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Elton Hills Drive NW

TRAFFIC AND SAFETY STUDY

FINAL REPORT

Prepared for:

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5/1/2026

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Table of Contents

LIST OF TABLES

LIST OF FIGURES

1. Introduction

In advance of a planned 2027 mill and overlay project to address deteriorating pavement along Elton Hills Drive NW, the City of Rochester has identified a need to perform a traffic and safety study to inform future lane configurations and traffic safety improvements that align with the City's Active Transportation Plan (2022) and Rochester Public Schools' Elementary Safe Routes to School Plan (2025). Per ROCOG's Safety Action Plan (2026) Elton Hills Drive NW is a Tier 1 corridor as it was identified as a high injury network, had concerning crash profiles, and a high concentration of public comments. The purpose of this study is to evaluate existing roadway characteristics and operations, identify safety and mobility concerns, and develop both short-term and long-term corridor improvement strategies. Short-term improvements are those that could be implemented as part of the 2027 mill and overlay project, whereas long-term improvements would be implemented during a future (15 to 20 years or more) reconstruction project along Elton Hills Drive NW.

1.1 PROJECT STUDY AREA

Elton Hills Drive NW is classified as a Major Arterial roadway in the ROCOG (Rochester Olmsted Council of Governments) 2050 Metropolitan Transportation Plan extending from the TH 52 & 19th Street NW / Elton Hills Drive NW interchange to N Broadway Avenue. Elton Hills Drive NW provides regional connectivity, interchange access to TH 52, and direct access to neighborhoods and schools along the corridor (Elton Hills Elementary, Rochester Central Lutheran, and Hoover Elementary). The study limits include the 1.8-mile segment of Elton Hills Drive NW between E Frontage Road and N Broadway Avenue. The study corridor is shown in **Figure 1**.

1.2 STUDY OBJECTIVE

Key goals of this traffic and safety study are to identify short-term alternatives that can be implemented in conjunction with the 2027 mill and overlay project, along with potential improvements that can be implemented as part of a future full reconstruction project along Elton Hills Drive NW. The proposed alternatives were developed with the intent to address corridor crash, speed, mobility, and pedestrian / cyclist accessibility concerns that have been raised by the City of Rochester. This feasibility study will include evaluation of key considerations such as:

- Street Width, Function, Utilization, and On-Street Parking
- Traffic Volumes (Vehicle, Pedestrian, and Cyclist)
- Transit and Freight
- Motorist Speeds
- Crash History
- Mobility and Capacity
- Multimodal Travel

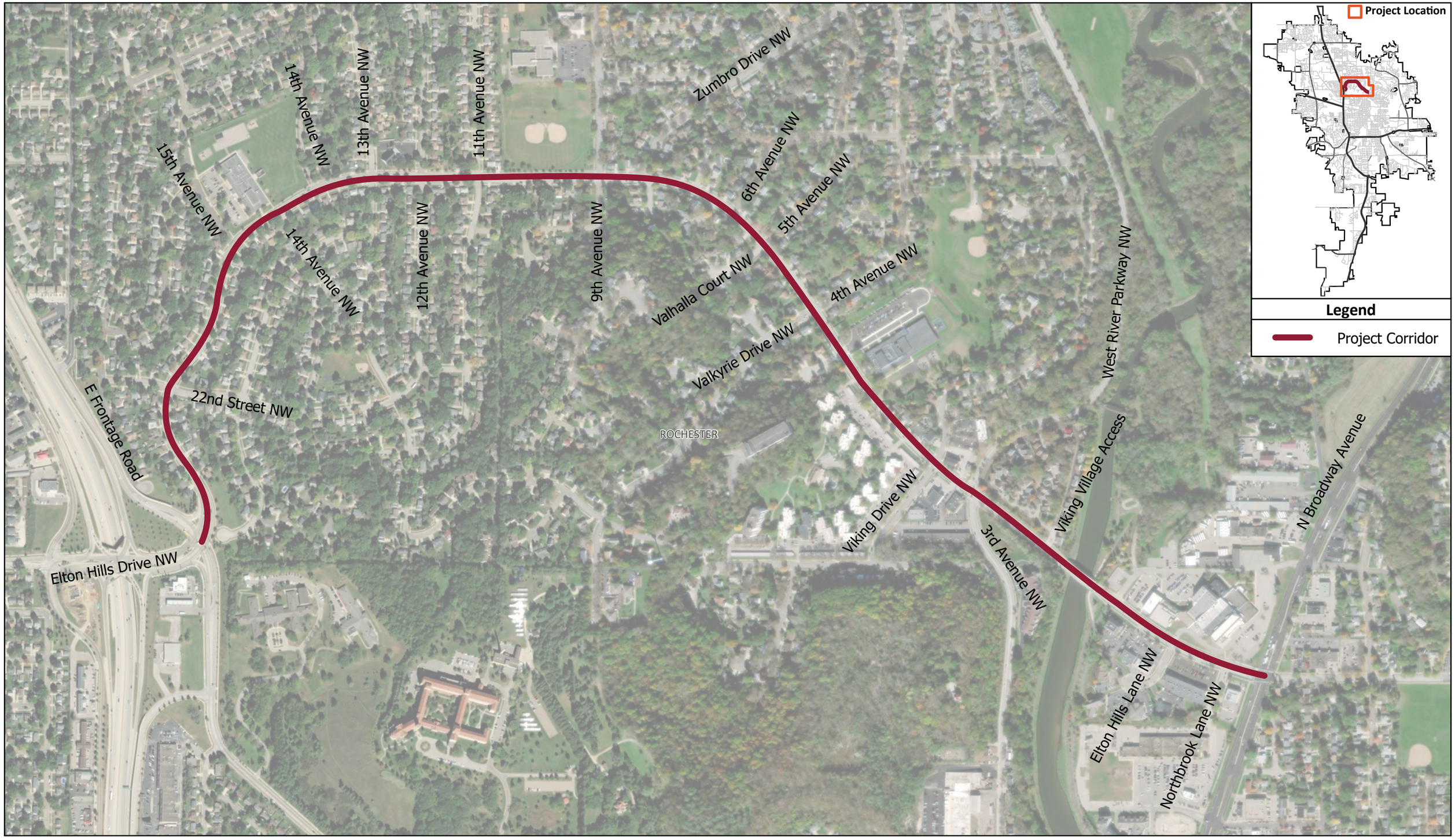

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Figure 1

Project Location

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2. Corridor Evaluation

Key components of the Elton Hills Drive NW corridor evaluation include corridor characteristics, traffic and multimodal volumes, vehicle speeds, and roadway safety.

2.1 CORRIDOR CHARACTERISTICS

Elton Hills Drive NW is a 4-lane undivided roadway that exhibits various roadway geometrics and traffic control devices as shown in **Figure 2**. The speed limit along Elton Hills Drive NW is posted at 30 miles per hour (mph) with 20 mph school speed zones near the Elton Hills Elementary and Hoover Elementary schools when children are present. Five project intersections are controlled by traffic signals, while all remaining intersections operate under through-stop traffic control. Key roadway characteristics along Elton Hills Drive NW are as follows:

ON STREET PARKING

On street parking is provided on both sides of Elton Hills Drive NW from 550 feet east of E Frontage Road to 150 feet west of Viking Drive NW. Seasonal on street parking restrictions require residents to park on alternating sides of Elton Hills Drive NW based on the date and address number between November 1st and April 1st. Based on conversations with City staff, field observations, and aerial imagery, on street parking is largely underutilized. Homes with direct access to Elton Hills Drive NW have driveways and garage space, schools and apartments along the corridor have dedicated parking lots, and frequent cross-streets offer lower friction alternatives.

ADJACENT LAND USE

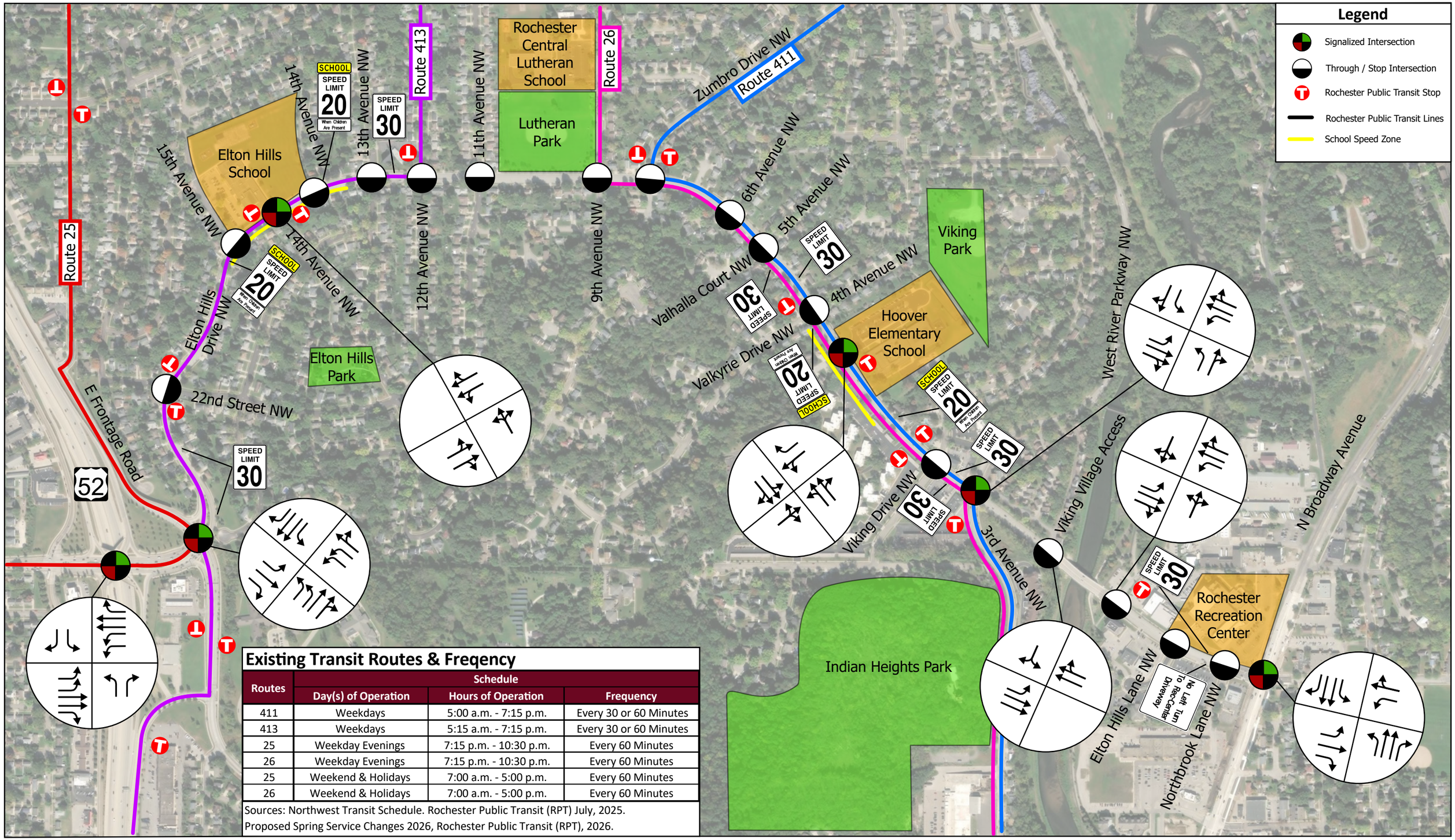
Land uses along Elton Hills Drive NW are primarily residential including three schools (and Lutheran Park) west of the Viking Drive NW intersection. Between Viking Drive NW and West River Parkway NW / 3rd Avenue NW there is a mix of land uses and businesses before transitioning to mostly commercial land uses east of the Zumbro River including the Rochester Recreation Center.

CORRIDOR ACCESS

Elton Hills Drive NW provides direct driveway access to approximately 100 homes, 20 public streets, and several commercial driveways often at less than one-eighth mile spacing. There are 3 commercial and 42 residential driveways along the north side and 2 commercial and 56 residential driveways along the south side west of W River Parkway NW / 3rd Avenue NW.

LIGHTING

Overhead lighting is provided along all of Elton Hills Drive NW within the project area. Overhead lighting is currently affixed to wooden utility poles that also carry overhead power lines except for the intersection of West River Parkway NW / 3rd Avenue NW and the Zumbro River where upgraded lighting is provided with the traffic signal and the bridge.



Existing Transit Routes & Freqency

Routes	Schedule		
	Day(s) of Operation	Hours of Operation	Frequency
411	Weekdays	5:00 a.m. - 7:15 p.m.	Every 30 or 60 Minutes
413	Weekdays	5:15 a.m. - 7:15 p.m.	Every 30 or 60 Minutes
25	Weekday Evenings	7:15 p.m. - 10:30 p.m.	Every 60 Minutes
26	Weekday Evenings	7:15 p.m. - 10:30 p.m.	Every 60 Minutes
25	Weekend & Holidays	7:00 a.m. - 5:00 p.m.	Every 60 Minutes
26	Weekend & Holidays	7:00 a.m. - 5:00 p.m.	Every 60 Minutes

Sources: Northwest Transit Schedule. Rochester Public Transit (RPT) July, 2025.
Proposed Spring Service Changes 2026, Rochester Public Transit (RPT), 2026.

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Figure 2

Existing Conditions

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TRANSIT

Elton Hills Drive NW is a key roadway in facilitating bus service for Rochester Public Transit. An overview of bus stops and routes currently operating within the project area is shown in **Figure 2**. The corridor mainly services routes 26, 102, 411, and 413. Buses operate in mixed traffic lanes, stopping to pick up or drop off passengers in existing parking lanes or within designated no parking areas at the bus stop locations adjacent to Viking Drive NW, ensuring these stops do not impede traffic flow. When active, buses arrive every 30 to 60 minutes depending on the route. Detailed routes and schedules can be found in **Appendix A**.

CYCLIST AND PEDESTRIAN FACILITIES

Sidewalks are provided along both sides of Elton Hills Drive NW. No dedicated facilities for cyclists are currently provided directly along the corridor, although more confident cyclists may travel in-lane and less experienced cyclists would utilize the sidewalks. Shared-use facilities connect to Elton Hills Drive NW at the northeast quadrant of the Elton Hills Drive NW & West River Parkway NW / 3rd Avenue NW intersection. Additional shared-use facilities are also provided along the east side of the Zumbro River with connections to Elton Hills Drive NW. On street cycle lanes cross Elton Hills Drive NW and are provided along West River Parkway NW and 3rd Avenue NW. The City of Rochester's 2040 Comprehensive Plan (P2S) identifies Elton Hills Drive NW as a proposed cyclist network, specifically for an on street cyclist facility. Additionally, the City of Rochester's Active Transportation Plan identifies Elton Hills Drive NW as an All Ages and Abilities (AAA) network gap.

2.2 MOTOR VEHICLE, PEDESTRIAN, AND BICYCLE VOLUMES

Existing motor vehicle, pedestrian, cyclist, and heavy truck traffic volumes were collected in November 2025 by Alliant. Weekday turning movement counts were collected at all public intersections along the corridor. Rochester Public School's calendars were reviewed, and volumes were collected on a day when all schools were in session. Traffic volumes during the a.m. and p.m. peak hours are depicted in **Figure 3**. It should be noted that volumes at the west access to the Rochester Recreation Center and N Broadway Avenue were not recollected as part of this project. Volumes utilized at N Broadway Avenue were previously collected in 2023 as part of a signal optimization project. Volumes utilized at the west Recreation Center access were reused from a previous traffic study along Elton Hills Drive NW that was completed in 2019.

MOTOR VEHICLE VOLUMES

Peak hour turning movement counts are necessary to evaluate intersection capacity needs and to assess the impacts associated with proposed lane configuration alternatives. The annual average daily traffic (AADT) along Elton Hills Drive NW is approximately 10,800 vehicles per day. The 24-Hour counts collected at 9th Avenue NW and West River Parkway NW / 3rd Avenue NW were utilized to calculate ADTs which were determined to be 11,100 vehicles per day and 10,700 vehicles per day, respectively, with the corridor experiencing balanced directional flow (approximately a 50/50 split).

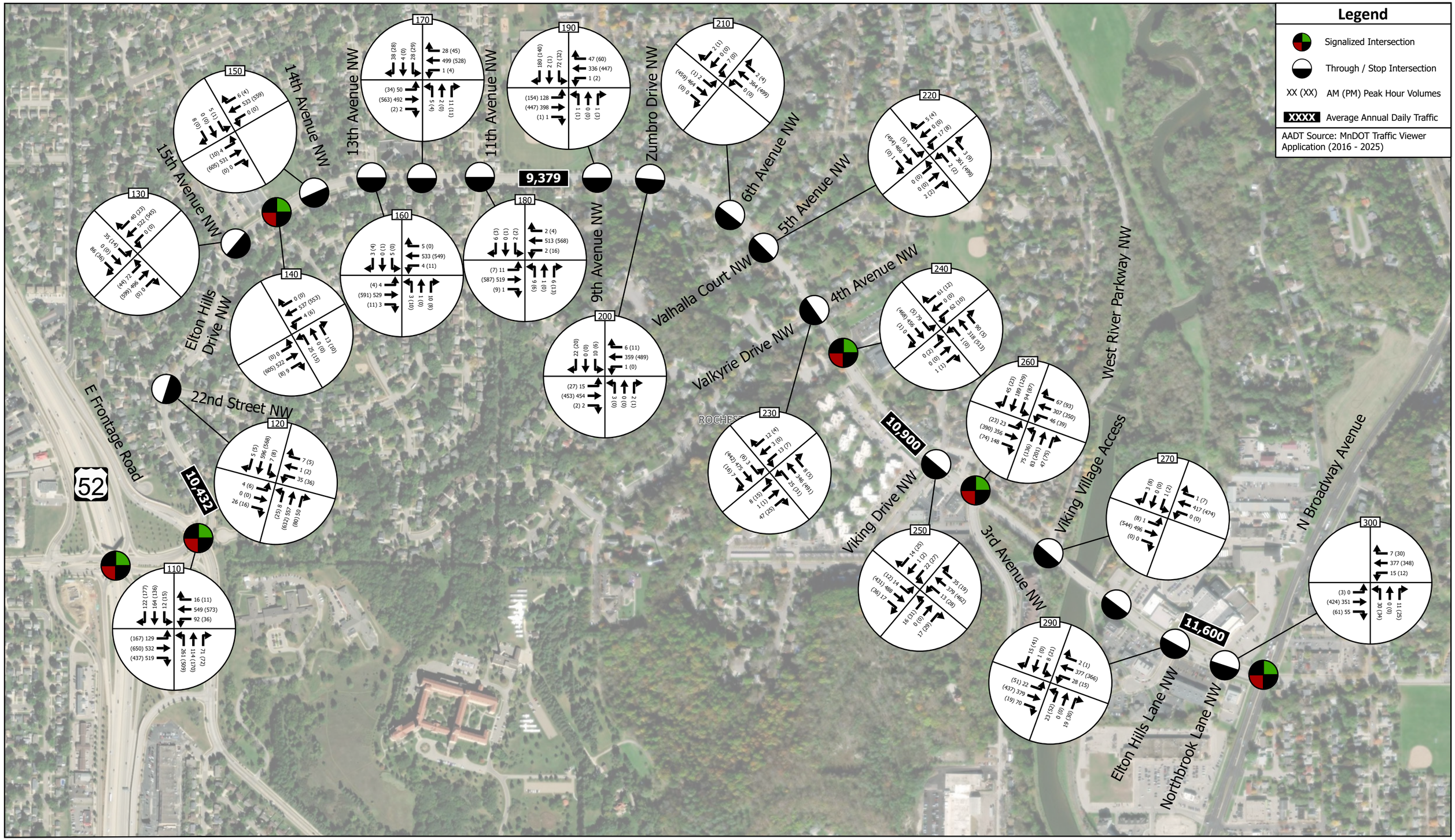

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Figure 3

Existing Year 2025 Traffic Volumes

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PEDESTRIAN AND CYCLIST VOLUMES

Existing pedestrian and cyclist volumes were also collected as part of the November 2025 data collection effort. Several locations along Elton Hills Drive NW experience high pedestrian and cyclist volumes that coincide with school arrival and dismissal times. These locations include Elton Hills Drive NW & Norseman Court and Elton Hills Drive NW & 14th Avenue NW (West Junction) intersections which see more than 150 pedestrians per day. Other adjacent intersections also see higher pedestrian volumes, tapering off as intersections are further from the schools. Elton Hills Drive NW west of 6th Avenue NW sees low cyclist volumes (less than 10 cyclist a day) while the area east of 6th Avenue NW generally sees much higher cyclist volumes (ranging from 10 to 40 cyclists per day).

HEAVY VEHICLES

Elton Hills Drive NW prohibits vehicle traffic weighing more than 10,000 pounds. While Elton Hills Drive NW is not a designated truck route, the City of Rochester's city ordinances allow trucks to make deliveries to properties along the corridor but require them to follow the shortest possible path to their destination and return to the trucking route once their delivery is complete. Collected turning moving counts indicate that throughout the day trucks make up between 1% to 4% of the traffic on average.

HISTORICAL TRAFFIC VOLUMES

Elton Hills Drive NW passes through a fully developed area of Rochester. Future traffic growth in the area would mostly be attributed to redevelopment, changes in traffic patterns, or changes in other parts of Rochester's transportation network. Although there has been some historic variation in traffic volumes along Elton Hills Drive NW, traffic volumes have remained relatively stagnant. To better estimate expected growth in traffic volumes for forecast year 2050, Alliant contacted ROCOG's planning group to evaluate expected traffic growth along Elton Hills Drive NW using ROCOG's travel demand model. ROCOG recommendations were as follows:

- E Frontage Road to 9th Avenue NW – 0.90% increase from 2026 to 2050 (0.037% annually)
  - This segment provides connectivity to three schools: Elton Hills Elementary, John Adams Middle School (off corridor), and Rochester Central Lutheran. There is also significant development west of TH 52 around West Circle Drive, which may attract trips from the Elton Hills neighborhood, in addition to access to and from TH 52.
- 9th Avenue NW to N Broadway Avenue – 0.12% increase from 2026 to 2050 (0.005% annually)
  - This segment provides connectivity to one school: Hoover Elementary. While it is close to N Broadway Avenue, the surrounding area is largely built out, which may explain the lower projected growth rate.

Forecast year 2050 traffic volumes were developed using growth rates from ROCOG's travel demand model. Forecast year 2050 peak hour traffic volumes are depicted in **Figure 4**.

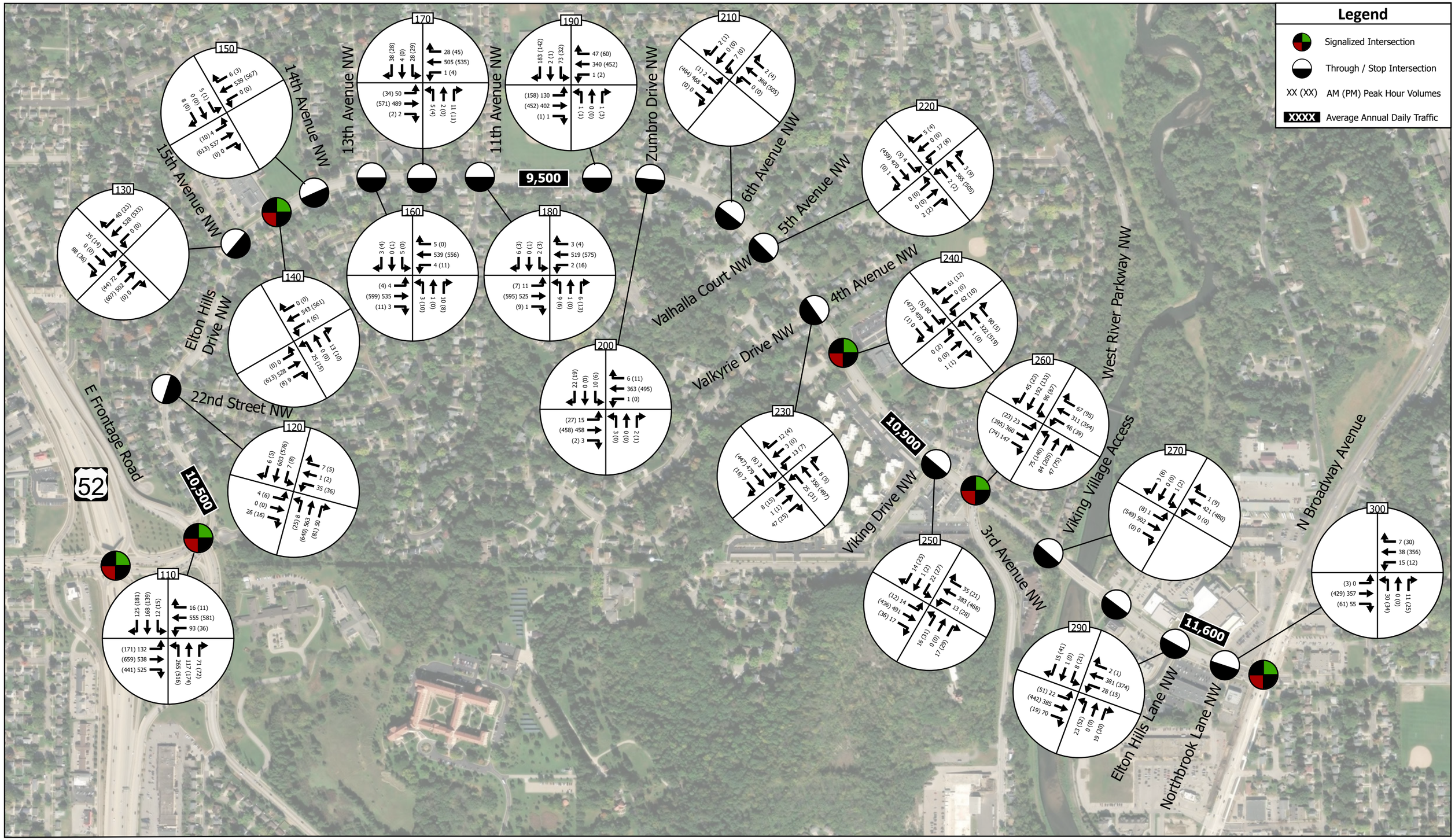

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Figure 4

Forecast Year 2050 Traffic Volumes

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2.3 MOTOR VEHICLE SPEEDS

Speed studies are an important part of investigating traffic safety. Drivers take many environmental factors into account when selecting a speed at which to travel. The speed most people consider reasonable is an important value. Speed data along Elton Hills Drive NW was collected by utilizing two methods, field data collection using pneumatic tubes with a counting device, and by using data retrieved from StreetLight. Field speed data was collected in October 2025 by the City whereas StreetLight data was pulled by Alliant from April through July 2025. A data analysis was completed to determine the average and 85th percentile speeds. A posted speed limit near the 85th percentile speed is considered the maximum safe and reasonable speed. As motor vehicle speeds increase, the probability of a crash resulting in an injury increases.

Lowering posted speed limits on its own is not an effective strategy to change driver behavior. If a speed limit is lowered arbitrarily and is inconsistent with driver behavior, motorists are not likely to comply with the posted speed limit – this creates a wider range of speeds and an unsafe corridor. If lowering motorist speeds is a desired outcome, changes to roadway design and surrounding features should be made. **Figure 5** depicts the calculated average and 85th percentile speeds at the four data collection locations along Elton Hills Drive NW for both field collected and StreetLight data. A review of the speed study data indicates the following conclusions:

- Average vehicle speeds along Elton Hills Drive NW range from 30 to 34 mph
- 85th percentile vehicle speeds (85% of motorists travel at or below) range from 34 to 40 mph
- Long-term StreetLight and 48-hour data collected by the City of Rochester show similar results.

The speed study indicates that overall, vehicles along Elton Hills Drive NW are traveling at speeds higher than what is posted. This indicates that either the speed limit for this corridor is not appropriately set or that design changes are needed to achieve the targeted design speed. Currently, speed limits are enforced by routine patrols by the City of Rochester's police department. Increasing frequency of patrol units along Elton Hills Drive NW may be beneficial, however, limited staffing makes this strategy less appealing from a long-term corridor safety perspective.

Legend

- Signalized Intersection
- Through / Stop Intersection
- Data Collection Location
- School Speed Zone

Data Source	Avg.	85th	Pace
Street Light	30	34	N/A
City Collected	32	36	28-38

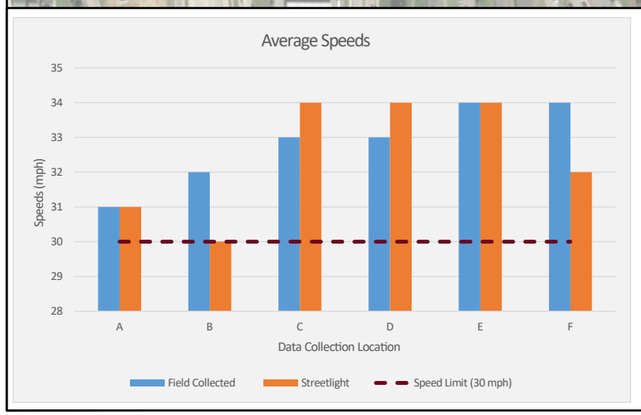
Data Source	Avg.	85th	Pace
Street Light	34	40	N/A
City Collected	33	38	30 - 40

Data Source	Avg.	85th	Pace
Street Light	34	39	N/A
City Collected	33	38	29 - 39

Data Source	Avg.	85th	Pace
Street Light	34	39	N/A
City Collected	34	40	30 - 40

Data Source	Avg.	85th	Pace
Street Light	31	36	N/A
City Collected	31	36	27 - 37

Data Source	Avg.	85th	Pace
Street Light	32	38	N/A
City Collected	34	39	29 - 39



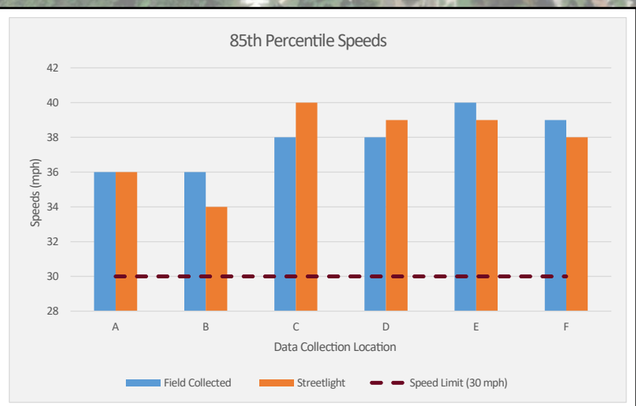


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Figure 5

Speed Analysis Summary

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2.4 ROADWAY SAFETY

Historical crash data from the most recent 10-year period (2015-2024) was obtained from MnDOT's MnCMAT2 (Minnesota Crash Mapping Analysis Tool). Crash narratives were reviewed to verify details including location, crash type, and contributing factors. Evaluation of historical crash patterns may identify safety issues that can be addressed with design changes.

2.4.1 Key Factors in Safety Analysis

Key factors of the roadway safety analysis included crash rate, crash severity, crash type, and critical crash rates.

CRASH RATE

History has proven that crashes are a function of exposure. Roadways with higher traffic volumes experience more crashes than similar roadways with lower traffic volumes. Rather than documenting the number of crashes that occur along a specific roadway, crash rates must be considered. Crash rates normalize similar roadways with varying traffic volumes, which in turn allows engineers to more effectively compare different locations

CRITICAL CRASH RATES

Crash occurrence is somewhat random by nature. Identifying every segment or intersection with a crash rate above state averages is not the most effective way to determine if a location has a statistically significant crash rate. The critical crash rate identifies locations that have a crash rate that is statistically significant in comparison to state averages for similar roadway facilities. The critical crash rate is calculated by adjusting the system-wide average based on the amount of exposure and a statistical constant indicating a level of confidence, with the critical index serving as a ratio of the observed crash rate to the critical crash rate. While the critical index for any safety metric at an intersection may be less than 1.0 – indicating rates are not statistically significant – this does not necessarily indicate that the intersection is safe. Documented crashes do not always capture risk or near misses, and safety improvements should still be considered where feasible.

CRASH SEVERITY

Crash severity quantifies how severe crashes are at a particular location. Identifying injury crash hotspots allows engineers to focus funding and alternatives around locations that have a severe crash history. Additionally, understanding where severe crashes occur can also provide some insight as to what countermeasures may be most cost effective.

CRASH TYPE

Crash types provide additional insight into what may have caused a crash at a particular location. Compiling these crash types by intersection or segment provides the ability to determine common causes of crashes and can help guide the selection of safety countermeasures.

2.4.2 Crash Summary

Intersection crash, severity, and K/A rates are summarized in **Figure 6**. Segment crash, severity, and K/A rates are summarized in **Figure 7**. Rates above the state average for similar facilities are highlighted in **orange** with rates above the critical rate highlighted in **red**. Key conclusions are below:

INTERSECTION CRASH ANALYSIS

- Crash hot spots along Elton Hills Drive NW were mostly concentrated at the signalized intersections with E Frontage Road (50 crashes), West River Parkway NW / 3rd Avenue NW (32 crashes), and N Broadway Avenue (58 crashes).
  - This makes up 140 (67.6% of crashes) of the total 207 intersection crashes.
  - Despite crash totals, only E Frontage Road exceeded state average crash and K/A rates.
- Other intersections with crash rates exceeding state average crash rates for similar facilities include 15th Avenue NW, 9th Avenue NW, and Northbrook Lane NW.
- Two intersections had serious injury (Type A) crashes – E Frontage Road (left-turn) and 9th Avenue NW (angle) – resulting in both exceeding the state average K/A rates.
- No intersections along the corridor exceeded critical crash, severity, or K/A rates.

SEGMENT CRASH ANALYSIS

- There were three segments with crash rates over the critical crash rate, indicating these segments see a statistically significant number of crashes.
  - E Frontage Road to 22nd Street NW
  - 22nd Street NW to 15th Avenue NW
  - Hoover Elementary Access / Norseman Court to Viking Drive NW
- Except for the segments between 13th Avenue NW and 9th Avenue NW all other segments west of West River Parkway NW / 3rd Avenue NW were above the state average. Due to one serious injury (Type A) crash, the segment between 15th Avenue NW and 14th Avenue NW (S Jct) adjacent to Elton Hills School had a K/A rate exceeding the critical K/A rate.
  - The crash involved a passenger vehicle that rear-ended an Elton Hills Elementary school bus. The narrative indicated that the school bus had flashers on and that the passenger of the vehicle was the one injured. No pedestrians or school children were involved.
- The most prevalent segment crash types observed include rear-end (33% of crashes), sideswipe (25% of crashes) and run-off road (25% of crashes)

PEDESTRIAN AND BICYLIST CRASH ANALYSIS

- There were a total of six cyclist or pedestrian related crashes during the analysis period
  - Four of the six crashes involved cyclists (66.7% of crashes)
    - Broadway Avenue N possible injury (Type C) crash in 2015
    - Broadway Avenue N minor injury (Type B) crash in 2018
    - E Frontage Road minor injury (Type B) crash in 2021
    - Broadway Avenue N possible injury (Type C) crash in 2025
  - Two crashes involved non-cyclists, one pedestrian and one skateboarder
    - 9th Avenue NW possible injury (Type C) crash involving a skateboarder in 2022
    - Broadway Avenue N minor injury (Type B) crash involving a pedestrian in 2024

FOUR LANE CRASH ANALYSIS

A common trend with undivided four lane segments is a concentration of rear-end and sideswipe crashes resulting from abrupt stops and lane changes due to left-turns from the left lane and right-turns from the right lane at intersections and driveways along the corridor. Crashes assigned to both intersections and segments along Elton Hills Drive NW were reviewed to identify those that may align with common four lane undivided roadway crash trends, documenting 64 crashes in total.

- There were 56 rear-end crashes identified along the corridor, excluding the E Frontage Road and Broadway Avenue N intersections. Narratives were reviewed to determine contributing factors. In some cases, narratives were not detailed enough to provide insight.
  - 23 rear-end crashes related to turning movements
    - 18 left-turn related rear-ends
    - 4 right-turn related rear-ends
    - 1 U-turn related rear-end
    - 1 rear-end related to a vehicle stopping for pedestrians
  - 10 rear-end crashes involved parked vehicles
    - Due to on street parking being largely underutilized, parked vehicles may be unexpected, especially if motorists are changing lanes to avoid turning vehicles.
- 20 sideswipe crashes were identified along the corridor, excluding the E Frontage Road and Broadway Avenue N intersections. Narratives reviewed to determine contributing factors. In some cases, narratives were not detailed enough to provide insight.
  - 2 sideswipe crashes involved U-turns
  - 2 sideswipe crashes involved parked vehicles

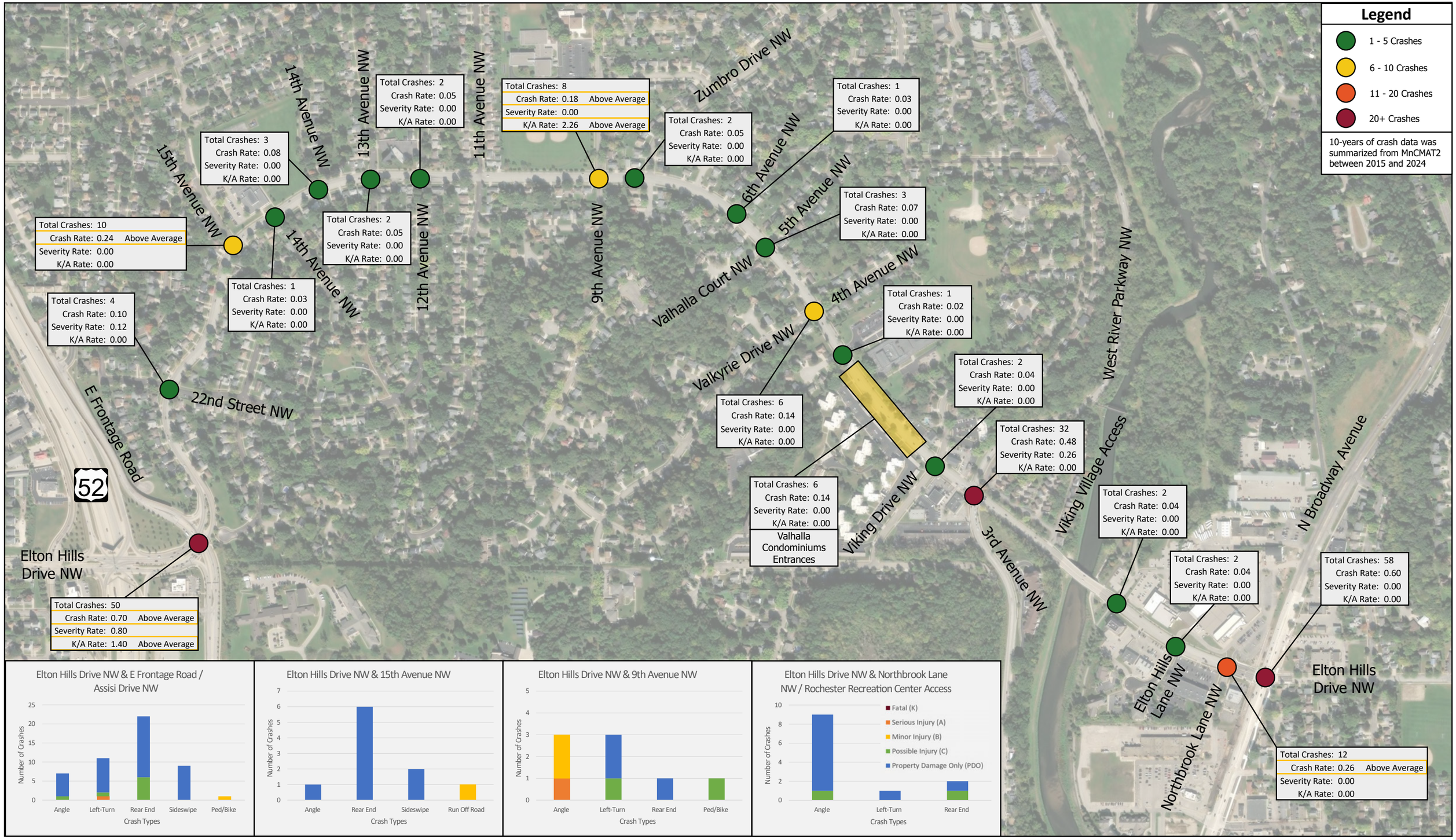

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Figure 6

Intersection Crash Analysis Summary

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Total Crashes: 2
Crash Rate: 0.74 Above Average
K/A Rate: 0.00

Total Crashes: 3
Crash Rate: 1.12 Above Average
K/A Rate: 37.22 Above Critical

Total Crashes: 1
Crash Rate: 0.42 Above Average
K/A Rate: 0.00

Total Crashes: 2
Crash Rate: 0.46 Above Average
K/A Rate: 0.00

Total Crashes: 2
Crash Rate: 0.37
K/A Rate: 0.00

Total Crashes: 1
Crash Rate: 0.50 Above Average
K/A Rate: 0.00

Total Crashes: 1
Crash Rate: 0.37
K/A Rate: 0.00

Total Crashes: 4
Crash Rate: 1.01 Above Average
K/A Rate: 0.00

Total Crashes: 9
Crash Rate: 1.30 Above Critical
K/A Rate: 0.00

Total Crashes: 1
Crash Rate: 0.52 Above Average
K/A Rate: 0.00

Total Crashes: 1
Crash Rate: 0.42 Above Average
K/A Rate: 0.00

Total Crashes: 2
Crash Rate: 1.01 Above Average
K/A Rate: 0.00

Total Crashes: 19
Crash Rate: 2.61 Above Critical
K/A Rate: 0.00

Total Crashes: 10
Crash Rate: 1.48 Above Critical
K/A Rate: 0.00

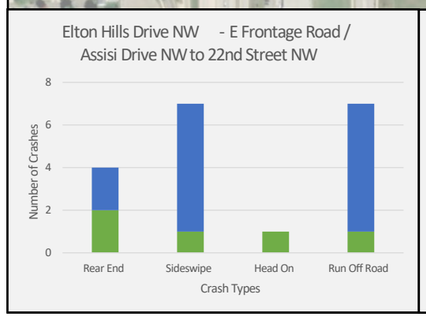
Total Crashes: 1
Crash Rate: 0.24
K/A Rate: 0.00

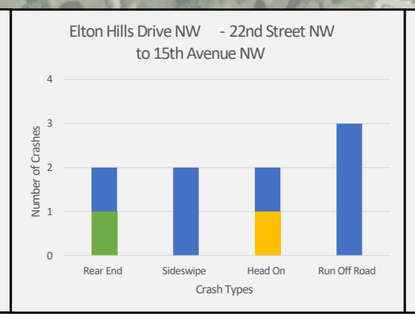
Total Crashes: 1
Crash Rate: 0.30
K/A Rate: 0.00

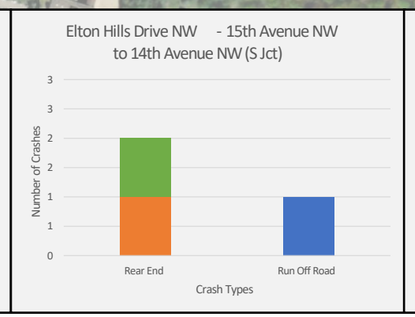
Legend

- 1 - 5 Crashes
- 6 - 10 Crashes
- 11 - 20 Crashes
- 20+ Crashes
- Segment Break

10-years of crash data was summarized from MnCMAT2 between 2015 and 2024







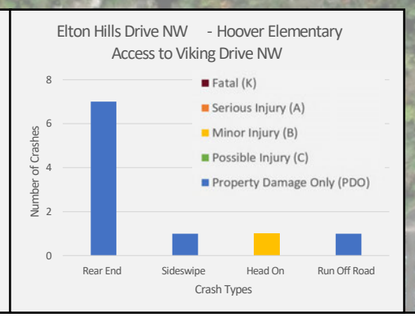


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Figure 7

Segment Crash Analysis Summary

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3. Four to Three Lane Conversion

Based on the characteristics of the corridor and findings of the safety analysis, the most effective safety improvement for this corridor would be conversion to a 3-lane roadway. 3-lane roadways have been successfully implemented for decades, but recent years have seen an increase in popularity and an upsurge in interest from agencies throughout Minnesota and nationally to convert existing 4-lane roadways to 3-lanes. This is due to the variety of safety and mobility benefits that 3-lane roadways have, coupled with the opportunity of reallocating the extra space for other uses or travel modes such as parking, pedestrian, bicycle lanes, transit use, turn lanes, medians, or pedestrian refuge islands. In addition to the prevalent rate of sideswipe, rear-end, run off the road crashes that are associated with a 4-lane undivided roadway, pedestrian and cyclist mobility and safety are also primary considerations as they are subject to longer crossing distances and more conflict points.

3.1 BENEFITS OF A THREE LANE CONVERSION

There are several benefits of converting a 4-lane roadway to a 3-lane roadway including safety, operational, multimodal, and quality of life. Key benefits are discussed in **Table 1**.

Table 1. Key Benefits of 4 to 3-Lane Conversions

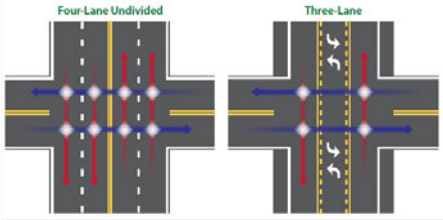
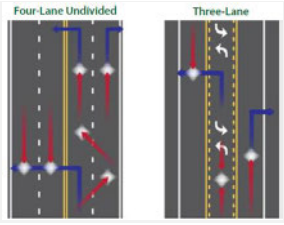
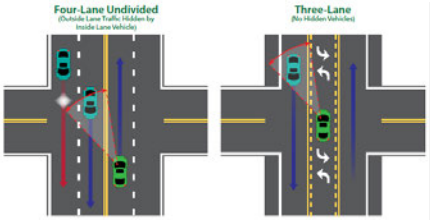
Metric	Key Benefit	Description	
Safety	Reduce Conflicts		The number of conflict points at an intersection is halved, from 8 conflict points with a 4-lane to 4 conflict points with a 3-lane when the cross street is a two-lane roadway
	Reduce Vehicle Interactions and Crash Severity		The number of vehicle conflict points at mid-block locations decreases from 6 to 3 when comparing 4-lane roadways to 3-lane. Reduces weaving and lane change manuevers
	Improve Left-turn Sight Distance		Provides improved left turn movement lateral offset and reduces the potential for on-coming vehicle to be blocked from view.

Table 1. Key Benefits of 4 to 3-Lane Conversions, Continued

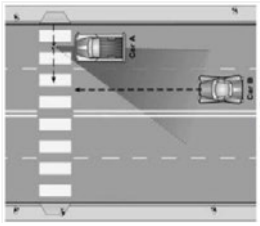
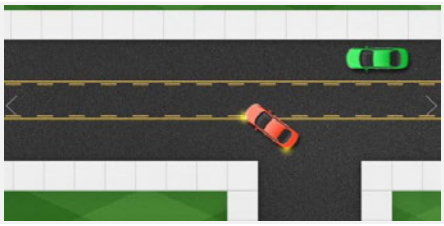
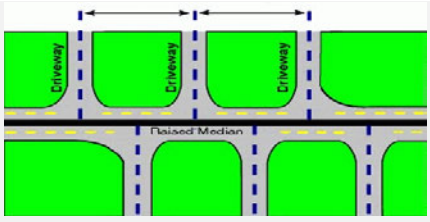
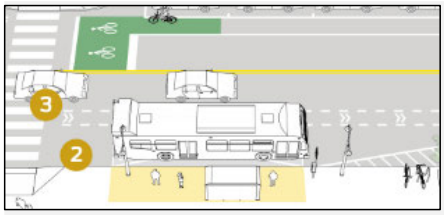
Metric	Key Benefit	Description
Safety	Eliminate Multiple-threat Crashes	  Eliminates the double lane threat when crossing. When crossing on a roadway with more than one through lane, a stopped vehicle can block the view of a pedestrian from vehicles in the other lane
	Reduce Vehicle Speed and Speed Differential	 High motorist speeds result in greater potential for injury related crashes. Moving all through traffic to one lane, motorists are must travel the speed of the slowest vehicle which has been shown to reduce overall speeds. More consistent traffic flow
Mobility	Separating Left Turning Vehicles	 Improved safety at intersections (removes left turning motorist from through traffic) but also can improve delay and capacity at intersections by yielding cars not impeding the through lane.
	Easier Gap-taking from Side-street	 Side street traffic can more comfortably enter the mainline because there are fewer lanes to cross. This can reduce delay overall. However, the number of traffic gaps may be reduced and peak hour traffic may experience slight increase in wait time.
	Access Density	 Corridors with high density of street access, residential or commercial driveways and have a high number of turning movements generally have similar capacity between 4-lane and 3-lane. Separating the turn movements improves efficiency.

Table 1. Key Benefits of 4 to 3-Lane Conversions, Continued

Metric	Key Benefit	Description	
Multimodal	Easier Pedestrian Crossing and Refuge Island Opportunities		Improves comfort, ease of crossing, reduced exposure to oncoming traffic and visibility. Pedestrians only have to be concerned with one direction, and one lane of traffic at a time.
	Bicycle Facilities		Reallocated space provides opportunties to consider a bicycle facility, address system network gaps and connections or dedicated street space.
	Transit		Reallocated space provides opportunity to incorporate bus pull outs at transit stops.
Quality of Life	Comfort and Environment		Added to direct safety benefits, improves the quality of life inthe corridor through a combination of bicycle lanes, pedestrian improvements,and reduced speed differential, which can improve the comfort level for all users

Although there are many benefits of a 3-lane conversion, there are several potential impacts (usually corridor specific) or design considerations that should be evaluated. These impacts include:

- Appropriate reallocation of space. Providing too narrow or too wide of travel or parking lanes can have unintended lane use or lesser benefit to addressing motor vehicle speeds.
- The two-way center left turn lane design at overlapping high volume left-turn accesses may require special design to avoid safety concerns. This typically has not been found to be problematic with residential driveways.
- Concerns with pedestrians using the center turn lane (without a refuge island) as a refuge space when crossing the road.
- At certain traffic volume levels mobility concerns may arise such as;
  - Reduced capacity
  - An increase in travel time along the corridor
  - Increased delay for cross street vehicles at a through-stop controlled intersection.
  - Longer vehicle queues at traffic signals. Delay may be acceptable, however the increased queues experienced may make the corridor feel busier than before.

3.2 FACTORS TO CONSIDER

While a four-to-three lane conversion can provide a variety of benefits, it is important to make sure the roadway is a good candidate prior to beginning the conversion. **Table 2** highlights key factors that require consideration when evaluating a corridor for a four-to-three lane conversion. A comprehensive review of the Elton Hills Drive NW corridor with respect to these considerations is depicted in **Table 5**.

Table 2. Key Considerations for 4 to 3-Lane Conversions

Key Factors	Description
Crash Patterns	Historical crash data should be analyzed to determine if crash patterns are of the type that can be addressed by a conversion. Conversions from 4-lane to 3-lane have been proven to lower rear end, sideswipe, head-on, and pedestrian crashes.
Parking	It is important to understand if parking is needed and can be provided with the new configuration. In some cases, continuous on-street parking can be provided as a result of a conversion. Trade off with other street uses (e.g., bicycle lanes or pedestrian space may require consideration)
Roadway Function	Roadways serve two major functions: access and mobility. Interstates and principal arterials provide the highest degree of mobility but are limited in providing land access. Local streets provide a high degree of land access with less mobility. It is important to understand if the intended roadway function can be maintained with a 3-lane cross section.
Average Daily Traffic (ADT)	Roadways with high Average Daily Traffic (ADT) may not be appropriate for a 3-lane configuration. Studies have shown that a 3-lane cross section can operate with acceptable levels of service with ADTs up to 24,000. FHWA (Federal Highway Administration), advises that 3-lane roadways with ADTs above 20,000 are reaching capacity and may experience poor levels of service.
Peak Hour Traffic Volumes	Roadways with peak hour volumes in one direction above 875 are likely to see a reduction in level of service on a 3-lane roadway. Volumes at or below 750 vehicles in one direction are good candidates and can typically be accommodated with minimal traffic flow impacts.
Traffic Volume Directional Distribution	The directionality of volumes must also be considered. If the directional distribution is not 50/50, an analysis should be performed in the direction of heavier traffic flow to determine any mobility or traffic capacity concerns.
Access Points and Turning Traffic Patterns	Roadways with a high number of left turns are generally good candidates for conversion. The spacing of access driveways and turning volumes should be considered. A TWCLTL is typically a good solution for higher access density corridors if the overlapping left turn volumes are appropriate.
Transit and Freight	Generally, these types of vehicles use the outer lane for stopping, so it may be necessary to provide a wide shoulder, or designated spacing shadowing on street parking; or accommodated in bike lane design to accommodate their needs. Maintaining the overall mobility of the corridor is important to transit service and reliability.
Roadway Width	Many 4-lane to 3-lane conversion projects can occur within the existing right-of-way and may only require pavement marking changes. This is low cost. The street width will inform the 3-lane conversion options, for example, what amount of parking or bicycle space or travel lane space may be accommodated.

3.3 MOBILITY

Preserving the quality of traffic flow and mobility along Elton Hills Drive NW is an important priority for the City of Rochester. An assessment of existing quality of mobility (traffic operations) for the corridor and intersections was completed. The quality of traffic flow and mobility is measured using Level of Service (LOS) methodology. The traffic operations analysis that was conducted focuses on the a.m. and p.m. peak hours for the existing 4-lane configuration. An analysis of a potential 3-lane configuration was also completed to provide a comparison.

3.3.1 Analysis Tool

The traffic operation analysis was completed using SimTraffic. SimTraffic is a traffic micro-simulation tool and was used to model and evaluate the operational performance of the signalized and unsignalized intersections along Elton Hills Drive NW. Due to the interaction of closely spaced intersections along the corridor, the traffic mobility of the corridor was evaluated using micro-simulation traffic modeling. The primary variables influencing capacity along the corridor include traffic volume, traffic signal timing at signalized intersections, pedestrian / cyclist volumes, and lane configuration. Individual residential driveways were not included in the analysis, since the level of traffic activity at these locations will have a negligible effect on the roadway capacity.

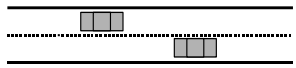
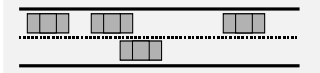
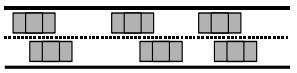
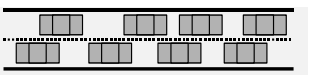
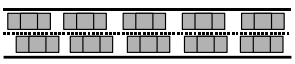
3.3.2 Measures of Effectiveness

The following measures of effectiveness (MOEs) were selected to represent the traffic operation performance of Elton Hills Drive NW:

- Intersection delay and individual movement delay
- Corridor passenger vehicle travel time and average operating speed
- Intersection and individual movement Level of Services (LOS)
- Planning level capacity assessment

These MOEs comprehensively represent the traffic operation performance of the corridor as well as the individual intersections and uncover areas of focus. The term level of service (LOS), as taken from the *Highway Capacity Manual (HCM)*[1], quantifies how well an intersection or segment of roadway processes the traffic volumes traveling through it. It is defined as the delay to vehicles caused by the traffic control at the intersection or average operating speed along an urban arterial. The results of this MOE are typically presented in the form of a letter grade (A-F) that provides a qualitative indication of the operational efficiency or effectiveness. The general relationship between intersection delay, average operating speed and LOS are presented in **Table 3**.

Table 3. Level Of Service (LOS) Definitions

LOS	Description		Delay per Vehicle (seconds)		Urban Street LOS
			Signalized Intersection	Unsignalized Intersection	Average Speed (mph)
					Base Speed (30 mph)
A		**Free Flow.** Low volumes and no delays.	0 - 10	0 - 10	>26
B		**Stable Flow.** Speeds restricted by travel conditions, minor delays.	>10 - 20	>10 - 15	>20
C		**Stable Flow.** Speeds and maneuverability closely controlled due to higher volumes.	>20 - 35	>15 - 25	>15
D		**Stable Flow.** Speeds considerably affected by change in operating conditions. High density traffic restricts maneuverability, volume near capacity.	>35 - 55	>25 - 35	>12
E		**Unstable Flow.** Low speeds, considerable delay, volume at or slightly over capacity.	>55 - 80	>35 - 50	>9
F		**Forced Flow.** Very low speeds, volumes exceed capacity, long delays with stop and go traffic.	> 80 or v/c > 1.0	> 50 or v/c > 1.0	0 - 9

Source: Highway Capacity Manual, 7th Edition, Transportation Research Board, Exhibits 19-8, 20-2, 21-8, 22-8.

A planning level assessment was completed to compare the daily traffic volumes (ADT) against estimated capacity thresholds for various facility types. A daily volume capacity of a facility accounts for peak hour percentage, percentage of left turning traffic, and industry standard lane type capacities.

[1] Highway Capacity Manual, 7th Edition, Transportation Research Board.

3.3.3 Existing Year 2025 Traffic Operations Analysis Summary

The intersection and corridor MOE summaries for existing year 2025 traffic volumes are provided in **Figure 8**. Detailed traffic operations analysis results can be found in **Appendix B**. Key findings when comparing the 4-lane and 3-lane analyses are summarized below:

- All project intersections along Elton Hills Drive NW between E Frontage Road and Broadway Avenue N operate at LOS C or better during both the AM and PM peak hour traffic volumes. Additionally, all individual movements operate at LOS E or better during both the AM and PM peak hours excluding the eastbound left-turn at E Frontage Road.
- Operations under a 3-lane alternative are expected to remain consistent with existing traffic operations. Under peak hour traffic volumes, the largest change in operations was observed at 9th Avenue NW where the southbound through movement during the AM peak increased to from LOS A to LOS F. However, southbound through movements are minimal with only a single vehicle modeled under this scenario. A better comparison would be the southbound left-turn which worsened from LOS C (17.5s of delay) to LOS D (28.9s of delay).
- Overall, a motorist traveling through the corridor would see a minor increase in travel time between the existing 4-lane and 3-lane configurations. **Table 4** summarizes the change in travel time with the a.m. peak seeing an increase of 10 to 15 seconds and the p.m. peak seeing an increase of 15 to 20 seconds if traversing the entire corridor.
  - Outside of the peak hours, increases in travel time would be much lower; however, if there is a desire to reduce vehicle speeds an increase in travel time will be necessary.
- Corridor operating speed is expected to see a decrease between 5% and 8%.
- Signalized intersection timing parameters were not modified between the two configuration cases; however, signal timing improvements at these locations would provide additional benefits and improve both overall and worst individual movement operations.

Table 4. Travel Time Comparison

Travel Time (Sec)		AM		PM		Travel Time Comparison*	
		Existing	3-lane	Existing	3-lane	AM	PM
Eastbound	Segment A & B	205.2	215.2	206.1	217.7	10.0	11.6
	Segment C	76.3	74.5	83.3	90.9	-1.8	7.6
Westbound	Segment A & B	204.0	214.3	204.9	218.8	10.3	13.9
	Segment C	64.7	68.7	66.9	69.8	4.0	2.9

*Positive value indicates an increase in travel time in seconds

Legend

- Signalized Intersection
- Through / Stop Intersection
- Analysis Segment
- X / X — Intersection / Worst Movement Level of Service (LOS)

Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / B	A / B
3-Lane	A / C	A / C

Scenario	AM Peak	PM Peak
Existing	A / B	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / B	A / B
3-Lane	A / B	A / C

Scenario	AM Peak	PM Peak
Existing	A / C	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / F	A / C

Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / C	A / A

Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / B	A / B
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / A	A / A

Scenario	AM Peak	PM Peak
Existing	A / B	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / B	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
Existing	A / B	A / B
3-Lane	A / B	A / B

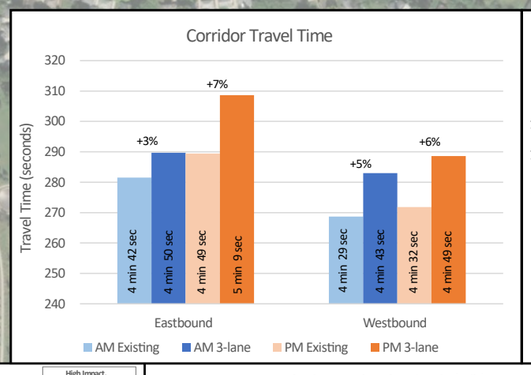
Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / B	A / B

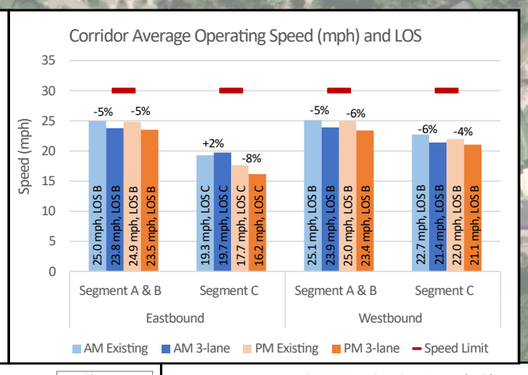
Scenario	AM Peak	PM Peak
Existing	B / C	B / C
3-Lane	B / C	B / C

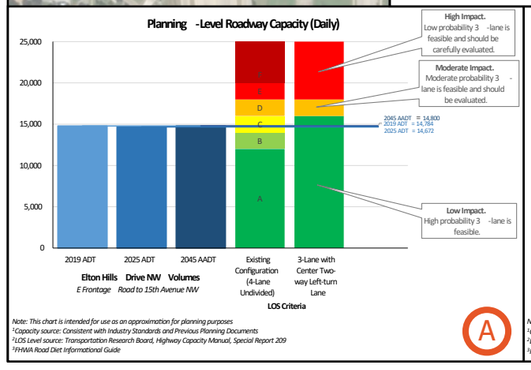
Scenario	AM Peak	PM Peak
Existing	A / A	A / A
3-Lane	A / B	A / B

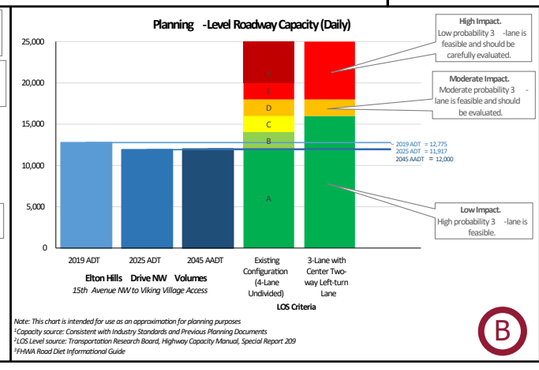
Scenario	AM Peak	PM Peak
Existing	A / B	A / B
3-Lane	A / C	A / B

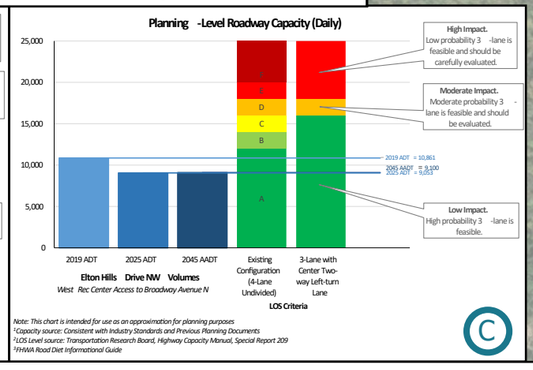
Scenario	AM Peak	PM Peak
Existing	C / D	C / F
3-Lane	C / D	C / D











Elton Hills Traffic and Safety Study

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Figure 8

Existing Year 2025 Intersection and Corridor Mobility Performance Analysis Summary

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3.3.4 Forecast Year 2050 Traffic Operations Analysis Summary

The intersection and corridor MOE summaries for forecast year 2050 traffic volumes are provided in **Figure 9**. Detailed traffic operations analysis results can be found in **Appendix B**. Key findings when comparing the 4-lane and 3-lane analyses are summarized below:

- All project intersections along Elton Hills Drive NW between E Frontage Road and Broadway Avenue N operate at LOS C or better during both the AM and PM peak hour traffic volumes. Additionally, all individual movements operate at LOS E or better during both the AM and PM peak hours excluding the eastbound left-turn at E Frontage Road.
- Operations under a 3-lane alternative are expected to remain consistent with traffic operations under the existing 4-lane cross section. Under peak hour traffic volumes, the largest change in operations was observed at 9th Avenue NW during the AM peak where the southbound through and left-turn movement increased from LOS A to LOS D and during the PM peak where the southbound through movement increased from LOS C to LOS E. Similar to the existing conditions traffic operations analysis, the southbound through movement analyzed in both scenarios was very low volume (two vehicles) and a more fair comparison of operational impacts to the cross street would be the southbound left-turning movement.
- Signalized intersection timing parameters were not modified between the two configuration cases; however, signal timing improvements at these locations would provide additional benefits and improve both overall and individual movement operations.

Legend

- Signalized Intersection
- Through / Stop Intersection
- X / X — Intersection / Worst Movement Level of Service (LOS)

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / A
3-Lane	A / B	A / C

14th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / A
3-Lane	A / B	A / A

15th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / B
3-Lane	A / C	A / B

Scenario	AM Peak	PM Peak
4-Lane	A / C	A / B
3-Lane	A / C	A / C

22nd Street NW

52

E Frontage Road

Scenario	AM Peak	PM Peak
4-Lane	C / E	C / F
3-Lane	C / D	C / D

Elton Hills Drive NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / B
3-Lane	A / B	A / C

13th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / C
3-Lane	A / B	A / B

12th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / B
3-Lane	A / C	A / C

11th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / C	A / B
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
4-Lane	A / C	A / C
3-Lane	A / D	A / E

9th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / A
3-Lane	A / B	A / B

Zumbro Drive NW

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / A
3-Lane	A / A	A / B

6th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / A
3-Lane	A / A	A / A

Valhalla Court NW

5th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / B
3-Lane	A / B	A / B

4th Avenue NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / B
3-Lane	A / B	A / A

Valkyrie Drive NW

Scenario	AM Peak	PM Peak
4-Lane	B / C	B / C
3-Lane	B / C	C / C

Viking Drive NW

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / C
3-Lane	A / C	A / C

3rd Avenue NW

Viking Village Access

West River Parkway NW

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / A
3-Lane	A / A	A / B

N Broadway Avenue

Scenario	AM Peak	PM Peak
4-Lane	A / C	A / B
3-Lane	A / C	A / B

Scenario	AM Peak	PM Peak
4-Lane	A / A	A / A
3-Lane	A / B	A / B

Scenario	AM Peak	PM Peak
4-Lane	A / B	A / A
3-Lane	A / A	A / B

Elton Hills Lane NW

Northbrook Lane NW

Elton Hills Drive NW

Elton Hills Traffic and Safety Study

Figure 9

Forecast Year 2050 Intersection and Corridor Mobility Performance Analysis Summary

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3.4 THREE LANE CONVERSION FEASIBILITY ASSESSMENT

Table 5 summarizes the feasibility assessment of converting Elton Hills Drive NW to a 3-lane configuration. The assessment highlights the key findings and metrics discussed in the previous sections of this document.

Table 5. 3-Lane Conversion Feasibility Evaluation

Key Factors	Key Findings	Favorability	Conclusion
Crash Patterns	1. 140 crashes (52% of total) occurred at 3 signalized intersections, including either end and W River Parkway NW / 3rd Avenue NW. 2. 109 crashes occurred west of W River Parkway NW / 3rd Avenue NW (48% - Segment 1) and 18 crashes occurred to the east (7% - Segment 2). 3. Three segments exceeded critical crash rates: - E Frontage Road to 22nd Avenue NW - 22nd Avenue NW to 15th Avenue NW - Norseman Court NW to Viking Drive NW 4. 6 crashes involved bicyclists or pedestrians. 5. 74% of crashes were sideswipe, rear-end, run off the road, or left-turn crashes. 6. Detailed crash analysis indicated that 56 rear-end crashes and 20 sideswipe occured along the corridor excluding crashes that occurred at signalized intersections at either end.	1. The 3-lane conversion is expected to reduce sideswipe, rear-end, run off the road, left-turn, and head on crashes that consist >70% of all historical crashes. 2. The conversion is expected to improve pedestrian crossing safety, and potentially improve comfort of cyclists if bicycle facilities are implemented. 3. The conversion is expected to reduce crash severity due to reduced vehicle speeds.	**Feasible** **Benefit Expected**
Parking	1. On-street parking can be accommodated within the existing roadway width under a 3-lane cross section depending on the alternative. 2. On-street parking is underutilized and could be reallocated to better serve all users.	1. Most cross-section alternatives accommodate on-street parking on at least one side of Elton Hills Drive NW. 2. Some alternatives trade off one or both side(s) of on-street parking for buffered bike lanes and/or a wider center two-way left-turn lane.	**Feasible** **Minimal to No Impact (depends on alternative)**
Roadway Function / Mobility	1. Unsignalized intersections operate at LOS A. 2. All signalized intersections operate at LOS C or better during both peak hours. 3. Side-street delay may increase 0 to 12s. 4. Peak hour travel time change is expected to be minimal (10-15s a.m. and 15-20s p.m.). 5. Existing and historical ADT is expected to be LOS C or better with a 3-lane cross-section.	1. Roadway function is maintained with minimal traffic mobility impact from the 3-lane conversion. 2. The slight travel time and side-street delay increases are not expected to negatively impact roadway mobility.	**Feasible** **Minimal Impact**
Average Daily Traffic (ADT)	1. The historical AADT is around 11,000. 2. ROCOG's Traffic Demand Model estimates that over the next 25 years, traffic is expected to grow less than 1% (0.037% annually).	The AADT (10,600-11,600) falls well below the capacity threshold of 16,000.	**Feasible** **Minimal Impact**

Table 5. 3-Lane Conversion Feasibility Evaluation, Continued

Key Factors	Key Findings	Favorability	Conclusion
Peak Hour Traffic Volumes	Observed peak hour traffic volumes are well below the 875 threshold that the FHWA states would make a 3-lane cross section a less feasible cross section alternative	Based on ROCOG's provided traffic growth rate, the expected peak hour traffic volumes in the year 2050 are planned to be 550 and 650 during the AM and PM peak hours, respectively; indicating that expected traffic volumes along Elton Hills Drive NW are in line with FHWA recommendations	**Feasible** **Minimal Impact**
Directional Distribution	Roughly 50/50 along Elton Hills Drive NW.	There is not a peak-hour traffic volume single lane capacity concern given the distribution.	**Feasible** **No Impact**
Motor Vehicle Speeds	1. Average speeds from 30 to 34 mph. 2. 85th percentile speeds from 34 to 39 mph.	An overall speed reduction is expected. Local and national 3-lane conversions have resulted in vehicle speed reductions of 5 mph or more.	**Feasible** **Benefit Expected**
Access Points & Turning Patterns	1. 16 unsignalized public side streets, some of which are closely spaced (as little as 300 feet). 2. Peak hour left-turn volumes range from 0-155.	1. Close spacing of side streets indicates that it's a good candidate for a center two-way left-turn lane. 2. Side-streets with high left-turn volumes (e.g. 9th Avenue NW) may become more efficient from the 3-lane conversion due to the exclusive left-turn lane.	**Feasible** **Benefit Expected**
Transit & Freight	1. Prohibits trucks over 10,000 pounds. 2. There are 2 transit routes along the corridor. A 3-lane conversion will maintain curb-side bus stops and allow buses to stop out of travel lanes.	1. Not expected to negatively affect trucks movements. 2. The conversion will not impact transit operation. Design configurations will allow buses to stop out of travel lanes.	**Feasible** **No Impact**
Roadway Width	1. Existing roadway width is 60 feet curb-to-curb. 2. All 3-lane cross-section alternatives could fit within the roadway and serve existing and future corridor users.	1. The existing roadway width is sufficient to accommodate all existing features (parking, turn lanes, etc.) under a 3-lane cross-section. 2. Some alternatives may include minimum lane width per State Aid standards, with trade-offs between parking and cyclist facilities a common decision point.	**Feasible** **Street Space Trade Off Required (depends on alternative)**

4. Corridor Concept Alternatives

To provide corridor or intersection safety improvements along Elton Hills Drive NW concept alternatives under both 3-lane and the existing 4-lane configuration were evaluated. There are several lane configuration alternatives that can be considered. Considerations include on street parking, cyclist facility type, lane use, and travel lane widths. In addition to these considerations, strategies and treatments to improve intersection, pedestrian, and cyclist safety are highlighted.

4.1 TYPICAL SECTIONS 3-LANE FACILITY

Table 6 highlights potential 3-lane roadway configuration alternatives within the existing 60-foot roadway width, and key considerations or trade-offs. Providing a cyclist facility along Elton Hills Drive NW is consistent with the Rochester Public Schools' Safe Routes to Schools program, Non-Motorized Transportation Analysis section of the 2040 Comprehensive Plan (P2S), and the City's Active Transportation Plan. Elton Hills Drive NW has also been identified as a top 10 All Ages and Abilities (AAA) network near term gap. However, the conversion of Elton Hills Drive NW to a 3-lane configuration does not necessitate a cyclist facility. In other words, the decision to convert the corridor to a 3-lane configuration should not be associated with provision of a cyclist facility. Alternative pavement marking concepts exist that would provide suitable corridor mobility and safety improvements.

Although many different configurations could be considered, a two-way cycle track would work with the City's existing snow clearing equipment (wide enough to leverage existing plows), which is important to facilitate year-round use of the facility. The larger buffer and long-term plan for physical separation are also important for most users to feel comfortable and safe using the bicycle facility.

4.2 TYPICAL SECTIONS 4-LANE FACILITY

Table 7 highlights four potential undivided 4-lane roadway configuration alternatives within the existing 60-foot roadway width, and key considerations or trade-offs.

4.3 CORRIDOR SAFETY IMPROVEMENT STRATEGIES

To improve intersection safety for motorists, or pedestrian / cyclist crossing safety, comfort, and quality of experience, the strategies could range from establishing connections and improving accessibility, improving visibility, reducing exposure, enhancing awareness or providing protection. The implementation of such strategies is dependent upon intersection characteristics; but are typically considered in the hierarchy of least restrictive measures first to the most restrictive measures only when warranted. Although there are many treatments that fit into each strategy category, **Table 8** illustrates and discusses a few treatments that might be beneficial to Elton Hills Drive NW at selected locations.

Table 6. 3-Lane Typical Section Alternatives

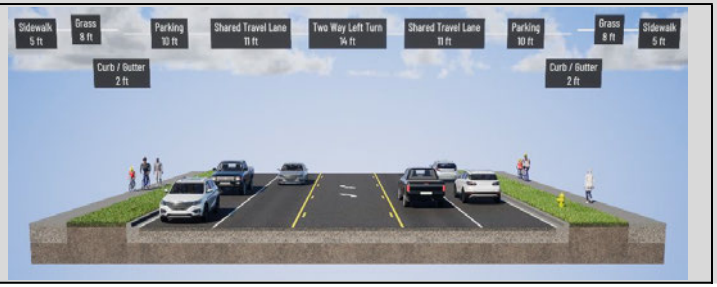
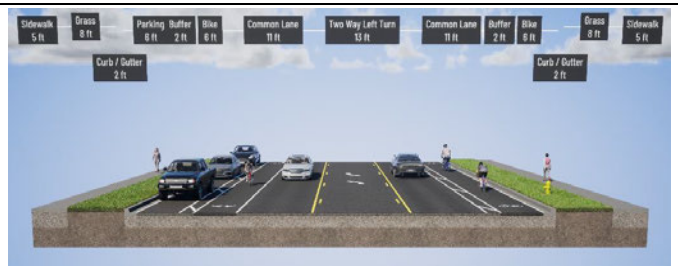
Segment 1: E Frontage Road to W River Parkway				
Alt 1: Cyclist Facilities & Parking on Both Sides				
	**Key Features:** - 3-lane w/ TWLTL - Parking both sides - On-street bicyclist facilities **Takeaway:** - Reduces speeds and common 4-lane crash types - Limited Bicyclist safety	**Parking Impacts:** No reduction in parking, but narrower parking accomodations	**Cyclist Facilities:** Facilities for cyclists are provided on-street, however, buffer lanes are not included which may be uncomfortable for cyclists	**Cost and Maintenance:** Low cost (striping), maintenance is similar to existing, and is compatible with a couple other alternatives
Alt 2: No Cyclist Facitlities & Parking on Both Sides				
	**Key Features:** - 3-lane w/ TWLTL - Parking both sides **Takeaway:** - May not reduce speeds due to wider lane widths	**Parking Impacts:** No reduction in parking, and wider parking accomodations	**Cyclist Facilities:** No cyclist facilities are provided, either on-street or off-street, and cyclists using vehicle lanes may slow down traffic	**Cost and Maintenance:** Low cost (striping), maintenance is similar to existing, and is compatible with a couple other alternatives
Alt 3A: Cyclist Facilities & Parking on One Side (outside)				
	**Key Features:** - 3-lane w/ TWLTL - One sided parking (outside) - On-street bicyclist facilities - Striped buffers **Takeaway:** - Limited Bicyclist safety	**Parking Impacts:** Overall parking cut in half, but no changes to parking widths	**Cyclist Facilities:** Facilities for cyclists are provided on-street, including minimal 2' buffers -- narrower lanes could be implemented to add an additional buffer	**Cost and Maintenance:** Low cost (striping), maintenance is slightly easier than existing, but is only compatible with one non-median alternative

Table 6. 3-Lane Typical Section Alternatives, Continued

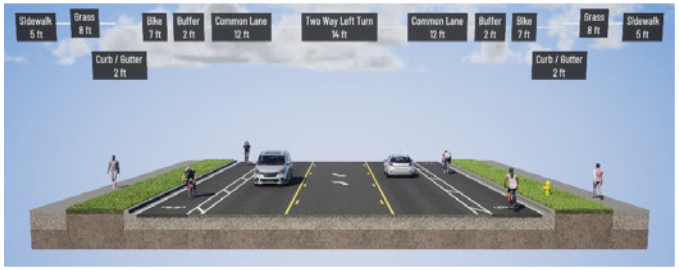
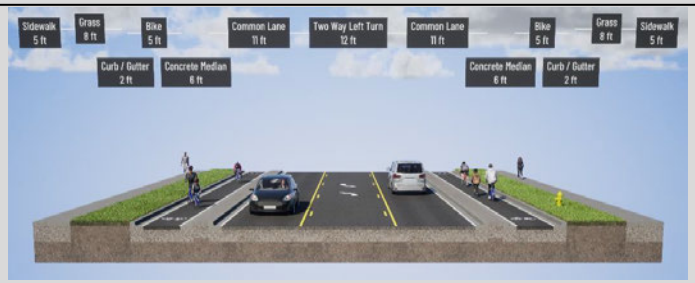
Segment 1: E Frontage Road to W River Parkway				
Alt 3B: Cyclist Facilities & Parking on One Side (inside)				
	**Key Features:** - 3-lane w/ TWLTL - One sided parking (inside) - On-street bicyclist facilities - Striped buffers **Takeaway:** - Challenging parking and maintenance accomodations	**Parking Impacts:** Overall parking cut in half, and narrower parking accomodations	**Cyclist Facilities:** Facilities for cyclists are provided on-street, including minimal 2' buffers -- parked cars may provide extra risk (doors) but extra protection (added buffer space), cars may park in the bike lane	**Cost and Maintenance:** Low cost (striping), maintenance is more challening if parked cars are present, and is only compatible with one non-median alternative
Alt 4A: Buffered Cyclist Facilities (striping) & No Parking				
	**Key Features:** - 3-lane w/ TWLTL - On-street bicyclist facilities - Striped buffers **Takeaway:** - No parking	**Parking Impacts:** Parking is eliminated	**Cyclist Facilities:** Facilities for cyclist are provided on-street, including minimal 2' buffers -- no parking eliminates door risk	**Cost and Maintenance:** Low cost (striping), maintenance is easier than existing (no parked cars), and is compatible with several alternatives
Alt 4B: Buffered Cyclist Facilities (median) & No Parking				
	**Key Features:** - 3-lane w/ TWLTL - On-street bicyclist facilities - Raised medians **Takeaway:** - No parking - Maintenance challenges	**Parking Impacts:** Parking is eliminated	**Cyclist Facilities:** Minimum width cyclist facilities are provided behind a raised median -- added protection, but narrower facilities	**Cost and Maintenance:** Highest cost (two medians), maintenance is challenging (widths < 14'), and limited flexibility once constructed

Table 6. 3-Lane Typical Section Alternatives, Continued

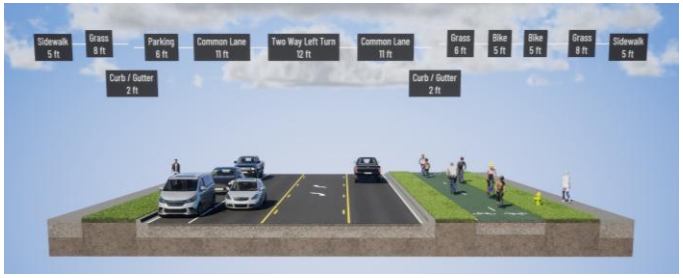
Segment 1: E Frontage Road to W River Parkway				
Alt 5: Two-Way Cyclist Facilities & Parking on Both Sides				
	**Key Features:** - 3-lane w/ TWLTL - Parking both sides - Two-way bicyclist facility - Striped buffer **Takeaway:** - Challenging parking accomodations	**Parking Impacts:** No reduction in parking, but narrower parking accomodations	**Cyclist Facilities:** A two-way cyclist facility is provided, including a minimal 2' buffer -- minimum width bike lanes may be encroached upon by adjacent parked cars (doors)	**Cost and Maintenance:** Low cost (striping), maintenance is slightly more complex compared to existing, and is only compatible with one other alternative
Alt 6A: Two-Way Cyclist Facilities (striping) & Parking on One Side				
	**Key Features:** - 3-lane w/ TWLTL - One sided parking - Two-way bicyclist facility - Wide striped buffer **Takeaway:** - Flexibility to add median in the future if desired	**Parking Impacts:** Overall parking cut in half, but no changes to parking widths	**Cyclist Facilities:** A two-way cyclist facility is provided, including a larger 6' buffer -- minimum width bike lanes are no longer encroached upon	**Cost and Maintenance:** Medium cost (striping and delineators), maintenance is slightly more complex compared to existing, and is only compatible with one other alternative
Alt 6B: Two-Way Cyclist Facilities (median) & Parking on One Side				
	**Key Features:** - 3-lane w/ TWLTL - One sided parking - Two-way bicyclist facility - Raised median **Takeaway:** - Addresses all major concerns, limited flexibility	**Parking Impacts:** Overall parking cut in half, but no changes to parking widths	**Cyclist Facilities:** A two-way cyclist facility is provided behind a raised median -- minimum width bike lanes are no longer encroached upon	**Cost and Maintenance:** High cost (one medians), maintenance is slightly more complex compared to existing (width = 14'), and limited flexibility once constructed

Table 7. 4-Lane Typical Section Alternatives

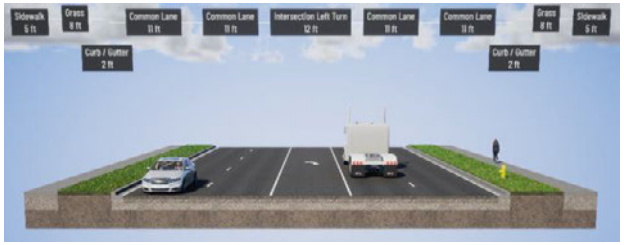
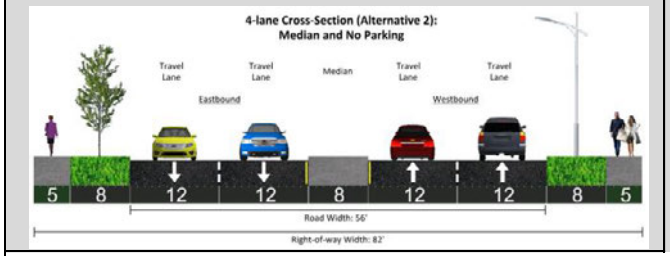
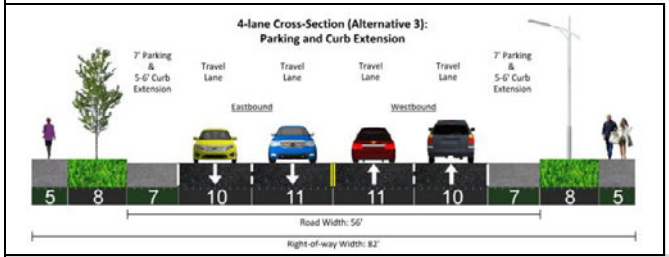
Alt 1: Left-Turn Lane at Intersection				
	**Key Features:** - 4-lane w/ left-turn lanes **Takeaway:** - No parking and no cyclist facilities, would also reduce center left-turn lanes to a minimum width	**Parking Impacts:** Parking is eliminated	**Cyclist Facilities:** No cyclist facilities are provided, either on-street or off-street, and cyclists would be using vehicle lanes (uncomfortable experience) may slow down traffic or cause abrupt lane changes	**'Cost and Maintenance:** Low cost (striping), maintenance is easier than existing (no parked cars), and is compatible with a few 3-lane alternatives
Alt 2: Refuge Median at Intersections				
	**Key Features:** - 4-lane w/ median refuges **Takeaway:** - No parking and no cyclist facilities, would also reduce center left-turn lanes to a minimum width - Shorter crossing distances	**Parking Impacts:** Parking is eliminated	**Cyclist Facilities:** No cyclist facilities are provided, either on-street or off-street, and cyclists would be using vehicle lanes (uncomfortable experience) may slow down traffic or cause abrupt lane changes	**Cost and Maintenance:** High cost (one median), maintenance is slightly more complex compared to existing, and limited flexibility once constructed
Alt 3: Curb Extension at Intersections				
	**Key Features:** - 4-lane cross section - Parking both sides - Curb extensions **Takeaway:** - Would limit future continuous bicyclist facilities - Shorter crossing distances	**Parking Impacts:** Some reduction in parking (curb extensions), but no decrease in parking widths	**Cyclist Facilities:** No cyclist facilities are provided, either on-street or off-street, and cyclists would be using vehicle lanes (uncomfortable experience) may slow down traffic or cause abrupt lane changes	**'Cost and Maintenance:** High cost (curb extensions), maintenance is slightly more complex compared to existing, and limited flexibility once constructed
Alt 4: On Street cyclist Facilities				
	**Key Features:** - 4-lane cross section - On-street bike lanes **Takeaway:** - No parking	**Parking Impacts:** Parking is eliminated	**Cyclist Facilities:** Cyclist facilities are provided on-street, however, buffer lanes are not included which may be uncomfortable for cyclists	**'Cost and Maintenance:** Low cost (striping), maintenance is easier than existing (no parked cars), and is compatible with a few 3-lane alternatives

Table 8. Pedestrian and Intersection Safety Toolbox

4-to-3 Lanes Conversion

Description	Benefits	Considerations
Convert a 4-lane undivided roadway to 3-lane with middle two-way left-turn lane. This conversion decreases the effective pedestrian crossing distance and provides opportunities for median pedestrian refuge treatment.	1. Shortens the effective pedestrian crossing distance. 2. Provide a median space for easier pedestrian crossing. 3. The median space can be upgraded to a refuge island (see details below).	1. The 3-lane conversion of Elton Hills Drive NW is expected to have minimal impact on vehicle mobility, while reducing side-swipe, rear-end, head on and left-turn crashes. 2. Reallocation of space for other corridor users or street use and appropriate lane width designations.

Left-turn Lane

Description	Benefits	Considerations
Absent a two-way center left turn lane conviguration, provide an exclusive left-turn lane to the mainline at signalized and unsignalized intersections. This allows the left turning vehicles to position out of the through traffic, minimizing the disruption to the through traffic flow.	1. Reduce disruptions to the through traffic from the left turning vehicles. 2. Reduce rear-end crashes with left turning vehicles. 3. Increase roadway capacity at intersections.	1. May trade-off street space with other roadway elements (right turn lane, parking space, cyclist facility, etc.) . 2. Compatible with the typical 3-lane section with center two-way left-turn lane. 3. The length of left-turn lane should accommodate 95th percentile queues in the traffic operation study. 4. The lane width of left turn lanes can go down as low as 10'.

Median Refuge Island

Description	Benefits	Considerations
Medians and crossing islands (also known as refuge islands or center islands) are raised areas that are constructed in the center portion of a roadway that can serve as a place of refuge for pedestrians who cross the road mid-block or at an intersection. After crossing to the center island, pedestrians wait for motorists to stop or for an adequate gap in traffic before crossing the second half of the street.	1. Provide a simplified crossing maneuver by allowing pedestrians to concentrate on only one direction of traffic at a time, creating the equivalent of two narrower one-way streets instead of one wide two-way street. 2. Crossing islands may also provide space for landscaping that can be used to change the visual cues of the roadway and reduce driver speeds.	1. Crossing islands may not be appropriate or physically possible at all locations. May be most applicable at tee configuration intersections where a left turn movement is not provided. 2. Crossing islands must be fully accessible by ramps or cut through, and should provide tactile cues for pedestrians with visual impairments to indicate the border between the pedestrian refuge area and the motorized vehicle roadway. 3. Winter maintenance should be considered to keep the pedestrian route clear of snow.

Table 8. Pedestrian and Intersection Safety Toolbox, Continued

ADA Ramps

Description	Benefits	Considerations
When expanding/improving a pedestrian network, eliminating gaps in connectivity is recommended. If a sidewalk is added, or at existing and outdated intersection corners, upgrading pedestrian curb ramps to ADA standards will help provide an accessible route that people with disabilities can use to safely transition from a roadway to a curbed sidewalk and vice versa.	1. Will establish a connection for pedestrians between streets, schools, regional trails, and parks that are accessible by all users. 2. Improving pedestrian access to transit routes will improve a multimodal transportation environment.	1. There are numerious pedestrian ramps along Elton Hills Drive NW between the E Frontage Road and Broadway Avenue that may not be compliant with ADA design standards and could be considered for upgrade 2. Follow Americans with Disabilities Act (ADA) design guidelines. 3. Texture patterns must be detectable to visually impaired pedestrians. 4. Curb ramps can be easily accommodated within curb extensions. 5. Provide direction pedestrian ramps to properly orientate the user.

Curb Extensions

Description	Benefits	Considerations
Curb extensions narrow the roadway and reduce crossing distance/vehicle exposure for pedestrians.	1. Curb extensions can improve pedestrian safety by reducing the pedestrian crossing distance and reducing the time that pedestrians are in the street. 2. Drivers are encouraged to reduce speeds because of the restricted street width. 3. Tight curb radii result in slower running speeds. 4. The reduction in the street cross-section caused by curb extensions can also eliminate improper passing of turning vehicles by through movement vehicles.	1. The turning needs of larger vehicles such as trucks and school buses need to be considered in the design of curb extensions. 2. Applicable at most intersections along Elton Hills Drive NW since a wide parking space is currently provided. The curb extensions could fill in the existing parking space. 3. However, may not be applicable at intersections depending upon the bicycle facility design.

APS Pedestrian Push Buttons

Description	Benefits	Considerations
APS push buttons provide guidance to the visually impaired on the location of the push button, status of the "walk" indication, and direction of the crosswalk at signalized intersections. These buttons greatly improve the walkability, safety, and comfort of accessing the sidewalk, intersection and crosswalks for visually impaired users.	1. Provide audible indication for visually impaired users on crosswalk direction and status of the walk and dont walk indications. 2. Are directionally oriented to provide specific direction of travel for visually impaired users	1. Should be required with all new traffic signal installations and accessible pedestrian push buttons. 2. May be a high cost installation as most intersections would require substantial signal modifications. 3. Would be most economical to install concurrent with an ADA pedestrian ramp improvement project.

Table 8. Pedestrian and Intersection Safety Toolbox, Continued

High-Visibility Crosswalk Markings

Description	Benefits	Considerations
A marked crosswalk is a type of pavement marking that indicates to pedestrians the recommended location to cross the roadway and also alerts approaching motorists as to where pedestrians may be crossing the street.	1. Providing highly visible crosswalk locations can serve to bring greater attention to the motorist to expect pedestrian activity.	1. Pavement marking material type is important. 2. Design style (i.e., parallel bar, zebra, or other). 3. Note that at uncontrolled intersections without related enhancements, marked crosswalks are unlikely to statistically increase pedestrian safety, however awareness is improved. 4. Frequent maintenance required due to vehicle tire wear and weather conditions.

Pedestrian Lighting

Description	Benefits	Considerations
This strategy involves the installation of street lights at intersections and crosswalks. In practice, the design of the street lights can vary from low-level, pedestrian-scale decorative lighting to a typical highway intersection style that consists of a luminaire mounted on a davit arm on top of a 30- to 40-foot vertical pole. Street lights can also be located at individual intersections or crosswalks or can be continuous along roadway corridors.	1. Street lights can contribute to safety by providing an advance warning to drivers that they are approaching a point of potential conflict with crossing pedestrians and bicyclists. 2. Driver recognition of pedestrians and bicyclists is also improved because street lights illuminate them when it is dark. 3. Enhances the comfort and environment for pedestrians within the sidewalk space	1. The Elton Hills Drive corridor is entirely lit, but the pedestrian environment could be improved by pedestrian-scale lighting. 2. While street light installation costs may be eligible to be covered by federal and state funds, ongoing maintenance and power costs are not eligible.

Rectangular Rapid Flashing Beacon (RRFB)

Description	Benefits	Considerations
A rectangular rapid flashing beacon (RRFB) has two rapidly and alternatively flashing rectangular yellow indications attached to supplement the pedestrian warning sign (W11-2) or school crossing sign (S1-1) at a crosswalk. The beacon, when activated manually by a pedestrian or passively by a pedestrian detection system, uses an irregular flash pattern similar to emergency flashers on police vehicles, an alternating "wig-wag" flashing sequence (left light on, then right light on) with a rapid pulsing light source.	1. High rates of motorist "yield to pedestrians" compliance, up to 80 percent has been documented. 2. The RRFB has been shown to be more effective than standard yellow flashing beacons. Drivers were yielding or slowing down farther in advance of the crosswalk with RRFB than with standard round yellow flashing beacons. 3. Increases driver awareness of the presence of pedestrians. 4. Allows for normal traffic flow when not actuated.	1. The purpose of the RRFB is to increase driver awareness of crosswalks that are not across approaches controlled by YIELD signs, STOP signs, or traffic control signals. 2. Application of RRFB should be deployed at selective locations to improve effectiveness. 3. Consideration could be given if alternative treatments prove to be ineffective.

Table 8. Pedestrian and Intersection Safety Toolbox, Continued

Leading Pedestrian Interval (LPI)			
	Description	Benefits	Considerations
	A Leading Pedestrian Interval (LPI) is a feature that displays the "Walk" indication, prior to the concurrent vehicle green indication for set amount of time (typically around 4 second). LPI allows the pedestrian to enter and be in the crosswalk to increase visibility and to establish right of way prior to allowing the concurrent motorist left turn and right movements. To enable LPI, a cycle length longer than the minimum cycle is often needed to create the additional time.	1. Allows the pedestrian to get a "head start" into the intersection making them more visible and clearly indicating that the pedestrian in the crosswalk has the right of way. 2. Effective in reducing motorist right turn related conflicts with pedestrians 3. Increases driver awareness of the presence of pedestrians.	1. May have potential to impact traffic flow or operations under certain circumstances, as the motor vehicle green time is reduced to accommodate the leading "walk" indication. A traffic capacity impact at intersections along Elton Hills Drive NW would not be expected. 2. The appropriate signal controller software is required to accommodate the leading pedestrian interval operation.
Pedestrian Countdown Timer			
	Description	Benefits	Considerations
	Countdown Pedestrian Timer Indications inform the pedestrian, or bicyclist how much time is left to cross the street on the "flashing don't walk". The time shown is based on the time it takes for a slow walking pedestrian (3.5 feet per second) to cross the full width of the roadway (curb to curb).	1. Countdown timers are informative to all intersection users and are effective in reducing the number of pedestrians in the intersection when the signal turns yellow. 2. Easily understood by most users 3. Helps pedestrians judge if they have enough time to safely cross the street 4. Especially helpful to the mobility challenged, children and elderly intersection users	1. All intersections along Elton Hills Drive NW are equipped with countdown timer indications. Currently, the south leg of 14th Ave signal does not have pedestrian indications and should. 2. Should be required with all new traffic signal installations and accessible pedestrian push buttons.

5. 9th Avenue NW Intersection Improvement Analysis

A review of the existing Elton Hills Drive NW & 9th Avenue NW intersection was performed to identify potential intersection improvements that can assist in enhancing the mobility of the intersection while also providing additional pedestrian safety and comfort. Details of the intersection review are provided in the following sections.

5.1 EXISTING CONDITIONS

The Elton Hills Drive NW & 9th Avenue NW intersection is currently a through / stop-controlled intersection with a marked crosswalk (signing and striping) for the west leg (eastbound approach). Despite the presence of a crosswalk, there are no pedestrian ramps serving the movements. Instead, pedestrians that are unable to traverse the curb must utilize the pedestrian ramps that cross 9th Avenue NW and then proceed to the marked crosswalk. Traffic counts show that the north leg (southbound approach) saw the largest pedestrian volumes over the course of the day (17) while other crosswalks saw three or less crossings. The 17 pedestrians were not isolated to school arrival or dismissal times and were instead scattered throughout the recording period.

5.2 INTERSECTION IMPROVEMENTS EVALUATION

The following sections outline potential intersection improvements at 9th Avenue NW. In addition to traffic control changes, geometric changes could also be considered to address operational issues.

5.2.1 Traffic Signal

A traffic signal evaluation needs to be completed to determine if a traffic signal is warranted, would be an effective intersection alternative, and to determine how beneficial it would be to construct a signal. The following sections outline the warrant analysis and a review of the intersection depicting what advantages and disadvantages there would be to having a traffic signal at 9th Avenue NW.

SIGNAL WARRANT ANALYSIS

A traffic signal warrant analysis was performed for the 9th Avenue NW intersection. Under the existing 4-lane cross-section, none of the volume-based signal warrants were met; however, signal warrant analysis under a 3-lane cross-section indicates that Warrant 2 (Four-Hour Vehicular Volumes) is met. A summary of the volume warrant analysis is provided in **Table 9**. Detailed traffic signal warrant analyses are presented in **Appendix C**.

Table 9. 9th Avenue NW Signal Warrant Analysis

Scenario	Warrant 1 - Eight-Hour Vehicular Volumes				Warrant 2 - Four-Hour Vehicular Volumes		Warrant 3 - Peak Hour		Warrant 5 - School Crossing	
	1A	1B	1C	Met?	Hours	Met?	3B	Met?	Crossings	Met?
4-Lane	3	3	5	No	2	No	0	No	4	No
3-Lane	3	6	5	No	4	Yes	0	No	4	No

5.2.2 Advantages and Disadvantages

Advantages and disadvantages of constructing a traffic signal at 9th Avenue NW are outlined below:

Advantages:

- The signal would give pedestrians priority while crossing Elton Hills Drive NW.
- The signal may provide an operational benefit for side-street movements during peak-hour traffic volumes under a 3-lane cross-section.

Disadvantages:

- Most cross-street traffic is generated by southbound right-turning vehicles which may not see as much benefit from the construction of a traffic signal.
- Although Warrant 2 is met, traditionally Warrant 1 is preferred. Unwarranted signals may result in safety issues due to red light running and/or increased delay during off-peak periods.

5.2.3 Elton Hills Drive NW Crossing Relocation

The existing high visibility crossing along the west leg (eastbound approach) of Elton Hills Drive NW has approximately three times the number of conflicting turning movements than the crossing along the east leg (westbound approach) due to the high number of southbound right-turning vehicles. One approach to improving pedestrian safety and comfort would be to relocate the existing crosswalk to the east. This revision would be beneficial for both unsignalized and signalized traffic control types as reducing pedestrian exposure to conflicting vehicles is an effective strategy to improve safety. Furthermore, driver behavior is different when turning right versus turning left. When turning right, drivers are more likely to focus their attention in one direction and are less likely to notice a pedestrian to their right. When turning left, drivers must focus on both directions of travel, thus making the driver more likely to observe a pedestrian on either side of the intersection.

5.2.4 Curb Extensions

Curb extensions improve pedestrian safety and comfort by reducing the distance that pedestrians must be in the roadway while crossing, improving pedestrian visibility prior to entering the roadway, and by providing traffic calming. At the 9th Avenue NW intersection, curb extensions can be implemented while still accommodating the driveway of 904 Elton Hills Drive NW. If a cyclist facility is constructed, a unique design would be required to maintain cyclist mobility while still providing safety to pedestrians crossing Elton Hills Drive NW. This can take many forms, however, the simplest and most cost-effective solution is to leave a gap in the curb extensions for cyclists to pass through while still having a concrete structure that begins just outside of the cycle track.

5.2.5 Rapid Rectangular Flashing Beacon

Rapid-rectangular flashing beacons (RRFBs) have two-rapidly and alternatively flashing rectangular yellow indications attached to a pedestrian warning or school crossing sign at a crosswalk. When actuated, RRFBs begin rapidly flashing yellow indications signifying a pedestrian crossing to oncoming traffic. RRFBs have been shown to increase driver awareness, improve driver yield to pedestrian rates, and improve pedestrian safety and comfort. RRFBs could be implemented at the 9th Avenue NW intersection with minimal construction costs and could be constructed in tandem with pedestrian ramp improvements.

5.3 RECOMMENDATION

While traffic signal warrants are technically met, the southbound movements perform at LOS C/D (excluding the LOS F for the single through vehicle) under the 3-lane cross-section alternative and a traffic signal is not recommended at this time. The average southbound approach delay under the 3-lane cross-section alternative is 25.2 seconds, with 25.0 seconds being the threshold between LOS C and LOS D. The intersection was also modeled as a single approach lane despite there being enough room (20 feet) for right-turn vehicles to pull alongside a left-turning or through vehicle. City staff should monitor this intersection if a 3-lane cross section is implemented to ensure operations remain at acceptable LOS levels.

Assuming the through / stop traffic control remains at the 9th Avenue NW intersection, there are multiple pedestrian crossing improvements that can be implemented that would help improve pedestrian and cyclist safety. Based on the review of the 9th Avenue NW intersection, the most effective pedestrian crossing improvements are to relocate the high visibility pedestrian crossing to the east leg (westbound approach) and to provide ADA compliant pedestrian ramps that include curb extensions on Elton Hills Drive NW. Relocating the pedestrian crossing reduces pedestrian exposure to conflicting vehicles, and the addition of curb extensions would assist with pedestrian visibility at all intersection crossing locations while also calming traffic speeds. Curb extensions crossing 9th Avenue NW may be considered as a pedestrian improvement with the tradeoff of restricting right-turning traffic from being able to pull alongside other stopped traffic.

6. Elton Hills Elementary Traffic Signal Evaluation

A review of the traffic signal at Elton Hills Drive NW & 14th Avenue NW (W Jct) was conducted to identify whether the traffic signal should remain at 14th Avenue NW (W Jct) or if the signal would provide more benefit if it were relocated to 15th Avenue NW. The following sections outline each location and key considerations when evaluating where the traffic signal should be placed along with pedestrian crossing improvements that could be implemented.

6.1 14TH AVENUE NW (W JUNCTION)

The traffic signal at Elton Hills Drive NW & 14th Avenue NW (W Jct) operates as a pedestrian crossing signal that gives priority to pedestrians (specifically Elton Hills Elementary students) crossing Elton Hills Drive NW. The following sections outline the warrant analysis performed and the advantages and disadvantages of having a traffic signal at the 14th Avenue NW (W Jct) intersection.

6.1.1 Traffic Signal Warrant Analysis

A traffic signal warrant analysis was performed for the 14th Avenue NW (W Jct) intersection. The analysis indicated that while none of the volume-based signal warrants were met, the pedestrian volumes generated by Elton Hills Elementary do meet the thresholds for the school crossing warrant. A summary of the traditional volume warrant analysis is provided in **Table 10**. Detailed warrant analyses are presented in **Appendix C**.

Table 10. 14th Avenue NW (W Jct) Signal Warrant Analysis

Scenario	Warrant 1 - Eight-Hour Vehicular Volumes				Warrant 2 - Four-Hour Vehicular Volumes		Warrant 3 - Peak Hour		Warrant 5 - School Crossing	
	1A	1B	1C	Met?	Hours	Met?	3B	Met?	Crossings	Met?
4-Lane	0	0	0	No	0	No	0	No	34	Yes*
3-Lane	0	0	0	No	0	No	0	No	34	Yes*

*Assumed existing crossings at 14th Avenue NW (S Jct) move to 15th Avenue NW if the signal were to be moved.
**All portions of the School Crossing warrant are met excluding the necessity of a gap study. If a gap study were to find less than 60 acceptable gaps in an hour, this would be met.

6.1.2 Advantages and Disadvantages

Advantages and disadvantages of the traffic signal at 14th Avenue NW (W Jct) are outlined below:

Advantages:

- Provides direct connection to south school door where most children are entering and exiting.
- Crosswalks have low conflicts with turning traffic.
- Tee configuration is conducive to providing a pedestrian refuge median to reduce exposure
- Compatible with curb extension design with no drainage structure impacts but would require modification to the signal system.
- Could provide leading pedestrian interval.

Disadvantages:

- Outside of Elton Hills Elementary arrival and dismissal, the traffic signal system does not provide significant value and incurs maintenance and operation costs.

6.2 15TH AVENUE NW

The Elton Hills Drive NW & 15th Avenue NW intersection is currently a through / stop-controlled intersection that serves as the primary intersection for parents traveling to Elton Hills Elementary for student drop-off and pick-up. The following sections outline warrant analysis performed, the advantages and disadvantages of having a traffic signal at the 15th Avenue NW intersection, and key design considerations that would need to be accounted for if the signal were to be constructed.

6.2.1 Traffic Signal Warrant Analysis

A traffic signal warrant analysis was performed for the 15th Avenue NW intersection. The analysis indicated that none of the volume-based signal warrants were met; however, it can be assumed that if the signal were to be relocated to 15th Avenue NW, the pedestrian volumes generated by Elton Hills Elementary would simply shift to 15th Avenue NW, pushing this intersection over the pedestrian volume threshold for the school crossing warrant. A summary of the traditional warrant analysis is provided in **Table 11**. Detailed warrant analyses are presented in **Appendix C**.

Table 11. 15th Avenue NW Signal Warrant Analysis

Scenario	Warrant 1 - Eight-Hour Vehicular Volumes				Warrant 2 - Four-Hour Vehicular Volumes		Warrant 3 - Peak Hour		Warrant 5 - School Crossing	
	1A	1B	1C	Met?	Hours	Met?	3B	Met?	Crossings*	Met?
4-Lane	0	3	0	No	0	No	0	No	34	Yes**
3-Lane	0	3	0	No	1	No	0	No	34	Yes**

*Assumed existing crossings at 14th Avenue NW (S Jct) move to 15th Avenue NW if the signal were to be moved.
**All portions of the School Crossing warrant are met excluding the necessity of a gap study. If a gap study were to find less than 60 acceptable gaps in an hour, this would be met.

6.2.2 Advantages and Disadvantages

Advantages and disadvantages of the traffic signal at 15th Avenue NW are outlined below:

Advantages:

- Better facilitates overall traffic patterns (buses, pick-up/drop-up) of the main school entrance and parking lot given the higher cross street traffic volumes, thus providing more value for motor vehicle traffic.
- Compatible with curb extension design to reduce pedestrian exposure with no drainage structure impacts.
- Could provide leading pedestrian interval.

Disadvantages:

- Pedestrian crosswalks would see higher conflicts with turning traffic.
- Median refuge island design is complicated by the location of residential driveways and may likely be an infeasible option.
- Pedestrian crossing is not as direct.

6.2.3 Key Design Considerations

Key design considerations for the 15th Avenue NW intersection are outlined below:

- Eastbound crosswalk and stop bar would be in line with a residential driveway.
- Driveway at 1432 Elton Hills Drive NW would cause complications with addition of pedestrian crossing improvements such as a median refuge island or curb extensions.

6.3 PEDESTRIAN CROSSING IMPROVEMENTS

Pedestrian crossing improvements were evaluated to determine if they are feasible solutions at either the 14th Avenue NW (W Jct) or 15th Avenue NW intersection, and to address potential design considerations that would need to be addressed under each alternative.

6.3.1 Leading Pedestrian Interval

Leading pedestrian intervals (LPI) improve pedestrian crossing safety by providing a set time for pedestrians to enter the roadway prior to vehicles receiving their green signal indications, making the pedestrian more visible to conflicting traffic. Programming an LPI is a low-cost, software level improvement that could be programmed at either signal location and can benefit pedestrian safety.

6.3.2 Median Pedestrian Refuge Island

Median pedestrian refuge islands improve pedestrian crossing comfort and safety by simplifying larger roadway crossings into two smaller crossings where the pedestrian can focus on one direction of traffic at a time. At 14th Avenue NW (W Jct), a median pedestrian refuge island can be implemented with no impact to access and would fit under all 3-lane cross section alternatives. At 15th Avenue NW, a median pedestrian refuge island will require special design to ensure access to residential driveways is maintained. This can be done by shortening the refuge island, or by cutting out a section of the island to allow residents to still access their driveway while maintaining the refuge island length. There are disadvantages to both solutions, shorter pedestrian refuge islands tend to be less effective than longer refuge islands, additionally, a cutout in the raised median may cause confusion to motorists.

6.3.3 Curb Extensions

Curb extensions improve pedestrian safety and comfort by reducing the distance that pedestrians must be in the roadway while crossing, improving pedestrian visibility prior to entering the roadway, and by providing traffic calming. At the 14th Avenue NW (W Jct) intersection, curb extensions can be implemented with no impact to existing access. 15th Avenue NW would require special design to ensure full access is still provided to all residents with nearby driveways. Additionally, if a cyclist facility is constructed, a special design would be required to maintain cyclist mobility while still providing safety to pedestrians crossing Elton Hills Drive NW. This can take many forms, however, the simplest and most cost-effective would be to leave a gap in the curb extensions for cyclists to pass through while still having a concrete structure that begins just outside of the cycle track.

6.4 IMPROVEMENT AND LOCATION RECOMMENDATION

Based on the analysis performed and evaluation of pedestrian crossing improvements, it is more beneficial to have the traffic signal remain at 14th Avenue NW (W Jct) with the addition of crossing improvements such as curb extensions and a median pedestrian refuge island (**Figure 10**). However, final recommendations will be made based on conversations with City staff, the City Council, and feedback from local stakeholders.

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CONCEPT A - SCHOOL PEDESTRIAN CROSSING
ELTON HILLS DRIVE / 14TH AVE NW

Figure 10

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7. W River Parkway NW / 3rd Avenue NW Alternatives

The City of Rochester has received feedback from residents regarding cyclist safety at the West River Parkway NW / 3rd Avenue NW intersection As a result, an intersection traffic control evaluation was performed to identify potential improvements and/or traffic control alternatives that can improve cyclist safety when crossing while also maintaining or improving mobility of the intersection The following sections outline the existing conditions and safety concerns that have been observed and alternatives that were developed to address this safety issue.

7.1 EXISTING CONDITIONS AND SAFETY CONCERNS

Elton Hills Drive NW & West River Parkway NW / 3rd Avenue NW is currently a signalized intersection, that runs in FREE mode, with crosswalks on all approaches, and dedicated left-turn lanes in all directions. Despite being constructed in 1997, the signal is aging poorly and could benefit from replacement in addition to safety improvements. All approaches at the existing traffic signal operate at LOS C or better during both a.m. and p.m. peak hour traffic volumes. An on-street cyclist lane is currently provided along both sides of West River Parkway NW and 3rd Avenue NW.

Feedback from cyclists have stated that when traveling northbound in the existing on-street cyclist lane, right-turning vehicles are not noticing cyclists and either occupying the cyclist lane while they wait for gaps in traffic and/or they are turning through the cyclist lane. Additionally, north of the intersection cyclists must merge with motor vehicle traffic and share a lane for approximately 200 feet before the on-street cyclist lane reappears. Although there are no documented crashes, these issues present an inherent risk and serious safety concern that should be proactively addressed.

7.2 INTERSECTION ALTERNATIVES

The following sections outline the intersection improvements and traffic control alternatives developed to improve cyclist safety and maintain operations.

7.2.1 Bike Slip Ramp

A bike slip ramp (**Figure 11**) is a cyclist structure that provides a ramp from the on-street cyclist lane up to curb height, connecting to either a sidewalk, trail, or existing pedestrian ramp crossing. In this alternative, the slip ramp would elevate cyclists to the southeast corner of the intersection allowing them to utilize the same crosswalk as pedestrians during the walk phase. This improves cyclist visibility while also directly removing them from conflicts with stopped vehicles.

EXISTING ELTON HILLS DRIVE

WEST RIVER PKWY

BIKE SLIP RAMP

EXISTING ELTON HILLS DRIVE

3RD AVE NW

4' BIKE

BIKE SLIP RAMP

N

0 25 50

SCALE IN FEET

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ELTON HILLS DRIVE STUDY

CONCEPT B1 - BIKE SLIP RAMP
ELTON HILLS DR & 3RD AVE/WEST RIVER PKWY

Figure 11

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7.2.2 Bike Box

A bike box (**Figure 12**), typically denoted by a large green area painted on the pavement, is a roadway striping alternative that moves the vehicle stop bar back while allowing cyclists to stop at an advanced stop bar location. This makes cyclists more visible to motorists by putting them in front of vehicles and by giving them a head start when the signal turns green. This improves cyclist visibility but does not remove them from potential conflicts with stopped vehicles.

7.2.3 Single-Lane Roundabout

A single-lane roundabout was evaluated at the Elton Hills Drive NW & West River Parkway NW / 3rd Avenue NW intersection to determine the feasibility of this traffic control improvement. This alternative would remove cyclists from the roadway prior to the single-lane roundabout using a slip ramp to more easily access the pedestrian crossings at the roundabout. Cyclists would then proceed through the roundabout and before another slip ramp would allow them to re-enter the on-street cyclist lane. The following sections outline the findings of the feasibility analysis.

TRAFFIC OPERATIONS

The traffic operations analysis was completed using HCS 2024. Results indicate that during the a.m. and p.m. peak-hour traffic volumes a single-lane roundabout is expected to operate at an overall intersection LOS B. The detailed traffic operations analysis for the single-lane roundabout alternative can be found in **Appendix D**.

INTERSECTION GEOMETRY REVIEW

In addition to the operations analysis, roundabout geometry also needs to be evaluated closely to identify sizing, right-of-way impacts, identify potential construction costs, and overall feasibility.

130’ ICD Single-Lane Roundabout Alternative

Construction of a 130’ ICD roundabout (**Figure 13**), despite a typical design size, would cause significant right-of-way impacts, including building impacts, making this option infeasible.

110’ ICD Single-Lane Roundabout Alternative

Construction of a 110’ ICD roundabout (**Figure 14**) may still allow for a raised median element and avoid building impacts but would cause significant right-of-way impacts and may be infeasible.

90’ ICD Single Lane Roundabout Alternative

Construction of a 90’ ICD roundabout (**Figure 15**) would still require some right-of-way acquisition depending on the design, however, a raised median would likely not fit and the roundabout would effectively operate as a compact or mini-roundabout with a mountable center island.

EXISTING ELTON HILLS DRIVE

WEST RIVER PKWY

EXISTING ELTON HILLS DRIVE

10' x 16' BIKE BLOCK

3RD AVE NW

12' LTL

12' THRU

4' BIKE

N

0 15 30

SCALE IN FEET

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ELTON HILLS DRIVE STUDY

CONCEPT B2 - BIKE BLOCK
ELTON HILLS DR & 3RD AVE/WEST RIVER PKWY

Figure 12

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7.3 RECOMMENDATION

Advantages and disadvantages of a traffic signal and a roundabout are outlined below:

TRAFFIC SIGNAL ($475K-$650K)

Advantages:

- Existing control, familiar along corridor
- Works with skewed approaches, no property impacts
- Works with 4-to-3 conversion, revised mast arms and striping
- Acceptable overall operations (LOS B) and side-street operations (LOS C)
- Linear pedestrian/cyclist facilities, controlled crossings, predictable

Disadvantages:

- Does not reduce vehicle speeds
- Does not address angle crashes (14 out of 32), however, existing injury crash percentages (21.9%) are lower than the state average (27.7%) and typical roundabout averages (24.5%)

ROUNDABOUT ($1.5M-$2.5M)

Advantages:

- Reduces vehicle speeds between residential and commercial segments
- Provides logical transition point for 4-to-3 transition (if desired)
- Improves overall operations (LOS B) and side-street operations (LOS B)
- Addresses angle crashes (14 out of 32)
- 0.32 crashes/MEV per MnDOT 2017 RAB Study

Disadvantages:

- Tradeoffs between property impacts (130’ ICD) and raised median (90’ ICD)
- May result in an increase in rear-end and sideswipe crashes
- Indirect accommodations for bicyclists and pedestrians

Final intersection traffic control improvements and alternatives have not yet been determined for the Elton Hills Drive NW & West River Parkway NW / 3rd Avenue NW intersection. A final recommendation will be provided once public open houses are held to ensure that all stakeholder concerns are taken into consideration when selecting the preferred alternative. However, the reconstruction cost may outweigh what little benefit a 90’ ICD roundabout provides, suggesting that bike slip ramp or bike box alternatives with a traffic signal are more realistic solutions.

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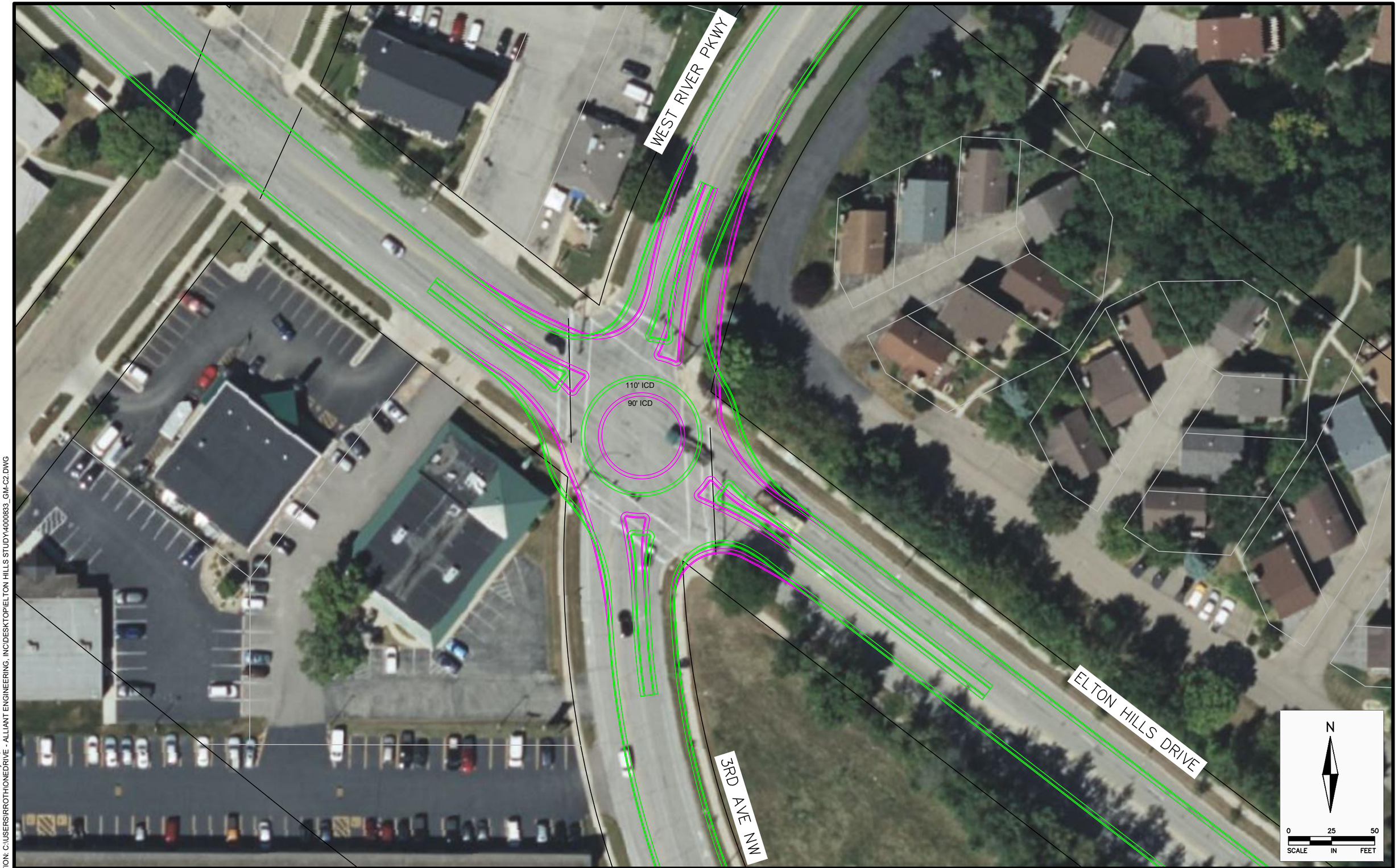
ELTON HILLS DRIVE STUDY

CONCEPT C1 - ROUNDABOUT
ELTON HILLS DR & 3RD AVE/WEST RIVER PKWY

Figure 13



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ELTON HILLS DRIVE STUDY

CONCEPT C2 - ROUNDABOUT ICD OPTIONS
ELTON HILLS DR & 3RD AVE/WEST RIVER PKWY

PINK - 90 FT ICD
GREEN - 110 FT ICD

Figure 14

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ELTON HILLS DRIVE STUDY

CONCEPT C3 - ROUNDABOUT
ELTON HILLS DR & 3RD AVE/WEST RIVER PKWY

Figure 15

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8. Corridor Improvement Concept Plan

The corridor improvement concept plan has been developed based on input from the City of Rochester and the results of the technical analysis completed as part of this traffic and safety study. The improvement alternatives illustrated will provide guidance to the city and can be utilized as a planning tool to develop a plan for future roadway improvements along Elton Hills Drive NW.

Key elements of the concept plan are illustrated in **Figure 16** and were developed under the premise of a retrofit (no reconstruction or relocation of curb lines) under the planned 2027 mill and overlay project. The illustration is intended to show general allocation of space along with some general intersection improvements that may be implemented with the mill and overlay or as part of a future construction project. The illustration is high level and not intended to provide specific details regarding design. In multiple cases, several alternatives or improvements may be beneficial; however, to best serve the community, discussions with the public and local stakeholders are required to ensure their feedback is considered when selecting the optimal alternative.

It is important to recall the primary goal of this traffic and safety study, to develop both short-term and long-term corridor improvement strategies that address safety and mobility issues for all users. The concept plan and associated improvement alternatives are expected to improve safety of vehicles, pedestrians, and bicyclists. Design considerations vary by location depending on the alternative and individual improvements selected. Key elements of the concept plan include:

- Consideration of a 3-lane cross section beginning east of the E Frontage Road intersection and ending west of Northbrook Lane. Based on overall project goals, corridor characteristics, vehicle speed analysis, and the findings of the mobility and safety analysis, the most beneficial improvement for Elton Hills Drive NW is conversion to a 3-lane roadway facility.
- The traffic signal at 14th Avenue NW (W Jct) near Elton Hills Elementary should be replaced with a new traffic signal in its current location. The existing traffic signal was constructed in 1980 and is nearing the end of its service life. In addition to reconstructing the traffic signal, pedestrian crossing improvements for students and residents should also be considered. Improvements include construction of a median pedestrian refuge island, ADA compliant pedestrian ramps, and curb extensions. Signal programming enhancements including LPI, addition of APS pushbutton stations, and timing standards should also be considered.
- Intersection improvements at the Elton Hills Drive NW & 9th Avenue NW may include pedestrian crossing improvements such as relocating the high-visibility crosswalk to the (east leg) westbound approach, upgrading intersection corners to be ADA compliant and to have ramps for all crossings, and the construction of curb extensions on corners with pedestrian crossings. If a 3-lane cross section is adopted along Elton Hills Drive NW, a traffic signal may also be constructed at this location to improve overall intersection operations and safety for all users.
- Optimize traffic signal timing at signalized intersections.

The potential intersection improvements identified may be mutually exclusive between the 4-lane or 3-lane configuration. In other words, some alternatives (ie. median pedestrian refuge islands) are not compatible with both lane configuration options and would require the conversion of the roadway to a 3-lane facility prior to the installation of the improvement. However, some improvements are applicable to both cross-section alternatives, including LPI, curb extensions, and relocating high-visibility crosswalks. It is important to clarify that the conversion of Elton Hills Drive NW to a 3-lane facility does not necessitate the need for a cyclist facility, nor is the conversion contingent upon the installation of a cyclist facility. However, a 3-lane facility would provide opportunities to reallocate the curb-to-curb space short-term (**Figure 17**) until a future construction project could provide a long-term (**Figure 18**) reconfiguration of the corridor.

The concept plan developed provides the City of Rochester and stakeholders with a range of improvement options at select locations to improve safety of Elton Hills Drive NW. To provide high level context to baseline potential project costs, typical construction (does not include engineering, design, or inspection related costs) for various treatments identified are provided in **Table 12**.

Table 12. Planning Level Construction Cost by Improvement

Improvement Measure	Cost Range	Notes
3-Lane Conversion (1.8 mile)	**$250k - $350k**	Pavement marking and signing only
Traffic Signal Replacement (including ADA Improvements)	**$475k - $650k**	
Signal Pole / Mast Arm Modification	**$35k - $50k / Corner**	Pole and mast arm replacement only
ADA Pedestrian Ramp Improvement	**$10k - $30k / Corner**	Depends on complexity
Curb Extension	**$20k - $40k / Corner**	Includes ADA ramps, depends on drainage
50 Foot Raised Pedestrian Refuge Island	**$70k - $140k / Approach**	Depends on construction method
RRFB Pedestrian Warning Beacon	**$35k - $50k / Crosswalk**	Solar powered
High Visibility Crosswalk Markings	**$4k - $6k / Crosswalk**	Durable pavement markings

(1) Estimated construction costs are not site specific. Does not include engineering, design, administration or inspection costs.

The total project cost is dependent upon the final typical section and intersection improvements selected by the City of Rochester. Some costs associated with an alternative cross sections (such as striping) will be incurred with the upcoming mill and overlay project that is expected to occur in 2027. A preliminary cost estimate should be developed upon selection of the final concept plan to ensure the recommended improvements are financially feasible.

Segment A: E Frontage Road to W River Parkway

Alt 1: Bicyclist Facilities & Parking on Both Sides

Alt 2: No Bicyclist Facitlities & Parking on Both Sides

Alt 3A: Bicyclist Facilities & Parking on One Side (Outside)

Alt 3B: Bicyclist Facilities & Parking on One Side (Inside)

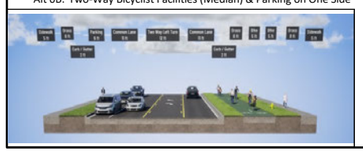
Alt 4A: Buffered Bicyclist Facilities (Striping) & No Parking

Alt 4B: Buffered Bicyclist Facilities (Median) & No Parking

Alt 5: Two-Way Bicyclist Facilities & Parking on Both Sides

Alt 6A: Two-Way Bicyclist Facilities (Striping) & Parking on One Side

Alt 6B: Two-Way Bicyclist Facilities (Median) & Parking on One Side

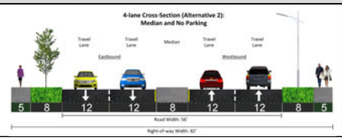


Segment A: E Frontage Road to W River Parkway

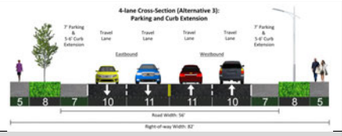
Segment B: W River Parkway to Broadway Avenue

Alt 1: Left-Turn Lane at Intersection

Alt 2: Refuge Median at Intersections



Alt 3: Curb Extension at Intersections



Alt 4: On Street Bicyclist Facilities

1 Elton Hills Drive NW & 14th Avenue NW

Reconstruct the traffic signal system with the following improvements:
- ADA compliant ramps
- Curb-extensions
- Median pedestrian refuge island
- Leading pedestrian interval (LPI)

2 Elton Hills Drive NW & 9th Avenue NW

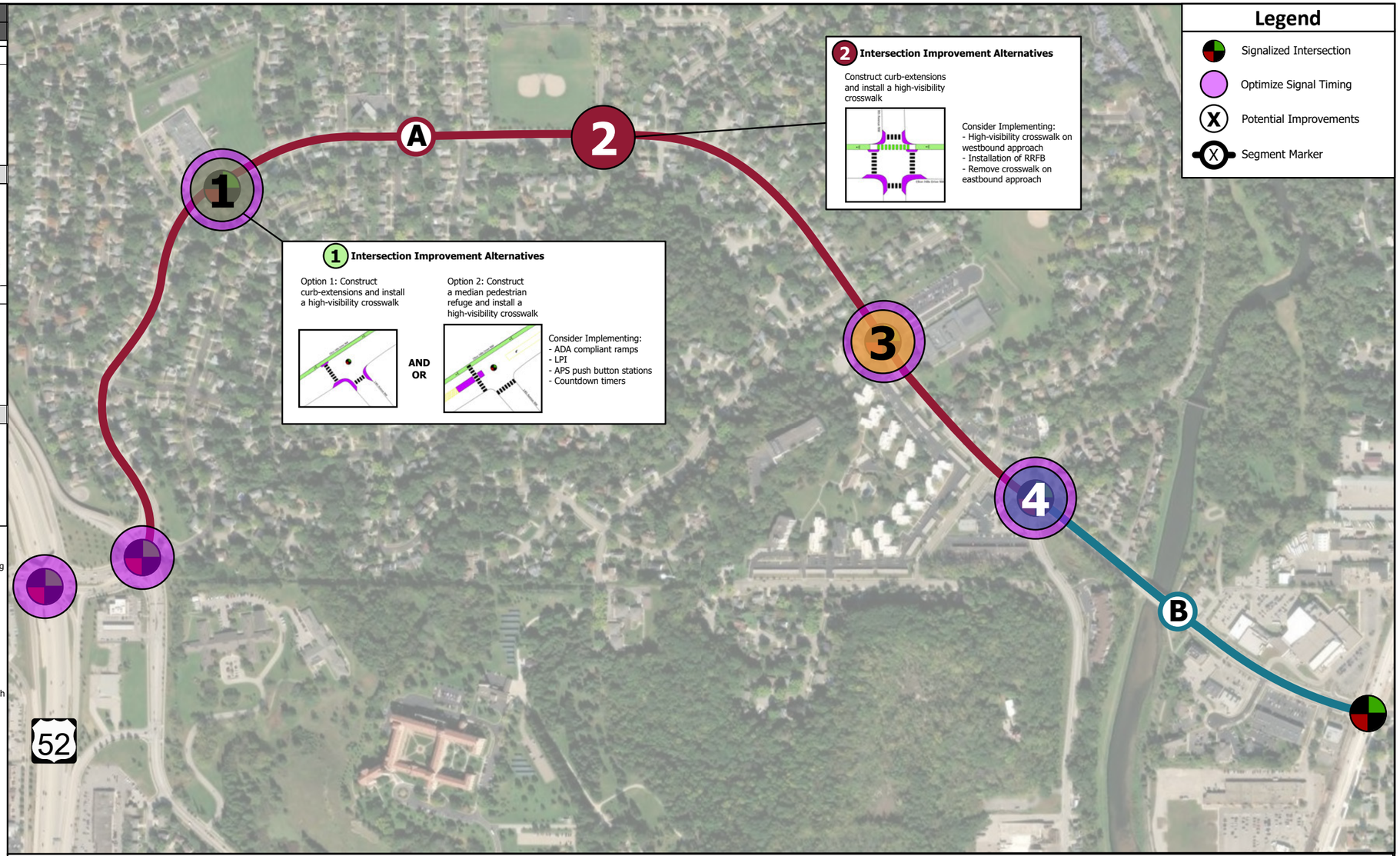
Consider the following pedestrian crossing improvements:
- Move high-visibility crosswalk to westbound approach to lower vehicular conflicts with turning traffic
- Construct curb-extensions
- Construct ADA compliant ramps
- Install a RRFB for the high-visibility crossing.

3 Elton Hills Drive NW & Norseman Court

- Update traffic signal to be the appropriate configuration for a three-lane roadway facility
- Consider programming a leading pedestrian interval (LPI)
- Review programmed timing standards

4 Elton Hills Drive NW & West River Parkway NW / 3rd Avenue NW

- The existing traffic signal was constructed in 1997 is aging poorly and should be reconstructed if retained
- If the traffic signal is retained, modify the signal as appropriate for the planned roadway cross-section
- Review intersection traffic control alternatives outlined in section 7 of the report
- Review cyclist safety improvements
- Construct ADA compliant pedestrian ramps



Examples and Illustrations

Median Pedestrian Refuge

ADA Compliant Ramps

Curb Extensions (Bump Outs)

High-Visibility Crosswalk

Rectangular-Rapid Flashing Beacon (RRFB)

Elton Hills Traffic and Safety Stud

ALLIANT

Figure 16

Intersection and Corridor Mobility Performance Analysis Summary

N

0 0.06 0.11 Miles

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ELTON HILLS DRIVE

W BOUND SIGNAL IMPACT

WEST RIVER PKWY

BIKE SLIP RAMP

E BOUND SIGNAL IMPACT

BIKE SLIP RAMP

ELTON HILLS DRIVE

3RD AVE NW

5' WALK
8' BLVD
10' BIKE
6' MED
11' THRU
12' TWLTL
11' THRU
6' PARK
8' BLVD
5' WALK

5' WALK
8' BLVD
10' BIKE
6' MED
11' THRU
12' LTL
11' THRU
6' PARK
8' BLVD
5' WALK

5' WALK
8' BLVD
13.5' THRU
12' LTL
13.5' THRU
5' BLVD
8' WALK

5' WALK
8' BLVD
5' BIKE
11' THRU
12' LTL
11' THRU
5' BIKE
8' BLVD
5' WALK

N

0 25 50
SCALE IN FEET

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ELTON HILLS DRIVE STUDY

CONCEPT D1 - BUFFERED FACILITIES
ELTON HILLS DRIVE

Figure 17

ELTON HILLS DRIVE

W BOUND SIGNAL IMPACT

WEST RIVER PKWY

E BOUND SIGNAL IMPACT

ELTON HILLS DRIVE

3RD AVE NW

5' WALK
8' BLVD
10' BIKE
4' BLVD
11' THRU
12' TWLTL
11' THRU
6' PARK
8' BLVD
5' WALK

5' WALK
8' BLVD
10' BIKE
4' BLVD
11' THRU
12' LTL
11' THRU
6' PARK
8' BLVD
5' WALK

5' WALK
8' BLVD
13.5' THRU
12' LTL
13.5' THRU
5' BLVD
8' WALK

5' WALK
8' BLVD
10' BIKE
4' BLVD
11' THRU
12' LTL
11' THRU
6' PARK
8' BLVD
5' WALK

5' WALK
8' BLVD
5' BIKE
11' THRU
12' LTL
11' THRU
5' BIKE
8' BLVD
5' WALK

5' WALK
8' BLVD
10' BIKE
4' BLVD
11' THRU
12' TWLTL
11' THRU
6' PARK
8' BLVD
5' WALK

N

0 25 50
SCALE IN FEET

PLOTTED BY: RYAN ROTH ON April 27, 2026 AT 1:29:35 PM
FILE LOCATION: C:\USERS\RROTH\ONEDRIVE - ALLIANT ENGINEERING, INC\DESKTOP\ELTON HILLS STUDY\4000833_GM-B2.DWG

ALLIANT

CITY OF ROCHESTER
ELTON HILLS DRIVE STUDY

CONCEPT D2 - ELEVATED FACILITIES
ELTON HILLS DRIVE

Figure 18

ALLIANT

Appendix A

ROCHESTER PUBLIC TRANSIT ROUTES AND SCHEDULE MAPS

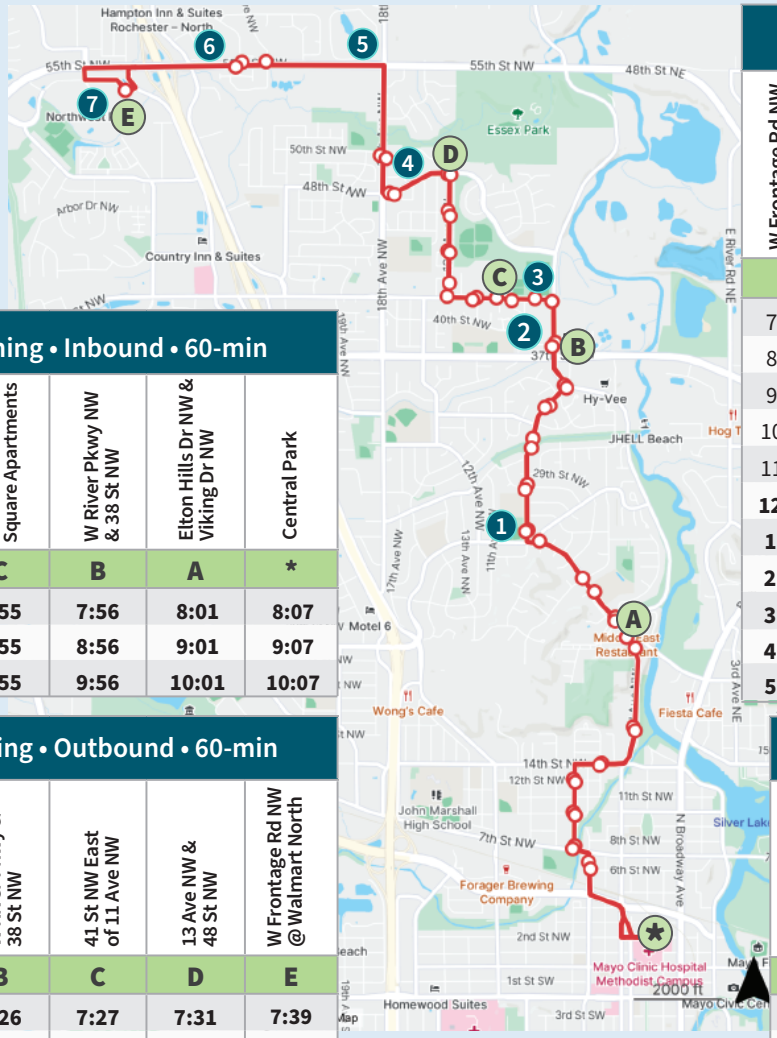
FINAL REPORT

ROUTE 26 | CENTRAL PARK STAND 3

Walmart North, Northwest Plaza, Calvary Church, Homestead, Resurrection Lutheran Church, Summit Square, City of Rochester North Service Center, Elton hills Drive NW

LEGEND

- Direction
- Bus Stop
- A Time-point
- Alt. Route
- P Park & Ride



Weekend & Holiday • Inbound • 60-min

W Frontage Rd NW @ Walmart North	48 St NW& 13 Ave NW	41 St NW & Summit Square Apartments	W River Pkwy NW & 38 St NW	Elton Hills Dr NW & Viking Dr NW	Central Park
E	D	C	B	A	*
7:22	7:28	7:30	7:32	7:37	7:46
8:22	8:28	8:30	8:32	8:37	8:46
9:22	9:28	9:30	9:32	9:37	9:46
10:22	10:28	10:30	10:32	10:37	10:46
11:22	11:28	11:30	11:32	11:37	11:46
12:22	**12:28**	**12:30**	**12:32**	**12:37**	**12:46**
1:22	**1:28**	**1:30**	**1:32**	**1:37**	**1:46**
2:22	**2:28**	**2:30**	**2:32**	**2:37**	**2:46**
3:22	**3:28**	**3:30**	**3:32**	**3:37**	**3:46**
4:22	**4:28**	**4:30**	**4:32**	**4:37**	**4:46**
5:22	**5:28**	**5:30**	**5:32**	**5:37**	**5:46**

Weekday Evening • Inbound • 60-min

W Frontage Rd NW @ Walmart North	48 St NW & 13 Ave NW	41 St NW & Summit Square Apartments	W River Pkwy NW & 38 St NW	Elton Hills Dr NW & Viking Dr NW	Central Park
E	D	C	B	A	*
7:46	**7:53**	**7:55**	**7:56**	**8:01**	**8:07**
8:46	**8:53**	**8:55**	**8:56**	**9:01**	**9:07**
9:46	**9:53**	**9:55**	**9:56**	**10:01**	**10:07**

Weekday Evening • Outbound • 60-min

Central Park Stand 3	Elton Hills Dr NW & Viking Dr NW	W River Pkwy & 38 St NW	41 St NW East of 11 Ave NW	13 Ave NW & 48 St NW	W Frontage Rd NW @ Walmart North
*	A	B	C	D	E
7:15	**7:21**	**7:26**	**7:27**	**7:31**	**7:39**
8:15	**8:21**	**8:26**	**8:27**	**8:29**	**8:37**
9:15	**9:21**	**9:26**	**9:27**	**9:29**	**9:37**

Weekend & Holiday • Outbound • 60-min

Central Park Stand3	Elton Hills Dr NW & Viking Dr NW	W River Pkwy NW & 38 St NW	41 St NW East of 11 Ave NW	13 Ave NW & 48 St NW	W Frontage Rd NW @ Walmart North
*	A	B	C	D	E
7:15	7:23	7:27	7:28	7:30	7:36
8:15	8:23	8:27	8:28	8:30	8:36
9:15	9:23	9:27	9:28	9:30	9:36
10:15	10:23	10:27	10:28	10:30	10:36
11:15	11:23	11:27	11:28	11:30	11:36
12:15	**12:23**	**12:27**	**12:28**	**12:30**	**12:36**
1:15	**1:23**	**1:27**	**1:28**	**1:30**	**1:36**
2:15	**2:23**	**2:27**	**2:28**	**2:30**	**2:36**
3:15	**3:23**	**3:27**	**3:28**	**3:30**	**3:36**
4:15	**4:23**	**4:27**	**4:28**	**4:30**	**4:36**
5:15	**5:23**	**5:27**	**5:28**	**5:30**	**5:36**

POINTS OF INTEREST

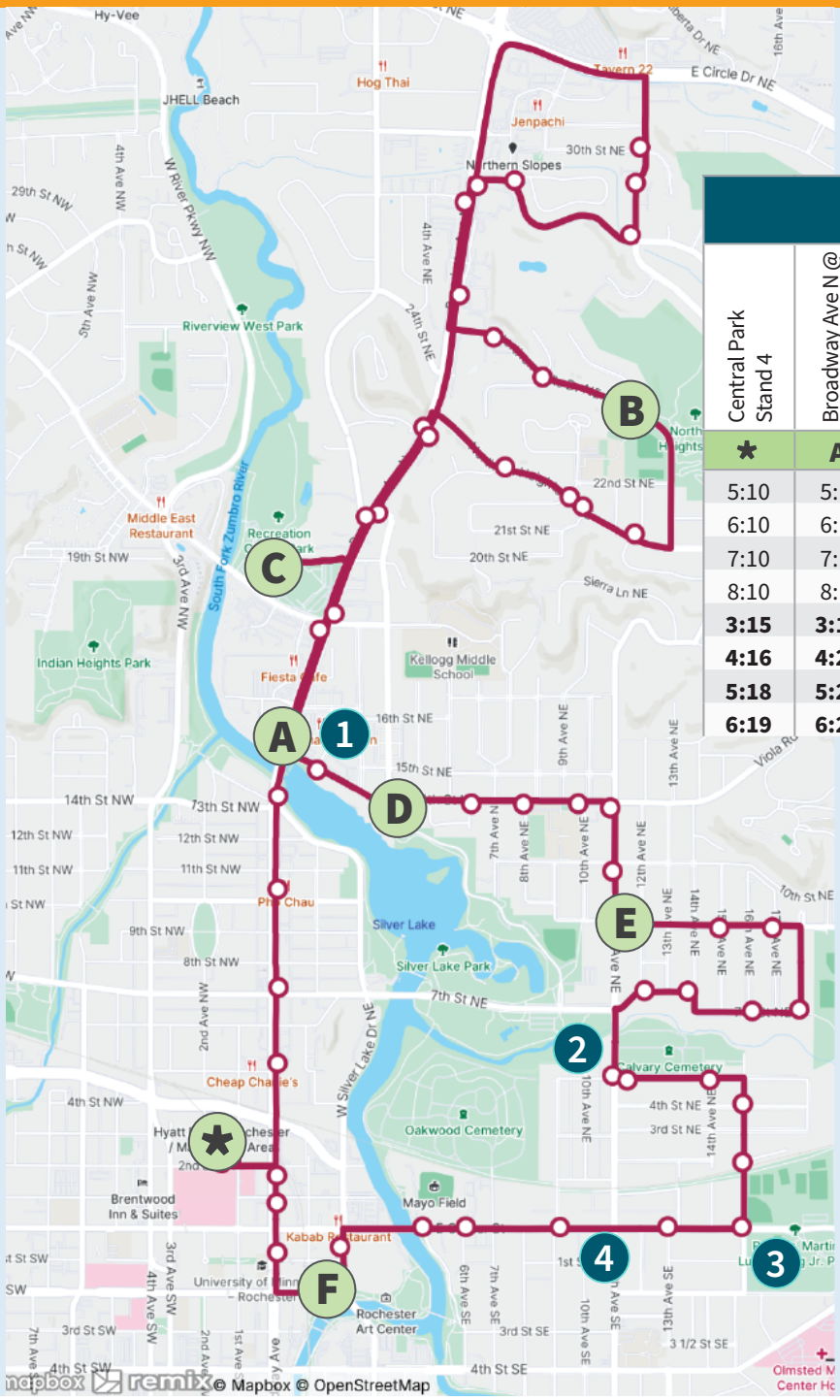
1. Central Lutheran School
2. City of Rochester N Service Ctr
3. Villages at Essex Park
4. Resurrection Lutheran Church
5. Homestead
6. Calvary Church
7. Northwest Plaza Walmart North

Times shown in bold are P.M. Letters correspond to the time points on the map. If your stop is between time points, use the time given for the time point before your stop to avoid missing the bus.

ROUTE 102 | CENTRAL PARK STAND 4

Quarry Hill, Teton Lane, Silver Lake Shopping Center, East Side Neighborhood

NORTHEAST



Weekday • 60-min service Peak Only

Central Park Stand 4	Broadway Ave N @ Silver Lake Shops	Northern Hills Dr NE & Northridge Ln NE	125 Live	14 St NE & East Silver Lake Dr NE	9 St NE & 11 Ave NE	2 St SE @ Rochester Public Library	Central Park
★	A	B	C	D	E	F	★
5:10	5:14	5:27	5:32	5:35	5:37	5:50	5:53
6:10	6:14	6:27	6:31	6:32	6:33	6:44	6:46
7:10	7:14	7:27	7:31	7:32	7:33	7:44	7:46
8:10	8:14	8:27	8:31	8:32	8:33	8:45	8:47
3:15	**3:19**	**3:33**	**3:38**	**3:41**	**3:45**	**3:59**	**4:04**
4:16	**4:21**	**4:34**	**4:40**	**4:43**	**4:46**	**4:58**	**5:00**
5:18	**5:22**	**5:35**	**5:41**	**5:44**	**5:47**	**5:59**	**6:01**
6:19	**6:23**	**6:37**	**6:42**	**6:45**	**6:48**	**7:01**	**7:03**

LEGEND

- Direction
- Bus Stop
- (A) Time-point
- Alt. Route
- (P) Park & Ride

POINTS OF INTEREST

1. Silver Lake Shopping Center
2. 3 Links Park
3. Dr. Martin Luther King Park
4. Boys & Girls Club

Times shown in bold are P.M.
Letters correspond to time-points on the map . If your stop is between time-points, use time given for the time-point before your stop to avoid missing the bus.

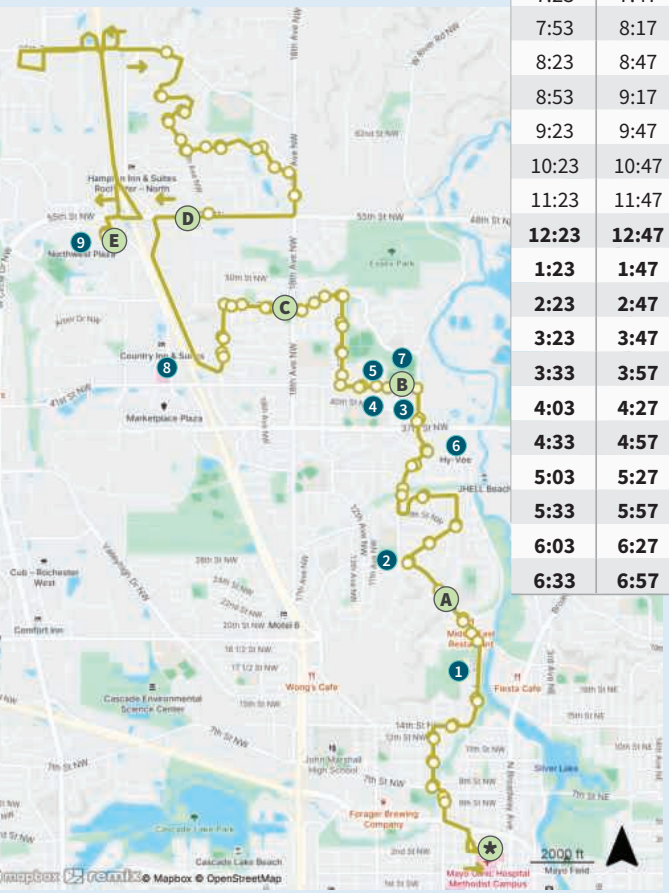
FOR EVENING SERVICE, SEE ROUTE 21

ROUTE 411 | CENTRAL PARK STAND 2

Valhalla, Elton Hills Drive, Summit Square, Crenlo, Marketplace, Gage School, Maplewood Square, Essex Park, United Way, Northwest Plaza

FOR EVENING/WEEKEND/ HOLIDAY SERVICE, SEE ROUTE 26

Times shown in bold are P.M. Letters correspond to the time points on the map. If your stop is between time points, use the time given for the time point before your stop to avoid missing the bus.



Weekday • Inbound • 30 peak/60-min off

W Frontage Rd @ Walmart North	55 St NW & George-towne Pl NW	48 St NW & 18 Ave NW	41 St NW @ Watson Fields	Elton Hills Dr NW @ Hoover Elem	Central Park
E	D	C	B	A	*
4:50	5:14	5:23	5:28	5:37	5:46
5:30	5:54	6:03	6:08	6:17	6:26
5:53	6:17	6:26	6:31	6:40	6:49
6:23	6:47	6:56	7:01	7:10	7:19
6:53	7:17	7:26	7:31	7:40	7:49
7:23	7:47	7:56	8:01	8:10	8:19
7:53	8:17	8:26	8:31	8:40	8:49
8:23	8:47	8:56	9:01	9:10	9:19
8:53	9:17	9:26	9:31	9:40	9:49
9:23	9:47	9:56	10:01	10:10	10:19
10:23	10:47	10:56	11:01	11:10	11:19
11:23	11:47	11:56	**12:01**	**12:10**	**12:19**
12:23	**12:47**	**12:56**	**1:01**	**1:10**	**1:19**
1:23	**1:47**	**1:56**	**2:01**	**2:10**	**2:19**
2:23	**2:47**	**2:56**	**3:01**	**3:10**	**3:19**
3:23	**3:47**	**3:56**	**4:01**	**4:10**	**4:19**
3:33	**3:57**	**4:06**	**4:11**	**4:20**	**4:29**
4:03	**4:27**	**4:36**	**4:41**	**4:50**	**4:59**
4:33	**4:57**	**5:06**	**5:11**	**5:20**	**5:29**
5:03	**5:27**	**5:36**	**5:41**	**5:50**	**5:59**
5:33	**5:57**	**6:06**	**6:11**	**6:20**	**6:29**
6:03	**6:27**	**6:36**	**6:41**	**6:50**	**6:59**
6:33	**6:57**	**7:06**	**7:11**	**7:20**	**7:29**

Weekday • Outbound • 30-min peak, 60-min off peak

Central Park Stand 2	Elton Hills Dr NW @ Hoover Elem	41 St NW @ Watson Fields	48 St NW & 18 Ave NW	55 St NW & George-towne Pl NW	W Frontage Rd @ Walmart North
*	A	B	C	D	E
5:00	5:08	5:17	5:22	5:31	5:50
5:30	5:38	5:47	5:52	6:01	6:20
6:00	6:08	6:17	6:22	6:31	6:50
6:30	6:38	6:47	6:52	7:01	7:20
7:00	7:08	7:17	7:22	7:31	7:50
7:30	7:38	7:47	7:52	8:01	8:20
8:00	8:08	8:17	8:22	8:31	8:50
8:30	8:38	8:47	8:52	9:01	9:20
9:30	9:38	9:47	9:52	10:01	10:20
10:30	10:38	10:47	10:52	11:01	11:20
11:30	11:38	11:47	11:52	**12:01**	**12:20**
12:30	**12:38**	**12:47**	**12:52**	**1:01**	**1:20**
1:30	**1:38**	**1:47**	**1:52**	**2:01**	**2:20**
2:30	**2:38**	**2:47**	**2:52**	**3:01**	**3:20**
2:40	**2:48**	**2:57**	**3:02**	**3:11**	**3:30**
3:10	**3:18**	**3:27**	**3:32**	**3:41**	**4:00**
3:40	**3:48**	**3:57**	**4:02**	**4:11**	**4:30**
4:10	**4:18**	**4:27**	**4:32**	**4:41**	**5:00**
4:40	**4:48**	**4:57**	**5:02**	**5:11**	**5:30**
5:10	**5:18**	**5:27**	**5:32**	**5:41**	**6:00**
5:40	**5:48**	**5:57**	**6:02**	**6:11**	**6:30**

POINTS OF INTEREST

1. Crenlo
2. Central Lutheran Church
3. Rochester North Service Center
4. Summit Square
5. Essex Park
6. Hy-Vee North
7. Watson Sports Complex
8. Mayo Family Clinic NW
9. Northwest Plaza

LEGEND

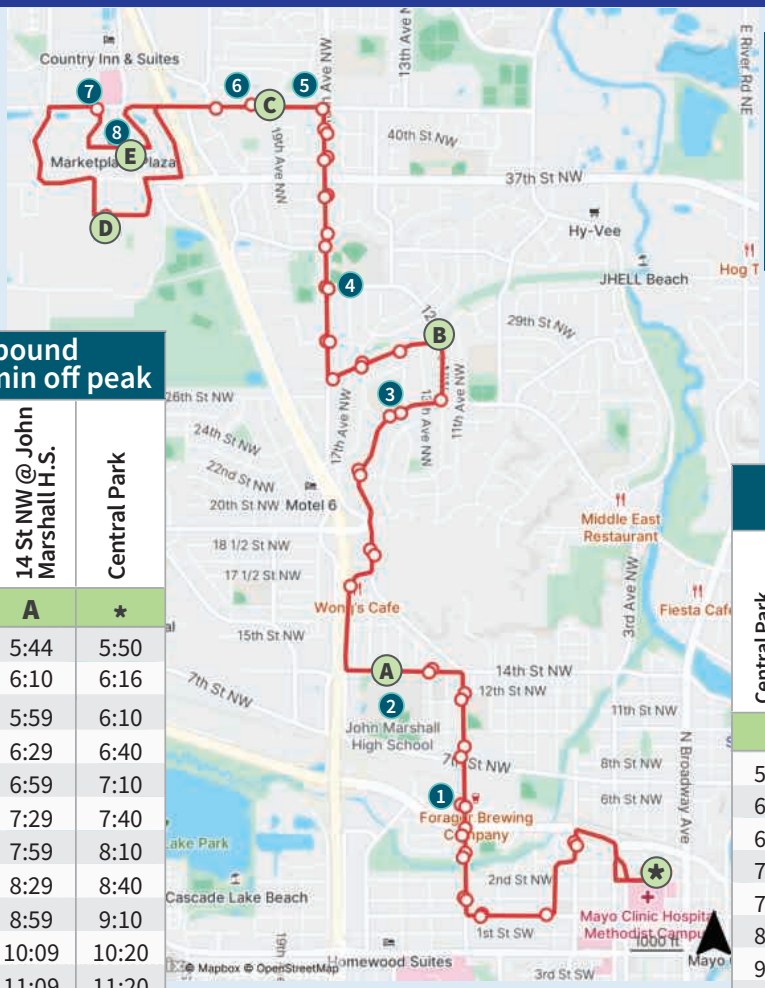
- Direction
- Bus Stop
- (A) Time-point
- Alt. Route
- (P) Park & Ride

ROUTE 413 | CENTRAL PARK STAND 3

Gates Apartments, Washington Elementary, Northgate Center, St. Marys Hospital, John Adams Middle School, Barlow Plaza, Mayo Family Clinic NW

LEGEND

- Direction
- Bus Stop
- A Time-point
- Alt. Route
- P Park & Ride



POINTS OF INTEREST

1. Barlow Plaza
2. John Marshall High School
3. Elton Hills Elementary
4. Mt. Olive Church
5. Pax Christi Church
6. The Gates Apartments
7. Mayo Family Clinic NW
8. Marketplace Plaza

Weekday • Inbound
30-min peak 60-min off peak

Target North @ Marketplace Dr NW	41 St NW & 19 Ave NW	12 Ave NW & Cascade St NW	14 St NW @ John Marshall H.S.	Central Park
E	C	B	A	*
5:20	5:31	5:39	5:44	5:50
5:46	5:57	6:05	6:10	6:16
5:40	5:44	5:51	5:59	6:10
6:10	6:14	6:21	6:29	6:40
6:40	6:44	6:51	6:59	7:10
7:10	7:14	7:21	7:29	7:40
7:40	7:44	7:51	7:59	8:10
8:10	8:14	8:21	8:29	8:40
8:40	8:44	8:51	8:59	9:10
9:50	9:54	10:01	10:09	10:20
10:50	10:54	11:01	11:09	11:20
11:50	11:54	**12:01**	**12:09**	**12:20**
12:50	**12:54**	**1:01**	**1:09**	**1:20**
1:50	**1:54**	**2:01**	**2:09**	**2:20**
2:50	**2:54**	**3:01**	**3:09**	**3:20**
3:52	**3:56**	**4:03**	**4:11**	**4:22**
4:23	**4:27**	**2:04**	**4:42**	**4:53**
4:53	**4:57**	**5:04**	**5:12**	**5:23**
5:23	**5:27**	**5:34**	**5:42**	**5:53**
5:53	**5:57**	**6:04**	**6:12**	**6:23**
6:23	**6:27**	**6:34**	**6:42**	**6:53**
6:53	**6:57**	**7:04**	**7:12**	**7:23**

FOR EVENING/WEEKEND/HOLIDAY SERVICE, SEE ROUTE 25

Times shown in bold are P.M. Letters correspond to the time points on the map. If your stop is between time points, use the time given for the time point before your stop to avoid missing the bus.

Weekday •Outbound
30-min peak 60-min off peak

Central Park Stand 3	14 St NW @ John Marshal High School	12 Ave NW & Cascade St NW	41 St NW @ Gates of Rochester	IBM Campus & South of 37 St NW	Target North @ Marketplace Dr NW
*	A	B	C	D	E
5:30	5:41	5:49	5:57	6:02	6:08
6:00	6:11	6:19	6:27	6:32	6:38
6:30	6:41	6:49	6:57	7:02	7:08
7:00	7:11	7:19	7:27	7:32	7:38
7:30	7:41	7:49	7:57	8:02	8:08
8:00	8:11	8:19	8:27	8:32	8:38
9:16	9:27	9:35	9:43		9:47
10:16	10:27	10:35	10:43		10:47
11:16	11:27	11:35	11:43		11:47
12:16	**12:27**	**12:35**	**12:43**		**12:47**
1:16	**1:27**	**1:35**	**1:43**		**1:47**
2:16	**2:27**	**2:35**	**2:43**		**2:47**
3:12	**3:23**	**3:31**	**3:39**	**3:44**	**3:50**
3:42	**3:53**	**4:01**	**4:09**	**4:14**	**4:20**
4:12	**4:23**	**4:31**	**4:39**	**4:44**	**4:50**
4:42	**4:53**	**5:01**	**5:09**	**5:14**	**5:20**
5:12	**5:23**	**5:31**	**5:39**	**5:44**	**5:50**
5:42	**5:53**	**6:01**	**6:09**	**6:14**	**6:20**
6:12	**6:23**	**6:31**	**6:39**	**6:44**	**6:50**

ALLIANT

Appendix B

TRAFFIC OPERATIONS ANALYSIS RESULTS

FINAL REPORT

Elton Hills Drive NW Traffic and Safety Study - Measures of Effectiveness Summary

Existing Year 2025 Conditions

Intersection	Overall		Movement	Eastbound Approach		Westbound Approach		Northbound Approach		Southbound Approach	
	AM	PM		AM	PM	AM	PM	AM	PM	AM	PM
Elton Hills Drive NW & E Frontage Road	C	C	Approach	B / 16.5	C / 29.4	C / 23.3	C / 25.1	C / 33.3	D / 35.8	C / 26.6	C / 25.6
			Left	D / 48.0	F / 106.2	D / 47.1	D / 47.6	D / 37.3	D / 39.3	B / 18.5	C / 21.6
	22.1	29.7	Through	B / 15.5	C / 20.6	C / 20.3	C / 24.0	C / 32.6	C / 30.7	D / 41.3	D / 42.1
			Right	A / 9.9	B / 13.4	A / 3.1	A / 3.3	C / 21.6	C / 22.8	A / 7.7	B / 13.3
Elton Hills Drive NW & 22nd Street	A	A	Approach	A / 2.5	A / 3.0	A / 0.9	A / 1.0	B / 12.9	B / 13.0	A / 5.8	A / 6.2
			Left	A / 4.1	A / 5.7	A / 5.5	A / 3.7	B / 14.3	B / 13.9	B / 12.0	B / 10.6
	2.2	2.5	Through	A / 2.5	A / 2.9	A / 0.9	A / 1.0	B / 15.0	C / 15.4	A / 0.0	A / 0.0
			Right	A / 2.4	A / 2.9	A / 0.7	A / 0.9	A / 5.4	A / 5.4	A / 5.0	A / 4.4
Elton Hills Drive NW & 15th Avenue	A	A	Approach	A / 2.2	A / 2.0	A / 0.9	A / 0.7	A / 0.0	A / 0.0	A / 7.8	A / 6.3
			Left	A / 5.8	A / 5.1	A / 0.0	A / 0.0	A / 0.0	A / 0.0	B / 11.7	B / 11.2
	2.2	1.6	Through	A / 1.6	A / 1.7	A / 0.9	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.8	A / 0.6	A / 0.0	A / 0.0	A / 6.4	A / 4.3
Elton Hills Drive NW & 14th Avenue S	A	A	Approach	A / 2.8	A / 2.3	A / 2.4	A / 2.2	A / 7.4	A / 6.8	A / 0.0	A / 0.0
			Left	A / 0.0	A / 0.0	A / 7.9	A / 7.1	A / 9.1	A / 8.5	A / 0.0	A / 0.0
	2.8	2.3	Through	A / 2.8	A / 2.3	A / 2.4	A / 2.1	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 2.5	A / 0.5	A / 0.0	A / 0.0	A / 4.6	A / 4.0	A / 0.0	A / 0.0
Elton Hills Drive NW & 14th Avenue N	A	A	Approach	A / 0.7	A / 0.7	A / 0.3	A / 0.3	A / 0.0	A / 0.0	A / 5.8	A / 0.0
			Left	A / 3.3	A / 3.6	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 8.0	A / 0.0
	0.6	0.5	Through	A / 0.7	A / 0.6	A / 0.3	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.2	A / 0.1	A / 0.0	A / 0.0	A / 4.2	A / 0.0
Elton Hills Drive NW & 13th Avenue	A	A	Approach	A / 0.4	A / 0.5	A / 0.3	A / 0.3	A / 5.4	A / 7.1	A / 8.9	A / 4.6
			Left	A / 4.2	A / 2.6	A / 2.3	A / 4.0	B / 11.3	A / 9.6	A / 9.8	A / 0.0
	0.5	0.5	Through	A / 0.4	A / 0.5	A / 0.3	A / 0.3	A / 5.2	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.3	A / 0.4	A / 0.2	A / 0.0	A / 3.6	A / 4.9	A / 7.1	A / 4.6
Elton Hills Drive NW & 12th Avenue	A	A	Approach	A / 1.0	A / 0.7	A / 0.4	A / 0.5	A / 7.8	A / 7.6	A / 7.3	A / 8.0
			Left	A / 4.6	A / 3.9	A / 0.0	A / 3.0	B / 13.5	B / 10.4	B / 10.1	B / 11.1
	1.2	1.0	Through	A / 0.7	A / 0.5	A / 0.4	A / 0.5	C / 16.7	A / 0.0	B / 11.9	A / 0.0
			Right	A / 0.4	A / 0.2	A / 0.2	A / 0.3	A / 5.2	A / 6.8	A / 4.7	A / 4.6
Elton Hills Drive NW & 11th Avenue	A	A	Approach	A / 0.6	A / 0.5	A / 0.5	A / 0.7	A / 6.7	A / 6.0	A / 4.2	A / 5.8
			Left	A / 4.2	A / 3.1	A / 2.3	A / 5.4	A / 7.8	A / 9.9	A / 4.4	A / 8.7
	0.7	0.7	Through	A / 0.5	A / 0.5	A / 0.5	A / 0.6	C / 18.2	A / 0.0	A / 0.0	A / 6.8
			Right	A / 0.3	A / 0.3	A / 0.6	A / 0.7	A / 4.1	A / 4.7	A / 4.1	A / 3.5
Elton Hills Drive NW & 9th Avenue	A	A	Approach	A / 1.8	A / 2.1	A / 0.5	A / 0.7	A / 6.9	A / 7.0	B / 13.4	A / 7.8
			Left	A / 4.7	A / 5.1	A / 1.8	A / 5.2	A / 8.3	B / 14.9	C / 17.5	B / 12.8
	3.9	2.3	Through	A / 1.0	A / 1.2	A / 0.5	A / 0.7	A / 0.0	A / 0.0	A / 9.5	A / 9.7
			Right	A / 0.2	A / 0.2	A / 0.3	A / 0.4	A / 4.0	A / 3.0	B / 11.6	A / 6.8
Elton Hills Drive NW & Zumbro Drive	A	A	Approach	A / 0.5	A / 0.6	A / 0.3	A / 0.5	A / 6.7	A / 7.3	A / 4.6	A / 4.9
			Left	A / 2.6	A / 4.2	A / 2.1	A / 0.0	A / 8.7	A / 0.0	A / 8.1	A / 7.1
	0.6	0.7	Through	A / 0.4	A / 0.4	A / 0.3	A / 0.5	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.5	A / 0.1	A / 0.2	A / 0.4	A / 4.6	A / 7.3	A / 3.6	A / 4.2
Elton Hills Drive NW & 6th Avenue	A	A	Approach	A / 0.4	A / 0.4	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 5.4	A / 4.7
			Left	A / 5.0	A / 2.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 6.4	A / 0.0
	0.4	0.4	Through	A / 0.4	A / 0.4	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.0	A / 0.3	A / 0.0	A / 0.0	A / 3.0	A / 4.7
Elton Hills Drive NW & 5th Avenue	A	A	Approach	A / 0.2	A / 0.2	A / 0.3	A / 0.4	A / 3.7	A / 2.2	A / 7.1	A / 7.0
			Left	A / 3.9	A / 3.2	A / 3.1	A / 2.4	A / 0.0	A / 0.0	A / 8.3	A / 8.2
	0.4	0.4	Through	A / 0.2	A / 0.2	A / 0.3	A / 0.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.2	A / 0.0	A / 0.2	A / 0.5	A / 3.7	A / 2.2	A / 3.3	A / 5.0
Elton Hills Drive NW & 4th Street	A	A	Approach	A / 0.5	A / 0.6	A / 1.1	A / 0.8	A / 5.0	A / 6.1	A / 5.8	A / 7.9
			Left	A / 2.7	A / 5.2	A / 3.8	A / 3.5	A / 8.8	A / 8.7	A / 7.5	A / 9.9
	1.1	1.0	Through	A / 0.5	A / 0.6	A / 0.9	A / 0.6	B / 11.1	B / 13.3	A / 7.3	A / 0.0
			Right	A / 0.3	A / 0.4	A / 0.9	A / 0.7	A / 4.3	A / 4.6	A / 4.2	A / 3.9
Elton Hills Drive NW & Hoover Elementary Access	A	A	Approach	A / 5.4	A / 1.7	A / 4.6	A / 2.0	A / 7.1	A / 7.1	A / 8.3	A / 5.4
			Left	A / 9.5	A / 5.6	A / 3.4	A / 0.0	A / 0.0	A / 9.8	B / 12.2	A / 7.6
	5.4	1.9	Through	A / 4.7	A / 1.6	A / 4.8	A / 2.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 2.3	A / 3.8	A / 1.1	A / 7.1	A / 4.4	A / 3.9	A / 3.8
Elton Hills Drive NW & Viking Drive	A	A	Approach	A / 1.9	A / 1.3	A / 1.7	A / 1.8	A / 8.5	A / 8.2	A / 8.7	A / 8.4
			Left	A / 4.6	A / 3.9	A / 5.1	A / 5.1	B / 10.4	B / 10.9	B / 10.6	B / 11.4
	2.3	2.3	Through	A / 1.8	A / 1.3	A / 1.6	A / 1.6	A / 0.0	A / 0.0	A / 5.2	A / 9.4
			Right	A / 1.9	A / 0.9	A / 1.5	A / 1.5	A / 6.2	A / 5.3	A / 6.1	A / 5.3
Elton Hills Drive NW & West River Parkway	B	B	Approach	B / 16.3	B / 19.6	B / 14.1	B / 16.6	B / 17.7	C / 20.0	C / 20.4	C / 22.4
			Left	B / 15.2	C / 20.1	B / 18.9	B / 18.4	B / 19.4	B / 16.7	B / 15.0	B / 17.5
	16.7	19.3	Through	B / 17.6	C / 20.7	B / 14.7	B / 18.1	C / 20.7	C / 24.2	C / 24.2	C / 26.9
			Right	B / 13.0	B / 13.9	A / 7.9	B / 10.6	B / 11.0	B / 15.2	B / 16.1	B / 15.4
Elton Hills Drive NW & Viking Village Access	A	A	Approach	A / 1.9	A / 1.9	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 3.3	A / 4.2
			Left	A / 3.7	A / 4.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 5.7	A / 7.0
	1.1	1.2	Through	A / 1.9	A / 1.9	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.1	A / 0.1	A / 0.0	A / 0.0	A / 2.8	A / 3.7
Elton Hills Drive NW & Elton Hills Lane	A	A	Approach	A / 1.0	A / 0.7	A / 0.5	A / 0.5	A / 7.9	A / 9.5	A / 5.0	A / 5.9
			Left	A / 3.1	A / 3.1	A / 4.3	A / 4.1	B / 11.3	B / 11.4	A / 9.2	A / 9.9
	1.1	1.7	Through	A / 0.9	A / 0.5	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.6	A / 0.3	A / 0.1	A / 0.0	A / 4.5	A / 5.9	A / 3.5	A / 4.0
Elton Hills Drive NW & Northbrook Lane	A	A	Approach	A / 0.9	A / 1.5	A / 1.0	A / 0.8	A / 7.9	A / 8.9	A / 0.0	A / 0.0
			Left	A / 0.0	A / 6.6	A / 5.0	A / 5.3	A / 9.6	A / 9.7	A / 0.0	A / 0.0
	1.3	1.7	Through	A / 1.0	A / 1.6	A / 0.9	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.5	A / 0.5	A / 0.8	A / 0.6	A / 4.0	A / 7.9	A / 0.0	A / 0.0
Elton Hills Drive NW & Rec Center West Access	A	A	Approach	A / 0.8	A / 1.1	A / 0.2	A / 0.4	A / 0.0	A / 0.0	A / 4.4	A / 5.0
			Left	A / 4.0	A / 3.9	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 8.1	B / 10.5
	0.6	1.0	Through	A / 0.6	A / 0.9	A / 0.2	A / 0.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 3.9	A / 4.3
Elton Hills Drive NW & TH 52 SPUI	B	C	Approach	C / 22.6	C / 31.4	B / 14.2	B / 15.0	B / 10.9	B / 12.6	C / 25.8	B / 20.0
			Left	D / 44.0	D / 47.6	D / 35.3	D / 40.9	C / 27.8	C / 28.5	C / 33.8	C / 32.0
	18.2	20.4	Through	C / 22.9	C / 32.9	A / 8.7	B / 13.1	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 3.1	A / 6.0	A / 3.0	A / 3.2	A / 6.1	A / 4.5	A / 1.3	A / 2.6
Elton Hills Drive NW & Broadway Avenue N	B	B	Approach	B / 19.6	C / 21.4	D / 50.5	D / 40.9	B / 12.6	A / 9.0	B / 12.3	B / 11.0
			Left	D / 36.6	D / 37.9	D / 47.6	D / 42.0	C / 21.4	B / 12.2	B / 11.1	B / 11.9
	17.4	13.7	Through	C / 27.4	C / 34.3	E / 60.4	E / 57.5	A / 8.8	A / 8.4	B / 14.3	B / 13.6
			Right	A / 7.8	A / 6.9	D / 37.5	C / 24.2	A / 1.5	A / 1.1	A / 3.3	A / 2.6

LOS / Delay

Elton Hills Drive NW Traffic and Safety Study - Measures of Effectiveness Summary

Year 2025 - 3-Lane Cross-Section

Intersection	Overall		Movement	Eastbound Approach		Westbound Approach		Northbound Approach		Southbound Approach	
	AM	PM		AM	PM	AM	PM	AM	PM	AM	PM
Elton Hills Drive NW & E Frontage Road	C	C	Approach	B / 14.0	B / 17.0	C / 26.1	C / 29.7	C / 34.3	D / 36.6	C / 26.0	C / 26.7
			Left	C / 33.0	D / 41.0	D / 45.4	D / 49.9	D / 42.4	D / 43.4	C / 24.9	C / 26.4
	21.9	25.6	Through	B / 15.6	B / 16.7	C / 23.6	C / 28.8	C / 26.4	C / 25.4	D / 39.0	D / 43.9
			Right	A / 7.2	A / 8.0	A / 2.1	A / 2.7	B / 17.1	B / 16.8	A / 7.7	B / 12.2
Elton Hills Drive NW & 22nd Street	A	A	Approach	A / 3.8	A / 5.5	A / 1.8	A / 1.8	B / 12.9	C / 20.3	A / 6.4	A / 9.4
			Left	A / 6.5	A / 9.3	A / 9.6	A / 8.7	B / 13.6	C / 21.1	C / 23.4	C / 19.2
	3.3	4.5	Through	A / 4.0	A / 5.8	A / 1.7	A / 1.7	B / 14.0	C / 23.7	A / 0.0	A / 0.0
			Right	A / 1.7	A / 1.9	A / 2.0	A / 1.7	A / 9.6	B / 13.0	A / 4.6	A / 4.2
Elton Hills Drive NW & 15th Avenue	A	A	Approach	A / 2.5	A / 2.5	A / 1.5	A / 1.2	A / 0.0	A / 0.0	B / 11.2	B / 10.7
			Left	A / 6.7	A / 6.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0	C / 15.7	C / 20.5
	2.9	2.2	Through	A / 1.9	A / 2.2	A / 1.5	A / 1.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 1.0	A / 0.7	A / 0.0	A / 0.0	A / 9.2	A / 7.3
Elton Hills Drive NW & 14th Avenue S	A	A	Approach	A / 4.2	A / 3.2	A / 3.2	A / 2.8	A / 9.2	A / 8.8	A / 0.0	A / 0.0
			Left	A / 0.0	A / 0.0	B / 10.2	A / 7.3	B / 10.1	B / 11.3	A / 0.0	A / 0.0
	3.9	3.1	Through	A / 4.2	A / 3.2	A / 3.2	A / 2.8	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 3.0	A / 2.4	A / 0.0	A / 0.0	A / 7.5	A / 5.6	A / 0.0	A / 0.0
Elton Hills Drive NW & 14th Avenue N	A	A	Approach	A / 1.0	A / 0.9	A / 0.8	A / 0.7	A / 0.0	A / 0.0	A / 8.0	A / 3.1
			Left	A / 4.0	A / 4.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0	B / 11.4	A / 3.1
	1.0	0.8	Through	A / 1.0	A / 0.9	A / 0.8	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.2	A / 0.2	A / 0.0	A / 0.0	A / 5.4	A / 0.0
Elton Hills Drive NW & 13th Avenue	A	A	Approach	A / 0.7	A / 0.8	A / 0.5	A / 0.7	A / 6.8	B / 11.4	A / 8.9	A / 4.5
			Left	A / 4.2	A / 5.3	A / 4.2	A / 5.3	B / 10.9	B / 13.3	B / 12.3	A / 0.0
	0.8	0.9	Through	A / 0.7	A / 0.8	A / 0.5	A / 0.6	B / 12.1	A / 0.0	A / 0.0	A / 7.0
			Right	A / 0.2	A / 0.3	A / 0.2	A / 0.0	A / 5.5	A / 8.3	A / 4.7	A / 4.1
Elton Hills Drive NW & 12th Avenue	A	A	Approach	A / 1.0	A / 0.9	A / 0.8	A / 1.0	A / 7.8	A / 7.6	A / 9.4	B / 11.4
			Left	A / 4.5	A / 4.7	A / 3.8	A / 6.3	A / 9.3	B / 10.9	B / 14.2	C / 15.8
	1.5	1.5	Through	A / 0.7	A / 0.7	A / 0.8	A / 1.0	B / 10.3	A / 0.0	B / 10.8	A / 0.0
			Right	A / 0.4	A / 0.7	A / 0.3	A / 0.6	A / 6.9	A / 6.1	A / 5.8	A / 7.2
Elton Hills Drive NW & 11th Avenue	A	A	Approach	A / 0.7	A / 0.9	A / 1.0	A / 1.4	B / 10.2	A / 8.0	A / 5.1	A / 7.6
			Left	A / 4.3	A / 4.3	A / 5.7	A / 5.8	B / 13.2	B / 13.0	A / 7.3	A / 9.9
	1.0	1.3	Through	A / 0.6	A / 0.9	A / 1.0	A / 1.3	B / 10.4	A / 0.0	A / 0.0	A / 4.7
			Right	A / 0.2	A / 0.5	A / 1.2	A / 1.0	A / 6.4	A / 6.2	A / 4.5	A / 6.8
Elton Hills Drive NW & 9th Avenue	A	A	Approach	A / 2.2	A / 2.7	A / 1.1	A / 1.5	A / 3.7	B / 11.4	D / 25.2	B / 12.3
			Left	A / 5.2	A / 7.1	A / 4.7	A / 3.2	A / 0.0	C / 16.7	D / 28.9	C / 19.6
	6.7	3.6	Through	A / 1.2	A / 1.3	A / 1.2	A / 1.6	A / 0.0	A / 0.0	F / 68.1	C / 20.1
			Right	A / 0.1	A / 0.7	A / 0.5	A / 0.6	A / 3.7	A / 8.7	C / 23.3	B / 10.7
Elton Hills Drive NW & Zumbro Drive	A	A	Approach	A / 0.6	A / 0.7	A / 0.8	A / 1.1	B / 13.4	A / 6.2	A / 6.1	A / 6.9
			Left	A / 3.0	A / 4.1	A / 3.2	A / 0.0	C / 15.3	A / 0.0	B / 10.6	A / 8.6
	0.9	1.1	Through	A / 0.5	A / 0.5	A / 0.8	A / 1.1	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.4	A / 0.1	A / 0.3	A / 0.6	A / 9.5	A / 6.2	A / 4.4	A / 6.5
Elton Hills Drive NW & 6th Avenue	A	A	Approach	A / 0.7	A / 0.7	A / 0.4	A / 0.5	A / 0.0	A / 0.0	A / 8.1	A / 0.0
			Left	A / 2.9	A / 3.1	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 9.5	A / 0.0
	0.6	0.6	Through	A / 0.7	A / 0.7	A / 0.4	A / 0.5	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.0	A / 0.1	A / 0.0	A / 0.0	A / 4.0	A / 0.0
Elton Hills Drive NW & 5th Avenue	A	A	Approach	A / 0.4	A / 0.4	A / 0.6	A / 0.9	A / 7.3	A / 7.3	A / 9.2	A / 7.8
			Left	A / 2.9	A / 3.1	A / 5.7	A / 2.9	A / 0.0	A / 0.0	B / 11.0	B / 10.4
	0.7	0.8	Through	A / 0.4	A / 0.4	A / 0.6	A / 0.9	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.2	A / 0.4	A / 7.3	A / 7.3	A / 4.6	A / 3.3
Elton Hills Drive NW & 4th Street	A	A	Approach	A / 1.0	A / 1.0	A / 1.3	A / 1.1	A / 6.2	A / 7.9	A / 8.0	A / 7.6
			Left	A / 5.7	A / 3.9	A / 4.2	A / 3.6	A / 9.6	B / 11.9	B / 10.3	A / 9.7
	1.6	1.4	Through	A / 1.0	A / 1.0	A / 1.1	A / 0.9	B / 14.0	B / 14.1	B / 11.0	A / 0.0
			Right	A / 0.4	A / 0.5	A / 1.0	A / 0.6	A / 5.5	A / 5.8	A / 5.0	A / 4.3
Elton Hills Drive NW & Hoover Elementary Access	A	A	Approach	A / 6.6	A / 2.0	A / 5.3	A / 3.4	A / 2.3	A / 6.8	A / 8.1	A / 5.6
			Left	B / 11.6	A / 5.3	B / 13.8	A / 0.0	A / 0.0	B / 14.8	B / 11.7	A / 7.6
	6.2	2.8	Through	A / 5.6	A / 2.0	A / 5.8	A / 3.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.1	A / 3.4	A / 0.9	A / 2.3	A / 2.8	A / 4.7	A / 4.2
Elton Hills Drive NW & Viking Drive	A	A	Approach	A / 3.1	A / 3.9	A / 2.1	A / 2.0	B / 10.1	B / 12.3	B / 10.5	B / 10.7
			Left	A / 5.9	A / 5.3	A / 6.3	A / 5.2	B / 13.2	B / 14.2	B / 13.4	B / 14.6
	3.1	3.9	Through	A / 3.1	A / 3.9	A / 2.0	A / 1.8	A / 0.0	A / 0.0	B / 14.1	B / 12.2
			Right	A / 1.9	A / 3.0	A / 1.5	A / 1.2	A / 7.0	B / 10.5	A / 6.5	A / 7.3
Elton Hills Drive NW & West River Parkway	B	B	Approach	B / 15.8	B / 19.9	B / 15.2	B / 17.4	C / 20.4	C / 20.5	C / 21.8	C / 22.7
			Left	B / 19.6	C / 21.3	B / 18.9	C / 20.5	C / 20.1	B / 17.5	B / 17.7	B / 18.4
	17.5	19.7	Through	B / 19.3	C / 22.4	B / 17.4	C / 20.1	C / 25.9	C / 23.8	C / 25.2	C / 26.5
			Right	A / 6.1	A / 4.3	A / 3.2	A / 5.2	B / 12.2	B / 17.1	B / 16.5	B / 16.8
Elton Hills Drive NW & Viking Village Access	A	A	Approach	A / 2.0	A / 2.1	A / 0.6	A / 0.6	A / 0.0	A / 0.0	A / 4.5	A / 5.8
			Left	A / 3.4	A / 5.6	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 7.4	B / 10.6
	1.3	1.4	Through	A / 2.0	A / 2.0	A / 0.6	A / 0.6	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.7	A / 0.4	A / 0.0	A / 0.0	A / 3.1	A / 4.4
Elton Hills Drive NW & Elton Hills Lane	A	A	Approach	A / 1.5	A / 1.0	A / 0.6	A / 0.6	A / 7.8	B / 11.0	A / 6.0	A / 7.4
			Left	A / 4.1	A / 3.1	A / 4.9	A / 4.1	A / 9.8	B / 12.9	A / 8.0	B / 12.6
	1.5	2.1	Through	A / 1.5	A / 0.8	A / 0.4	A / 0.5	A / 0.0	A / 0.0	B / 13.9	A / 0.0
			Right	A / 0.8	A / 0.3	A / 0.1	A / 0.4	A / 5.5	A / 7.9	A / 4.7	A / 4.8
Elton Hills Drive NW & Northbrook Lane	A	A	Approach	A / 1.4	A / 3.1	A / 1.1	A / 1.0	A / 8.7	B / 10.3	A / 0.0	A / 0.0
			Left	A / 0.0	A / 4.0	A / 5.5	A / 4.0	B / 10.6	B / 12.7	A / 0.0	A / 0.0
	1.7	2.7	Through	A / 1.5	A / 3.3	A / 1.0	A / 0.9	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 1.1	A / 1.8	A / 0.6	A / 0.6	A / 4.4	A / 7.6	A / 0.0	A / 0.0
Elton Hills Drive NW & Rec Center West Access	A	A	Approach	A / 1.0	A / 0.9	A / 0.6	A / 0.6	A / 0.0	A / 0.0	A / 6.6	A / 5.6
			Left	A / 3.4	A / 4.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0	C / 18.9	B / 12.7
	0.9	1.0	Through	A / 0.8	A / 0.7	A / 0.6	A / 0.6	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.4	A / 0.4	A / 0.0	A / 0.0	A / 4.8	A / 4.9
Elton Hills Drive NW & TH 52 SPUI	B	B	Approach	C / 25.2	C / 21.7	B / 12.9	B / 14.9	A / 9.6	B / 14.7	C / 26.6	C / 22.9
			Left	D / 45.6	D / 45.7	C / 33.2	D / 45.8	C / 27.7	C / 34.0	D / 35.8	D / 37.4
	18.5	18.2	Through	C / 25.5	C / 21.5	A / 7.3	B / 12.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 3.2	A / 3.0	A / 3.0	A / 3.1	A / 4.7	A / 4.4	A / 1.3	A / 2.6
Elton Hills Drive NW & Broadway Avenue N	B	B	Approach	B / 18.1	C / 23.7	D / 52.9	D / 37.6	B / 12.9	A / 9.8	B / 12.1	B / 11.2
			Left	C / 34.3	D / 41.8	D / 49.4	D / 39.3	C / 21.6	B / 14.3	B / 11.4	B / 12.2
	17.6	14.4	Through	C / 23.9	D / 39.2	E / 62.8	E / 55.4	A / 9.2	A / 8.8	B / 14.1	B / 13.6
			Right	A / 7.4	A / 6.0	D / 36.9	C / 21.7	A / 1.7	A / 1.2	A / 3.8	A / 3.0

LOS / Delay

Elton Hills Drive NW Traffic and Safety Study - Measures of Effectiveness Summary

Year 2050 No Build Conditions

Intersection	Overall		Movement	Eastbound Approach		Westbound Approach		Northbound Approach		Southbound Approach	
	AM	PM		AM	PM	AM	PM	AM	PM	AM	PM
Elton Hills Drive NW & E Frontage Road	C	C	Approach	C / 20.4	C / 31.2	C / 23.0	C / 25.5	C / 34.1	D / 36.2	C / 26.9	C / 27.6
			Left	E / 62.1	F / 104.1	D / 43.2	D / 48.6	D / 38.6	D / 40.3	C / 21.0	C / 22.1
	24.1	30.8	Through	B / 18.6	C / 22.7	C / 20.5	C / 24.4	C / 33.2	C / 29.9	D / 40.8	D / 45.5
			Right	B / 12.2	B / 15.4	A / 2.5	A / 3.3	C / 20.1	C / 21.9	A / 8.4	B / 14.4
Elton Hills Drive NW & 22nd Street	A	A	Approach	A / 2.7	A / 3.2	A / 0.9	A / 1.0	B / 12.2	B / 12.7	A / 5.9	A / 5.8
			Left	A / 6.1	A / 5.7	A / 6.2	A / 8.1	B / 13.5	B / 14.0	B / 12.8	B / 10.1
	2.2	2.6	Through	A / 2.6	A / 3.1	A / 0.9	A / 0.9	C / 17.7	A / 8.0	A / 0.0	A / 0.0
			Right	A / 2.9	A / 3.2	A / 0.6	A / 0.8	A / 3.9	A / 6.8	A / 4.9	A / 4.5
Elton Hills Drive NW & 15th Avenue	A	A	Approach	A / 2.0	A / 1.8	A / 0.8	A / 0.7	A / 0.0	A / 0.0	A / 7.5	A / 7.9
			Left	A / 5.0	A / 5.5	A / 0.0	A / 0.0	A / 0.0	A / 0.0	B / 12.0	B / 12.9
	2.0	1.6	Through	A / 1.6	A / 1.6	A / 0.8	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.8	A / 0.5	A / 0.0	A / 0.0	A / 5.7	A / 5.7
Elton Hills Drive NW & 14th Avenue S	A	A	Approach	A / 3.0	A / 2.4	A / 2.5	A / 2.0	A / 8.2	A / 7.5	A / 0.0	A / 0.0
			Left	A / 0.0	A / 0.0	A / 7.7	A / 6.5	B / 10.3	A / 8.8	A / 0.0	A / 0.0
	2.9	2.3	Through	A / 3.0	A / 2.4	A / 2.5	A / 2.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 1.5	A / 1.9	A / 0.0	A / 0.0	A / 4.4	A / 5.2	A / 0.0	A / 0.0
Elton Hills Drive NW & 14th Avenue N	A	A	Approach	A / 0.7	A / 0.6	A / 0.3	A / 0.3	A / 0.0	A / 0.0	A / 6.1	A / 7.3
			Left	A / 4.6	A / 3.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 9.1	A / 7.3
	0.6	0.5	Through	A / 0.7	A / 0.6	A / 0.3	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.2	A / 0.1	A / 0.0	A / 0.0	A / 4.6	A / 0.0
Elton Hills Drive NW & 13th Avenue	A	A	Approach	A / 0.4	A / 0.5	A / 0.2	A / 0.4	A / 4.6	A / 7.9	A / 6.5	A / 6.5
			Left	A / 4.8	A / 2.7	A / 4.5	A / 4.2	A / 5.9	A / 9.3	A / 9.1	A / 0.0
	0.4	0.6	Through	A / 0.4	A / 0.5	A / 0.2	A / 0.3	A / 7.9	A / 0.0	A / 0.0	C / 15.9
			Right	A / 0.3	A / 0.3	A / 0.1	A / 0.0	A / 4.0	A / 6.1	A / 4.3	A / 3.3
Elton Hills Drive NW & 12th Avenue	A	A	Approach	A / 1.0	A / 0.9	A / 0.4	A / 0.4	A / 7.3	A / 5.2	A / 7.7	A / 9.3
			Left	A / 4.9	A / 4.8	A / 1.7	A / 3.9	A / 9.3	A / 8.6	B / 11.2	B / 13.1
	1.2	1.1	Through	A / 0.6	A / 0.7	A / 0.4	A / 0.4	B / 13.8	A / 0.0	A / 9.9	A / 0.0
			Right	A / 0.0	A / 0.5	A / 0.2	A / 0.3	A / 5.0	A / 4.0	A / 5.5	A / 5.7
Elton Hills Drive NW & 11th Avenue	A	A	Approach	A / 0.6	A / 0.6	A / 0.5	A / 0.7	A / 8.3	A / 4.4	A / 6.0	A / 8.0
			Left	A / 4.7	A / 4.5	A / 5.1	A / 4.3	B / 10.1	A / 6.9	A / 9.4	B / 10.8
	0.7	0.8	Through	A / 0.5	A / 0.6	A / 0.5	A / 0.6	C / 18.0	A / 0.0	A / 0.0	A / 5.5
			Right	A / 0.3	A / 0.4	A / 0.6	A / 0.7	A / 4.0	A / 3.6	A / 3.9	A / 5.0
Elton Hills Drive NW & 9th Avenue	A	A	Approach	A / 2.0	A / 2.3	A / 0.6	A / 0.7	A / 7.1	A / 3.8	C / 15.0	A / 9.4
			Left	A / 4.9	A / 5.4	A / 4.1	A / 2.5	A / 9.2	A / 6.0	C / 19.1	C / 18.3
	4.3	2.7	Through	A / 1.1	A / 1.3	A / 0.6	A / 0.7	A / 0.0	A / 0.0	C / 17.8	C / 17.5
			Right	A / 0.0	A / 0.0	A / 0.4	A / 0.4	A / 2.9	A / 3.1	B / 13.3	A / 7.2
Elton Hills Drive NW & Zumbro Drive	A	A	Approach	A / 0.5	A / 0.6	A / 0.4	A / 0.5	A / 7.8	A / 3.1	A / 5.3	A / 5.1
			Left	A / 3.6	A / 4.3	A / 5.9	A / 0.0	A / 9.1	A / 0.0	A / 8.8	A / 9.3
	0.7	0.7	Through	A / 0.4	A / 0.4	A / 0.4	A / 0.5	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.4	A / 0.2	A / 0.2	A / 0.2	A / 5.8	A / 3.1	A / 3.9	A / 4.2
Elton Hills Drive NW & 6th Avenue	A	A	Approach	A / 0.4	A / 0.4	A / 0.2	A / 0.2	A / 0.0	A / 0.0	A / 5.7	A / 3.5
			Left	A / 2.6	A / 2.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 6.3	A / 0.0
	0.4	0.3	Through	A / 0.4	A / 0.4	A / 0.2	A / 0.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.0	A / 0.2	A / 0.0	A / 0.0	A / 4.6	A / 3.5
Elton Hills Drive NW & 5th Avenue	A	A	Approach	A / 0.2	A / 0.3	A / 0.3	A / 0.4	A / 2.7	A / 3.9	A / 6.7	A / 7.0
			Left	A / 3.8	A / 4.2	A / 3.8	A / 4.3	A / 0.0	A / 0.0	A / 7.6	A / 8.7
	0.5	0.4	Through	A / 0.2	A / 0.2	A / 0.3	A / 0.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.4	A / 0.0	A / 0.1	A / 0.2	A / 2.7	A / 3.9	A / 3.9	A / 3.6
Elton Hills Drive NW & 4th Street	A	A	Approach	A / 0.5	A / 0.6	A / 1.2	A / 0.8	A / 5.7	A / 6.5	A / 6.2	A / 7.6
			Left	A / 2.3	A / 2.6	A / 4.3	A / 4.0	B / 13.7	A / 9.5	A / 7.5	A / 8.7
	1.3	1.0	Through	A / 0.5	A / 0.6	A / 1.0	A / 0.6	A / 8.5	B / 12.2	A / 8.0	A / 0.0
			Right	A / 0.5	A / 0.4	A / 1.3	A / 0.9	A / 4.7	A / 4.3	A / 3.7	A / 4.2
Elton Hills Drive NW & Hoover Elementary Access	A	A	Approach	A / 5.3	A / 1.2	A / 4.3	A / 2.0	A / 4.7	B / 16.2	A / 9.4	A / 6.0
			Left	A / 8.5	A / 4.2	A / 0.0	A / 0.0	A / 0.0	B / 16.2	B / 14.2	A / 8.8
	5.3	1.7	Through	A / 4.7	A / 1.2	A / 4.6	A / 2.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.1	A / 3.0	A / 2.3	A / 4.7	A / 0.0	A / 4.3	A / 4.0
Elton Hills Drive NW & Viking Drive	A	A	Approach	A / 2.0	A / 1.2	A / 1.6	A / 1.7	A / 8.4	A / 7.2	A / 8.0	A / 8.7
			Left	A / 4.4	A / 4.2	A / 5.3	A / 4.6	B / 10.8	B / 10.1	A / 9.8	B / 11.3
	2.2	2.2	Through	A / 1.9	A / 1.2	A / 1.5	A / 1.6	A / 0.0	A / 0.0	B / 13.7	C / 15.1
			Right	A / 1.4	A / 0.8	A / 1.3	A / 1.5	A / 6.2	A / 4.9	A / 5.1	A / 5.3
Elton Hills Drive NW & West River Parkway	B	B	Approach	B / 16.6	B / 18.4	B / 14.4	B / 17.0	C / 20.5	B / 19.2	C / 22.4	C / 21.3
			Left	B / 14.8	B / 19.8	B / 19.0	B / 19.0	B / 20.0	B / 16.3	B / 17.5	B / 18.9
	17.8	18.6	Through	B / 17.9	B / 19.3	B / 14.8	B / 17.6	C / 26.3	C / 23.0	C / 26.0	C / 24.3
			Right	B / 13.7	B / 13.4	A / 8.8	B / 14.0	B / 11.6	B / 14.3	B / 16.4	B / 13.7
Elton Hills Drive NW & Viking Village Access	A	A	Approach	A / 1.9	A / 1.9	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 5.2	A / 4.6
			Left	A / 2.6	A / 6.1	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 8.0	A / 7.9
	1.1	1.2	Through	A / 1.9	A / 1.8	A / 0.2	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.0	A / 0.2	A / 0.0	A / 0.0	A / 4.2	A / 3.8
Elton Hills Drive NW & Elton Hills Lane	A	A	Approach	A / 1.0	A / 0.8	A / 0.4	A / 0.4	A / 7.6	A / 9.6	A / 5.2	A / 8.5
			Left	A / 3.3	A / 3.4	A / 3.8	A / 3.5	A / 9.9	B / 11.5	A / 8.8	B / 13.1
	1.2	1.7	Through	A / 1.0	A / 0.5	A / 0.2	A / 0.3	A / 0.0	A / 0.0	C / 15.7	A / 0.0
			Right	A / 0.6	A / 0.2	A / 0.0	A / 0.7	A / 4.6	A / 6.4	A / 3.3	A / 6.0
Elton Hills Drive NW & Northbrook Lane	A	A	Approach	A / 0.9	A / 1.8	A / 1.0	A / 0.8	A / 6.3	A / 8.5	A / 0.0	A / 0.0
			Left	A / 0.0	A / 2.7	A / 4.3	A / 5.6	A / 7.6	A / 9.6	A / 0.0	A / 0.0
	1.2	1.8	Through	A / 1.0	A / 2.0	A / 0.9	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.6	A / 0.6	A / 0.6	A / 0.5	A / 3.5	A / 7.1	A / 0.0	A / 0.0
Elton Hills Drive NW & Rec Center West Access	A	A	Approach	A / 0.8	A / 1.2	A / 0.3	A / 0.3	A / 0.0	A / 0.0	A / 4.5	A / 4.3
			Left	A / 3.8	A / 4.9	A / 0.0	A / 0.0	A / 0.0	A / 0.0	B / 11.4	A / 8.8
	0.7	0.9	Through	A / 0.6	A / 0.9	A / 0.3	A / 0.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.3	A / 0.4	A / 0.0	A / 0.0	A / 3.5	A / 3.9
Elton Hills Drive NW & TH 52 SPUI	B	B	Approach	C / 23.9	C / 23.2	B / 13.5	B / 15.0	B / 11.6	B / 14.1	C / 25.5	C / 20.9
			Left	D / 46.5	D / 44.3	C / 34.8	D / 39.6	C / 32.2	C / 30.4	C / 33.3	C / 33.5
	18.2	18.3	Through	C / 24.3	C / 23.7	A / 8.1	B / 13.3	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 3.2	A / 3.5	A / 2.9	A / 3.0	A / 5.8	A / 5.7	A / 1.3	A / 2.7
Elton Hills Drive NW & Broadway Avenue N	B	B	Approach	B / 18.9	C / 23.1	D / 55.0	D / 39.1	B / 11.6	A / 9.3	B / 12.8	B / 11.3
			Left	D / 35.3	D / 41.0	D / 53.4	D / 38.1	B / 19.2	B / 13.6	B / 13.2	B / 11.4
	17.6	14.1	Through	C / 25.8	C / 28.4	E / 64.3	E / 56.9	A / 8.3	A / 8.3	B / 14.7	B / 13.8
			Right	A / 7.6	A / 6.8	D / 41.3	C / 22.2	A / 1.7	A / 1.3	A / 2.9	A / 2.6

LOS / Delay

Elton Hills Drive NW Traffic and Safety Study - Measures of Effectiveness Summary

Year 2050 - 3-Lane Cross-Section

Intersection	Overall		Movement	Eastbound Approach		Westbound Approach		Northbound Approach		Southbound Approach	
	AM	PM		AM	PM	AM	PM	AM	PM	AM	PM
Elton Hills Drive NW & E Frontage Road	C	C	Approach	B / 13.9	B / 18.4	C / 26.8	C / 30.1	C / 32.8	D / 36.8	C / 26.7	C / 25.5
			Left	C / 34.6	D / 39.4	D / 50.0	D / 53.3	D / 41.1	D / 42.9	C / 25.1	C / 23.1
	21.8	26.2	Through	B / 15.2	B / 19.0	C / 23.7	C / 29.2	C / 24.8	C / 25.9	D / 41.3	D / 43.5
			Right	A / 7.3	A / 9.3	A / 2.1	A / 2.7	B / 14.5	B / 19.4	A / 7.5	B / 12.3
Elton Hills Drive NW & 22nd Street	A	A	Approach	A / 4.2	A / 5.6	A / 1.8	A / 1.9	B / 14.8	C / 19.0	A / 5.4	A / 7.7
			Left	A / 8.7	A / 9.1	A / 6.2	A / 7.4	C / 16.0	C / 20.2	B / 14.5	C / 18.0
	3.4	4.4	Through	A / 4.3	A / 5.9	A / 1.7	A / 1.8	A / 0.0	B / 14.5	A / 0.0	A / 0.0
			Right	A / 1.9	A / 2.3	A / 1.3	A / 1.5	A / 8.5	B / 12.1	A / 4.4	A / 4.6
Elton Hills Drive NW & 15th Avenue	A	A	Approach	A / 2.7	A / 2.7	A / 1.5	A / 1.2	A / 0.0	A / 0.0	B / 11.6	A / 9.2
			Left	A / 6.7	A / 7.5	A / 0.0	A / 0.0	A / 0.0	A / 0.0	C / 19.0	B / 14.5
	3.0	2.3	Through	A / 2.1	A / 2.3	A / 1.5	A / 1.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.8	A / 0.7	A / 0.0	A / 0.0	A / 9.1	A / 7.0
Elton Hills Drive NW & 14th Avenue S	A	A	Approach	A / 4.4	A / 3.0	A / 3.4	A / 2.7	B / 10.2	A / 7.3	A / 0.0	A / 0.0
			Left	A / 0.0	A / 0.0	A / 5.9	A / 6.0	B / 12.0	A / 8.9	A / 0.0	A / 0.0
	4.1	2.9	Through	A / 4.4	A / 3.0	A / 3.4	A / 2.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 3.9	A / 1.5	A / 0.0	A / 0.0	A / 7.0	A / 4.7	A / 0.0	A / 0.0
Elton Hills Drive NW & 14th Avenue N	A	A	Approach	A / 1.0	A / 0.9	A / 0.7	A / 0.7	A / 0.0	A / 0.0	A / 7.2	C / 22.1
			Left	A / 5.3	A / 4.0	A / 0.0	A / 0.0	A / 0.0	A / 0.0	B / 11.8	C / 22.1
	0.9	0.8	Through	A / 1.0	A / 0.9	A / 0.7	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.4	A / 0.3	A / 0.0	A / 0.0	A / 4.4	A / 0.0
Elton Hills Drive NW & 13th Avenue	A	A	Approach	A / 0.7	A / 0.9	A / 0.6	A / 0.7	A / 6.0	B / 10.6	A / 7.5	A / 7.3
			Left	A / 3.2	A / 3.5	A / 3.9	A / 5.6	B / 11.2	B / 12.3	A / 9.0	A / 0.0
	0.8	0.9	Through	A / 0.7	A / 0.9	A / 0.6	A / 0.6	B / 10.6	A / 0.0	A / 0.0	B / 13.7
			Right	A / 0.3	A / 0.3	A / 0.3	A / 0.0	A / 4.6	A / 8.0	A / 5.5	A / 4.1
Elton Hills Drive NW & 12th Avenue	A	A	Approach	A / 0.9	A / 1.0	A / 0.8	A / 1.1	A / 10.0	A / 7.6	B / 10.9	B / 11.0
			Left	A / 4.2	A / 4.8	A / 5.5	A / 4.1	B / 14.8	B / 11.6	C / 16.2	C / 15.6
	1.6	1.6	Through	A / 0.6	A / 0.7	A / 0.8	A / 1.1	C / 18.2	A / 0.0	B / 12.8	A / 0.0
			Right	A / 0.2	A / 0.3	A / 0.3	A / 0.6	A / 6.3	A / 6.5	A / 6.9	A / 6.6
Elton Hills Drive NW & 11th Avenue	A	A	Approach	A / 0.6	A / 0.8	A / 1.1	A / 1.4	A / 8.6	A / 8.5	A / 6.0	A / 9.1
			Left	A / 3.6	A / 4.1	A / 4.3	A / 5.2	B / 11.9	B / 15.0	A / 9.6	B / 13.1
	1.0	1.3	Through	A / 0.6	A / 0.8	A / 1.1	A / 1.3	A / 6.1	A / 0.0	A / 0.0	A / 7.2
			Right	A / 0.3	A / 0.3	A / 0.8	A / 1.5	A / 5.6	A / 6.5	A / 5.4	A / 6.4
Elton Hills Drive NW & 9th Avenue	A	A	Approach	A / 2.3	A / 2.6	A / 1.1	A / 1.5	A / 7.9	A / 3.6	D / 26.1	C / 16.6
			Left	A / 5.5	A / 6.3	A / 2.3	A / 3.9	A / 7.9	A / 0.0	D / 31.3	D / 28.5
	6.8	4.1	Through	A / 1.3	A / 1.3	A / 1.2	A / 1.6	A / 0.0	A / 0.0	D / 32.9	E / 38.0
			Right	A / 0.1	A / 0.0	A / 0.5	A / 0.8	A / 0.0	A / 3.6	C / 24.0	B / 13.6
Elton Hills Drive NW & Zumbro Drive	A	A	Approach	A / 0.7	A / 0.7	A / 0.8	A / 1.2	A / 8.9	A / 5.4	A / 5.4	A / 7.3
			Left	A / 3.3	A / 4.1	A / 2.4	A / 0.0	B / 10.6	A / 0.0	A / 8.2	B / 12.8
	0.9	1.1	Through	A / 0.6	A / 0.5	A / 0.8	A / 1.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.5	A / 0.2	A / 0.6	A / 0.7	A / 5.6	A / 5.4	A / 4.2	A / 5.9
Elton Hills Drive NW & 6th Avenue	A	A	Approach	A / 0.8	A / 0.7	A / 0.4	A / 0.5	A / 0.0	A / 0.0	A / 8.3	A / 0.0
			Left	A / 3.1	A / 2.2	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 9.4	A / 0.0
	0.7	0.6	Through	A / 0.8	A / 0.7	A / 0.4	A / 0.5	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.1	A / 0.1	A / 0.0	A / 0.0	A / 4.9	A / 0.0
Elton Hills Drive NW & 5th Avenue	A	A	Approach	A / 0.5	A / 0.4	A / 0.6	A / 0.9	A / 5.4	A / 4.7	A / 8.6	A / 9.0
			Left	A / 2.8	A / 4.6	A / 2.9	A / 5.2	A / 0.0	A / 0.0	A / 9.9	B / 12.1
	0.8	0.8	Through	A / 0.5	A / 0.4	A / 0.6	A / 0.9	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.5	A / 0.0	A / 0.4	A / 0.5	A / 5.4	A / 4.7	A / 3.9	A / 4.7
Elton Hills Drive NW & 4th Street	A	A	Approach	A / 1.1	A / 1.0	A / 1.3	A / 1.1	A / 7.6	A / 7.2	A / 7.3	A / 7.9
			Left	A / 2.5	A / 4.4	A / 4.1	A / 4.4	B / 13.4	B / 11.3	A / 9.5	B / 10.4
	1.7	1.4	Through	A / 1.1	A / 1.0	A / 1.1	A / 0.9	A / 8.3	A / 9.3	B / 13.0	A / 0.0
			Right	A / 0.6	A / 0.6	A / 0.9	A / 0.5	A / 6.5	A / 5.1	A / 3.8	A / 4.8
Elton Hills Drive NW & Hoover Elementary Access	A	A	Approach	A / 6.1	A / 2.2	A / 5.1	A / 3.4	A / 9.1	A / 4.9	A / 8.8	A / 6.0
			Left	B / 10.4	A / 6.4	B / 11.6	A / 0.0	A / 0.0	A / 6.0	B / 13.2	A / 8.6
	6.0	2.9	Through	A / 5.4	A / 2.2	A / 5.6	A / 3.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.6	A / 3.2	A / 1.7	A / 9.1	A / 2.7	A / 4.4	A / 4.2
Elton Hills Drive NW & Viking Drive	A	A	Approach	A / 3.3	A / 4.6	A / 1.9	A / 2.1	A / 9.6	C / 17.8	B / 12.8	B / 12.1
			Left	A / 6.7	A / 5.5	A / 6.9	A / 5.7	B / 11.8	C / 18.3	C / 16.6	C / 15.9
	3.3	4.5	Through	A / 3.3	A / 4.7	A / 1.8	A / 1.9	A / 0.0	A / 0.0	A / 9.6	B / 10.1
			Right	A / 1.8	A / 3.7	A / 1.3	A / 1.3	A / 7.6	C / 17.3	A / 7.1	A / 8.6
Elton Hills Drive NW & West River Parkway	B	C	Approach	B / 15.6	C / 20.6	B / 15.9	B / 17.5	C / 20.3	C / 21.4	C / 21.8	C / 22.1
			Left	B / 17.9	B / 19.9	B / 19.7	C / 20.1	C / 20.6	B / 17.5	B / 16.5	C / 20.5
	17.7	20.1	Through	B / 19.4	C / 23.3	B / 18.1	C / 20.1	C / 24.4	C / 25.1	C / 25.2	C / 24.6
			Right	A / 5.7	A / 4.6	A / 3.2	A / 5.3	B / 12.7	B / 17.8	B / 19.1	B / 13.4
Elton Hills Drive NW & Viking Village Access	A	A	Approach	A / 2.0	A / 2.2	A / 0.5	A / 0.6	A / 0.0	A / 0.0	A / 5.5	A / 5.7
			Left	A / 0.0	A / 4.4	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 6.9	B / 11.1
	1.3	1.5	Through	A / 2.0	A / 2.2	A / 0.5	A / 0.6	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.4	A / 0.2	A / 0.0	A / 0.0	A / 4.1	A / 5.2
Elton Hills Drive NW & Elton Hills Lane	A	A	Approach	A / 1.4	A / 1.0	A / 0.7	A / 0.6	B / 11.6	A / 9.8	A / 6.2	A / 7.0
			Left	A / 3.5	A / 3.3	A / 5.4	A / 3.3	C / 15.3	B / 11.4	A / 8.7	B / 10.2
	1.6	1.9	Through	A / 1.4	A / 0.8	A / 0.4	A / 0.5	A / 0.0	A / 0.0	A / 3.7	A / 0.0
			Right	A / 0.8	A / 0.6	A / 0.3	A / 0.2	A / 6.9	A / 6.7	A / 5.1	A / 5.5
Elton Hills Drive NW & Northbrook Lane	A	A	Approach	A / 1.5	A / 2.3	A / 1.0	A / 1.0	A / 8.8	A / 8.4	A / 0.0	A / 0.0
			Left	A / 0.0	A / 2.0	A / 5.1	A / 4.5	B / 10.4	B / 10.2	A / 0.0	A / 0.0
	1.6	2.0	Through	A / 1.6	A / 2.4	A / 0.9	A / 0.9	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.8	A / 1.3	A / 0.7	A / 0.6	A / 3.8	A / 6.1	A / 0.0	A / 0.0
Elton Hills Drive NW & Rec Center West Access	A	A	Approach	A / 1.0	A / 1.1	A / 0.5	A / 0.7	A / 0.0	A / 0.0	A / 5.1	A / 5.2
			Left	A / 3.8	A / 4.6	A / 0.0	A / 0.0	A / 0.0	A / 0.0	A / 9.8	B / 11.1
	0.9	1.1	Through	A / 0.8	A / 0.8	A / 0.5	A / 0.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 0.0	A / 0.0	A / 0.2	A / 0.4	A / 0.0	A / 0.0	A / 4.5	A / 4.6
Elton Hills Drive NW & TH 52 SPUI	B	B	Approach	C / 24.2	C / 21.9	B / 12.9	B / 15.2	B / 10.8	B / 14.6	C / 25.7	C / 25.0
			Left	D / 42.3	D / 44.4	C / 33.3	D / 45.1	C / 31.6	C / 34.1	C / 34.7	D / 39.9
	18.1	18.7	Through	C / 25.1	C / 21.8	A / 7.1	B / 12.7	A / 0.0	A / 0.0	A / 0.0	A / 0.0
			Right	A / 3.2	A / 3.6	A / 3.0	A / 3.2	A / 4.7	A / 4.1	A / 1.4	A / 2.7
Elton Hills Drive NW & Broadway Avenue N	B	B	Approach	B / 19.5	C / 21.8	D / 45.8	D / 40.8	B / 11.4	A / 9.6	B / 11.6	B / 11.8
			Left	D / 39.5	D / 39.0	D / 44.2	D / 43.3	B / 16.6	B / 14.2	B / 10.9	B / 13.8
	16.4	14.1	Through	C / 24.5	C / 31.5	E / 56.3	E / 59.6	A / 9.5	A / 8.7	B / 13.3	B / 14.2
			Right	A / 8.5	A / 6.3	C / 32.3	C / 22.0	A / 1.4	A / 1.2	A / 3.4	A / 3.4

Existing Year 2025 Conditions - AM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	Movement Delay (sec/veh)	48.0	15.5	9.9	47.1	20.3	3.1	37.3	32.6	21.6	18.5	41.3	7.7	22.1
	Total Delay (hr)	1.7	2.6	1.5	1.1	3.1	0.0	2.5	1.1	0.4	0.1	1.9	0.3	16.3
	Movement LOS	D	B	A	D	C	A	D	C	C	B	D	A	C
	Movement Volume	130	589	525	86	549	19	241	116	74	11	165	123	2628
	Movement 95th Queue (ft)	120	214	259	122	187	51	137	166	166	16	161	57	
	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	Approach Delay (sec/veh)		16.5			23.3			33.3			26.6		
	Approach LOS		B			C			C			C		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	Movement Delay (sec/veh)	4.1	2.5	2.4	5.5	0.9	0.7	14.3	15.0	5.4	12.0	0.0	5.0	2.2
	Total Delay (hr)	0.0	0.4	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.6
	Movement LOS	A	A	A	A	A	A	B	B	A	B	A	A	A
	Movement Volume	8	569	53	6	581	6	36	1	7	3	0	23	1293
	Movement 95th Queue (ft)	19	19	0	23	12	0	57	57	57	46	46	46	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		2.5			0.9			12.9			5.8		
	Approach LOS		A			A			B			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	Movement Delay (sec/veh)	5.8	1.6	0.0	0.0	0.9	0.8	0.0	0.0	0.0	11.7	0.0	6.4	2.2
	Total Delay (hr)	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.2	0.7
	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	Movement Volume	78	507	0	0	503	44	0	0	0	34	0	91	1257
	Movement 95th Queue (ft)	75	45	0	0	3	3	0	0	0	83	0	83	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		2.2			0.9			0.0			7.8		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	Movement Delay (sec/veh)	0.0	2.8	2.5	7.9	2.4	0.0	9.1	0.0	4.6	0.0	0.0	0.0	2.8
	Total Delay (hr)	0.0	0.4	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.9
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	523	8	4	526	0	24	0	14	0	0	0	1099
	Movement 95th Queue (ft)	0	88	96	74	80	0	49	0	49	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		2.8			2.4			7.4			0.0		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	Movement Delay (sec/veh)	3.3	0.7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	8.0	0.0	4.2	0.6
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	3	536	0	0	523	7	0	0	0	5	0	7	1081
	Movement 95th Queue (ft)	15	15	0	0	0	0	0	0	0	33	0	33	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		0.7			0.3			0.0			5.8		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	Movement Delay (sec/veh)	4.2	0.4	0.3	2.3	0.3	0.2	11.3	5.2	3.6	9.8	0.0	7.1	0.5
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	Movement Volume	3	533	3	2	524	6	3	1	10	6	0	3	1094
	Movement 95th Queue (ft)	13	13	0	4	4	0	33	33	33	32	32	32	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		0.4			0.3			5.4			8.9		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	Movement Delay (sec/veh)	4.6	0.7	0.4	0.0	0.4	0.2	13.5	16.7	5.2	10.1	11.9	4.7	1.2
	Total Delay (hr)	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5
	Movement LOS	A	A	A	A	A	A	B	C	A	B	B	A	A
	Movement Volume	46	497	1	0	488	27	4	1	12	26	6	40	1148
	Movement 95th Queue (ft)	64	64	0	0	3	3	40	40	40	62	62	62	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		1.0			0.4			7.8			7.3		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	Movement Delay (sec/veh)	4.2	0.5	0.3	2.3	0.5	0.6	7.8	18.2	4.1	4.4	0.0	4.1	0.7
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	C	A	A	A	A	A
	Movement Volume	12	519	2	2	501	3	8	1	8	2	0	4	1062
	Movement 95th Queue (ft)	33	33	0	4	4	0	39	39	39	23	23	23	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.6			0.5			6.7			4.2			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	Movement Delay (sec/veh)	4.7	1.0	0.2	1.8	0.5	0.3	8.3	0.0	4.0	17.5	9.5	11.6	3.9
	Total Delay (hr)	0.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.6	1.3
	Movement LOS	A	A	A	A	A	A	A	A	A	C	A	B	A
	Movement Volume	118	413	1	1	333	48	2	0	1	75	1	175	1168
	Movement 95th Queue (ft)	78	78	0	6	5	4	17	17	17	176	176	176	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.8			0.5			6.9			13.4			
	Approach LOS	A			A			A			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	Movement Delay (sec/veh)	2.6	0.4	0.5	2.1	0.3	0.2	8.7	0.0	4.6	8.1	0.0	3.6	0.6
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	14	470	1	2	358	6	2	0	2	7	0	24	886
	Movement 95th Queue (ft)	16	16	0	5	5	0	21	21	21	52	52	52	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.5			0.3			6.7			4.6			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	Movement Delay (sec/veh)	5.0	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	6.4	0.0	3.0	0.4
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	481	0	0	362	1	0	0	0	7	0	3	855
	Movement 95th Queue (ft)	10	10	0	0	0	0	0	0	0	28	0	28	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.4			0.2			0.0			5.4			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	Movement Delay (sec/veh)	3.9	0.2	0.2	3.1	0.3	0.2	0.0	0.0	3.7	8.3	0.0	3.3	0.4
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	5	481	1	2	359	4	0	0	1	16	0	5	874
	Movement 95th Queue (ft)	14	14	0	6	6	0	10	10	10	44	44	44	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.2			0.3			3.7			7.1			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	Movement Delay (sec/veh)	2.7	0.5	0.3	3.8	0.9	0.9	8.8	11.1	4.3	7.5	7.3	4.2	1.1
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	B	A	A	A	A	A
	Movement Volume	2	490	9	23	346	8	6	1	45	11	3	15	959
	Movement 95th Queue (ft)	7	7	0	31	31	0	54	54	54	47	47	47	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.5			1.1			5.0			5.8			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	Movement Delay (sec/veh)	9.5	4.7	0.0	3.4	4.8	3.8	0.0	0.0	7.1	12.2	0.0	3.9	5.4
	Total Delay (hr)	0.2	0.6	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.2	0.0	0.1	1.6
	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	Movement Volume	76	471	0	1	319	95	0	0	1	63	0	56	1082
	Movement 95th Queue (ft)	100	97	93	76	87	98	8	8	8	65	65	55	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	50	
	Approach Delay (sec/veh)	5.4			4.6			7.1			8.3			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	Movement Delay (sec/veh)	4.6	1.8	1.9	5.1	1.6	1.5	10.4	0.0	6.2	10.6	5.2	6.1	2.3
	Total Delay (hr)	0.0	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.5
	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	Movement Volume	19	495	20	16	388	37	16	0	13	22	1	15	1042
	Movement 95th Queue (ft)	28	22	15	32	32	0	48	48	48	55	55	55	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.9			1.7			8.5			8.7			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	Movement Delay (sec/veh)	15.2	17.6	13.0	18.9	14.7	7.9	19.4	20.7	11.0	15.0	24.2	16.1	16.7
	Total Delay (hr)	0.1	1.8	0.5	0.2	1.3	0.1	0.4	0.5	0.2	0.4	1.2	0.2	6.9
	Movement LOS	B	B	B	B	B	A	B	C	B	B	C	B	B
	Movement Volume	22	374	140	44	322	65	74	77	52	90	181	47	1488
	Movement 95th Queue (ft)	26	151	176	40	90	106	65	105	105	112	215	215	
	Storage Bay Distance (ft)	100	0	0	190	0	0	275	0	0	150	0	0	
	Approach Delay (sec/veh)	16.3			14.1			17.7			20.4			
	Approach LOS	B			B			B			C			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	Movement Delay (sec/veh)	3.7	1.9	0.0	0.0	0.2	0.1	0.0	0.0	0.0	5.7	0.0	2.8	1.1
	Total Delay (hr)	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	510	0	0	420	1	0	0	0	1	0	5	938
	Movement 95th Queue (ft)	5	0	0	0	0	0	0	0	0	21	0	21	
	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.9			0.2			0.0			3.3			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	Movement Delay (sec/veh)	3.1	0.9	0.6	4.3	0.2	0.1	11.3	0.0	4.5	9.2	0.0	3.5	1.1
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	Movement Volume	25	391	75	25	380	2	19	0	19	6	0	17	959
	Movement 95th Queue (ft)	25	0	0	31	3	3	58	58	58	47	47	47	
	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.0			0.5			7.9			5.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	Movement Delay (sec/veh)	0.0	1.0	0.5	5.0	0.9	0.8	9.6	0.0	4.0	0.0	0.0	0.0	1.3
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	360	52	16	417	7	28	0	12	0	0	0	892
	Movement 95th Queue (ft)	0	10	10	38	38	0	49	49	32	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	Approach Delay (sec/veh)	0.9			1.0			7.9			0.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	Movement Delay (sec/veh)	4.0	0.6	0.0	0.0	0.2	0.2	0.0	0.0	0.0	8.1	0.0	3.9	0.6
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	25	476	0	0	394	16	0	0	0	3	0	23	937
	Movement 95th Queue (ft)	42	42	0	0	3	3	0	0	0	45	0	45	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.8			0.2			0.0			4.4			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	Movement Delay (sec/veh)	44.0	22.9	3.1	35.3	8.7	3.0	27.8	0.0	6.1	33.8	0.0	1.3	18.2
	Total Delay (hr)	1.1	4.2	0.1	2.6	1.0	0.2	0.6	0.0	0.5	2.4	0.0	0.0	12.7
	Movement LOS	D	C	A	D	A	A	C	A	A	C	A	A	B
	Movement Volume	86	662	103	260	404	293	79	0	276	257	0	84	2504
	Movement 95th Queue (ft)	82	244	110	186	97	11	95	0	173	238	0	0	
	Storage Bay Distance (ft)	160	0	165	275	0	250	0	0	600	0	0	0	
	Approach Delay (sec/veh)	22.6			14.2			10.9			25.8			
	Approach LOS	C			B			B			C			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	Movement Delay (sec/veh)	36.6	27.4	7.8	47.6	60.4	37.5	21.4	8.8	1.5	11.1	14.3	3.3	17.4
	Total Delay (hr)	1.1	0.7	0.4	0.9	1.3	0.4	1.2	0.8	0.0	0.2	2.5	0.1	9.6
	Movement LOS	D	C	A	D	E	D	C	A	A	B	B	A	B
	Movement Volume	102	92	208	65	76	43	199	334	43	69	618	127	1976
	Movement 95th Queue (ft)	132	96	96	133	225	225	183	95	9	69	190	79	
	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	Approach Delay (sec/veh)	19.6			50.5			12.6			12.3			
	Approach LOS	B			D			B			B			

Existing Year 2025 Conditions - PM Peak Hour

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	Movement Delay (sec/veh)	106.2	20.6	13.4	47.6	24.0	3.3	39.3	30.7	22.8	21.6	42.1	13.3	29.7
	Total Delay (hr)	5.0	3.9	1.7	0.5	3.9	0.0	5.7	1.5	0.5	0.1	1.6	0.7	25.1
	Movement LOS	F	C	B	D	C	A	D	C	C	C	D	B	C
	Movement Volume	169	666	442	36	583	9	516	175	73	13	135	178	2995
	Movement 95th Queue (ft)	250	421	450	62	191	42	235	189	189	23	139	111	
	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	Approach Delay (sec/veh)		29.4			25.1			35.8			25.6		
	Approach LOS		C			C			D			C		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	Movement Delay (sec/veh)	5.7	2.9	2.9	3.7	1.0	0.9	13.9	15.4	5.4	10.6	0.0	4.4	2.5
	Total Delay (hr)	0.0	0.5	0.1	0.0	0.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.9
	Movement LOS	A	A	A	A	A	A	B	C	A	B	A	A	A
	Movement Volume	24	622	81	7	570	5	36	3	5	6	0	15	1374
	Movement 95th Queue (ft)	41	25	9	8	4	0	49	49	49	41	41	41	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		3.0			1.0			13.0			6.2		
	Approach LOS		A			A			B			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	Movement Delay (sec/veh)	5.1	1.7	0.0	0.0	0.7	0.6	0.0	0.0	0.0	11.2	0.0	4.3	1.6
	Total Delay (hr)	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	Movement Volume	47	586	0	0	542	19	0	0	0	15	0	38	1247
	Movement 95th Queue (ft)	58	58	0	0	0	0	0	0	0	53	0	53	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		2.0			0.7			0.0			6.3		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	Movement Delay (sec/veh)	0.0	2.3	0.5	7.1	2.1	0.0	8.5	0.0	4.0	0.0	0.0	0.0	2.3
	Total Delay (hr)	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	0	591	11	7	548	0	15	0	9	0	0	0	1181
	Movement 95th Queue (ft)	0	93	100	71	75	0	43	0	43	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		2.3			2.2			6.8			0.0		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	Movement Delay (sec/veh)	3.6	0.6	0.0	0.0	0.3	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	12	584	0	0	551	3	0	0	0	0	0	0	1150
	Movement 95th Queue (ft)	27	27	0	0	0	0	0	0	0	5	0	5	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		0.7			0.3			0.0			0.0		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	Movement Delay (sec/veh)	2.6	0.5	0.4	4.0	0.3	0.0	9.6	0.0	4.9	0.0	0.0	4.6	0.5
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	3	570	11	6	539	0	8	0	9	0	0	4	1150
	Movement 95th Queue (ft)	15	15	0	20	20	0	36	36	36	24	24	24	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		0.5			0.3			7.1			4.6		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	Movement Delay (sec/veh)	3.9	0.5	0.2	3.0	0.5	0.3	10.4	0.0	6.8	11.1	0.0	4.6	1.0
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	Movement Volume	32	541	3	4	514	46	4	0	13	30	0	28	1215
	Movement 95th Queue (ft)	44	44	0	12	12	0	41	41	41	54	54	54	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)		0.7			0.5			7.6			8.0		
	Approach LOS		A			A			A			A		

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	Movement Delay (sec/veh)	3.1	0.5	0.3	5.4	0.6	0.7	9.9	0.0	4.7	8.7	6.8	3.5	0.7
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	4	571	8	15	558	5	4	0	12	2	1	3	1183
	Movement 95th Queue (ft)	14	14	0	29	29	0	38	38	38	25	25	25	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.5			0.7			6.0			5.8			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	Movement Delay (sec/veh)	5.1	1.2	0.2	5.2	0.7	0.4	14.9	0.0	3.0	12.8	9.7	6.8	2.3
	Total Delay (hr)	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.3	0.8
	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	Movement Volume	143	444	1	3	440	62	1	0	2	28	1	138	1263
	Movement 95th Queue (ft)	77	45	12	18	11	4	17	17	17	88	88	88	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	2.1			0.7			7.0			7.8			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	Movement Delay (sec/veh)	4.2	0.4	0.1	0.0	0.5	0.4	0.0	0.0	7.3	7.1	0.0	4.2	0.7
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	23	444	2	0	485	11	0	0	1	6	0	19	991
	Movement 95th Queue (ft)	34	34	0	0	2	2	12	12	12	45	45	45	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.6			0.5			7.3			4.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	Movement Delay (sec/veh)	2.7	0.4	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0	4.7	0.4
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	1	452	0	0	497	3	0	0	0	0	0	1	954
	Movement 95th Queue (ft)	9	9	0	0	0	0	0	0	0	10	0	10	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.4			0.3			0.0			4.7			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	Movement Delay (sec/veh)	3.2	0.2	0.0	2.4	0.4	0.5	0.0	0.0	2.2	8.2	0.0	5.0	0.4
	Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	5	446	0	1	497	7	0	0	1	7	0	4	968
	Movement 95th Queue (ft)	11	11	0	4	4	0	8	8	8	35	35	35	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.2			0.4			2.2			7.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	Movement Delay (sec/veh)	5.2	0.6	0.4	3.5	0.6	0.7	8.7	13.3	4.6	9.9	0.0	3.9	1.0
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	Movement LOS	A	A	A	A	A	A	A	B	A	A	A	A	A
	Movement Volume	5	433	16	27	486	6	13	1	28	8	0	4	1027
	Movement 95th Queue (ft)	21	21	0	31	31	0	48	48	48	36	36	36	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.6			0.8			6.1			7.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	Movement Delay (sec/veh)	5.6	1.6	2.3	0.0	2.0	1.1	9.8	0.0	4.4	7.6	0.0	3.8	1.9
	Total Delay (hr)	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	6	461	1	0	502	6	2	0	2	9	0	12	1001
	Movement 95th Queue (ft)	47	55	63	57	64	71	19	19	19	31	31	31	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	50	
	Approach Delay (sec/veh)	1.7			2.0			7.1			5.4			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	Movement Delay (sec/veh)	3.9	1.3	0.9	5.1	1.6	1.5	10.9	0.0	5.3	11.4	9.4	5.3	2.3
	Total Delay (hr)	0.0	0.2	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.6
	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	Movement Volume	11	433	30	32	453	20	30	0	27	27	1	26	1090
	Movement 95th Queue (ft)	24	17	9	50	35	20	55	55	55	56	56	56	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.3			1.8			8.2			8.4			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	Movement Delay (sec/veh)	20.1	20.7	13.9	18.4	18.1	10.6	16.7	24.2	15.2	17.5	26.9	15.4	19.3
	Total Delay (hr)	0.1	2.2	0.3	0.2	1.8	0.3	0.7	1.4	0.3	0.4	1.0	0.1	8.8
	Movement LOS	C	C	B	B	B	B	B	C	B	B	C	B	B
	Movement Volume	21	388	74	40	351	96	138	197	76	89	134	23	1627
	Movement 95th Queue (ft)	28	142	154	38	119	129	97	196	196	69	138	138	
	Storage Bay Distance (ft)	100	0	0	190	0	0	275	0	0	150	0	0	
	Approach Delay (sec/veh)	19.6			16.6			20.0			22.4			
	Approach LOS	B			B			C			C			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	Movement Delay (sec/veh)	4.3	1.9	0.0	0.0	0.3	0.1	0.0	0.0	0.0	7.0	0.0	3.7	1.2
	Total Delay (hr)	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	6	539	0	0	485	8	0	0	0	1	0	6	1045
	Movement 95th Queue (ft)	14	0	0	0	0	0	0	0	0	25	0	25	
	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.9			0.3			0.0			4.2			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	Movement Delay (sec/veh)	3.1	0.5	0.3	4.1	0.3	0.0	11.4	0.0	5.9	9.9	0.0	4.0	1.7
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.3
	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	Movement Volume	48	452	16	15	362	1	58	0	30	18	0	38	1038
	Movement 95th Queue (ft)	33	0	0	24	0	0	74	74	74	56	56	56	
	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	0.7			0.5			9.5			5.9			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	Movement Delay (sec/veh)	6.6	1.6	0.5	5.3	0.7	0.6	9.7	0.0	7.9	0.0	0.0	0.0	1.7
	Total Delay (hr)	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.5
	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	Movement Volume	3	422	59	13	373	31	36	0	27	0	0	0	964
	Movement 95th Queue (ft)	55	36	16	33	33	0	50	50	46	0	0	0	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	Approach Delay (sec/veh)	1.5			0.8			8.9			0.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	Movement Delay (sec/veh)	3.9	0.9	0.0	0.0	0.4	0.3	0.0	0.0	0.0	10.5	0.0	4.3	1.0
	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	Movement Volume	43	493	0	0	436	19	0	0	0	5	0	40	1036
	Movement 95th Queue (ft)	55	55	0	0	0	0	0	0	0	50	0	50	
	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	Approach Delay (sec/veh)	1.1			0.4			0.0			5.0			
	Approach LOS	A			A			A			A			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	Movement Delay (sec/veh)	47.6	32.9	6.0	40.9	13.1	3.2	28.5	0.0	4.5	32.0	0.0	2.6	20.4
	Total Delay (hr)	1.0	6.9	0.2	1.7	3.7	0.1	1.0	0.0	0.3	2.4	0.0	0.1	17.4
	Movement LOS	D	C	A	D	B	A	C	A	A	C	A	A	C
	Movement Volume	75	745	92	143	1008	148	120	0	236	269	0	186	3022
	Movement 95th Queue (ft)	106	411	104	95	226	0	124	0	114	236	0	60	
	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	600	
	Approach Delay (sec/veh)	31.4			15.0			12.6			20.0			
	Approach LOS	C			B			B			B			

Intersection	MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	Movement Delay (sec/veh)	37.9	34.3	6.9	42.0	57.5	24.2	12.2	8.4	1.1	11.9	13.6	2.6	13.7
	Total Delay (hr)	1.9	0.3	0.4	0.3	0.5	0.2	0.7	1.7	0.0	0.1	1.7	0.1	7.9
	Movement LOS	D	C	A	D	E	C	B	A	A	B	B	A	B
	Movement Volume	183	31	235	29	33	35	209	736	25	24	452	141	2133
	Movement 95th Queue (ft)	174	53	104	63	104	104	103	141	1	35	148	51	
	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	Approach Delay (sec/veh)	21.4			40.9			9.0			11.0			
	Approach LOS	C			D			A			B			

Year 2025 - 3-Lane Cross-Section - AM Peak Hour

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	110-Movement Delay	Movement Delay (sec/veh)	33.0	15.6	7.2	45.4	23.6	2.1	42.4	26.4	17.1	24.9	39.0	7.7	21.9
	110-Total Delay	Total Delay (hr)	1.2	2.5	1.0	1.1	3.6	0.0	3.2	0.8	0.4	0.1	1.8	0.2	15.9
	110-Movement LOS	Movement LOS	C	B	A	D	C	A	D	C	B	C	D	A	C
	110-Movement Volume	Movement Volume	127	580	499	90	549	16	271	114	74	13	163	115	2611
	110-95th Percentile Queue	Movement 95th Queue (ft)	118	201	204	129	205	0	175	162	162	24	155	73	
	110-Storage Bay Distance	Storage Bay Distance (ft)	175	0	0	100	0	0	113	0	0	175	0	175	
	110-Approach Delay	Approach Delay (sec/veh)	14.0			26.1			34.3			26.0			
	110-Approach LOS	Approach LOS	B			C			C			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	120-Movement Delay	Movement Delay (sec/veh)	6.5	4.0	1.7	9.6	1.7	2.0	13.6	14.0	9.6	23.4	0.0	4.6	3.3
	120-Total Delay	Total Delay (hr)	0.0	0.6	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.0
	120-Movement LOS	Movement LOS	A	A	A	A	A	A	B	B	A	C	A	A	A
	120-Movement Volume	Movement Volume	7	563	49	5	581	5	34	1	8	3	0	29	1285
	120-95th Percentile Queue	Movement 95th Queue (ft)	31	31	0	12	0	0	57	57	57	45	45	45	
	120-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	150	0	0	0	0	0	0	0	0	
	120-Approach Delay	Approach Delay (sec/veh)	3.8			1.8			12.9			6.4			
	120-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	130-Movement Delay	Movement Delay (sec/veh)	6.7	1.9	0.0	0.0	1.5	1.0	0.0	0.0	0.0	15.7	0.0	9.2	2.9
	130-Total Delay	Total Delay (hr)	0.1	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	1.0
	130-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	A	A	A
	130-Movement Volume	Movement Volume	70	512	0	0	506	39	0	0	0	39	0	87	1253
	130-95th Percentile Queue	Movement 95th Queue (ft)	64	0	0	0	4	4	0	0	0	89	0	89	
	130-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	130-Approach Delay	Approach Delay (sec/veh)	2.5			1.5			0.0			11.2			
	130-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	140-Movement Delay	Movement Delay (sec/veh)	0.0	4.2	3.0	10.2	3.2	0.0	10.1	0.0	7.5	0.0	0.0	0.0	3.9
	140-Total Delay	Total Delay (hr)	0.0	0.6	0.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.2
	140-Movement LOS	Movement LOS	A	A	A	B	A	A	B	A	A	A	A	A	A
	140-Movement Volume	Movement Volume	0	528	12	3	524	0	25	0	13	0	0	0	1105
	140-95th Percentile Queue	Movement 95th Queue (ft)	0	184	184	13	153	0	53	0	53	0	0	0	
	140-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	50	0	0	0	0	0	0	0	0	
	140-Approach Delay	Approach Delay (sec/veh)	4.2			3.2			9.2			0.0			
	140-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	150-Movement Delay	Movement Delay (sec/veh)	4.0	1.0	0.0	0.0	0.8	0.2	0.0	0.0	0.0	11.4	0.0	5.4	1.0
	150-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	150-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	150-Movement Volume	Movement Volume	5	535	0	0	519	7	0	0	0	6	0	8	1080
	150-95th Percentile Queue	Movement 95th Queue (ft)	14	0	0	0	29	29	0	0	0	35	0	35	
	150-Storage Bay Distance	Storage Bay Distance (ft)	50	0	0	0	0	0	0	0	0	0	0	0	
	150-Approach Delay	Approach Delay (sec/veh)	1.0			0.8			0.0			8.0			
	150-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	160-Movement Delay	Movement Delay (sec/veh)	4.2	0.7	0.2	4.2	0.5	0.2	10.9	12.1	5.5	12.3	0.0	4.7	0.8
	160-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	160-Movement LOS	Movement LOS	A	A	A	A	A	A	B	B	A	B	A	A	A
	160-Movement Volume	Movement Volume	3	534	2	3	519	5	2	1	10	5	0	4	1088
	160-95th Percentile Queue	Movement 95th Queue (ft)	11	0	0	12	0	0	33	33	33	30	30	30	
	160-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	160-Approach Delay	Approach Delay (sec/veh)	0.7			0.5			6.8			8.9			
	160-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	170-Movement Delay	Movement Delay (sec/veh)	4.5	0.7	0.4	3.8	0.8	0.3	9.3	10.3	6.9	14.2	10.8	5.8	1.5
	170-Total Delay	Total Delay (hr)	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5
	170-Movement LOS	Movement LOS	A	A	A	A	A	A	A	B	A	B	B	A	A
	170-Movement Volume	Movement Volume	46	502	4	1	487	27	3	3	13	26	4	37	1153
	170-95th Percentile Queue	Movement 95th Queue (ft)	46	0	0	6	3	3	42	42	42	71	71	71	
	170-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	100	0	0	0	0	0	0	0	0	
	170-Approach Delay	Approach Delay (sec/veh)	1.0			0.8			7.8			9.4			
	170-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	180-Movement Delay	Movement Delay (sec/veh)	4.3	0.6	0.2	5.7	1.0	1.2	13.2	10.4	6.4	7.3	0.0	4.5	1.0
	180-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	180-Movement LOS	Movement LOS	A	A	A	A	A	A	B	B	A	A	A	A	A
	180-Movement Volume	Movement Volume	11	532	0	2	500	1	9	1	7	2	0	7	1072
	180-95th Percentile Queue	Movement 95th Queue (ft)	24	0	0	11	0	0	40	40	40	29	29	29	
	180-Storage Bay Distance	Storage Bay Distance (ft)	100	0	0	150	0	0	0	0	0	0	0	0	
	180-Approach Delay	Approach Delay (sec/veh)		0.7			1.0			10.2			5.1		
	180-Approach LOS	Approach LOS		A			A			B			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	190-Movement Delay	Movement Delay (sec/veh)	5.2	1.2	0.1	4.7	1.2	0.5	0.0	0.0	3.7	28.9	68.1	23.3	6.7
	190-Total Delay	Total Delay (hr)	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.0	1.1	2.1
	190-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	D	F	C	A
	190-Movement Volume	Movement Volume	137	407	1	1	334	49	0	0	1	76	1	173	1180
	190-95th Percentile Queue	Movement 95th Queue (ft)	67	0	0	7	8	8	11	11	11	262	262	262	
	190-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	190-Approach Delay	Approach Delay (sec/veh)		2.2			1.1			3.7			25.2		
	190-Approach LOS	Approach LOS		A			A			A			D		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	200-Movement Delay	Movement Delay (sec/veh)	3.0	0.5	0.4	3.2	0.8	0.3	15.3	0.0	9.5	10.6	0.0	4.4	0.9
	200-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	200-Movement LOS	Movement LOS	A	A	A	A	A	A	C	A	A	B	A	A	A
	200-Movement Volume	Movement Volume	16	466	2	1	361	6	2	0	1	8	0	22	885
	200-95th Percentile Queue	Movement 95th Queue (ft)	22	0	0	4	0	0	19	19	19	49	49	49	
	200-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	150	0	0	0	0	0	0	0	0	
	200-Approach Delay	Approach Delay (sec/veh)		0.6			0.8			13.4			6.1		
	200-Approach LOS	Approach LOS		A			A			B			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	210-Movement Delay	Movement Delay (sec/veh)	2.9	0.7	0.0	0.0	0.4	0.0	0.0	0.0	0.0	9.5	0.0	4.0	0.6
	210-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	210-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	210-Movement Volume	Movement Volume	2	476	0	0	367	2	0	0	0	6	0	2	855
	210-95th Percentile Queue	Movement 95th Queue (ft)	7	0	0	0	0	0	0	0	0	28	0	28	
	210-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	210-Approach Delay	Approach Delay (sec/veh)		0.7			0.4			0.0			8.1		
	210-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	220-Movement Delay	Movement Delay (sec/veh)	2.9	0.4	0.0	5.7	0.6	0.2	0.0	0.0	7.3	11.0	0.0	4.6	0.7
	220-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	220-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	220-Movement Volume	Movement Volume	5	474	0	1	367	3	0	0	2	13	0	5	870
	220-95th Percentile Queue	Movement 95th Queue (ft)	10	0	0	6	0	0	14	14	14	45	45	45	
	220-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	150	0	0	0	0	0	0	0	0	
	220-Approach Delay	Approach Delay (sec/veh)		0.4			0.6			7.3			9.2		
	220-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	230-Movement Delay	Movement Delay (sec/veh)	5.7	1.0	0.4	4.2	1.1	1.0	9.6	14.0	5.5	10.3	11.0	5.0	1.6
	230-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3
	230-Movement LOS	Movement LOS	A	A	A	A	A	A	A	B	A	B	B	A	A
	230-Movement Volume	Movement Volume	1	483	6	24	355	9	8	1	49	12	3	12	963
	230-95th Percentile Queue	Movement 95th Queue (ft)	4	0	0	31	0	0	54	54	54	44	44	44	
	230-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	230-Approach Delay	Approach Delay (sec/veh)		1.0			1.3			6.2			8.0		
	230-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	240-Movement Delay	Movement Delay (sec/veh)	11.6	5.6	0.0	13.8	5.8	3.4	0.0	0.0	2.3	11.7	0.0	4.7	6.2
	240-Total Delay	Total Delay (hr)	0.3	0.7	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.2	0.0	0.1	1.9
	240-Movement LOS	Movement LOS	B	A	A	B	A	A	A	A	A	B	A	A	A
	240-Movement Volume	Movement Volume	86	457	0	1	324	95	0	0	1	56	0	61	1081
	240-95th Percentile Queue	Movement 95th Queue (ft)	73	155	0	10	146	65	6	6	6	58	58	50	
	240-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	150	0	50	0	0	0	0	0	50	
	240-Approach Delay	Approach Delay (sec/veh)		6.6			5.3			2.3			8.1		
	240-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	250-Movement Delay	Movement Delay (sec/veh)	5.9	3.1	1.9	6.3	2.0	1.5	13.2	0.0	7.0	13.4	14.1	6.5	3.1
	250-Total Delay	Total Delay (hr)	0.0	0.4	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.8
	250-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	B	A	A
	250-Movement Volume	Movement Volume	11	485	18	13	396	35	14	0	14	21	1	16	1024
	250-95th Percentile Queue	Movement 95th Queue (ft)	21	68	68	23	0	0	49	49	49	56	56	56	
	250-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	50	0	0	0	0	0	0	0	0	
	250-Approach Delay	Approach Delay (sec/veh)		3.1			2.1			10.1			10.5		
	250-Approach LOS	Approach LOS		A			A			B			B		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	260-Movement Delay	Movement Delay (sec/veh)	19.6	19.3	6.1	18.9	17.4	3.2	20.1	25.9	12.2	17.7	25.2	16.5	17.5
	260-Total Delay	Total Delay (hr)	0.1	2.0	0.2	0.3	1.6	0.1	0.4	0.6	0.2	0.4	1.3	0.2	7.4
	260-Movement LOS	Movement LOS	B	B	A	B	B	A	C	C	B	B	C	B	B
	260-Movement Volume	Movement Volume	23	367	143	50	327	74	71	77	49	90	185	49	1505
	260-95th Percentile Queue	Movement 95th Queue (ft)	54	216	134	78	198	66	78	111	111	124	235	235	
	260-Storage Bay Distance	Storage Bay Distance (ft)	75	0	100	190	0	100	275	0	0	150	0	0	
	260-Approach Delay	Approach Delay (sec/veh)		15.8			15.2			20.4			21.8		
	260-Approach LOS	Approach LOS		B			B			C			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	270-Movement Delay	Movement Delay (sec/veh)	3.4	2.0	0.0	0.0	0.6	0.7	0.0	0.0	0.0	7.4	0.0	3.1	1.3
	270-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	270-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	270-Movement Volume	Movement Volume	1	497	0	0	447	1	0	0	0	1	0	2	949
	270-95th Percentile Queue	Movement 95th Queue (ft)	6	0	0	0	0	0	0	0	0	16	0	16	
	270-Storage Bay Distance	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	270-Approach Delay	Approach Delay (sec/veh)		2.0			0.6			0.0			4.5		
	270-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	290-Movement Delay	Movement Delay (sec/veh)	4.1	1.5	0.8	4.9	0.4	0.1	9.8	0.0	5.5	8.0	13.9	4.7	1.5
	290-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
	290-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	B	A	A
	290-Movement Volume	Movement Volume	18	380	70	24	406	1	23	0	20	7	1	16	966
	290-95th Percentile Queue	Movement 95th Queue (ft)	26	3	3	32	0	0	60	60	60	48	48	48	
	290-Storage Bay Distance	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	290-Approach Delay	Approach Delay (sec/veh)		1.5			0.6			7.8			6.0		
	290-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	300-Movement Delay	Movement Delay (sec/veh)	0.0	1.5	1.1	5.5	1.0	0.6	10.6	0.0	4.4	0.0	0.0	0.0	1.7
	300-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
	300-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	300-Movement Volume	Movement Volume	0	352	51	15	432	9	31	0	14	0	0	0	904
	300-95th Percentile Queue	Movement 95th Queue (ft)	0	21	21	30	0	0	36	36	32	0	0	0	
	300-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	300-Approach Delay	Approach Delay (sec/veh)		1.4			1.1			8.7			0.0		
	300-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	280-Movement Delay	Movement Delay (sec/veh)	3.4	0.8	0.0	0.0	0.6	0.4	0.0	0.0	0.0	18.9	0.0	4.8	0.9
	280-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	280-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	A	A	A
	280-Movement Volume	Movement Volume	34	457	0	0	422	18	0	0	0	3	0	21	955
	280-95th Percentile Queue	Movement 95th Queue (ft)	36	0	0	0	0	0	0	0	0	47	0	47	
	280-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	280-Approach Delay	Approach Delay (sec/veh)		1.0			0.6			0.0			6.6		
	280-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	100-Movement Delay	Movement Delay (sec/veh)	45.6	25.5	3.2	33.2	7.3	3.0	27.7	0.0	4.7	35.8	0.0	1.3	18.5
	100-Total Delay	Total Delay (hr)	1.3	4.6	0.1	2.4	0.9	0.2	0.6	0.0	0.4	2.5	0.0	0.0	13.0
	100-Movement LOS	Movement LOS	D	C	A	C	A	A	C	A	A	D	A	A	B
	100-Movement Volume	Movement Volume	98	650	98	256	431	286	73	0	268	248	0	90	2498
	100-95th Percentile Queue	Movement 95th Queue (ft)	109	258	90	169	95	0	93	0	137	234	0	0	
	100-Storage Bay Distance	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	0	
	100-Approach Delay	Approach Delay (sec/veh)		25.2			12.9			9.6			26.6		
	100-Approach LOS	Approach LOS		C			B			A			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	310-Movement Delay	Movement Delay (sec/veh)	34.3	23.9	7.4	49.4	62.8	36.9	21.6	9.2	1.7	11.4	14.1	3.8	17.6
	310-Total Delay	Total Delay (hr)	0.9	0.7	0.4	0.9	1.6	0.4	1.1	0.8	0.0	0.2	2.4	0.2	9.6
	310-Movement LOS	Movement LOS	C	C	A	D	E	D	C	A	A	B	B	A	B
	310-Movement Volume	Movement Volume	97	98	201	60	90	43	190	305	47	68	614	141	1954
	310-95th Percentile Queue	Movement 95th Queue (ft)	123	90	92	134	256	256	151	78	14	72	192	61	
	310-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	310-Approach Delay	Approach Delay (sec/veh)		18.1			52.9			12.9			12.1		
	310-Approach LOS	Approach LOS		B			D			B			B		

Year 2025 - 3-Lane Cross-Section - PM Peak Hour

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	110-Movement Delay	Movement Delay (sec/veh)	41.0	16.7	8.0	49.9	28.8	2.7	43.4	25.4	16.8	26.4	43.9	12.2	25.6
	110-Total Delay	Total Delay (hr)	2.0	3.1	1.0	0.6	4.7	0.0	6.2	1.2	0.4	0.1	1.7	0.6	21.6
	110-Movement LOS	Movement LOS	D	B	A	D	C	A	D	C	B	C	D	B	C
	110-Movement Volume	Movement Volume	172	673	442	40	580	10	500	166	78	11	137	162	2971
	110-95th Percentile Queue	Movement 95th Queue (ft)	154	238	241	100	213	41	246	192	192	20	160	91	
	110-Storage Bay Distance	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	110-Approach Delay	Approach Delay (sec/veh)	17.0			29.7			36.6			26.7			
	110-Approach LOS	Approach LOS	B			C			D			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	120-Movement Delay	Movement Delay (sec/veh)	9.3	5.8	1.9	8.7	1.7	1.7	21.1	23.7	13.0	19.2	0.0	4.2	4.5
	120-Total Delay	Total Delay (hr)	0.1	1.0	0.0	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	1.6
	120-Movement LOS	Movement LOS	A	A	A	A	A	A	C	C	B	C	A	A	A
	120-Movement Volume	Movement Volume	24	615	86	7	569	5	39	2	5	8	0	15	1375
	120-95th Percentile Queue	Movement 95th Queue (ft)	110	110	0	13	1	1	63	63	63	41	41	41	
	120-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	150	0	0	0	0	0	0	0	0	
	120-Approach Delay	Approach Delay (sec/veh)	5.5			1.8			20.3			9.4			
	120-Approach LOS	Approach LOS	A			A			C			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	130-Movement Delay	Movement Delay (sec/veh)	6.4	2.2	0.0	0.0	1.2	0.7	0.0	0.0	0.0	20.5	0.0	7.3	2.2
	130-Total Delay	Total Delay (hr)	0.1	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.9
	130-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	A	A	A
	130-Movement Volume	Movement Volume	45	594	0	0	546	18	0	0	0	12	0	35	1250
	130-95th Percentile Queue	Movement 95th Queue (ft)	50	16	0	0	3	3	0	0	0	53	0	53	
	130-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	130-Approach Delay	Approach Delay (sec/veh)	2.5			1.2			0.0			10.7			
	130-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	140-Movement Delay	Movement Delay (sec/veh)	0.0	3.2	2.4	7.3	2.8	0.0	11.3	0.0	5.6	0.0	0.0	0.0	3.1
	140-Total Delay	Total Delay (hr)	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
	140-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	140-Movement Volume	Movement Volume	0	597	8	6	554	0	13	0	10	0	0	0	1188
	140-95th Percentile Queue	Movement 95th Queue (ft)	0	186	186	17	158	0	40	0	40	0	0	0	
	140-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	50	0	0	0	0	0	0	0	0	
	140-Approach Delay	Approach Delay (sec/veh)	3.2			2.8			8.8			0.0			
	140-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	150-Movement Delay	Movement Delay (sec/veh)	4.0	0.9	0.0	0.0	0.7	0.2	0.0	0.0	0.0	3.1	0.0	0.0	0.8
	150-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	150-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	150-Movement Volume	Movement Volume	9	588	0	0	556	5	0	0	0	1	0	0	1159
	150-95th Percentile Queue	Movement 95th Queue (ft)	18	0	0	0	22	22	0	0	0	8	0	8	
	150-Storage Bay Distance	Storage Bay Distance (ft)	50	0	0	0	0	0	0	0	0	0	0	0	
	150-Approach Delay	Approach Delay (sec/veh)	0.9			0.7			0.0			3.1			
	150-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	160-Movement Delay	Movement Delay (sec/veh)	5.3	0.8	0.3	5.3	0.6	0.0	13.3	0.0	8.3	0.0	7.0	4.1	0.9
	160-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	160-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	160-Movement Volume	Movement Volume	3	579	9	15	542	0	10	0	6	0	1	6	1171
	160-95th Percentile Queue	Movement 95th Queue (ft)	12	3	3	28	0	0	38	38	38	25	25	25	
	160-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	160-Approach Delay	Approach Delay (sec/veh)	0.8			0.7			11.4			4.5			
	160-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	170-Movement Delay	Movement Delay (sec/veh)	4.7	0.7	0.7	6.3	1.0	0.6	10.9	0.0	6.1	15.8	0.0	7.2	1.5
	170-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.4
	170-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	C	A	A	A
	170-Movement Volume	Movement Volume	33	547	1	2	525	47	5	0	11	29	0	31	1231
	170-95th Percentile Queue	Movement 95th Queue (ft)	40	0	0	10	0	0	38	38	38	63	63	63	
	170-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	100	0	0	0	0	0	0	0	0	
	170-Approach Delay	Approach Delay (sec/veh)	0.9			1.0			7.6			11.4			
	170-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	180-Movement Delay	Movement Delay (sec/veh)	4.3	0.9	0.5	5.8	1.3	1.0	13.0	0.0	6.2	9.9	4.7	6.8	1.3
	180-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	180-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	180-Movement Volume	Movement Volume	9	565	8	16	568	3	5	0	14	2	1	2	1193
	180-95th Percentile Queue	Movement 95th Queue (ft)	23	0	0	30	0	0	40	40	40	22	22	22	
	180-Storage Bay Distance	Storage Bay Distance (ft)	100	0	0	150	0	0	0	0	0	0	0	0	
	180-Approach Delay	Approach Delay (sec/veh)		0.9			1.4			8.0			7.6		
	180-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	190-Movement Delay	Movement Delay (sec/veh)	7.1	1.3	0.7	3.2	1.6	0.6	16.7	0.0	8.7	19.6	20.1	10.7	3.6
	190-Total Delay	Total Delay (hr)	0.3	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.4	1.3
	190-Movement LOS	Movement LOS	A	A	A	A	A	A	C	A	A	C	C	B	A
	190-Movement Volume	Movement Volume	144	435	2	2	438	58	1	0	2	30	2	149	1263
	190-95th Percentile Queue	Movement 95th Queue (ft)	75	0	0	6	7	7	19	19	19	116	116	116	
	190-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	190-Approach Delay	Approach Delay (sec/veh)		2.7			1.5			11.4			12.3		
	190-Approach LOS	Approach LOS		A			A			B			B		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	200-Movement Delay	Movement Delay (sec/veh)	4.1	0.5	0.1	0.0	1.1	0.6	0.0	0.0	6.2	8.6	0.0	6.5	1.1
	200-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	200-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	200-Movement Volume	Movement Volume	27	436	2	0	480	12	0	0	1	5	0	19	982
	200-95th Percentile Queue	Movement 95th Queue (ft)	32	0	0	0	0	0	14	14	14	46	46	46	
	200-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	0	0	0	0	0	0	0	0	0	
	200-Approach Delay	Approach Delay (sec/veh)		0.7			1.1			6.2			6.9		
	200-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	210-Movement Delay	Movement Delay (sec/veh)	3.1	0.7	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6
	210-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	210-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	210-Movement Volume	Movement Volume	1	442	0	0	495	3	0	0	0	0	0	0	941
	210-95th Percentile Queue	Movement 95th Queue (ft)	5	0	0	0	0	0	0	0	0	6	0	6	
	210-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	210-Approach Delay	Approach Delay (sec/veh)		0.7			0.5			0.0			0.0		
	210-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	220-Movement Delay	Movement Delay (sec/veh)	3.1	0.4	0.0	2.9	0.9	0.4	0.0	0.0	7.3	10.4	0.0	3.3	0.8
	220-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	220-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	220-Movement Volume	Movement Volume	7	438	0	2	497	11	0	0	2	7	0	4	968
	220-95th Percentile Queue	Movement 95th Queue (ft)	13	0	0	9	0	0	13	13	13	34	34	34	
	220-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	150	0	0	0	0	0	0	0	0	
	220-Approach Delay	Approach Delay (sec/veh)		0.4			0.9			7.3			7.8		
	220-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	230-Movement Delay	Movement Delay (sec/veh)	3.9	1.0	0.5	3.6	0.9	0.6	11.9	14.1	5.8	9.7	0.0	4.3	1.4
	230-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	230-Movement LOS	Movement LOS	A	A	A	A	A	A	B	B	A	A	A	A	A
	230-Movement Volume	Movement Volume	4	427	16	31	491	4	14	1	30	8	0	5	1031
	230-95th Percentile Queue	Movement 95th Queue (ft)	9	0	0	33	0	0	50	50	50	35	35	35	
	230-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	230-Approach Delay	Approach Delay (sec/veh)		1.0			1.1			7.9			7.6		
	230-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	240-Movement Delay	Movement Delay (sec/veh)	5.3	2.0	0.1	0.0	3.4	0.9	14.8	0.0	2.8	7.6	0.0	4.2	2.8
	240-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
	240-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	240-Movement Volume	Movement Volume	5	460	2	0	509	4	1	0	2	9	0	13	1005
	240-95th Percentile Queue	Movement 95th Queue (ft)	11	91	0	0	139	0	14	14	14	24	24	25	
	240-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	0	0	0	0	0	0	0	0	50	
	240-Approach Delay	Approach Delay (sec/veh)		2.0			3.4			6.8			5.6		
	240-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	250-Movement Delay	Movement Delay (sec/veh)	5.3	3.9	3.0	5.2	1.8	1.2	14.2	0.0	10.5	14.6	12.2	7.3	3.9
	250-Total Delay	Total Delay (hr)	0.0	0.5	0.0	0.0	0.2	0.0	0.1	0.0	0.1	0.1	0.0	0.1	1.1
	250-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	B	B	B	A	A
	250-Movement Volume	Movement Volume	12	422	35	32	452	18	29	0	32	27	2	31	1092
	250-95th Percentile Queue	Movement 95th Queue (ft)	21	112	112	37	4	4	60	60	60	57	57	57	
	250-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	50	0	0	0	0	0	0	0	0	
	250-Approach Delay	Approach Delay (sec/veh)		3.9			2.0			12.3			10.7		
	250-Approach LOS	Approach LOS		A			A			B			B		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	260-Movement Delay	Movement Delay (sec/veh)	21.3	22.4	4.3	20.5	20.1	5.2	17.5	23.8	17.1	18.4	26.5	16.8	19.7
	260-Total Delay	Total Delay (hr)	0.1	2.5	0.1	0.2	2.0	0.1	0.7	1.3	0.3	0.5	1.0	0.1	8.9
	260-Movement LOS	Movement LOS	C	C	A	C	C	A	B	C	B	B	C	B	B
	260-Movement Volume	Movement Volume	22	390	63	38	357	90	135	198	71	90	134	20	1608
	260-95th Percentile Queue	Movement 95th Queue (ft)	82	237	101	43	244	114	92	191	191	80	135	135	
	260-Storage Bay Distance	Storage Bay Distance (ft)	75	0	100	190	0	100	275	0	0	150	0	0	
	260-Approach Delay	Approach Delay (sec/veh)		19.9			17.4			20.5			22.7		
	260-Approach LOS	Approach LOS		B			B			C			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	270-Movement Delay	Movement Delay (sec/veh)	5.6	2.0	0.0	0.0	0.6	0.4	0.0	0.0	0.0	10.6	0.0	4.4	1.4
	270-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	270-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	270-Movement Volume	Movement Volume	10	536	0	0	485	9	0	0	0	2	0	7	1049
	270-95th Percentile Queue	Movement 95th Queue (ft)	20	0	0	0	0	0	0	0	0	29	0	29	
	270-Storage Bay Distance	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	270-Approach Delay	Approach Delay (sec/veh)		2.1			0.6			0.0			5.8		
	270-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	290-Movement Delay	Movement Delay (sec/veh)	3.1	0.8	0.3	4.1	0.5	0.4	12.9	0.0	7.9	12.6	0.0	4.8	2.1
	290-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.6
	290-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	290-Movement Volume	Movement Volume	54	445	17	13	362	1	51	0	32	21	0	43	1039
	290-95th Percentile Queue	Movement 95th Queue (ft)	38	0	0	22	0	0	68	68	68	61	61	61	
	290-Storage Bay Distance	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	290-Approach Delay	Approach Delay (sec/veh)		1.0			0.6			11.0			7.4		
	290-Approach LOS	Approach LOS		A			A			B			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	300-Movement Delay	Movement Delay (sec/veh)	4.0	3.3	1.8	4.0	0.9	0.6	12.7	0.0	7.6	0.0	0.0	0.0	2.7
	300-Total Delay	Total Delay (hr)	0.0	0.4	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.7
	300-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	300-Movement Volume	Movement Volume	2	420	61	12	375	28	33	0	29	0	0	0	960
	300-95th Percentile Queue	Movement 95th Queue (ft)	118	118	118	19	0	0	37	37	41	0	0	0	
	300-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	300-Approach Delay	Approach Delay (sec/veh)		3.1			1.0			10.3			0.0		
	300-Approach LOS	Approach LOS		A			A			B			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	280-Movement Delay	Movement Delay (sec/veh)	4.2	0.7	0.0	0.0	0.6	0.4	0.0	0.0	0.0	12.7	0.0	4.9	1.0
	280-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.3
	280-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	280-Movement Volume	Movement Volume	36	498	0	0	435	20	0	0	0	4	0	39	1032
	280-95th Percentile Queue	Movement 95th Queue (ft)	44	0	0	0	0	0	0	0	0	50	0	50	
	280-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	280-Approach Delay	Approach Delay (sec/veh)		0.9			0.6			0.0			5.6		
	280-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	100-Movement Delay	Movement Delay (sec/veh)	45.7	21.5	3.0	45.8	12.2	3.1	34.0	0.0	4.4	37.4	0.0	2.6	18.2
	100-Total Delay	Total Delay (hr)	1.0	4.5	0.1	1.9	3.3	0.1	1.2	0.0	0.3	3.0	0.0	0.1	15.5
	100-Movement LOS	Movement LOS	D	C	A	D	B	A	C	A	A	D	A	A	B
	100-Movement Volume	Movement Volume	78	751	91	143	964	155	124	0	231	277	0	197	3011
	100-95th Percentile Queue	Movement 95th Queue (ft)	86	255	111	100	220	0	140	0	112	265	0	46	
	100-Storage Bay Distance	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	600	
	100-Approach Delay	Approach Delay (sec/veh)		21.7			14.9			14.7			22.9		
	100-Approach LOS	Approach LOS		C			B			B			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	310-Movement Delay	Movement Delay (sec/veh)	41.8	39.2	6.0	39.3	55.4	21.7	14.3	8.8	1.2	12.2	13.6	3.0	14.4
	310-Total Delay	Total Delay (hr)	2.2	0.4	0.4	0.3	0.5	0.2	0.8	1.8	0.0	0.1	1.8	0.1	8.6
	310-Movement LOS	Movement LOS	D	D	A	D	E	C	B	A	A	B	B	A	B
	310-Movement Volume	Movement Volume	188	38	225	32	31	38	210	748	28	25	473	141	2177
	310-95th Percentile Queue	Movement 95th Queue (ft)	175	69	86	68	96	96	107	139	1	35	154	55	
	310-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	310-Approach Delay	Approach Delay (sec/veh)	23.7			37.6			9.8			11.2			
	310-Approach LOS	Approach LOS	C			D			A			B			

Year 2050 No Build Conditions - AM Peak Hour

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	110-Movement Delay	Movement Delay (sec/veh)	62.1	18.6	12.2	43.2	20.5	2.5	38.6	33.2	20.1	21.0	40.8	8.4	24.1
	110-Total Delay	Total Delay (hr)	2.3	3.1	1.8	1.1	3.2	0.0	2.8	1.0	0.4	0.1	1.9	0.3	18.0
	110-Movement LOS	Movement LOS	E	B	B	D	C	A	D	C	C	C	D	A	C
	110-Movement Volume	Movement Volume	131	591	530	88	555	18	262	113	76	11	166	121	2662
	110-95th Percentile Queue	Movement 95th Queue (ft)	152	297	351	119	186	29	159	164	164	20	162	56	
	110-Storage Bay Distance	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	110-Approach Delay	Approach Delay (sec/veh)	20.4			23.0			34.1			26.9			
	110-Approach LOS	Approach LOS	C			C			C			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	120-Movement Delay	Movement Delay (sec/veh)	6.1	2.6	2.9	6.2	0.9	0.6	13.5	17.7	3.9	12.8	0.0	4.9	2.2
	120-Total Delay	Total Delay (hr)	0.0	0.4	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.6
	120-Movement LOS	Movement LOS	A	A	A	A	A	A	B	C	A	B	A	A	A
	120-Movement Volume	Movement Volume	7	568	57	6	588	7	33	1	6	4	0	28	1305
	120-95th Percentile Queue	Movement 95th Queue (ft)	36	28	20	25	19	12	50	50	50	50	50	50	
	120-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	120-Approach Delay	Approach Delay (sec/veh)	2.7			0.9			12.2			5.9			
	120-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	130-Movement Delay	Movement Delay (sec/veh)	5.0	1.6	0.0	0.0	0.8	0.8	0.0	0.0	0.0	12.0	0.0	5.7	2.0
	130-Total Delay	Total Delay (hr)	0.1	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.6
	130-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	130-Movement Volume	Movement Volume	71	517	0	0	521	37	0	0	0	34	0	83	1263
	130-95th Percentile Queue	Movement 95th Queue (ft)	62	40	0	0	6	6	0	0	0	74	0	74	
	130-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	130-Approach Delay	Approach Delay (sec/veh)	2.0			0.8			0.0			7.5			
	130-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	140-Movement Delay	Movement Delay (sec/veh)	0.0	3.0	1.5	7.7	2.5	0.0	10.3	0.0	4.4	0.0	0.0	0.0	2.9
	140-Total Delay	Total Delay (hr)	0.0	0.4	0.0	0.0	0.4	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.9
	140-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	140-Movement Volume	Movement Volume	0	528	12	4	534	0	25	0	14	0	0	0	1117
	140-95th Percentile Queue	Movement 95th Queue (ft)	0	99	101	81	87	0	57	0	57	0	0	0	
	140-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	140-Approach Delay	Approach Delay (sec/veh)	3.0			2.5			8.2			0.0			
	140-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	150-Movement Delay	Movement Delay (sec/veh)	4.6	0.7	0.0	0.0	0.3	0.2	0.0	0.0	0.0	9.1	0.0	4.6	0.6
	150-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	150-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	150-Movement Volume	Movement Volume	3	537	0	0	529	6	0	0	0	5	0	10	1090
	150-95th Percentile Queue	Movement 95th Queue (ft)	17	17	0	0	0	0	0	0	0	36	0	36	
	150-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	150-Approach Delay	Approach Delay (sec/veh)	0.7			0.3			0.0			6.1			
	150-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	160-Movement Delay	Movement Delay (sec/veh)	4.8	0.4	0.3	4.5	0.2	0.1	5.9	7.9	4.0	9.1	0.0	4.3	0.4
	160-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	160-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	160-Movement Volume	Movement Volume	3	536	4	3	529	4	2	1	9	5	0	6	1102
	160-95th Percentile Queue	Movement 95th Queue (ft)	23	12	0	11	11	0	33	33	33	32	32	32	
	160-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	160-Approach Delay	Approach Delay (sec/veh)	0.4			0.2			4.6			6.5			
	160-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	170-Movement Delay	Movement Delay (sec/veh)	4.9	0.6	0.0	1.7	0.4	0.2	9.3	13.8	5.0	11.2	9.9	5.5	1.2
	170-Total Delay	Total Delay (hr)	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5
	170-Movement LOS	Movement LOS	A	A	A	A	A	A	A	B	A	B	A	A	A
	170-Movement Volume	Movement Volume	49	500	1	1	493	30	3	3	11	24	4	43	1162
	170-95th Percentile Queue	Movement 95th Queue (ft)	68	68	0	0	5	5	43	43	43	71	71	71	
	170-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	170-Approach Delay	Approach Delay (sec/veh)	1.0			0.4			7.3			7.7			
	170-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	180-Movement Delay	Movement Delay (sec/veh)	4.7	0.5	0.3	5.1	0.5	0.6	10.1	18.0	4.0	9.4	0.0	3.9	0.7
	180-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	180-Movement LOS	Movement LOS	A	A	A	A	A	A	B	C	A	A	A	A	A
	180-Movement Volume	Movement Volume	11	520	2	1	508	3	9	1	6	3	0	5	1069
	180-95th Percentile Queue	Movement 95th Queue (ft)	37	37	0	12	12	0	39	39	39	29	29	29	
	180-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	180-Approach Delay	Approach Delay (sec/veh)		0.6			0.5			8.3			6.0		
	180-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	190-Movement Delay	Movement Delay (sec/veh)	4.9	1.1	0.0	4.1	0.6	0.4	9.2	0.0	2.9	19.1	17.8	13.3	4.3
	190-Total Delay	Total Delay (hr)	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.4	0.0	0.6	1.4
	190-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	C	B	A
	190-Movement Volume	Movement Volume	121	405	0	1	341	47	2	0	1	72	2	172	1164
	190-95th Percentile Queue	Movement 95th Queue (ft)	85	54	23	7	6	4	15	15	15	180	180	180	
	190-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	190-Approach Delay	Approach Delay (sec/veh)		2.0			0.6			7.1			15.0		
	190-Approach LOS	Approach LOS		A			A			A			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	200-Movement Delay	Movement Delay (sec/veh)	3.6	0.4	0.4	5.9	0.4	0.2	9.1	0.0	5.8	8.8	0.0	3.9	0.7
	200-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	200-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	200-Movement Volume	Movement Volume	14	459	3	1	361	5	3	0	2	9	0	23	880
	200-95th Percentile Queue	Movement 95th Queue (ft)	24	24	0	9	9	0	24	24	24	49	49	49	
	200-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	200-Approach Delay	Approach Delay (sec/veh)		0.5			0.4			7.8			5.3		
	200-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	210-Movement Delay	Movement Delay (sec/veh)	2.6	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	6.3	0.0	4.6	0.4
	210-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	210-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	210-Movement Volume	Movement Volume	3	467	0	0	364	2	0	0	0	5	0	3	844
	210-95th Percentile Queue	Movement 95th Queue (ft)	9	9	0	0	0	0	0	0	0	25	0	25	
	210-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	210-Approach Delay	Approach Delay (sec/veh)		0.4			0.2			0.0			5.7		
	210-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	220-Movement Delay	Movement Delay (sec/veh)	3.8	0.2	0.4	3.8	0.3	0.1	0.0	0.0	2.7	7.6	0.0	3.9	0.5
	220-Total Delay	Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	220-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	220-Movement Volume	Movement Volume	4	466	1	2	360	2	0	0	2	18	0	6	861
	220-95th Percentile Queue	Movement 95th Queue (ft)	9	9	0	4	4	0	12	12	12	45	45	45	
	220-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	220-Approach Delay	Approach Delay (sec/veh)		0.2			0.3			2.7			6.7		
	220-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	230-Movement Delay	Movement Delay (sec/veh)	2.3	0.5	0.5	4.3	1.0	1.3	13.7	8.5	4.7	7.5	8.0	3.7	1.3
	230-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3
	230-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	230-Movement Volume	Movement Volume	3	479	6	25	352	9	6	1	49	15	3	10	958
	230-95th Percentile Queue	Movement 95th Queue (ft)	10	11	11	35	35	0	55	55	55	46	46	46	
	230-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	230-Approach Delay	Approach Delay (sec/veh)		0.5			1.2			5.7			6.2		
	230-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	240-Movement Delay	Movement Delay (sec/veh)	8.5	4.7	0.0	0.0	4.6	3.0	0.0	0.0	4.7	14.2	0.0	4.3	5.3
	240-Total Delay	Total Delay (hr)	0.2	0.6	0.0	0.0	0.4	0.1	0.0	0.0	0.0	0.2	0.0	0.1	1.6
	240-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	240-Movement Volume	Movement Volume	81	461	0	0	323	90	0	0	1	63	0	60	1079
	240-95th Percentile Queue	Movement 95th Queue (ft)	91	97	103	69	82	95	9	9	9	78	78	65	
	240-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	50	
	240-Approach Delay	Approach Delay (sec/veh)		5.3			4.3			4.7			9.4		
	240-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	250-Movement Delay	Movement Delay (sec/veh)	4.4	1.9	1.4	5.3	1.5	1.3	10.8	0.0	6.2	9.8	13.7	5.1	2.2
	250-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.7
	250-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	B	A	A
	250-Movement Volume	Movement Volume	16	491	17	13	386	36	16	0	17	20	1	15	1028
	250-95th Percentile Queue	Movement 95th Queue (ft)	32	35	38	28	17	5	52	52	52	53	53	53	
	250-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	250-Approach Delay	Approach Delay (sec/veh)		2.0			1.6			8.4			8.0		
	250-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	260-Movement Delay	Movement Delay (sec/veh)	14.8	17.9	13.7	19.0	14.8	8.8	20.0	26.3	11.6	17.5	26.0	16.4	17.8
	260-Total Delay	Total Delay (hr)	0.1	1.8	0.6	0.2	1.3	0.2	0.4	0.6	0.2	0.4	1.4	0.2	7.4
	260-Movement LOS	Movement LOS	B	B	B	B	B	A	B	C	B	B	C	B	B
	260-Movement Volume	Movement Volume	22	369	145	47	324	65	72	81	49	89	195	43	1501
	260-95th Percentile Queue	Movement 95th Queue (ft)	28	158	192	44	94	108	62	116	116	92	207	207	
	260-Storage Bay Distance	Storage Bay Distance (ft)	100	0	0	190	0	0	275	0	0	150	0	0	
	260-Approach Delay	Approach Delay (sec/veh)		16.6			14.4			20.5			22.4		
	260-Approach LOS	Approach LOS		B			B			C			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	270-Movement Delay	Movement Delay (sec/veh)	2.6	1.9	0.0	0.0	0.2	0.0	0.0	0.0	0.0	8.0	0.0	4.2	1.1
	270-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	270-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	270-Movement Volume	Movement Volume	1	495	0	0	428	1	0	0	0	1	0	3	929
	270-95th Percentile Queue	Movement 95th Queue (ft)	0	3	0	0	0	0	0	0	0	20	0	20	
	270-Storage Bay Distance	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	270-Approach Delay	Approach Delay (sec/veh)		1.9			0.2			0.0			5.2		
	270-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	290-Movement Delay	Movement Delay (sec/veh)	3.3	1.0	0.6	3.8	0.2	0.0	9.9	0.0	4.6	8.8	15.7	3.3	1.2
	290-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.2
	290-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	C	A	A
	290-Movement Volume	Movement Volume	22	381	74	28	380	1	24	0	19	6	1	17	953
	290-95th Percentile Queue	Movement 95th Queue (ft)	26	0	0	27	0	0	54	54	54	46	46	46	
	290-Storage Bay Distance	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	290-Approach Delay	Approach Delay (sec/veh)		1.0			0.4			7.6			5.2		
	290-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	300-Movement Delay	Movement Delay (sec/veh)	0.0	1.0	0.6	4.3	0.9	0.6	7.6	0.0	3.5	0.0	0.0	0.0	1.2
	300-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
	300-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	300-Movement Volume	Movement Volume	0	349	52	15	422	8	29	0	13	0	0	0	888
	300-95th Percentile Queue	Movement 95th Queue (ft)	0	12	11	28	28	0	45	45	36	0	0	0	
	300-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	300-Approach Delay	Approach Delay (sec/veh)		0.9			1.0			6.3			0.0		
	300-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	280-Movement Delay	Movement Delay (sec/veh)	3.8	0.6	0.0	0.0	0.3	0.3	0.0	0.0	0.0	11.4	0.0	3.5	0.7
	280-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	280-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	280-Movement Volume	Movement Volume	27	462	0	0	403	15	0	0	0	3	0	20	930
	280-95th Percentile Queue	Movement 95th Queue (ft)	40	40	0	0	0	0	0	0	0	41	0	41	
	280-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	280-Approach Delay	Approach Delay (sec/veh)		0.8			0.3			0.0			4.5		
	280-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	100-Movement Delay	Movement Delay (sec/veh)	46.5	24.3	3.2	34.8	8.1	2.9	32.2	0.0	5.8	33.3	0.0	1.3	18.2
	100-Total Delay	Total Delay (hr)	1.1	4.4	0.1	2.5	1.0	0.2	0.8	0.0	0.5	2.4	0.0	0.0	13.0
	100-Movement LOS	Movement LOS	D	C	A	C	A	A	C	A	A	C	A	A	B
	100-Movement Volume	Movement Volume	85	649	105	257	425	303	83	0	296	259	0	84	2546
	100-95th Percentile Queue	Movement 95th Queue (ft)	88	241	105	187	99	0	102	0	171	237	0	0	
	100-Storage Bay Distance	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	0	
	100-Approach Delay	Approach Delay (sec/veh)		23.9			13.5			11.6			25.5		
	100-Approach LOS	Approach LOS		C			B			B			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	310-Movement Delay	Movement Delay (sec/veh)	35.3	25.8	7.6	53.4	64.3	41.3	19.2	8.3	1.7	13.2	14.7	2.9	17.6
	310-Total Delay	Total Delay (hr)	1.0	0.7	0.4	0.9	1.4	0.5	1.1	0.8	0.0	0.3	2.5	0.1	9.7
	310-Movement LOS	Movement LOS	D	C	A	D	E	D	B	A	A	B	B	A	B
	310-Movement Volume	Movement Volume	99	91	200	60	79	47	207	331	50	70	612	119	1965
	310-95th Percentile Queue	Movement 95th Queue (ft)	117	99	98	135	292	292	156	76	11	85	194	51	
	310-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	310-Approach Delay	Approach Delay (sec/veh)		18.9			55.0			11.6			12.8		
	310-Approach LOS	Approach LOS		B			D			B			B		

Year 2050 No Build Conditions - PM Peak Hour

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	110-Movement Delay	Movement Delay (sec/veh)	104.1	22.7	15.4	48.6	24.4	3.3	40.3	29.9	21.9	22.1	45.5	14.4	30.8
	110-Total Delay	Total Delay (hr)	5.1	4.4	1.9	0.5	4.1	0.0	5.6	1.4	0.4	0.1	1.8	0.7	26.0
	110-Movement LOS	Movement LOS	F	C	B	D	C	A	D	C	C	C	D	B	C
	110-Movement Volume	Movement Volume	176	695	439	36	591	9	495	168	66	14	142	186	3017
	110-95th Percentile Queue	Movement 95th Queue (ft)	237	395	414	73	194	41	232	191	191	18	164	116	
	110-Storage Bay Distance	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	110-Approach Delay	Approach Delay (sec/veh)	31.2			25.5			36.2			27.6			
	110-Approach LOS	Approach LOS	C			C			D			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	120-Movement Delay	Movement Delay (sec/veh)	5.7	3.1	3.2	8.1	0.9	0.8	14.0	8.0	6.8	10.1	0.0	4.5	2.6
	120-Total Delay	Total Delay (hr)	0.0	0.6	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.9
	120-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	120-Movement Volume	Movement Volume	25	640	82	6	578	4	32	1	6	6	0	19	1399
	120-95th Percentile Queue	Movement 95th Queue (ft)	47	37	27	12	12	0	48	48	48	43	43	43	
	120-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	120-Approach Delay	Approach Delay (sec/veh)	3.2			1.0			12.7			5.8			
	120-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	130-Movement Delay	Movement Delay (sec/veh)	5.5	1.6	0.0	0.0	0.7	0.5	0.0	0.0	0.0	12.9	0.0	5.7	1.6
	130-Total Delay	Total Delay (hr)	0.1	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.7
	130-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	130-Movement Volume	Movement Volume	40	609	0	0	551	20	0	0	0	16	0	36	1272
	130-95th Percentile Queue	Movement 95th Queue (ft)	56	33	0	0	3	3	0	0	0	55	0	55	
	130-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	130-Approach Delay	Approach Delay (sec/veh)	1.8			0.7			0.0			7.9			
	130-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	140-Movement Delay	Movement Delay (sec/veh)	0.0	2.4	1.9	6.5	2.0	0.0	8.8	0.0	5.2	0.0	0.0	0.0	2.3
	140-Total Delay	Total Delay (hr)	0.0	0.4	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7
	140-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	140-Movement Volume	Movement Volume	0	616	8	6	558	0	15	0	9	0	0	0	1212
	140-95th Percentile Queue	Movement 95th Queue (ft)	0	95	98	70	76	0	46	0	46	0	0	0	
	140-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	140-Approach Delay	Approach Delay (sec/veh)	2.4			2.0			7.5			0.0			
	140-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	150-Movement Delay	Movement Delay (sec/veh)	3.3	0.6	0.0	0.0	0.3	0.1	0.0	0.0	0.0	7.3	0.0	0.0	0.5
	150-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	150-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	150-Movement Volume	Movement Volume	10	610	0	0	560	3	0	0	0	1	0	0	1184
	150-95th Percentile Queue	Movement 95th Queue (ft)	23	23	0	0	0	0	0	0	0	9	0	9	
	150-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	150-Approach Delay	Approach Delay (sec/veh)	0.6			0.3			0.0			7.3			
	150-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	160-Movement Delay	Movement Delay (sec/veh)	2.7	0.5	0.3	4.2	0.3	0.0	9.3	0.0	6.1	0.0	15.9	3.3	0.6
	160-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	160-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	C	A	A
	160-Movement Volume	Movement Volume	2	599	12	10	548	0	10	0	8	0	1	3	1193
	160-95th Percentile Queue	Movement 95th Queue (ft)	9	9	0	24	24	0	40	40	40	22	22	22	
	160-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	160-Approach Delay	Approach Delay (sec/veh)	0.5			0.4			7.9			6.5			
	160-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	170-Movement Delay	Movement Delay (sec/veh)	4.8	0.7	0.5	3.9	0.4	0.3	8.6	0.0	4.0	13.1	0.0	5.7	1.1
	170-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.3
	170-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	170-Movement Volume	Movement Volume	33	567	3	3	525	40	4	0	11	29	0	31	1246
	170-95th Percentile Queue	Movement 95th Queue (ft)	57	57	0	13	13	0	37	37	37	63	63	63	
	170-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	170-Approach Delay	Approach Delay (sec/veh)	0.9			0.4			5.2			9.3			
	170-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	180-Movement Delay	Movement Delay (sec/veh)	4.5	0.6	0.4	4.3	0.6	0.7	6.9	0.0	3.6	10.8	5.5	5.0	0.8
	180-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	180-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	180-Movement Volume	Movement Volume	6	587	11	12	564	4	5	0	17	3	1	2	1212
	180-95th Percentile Queue	Movement 95th Queue (ft)	28	28	0	26	26	0	40	40	40	25	25	25	
	180-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	180-Approach Delay	Approach Delay (sec/veh)		0.6			0.7			4.4			8.0		
	180-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	190-Movement Delay	Movement Delay (sec/veh)	5.4	1.3	0.0	2.5	0.7	0.4	6.0	0.0	3.1	18.3	17.5	7.2	2.7
	190-Total Delay	Total Delay (hr)	0.2	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.3	1.0
	190-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	C	A	A
	190-Movement Volume	Movement Volume	151	457	0	1	435	60	1	0	3	35	1	142	1286
	190-95th Percentile Queue	Movement 95th Queue (ft)	83	49	15	8	7	6	18	18	18	101	101	101	
	190-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	190-Approach Delay	Approach Delay (sec/veh)		2.3			0.7			3.8			9.4		
	190-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	200-Movement Delay	Movement Delay (sec/veh)	4.3	0.4	0.2	0.0	0.5	0.2	0.0	0.0	3.1	9.3	0.0	4.2	0.7
	200-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	200-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	200-Movement Volume	Movement Volume	28	459	2	0	475	11	0	0	1	5	0	22	1003
	200-95th Percentile Queue	Movement 95th Queue (ft)	40	40	0	0	0	0	9	9	9	47	47	47	
	200-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	200-Approach Delay	Approach Delay (sec/veh)		0.6			0.5			3.1			5.1		
	200-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	210-Movement Delay	Movement Delay (sec/veh)	2.7	0.4	0.0	0.0	0.2	0.2	0.0	0.0	0.0	0.0	0.0	3.5	0.3
	210-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	210-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	210-Movement Volume	Movement Volume	1	465	0	0	487	4	0	0	0	0	0	1	958
	210-95th Percentile Queue	Movement 95th Queue (ft)	6	6	0	0	8	0	0	0	0	10	0	10	
	210-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	210-Approach Delay	Approach Delay (sec/veh)		0.4			0.2			0.0			3.5		
	210-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	220-Movement Delay	Movement Delay (sec/veh)	4.2	0.2	0.0	4.3	0.4	0.2	0.0	0.0	3.9	8.7	0.0	3.6	0.4
	220-Total Delay	Total Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	220-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	220-Movement Volume	Movement Volume	6	458	0	2	488	10	0	0	1	10	0	5	980
	220-95th Percentile Queue	Movement 95th Queue (ft)	16	16	0	9	9	0	7	7	7	35	35	35	
	220-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	220-Approach Delay	Approach Delay (sec/veh)		0.3			0.4			3.9			7.0		
	220-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	230-Movement Delay	Movement Delay (sec/veh)	2.6	0.6	0.4	4.0	0.6	0.9	9.5	12.2	4.3	8.7	0.0	4.2	1.0
	230-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	230-Movement LOS	Movement LOS	A	A	A	A	A	A	A	B	A	A	A	A	A
	230-Movement Volume	Movement Volume	6	445	19	26	486	4	12	2	21	9	0	3	1033
	230-95th Percentile Queue	Movement 95th Queue (ft)	10	10	0	36	23	9	46	46	46	33	33	33	
	230-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	230-Approach Delay	Approach Delay (sec/veh)		0.6			0.8			6.5			7.6		
	230-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	240-Movement Delay	Movement Delay (sec/veh)	4.2	1.2	0.1	0.0	2.0	2.3	16.2	0.0	0.0	8.8	0.0	4.0	1.7
	240-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5
	240-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	240-Movement Volume	Movement Volume	5	470	1	0	502	6	1	0	0	8	0	11	1004
	240-95th Percentile Queue	Movement 95th Queue (ft)	36	37	38	60	67	73	12	12	12	32	32	31	
	240-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	50	
	240-Approach Delay	Approach Delay (sec/veh)		1.2			2.0			16.2			6.0		
	240-Approach LOS	Approach LOS		A			A			B			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	250-Movement Delay	Movement Delay (sec/veh)	4.2	1.2	0.8	4.6	1.6	1.5	10.1	0.0	4.9	11.3	15.1	5.3	2.2
	250-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.5
	250-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	C	A	A
	250-Movement Volume	Movement Volume	10	437	33	26	457	24	28	0	34	27	2	25	1103
	250-95th Percentile Queue	Movement 95th Queue (ft)	27	27	0	41	41	0	56	56	56	58	58	58	
	250-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	250-Approach Delay	Approach Delay (sec/veh)		1.2			1.7			7.2			8.7		
	250-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	260-Movement Delay	Movement Delay (sec/veh)	19.8	19.3	13.4	19.0	17.6	14.0	16.3	23.0	14.3	18.9	24.3	13.7	18.6
	260-Total Delay	Total Delay (hr)	0.1	2.2	0.3	0.2	1.8	0.4	0.6	1.3	0.3	0.5	0.9	0.1	8.7
	260-Movement LOS	Movement LOS	B	B	B	B	B	B	B	C	B	B	C	B	B
	260-Movement Volume	Movement Volume	18	402	76	37	356	93	134	204	78	90	128	23	1639
	260-95th Percentile Queue	Movement 95th Queue (ft)	25	142	154	40	122	137	84	193	193	72	125	125	
	260-Storage Bay Distance	Storage Bay Distance (ft)	100	0	0	190	0	0	275	0	0	150	0	0	
	260-Approach Delay	Approach Delay (sec/veh)		18.4			17.0			19.2			21.3		
	260-Approach LOS	Approach LOS		B			B			B			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	270-Movement Delay	Movement Delay (sec/veh)	6.1	1.8	0.0	0.0	0.3	0.2	0.0	0.0	0.0	7.9	0.0	3.8	1.2
	270-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	270-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	270-Movement Volume	Movement Volume	7	559	0	0	482	11	0	0	0	2	0	8	1069
	270-95th Percentile Queue	Movement 95th Queue (ft)	19	0	0	0	0	0	0	0	0	30	0	30	
	270-Storage Bay Distance	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	270-Approach Delay	Approach Delay (sec/veh)		1.9			0.3			0.0			4.6		
	270-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	290-Movement Delay	Movement Delay (sec/veh)	3.4	0.5	0.2	3.5	0.3	0.7	11.5	0.0	6.4	13.1	0.0	6.0	1.7
	290-Total Delay	Total Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.7
	290-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	290-Movement Volume	Movement Volume	53	455	20	14	369	1	49	0	30	21	0	38	1050
	290-95th Percentile Queue	Movement 95th Queue (ft)	39	0	0	19	0	0	69	69	69	66	66	66	
	290-Storage Bay Distance	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	290-Approach Delay	Approach Delay (sec/veh)		0.8			0.4			9.6			8.5		
	290-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	300-Movement Delay	Movement Delay (sec/veh)	2.7	2.0	0.6	5.6	0.7	0.5	9.6	0.0	7.1	0.0	0.0	0.0	1.8
	300-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.5
	300-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	300-Movement Volume	Movement Volume	4	428	59	8	383	33	33	0	28	0	0	0	976
	300-95th Percentile Queue	Movement 95th Queue (ft)	70	40	10	21	21	0	49	49	46	0	0	0	
	300-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	300-Approach Delay	Approach Delay (sec/veh)		1.8			0.8			8.5			0.0		
	300-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	280-Movement Delay	Movement Delay (sec/veh)	4.9	0.9	0.0	0.0	0.3	0.4	0.0	0.0	0.0	8.8	0.0	3.9	0.9
	280-Total Delay	Total Delay (hr)	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	280-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	280-Movement Volume	Movement Volume	44	511	0	0	434	20	0	0	0	3	0	39	1051
	280-95th Percentile Queue	Movement 95th Queue (ft)	71	71	0	0	5	5	0	0	0	52	0	52	
	280-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	280-Approach Delay	Approach Delay (sec/veh)		1.2			0.3			0.0			4.3		
	280-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	100-Movement Delay	Movement Delay (sec/veh)	44.3	23.7	3.5	39.6	13.3	3.0	30.4	0.0	5.7	33.5	0.0	2.7	18.3
	100-Total Delay	Total Delay (hr)	1.0	5.1	0.1	1.7	3.7	0.1	1.1	0.0	0.4	2.6	0.0	0.1	15.9
	100-Movement LOS	Movement LOS	D	C	A	D	B	A	C	A	A	C	A	A	B
	100-Movement Volume	Movement Volume	78	766	105	146	1002	155	124	0	239	280	0	194	3089
	100-95th Percentile Queue	Movement 95th Queue (ft)	97	258	112	104	225	0	120	0	132	239	0	63	
	100-Storage Bay Distance	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	600	
	100-Approach Delay	Approach Delay (sec/veh)		23.2			15.0			14.1			20.9		
	100-Approach LOS	Approach LOS		C			B			B			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	310-Movement Delay	Movement Delay (sec/veh)	41.0	28.4	6.8	38.1	56.9	22.2	13.6	8.3	1.3	11.4	13.8	2.6	14.1
	310-Total Delay	Total Delay (hr)	2.3	0.3	0.4	0.3	0.5	0.2	0.8	1.7	0.0	0.1	1.9	0.1	8.6
	310-Movement LOS	Movement LOS	D	C	A	D	E	C	B	A	A	B	B	A	B
	310-Movement Volume	Movement Volume	198	34	228	28	32	32	218	738	26	22	491	141	2188
	310-95th Percentile Queue	Movement 95th Queue (ft)	175	46	102	68	108	108	118	138	1	38	155	51	
	310-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	310-Approach Delay	Approach Delay (sec/veh)	23.1			39.1			9.3			11.3			
	310-Approach LOS	Approach LOS	C			D			A			B			

Year 2050 - 3-Lane Cross-Section - AM Peak Hour

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	110-Movement Delay	Movement Delay (sec/veh)	34.6	15.2	7.3	50.0	23.7	2.1	41.1	24.8	14.5	25.1	41.3	7.5	21.8
	110-Total Delay	Total Delay (hr)	1.2	2.5	1.1	1.3	3.7	0.0	3.0	0.8	0.3	0.1	1.9	0.3	16.2
	110-Movement LOS	Movement LOS	C	B	A	D	C	A	D	C	B	C	D	A	C
	110-Movement Volume	Movement Volume	127	585	516	90	558	14	264	119	68	14	164	124	2643
	110-95th Percentile Queue	Movement 95th Queue (ft)	113	196	199	130	209	29	158	147	147	24	158	56	
	110-Storage Bay Distance	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	110-Approach Delay	Approach Delay (sec/veh)	13.9			26.8			32.8			26.7			
	110-Approach LOS	Approach LOS	B			C			C			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	120-Movement Delay	Movement Delay (sec/veh)	8.7	4.3	1.9	6.2	1.7	1.3	16.0	0.0	8.5	14.5	0.0	4.4	3.4
	120-Total Delay	Total Delay (hr)	0.0	0.7	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.1
	120-Movement LOS	Movement LOS	A	A	A	A	A	A	C	A	A	B	A	A	A
	120-Movement Volume	Movement Volume	9	564	43	8	588	5	33	0	6	3	0	26	1285
	120-95th Percentile Queue	Movement 95th Queue (ft)	70	70	14	14	0	0	57	57	57	44	44	44	
	120-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	150	0	0	0	0	0	0	0	0	
	120-Approach Delay	Approach Delay (sec/veh)	4.2			1.8			14.8			5.4			
	120-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	130-Movement Delay	Movement Delay (sec/veh)	6.7	2.1	0.0	0.0	1.5	0.8	0.0	0.0	0.0	19.0	0.0	9.1	3.0
	130-Total Delay	Total Delay (hr)	0.1	0.3	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.2	0.0	0.2	1.0
	130-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	A	A	A
	130-Movement Volume	Movement Volume	71	515	0	0	519	37	0	0	0	30	0	88	1260
	130-95th Percentile Queue	Movement 95th Queue (ft)	57	13	0	0	6	6	0	0	0	94	0	94	
	130-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	130-Approach Delay	Approach Delay (sec/veh)	2.7			1.5			0.0			11.6			
	130-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	140-Movement Delay	Movement Delay (sec/veh)	0.0	4.4	3.9	5.9	3.4	0.0	12.0	0.0	7.0	0.0	0.0	0.0	4.1
	140-Total Delay	Total Delay (hr)	0.0	0.6	0.0	0.0	0.5	0.0	0.1	0.0	0.0	0.0	0.0	0.0	1.2
	140-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	140-Movement Volume	Movement Volume	0	519	11	4	531	0	24	0	14	0	0	0	1103
	140-95th Percentile Queue	Movement 95th Queue (ft)	0	206	206	10	166	0	52	0	52	0	0	0	
	140-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	50	0	0	0	0	0	0	0	0	
	140-Approach Delay	Approach Delay (sec/veh)	4.4			3.4			10.2			0.0			
	140-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	150-Movement Delay	Movement Delay (sec/veh)	5.3	1.0	0.0	0.0	0.7	0.4	0.0	0.0	0.0	11.8	0.0	4.4	0.9
	150-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	150-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	150-Movement Volume	Movement Volume	4	532	0	0	524	7	0	0	0	5	0	8	1080
	150-95th Percentile Queue	Movement 95th Queue (ft)	14	0	0	0	20	20	0	0	0	35	0	35	
	150-Storage Bay Distance	Storage Bay Distance (ft)	50	0	0	0	0	0	0	0	0	0	0	0	
	150-Approach Delay	Approach Delay (sec/veh)	1.0			0.7			0.0			7.2			
	150-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	160-Movement Delay	Movement Delay (sec/veh)	3.2	0.7	0.3	3.9	0.6	0.3	11.2	10.6	4.6	9.0	0.0	5.5	0.8
	160-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	160-Movement LOS	Movement LOS	A	A	A	A	A	A	B	B	A	A	A	A	A
	160-Movement Volume	Movement Volume	5	530	2	4	525	6	2	1	11	4	0	3	1093
	160-95th Percentile Queue	Movement 95th Queue (ft)	13	0	0	13	0	0	35	35	35	26	26	26	
	160-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	160-Approach Delay	Approach Delay (sec/veh)	0.7			0.6			6.0			7.5			
	160-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	170-Movement Delay	Movement Delay (sec/veh)	4.2	0.6	0.2	5.5	0.8	0.3	14.8	18.2	6.3	16.2	12.8	6.9	1.6
	170-Total Delay	Total Delay (hr)	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5
	170-Movement LOS	Movement LOS	A	A	A	A	A	A	B	C	A	C	B	A	A
	170-Movement Volume	Movement Volume	47	495	1	1	493	26	5	2	11	27	5	39	1152
	170-95th Percentile Queue	Movement 95th Queue (ft)	48	0	0	8	0	0	43	43	43	68	68	68	
	170-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	100	0	0	0	0	0	0	0	0	
	170-Approach Delay	Approach Delay (sec/veh)	0.9			0.8			10.0			10.9			
	170-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	180-Movement Delay	Movement Delay (sec/veh)	3.6	0.6	0.3	4.3	1.1	0.8	11.9	6.1	5.6	9.6	0.0	5.4	1.0
	180-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	180-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	180-Movement Volume	Movement Volume	8	523	1	1	507	3	7	1	7	1	0	6	1065
	180-95th Percentile Queue	Movement 95th Queue (ft)	19	0	0	6	0	0	37	37	37	28	28	28	
	180-Storage Bay Distance	Storage Bay Distance (ft)	100	0	0	150	0	0	0	0	0	0	0	0	
	180-Approach Delay	Approach Delay (sec/veh)		0.6			1.1			8.6			6.0		
	180-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	190-Movement Delay	Movement Delay (sec/veh)	5.5	1.3	0.1	2.3	1.2	0.5	7.9	0.0	0.0	31.3	32.9	24.0	6.8
	190-Total Delay	Total Delay (hr)	0.2	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.6	0.0	1.2	2.2
	190-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	D	D	C	A
	190-Movement Volume	Movement Volume	123	410	1	1	342	45	1	0	0	65	3	173	1164
	190-95th Percentile Queue	Movement 95th Queue (ft)	73	29	29	4	3	3	10	10	10	283	283	283	
	190-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	190-Approach Delay	Approach Delay (sec/veh)		2.3			1.1			7.9			26.1		
	190-Approach LOS	Approach LOS		A			A			A			D		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	200-Movement Delay	Movement Delay (sec/veh)	3.3	0.6	0.5	2.4	0.8	0.6	10.6	0.0	5.6	8.2	0.0	4.2	0.9
	200-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	200-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	200-Movement Volume	Movement Volume	14	456	3	1	366	7	2	0	1	9	0	21	880
	200-95th Percentile Queue	Movement 95th Queue (ft)	22	0	0	4	0	0	21	21	21	49	49	49	
	200-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	150	0	0	0	0	0	0	0	0	
	200-Approach Delay	Approach Delay (sec/veh)		0.7			0.8			8.9			5.4		
	200-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	210-Movement Delay	Movement Delay (sec/veh)	3.1	0.8	0.0	0.0	0.4	0.1	0.0	0.0	0.0	9.4	0.0	4.9	0.7
	210-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
	210-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	210-Movement Volume	Movement Volume	2	465	0	0	371	2	0	0	0	9	0	3	852
	210-95th Percentile Queue	Movement 95th Queue (ft)	6	0	0	0	0	0	0	0	0	32	0	32	
	210-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	210-Approach Delay	Approach Delay (sec/veh)		0.8			0.4			0.0			8.3		
	210-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	220-Movement Delay	Movement Delay (sec/veh)	2.8	0.5	0.5	2.9	0.6	0.4	0.0	0.0	5.4	9.9	0.0	3.9	0.8
	220-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	220-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	220-Movement Volume	Movement Volume	4	467	1	2	369	3	0	0	2	18	0	5	871
	220-95th Percentile Queue	Movement 95th Queue (ft)	11	0	0	8	0	0	13	13	13	45	45	45	
	220-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	150	0	0	0	0	0	0	0	0	
	220-Approach Delay	Approach Delay (sec/veh)		0.5			0.6			5.4			8.6		
	220-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	230-Movement Delay	Movement Delay (sec/veh)	2.5	1.1	0.6	4.1	1.1	0.9	13.4	8.3	6.5	9.5	13.0	3.8	1.7
	230-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.3
	230-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	B	A	A
	230-Movement Volume	Movement Volume	3	479	8	21	355	8	9	1	46	15	2	13	960
	230-95th Percentile Queue	Movement 95th Queue (ft)	4	0	0	29	0	0	60	60	60	47	47	47	
	230-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	230-Approach Delay	Approach Delay (sec/veh)		1.1			1.3			7.6			7.3		
	230-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	240-Movement Delay	Movement Delay (sec/veh)	10.4	5.4	0.0	11.6	5.6	3.2	0.0	0.0	9.1	13.2	0.0	4.4	6.0
	240-Total Delay	Total Delay (hr)	0.2	0.7	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.2	0.0	0.1	1.8
	240-Movement LOS	Movement LOS	B	A	A	B	A	A	A	A	A	B	A	A	A
	240-Movement Volume	Movement Volume	80	459	0	1	323	93	0	0	1	58	0	57	1072
	240-95th Percentile Queue	Movement 95th Queue (ft)	82	156	0	8	124	68	8	8	8	71	71	53	
	240-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	150	0	50	0	0	0	0	0	50	
	240-Approach Delay	Approach Delay (sec/veh)		6.1			5.1			9.1			8.8		
	240-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	250-Movement Delay	Movement Delay (sec/veh)	6.7	3.3	1.8	6.9	1.8	1.3	11.8	0.0	7.6	16.6	9.6	7.1	3.3
	250-Total Delay	Total Delay (hr)	0.0	0.4	0.0	0.0	0.2	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.8
	250-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	C	A	A	A
	250-Movement Volume	Movement Volume	14	488	17	11	391	31	16	0	18	23	1	15	1025
	250-95th Percentile Queue	Movement 95th Queue (ft)	24	74	74	26	0	0	49	49	49	61	61	61	
	250-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	50	0	0	0	0	0	0	0	0	
	250-Approach Delay	Approach Delay (sec/veh)	3.3			1.9			9.6			12.8			
	250-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	260-Movement Delay	Movement Delay (sec/veh)	17.9	19.4	5.7	19.7	18.1	3.2	20.6	24.4	12.7	16.5	25.2	19.1	17.7
	260-Total Delay	Total Delay (hr)	0.1	2.0	0.2	0.3	1.6	0.1	0.5	0.6	0.2	0.5	1.4	0.2	7.7
	260-Movement LOS	Movement LOS	B	B	A	B	B	A	C	C	B	B	C	B	B
	260-Movement Volume	Movement Volume	23	370	149	48	308	67	82	87	49	98	192	46	1519
	260-95th Percentile Queue	Movement 95th Queue (ft)	71	218	115	71	206	56	81	115	115	137	225	225	
	260-Storage Bay Distance	Storage Bay Distance (ft)	75	0	100	190	0	100	275	0	0	150	0	0	
	260-Approach Delay	Approach Delay (sec/veh)	15.6			15.9			20.3			21.8			
	260-Approach LOS	Approach LOS	B			B			C			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	270-Movement Delay	Movement Delay (sec/veh)	0.0	2.0	0.0	0.0	0.5	0.4	0.0	0.0	0.0	6.9	0.0	4.1	1.3
	270-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	270-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	270-Movement Volume	Movement Volume	0	510	0	0	420	1	0	0	0	2	0	2	935
	270-95th Percentile Queue	Movement 95th Queue (ft)	0	0	0	0	0	0	0	0	0	17	0	17	
	270-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	0	0	0	0	
	270-Approach Delay	Approach Delay (sec/veh)	2.0			0.5			0.0			5.5			
	270-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	290-Movement Delay	Movement Delay (sec/veh)	3.5	1.4	0.8	5.4	0.4	0.3	15.3	0.0	6.9	8.7	3.7	5.1	1.6
	290-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.3
	290-Movement LOS	Movement LOS	A	A	A	A	A	A	C	A	A	A	A	A	A
	290-Movement Volume	Movement Volume	25	398	69	24	375	1	22	0	17	7	1	14	953
	290-95th Percentile Queue	Movement 95th Queue (ft)	30	5	5	36	0	0	55	55	55	46	46	46	
	290-Storage Bay Distance	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	290-Approach Delay	Approach Delay (sec/veh)	1.4			0.7			11.6			6.2			
	290-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	300-Movement Delay	Movement Delay (sec/veh)	0.0	1.6	0.8	5.1	0.9	0.7	10.4	0.0	3.8	0.0	0.0	0.0	1.6
	300-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.4
	300-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	300-Movement Volume	Movement Volume	0	363	55	15	405	7	31	0	10	0	0	0	886
	300-95th Percentile Queue	Movement 95th Queue (ft)	0	36	36	23	7	7	36	36	27	0	0	0	
	300-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	300-Approach Delay	Approach Delay (sec/veh)	1.5			1.0			8.8			0.0			
	300-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	280-Movement Delay	Movement Delay (sec/veh)	3.8	0.8	0.0	0.0	0.5	0.2	0.0	0.0	0.0	9.8	0.0	4.5	0.9
	280-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	280-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	280-Movement Volume	Movement Volume	27	477	0	0	394	15	0	0	0	3	0	23	939
	280-95th Percentile Queue	Movement 95th Queue (ft)	32	0	0	0	3	3	0	0	0	46	0	46	
	280-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	280-Approach Delay	Approach Delay (sec/veh)	1.0			0.5			0.0			5.1			
	280-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	100-Movement Delay	Movement Delay (sec/veh)	42.3	25.1	3.2	33.3	7.1	3.0	31.6	0.0	4.7	34.7	0.0	1.4	18.1
	100-Total Delay	Total Delay (hr)	1.1	4.6	0.1	2.5	0.8	0.3	0.7	0.0	0.4	2.4	0.0	0.0	12.9
	100-Movement LOS	Movement LOS	D	C	A	C	A	A	C	A	A	C	A	A	B
	100-Movement Volume	Movement Volume	94	656	110	265	423	300	82	0	280	250	0	92	2552
	100-95th Percentile Queue	Movement 95th Queue (ft)	86	235	111	168	93	0	104	0	131	225	0	0	
	100-Storage Bay Distance	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	0	
	100-Approach Delay	Approach Delay (sec/veh)	24.2			12.9			10.8			25.7			
	100-Approach LOS	Approach LOS	C			B			B			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	310-Movement Delay	Movement Delay (sec/veh)	39.5	24.5	8.5	44.2	56.3	32.3	16.6	9.5	1.4	10.9	13.3	3.4	16.4
	310-Total Delay	Total Delay (hr)	1.0	0.7	0.5	0.8	1.1	0.4	0.9	0.8	0.0	0.2	2.2	0.1	8.7
	310-Movement LOS	Movement LOS	D	C	A	D	E	C	B	A	A	B	B	A	B
	310-Movement Volume	Movement Volume	92	95	210	63	73	50	193	315	43	70	602	123	1929
	310-95th Percentile Queue	Movement 95th Queue (ft)	116	91	109	136	225	225	119	82	6	69	177	60	
	310-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	310-Approach Delay	Approach Delay (sec/veh)	19.5			45.8			11.4			11.6			
	310-Approach LOS	Approach LOS	B			D			B			B			

Year 2050 - 3-Lane Cross-Section - PM Peak Hour

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & E Frontage Road	110-Movement Delay	Movement Delay (sec/veh)	39.4	19.0	9.3	53.3	29.2	2.7	42.9	25.9	19.4	23.1	43.5	12.3	26.2
	110-Total Delay	Total Delay (hr)	1.9	3.7	1.1	0.5	4.7	0.0	6.2	1.3	0.4	0.1	1.7	0.6	22.2
	110-Movement LOS	Movement LOS	D	B	A	D	C	A	D	C	B	C	D	B	C
	110-Movement Volume	Movement Volume	169	691	435	34	578	9	510	173	69	17	138	184	3007
	110-95th Percentile Queue	Movement 95th Queue (ft)	164	281	283	90	205	29	250	197	197	23	148	107	
	110-Storage Bay Distance	Storage Bay Distance (ft)	175	0	0	100	0	150	113	0	0	175	0	175	
	110-Approach Delay	Approach Delay (sec/veh)	18.4			30.1			36.8			25.5			
	110-Approach LOS	Approach LOS	B			C			D			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 22nd Street	120-Movement Delay	Movement Delay (sec/veh)	9.1	5.9	2.3	7.4	1.8	1.5	20.2	14.5	12.1	18.0	0.0	4.6	4.4
	120-Total Delay	Total Delay (hr)	0.1	1.1	0.1	0.0	0.3	0.0	0.2	0.0	0.0	0.0	0.0	0.0	1.8
	120-Movement LOS	Movement LOS	A	A	A	A	A	A	C	B	B	C	A	A	A
	120-Movement Volume	Movement Volume	23	634	85	7	565	5	31	2	4	6	0	20	1382
	120-95th Percentile Queue	Movement 95th Queue (ft)	102	102	19	10	0	0	60	60	60	42	42	42	
	120-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	150	0	0	0	0	0	0	0	0	
	120-Approach Delay	Approach Delay (sec/veh)	5.6			1.9			19.0			7.7			
	120-Approach LOS	Approach LOS	A			A			C			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 15th Avenue	130-Movement Delay	Movement Delay (sec/veh)	7.5	2.3	0.0	0.0	1.2	0.7	0.0	0.0	0.0	14.5	0.0	7.0	2.3
	130-Total Delay	Total Delay (hr)	0.1	0.4	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.9
	130-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	130-Movement Volume	Movement Volume	47	605	0	0	542	19	0	0	0	14	0	33	1260
	130-95th Percentile Queue	Movement 95th Queue (ft)	53	16	0	0	0	0	0	0	0	57	0	57	
	130-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	130-Approach Delay	Approach Delay (sec/veh)	2.7			1.2			0.0			9.2			
	130-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue S	140-Movement Delay	Movement Delay (sec/veh)	0.0	3.0	1.5	6.0	2.7	0.0	8.9	0.0	4.7	0.0	0.0	0.0	2.9
	140-Total Delay	Total Delay (hr)	0.0	0.5	0.0	0.0	0.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
	140-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	140-Movement Volume	Movement Volume	0	606	9	5	551	0	14	0	9	0	0	0	1194
	140-95th Percentile Queue	Movement 95th Queue (ft)	0	192	192	16	160	0	44	0	44	0	0	0	
	140-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	50	0	0	0	0	0	0	0	0	
	140-Approach Delay	Approach Delay (sec/veh)	3.0			2.7			7.3			0.0			
	140-Approach LOS	Approach LOS	A			A			A			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 14th Avenue N	150-Movement Delay	Movement Delay (sec/veh)	4.0	0.9	0.0	0.0	0.7	0.3	0.0	0.0	0.0	22.1	0.0	0.0	0.8
	150-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	150-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	C	A	A	A
	150-Movement Volume	Movement Volume	9	600	0	0	552	3	0	0	0	1	0	0	1165
	150-95th Percentile Queue	Movement 95th Queue (ft)	20	0	0	0	19	19	0	0	0	8	0	8	
	150-Storage Bay Distance	Storage Bay Distance (ft)	50	0	0	0	0	0	0	0	0	0	0	0	
	150-Approach Delay	Approach Delay (sec/veh)	0.9			0.7			0.0			22.1			
	150-Approach LOS	Approach LOS	A			A			A			C			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 13th Avenue	160-Movement Delay	Movement Delay (sec/veh)	3.5	0.9	0.3	5.6	0.6	0.0	12.3	0.0	8.0	0.0	13.7	4.1	0.9
	160-Total Delay	Total Delay (hr)	0.0	0.2	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	160-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	B	A	A
	160-Movement Volume	Movement Volume	3	589	12	10	545	0	9	0	6	0	1	2	1177
	160-95th Percentile Queue	Movement 95th Queue (ft)	10	3	3	22	0	0	37	37	37	15	15	15	
	160-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	160-Approach Delay	Approach Delay (sec/veh)	0.9			0.7			10.6			7.3			
	160-Approach LOS	Approach LOS	A			A			B			A			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 12th Avenue	170-Movement Delay	Movement Delay (sec/veh)	4.8	0.7	0.3	4.1	1.1	0.6	11.6	0.0	6.5	15.6	0.0	6.6	1.6
	170-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.1	0.0	0.1	0.5
	170-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	C	A	A	A
	170-Movement Volume	Movement Volume	37	553	2	5	521	49	3	0	11	30	0	32	1243
	170-95th Percentile Queue	Movement 95th Queue (ft)	41	0	0	14	6	6	35	35	35	58	58	58	
	170-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	100	0	0	0	0	0	0	0	0	
	170-Approach Delay	Approach Delay (sec/veh)	1.0			1.1			7.6			11.0			
	170-Approach LOS	Approach LOS	A			A			A			B			

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 11th Avenue	180-Movement Delay	Movement Delay (sec/veh)	4.1	0.8	0.3	5.2	1.3	1.5	15.0	0.0	6.5	13.1	7.2	6.4	1.3
	180-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	180-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	180-Movement Volume	Movement Volume	6	577	6	15	567	3	5	0	16	3	2	3	1203
	180-95th Percentile Queue	Movement 95th Queue (ft)	18	3	3	25	0	0	44	44	44	29	29	29	
	180-Storage Bay Distance	Storage Bay Distance (ft)	100	0	0	150	0	0	0	0	0	0	0	0	
	180-Approach Delay	Approach Delay (sec/veh)		0.8			1.4			8.5			9.1		
	180-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 9th Avenue	190-Movement Delay	Movement Delay (sec/veh)	6.3	1.3	0.0	3.9	1.6	0.8	0.0	0.0	3.6	28.5	38.0	13.6	4.1
	190-Total Delay	Total Delay (hr)	0.3	0.2	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.3	0.0	0.5	1.5
	190-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	D	E	B	A
	190-Movement Volume	Movement Volume	153	443	0	1	443	66	0	0	3	34	1	143	1287
	190-95th Percentile Queue	Movement 95th Queue (ft)	73	0	0	4	7	7	18	18	18	148	148	148	
	190-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	190-Approach Delay	Approach Delay (sec/veh)		2.6			1.5			3.6			16.6		
	190-Approach LOS	Approach LOS		A			A			A			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Zumbro Drive	200-Movement Delay	Movement Delay (sec/veh)	4.1	0.5	0.2	0.0	1.2	0.7	0.0	0.0	5.4	12.8	0.0	5.9	1.1
	200-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
	200-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	200-Movement Volume	Movement Volume	30	445	2	0	492	12	0	0	1	5	0	20	1007
	200-95th Percentile Queue	Movement 95th Queue (ft)	33	0	0	0	0	0	11	11	11	46	46	46	
	200-Storage Bay Distance	Storage Bay Distance (ft)	75	0	0	0	0	0	0	0	0	0	0	0	
	200-Approach Delay	Approach Delay (sec/veh)		0.7			1.2			5.4			7.3		
	200-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 6th Avenue	210-Movement Delay	Movement Delay (sec/veh)	2.2	0.7	0.0	0.0	0.5	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.6
	210-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	210-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	210-Movement Volume	Movement Volume	1	454	0	0	503	3	0	0	0	0	0	0	961
	210-95th Percentile Queue	Movement 95th Queue (ft)	5	0	0	0	0	0	0	0	0	6	0	6	
	210-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	210-Approach Delay	Approach Delay (sec/veh)		0.7			0.5			0.0			0.0		
	210-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 5th Avenue	220-Movement Delay	Movement Delay (sec/veh)	4.6	0.4	0.0	5.2	0.9	0.5	0.0	0.0	4.7	12.1	0.0	4.7	0.8
	220-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	220-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	220-Movement Volume	Movement Volume	3	452	0	2	501	9	0	0	2	7	0	5	981
	220-95th Percentile Queue	Movement 95th Queue (ft)	11	0	0	11	0	0	13	13	13	32	32	32	
	220-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	150	0	0	0	0	0	0	0	0	
	220-Approach Delay	Approach Delay (sec/veh)		0.4			0.9			4.7			9.0		
	220-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & 4th Street	230-Movement Delay	Movement Delay (sec/veh)	4.4	1.0	0.6	4.4	0.9	0.5	11.3	9.3	5.1	10.4	0.0	4.8	1.4
	230-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.2
	230-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	230-Movement Volume	Movement Volume	4	441	15	28	490	6	13	1	26	5	0	4	1033
	230-95th Percentile Queue	Movement 95th Queue (ft)	14	0	0	34	0	0	50	50	50	32	32	32	
	230-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	75	0	0	0	0	0	0	0	0	
	230-Approach Delay	Approach Delay (sec/veh)		1.0			1.1			7.2			7.9		
	230-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Hoover Elementary Access	240-Movement Delay	Movement Delay (sec/veh)	6.4	2.2	0.6	0.0	3.4	1.7	6.0	0.0	2.7	8.6	0.0	4.2	2.9
	240-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
	240-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	A	A	A	A
	240-Movement Volume	Movement Volume	5	466	1	0	505	6	2	0	1	9	0	13	1008
	240-95th Percentile Queue	Movement 95th Queue (ft)	13	115	2	0	137	5	13	13	13	25	25	23	
	240-Storage Bay Distance	Storage Bay Distance (ft)	75	0	50	0	0	50	0	0	0	0	0	50	
	240-Approach Delay	Approach Delay (sec/veh)		2.2			3.4			4.9			6.0		
	240-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Drive	250-Movement Delay	Movement Delay (sec/veh)	5.5	4.7	3.7	5.7	1.9	1.3	18.3	0.0	17.3	15.9	10.1	8.6	4.5
	250-Total Delay	Total Delay (hr)	0.0	0.6	0.0	0.0	0.2	0.0	0.2	0.0	0.1	0.1	0.0	0.1	1.3
	250-Movement LOS	Movement LOS	A	A	A	A	A	A	C	A	C	C	B	A	A
	250-Movement Volume	Movement Volume	15	424	36	28	458	20	29	0	28	25	3	25	1091
	250-95th Percentile Queue	Movement 95th Queue (ft)	24	124	124	34	0	0	68	68	68	62	62	62	
	250-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	50	0	0	0	0	0	0	0	0	
	250-Approach Delay	Approach Delay (sec/veh)		4.6			2.1			17.8			12.1		
	250-Approach LOS	Approach LOS		A			A			C			B		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & West River Parkway	260-Movement Delay	Movement Delay (sec/veh)	19.9	23.3	4.6	20.1	20.1	5.3	17.5	25.1	17.8	20.5	24.6	13.4	20.1
	260-Total Delay	Total Delay (hr)	0.1	2.6	0.1	0.3	2.0	0.1	0.6	1.4	0.4	0.5	0.9	0.1	9.1
	260-Movement LOS	Movement LOS	B	C	A	C	C	A	B	C	B	C	C	B	C
	260-Movement Volume	Movement Volume	23	390	64	45	361	88	129	201	71	84	138	25	1619
	260-95th Percentile Queue	Movement 95th Queue (ft)	66	242	117	67	235	90	102	203	203	89	136	136	
	260-Storage Bay Distance	Storage Bay Distance (ft)	75	0	100	190	0	100	275	0	0	150	0	0	
	260-Approach Delay	Approach Delay (sec/veh)		20.6			17.5			21.4			22.1		
	260-Approach LOS	Approach LOS		C			B			C			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Viking Village Access	270-Movement Delay	Movement Delay (sec/veh)	4.4	2.2	0.0	0.0	0.6	0.2	0.0	0.0	0.0	11.1	0.0	5.2	1.5
	270-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4
	270-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	270-Movement Volume	Movement Volume	6	534	0	0	491	10	0	0	0	1	0	10	1052
	270-95th Percentile Queue	Movement 95th Queue (ft)	16	0	0	0	0	0	0	0	0	33	0	33	
	270-Storage Bay Distance	Storage Bay Distance (ft)	210	0	0	0	0	0	0	0	0	0	0	0	
	270-Approach Delay	Approach Delay (sec/veh)		2.2			0.6			0.0			5.7		
	270-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Elton Hills Lane	290-Movement Delay	Movement Delay (sec/veh)	3.3	0.8	0.6	3.3	0.5	0.2	11.4	0.0	6.7	10.2	0.0	5.5	1.9
	290-Total Delay	Total Delay (hr)	0.0	0.1	0.0	0.0	0.1	0.0	0.2	0.0	0.1	0.1	0.0	0.1	0.7
	290-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	B	A	A	A
	290-Movement Volume	Movement Volume	49	440	18	12	367	1	54	0	28	20	0	44	1033
	290-95th Percentile Queue	Movement 95th Queue (ft)	37	0	0	20	0	0	68	68	68	61	61	61	
	290-Storage Bay Distance	Storage Bay Distance (ft)	200	0	0	150	0	0	0	0	0	0	0	0	
	290-Approach Delay	Approach Delay (sec/veh)		1.0			0.6			9.8			7.0		
	290-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Northbrook Lane	300-Movement Delay	Movement Delay (sec/veh)	2.0	2.4	1.3	4.5	0.9	0.6	10.2	0.0	6.1	0.0	0.0	0.0	2.0
	300-Total Delay	Total Delay (hr)	0.0	0.3	0.0	0.0	0.1	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.5
	300-Movement LOS	Movement LOS	A	A	A	A	A	A	B	A	A	A	A	A	A
	300-Movement Volume	Movement Volume	1	414	56	14	381	30	29	0	23	0	0	0	948
	300-95th Percentile Queue	Movement 95th Queue (ft)	85	85	85	25	7	7	32	32	38	0	0	0	
	300-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	0	0	0	0	0	100	0	0	0	
	300-Approach Delay	Approach Delay (sec/veh)		2.3			1.0			8.4			0.0		
	300-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Rec Center West Access	280-Movement Delay	Movement Delay (sec/veh)	4.6	0.8	0.0	0.0	0.7	0.4	0.0	0.0	0.0	11.1	0.0	4.6	1.1
	280-Total Delay	Total Delay (hr)	0.1	0.1	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.4
	280-Movement LOS	Movement LOS	A	A	A	A	A	A	A	A	A	B	A	A	A
	280-Movement Volume	Movement Volume	46	484	0	0	445	19	0	0	0	4	0	41	1039
	280-95th Percentile Queue	Movement 95th Queue (ft)	44	0	0	0	0	0	0	0	0	53	0	53	
	280-Storage Bay Distance	Storage Bay Distance (ft)	150	0	0	0	0	0	0	0	0	0	0	0	
	280-Approach Delay	Approach Delay (sec/veh)		1.1			0.7			0.0			5.2		
	280-Approach LOS	Approach LOS		A			A			A			A		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & TH 52 SPUI	100-Movement Delay	Movement Delay (sec/veh)	44.4	21.8	3.6	45.1	12.7	3.2	34.1	0.0	4.1	39.9	0.0	2.7	18.7
	100-Total Delay	Total Delay (hr)	1.0	4.6	0.1	1.9	3.5	0.1	1.2	0.0	0.3	3.3	0.0	0.1	16.1
	100-Movement LOS	Movement LOS	D	C	A	D	B	A	C	A	A	D	A	A	B
	100-Movement Volume	Movement Volume	75	758	87	143	999	152	121	0	226	288	0	192	3041
	100-95th Percentile Queue	Movement 95th Queue (ft)	77	263	89	95	233	0	141	0	94	279	0	61	
	100-Storage Bay Distance	Storage Bay Distance (ft)	160	0	165	275	0	0	0	0	600	0	0	600	
	100-Approach Delay	Approach Delay (sec/veh)		21.9			15.2			14.6			25.0		
	100-Approach LOS	Approach LOS		C			B			B			C		

Intersection		MOE	Eastbound Approach			Westbound Approach			Northbound Approach			Southbound Approach			Intersection Total
			EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Elton Hills Drive NW & Broadway Avenue N	310-Movement Delay	Movement Delay (sec/veh)	39.0	31.5	6.3	43.3	59.6	22.0	14.2	8.7	1.2	13.8	14.2	3.4	14.1
	310-Total Delay	Total Delay (hr)	2.0	0.3	0.4	0.4	0.5	0.2	0.9	1.8	0.0	0.1	1.9	0.1	8.6
	310-Movement LOS	Movement LOS	D	C	A	D	E	C	B	A	A	B	B	A	B
	310-Movement Volume	Movement Volume	178	38	222	30	33	37	212	751	31	22	484	147	2185
	310-95th Percentile Queue	Movement 95th Queue (ft)	174	54	87	64	112	112	113	143	1	35	162	58	
	310-Storage Bay Distance	Storage Bay Distance (ft)	0	0	0	100	0	0	350	0	325	350	0	250	
	310-Approach Delay	Approach Delay (sec/veh)	21.8			40.8			9.6			11.8			
	310-Approach LOS	Approach LOS	C			D			A			B			

ALLIANT

Appendix C

TRAFFIC SIGNAL WARRANT ANALYSES RESULTS

FINAL REPORT

ALLIANT

Signal Warrant Analysis Summary

Intersection	Scenario	Warrant 1 - Eight-Hour Vehicular Volumes				Warrant 2 - Four-Hour Vehicular Volumes		Warrant 3 - Peak Hour		Warrant 7 - Crash Experience	
		1A	1B	1C	Met?	Hours	Met?	3B	Met?	Crashes	Met?
9th Avenue NW	4-Lane	3	3	5	No	2	No	0	No	0	No
9th Avenue NW	3-Lane	3	6	5	No	4	Yes	0	No	0	No

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 9th Avenue NW

3-Lane Config

ALLIANT

Background

Project Data			Analysis	Volumes	Direction	Analysis Approach	Roadway	Speed	Lanes	RT %
Project:	4000833_Elton Hills Drive Traffic and Sa		***Date:***	***Scenario:***	WB	Major Approach 1	Elton Hills Drive NW	30	1	100%
Intersection:	Elton Hills Drive NW & 9th Avenue NW		1/14/2026	3-Lane Config	EB	Major Approach 3	Elton Hills Drive NW	30	1	100%
Population < 10,000?	NO	***Exist. Traffic Control:***	***Analyst:***	***Format:***	NB	Minor Approach 2	9th Avenue NW	25	1	100%
70% Factor Used:	NO	Signal	GAD	15 MIN	SB	Minor Approach 4	9th Avenue NW	25	1	100%

Analysis

Hour	Major Approaches					Minor Approaches					Traffic Signal Warrants					Existing Signal Justification						AWSC Warrants		
	Approach			Volumes Met		Approach			Volumes Met		8-Hour			4-Hr	Peak	60%			80%			C1	C2	80% of C1&C2
	WB	EB	Total	A	B	NB	SB	Max	A	B	1A	1B	1C (1A/1B)	2	3B	1A	1B	1C (1A/1B)	1A	1B	1C (1A/1B)			
	1	3		500	750	2	4		150	75												300	200	D
12 - 1 AM	8	18	26			0	1	1																
1 - 2 AM	6	10	16			0	2	2																
2 - 3 AM	9	9	18			1	2	2																
3 - 4 AM	10	7	17			0	2	2																
4 - 5 AM	22	20	42			1	8	8																
5 - 6 AM	81	90	171			2	26	26																
6 - 7 AM	154	187	341			4	54	54														X		
7 - 8 AM	322	485	807	X	X	4	138	138		X		X	X / X			X	X	X / X	X	X	X / X	X		
8 - 9 AM	371	428	799	X	X	1	206	206	X	X	X	X	X / X	X		X	X	X / X	X	X	X / X	X	X	X
9 - 10 AM	237	323	560	X		4	69	69									X	- / X			- / X	X		
10 - 11 AM	287	319	606	X		4	58	58									X	- / X			- / X	X		
11 - Noon	316	304	620	X		0	57	57									X	- / X			- / X	X		
12 - 1 PM	341	371	712	X		9	74	74					- / X				X	X / X		X	- / X	X		
1 - 2 PM	303	327	630	X		5	81	81		X			- / X				X	X / X		X	- / X	X		
2 - 3 PM	398	397	795	X	X	1	86	86		X		X	- / X				X	X / X		X	- / X	X		
3 - 4 PM	483	514	997	X	X	3	164	164	X	X	X	X	X / X	X		X	X	X / X	X	X	X / X	X		X
4 - 5 PM	472	523	995	X	X	5	144	144		X		X	X / X	X		X	X	X / X	X	X	X / X	X		
5 - 6 PM	455	573	1028	X	X	3	168	168	X	X	X	X	X / X	X		X	X	X / X	X	X	X / X	X		X
6 - 7 PM	317	382	699	X		1	106	106		X			- / X			X	X	X / X		X	X / X	X		
7 - 8 PM	221	278	499			4	58	58									X	- / X			- / X	X		
8 - 9 PM	178	177	355			3	51	51														X		
9 - 10 PM	110	106	216			1	33	33																
10 - 11 PM	49	86	135			1	12	12																
11 - Midnight	27	42	69			1	8	8																

Summary

Signal Warrants[1]	Met	Req'd	Warrant Met?	
Warrant 1				
1A: 8-Hour (Minimum Vehicular Volume)	3	8	NO	
1B: 8-Hour (Interruption of Continuous Traffic)	6	8	NO	NO
1C: 8-Hour (Combination of 1A & 1B at 80%)	5	8	NO	
Warrant 2: 4-Hour	4	4	MET	MET
Warrant 3B: Peak Hour	0	1	NO	NO
Warrant 7				
7B: Crash History	0	5	NO	NO
7C: Condition A or Condition B (80%)	9	8	MET	

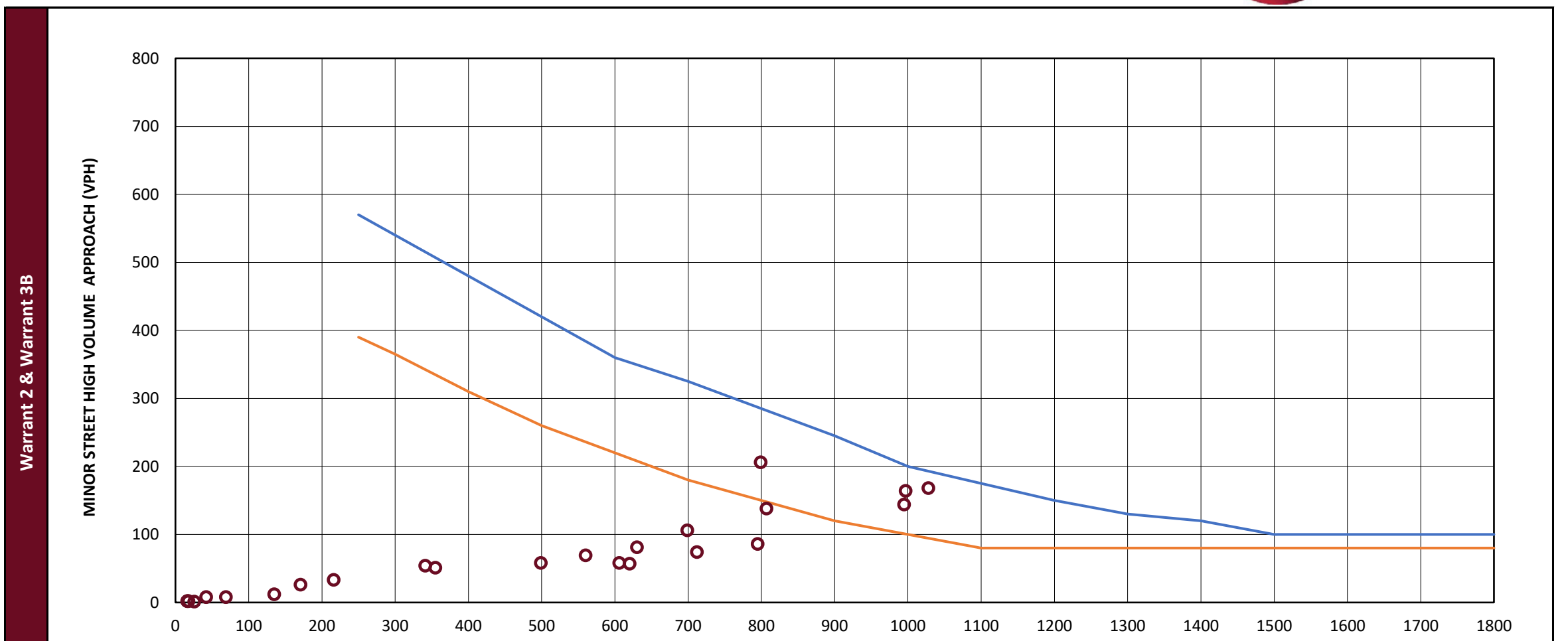
Existing Signal Justification[2]	Met 60%	Met 80%	Req'd	Justification Criteria Met?	
Existing Signal Justification: Reduced Warrant 1A	6	5	8	UNJUSTIFIED	MET
Existing Signal Justification: Reduced Warrant 1B	13	9	8	JUSTIFIED	
Existing Signal Justification: Reduced Warrant 1C	9	6	8	CONSIDER REMOVAL	

All-Way Stop Warrants[1]	Met	Req'd.	Warrant Met?	
All-Way Stop: Crit. A (Signal Justified)	1	1	MET	MET
All-Way Stop: Crit. B (Crash History)	0	5	NO	
All-Way Stop: Crit. C1 & C2 (Min Vols, Same Hrs)	1	8	NO	
All-Way Stop: Crit. C2 (Minor App. Delay)	-	30	NO	
All-Way Stop: Crit. D (80% of B, C1, & C2)	-	-	NO	

[1] ***Source:*** *U.S. Dept. of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

[2] ***Source:*** *MnDOT Traffic Engineering Manual, Chapter 9-5.02.05 "Traffic Control Signal Removal Justification Criteria"*

Prepared by Alliant Engineering, 1/29/2026



Scenario:	Major: 1	Minor: 1								
3-Lane Config	70% Factor:	**NO**	**Warrant 2 (Four-Hour)**	Lower Threshold:	**80**	Hours Met:	**4**	Hours Req'd:	**4**	Met? **MET**
			Warrant 3B (Peak Hour)		**100**		**0**		**1**	Met? **NO**

Source: *U.S. Department of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

Warrant 2 (Four-Hour) Notes:
100%: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3B (Peak Hour) Notes:
100%: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 9th Avenue NW

4-Lane Config

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Background

Project Data			Analysis	Volumes	Direction	Analysis Approach	Roadway	Speed	Lanes	RT %
Project:	4000833_Elton Hills Drive Traffic and Sa		***Date:***	***Scenario:***	WB	Major Approach 1	Elton Hills Drive NW	30	2	50%
Intersection:	Elton Hills Drive NW & 9th Avenue NW		1/14/2026	4-Lane Config	EB	Major Approach 3	Elton Hills Drive NW	30	2	50%
Population < 10,000?	NO	***Exist. Traffic Control:***	***Analyst:***	***Format:***	NB	Minor Approach 2	9th Avenue NW	25	1	100%
70% Factor Used:	NO	Signal	GAD	15 MIN	SB	Minor Approach 4	9th Avenue NW	25	1	100%

Analysis

Hour	Major Approaches					Minor Approaches					Traffic Signal Warrants					Existing Signal Justification						AWSC Warrants		
	Approach			Volumes Met		Approach			Volumes Met		8-Hour			4-Hr	Peak	60%			80%			C1	C2	80% of C1&C2
	WB	EB	Total	A	B	NB	SB	Max	A	B	1A	1B	1C (1A/1B)	2	3B	1A	1B	1C (1A/1B)	1A	1B	1C (1A/1B)			
	1	3		600	900	2	4		150	75												300	200	D
12 - 1 AM	8	18	26			0	1	1																
1 - 2 AM	6	10	16			0	2	2																
2 - 3 AM	9	9	18			1	2	2																
3 - 4 AM	10	7	17			0	2	2																
4 - 5 AM	22	20	42			1	8	8																
5 - 6 AM	81	90	171			2	26	26																
6 - 7 AM	151	187	338			4	54	54														X		
7 - 8 AM	309	485	794	X		4	138	138		X			X / X			X	X	X / X	X	X	X / X	X		
8 - 9 AM	355	428	783	X		1	206	206	X	X	X		X / X			X	X	X / X	X	X	X / X	X	X	X
9 - 10 AM	233	322	555			4	69	69									X	- / X				X		
10 - 11 AM	279	319	598			4	58	58									X	- / X			- / X	X		
11 - Noon	309	304	613	X		0	57	57									X	- / X			- / X	X		
12 - 1 PM	331	370	701	X		9	74	74									X	X / X			- / X	X		
1 - 2 PM	294	327	621	X		5	81	81		X							X	X / X			- / X	X		
2 - 3 PM	379	397	776	X		1	86	86		X			- / X				X	X / X		X	- / X	X		
3 - 4 PM	459	514	973	X	X	3	164	164	X	X	X	X	X / X	X		X	X	X / X	X	X	X / X	X		X
4 - 5 PM	448	523	971	X	X	5	144	144		X		X	X / X			X	X	X / X	X	X	X / X	X		
5 - 6 PM	433	572	1005	X	X	3	168	168	X	X	X	X	X / X	X		X	X	X / X	X	X	X / X	X		X
6 - 7 PM	311	382	693	X		1	106	106		X						X	X	X / X			X / X	X		
7 - 8 PM	217	278	495			4	58	58										- / X				X		
8 - 9 PM	169	177	346			3	51	51														X		
9 - 10 PM	106	106	212			1	33	33																
10 - 11 PM	47	86	133			1	12	12																
11 - Midnight	27	41	68			1	8	8																

Summary

Signal Warrants[1]	Met	Req'd	Warrant Met?	
Warrant 1				
1A: 8-Hour (Minimum Vehicular Volume)	3	8	NO	
1B: 8-Hour (Interruption of Continuous Traffic)	3	8	NO	NO
1C: 8-Hour (Combination of 1A & 1B at 80%)	5	8	NO	
Warrant 2: 4-Hour	2	4	NO	NO
Warrant 3B: Peak Hour	0	1	NO	NO
Warrant 7				
7B: Crash History	0	5	NO	NO
7C: Condition A or Condition B (80%)	6	8	NO	

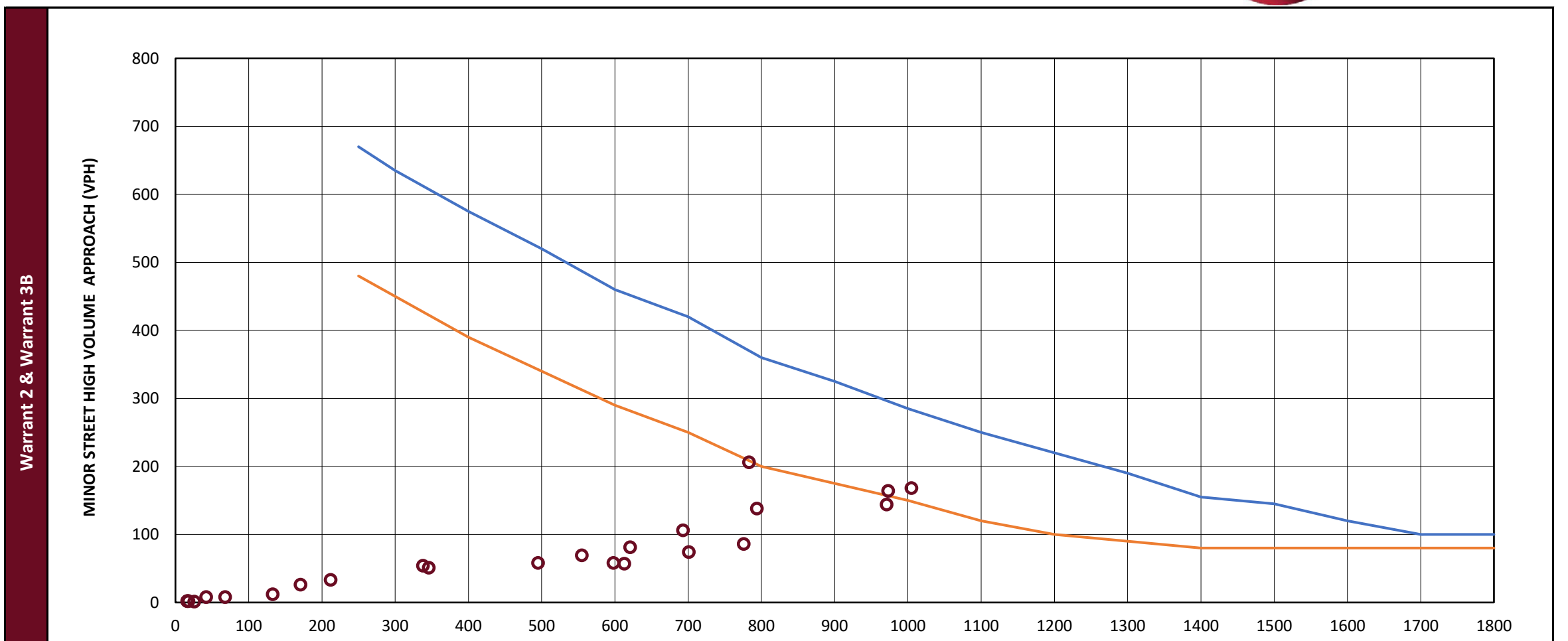
Existing Signal Justification[2]	Met 60%	Met 80%	Req'd	Justification Criteria Met?	
Existing Signal Justification: Reduced Warrant 1A	6	5	8	UNJUSTIFIED	NO
Existing Signal Justification: Reduced Warrant 1B	12	6	8	CONSIDER REMOVAL	
Existing Signal Justification: Reduced Warrant 1C	9	6	8	CONSIDER REMOVAL	

All-Way Stop Warrants[1]	Met	Req'd.	Warrant Met?	
All-Way Stop: Crit. A (Signal Justified)	0	1	NO	
All-Way Stop: Crit. B (Crash History)	0	5	NO	
All-Way Stop: Crit. C1 & C2 (Min Vols, Same Hrs)	1	8	NO	NO
All-Way Stop: Crit. C2 (Minor App. Delay)	-	30	NO	
All-Way Stop: Crit. D (80% of B, C1, & C2)	-	-	NO	

[1] ***Source:*** *U.S. Dept. of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

[2] ***Source:*** *MnDOT Traffic Engineering Manual, Chapter 9-5.02.05 "Traffic Control Signal Removal Justification Criteria"*

Prepared by Alliant Engineering, 1/29/2026



Scenario:	Major: 2	Minor: 1								
4-Lane Config	70% Factor:	**NO**	**Warrant 2 (Four-Hour)**	Lower Threshold:	80	Hours Met:	2	Hours Req'd:	4	Met? **NO**
			Warrant 3B (Peak Hour)		100		0		1	**NO**

Source: *U.S. Department of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

Warrant 2 (Four-Hour) Notes:
100%: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3B (Peak Hour) Notes:
100%: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

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Signal Warrant Analysis Summary

Intersection	Scenario	Warrant 1 - Eight-Hour Vehicular Volumes				Warrant 2 - Four-Hour Vehicular Volumes		Warrant 3 - Peak Hour		Warrant 7 - Crash Experience		Exising Signal Justification - 60%			
		1A	1B	1C	Met?	Hours	Met?	3B	Met?	Crashes	Met?	1A	1B	1C	Met
14th Avenue NW (W Jct)	4-Lane	0	0	0	No	0	No	0	No	0	No	0	0	0	No
14th Avenue NW (W Jct)	3-Lane	0	0	0	No	0	No	0	No	0	No	0	0	0	No

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 14th Avenue NW (W Jct)

3-Lane Config

Background

Project Data			Analysis	Volumes	Direction	Analysis Approach	Roadway	Speed	Lanes	RT %
Project:	4000833_Elton Hills Drive Traffic and Sa		***Date:***	***Scenario:***	WB	Major Approach 1	Elton Hills Drive NW	30	1	100%
Intersection:	Elton Hills Drive NW & 14th Avenue NW		1/14/2026	3-Lane Config	EB	Major Approach 3	Elton Hills Drive NW	30	1	100%
Population < 10,000?	NO	***Exist. Traffic Control:***	***Analyst:***	***Format:***	NB	Minor Approach 2	14th Avenue NW	25	1	100%
70% Factor Used:	NO	Signal	GAD	15 MIN	-	Minor Approach 4	N/A	N/A	N/A	N/A

Analysis

Hour	Major Approaches					Minor Approaches					Traffic Signal Warrants					Existing Signal Justification						AWSC Warrants		
	Approach			Volumes Met		Approach			Volumes Met		8-Hour			4-Hr	Peak	60%			80%			C1	C2	80% of C1&C2
	WB	EB	Total	A	B	NB	-	Max	A	B	1A	1B	1C (1A/1B)	2	3B	1A	1B	1C (1A/1B)	1A	1B	1C (1A/1B)			
	1	3		500	750	2	4		150	75												300	200	D
12 - 1 AM	0	0	0			0		0																
1 - 2 AM	0	0	0			0		0																
2 - 3 AM	0	0	0			0		0																
3 - 4 AM	0	0	0			0		0																
4 - 5 AM	0	0	0			0		0																
5 - 6 AM	0	0	0			0		0																
6 - 7 AM	201	150	351			11		11														X		
7 - 8 AM	429	443	872	X	X	32		32														X		
8 - 9 AM	498	445	943	X	X	21		21														X		
9 - 10 AM	305	314	619	X		22		22														X		
10 - 11 AM	292	311	603	X		15		15														X		
11 - Noon	346	306	652	X		16		16														X		
12 - 1 PM	373	393	766	X	X	16		16														X		
1 - 2 PM	343	316	659	X		13		13														X		
2 - 3 PM	416	420	836	X	X	22		22														X		
3 - 4 PM	544	533	1077	X	X	28		28														X		
4 - 5 PM	503	542	1045	X	X	31		31														X		
5 - 6 PM	515	588	1103	X	X	22		22														X		
6 - 7 PM	373	407	780	X	X	19		19														X		
7 - 8 PM	0	0	0			0		0																
8 - 9 PM	0	0	0			0		0																
9 - 10 PM	0	0	0			0		0																
10 - 11 PM	0	0	0			0		0																
11 - Midnight	0	0	0			0		0																

Summary

Signal Warrants[1]	Met	Req'd	Warrant Met?	
Warrant 1				
1A: 8-Hour (Minimum Vehicular Volume)	0	8	NO	
1B: 8-Hour (Interruption of Continuous Traffic)	0	8	NO	NO
1C: 8-Hour (Combination of 1A & 1B at 80%)	0	8	NO	
Warrant 2: 4-Hour	0	4	NO	NO
Warrant 3B: Peak Hour	0	1	NO	NO
Warrant 7				
7B: Crash History	0	5	NO	NO
7C: Condition A or Condition B (80%)	0	8	NO	

Existing Signal Justification[2]	Met 60%	Met 80%	Req'd	Justification Criteria Met?	
Existing Signal Justification: Reduced Warrant 1A	0	0	8	UNJUSTIFIED	
Existing Signal Justification: Reduced Warrant 1B	0	0	8	UNJUSTIFIED	NO
Existing Signal Justification: Reduced Warrant 1C	0	0	8	UNJUSTIFIED	

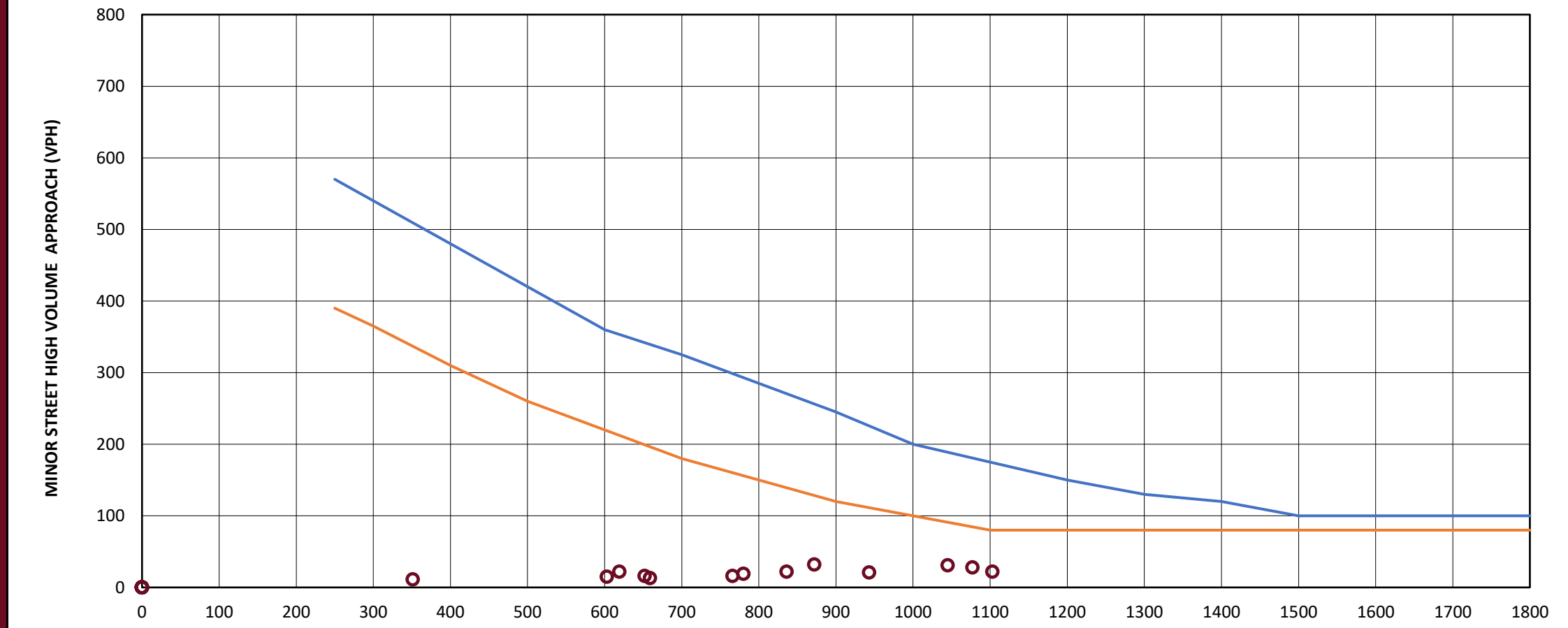
All-Way Stop Warrants[1]	Met	Req'd.	Warrant Met?	
All-Way Stop: Crit. A (Signal Justified)	0	1	NO	
All-Way Stop: Crit. B (Crash History)	0	5	NO	
All-Way Stop: Crit. C1 & C2 (Min Vols, Same Hrs)	0	8	NO	NO
All-Way Stop: Crit. C2 (Minor App. Delay)	-	30	NO	
All-Way Stop: Crit. D (80% of B, C1, & C2)	-	-	NO	

[1] ***Source:*** *U.S. Dept. of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

[2] ***Source:*** *MnDOT Traffic Engineering Manual, Chapter 9-5.02.05 "Traffic Control Signal Removal Justification Criteria"*

Prepared by Alliant Engineering, 1/29/2026

Warrant 2 & Warrant 3B



Scenario:	Major: 1	Minor: 1	Warrant 2 (Four-Hour)	Lower Threshold:	80	Hours Met:	0	Hours Req'd:	4	Met?	NO
3-Lane Config	70% Factor:	NO	Warrant 3B (Peak Hour)		100		0		1		NO

Source: *U.S. Department of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

Warrant 2 (Four-Hour) Notes:
100%: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3B (Peak Hour) Notes:
100%: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 14th Avenue NW (W Jct)

4-Lane Config

Background

Project Data			Analysis	Volumes	Direction	Analysis Approach	Roadway	Speed	Lanes	RT %
Project:	4000833_Elton Hills Drive Traffic and Sa		***Date:***	***Scenario:***	WB	Major Approach 1	Elton Hills Drive NW	30	2	50%
Intersection:	Elton Hills Drive NW & 14th Avenue NW		1/14/2026	4-Lane Config	EB	Major Approach 3	Elton Hills Drive NW	30	2	50%
Population < 10,000?	NO	***Exist. Traffic Control:***	***Analyst:***	***Format:***	NB	Minor Approach 2	14th Avenue NW	25	1	100%
70% Factor Used:	NO	Signal	GAD	15 MIN	-	Minor Approach 4	N/A	N/A	N/A	N/A

Analysis

Hour	Major Approaches					Minor Approaches					Traffic Signal Warrants					Existing Signal Justification						AWSC Warrants		
	Approach			Volumes Met		Approach			Volumes Met		8-Hour			4-Hr	Peak	60%			80%			C1	C2	80% of C1&C2
	WB	EB	Total	A	B	NB	-	Max	A	B	1A	1B	1C (1A/1B)	2	3B	1A	1B	1C (1A/1B)	1A	1B	1C (1A/1B)			
	1	3		600	900	2	4		150	75												300	200	D
12 - 1 AM	0	0	0			0		0																
1 - 2 AM	0	0	0			0		0																
2 - 3 AM	0	0	0			0		0																
3 - 4 AM	0	0	0			0		0																
4 - 5 AM	0	0	0			0		0																
5 - 6 AM	0	0	0			0		0																
6 - 7 AM	201	150	351			11		11														X		
7 - 8 AM	429	439	868	X		32		32														X		
8 - 9 AM	498	442	940	X	X	21		21														X		
9 - 10 AM	305	313	618	X		22		22														X		
10 - 11 AM	292	311	603	X		15		15														X		
11 - Noon	346	306	652	X		16		16														X		
12 - 1 PM	373	391	764	X		16		16														X		
1 - 2 PM	343	316	659	X		13		13														X		
2 - 3 PM	416	418	834	X		22		22														X		
3 - 4 PM	544	532	1076	X	X	28		28														X		
4 - 5 PM	503	540	1043	X	X	31		31														X		
5 - 6 PM	515	582	1097	X	X	22		22														X		
6 - 7 PM	373	407	780	X		19		19														X		
7 - 8 PM	0	0	0			0		0																
8 - 9 PM	0	0	0			0		0																
9 - 10 PM	0	0	0			0		0																
10 - 11 PM	0	0	0			0		0																
11 - Midnight	0	0	0			0		0																

Summary

Signal Warrants[1]	Met	Req'd	Warrant Met?	
Warrant 1				
1A: 8-Hour (Minimum Vehicular Volume)	0	8	NO	
1B: 8-Hour (Interruption of Continuous Traffic)	0	8	NO	NO
1C: 8-Hour (Combination of 1A & 1B at 80%)	0	8	NO	
Warrant 2: 4-Hour	0	4	NO	NO
Warrant 3B: Peak Hour	0	1	NO	NO
Warrant 7				
7B: Crash History	0	5	NO	NO
7C: Condition A or Condition B (80%)	0	8	NO	

Existing Signal Justification[2]	Met 60%	Met 80%	Req'd	Justification Criteria Met?	
Existing Signal Justification: Reduced Warrant 1A	0	0	8	UNJUSTIFIED	
Existing Signal Justification: Reduced Warrant 1B	0	0	8	UNJUSTIFIED	NO
Existing Signal Justification: Reduced Warrant 1C	0	0	8	UNJUSTIFIED	

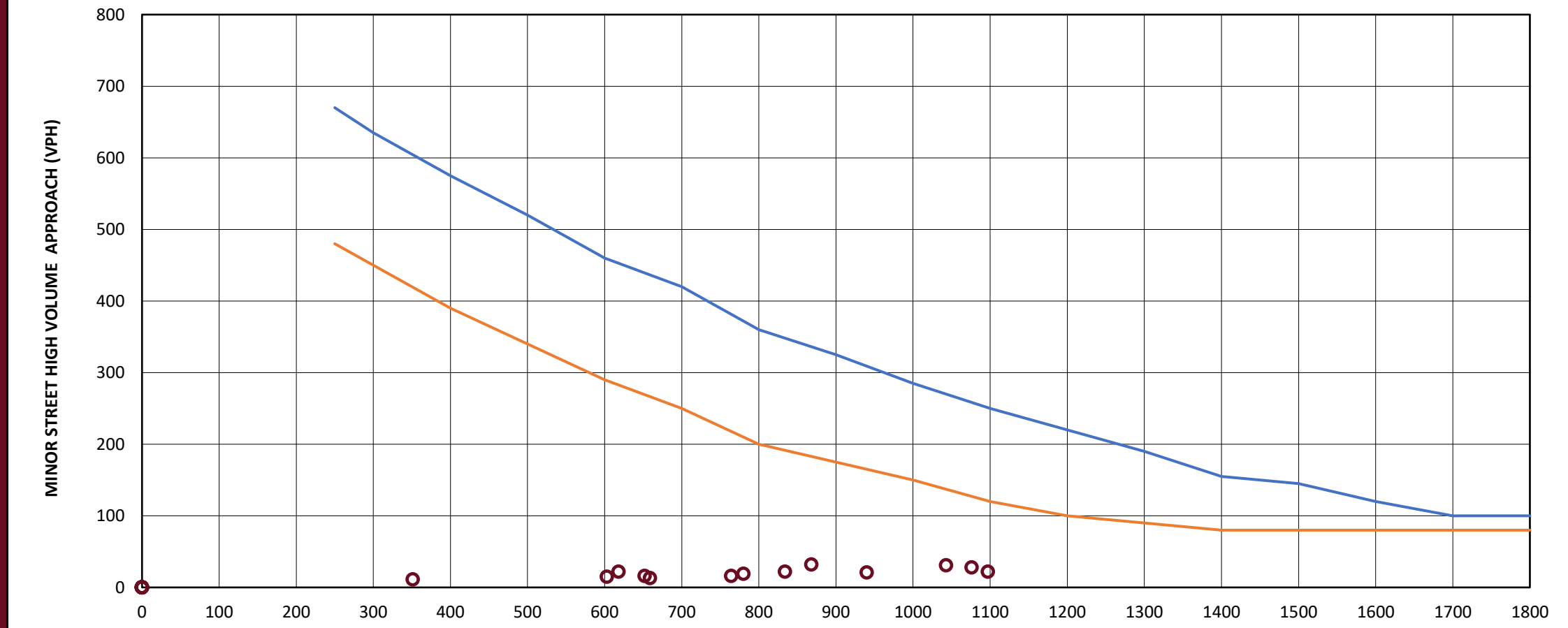
All-Way Stop Warrants[1]	Met	Req'd.	Warrant Met?	
All-Way Stop: Crit. A (Signal Justified)	0	1	NO	
All-Way Stop: Crit. B (Crash History)	0	5	NO	
All-Way Stop: Crit. C1 & C2 (Min Vols, Same Hrs)	0	8	NO	NO
All-Way Stop: Crit. C2 (Minor App. Delay)	-	30	NO	
All-Way Stop: Crit. D (80% of B, C1, & C2)	-	-	NO	

[1] ***Source:*** *U.S. Dept. of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

[2] ***Source:*** *MnDOT Traffic Engineering Manual, Chapter 9-5.02.05 "Traffic Control Signal Removal Justification Criteria"*

Prepared by Alliant Engineering, 1/29/2026

Warrant 2 & Warrant 3B



Scenario:	Major: 2	Minor: 1	Warrant 2 (Four-Hour)	Lower Threshold:	80	Hours Met:	0	Hours Req'd:	4	Met?	NO
4-Lane Config	70% Factor:	NO	Warrant 3B (Peak Hour)		100		0		1		NO

Source: *U.S. Department of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

Warrant 2 (Four-Hour) Notes:
100%: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3B (Peak Hour) Notes:
100%: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

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Signal Warrant Analysis Summary

Intersection	Scenario	Warrant 1 - Eight-Hour Vehicular Volumes				Warrant 2 - Four-Hour Vehicular Volumes		Warrant 3 - Peak Hour		Warrant 7 - Crash Experience	
		1A	1B	1C	Met?	Hours	Met?	3B	Met?	Crashes	Met?
15th Avenue NW	4-Lane	0	3	0	No	0	No	0	No	1	No
15th Avenue NW	3-Lane	0	3	0	No	1	No	0	No	1	No

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 15th Avenue NW

3-Lane Config

ALLIANT

Background

Project Data				Analysis	Volumes	Direction	Analysis Approach	Roadway	Speed	Lanes	RT %
Project:	4000833_Elton Hills Drive Traffic and Saf			***Date:***	***Scenario:***	WB	Major Approach 1	Elton Hills Drive NW	30	1	100%
Intersection:	Elton Hills Drive NW & 15th Avenue NW			1/14/2026	3-Lane Config	EB	Major Approach 3	Elton Hills Drive NW	30	1	100%
Population < 10,000?	NO	***Exist. Traffic Control:***		***Analyst:***	***Format:***	SB	Minor Approach 2	15th Avenue NW	25	1	100%
70% Factor Used:	NO	Signal		GAD	15 MIN	-	Minor Approach 4	N/A	N/A	N/A	N/A

Analysis

Hour	Major Approaches					Minor Approaches					Traffic Signal Warrants					Existing Signal Justification						AWSC Warrants		
	Approach			Volumes Met		Approach			Volumes Met		8-Hour			4-Hr	Peak	60%			80%			C1	C2	80% of C1&C2
	WB	EB	Total	A	B	SB	-	Max	A	B	1A	1B	1C (1A/1B)	2	3B	1A	1B	1C (1A/1B)	1A	1B	1C (1A/1B)			
	1	3		500	750	2	4		150	75												300	200	D
12 - 1 AM	0	0	0			0		0																
1 - 2 AM	0	0	0			0		0																
2 - 3 AM	0	0	0			0		0																
3 - 4 AM	0	0	0			0		0																
4 - 5 AM	0	0	0			0		0																
5 - 6 AM	0	0	0			0		0																
6 - 7 AM	206	152	358			32		32														X		
7 - 8 AM	450	483	933	X	X	91		91		X		X	- / X			X	X	X / X		X	- / X	X		
8 - 9 AM	507	473	980	X	X	93		93		X		X	- / X			X	X	X / X		X	- / X	X		
9 - 10 AM	322	328	650	X		25		25														X		
10 - 11 AM	303	314	617	X		25		25														X		
11 - Noon	353	306	659	X		29		29														X		
12 - 1 PM	386	406	792	X	X	34		34														X		
1 - 2 PM	356	356	712	X		41		41										- / X				X		
2 - 3 PM	428	460	888	X	X	70		70					- / X				X	- / X		X	- / X	X		
3 - 4 PM	549	573	1122	X	X	96		96		X		X	- / X	X		X	X	X / X		X	X / X	X		
4 - 5 PM	526	584	1110	X	X	40		40										- / X				X		
5 - 6 PM	530	622	1152	X	X	48		48									X	- / X			- / X	X		
6 - 7 PM	393	434	827	X	X	26		26														X		
7 - 8 PM	0	0	0			0		0																
8 - 9 PM	0	0	0			0		0																
9 - 10 PM	0	0	0			0		0																
10 - 11 PM	0	0	0			0		0																
11 - Midnight	0	0	0			0		0																

Summary

Signal Warrants[1]	Met	Req'd	Warrant Met?	
Warrant 1				
1A: 8-Hour (Minimum Vehicular Volume)	0	8	NO	NO
1B: 8-Hour (Interruption of Continuous Traffic)	3	8	NO	
1C: 8-Hour (Combination of 1A & 1B at 80%)	0	8	NO	
Warrant 2: 4-Hour	1	4	NO	NO
Warrant 3B: Peak Hour	0	1	NO	NO
Warrant 7				
7B: Crash History	1	5	NO	NO
7C: Condition A or Condition B (80%)	4	8	NO	

Existing Signal Justification[2]	Met 60%	Met 80%	Req'd	Justification Criteria Met?	
Existing Signal Justification: Reduced Warrant 1A	3	0	8	UNJUSTIFIED	NO
Existing Signal Justification: Reduced Warrant 1B	5	4	8	UNJUSTIFIED	
Existing Signal Justification: Reduced Warrant 1C	3	1	8	UNJUSTIFIED	

All-Way Stop Warrants[1]	Met	Req'd.	Warrant Met?	
All-Way Stop: Crit. A (Signal Justified)	0	1	NO	NO
All-Way Stop: Crit. B (Crash History)	3	5	NO	
All-Way Stop: Crit. C1 & C2 (Min Vols, Same Hrs)	0	8	NO	
All-Way Stop: Crit. C2 (Minor App. Delay)	-	30	NO	
All-Way Stop: Crit. D (80% of B, C1, & C2)	-	-	NO	

[1] ***Source:*** *U.S. Dept. of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

[2] ***Source:*** *MnDOT Traffic Engineering Manual, Chapter 9-5.02.05 "Traffic Control Signal Removal Justification Criteria"*

Prepared by Alliant Engineering, 1/29/2026

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 15th Avenue NW

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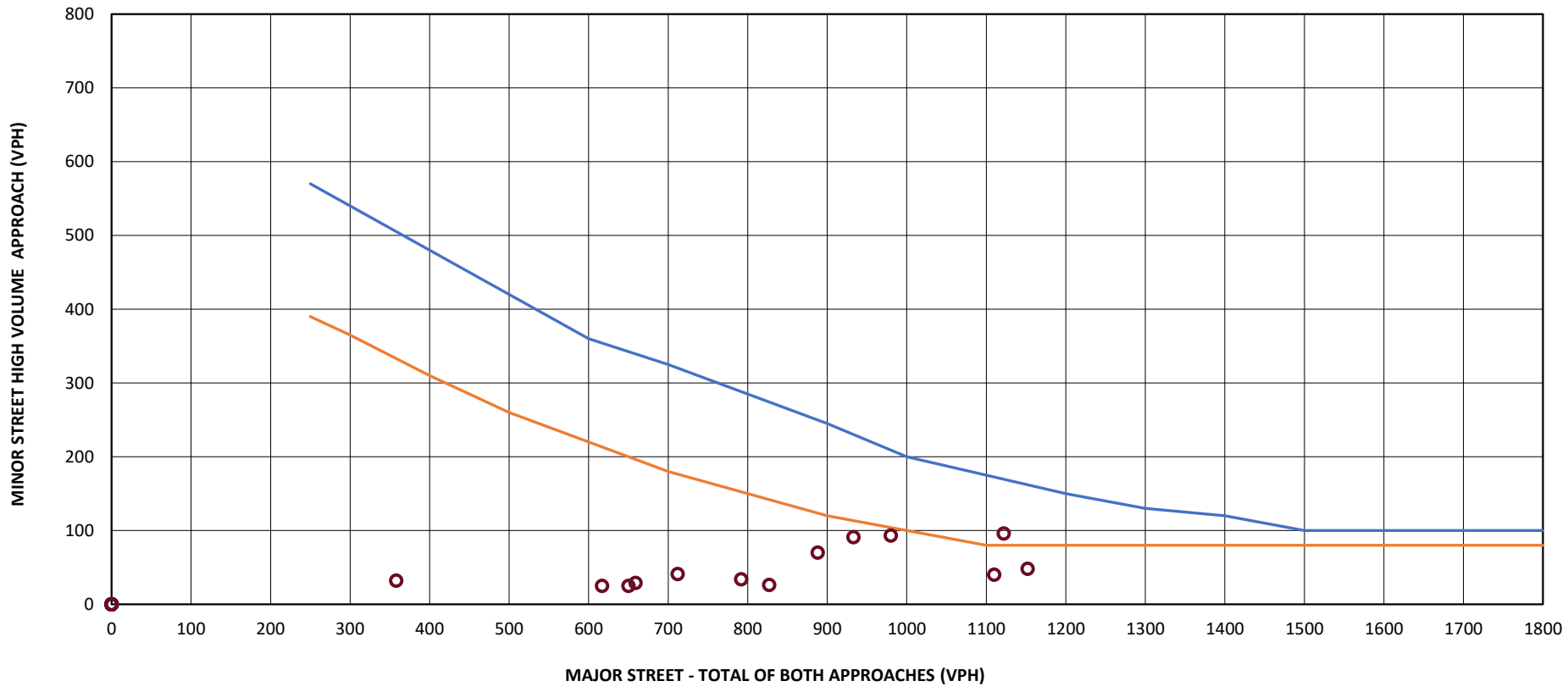
Warrant 2 & Warrant 3B



Scenario:	Major: 1	Minor: 1								
3-Lane Config	70% Factor:	**NO**	Warrant 2 (Four-Hour)	Lower Threshold:	80	Hours Met:	1	Hours Req'd:	4	Met? **NO**
			Warrant 3B (Peak Hour)		100		0		1	**NO**

Source: *U.S. Department of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

Warrant 2 (Four-Hour) Notes:

100%: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3B (Peak Hour) Notes:

100%: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 15th Avenue NW

4-Lane Config

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Background

Project Data				Analysis	Volumes	Direction	Analysis Approach	Roadway	Speed	Lanes	RT %
Project:	4000833_Elton Hills Drive Traffic and Saf			***Date:***	***Scenario:***	WB	Major Approach 1	Elton Hills Drive NW	30	2	50%
Intersection:	Elton Hills Drive NW & 15th Avenue NW			1/14/2026	4-Lane Config	EB	Major Approach 3	Elton Hills Drive NW	30	2	50%
Population < 10,000?	NO	***Exist. Traffic Control:***		***Analyst:***	***Format:***	SB	Minor Approach 2	15th Avenue NW	25	1	100%
70% Factor Used:	NO	Signal		GAD	15 MIN	-	Minor Approach 4	N/A	N/A	N/A	N/A

Analysis

Hour	Major Approaches					Minor Approaches					Traffic Signal Warrants					Existing Signal Justification						AWSC Warrants		
	Approach			Volumes Met		Approach			Volumes Met		8-Hour			4-Hr	Peak	60%			80%			C1	C2	80% of C1&C2
	WB	EB	Total	A	B	SB	-	Max	A	B	1A	1B	1C (1A/1B)	2	3B	1A	1B	1C (1A/1B)	1A	1B	1C (1A/1B)			
	1	3		600	900	2	4		150	75												300	200	D
12 - 1 AM	0	0	0			0		0																
1 - 2 AM	0	0	0			0		0																
2 - 3 AM	0	0	0			0		0																
3 - 4 AM	0	0	0			0		0																
4 - 5 AM	0	0	0			0		0																
5 - 6 AM	0	0	0			0		0																
6 - 7 AM	205	152	357			32		32														X		
7 - 8 AM	430	483	913	X	X	91		91		X		X	- / X			X	X	X / X		X	- / X	X		
8 - 9 AM	499	473	972	X	X	93		93		X		X	- / X			X	X	X / X		X	- / X	X		
9 - 10 AM	317	328	645	X		25		25														X		
10 - 11 AM	299	314	613	X		25		25														X		
11 - Noon	348	306	654	X		29		29														X		
12 - 1 PM	380	406	786	X		34		34														X		
1 - 2 PM	346	356	702	X		41		41										- / X				X		
2 - 3 PM	412	460	872	X		70		70					- / X				X	- / X		X	- / X	X		
3 - 4 PM	538	573	1111	X	X	96		96		X		X	- / X			X	X	X / X		X	X / X	X		
4 - 5 PM	519	584	1103	X	X	40		40										- / X				X		
5 - 6 PM	520	622	1142	X	X	48		48									X	- / X			- / X	X		
6 - 7 PM	385	434	819	X		26		26														X		
7 - 8 PM	0	0	0			0		0																
8 - 9 PM	0	0	0			0		0																
9 - 10 PM	0	0	0			0		0																
10 - 11 PM	0	0	0			0		0																
11 - Midnight	0	0	0			0		0																

Summary

Signal Warrants[1]	Met	Req'd	Warrant Met?	
Warrant 1				
1A: 8-Hour (Minimum Vehicular Volume)	0	8	NO	NO
1B: 8-Hour (Interruption of Continuous Traffic)	3	8	NO	
1C: 8-Hour (Combination of 1A & 1B at 80%)	0	8	NO	
Warrant 2: 4-Hour	0	4	NO	NO
Warrant 3B: Peak Hour	0	1	NO	NO
Warrant 7				
7B: Crash History	1	5	NO	NO
7C: Condition A or Condition B (80%)	4	8	NO	

Existing Signal Justification[2]	Met 60%	Met 80%	Req'd	Justification Criteria Met?	
Existing Signal Justification: Reduced Warrant 1A	3	0	8	UNJUSTIFIED	NO
Existing Signal Justification: Reduced Warrant 1B	5	4	8	UNJUSTIFIED	
Existing Signal Justification: Reduced Warrant 1C	3	1	8	UNJUSTIFIED	

All-Way Stop Warrants[1]	Met	Req'd.	Warrant Met?	
All-Way Stop: Crit. A (Signal Justified)	0	1	NO	NO
All-Way Stop: Crit. B (Crash History)	3	5	NO	
All-Way Stop: Crit. C1 & C2 (Min Vols, Same Hrs)	0	8	NO	
All-Way Stop: Crit. C2 (Minor App. Delay)	-	30	NO	
All-Way Stop: Crit. D (80% of B, C1, & C2)	-	-	NO	

[1] ***Source:*** *U.S. Dept. of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

[2] ***Source:*** *MnDOT Traffic Engineering Manual, Chapter 9-5.02.05 "Traffic Control Signal Removal Justification Criteria"*

Prepared by Alliant Engineering, 1/29/2026

TRAFFIC CONTROL WARRANTS ANALYSIS

4000833_Elton Hills Drive Traffic and Safety Study, Elton Hills Drive NW & 15th Avenue NW

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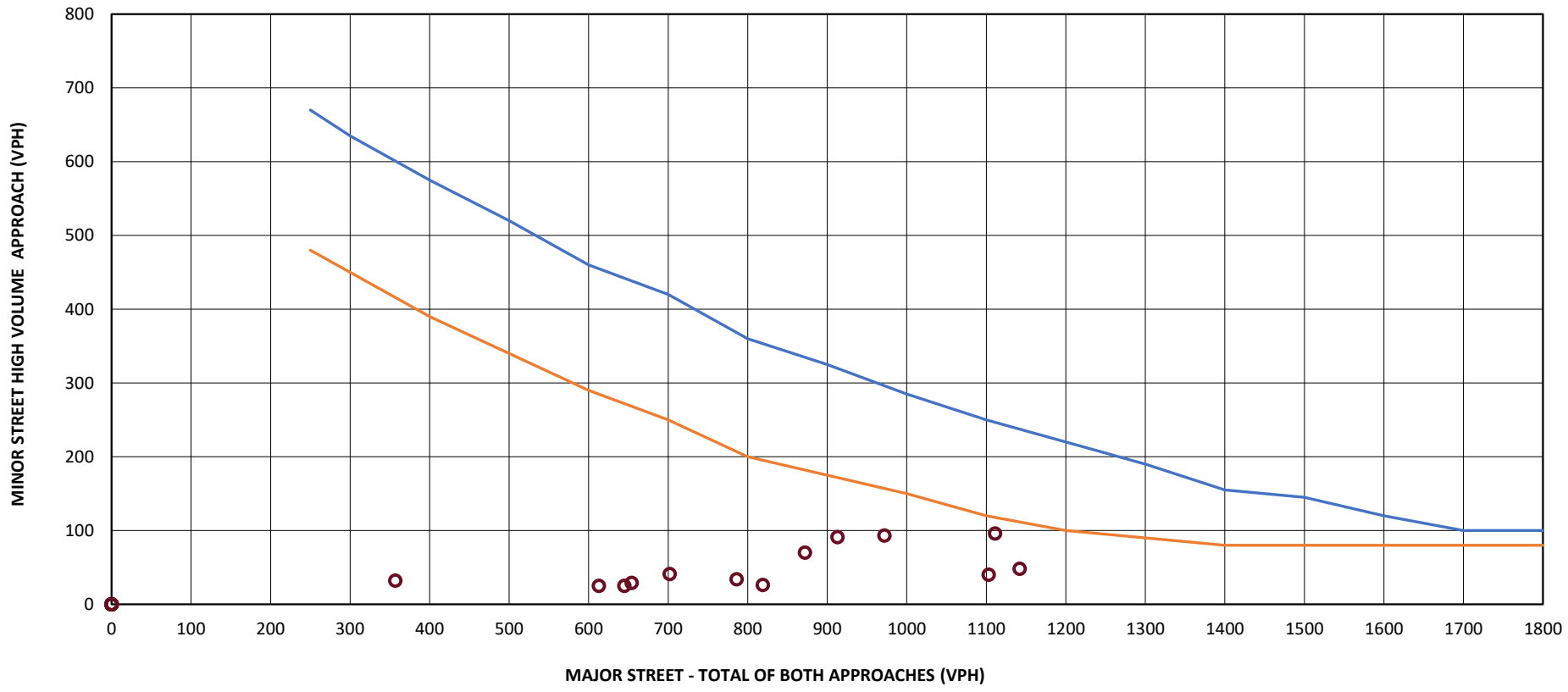
Warrant 2 & Warrant 3B



Scenario:	Major: 2	Minor: 1								
4-Lane Config	70% Factor:	**NO**	Warrant 2 (Four-Hour)	Lower Threshold:	80	Hours Met:	0	Hours Req'd:	4	Met? **NO**
			Warrant 3B (Peak Hour)		100		0		1	**NO**

Source: *U.S. Department of Transportation FHWA Manual on Uniform Traffic Control Devices (2009 Edition)*

Warrant 2 (Four-Hour) Notes:

100%: 115 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 80 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Warrant 3B (Peak Hour) Notes:

100%: 150 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 100 vph applies as the lower threshold volume for a minor-street approach with one lane.
70%: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

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Appendix D

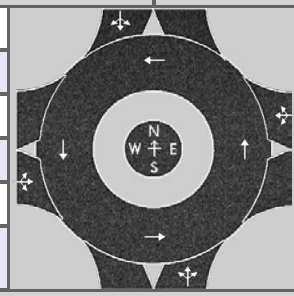
WEST RIVER PARKWAY NW / 3RD AVENUE NW ROUNDABOUT OPERATIONS ANALYSIS

FINAL REPORT

HCS Roundabouts Report

General Information

Analyst	Alliant Inc.
Agency or Co.	
Date Performed	1/27/2026
Analysis Year	2025
Time Analyzed	AM Peak Hour
Project Description	Traffic and Safety Study



Site Information

Intersection	Elton Hills Drive NW & W Ri...
E/W Street Name	Elton Hills Drive NW
N/S Street Name	W River Parkway NW / 3rd A...
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.88
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	23	346	148	0	46	302	67	0	75	83	47	0	94	189	45
Percent Heavy Vehicles, %	0	3	3	3	0	4	5	2	0	5	7	0	0	1	0	4
Flow Rate (v_{PCE}), pc/h	0	27	405	173	0	54	360	78	0	89	101	53	0	108	215	53
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	4				1				4				7			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		605			492			243			376	
Entry Volume, veh/h		587			471			232			373	
Circulating Flow (v_c), pc/h	377			217			540			503		
Exiting Flow (v_{ex}), pc/h	566			502			206			442		
Capacity (c_{pce}), pc/h		939			1106			796			826	
Capacity (c), veh/h		912			1059			760			819	
v/c Ratio (x)		0.64			0.44			0.31			0.46	

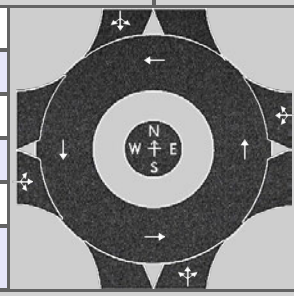
Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		14.2			8.3			8.3			10.3	
Lane LOS		B			A			A			B	
95% Queue Length, Q_{95} (veh)		5.3			2.4			1.3			2.5	
95% Queue Length, Q_{95} (ft)		135.7			62.1			33.7			62.9	
Approach Delay, s/veh | LOS	14.2	B		8.3	A		8.3	A		10.3	B	
Intersection Delay, s/veh | LOS	10.9						B					

HCS Roundabouts Report

General Information

Analyst	Alliant Inc.
Agency or Co.	
Date Performed	1/27/2026
Analysis Year	2026
Time Analyzed	PM Peak Hour
Project Description	Traffic and Safety Study



Site Information

Intersection	Elton Hills Drive NW & W Ri...
E/W Street Name	Elton Hills Drive NW
N/S Street Name	W River Parkway NW / 3rd A...
Analysis Time Period, hrs	1.00
Peak Hour Factor	0.92
Jurisdiction	

Volume Adjustments and Site Characteristics

Approach	EB				WB				NB				SB			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Number of Lanes (N)	0	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0
Lane Assignment			LTR				LTR				LTR				LTR	
Volume (V), veh/h	0	23	365	74	0	39	350	93	0	136	201	75	0	87	129	23
Percent Heavy Vehicles, %	1	1	1	4	1	1	1	1	1	1	1	1	1	1	1	1
Flow Rate (v_{PCE}), pc/h	0	25	401	84	0	43	384	102	0	149	221	82	0	96	142	25
Right-Turn Bypass	None				None				None				None			
Conflicting Lanes	1				1				1				1			
Pedestrians Crossing, p/h	0				2				3				4			
Proportion of CAVs, %	0															

Critical and Follow-Up Headway Adjustment

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Critical Headway, s		4.9763			4.9763			4.9763			4.9763	
Follow-Up Headway, s		2.6087			2.6087			2.6087			2.6087	

Flow Computations, Capacity and v/c Ratios

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Entry Flow (v_e), pc/h		510			529			452			263	
Entry Volume, veh/h		503			524			448			260	
Circulating Flow (v_c), pc/h	281			395			522			576		
Exiting Flow (v_{ex}), pc/h	579			558			348			269		
Capacity (c_{pce}), pc/h		1036			922			810			767	
Capacity (c), veh/h		1021			913			802			759	
v/c Ratio (x)		0.49			0.57			0.56			0.34	

Delay and Level of Service

Approach	EB			WB			NB			SB		
Lane	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass	Left	Right	Bypass
Lane Control Delay (d), s/veh		9.4			12.1			12.9			8.9	
Lane LOS		A			B			B			A	
95% Queue Length, Q_{95} (veh)		2.9			4.0			3.7			1.6	
95% Queue Length, Q_{95} (ft)		73.4			100.8			93.2			40.3	
Approach Delay, s/veh | LOS	9.4	A		12.1	B		12.9	B		8.9	A	
Intersection Delay, s/veh | LOS	11.0						B					