broader shifts in commuting behaviour and work-from-home adoption. Transit ridership has recovered to pre-pandemic levels, but active transportation and e-commerce-related vehicle activity has increased, prompting the need for a flexible, multimodal approach to future planning.

Future Conditions and Operations

Looking ahead to the forecast population horizon, travel demand within the PGAs is expected to grow significantly because of population intensification and redevelopment. Targeted intensification arising from the PGA rezoning, combined with organically occurring property redevelopment, is expected to add 43,000 people (representing 80% growth) to the study area population). While traffic volumes will increase, the rate of growth will be tempered by the availability and planned expansion of sustainable transportation infrastructure. Across the study areas, trips by all modes are forecast to increase by approximately 40%, comprised of a 32% increase in vehicle trips and a 49% increase in trips by foot, bike, and transit.

The Valley Line West LRT, the City's Active Transportation Network Expansion, and broader land use changes will all play a role in shaping these outcomes. PGAs that currently exhibit lower sustainable mode shares, such as the 156 Street area, have the potential to see the greatest relative gains by addressing infrastructure deficits and land use barriers. Conversely, areas like University - Garneau, where over 60% of trips are already made by sustainable modes, will require careful attention to preserve and enhance existing multimodal infrastructure as densities rise.

The MMLOS assessment framework was used to evaluate future performance under the assumption that no additional infrastructure beyond currently funded projects would be in place. These approved projects include Valley Line West LRT, Imagine Jasper Phase 2, and planned expansions to the active transportation network in 2025 and 2026. MMLOS targets based on road classification were adjusted for each mode based on City policy and planning directives such as pedestrian priority areas outlined in the District Plan, transit corridors based on LRT and BRT planning, and the cycling network identified in the Bike Plan. This analysis revealed that while some intersections and corridors could accommodate projected growth, others would experience level of service degradation – particularly for pedestrians and transit users – without targeted improvements. Key issues included uncontrolled conflicts between pedestrians and vehicles, gaps in cycling infrastructure, limited curbside transit amenities, and delays to on-street transit when travelling in mixed traffic with other vehicles.

Recommendations

The study provides detailed recommendations to support multi-modal mobility in each Priority Growth Area, aligned with the City’s broader transportation and land use objectives. Recommendations are summarized in **Figure E2** through **Figure E6**.

Pedestrian improvements are recommended at many intersections and corridors. These include the installation of:

- curb extensions,
- leading pedestrian intervals (LPIs),
- wider sidewalks,
- audible crossing signals, and
- the prohibition of right turns on red (RTOR).

These enhancements aim to reduce conflicts, shorten crossing distances, and improve the overall comfort and accessibility of the pedestrian environment, particularly in designated pedestrian priority areas.

Cycling infrastructure improvements are also identified as a priority. The report recommends filling key gaps in the network by constructing new protected cycling facilities along corridors such as:

East / West Routes

- 100 Avenue,
- 102 Avenue,
- 111 Avenue,
- 114 Avenue,
- 87 Avenue, and
- 104 Avenue.

North/South Routes

- 112 Street,
- 118/119 Street,
- 158 Street,
- 163 Street,
- 115 Street, and
- 116 Street.

These corridors will serve as district connectors, enabling residents to safely access destinations within and beyond the PGAs. Supplemental routing options are identified to create a robust cycling network, placing most residents within 400 m of a low stress cycling facility.

Transit recommendations include the implementation of:

- transit only lanes,
- queue jump lanes,
- transit signal priority, and
- the enhancement of passenger amenities such as shelters, benches, and lighting.

These changes are intended to reduce delay, improve reliability, and enhance the user experience, especially in areas served by the Valley Line West LRT and planned BRT routes. In particular, intersections along 109 Street, Stony Plain Road, and 87 Avenue are identified as high-priority locations for transit-focused investment beyond the current investment in the West Valley Line LRT.

In terms of **vehicle operations**, the report recommends optimizing signal timing and reallocating right-of-way where necessary to improve multimodal performance. In some cases, protected-only turning movements and signal timing adjustments are proposed to improve safety and reduce delay. However, consistent with the direction outlined in The City Plan, the report acknowledges that vehicle level of service may not meet the public expectations (specifically in the peak hour) at all locations and that any anticipated congestion will be managed through multi-modal investments rather than expanded roadway capacity.

The improvements suggested in this report are not solely required to support PGA redevelopment, rather, they address identified gaps in the mobility network and help to improve the overall MMLOS to optimize the potential people moving capacity of the mobility network. Some of the identified improvements align with existing long-term planning and strategy documents, such as the Bike Plan, while others can be integrated into the land development review process. Recommendations from this report should be reviewed with each future development application for opportunities to integrate infrastructure upgrades with densification. The implementation time frame may be tied to the rate at which redevelopment occurs rather than a year or City-wide population threshold.

High-level capital cost estimates for the recommended improvements total approximately \$10.4 million, summarized by PGA in **Table E1**. At the pre-conceptual design stage, these costs estimates should be considered $\pm 50\%$ as further assessment will be required to fully understand impacts of each project. These estimates cover a range of interventions, from minor upgrades to missing pedestrian and cyclist connections, to more substantial intersection reconstructions. Costs associated with major corridor reconfigurations (e.g., 109 Street or 82 Avenue as part of the B1/B2 BRT implementation) are excluded and will require further study and engagement.

Costs associated with improvements anticipated to be explored and implemented as part of upcoming neighbourhood renewal projects (such as Wihkwêntôwin and Glenwood 163 Street West) have not been included in the table below. Costs within the 156 Street / Stony Plain Road area are higher than the other nodes due to a high number missing pedestrian and cycling facilities within the area. Many of the neighbourhoods in this area underwent renewal before the introduction of the City's current Complete Streets Design and Construction Standards in 2018, with many neighbourhood renewals completed in 2014 or earlier. These renewals often followed a strict "like for like" renewal program which typically did not consider implementation of cycling infrastructure or construction of missing sidewalk links.

Implementation of these improvements is recommended in a phased manner. Some small-scale improvements generally abutting redevelopment parcels necessary to support each development could become a condition of future development permits. These are localized improvements often abutting a parcel that have traditionally been undertaken as a condition of development by the property owner, including missing sidewalk connections, curb ramps, and alleyway upgrades. Short-term actions (0–5 years) would focus on high-impact, low-cost improvements such as signal timing adjustments, RTOR bans, and transit signal priority. Medium-term actions (5–10 years) would include expansion of the active transportation network and intersection reconfigurations. Long-term actions (10+ years) may involve comprehensive street reconstructions to fully align with the City's Complete Streets Design and Construction Standards.

Table E1 – High-Level Capital Costs

	124 Street / Wihkwêntôwin	156 Street / Stony Plain Road	University-Garneau
Development Lead Initiatives	\$60,000	\$760,000	None
Short Term	\$150,000	\$500,000	\$150,000
Medium Term	\$840,000	\$6,240,000	\$1,690,000
Long Term**	<ul style="list-style-type: none"> • Transit oriented reconfiguration of 109 Street north of Jasper Avenue • Bi-directional cycling facilities along 111 Avenue • Bi-directional cycling facilities along 117 Avenue and 119 Avenue or 120 Avenue 	<ul style="list-style-type: none"> • Bi-directional cycling facilities along 102 Avenue paralleling Stony Plain Road • Pedestrian realm reconfiguration of Stony Plain Road from 156 Street to 163 Street • Extension of 100 Avenue Shared Pathway to 170 Street • Extension of cycling facilities on 153 Street and 163 Street • Reconfiguration of 87 Avenue to accommodate future BRT and active modes* 	<ul style="list-style-type: none"> • Reconfiguration of 82 Avenue and implementation of Old Strathcona Public Realm Strategy* • Reconfiguration of 109 Street from 61 Avenue to Waltherdale Hill Road/Saskatchewan Drive to improve transit and pedestrian realm* • Reconfiguration of 87 Avenue to improve transit service*
Total	\$1.04 million	\$7.50 million	\$1.84 million

Notes:

* denotes scope which is expected to be undertaken as part of B1 + B2 BRT Concept Plan work

** costs associated with long term improvements are excluded and will require further study and engagement.

In summary, the mobility assessment confirms that Edmonton's Priority Growth Areas can accommodate planned intensification with strategic, coordinated investments in multimodal infrastructure. By prioritizing people-focused design and sustainable transportation options, the City can support vibrant, connected communities that meet the goals of The City Plan, the Energy Transition Strategy, and the broader vision for a more equitable and resilient Edmonton.

Figure E1 - Comparison of LOS and MMLOS Outcomes

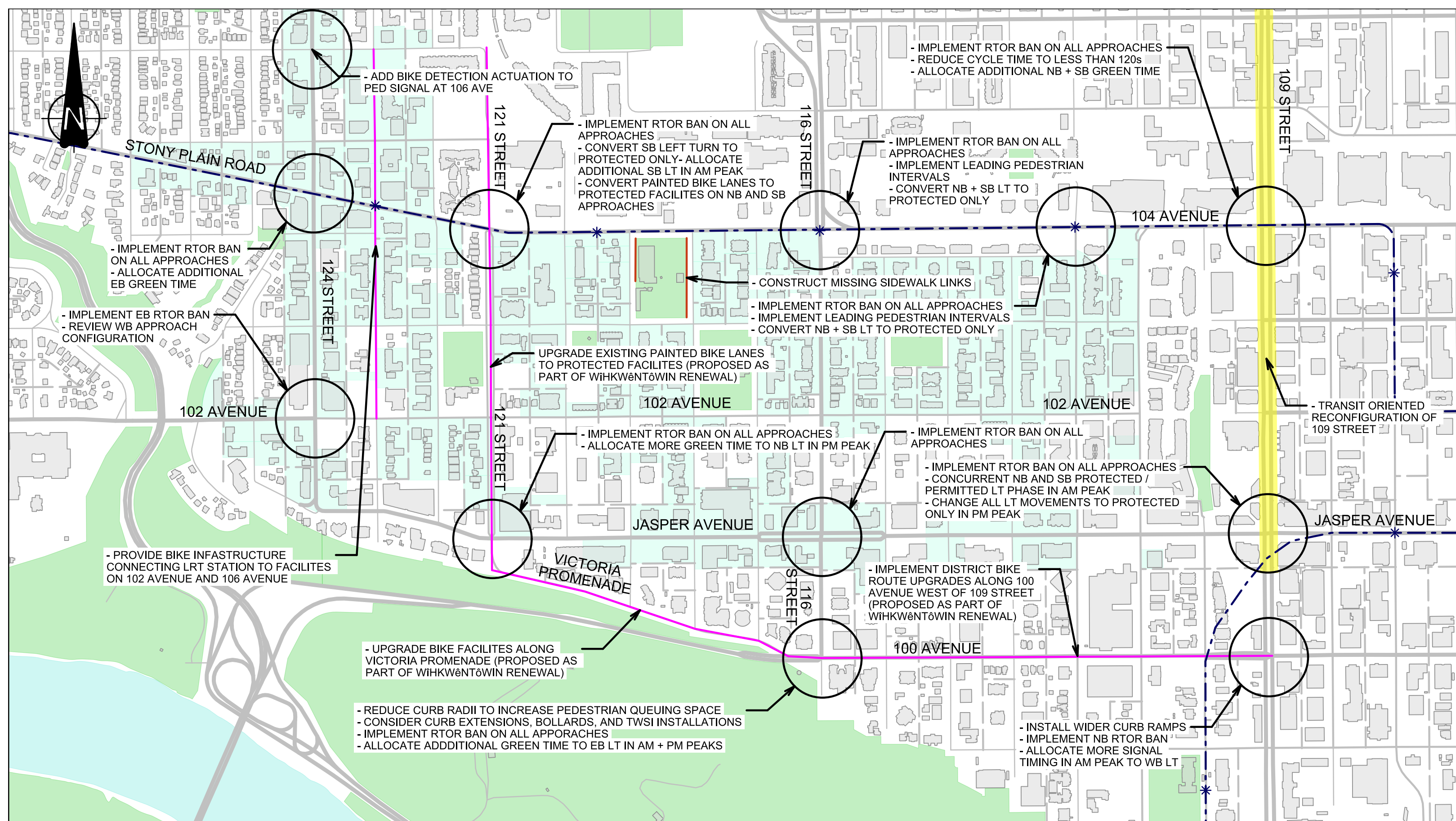
EXAMPLE - 109 Street and 87 Avenue

Located within the University-Garneau PGA, 109 Street is a commercial corridor while the intersection of 109 Street and 87 Avenue is a major access to the University of Alberta.

Based on the Scona District Plan, 109 Street and the west leg of 87 Avenue are pedestrian priority areas. The District Plan notes the following: “Enhance the pedestrian environment along 109 Street with a focus on protection, comfort and connectivity by separating sidewalks from the curb and including a treed landscaped boulevard, pedestrian-oriented lighting, public seating and improved connections and crossings”.

Additionally, bus-based mass transit routes B1 and B2 are expected through this intersection. B1 transit is expected to travel along 109 Street while B2 transit is expected to travel along the south leg of 109 Street and the west leg of 87 Avenue in the future. Concept planning for the routes has been initiated and will determine the exact routing and stop / station locations. Delivery timelines will be known once design work has been completed and funding for construction is allocated.

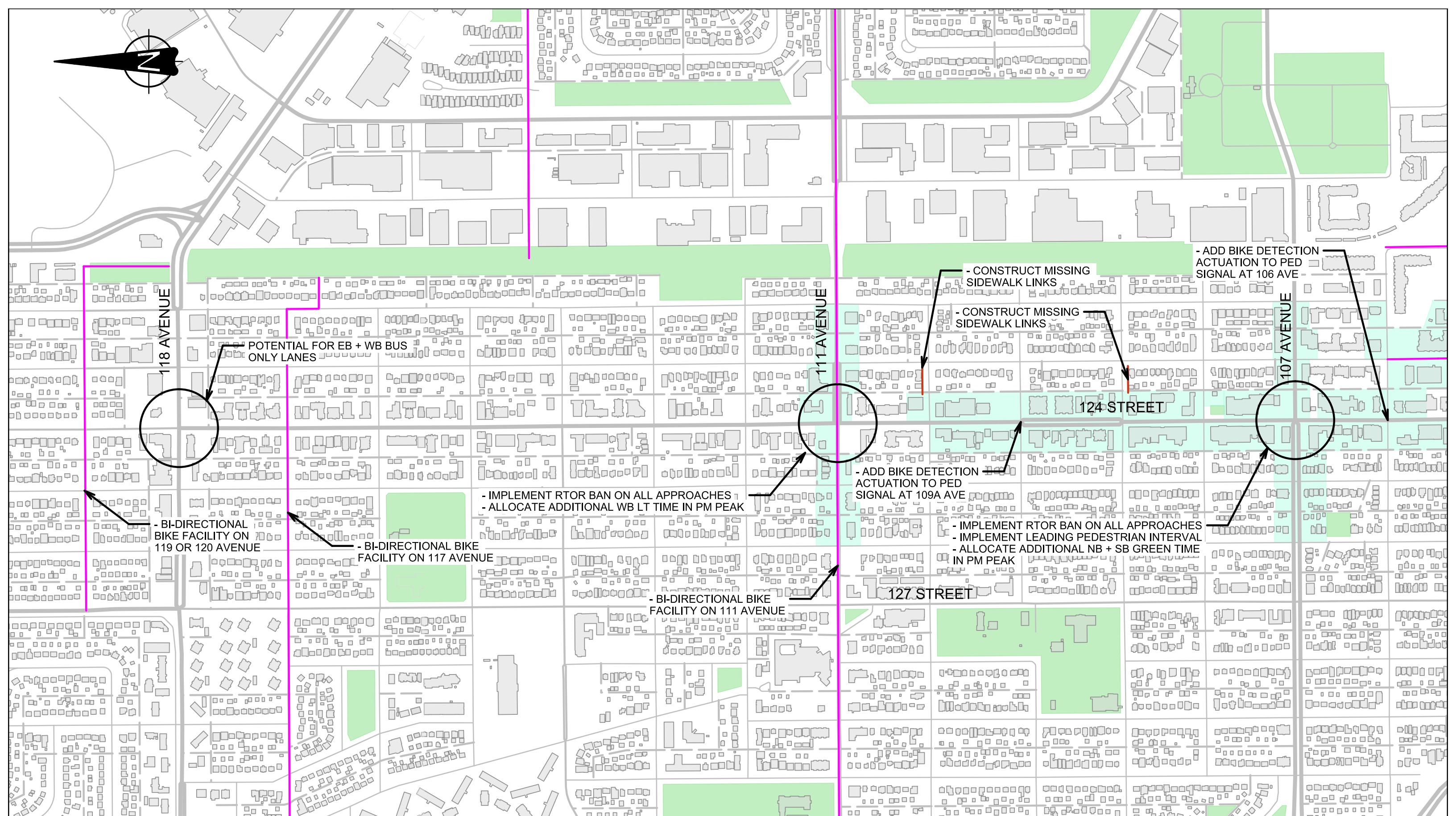
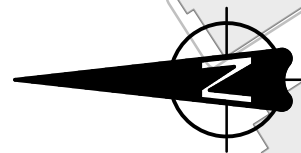
Traditional LOS Assessment	Multi-Modal Level of Service Assessment
<p>Traditional LOS assessment quantitatively analyzes the efficient movement of vehicles, which can often be at odds with stated policy direction and does not offer a framework to assess the qualitative experience of other uses of a street in a comparable manner.</p> <p>In the case of 109 Street and 87 Avenue, the vehicle demand for northbound left turns is expected to nearly double in the PM peak hour following redevelopment. A second left turn lane is theoretically needed to address this capacity issue and reduce delays to an ‘acceptable’ level.</p> <p>This solution requires property acquisition with little room for improvements to the pedestrian realm or transit infrastructure. The traditional LOS leads to design decisions that often prioritize the car above all other modes of travel.</p> <p>Most striking – the additional turning lane may increase the total roadway capacity by just 200 people per hour per lane (pphpl), which will be eclipsed as the City continues to grow to 2 million.</p>	<p>The MMLOS quantitative assessment allows the City to evaluate streets for a variety of travel modes, including but not limited to the car. This framework evaluates each mode by the aspects of an intersection that most impact their experiences.</p> <ul style="list-style-type: none"> • Pedestrians – uncontrolled conflicts with vehicles, crossing distance, cycle length, curb ramps • Cyclist – uncontrolled conflicts with vehicles, crossing distance, cycle length, bike infrastructure • Transit – delay, pedestrian LOS, and priority measures (queue jump lanes, TSP). • Vehicle – delay, presence of dedicated turn lanes. <p>The MMLOS targets for each mode can be adjusted based on policy and planning directives. For 109 Street, pedestrian and transit MMLOS targets were adjusted upwards to reflect the emphasis placed on these modes in the District Plan and Mass Transit Plan.</p> <p>Recommendations using the MMLOS framework identify that curb lanes on 109 Street should be converted to transit-only lanes. A scramble crosswalk allows pedestrians to cross all legs of the intersection without vehicle conflicts. By optimizing signal timing, delay to vehicles can be partially offset.</p> <p>When comparing equivalent road space, transit lanes can move significantly more people than general purpose vehicle lanes. By investing in mass transit, the theoretical capacity of 109 Street increases by nearly 1,000 pphpl, providing additional people-moving capacity for years to come.</p>



LEGEND	
	PGA TARGET AREA
	PARK / OPEN SPACE
	BODY OF WATER / RIVER
	LRT ALIGNMENT
	LRT STATION
	MISSING SIDEWALK
	MISSING CYCLING CONNECTION
	CORRIDOR UPGRADES REQUIRING FURTHER STUDY

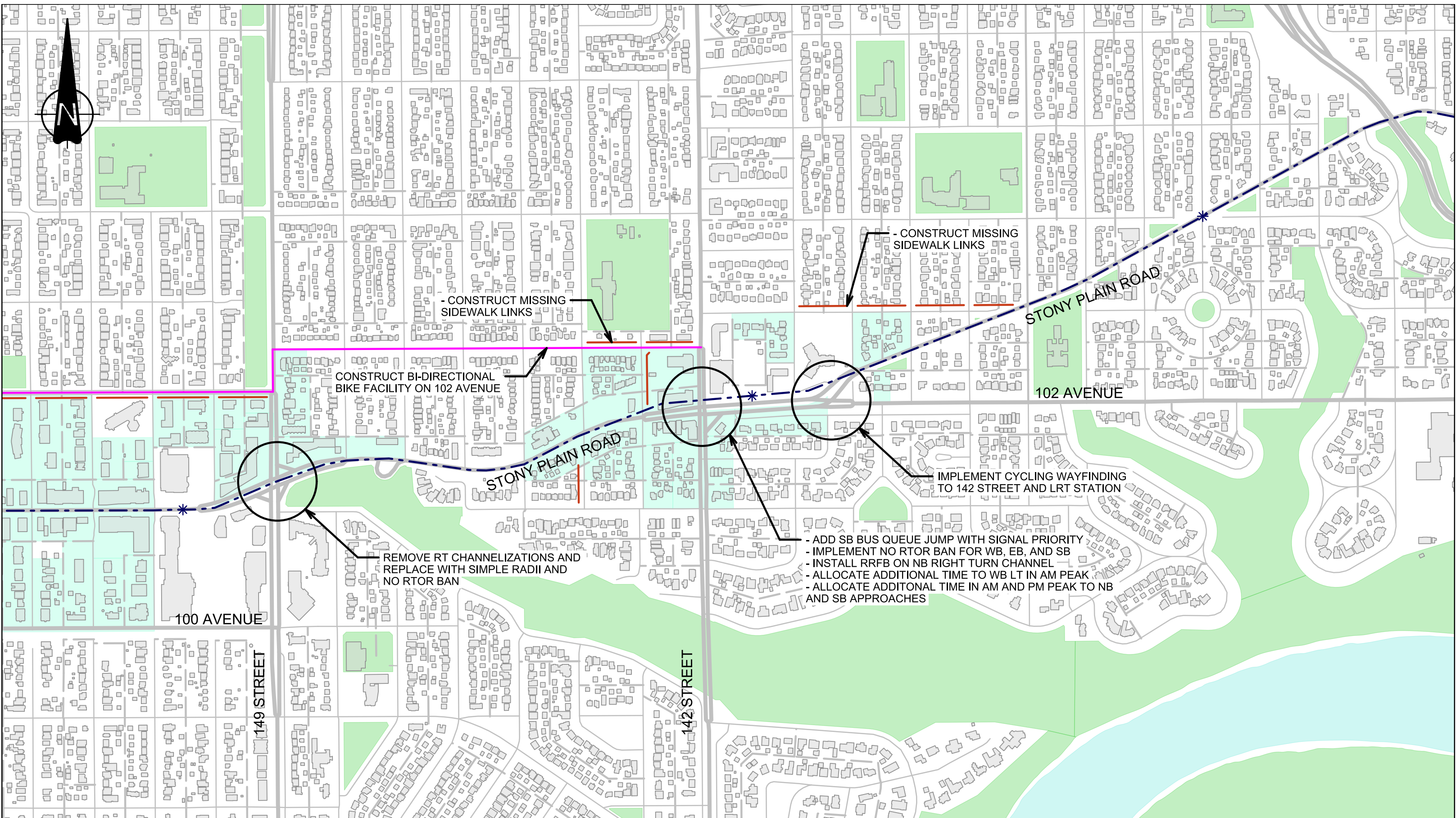
NOTE:
Detailed design on the Valley Line West corridor is in progress through the P3 contract with Marigold Infrastructure Partners. The analysis completed for this study along the Valley Line corridor is based on "Summer 2024 Look Book" drawings and preliminary signal timings. Multi-modal performance at study intersections along the Valley Line corridor are subject to changes to the design, with any major design change requiring further study to understand any impacts.

**FIGURE E-2 WîHKWêntôwin
PRIORITY GROWTH AREA
POTENTIAL
IMPROVEMENTS**



- LEGEND
- PGA TARGET AREA
 - PARK / OPEN SPACE
 - BODY OF WATER / RIVER
 - MISSING SIDEWALK / ACTIVE MODES LINK
 - MISSING CYCLING CONNECTION

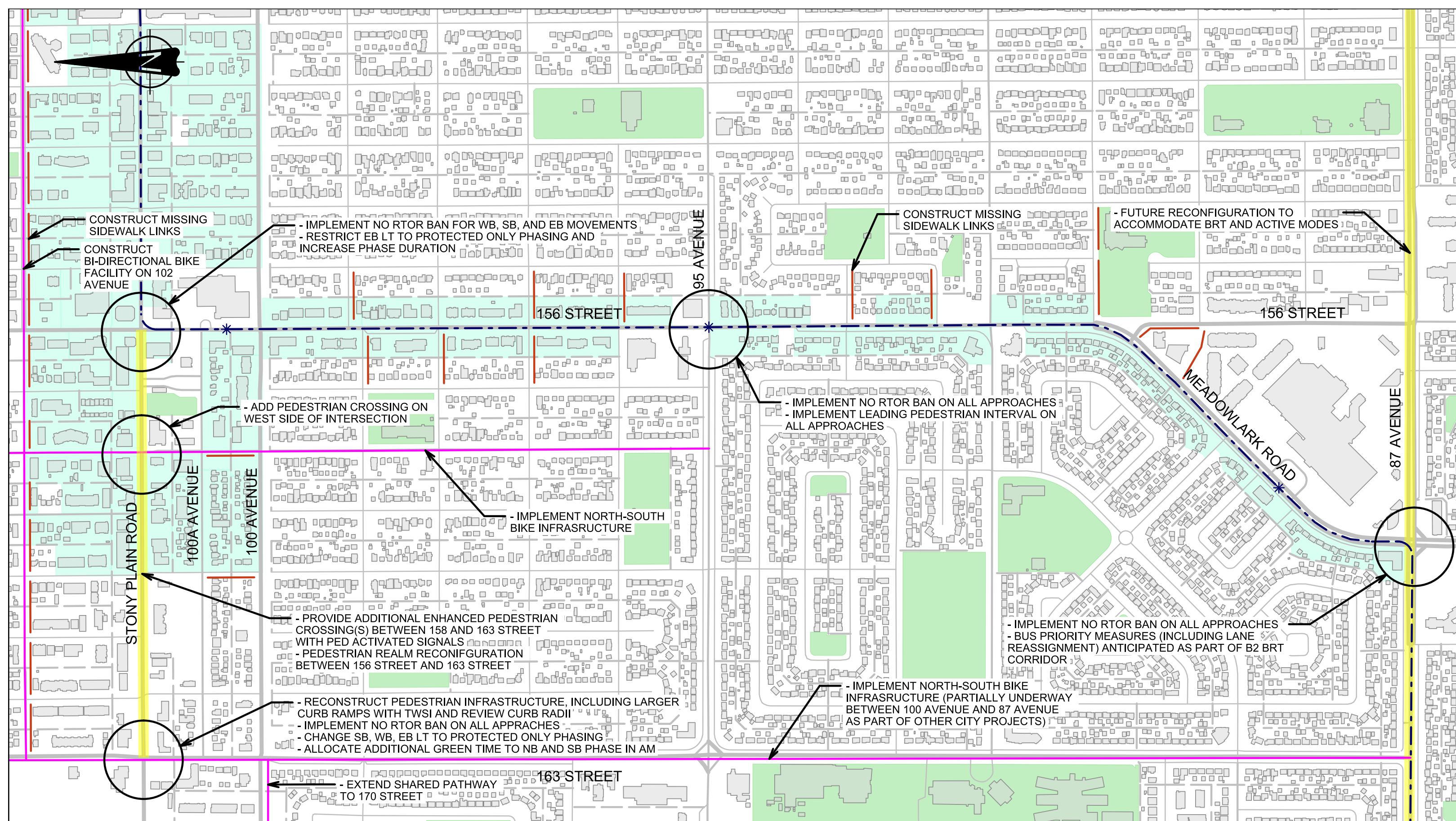
FIGURE E-3 124 STREET
PRIORITY GROWTH AREA
POTENTIAL
IMPROVEMENTS



- LEGEND
- PGA TARGET AREA
 - PARK / OPEN SPACE
 - BODY OF WATER / RIVER
 - LRT ALIGNMENT
 - LRT STATION
 - MISSING SIDEWALK
 - MISSING CYCLING CONNECTION

NOTE:
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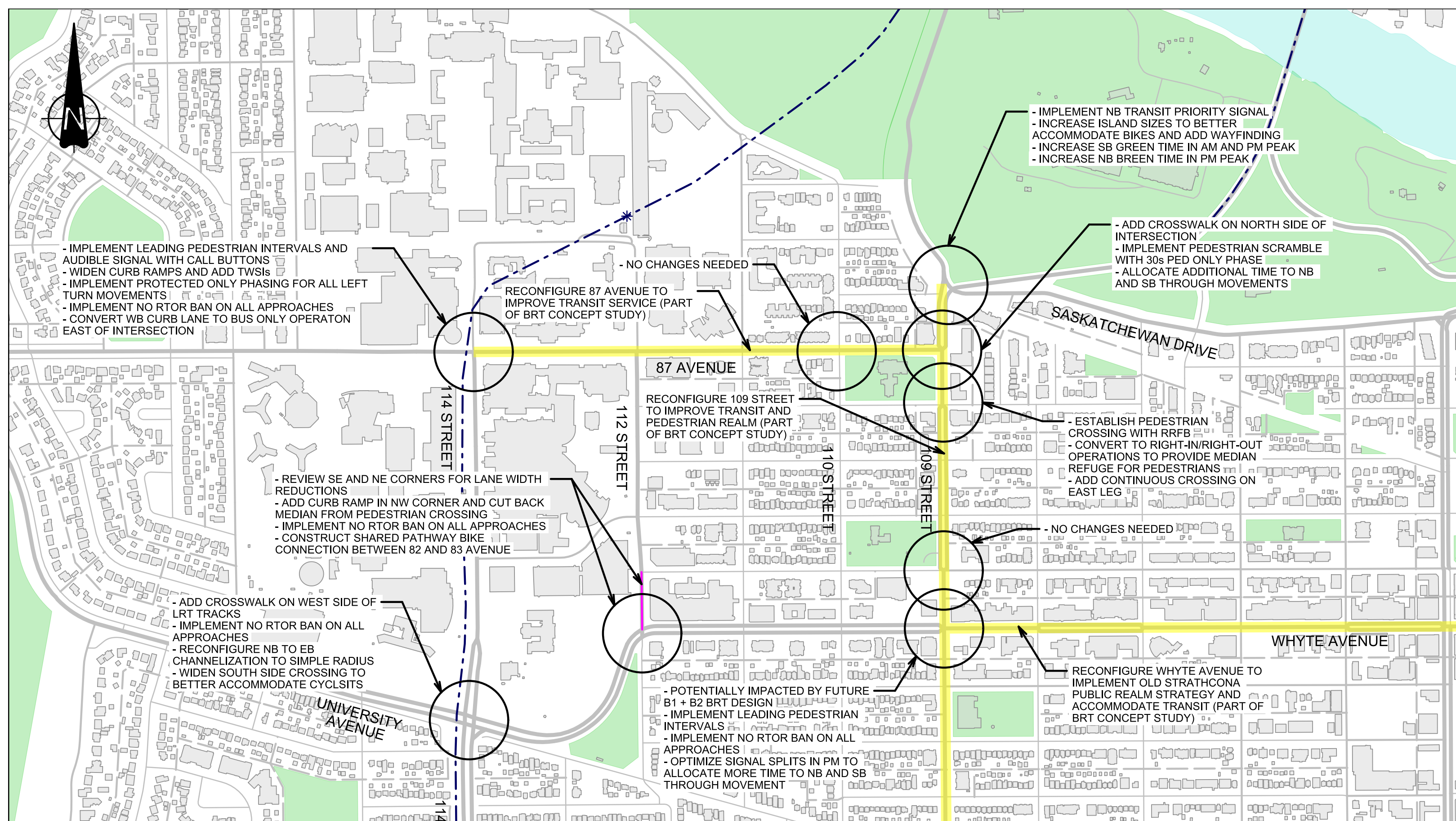
FIGURE E-4 STONY PLAIN
PRIORITY GROWTH AREA
POTENTIAL
IMPROVEMENTS



LEGEND	
	PGA TARGET AREA
	PARK / OPEN SPACE
	BODY OF WATER / RIVER
	LRT ALIGNMENT
	LRT STATION
	MISSING SIDEWALK
	MISSING CYCLING CONNECTION
	CORRIDOR UPGRADES REQUIRING FURTHER STUDY

NOTE:
Concept planning for the B1 and B2 BRT routes has been initiated and will determine the exact routing, street configuration, and stop / station locations. Delivery timelines will be known once design work has been completed and funding for construction is allocated.

**FIGURE E-5 156 STREET
PRIORITY GROWTH AREA
POTENTIAL
IMPROVEMENTS**



LEGEND

- PGA TARGET AREA
- PARK / OPEN SPACE
- BODY OF WATER / RIVER
- LRT ALIGNMENT
- LRT STATION
- MISSING SIDEWALK
- MISSING CYCLING CONNECTION
- CORRIDOR UPGRADES REQUIRING FURTHER STUDY

NOTE:
Concept planning for the B1 and B2 BRT routes has been initiated and will determine the exact routing, street configuration, and stop / station locations. Delivery timelines will be known once design work has been completed and funding for construction is allocated.

**FIGURE E-6 GARNEAU
PRIORITY GROWTH AREA
POTENTIAL
IMPROVEMENTS**