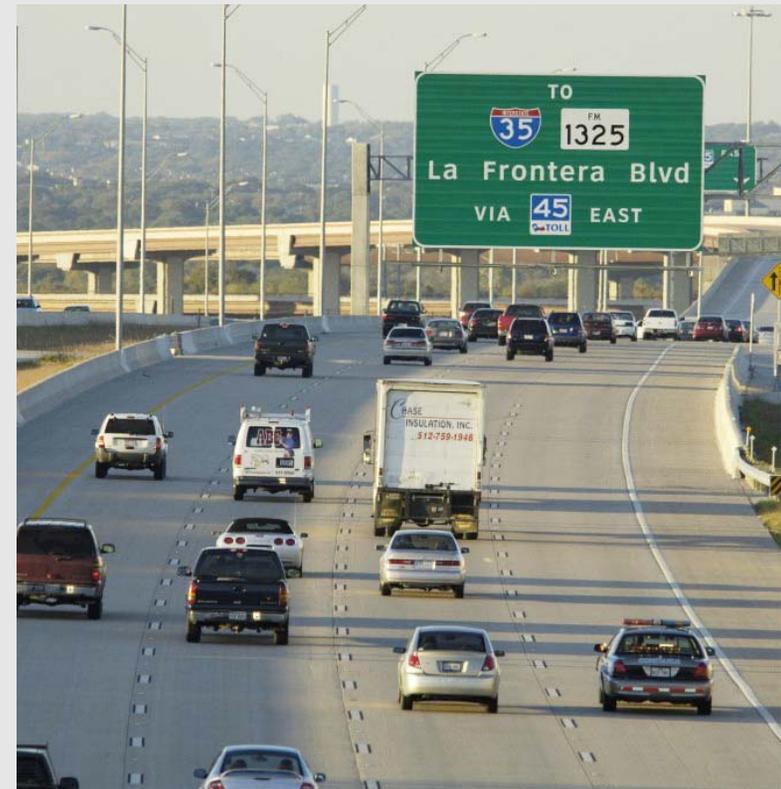




RM 620 FEASIBILITY STUDY

Sections 5 & 6





STUDY PROCESS

Study Purpose and Goals

The RM 620 Feasibility Study was launched by the Texas Department of Transportation (TxDOT) to analyze transportation issues along RM 620 from SH 71 to US 183. The 12 to 18-month study is a stakeholder-focused process incorporating input from neighborhoods, businesses, property owners, commuters, bicyclists, pedestrians, and others who use RM 620. This information will help TxDOT identify needs and gather feedback and ideas on potential short- and long-term mobility and safety improvements for the corridor.

The goal of the study is to identify potential improvements that will maximize safety and mobility while balancing competing stakeholder interests. Currently, there is no funding available for any improvements. TxDOT will be working with local communities and residents to determine the need and feasibility for potential improvements to serve existing and future growth. The information gathered from the community will help shape proposals for appropriate improvements.

Study Background

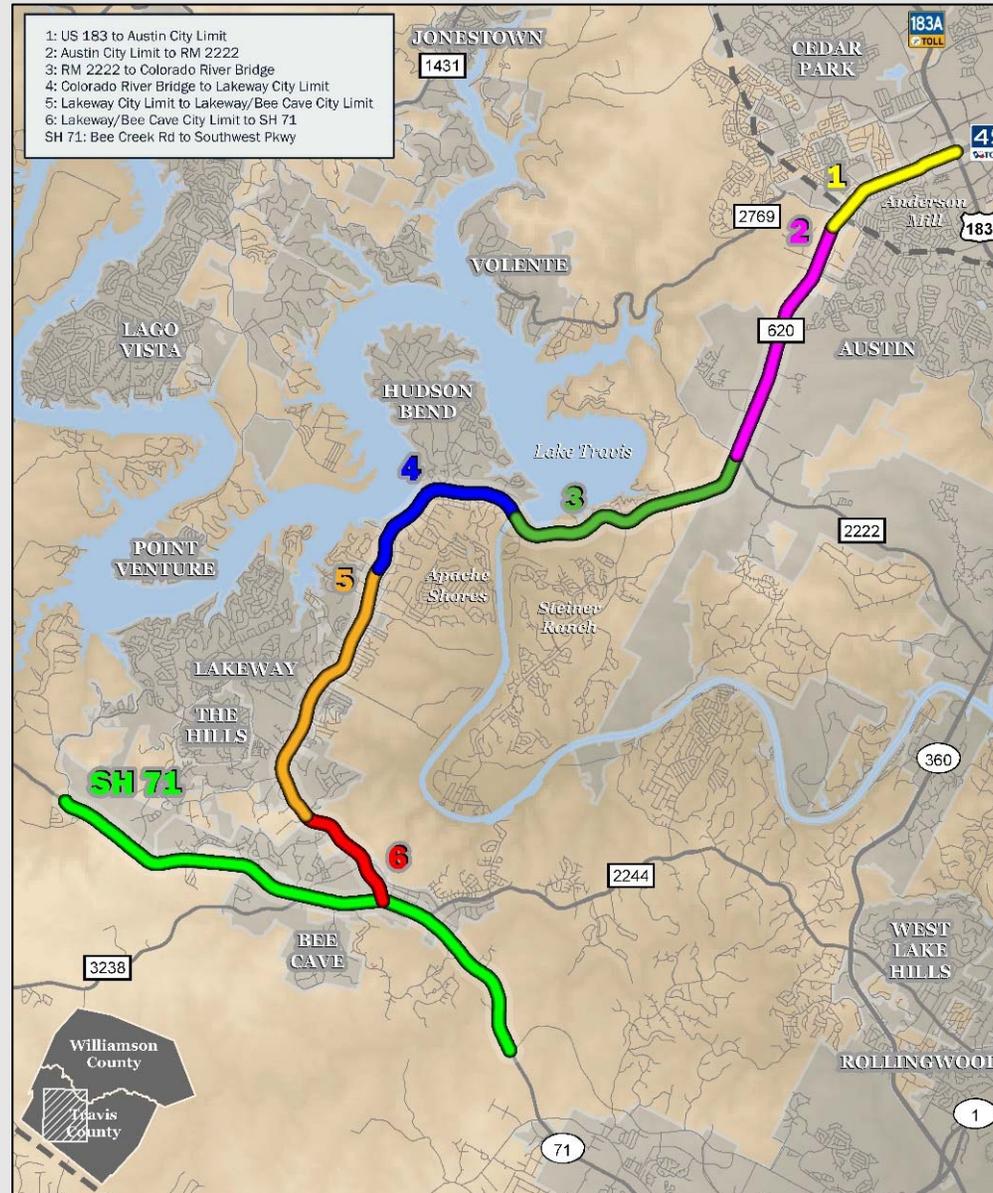
- RM 620 serves a wide range of users:
 - Residents
 - Businesses
 - Bicyclists
 - Commuters
- Segment of RM 620 under study:
 - Between US 183 and SH 71
 - Approximately 18 miles long
 - Located mostly within Travis County except small northern portion located in Williamson County
 - Connects Cedar Park, Austin, Lakeway, and Bee Cave
 - RM 620 segment divided into 6 sections for study purposes



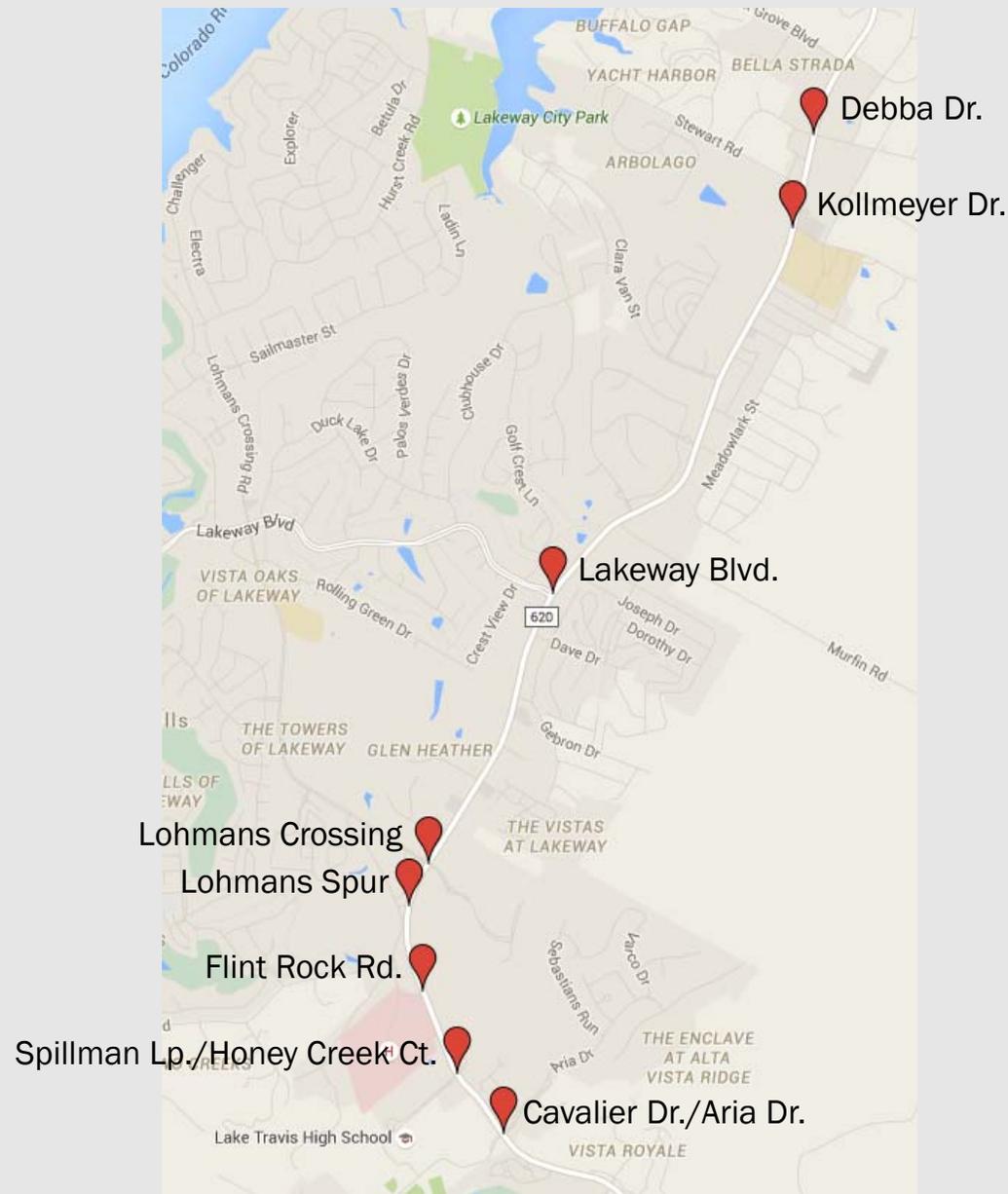
What is a Feasibility Study?

- A feasibility study is used to determine critical elements of engineering and the economic feasibility of a proposed facility or corridor.
- Feasibility studies establish design concepts, general right-of-way requirements, and potential project impacts. They are not intended to result in detailed design, environmental analysis, or thorough cost estimates.
- Generalized cost estimates are developed and help determine the project's overall financial feasibility in terms of a benefit and cost ratio.
- Feasibility studies consider various alternatives, analyze current and future traffic, analyze potential environmental problems, develop cost estimates, and determine feasibility.
- Once a feasibility study warrants further consideration and development, comprehensive environmental studies and construction documents may be completed.

RM 620 Feasibility Study Map Showing Study Sections

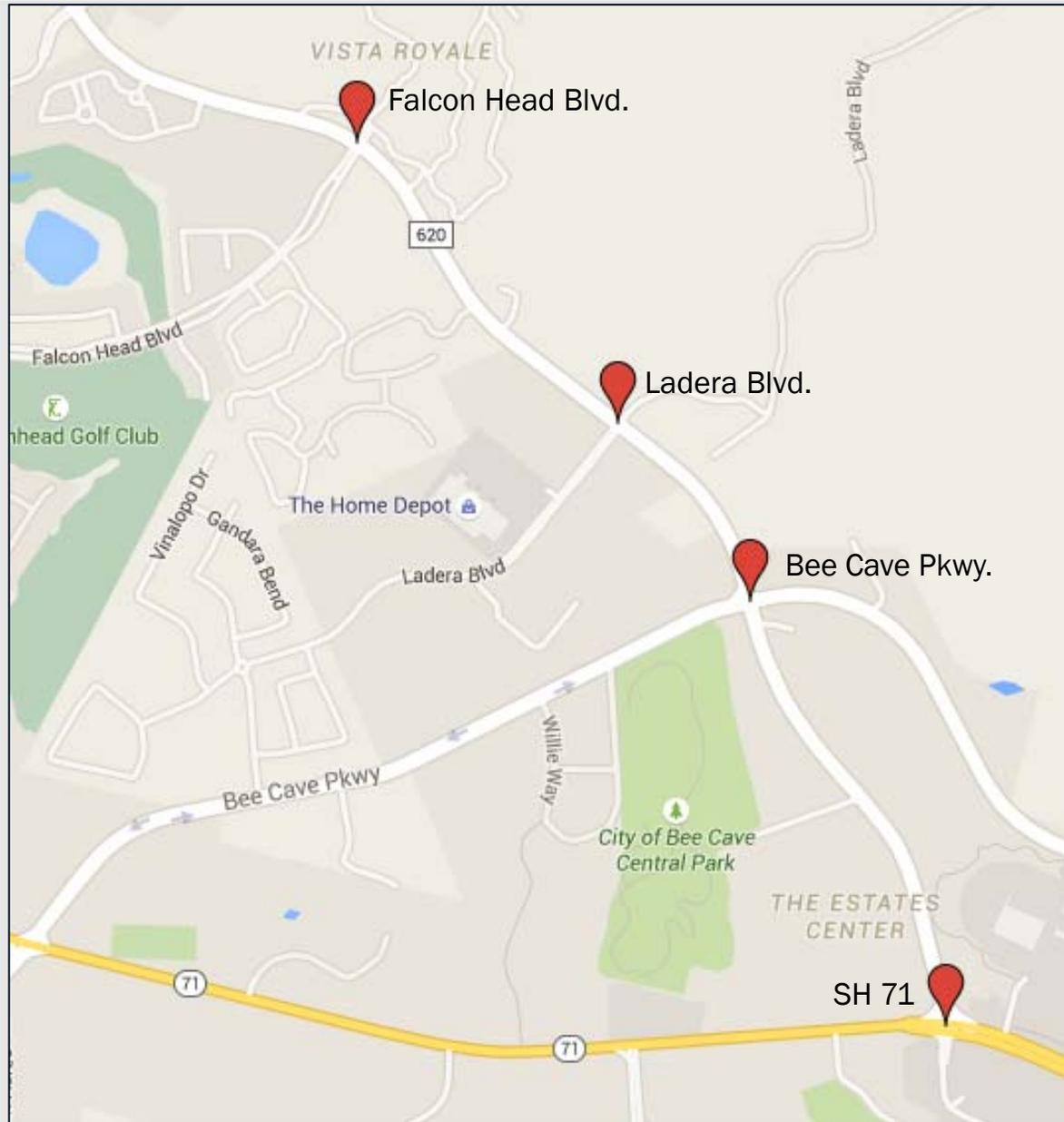


Existing Signalized Intersections within Section 5 (Lakeway)



(Google Maps, 2015)

Existing Signalized Intersections within Section 6 (Bee Cave)



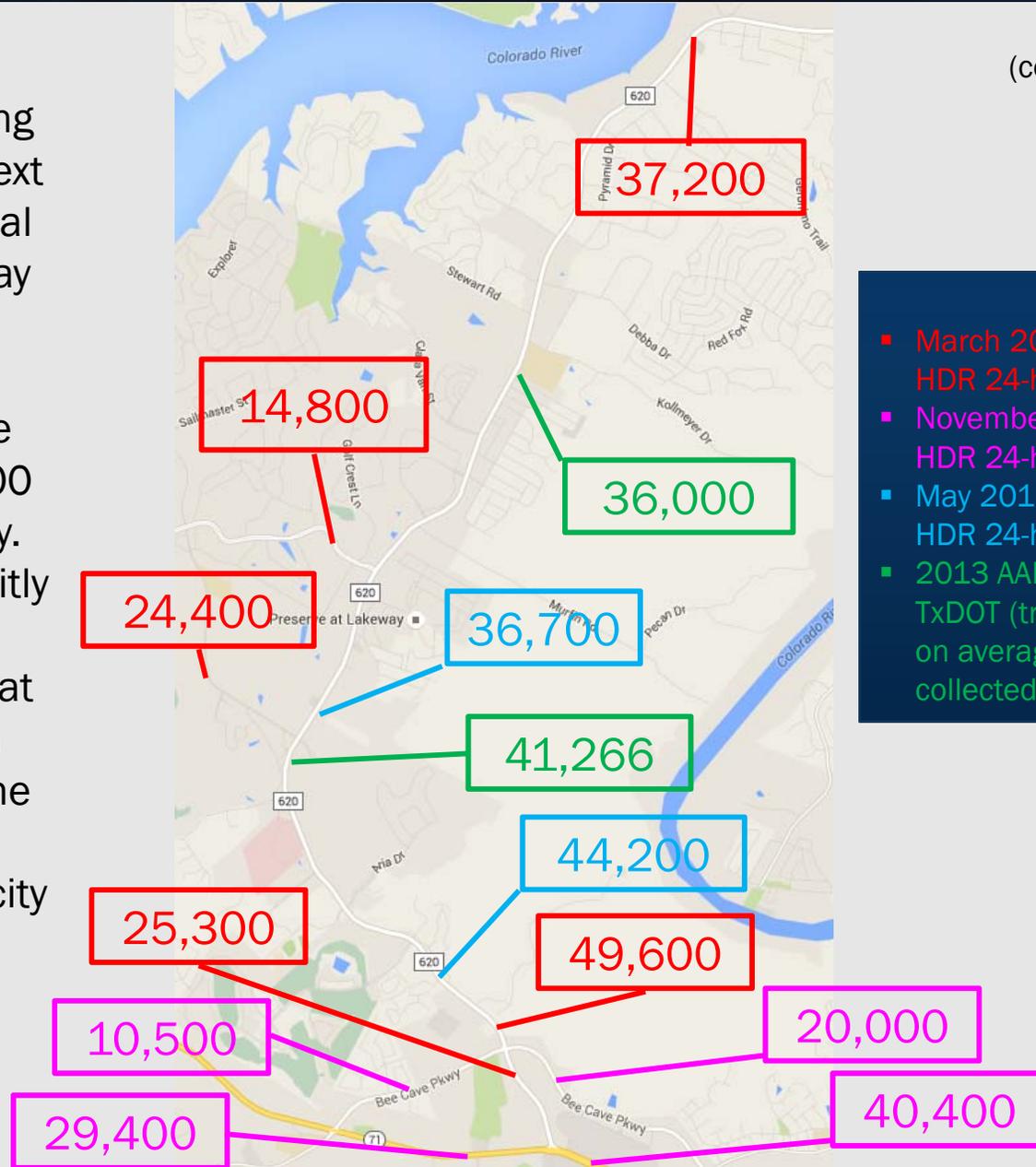
(Google Maps, 2015)



NEED FOR IMPROVEMENTS

Existing Conditions

- 24-hour traffic counts are occasionally collected along a roadway to provide context regarding local and regional travel patterns and roadway usage.
- For a road similar to RM 620, City of Austin lists the typical daily traffic as 5,000 to 35,500 vehicles per day. This range does not explicitly consider the number of signals, driveways, etc., that can impede traffic along a major arterial, however. The daily traffic volumes show that RM 620 is over capacity north of Bee Cave Pkwy.



(Google Maps, 2015)
(counts in vehicles per day)

LEGEND

- March 2015 HDR 24-hour vehicle count
- November 2013 HDR 24-hour vehicle count
- May 2012 HDR 24-hour vehicle count
- 2013 AADT TxDOT (traffic volumes based on average of daily volumes collected over an entire year)

Existing Traffic Conditions

Level of service (LOS) is the most commonly used metric to describe traffic conditions. It provides a way to quantify traffic congestion and present the results in a way that is easy to comprehend (i.e., on a scale similar to a school grading scale).

	LOS	Example
A	Free Flow. Traffic flows at or above the posted speed limit and motorists have complete mobility between lanes.	
B	Reasonably Free Flow: LOS A speeds are maintained, maneuverability within the traffic stream is slightly restricted.	
C	Stable Flow, at or near free flow. Ability to maneuver through lanes is noticeably restricted and lane changes require more driver awareness.	
D	Approaching Unstable Flow. Speeds slightly decrease as traffic volume slightly increase. Freedom to maneuver within the traffic stream is much more limited and driver comfort levels decrease.	
E	Unstable Flow, operating at capacity. Flow becomes irregular and speed varies rapidly because there are virtually no usable gaps to maneuver in the traffic stream and speeds rarely reach the posted speed limit.	
F	Forced or breakdown flow. Every vehicle moves in lockstep with the vehicle in front of it, with frequent slowing required. Travel time cannot be predicted, with generally more demand than capacity.	

AM Peak LOS: Sections 5 & 6

This table shows how major intersections along RM 620 are currently functioning and how they would function in 2035 with projected growth of traffic.

Intersection	Existing	2035 No-Build
RM 620 / Debba Drive	F	F
RM 620 / Kollmeyer Drive	B	E
RM 620 / Lakeway Boulevard	C	E
RM 620 / Lohmans Crossing Drive/Ameno Drive	E	F
RM 620 / Lohmans Spur Road	B	D
RM 620 / Flint Rock Road	B	F
RM 620 / Spillman Loop/Honey Creek Court	D	F
RM 620 / Cavalier Drive/Aria Drive	F	F
RM 620 / Falcon Head Boulevard	C	D
RM 620 / Ladera Boulevard	B	D
RM 620 / Bee Cave Parkway	E	F
RM 620 / SH 71	C	D

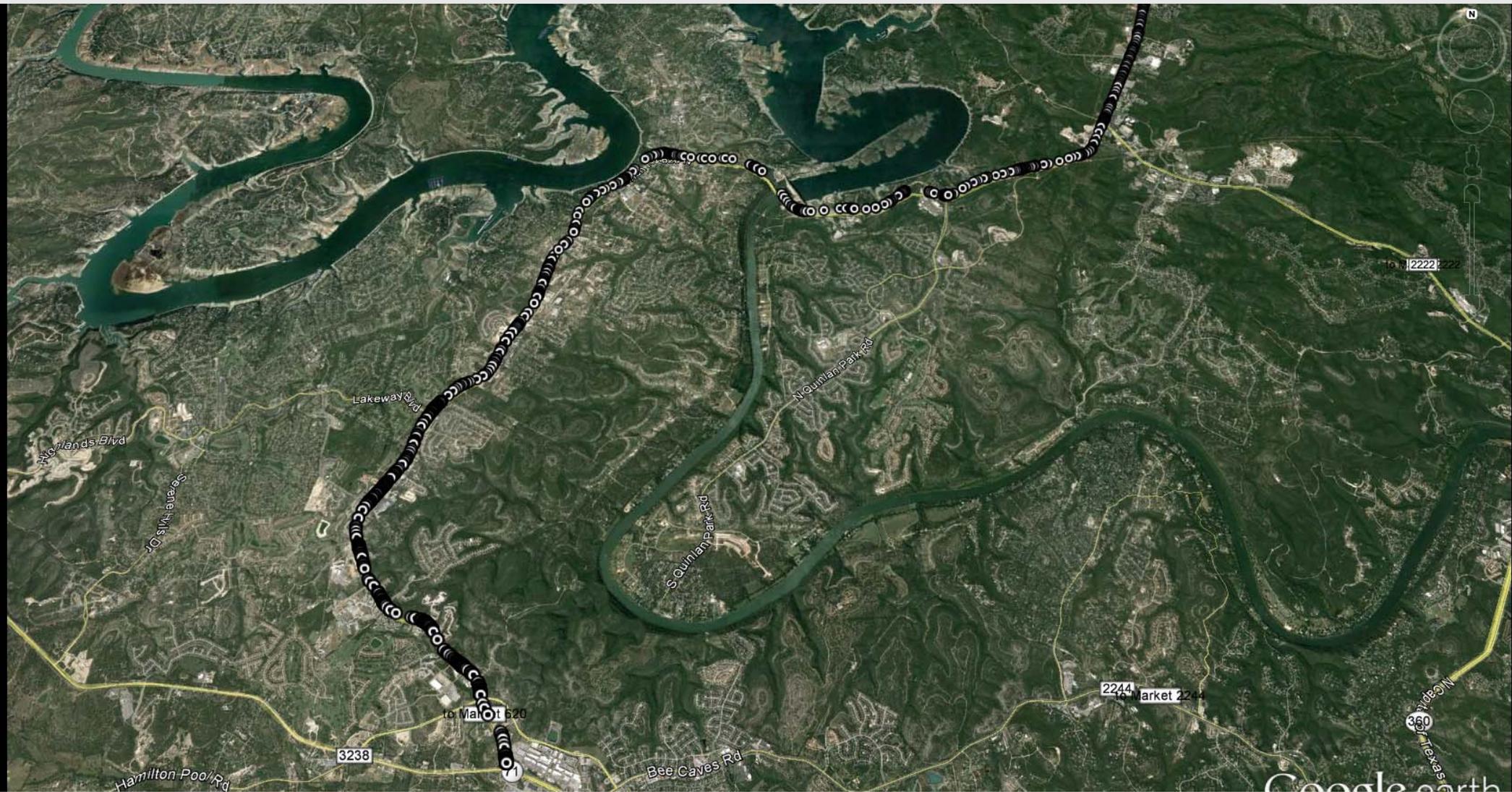
PM Peak LOS: Sections 5 & 6

Intersection	Existing	2035 No-Build
RM 620 / Debba Drive	E	F
RM 620 / Kollmeyer Drive	B	E
RM 620 / Lakeway Boulevard	C	F
RM 620 / Lohmans Crossing Drive/Ameno Drive	F	F
RM 620 / Lohmans Spur Road	B	E
RM 620 / Flint Rock Road	B	F
RM 620 / Spillman Loop/Honey Creek Court	A	E
RM 620 / Cavalier Drive/Aria Drive	C	F
RM 620 / Falcon Head Boulevard	C	E
RM 620 / Ladera Boulevard	C	F
RM 620 / Bee Cave Parkway	E	F
RM 620 / SH 71	D	F

Crash Data

- Crash data provided by TxDOT was summarized for the period between January 2010 and March 2015. Many of the crashes did not occur at the major signalized intersections, rather at driveways and other locations.
- RM 620 currently has a center left-turn lane along most of its length. A Transportation Research Board study shows that raised medians, compared with center left-turn lanes, are associated with fewer crashes on roads that carry more than 20,000 vehicles per day.

Total Crashes (2010 – 2015)



747 crashes have occurred throughout Sections 5 and 6

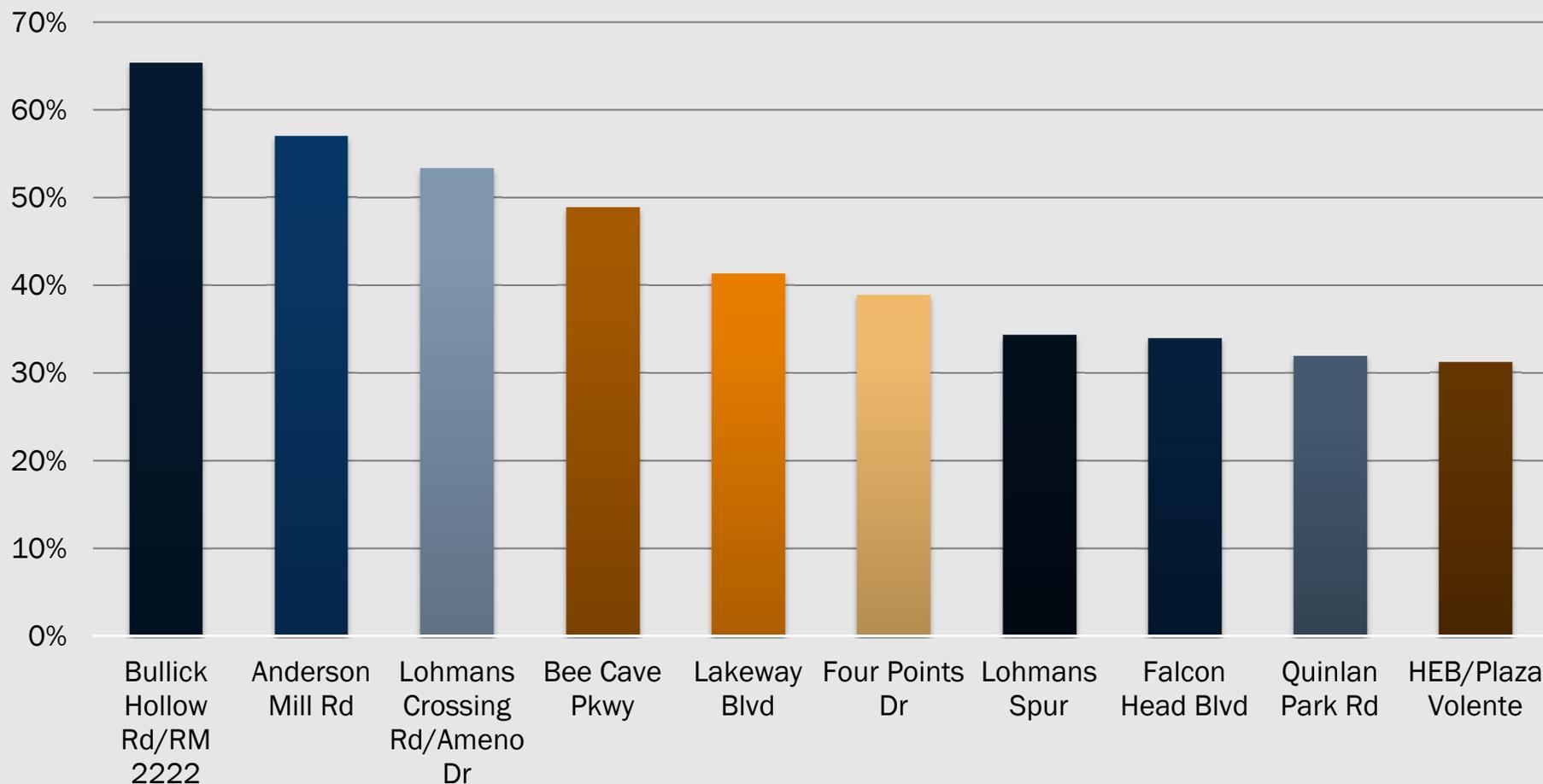
Data from TxDOT; map from Google Earth Pro
Each white dot represents a single crash



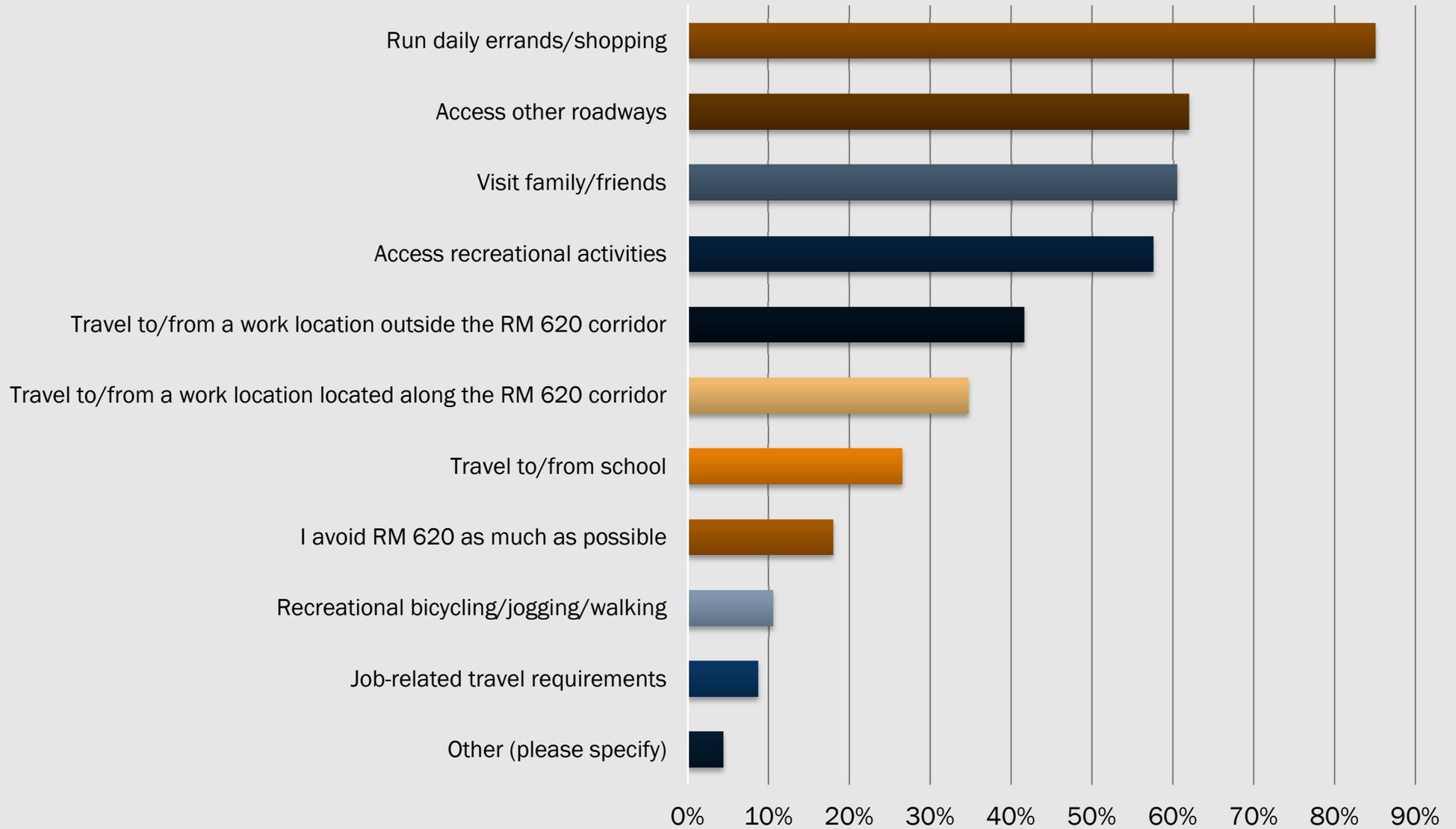
RM 620 SURVEY RESULTS

RM 620 Intersections

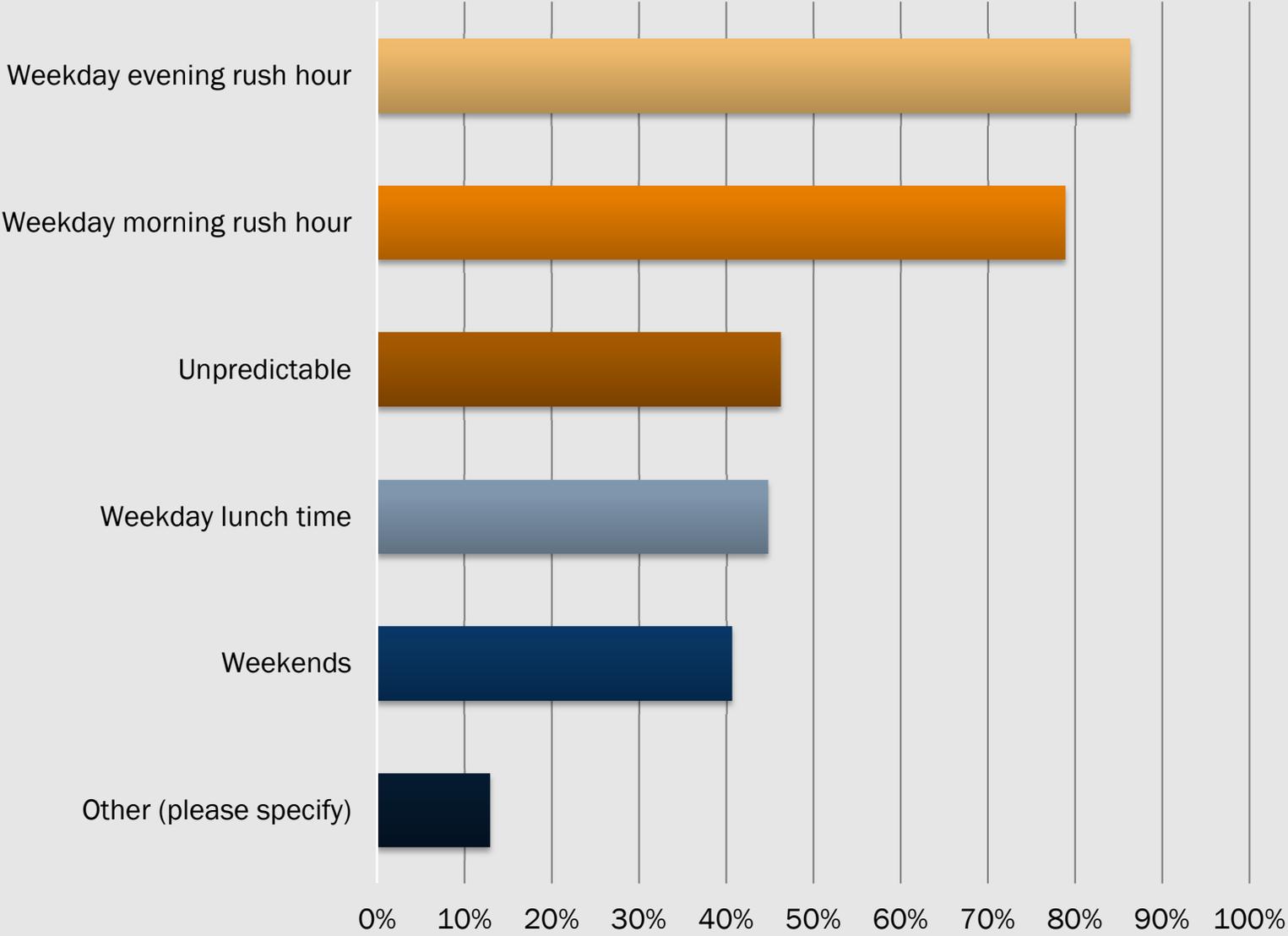
The top ten intersections most often identified by survey respondents as having significant mobility problems include:



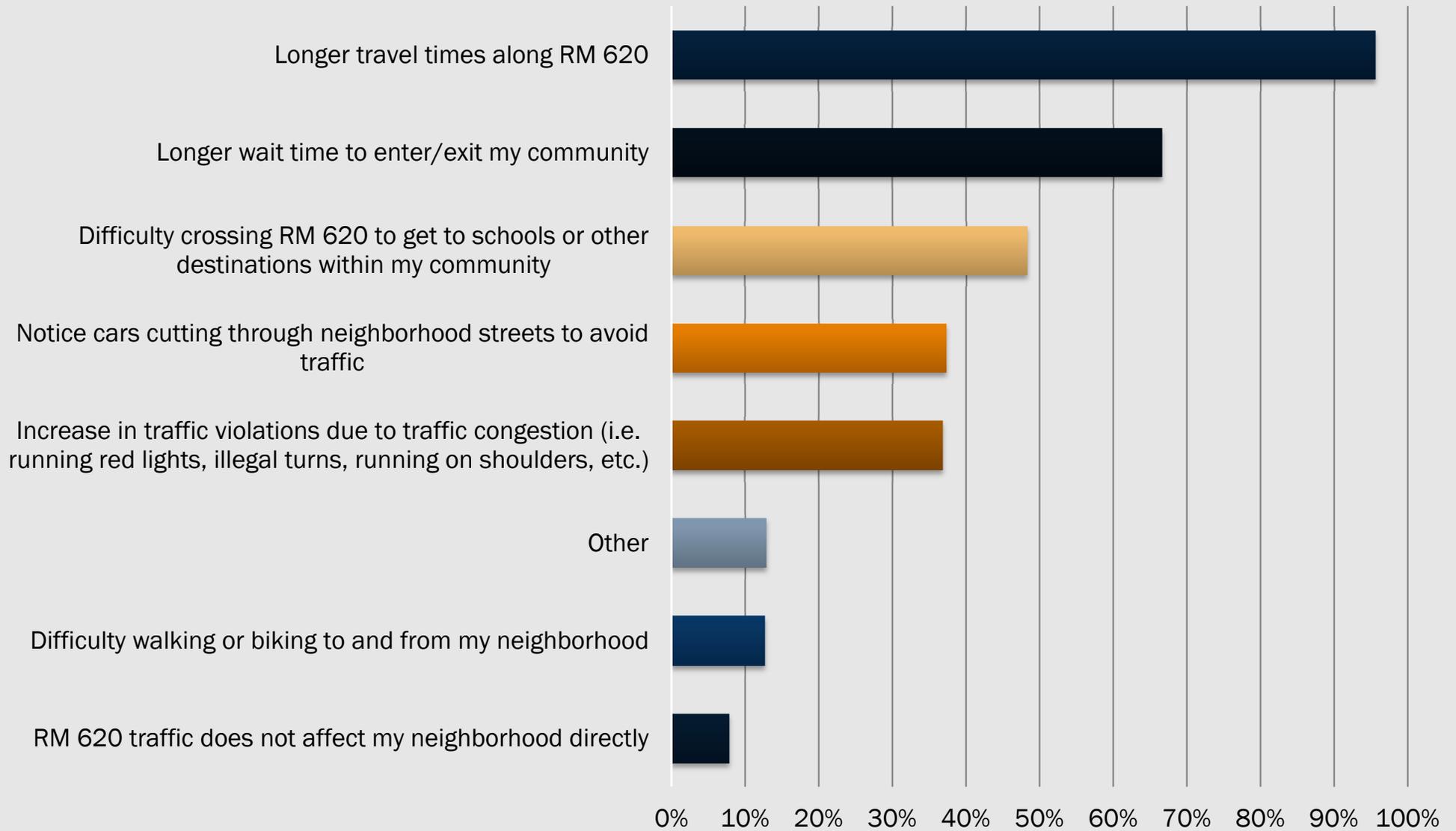
“For what purpose do you use RM 620?”



“When do you experience significant traffic congestion problems on RM 620?”



“How does the traffic on RM 620 impact you?”



“What are the most significant problems along RM 620?”

“Rank the order of each of the problems from 1 (most significant) to 10 (least significant)”		Average Ranking	Percentage Who Ranked this #1
1	Overall traffic congestion along the corridor	2.97	38%
2	Traffic backups at specific intersections on RM 620	3.36	24%
3	Congestion during accidents	5.02	6%
4	Overall safety along the corridor	5.16	12%
5	Traffic backups at schools and churches	5.25	7%
6	Difficulty turning/merging onto RM 620 from cross streets	5.56	4%
7	Difficulty/delay turning onto cross streets from RM 620	6.08	2%
8	Difficulty accessing businesses or residences from RM 620	6.47	3%
9	Difficulty crossing RM 620	6.54	2%
10	Conflicts between auto and bicycle/pedestrian traffic using the corridor	8.10	2%

MORE SIGNIFICANT

LESS SIGNIFICANT

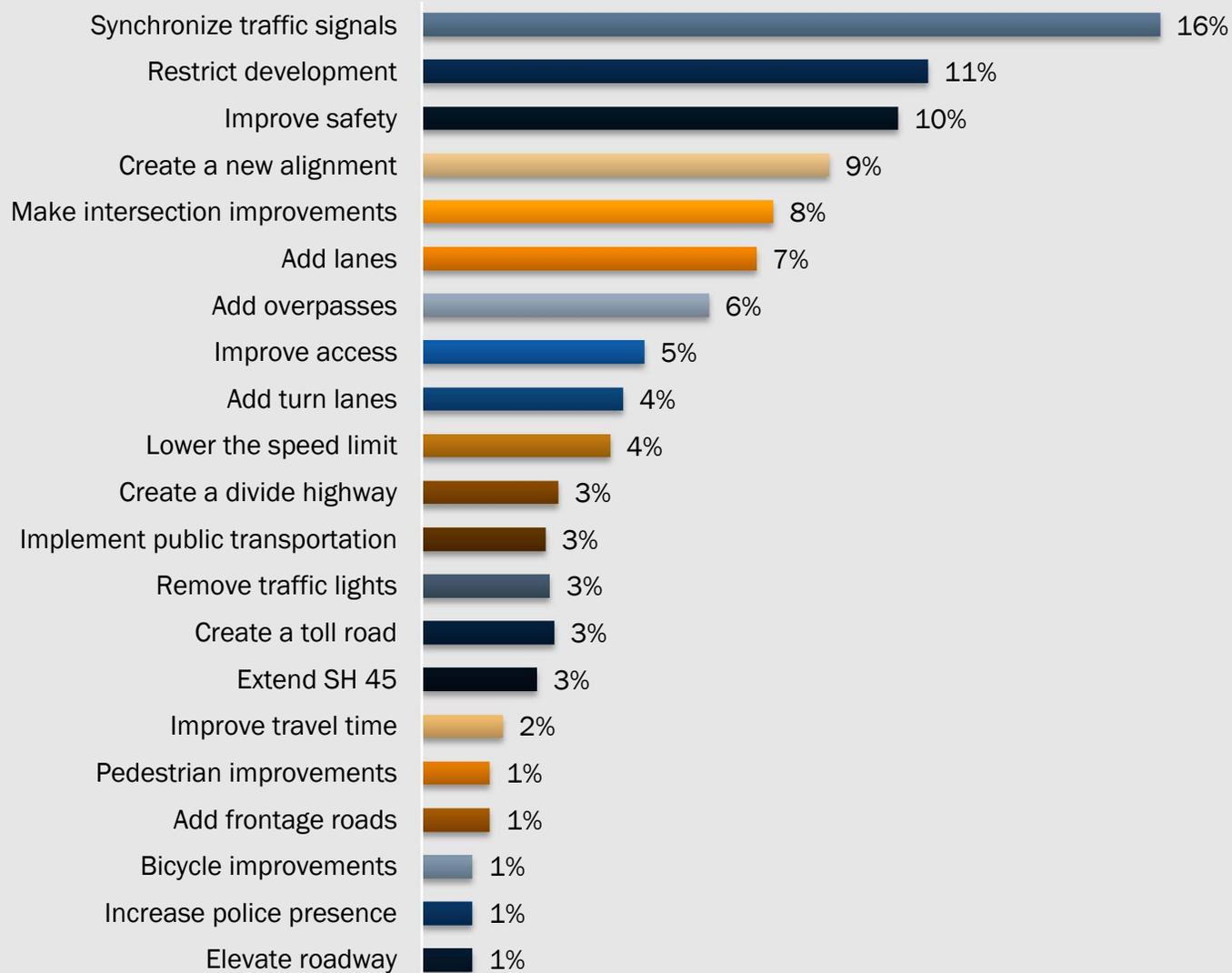
“How can these problems be addressed?”

“Rank the order of each of the problems from 1 (most effective) to 5 (least effective)”		Average Ranking	Percentage Who Ranked this #1
1	Intersection improvements that reduce travel time along RM 620	2.36	25%
2	Eliminate traffic signals on through traffic by building over/under passes at intersections	2.39	38%
3	Add more lanes to RM 620	2.44	28%
4	Intersection improvements that improve access to and from cross streets	3.26	7%
5	Add a separate bicycle/pedestrian path along the entire RM 620 corridor	4.39	3%

MORE EFFECTIVE

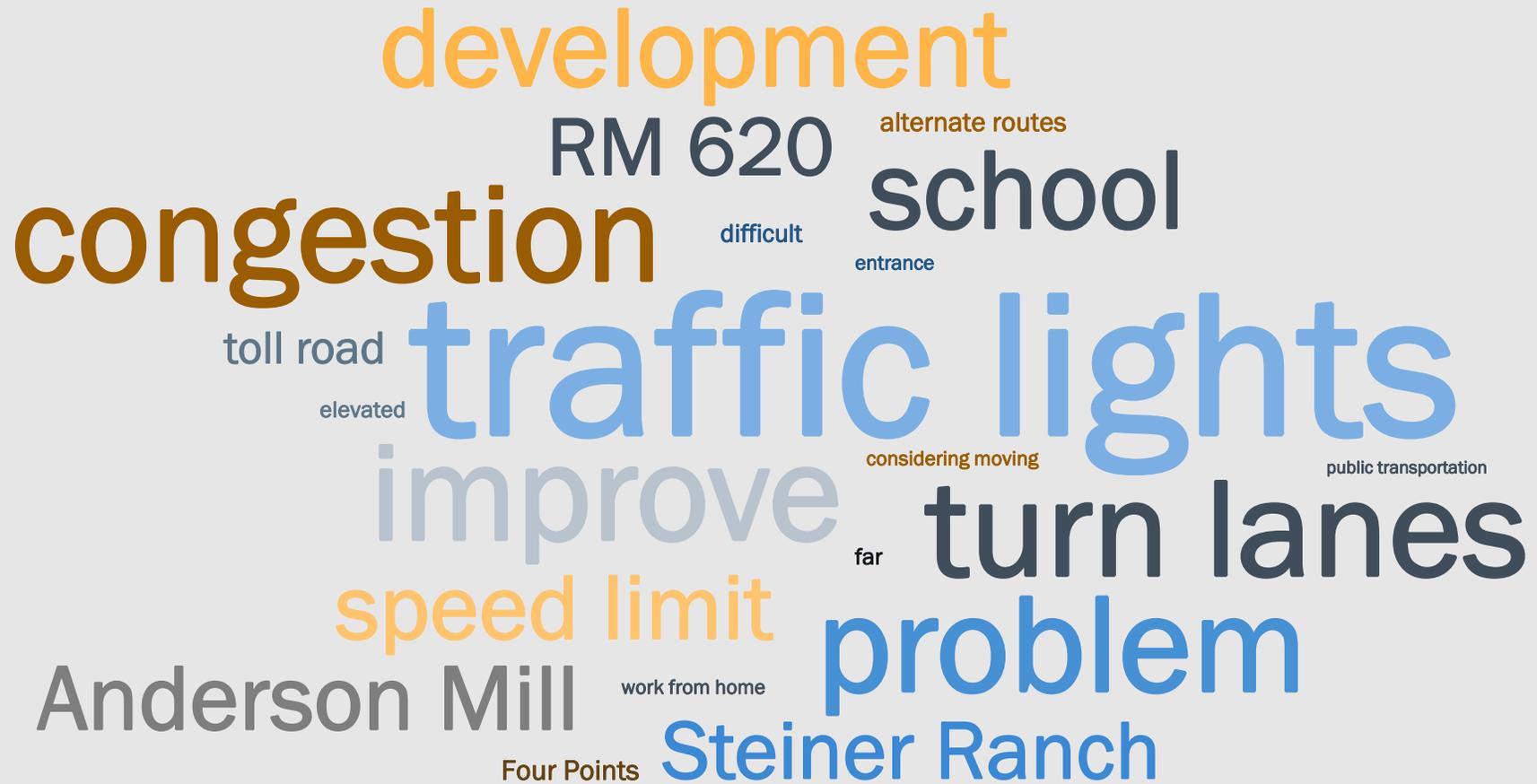
LESS EFFECTIVE

Suggestions from the public*



*Suggestion responses were grouped into themes. Percentages were calculated by dividing the number of responses per theme by the total number of responses.

Common Themes from Open-ended Comments



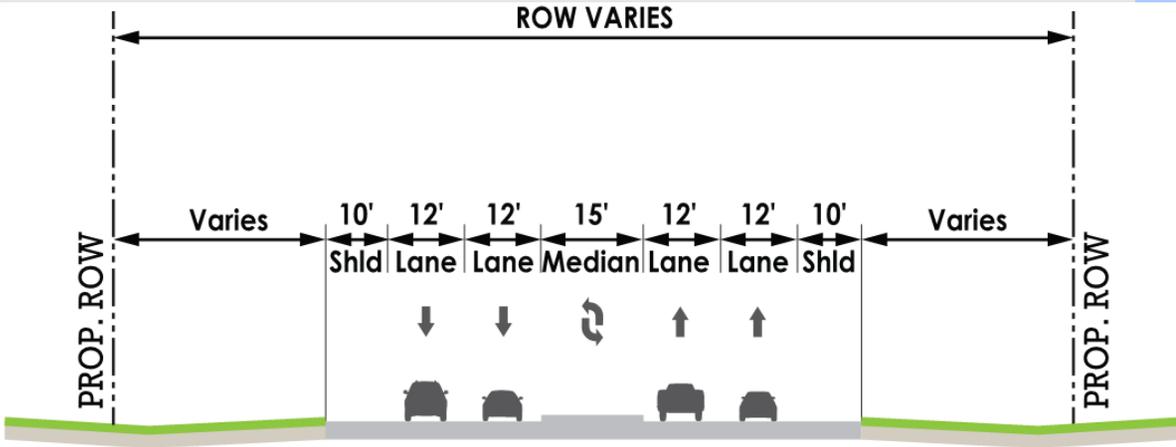
Question 19 asked the survey participants for open-ended feedback on how to improve the RM 620 corridor. This word cloud shows the most common words and phrases the respondents used. The larger the font size, the more significant the word.



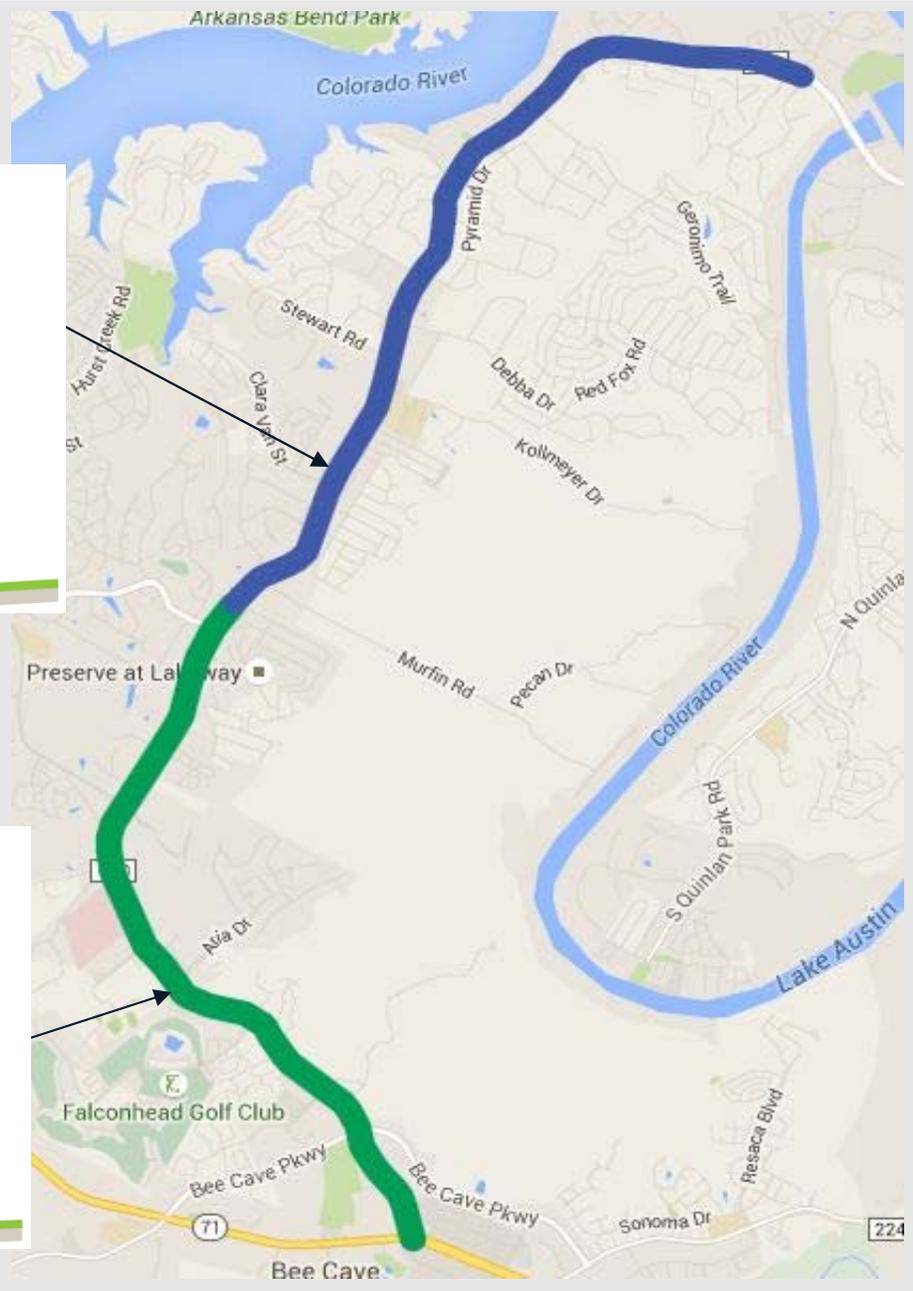
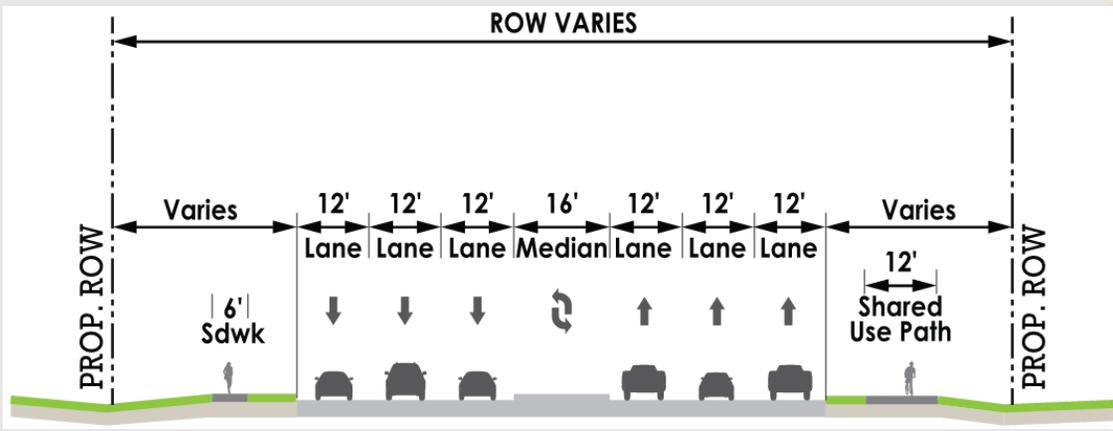
SCENARIO DEVELOPMENT AND ANALYSIS

Potential Cross Sections

Lakeway Boulevard to Mansfield Dam Bridge



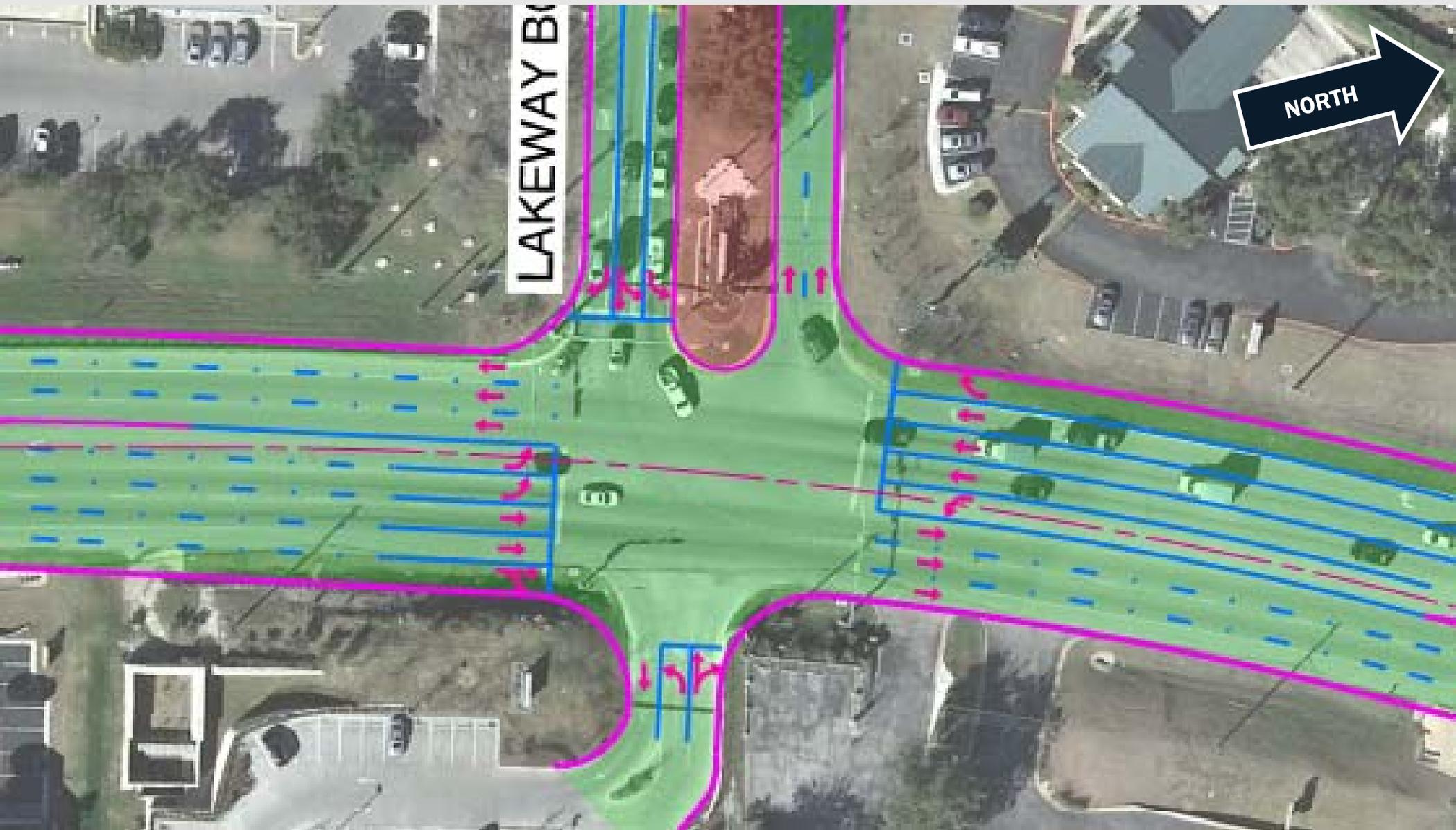
SH 71 to Lakeway Boulevard



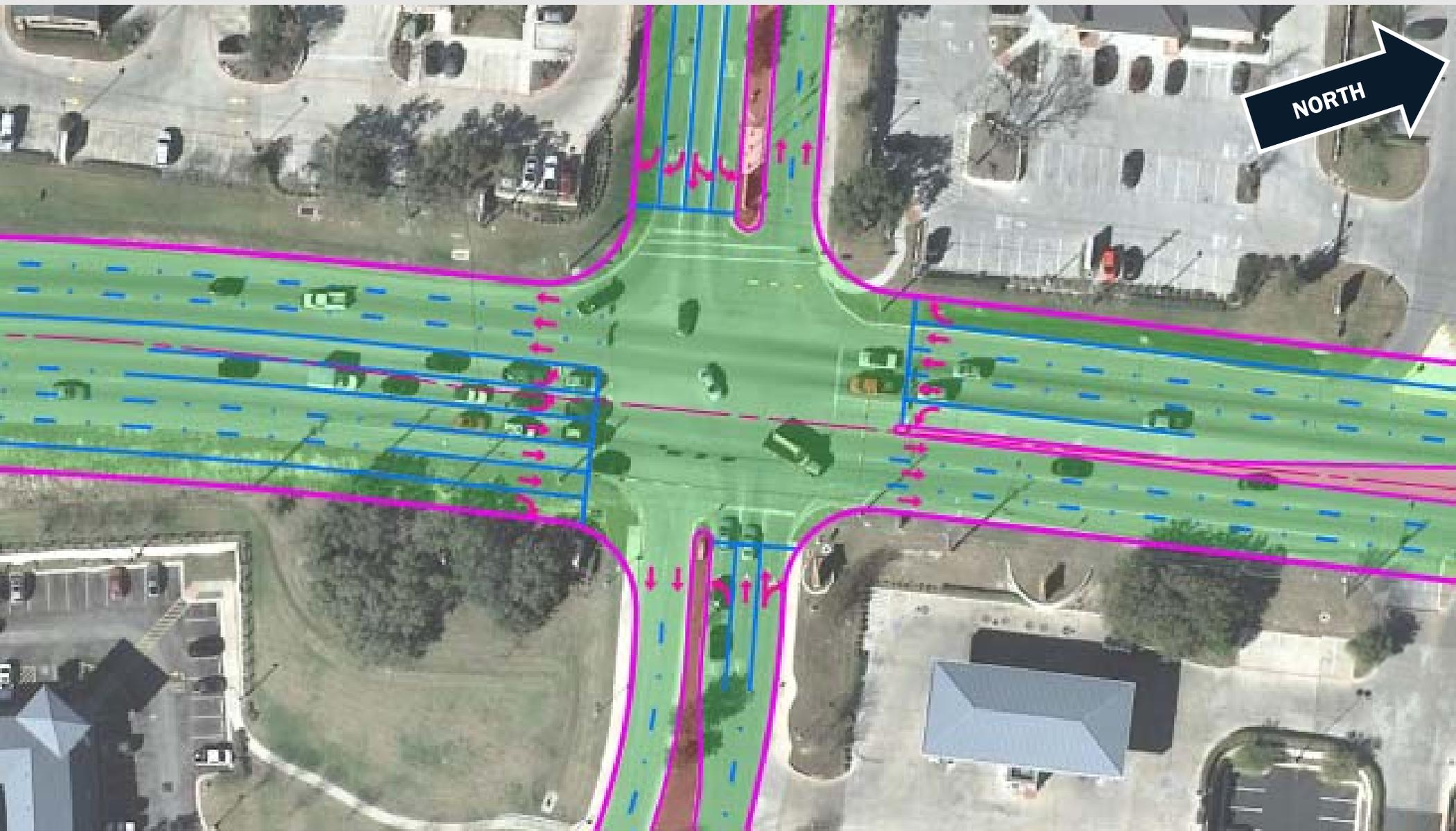
Potential Intersection Improvements

Intersection	Potential Improvement
RM 620 / Debba Drive	<ul style="list-style-type: none"> - Westbound right-turn bay - Northbound right-turn bay - Remove Eastbound/Westbound split-phasing
RM 620 / Lakeway Boulevard	<ul style="list-style-type: none"> - Additional Northbound left-turn lane
RM 620 / Lohmans Crossing Drive/Ameno Drive	<ul style="list-style-type: none"> - Additional Eastbound right-turn lane - Additional Northbound left-turn lane - Additional Northbound and Southbound right-turn lanes
RM 620 / Lohmans Spur Road	<ul style="list-style-type: none"> - Remove Eastbound/Westbound split-phasing
RM 620 / Flint Rock Road	<ul style="list-style-type: none"> - Remove Eastbound/Westbound split-phasing - Eastbound right-turn overlap
RM 620 / Spillman Loop/Honey Creek Court	<ul style="list-style-type: none"> - Free Southbound right-turn movement
RM 620 / Cavalier Drive/Aria Drive	<ul style="list-style-type: none"> - Additional Southbound left-turn lane - Additional Northbound right-turn lane - Additional Eastbound right-turn lane - Conversion of Westbound approach to LT-LT/T-T-RT lane configuration - Extended Northbound left-turn lane striping
RM 620 / Falcon Head Boulevard	<ul style="list-style-type: none"> - Dual Northbound left-turn - Dual Eastbound left-turn - Southbound right-turn lane - Remove Eastbound/Westbound split-phasing
RM 620 / Ladera Boulevard	<ul style="list-style-type: none"> - Dual Eastbound left-turn - Southbound right-turn lane - Remove Eastbound/Westbound split-phasing
RM 620 / Bee Cave Parkway	<ul style="list-style-type: none"> - Exclusive dual Westbound right-turn lanes - Exclusive dual Eastbound left-turn lanes
RM 620 / SH 71	<ul style="list-style-type: none"> - Triple Southbound left-turn

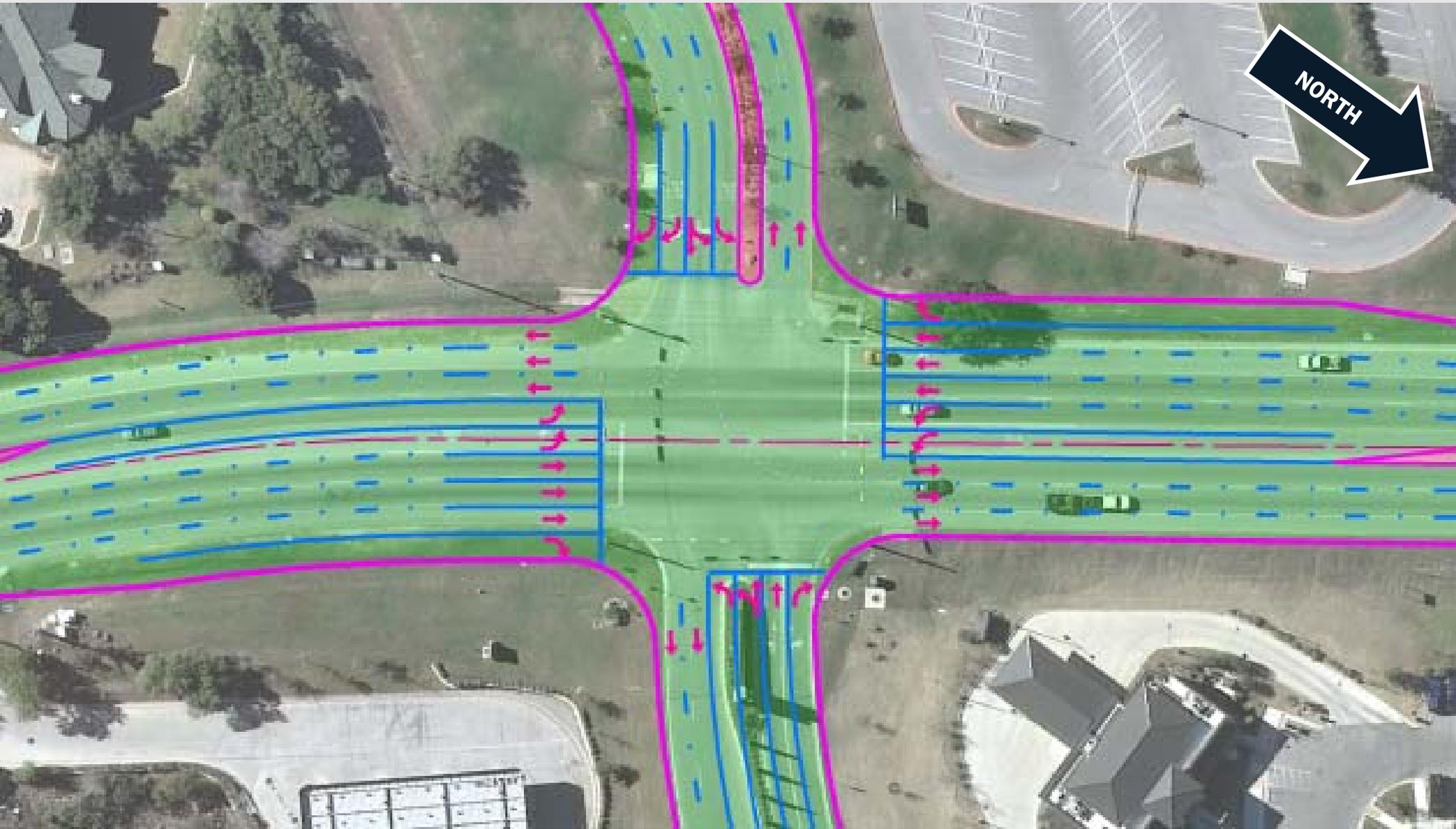
Potential Improvements at RM 620 & Lakeway Boulevard



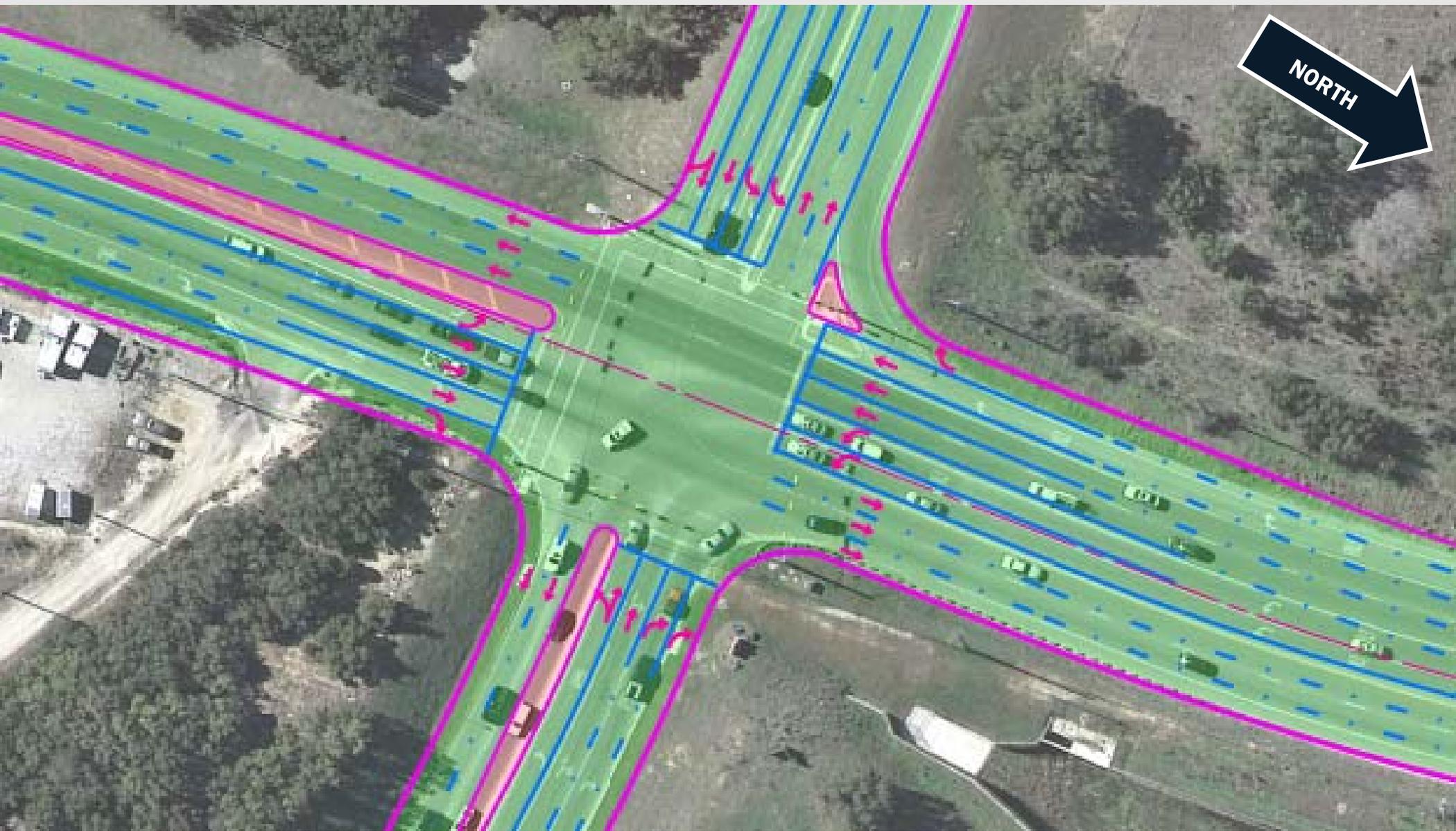
Potential Improvements at RM 620 & Lohmans Crossing Road/Ameno Drive



Potential Improvements at RM 620 & Cavalier Drive/Aria Drive



Potential Improvements at RM 620 & Bee Cave Parkway



Year 2035 AM Peak Level of Service: Sections 5 & 6

Intersection	No-Build	Build
RM 620 / Debba Drive	F	F
RM 620 / Kollmeyer Drive	E	E
RM 620 / Lakeway Boulevard	E	C
RM 620 / Lohmans Crossing Drive/Ameno Drive	F	C
RM 620 / Lohmans Spur Road	D	B
RM 620 / Flint Rock Road	F	B
RM 620 / Spillman Loop/Honey Creek Court	F	C
RM 620 / Cavalier Drive/Aria Drive	F	E
RM 620 / Falcon Head Boulevard	D	B
RM 620 / Ladera Boulevard	D	A
RM 620 / Bee Cave Parkway	F	F
RM 620 / SH 71	D	D

Year 2035 PM Peak LOS: Sections 5 & 6

Intersection	No-Build	Build
RM 620 / Debba Drive	F	D
RM 620 / Kollmeyer Drive	E	E
RM 620 / Lakeway Boulevard	F	C
RM 620 / Lohmans Crossing Drive/Ameno Drive	F	D
RM 620 / Lohmans Spur Road	E	B
RM 620 / Flint Rock Road	F	B
RM 620 / Spillman Loop/Honey Creek Court	E	A
RM 620 / Cavalier Drive/Aria Drive	F	C
RM 620 / Falcon Head Boulevard	E	B
RM 620 / Ladera Boulevard	F	B
RM 620 / Bee Cave Parkway	F	E
RM 620 / SH 71	F	F

Cost Estimates

Limits	Cost (Y2015 \$)
Between Colorado River Bridge and Lakeway Boulevard	\$21,797,700
Between Lakeway Boulevard and SH 71	\$51,039,100
Total	\$72,836,800

DISCLAIMER: Cost estimates are for planning purposes only, and actual construction costs may differ.

Costs vs. Benefits

- Estimated costs of improvements: \$73 million (subject to change after construction plans are finalized)
- Benefits calculated using Year 2035 AM peak and PM peak hour traffic models and the differences in intersection delay between the No-Build and the Build scenarios
- The following assumptions were made as part of the benefits analysis
 - Value of time = \$17.67 (based on value used by Texas Transportation Institute)
 - AM peak and PM peak hour delay savings each realized over 3 hours per day for 250 days per year
- Estimated benefits realized in Year 2035 alone: \$36 million



EXAMPLES OF DIVIDED ROADWAYS

Example Six-Lane Divided Major Arterial (RM 1431, Cedar Park)



Example Left-In/Right-In/Right-Out Driveways (RM 1431, Cedar Park)



Example Opposing Hooded Left Turns (RM 1431, Cedar Park)



Example Full-Purpose Driveway Intersection (RM 1431, Cedar Park)



Example Median U-Turn (US 281, San Antonio)





Bruce Byron
Project Manager
TxDOT Austin District

Email:
Bruce.Byron@txdot.gov

QUESTIONS?
E-MAIL BRUCE BYRON