



TRANSPORTATION OPERATIONS

Existing vehicle travel time

Current travel time varies by direction, time of day, speed limit compliance, and seasonal variability such as school being in session.

EXISTING AM, MIDDAY, AND PM PEAK HOURS DATA

- The average travel time is between 3 and 4 minutes.
- The 95th percentile travel time indicates about how long the slowest trips take along the corridor (only 5% of data were slower than this travel time). They represent a small number of overall trips but it may be what people driving remember the most. **For Iris, these longest trips can take between 4 and 5 minutes today.**

HOW IS THIS DATA COLLECTED?

This set of existing conditions data was collected in Fall 2023 using Bluetooth detection systems. End-to-end travel times are measured from the center of the intersection and include any time spent waiting in queued traffic on a red signal at the corridor 'bookend' intersections.

Existing vehicle traffic volumes

- Daily traffic volumes (vpd) vary along the corridor and are evenly split by direction.
- Daily traffic volumes west of Folsom Street/26th Street are comparable to Arapahoe Avenue west of Folsom Street/26th Street, Valmont Road east of 47th Street and 28th Street north of Palo Parkway.
- Peaking of weekday traffic volumes during the AM period occurs over a relatively short timeframe between 8:00 am to 9:00 am. Traffic volumes drop off slightly throughout the middle of the day before picking up again for a longer PM period of peak traffic volume from 3:00 pm to 6:00 pm.
- Peak hour volumes are heavier in the westbound direction in the AM and eastbound in the PM.
- Historical data suggests that daily traffic volumes along the corridor have remained consistent over the past 20 years.

IRIS AVENUE CORRIDOR DAILY TRAFFIC VOLUME AND DAILY DIRECTION SPLIT BETWEEN EASTBOUND AND WESTBOUND

	East of 16th Street		East of 19th Street		East of 26th Street/ Folsom Street	
	EB	WB	EB	WB	EB	WB
Vehicles per Day (vpd)	15,930 vpd		20,040 vpd		21,350 vpd	
Daily Direction Split (Eastbound and Westbound)	50.9%	49.1%	50.5%	49.5%	51.4%	48.6%

WHAT TRAVELERS EXPERIENCE ...

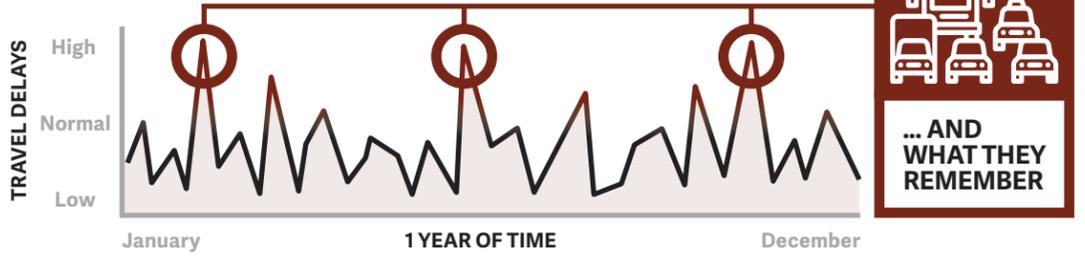


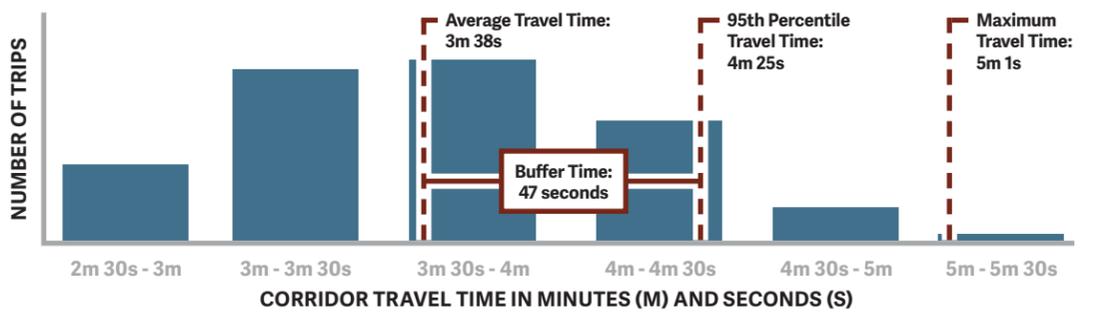
Chart for illustration purposes only. Travel times typically vary by direction, time of day, and speed limit compliance.

IRIS AVENUE EXISTING VEHICULAR TRAVEL TIME IN MINUTES (M) AND SECONDS (S)

Analysis Time Period Minutes (m) Seconds (s)	Eastbound			Westbound		
	AM	Midday	PM	AM	Midday	PM
Average Travel Time	3m 43s	3m 43s	4m 12s	3m 23s	3m 36s	3m 25s
95th Percentile Travel Time	4m 13s	4m 54s	4m 59s	4m 13s	4m 40s	4m 16s

IRIS AVENUE TRAVEL TIME DISTRIBUTION

Combined existing AM and PM peak travel times



IRIS AVENUE CORRIDOR PEAK VEHICLES PER HOUR (VPH)

	Between Broadway and 19th Street		Between 19th Street and 26th Street/Folsom Street		Between 26th Street/Folsom Street and 28th Street	
	Eastbound	Westbound	Eastbound	Westbound	Eastbound	Westbound
AM	571 vph	679 vph	714 vph	796 vph	763 vph	937 vph
Midday	607 vph	554 vph	724 vph	713 vph	768 vph	698 vph
PM	709 vph	651 vph	869 vph	851 vph	961 vph	799 vph

Safety improvements and potential travel time changes

HOW DID EXISTING CONDITIONS INFORM THE CONCEPTUAL DESIGN ALTERNATIVES?

As the project team developed conceptual designs for potential corridor improvements, it was learned with preliminary traffic analysis that the "bookends" of Iris Avenue are key to keeping all people moving through the corridor.

The conceptual designs for all four alternatives limit vehicle lane reconfiguration to between 13th Street and Folsom Street/26th Street. These extents were informed by preliminary traffic analysis that showed extending a three-lane configuration to the bookend intersections (Broadway and 28th Street) would significantly increase delay and travel time.

This analysis informed the maintenance of today's vehicle lane configurations at both bookends to ensure the advancement of the community priorities: vehicle travel time and safety improvements for all.

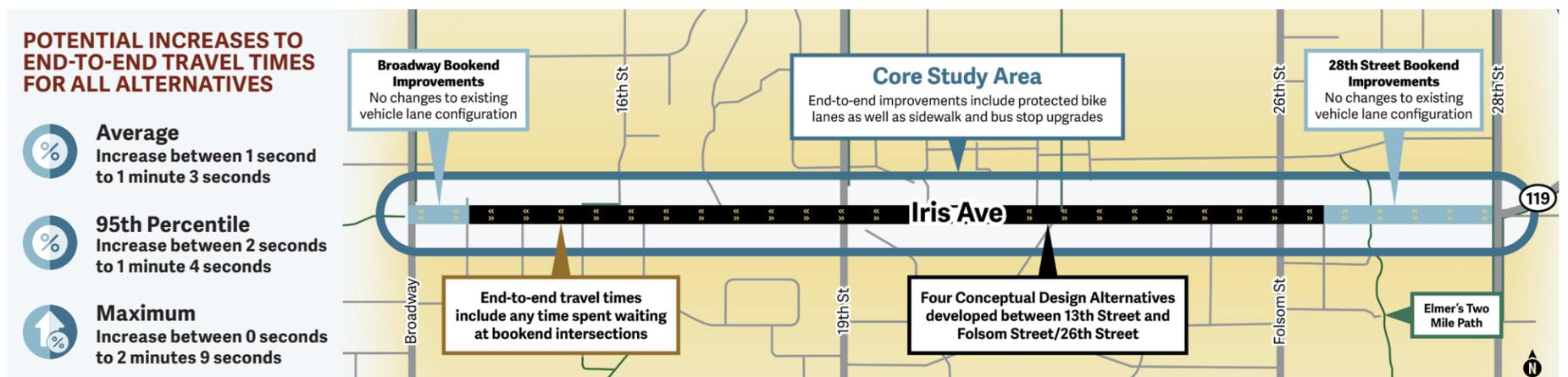
POTENTIAL INCREASES TO END-TO-END TRAVEL TIMES FOR ALL ALTERNATIVES

There will be some travel time delay associated with all four alternatives due to street design changes that advance Vision Zero Action Plan goals by moderating vehicle speeds, accommodating protected bike lanes, and modifying intersections to reduce conflicts between modes. This will vary by direction, time of day, and seasonal variability such as school being in session.

Depending on the direction and time of day, our analysis shows that average travel time changes may vary by +3 seconds to +1 minute 3 seconds for Alternatives A & B. Travel time changes for Alternatives C & D vary by +1 second to +25 seconds.

95th percentile travel time changes may vary by +2 seconds to +1 minute 4 seconds for Alternatives A & B and +2 seconds to +36 seconds for Alternatives C & D.

The four alternatives are informed by community input, city policies, analysis, and professional best practices. While the potential travel time changes may feel impactful to some, the four alternatives prioritize safety for all.





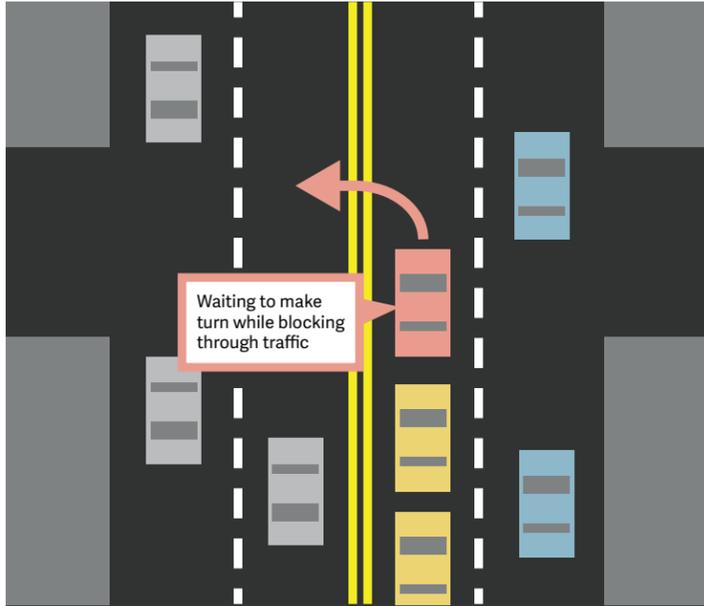
TRANSPORTATION OPERATIONS

Vehicle turning movements

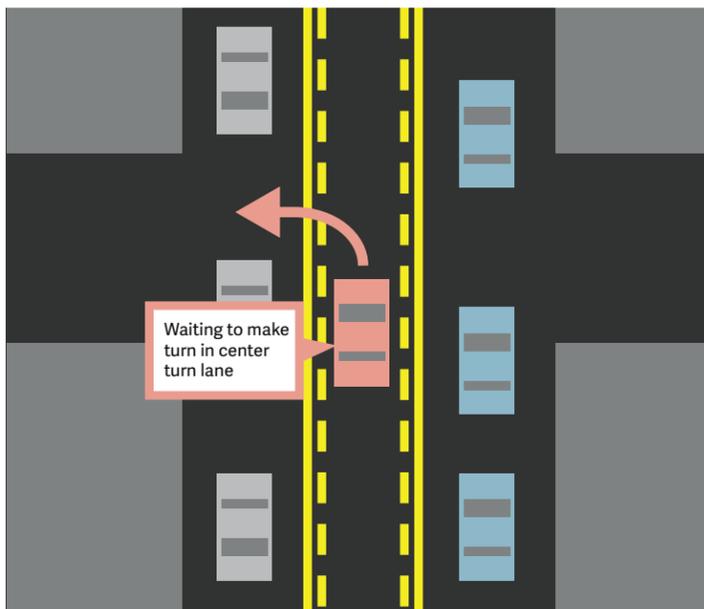
Two-way left turn lanes help with all turning movements on and off of Iris and help with traffic flow by removing turning vehicles from through lanes.

At signalized intersections, high volume turns crossing the protected bike lanes will utilize dedicated or protected signals to improve safety for all.

TYPICAL 4 LANE STREET



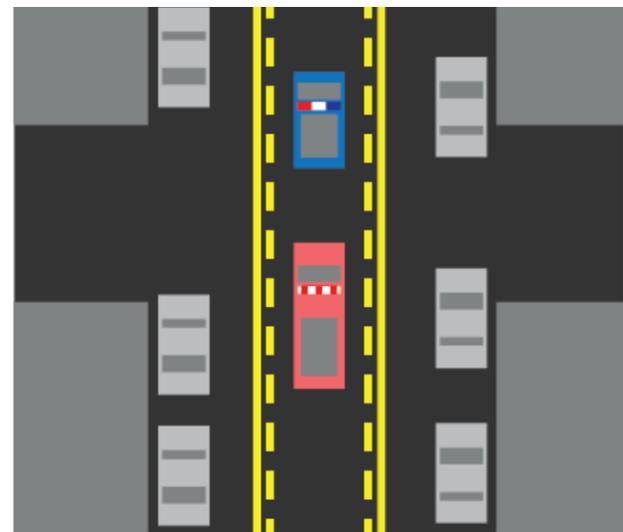
TYPICAL 3 LANE STREET



Emergency response

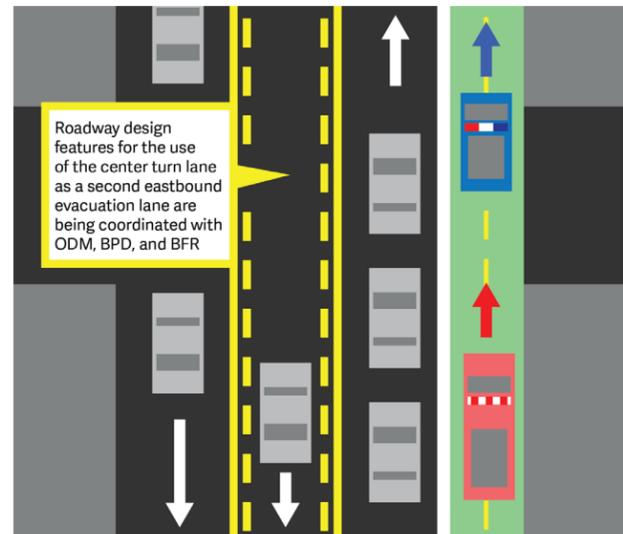
Quick response to emergencies and natural disasters is a priority for the city. **Day-to-day emergency response and disaster emergency response** are two of several key considerations for the project. The conceptual designs for improvements to Iris Avenue were informed by input from the city's Boulder-Fire Rescue (BFR) and Police (BPD) departments, and the Office of Disaster Management (ODM) for the City of Boulder and Boulder County. We will continue to work closely with them throughout the design process.

TWO COMMON QUESTIONS WE RECEIVE ABOUT ALTERNATIVES A & B ARE ANSWERED BELOW:



DAY-TO-DAY EMERGENCY RESPONSE

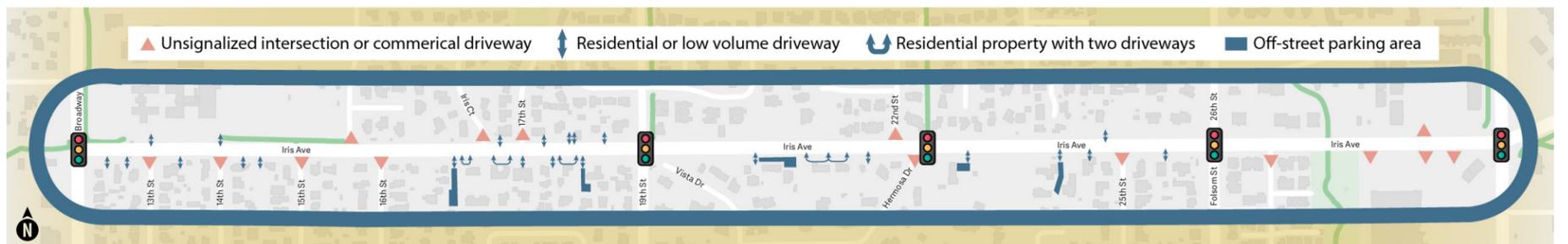
The Boulder-Fire Rescue and Police departments can utilize the center turn lane for emergency operations.



DISASTER EMERGENCY RESPONSE

In a disaster scenario, the two-way protected bike lane in Alternative B is wide enough to accommodate emergency vehicles.

Intersection and driveway access along Iris Avenue



Deliveries, loading, and trash collection

There are a small number of driveways along Iris Avenue that access homes. Many have large off-street areas or a pair of driveways that allow for deliveries and loading to occur off-street. As a result, traffic impacts will be minimal.

Currently, two separate Western Disposal trucks empty trash and compost or recycling bins every week. The next phase of design will work with Western Disposal to identify locations to store bins on collection days to optimize operations and minimize impacts to all members of the traveling public.

North side alignment for the two-way protected bike lane

Two-way protected bike lanes require intentional design at driveways and unsignalized intersections because drivers must expect cyclists coming from both directions. These designs include clear signage and markings as well as raised crossings where conditions allow.

The north side alignment for **Alternatives B & D** was preferable due to fewer conflict points and more sun exposure in the winter months than the south side. Between Broadway and 28th Street, the north side has 8 driveways and 5 unsignalized intersections totaling 13 conflict points, while the south side has 34 total conflict points with 24 driveways and 10 unsignalized intersections.

PROTECTED BIKE LANE CONSIDERATIONS: ONE-WAY OR TWO-WAY?

People biking on one-way protected bike lanes travel in the same direction as vehicles on both sides of the street and experience more conflict points along the corridor. People biking on two-way protected bike lanes travel in both directions on the north side of the street and experience fewer conflict points along the corridor. One-way protected bike lanes are narrower which poses challenges for snow plowing as well as street sweeping. Two-way protected bike lanes are wider and allow for easier passing and side-by-side bike riding. Both protected bike lane designs include adjustments to turn signal phasing to separate biking and vehicle turning movements to avoid conflicts when driving across the protected bike lane.