



Traffic and Site Access

October 7, 2026

Purpose

To understand how traffic and site access are accounted for in the development process.

Agenda

- Introduction
- Transportation and Mobility Master Plan
- Access Management
- Traffic Impact Study
- Development Example
- Class Exercise

Traffic Engineering and Operations

Traffic Engineer

- Engineering
 - Senior Civil Engineer – Traffic
 - Three Civil Engineers
 - One Traffic Engineering Technician
- Operations
 - Two Traffic Operations Supervisors
 - Six Traffic Operations Technicians



General Responsibilities

- Traffic Signs, Pavement Markings (Striping), Traffic Signals, City Streetlights
- Vision Zero Coordination
- iwatch/Traffic Calming
- Project Management
- Development Coordination!

Transportation and Mobility Master Plan (TMMP)

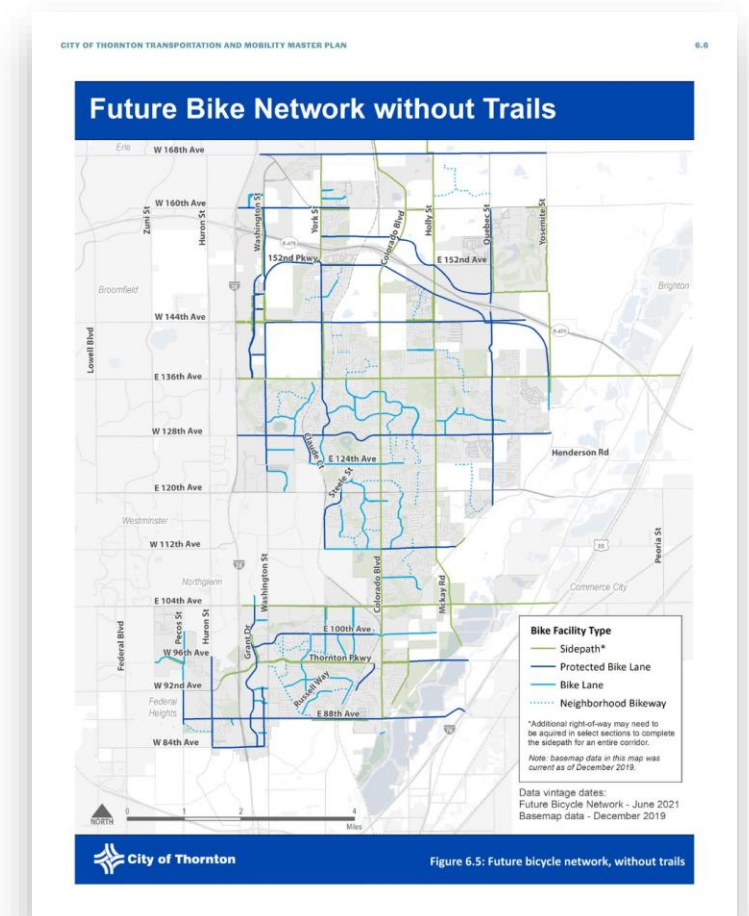
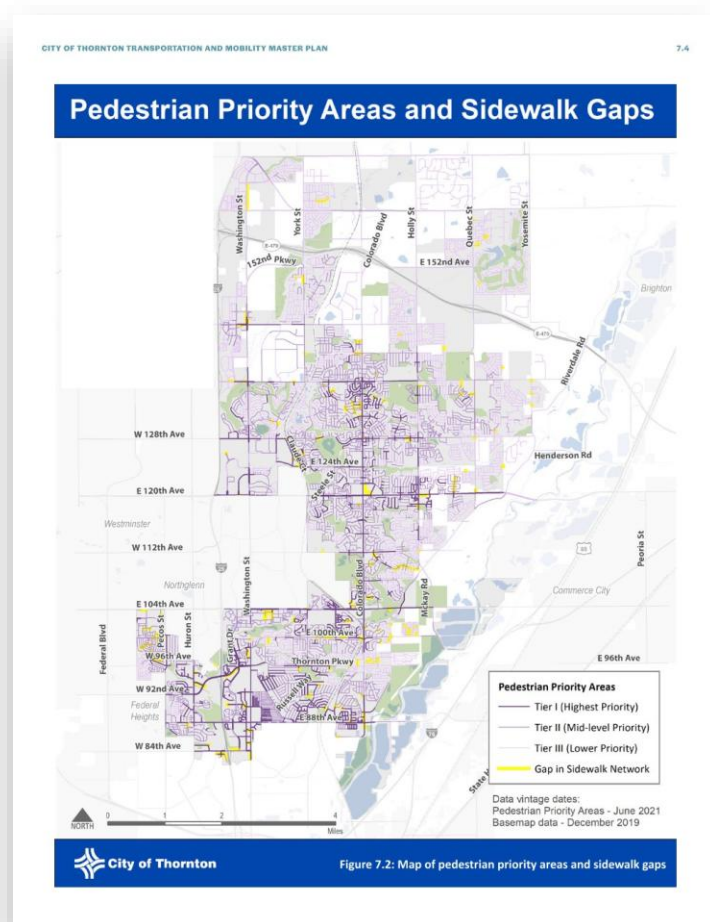
The TMMP is the City's long-range plan for travel and mobility.

- Adopted in 2022
- Supplement to the Comprehensive Plan
- Guides future transportation infrastructure

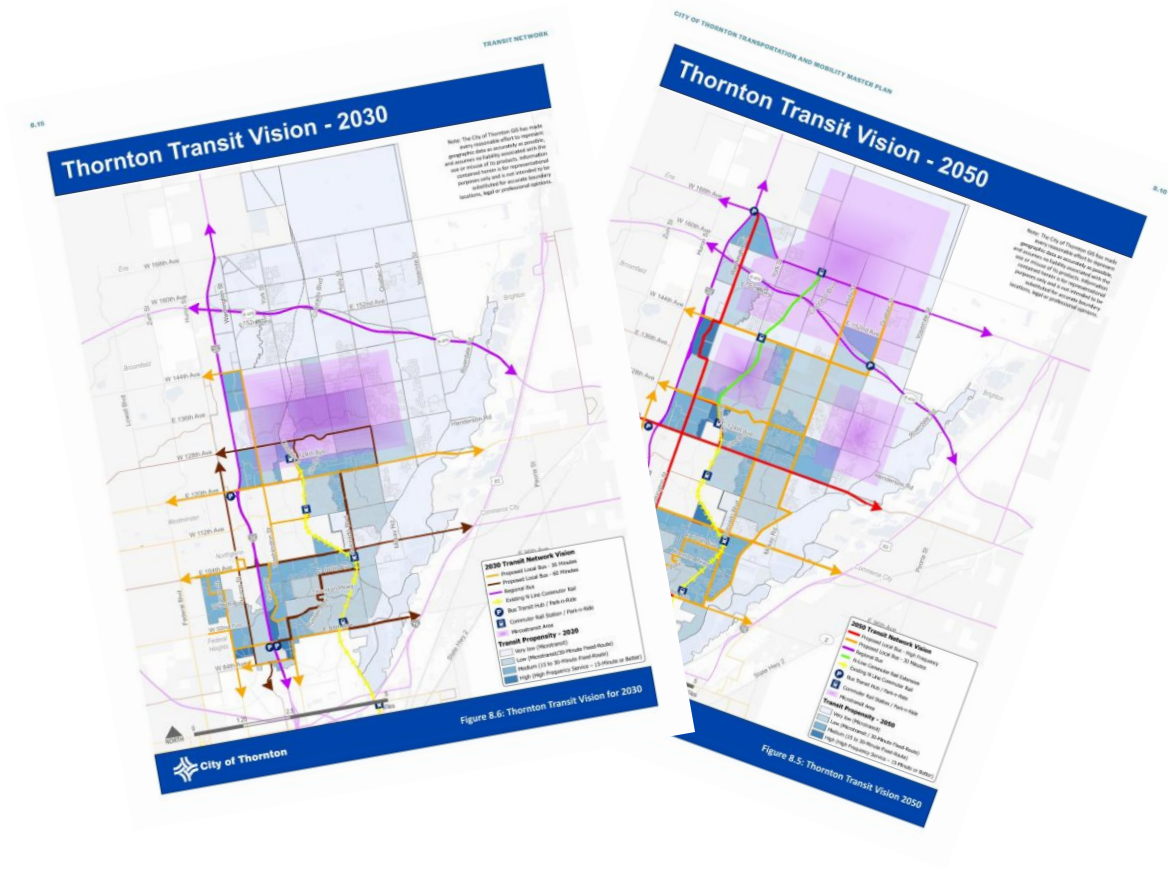


TMMP – Bicycle and Pedestrian Networks

The TMMP provides guidance on priority pedestrian and bicycle improvements across the City.



TMMP – Transit Network



The TMMP establishes the 2030 and 2050 visions for the transit network throughout the City, addressing service barriers and opportunities for improvement.

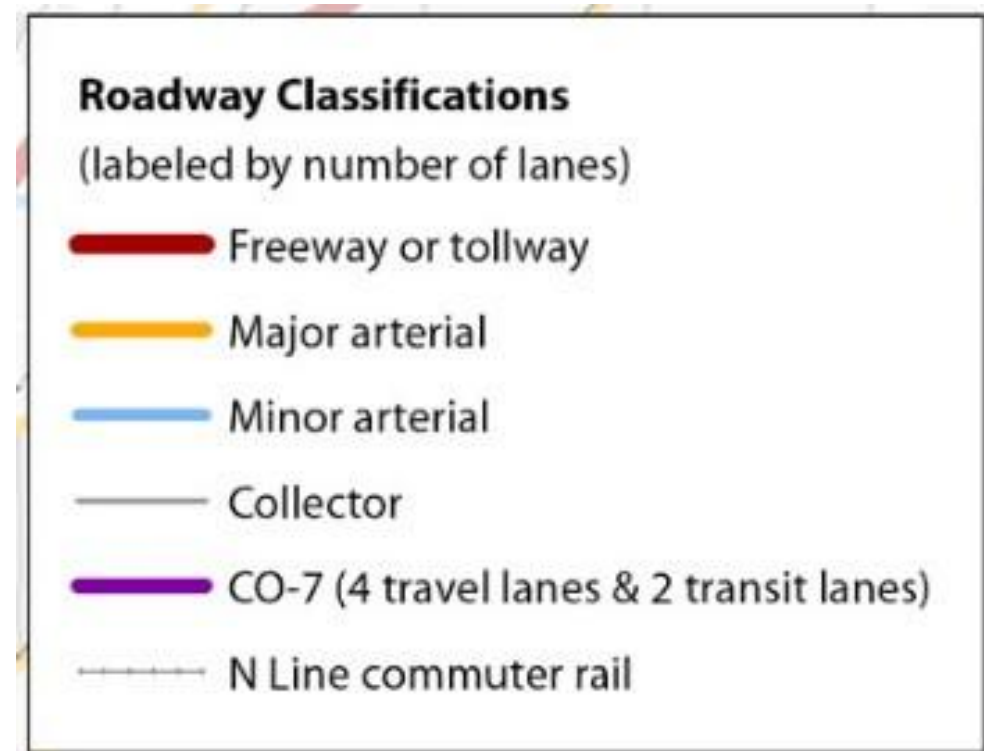
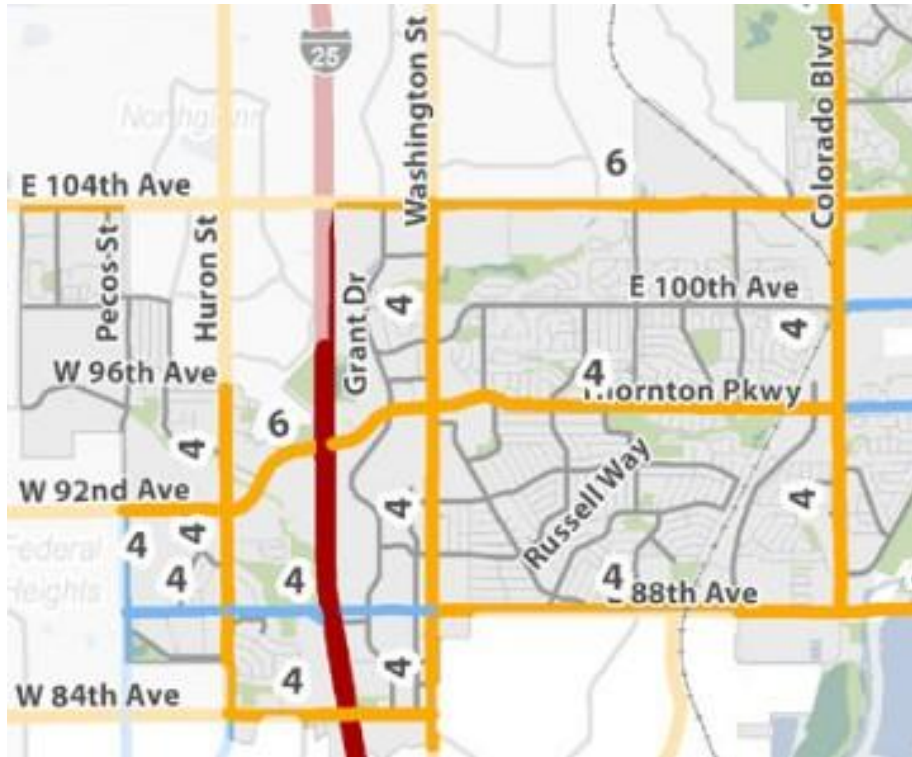
TMMP – Roadway Network

The roadway plan in the TMMP establishes the long-term vision for the road network throughout the City.

- Based on modeling driven by land use in the comprehensive plan
- Recommends and prioritizes short-term and long-term roadway projects
- Used in the development process



TMMP – Roadway Network



Roadway Network – Importance/Key Takeaways

- Roads need to be right-sized for the future
- Roadway network needs to provide mobility to/from adjacent land uses
- Multimodal facilities should be integrated throughout the roadway network
- Long-term Roadway Plan guides development projects and is likely the largest impact to a development project

Access Management

What is an access?

- Development Code
 - An “access drive” means a street, easement, or right-of-way providing ingress and egress to properties adjacent to a public or private street
- Transportation Research Board
 - An “access connection” means a driveway, street, turnout, or other means of providing for the movement of vehicles to or from the public roadway system
- In other words
 - The location where vehicles enter and exit the street!

Access Management

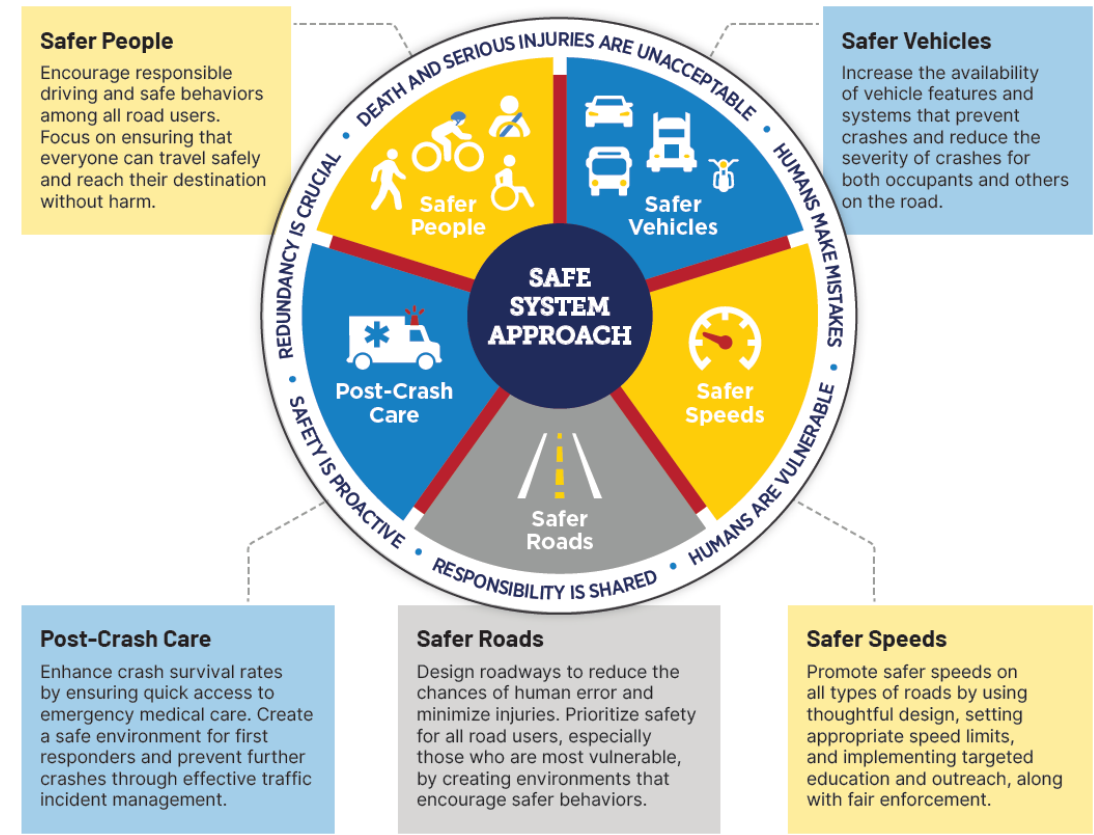
What main issues could there be with an access?

- **Safety**

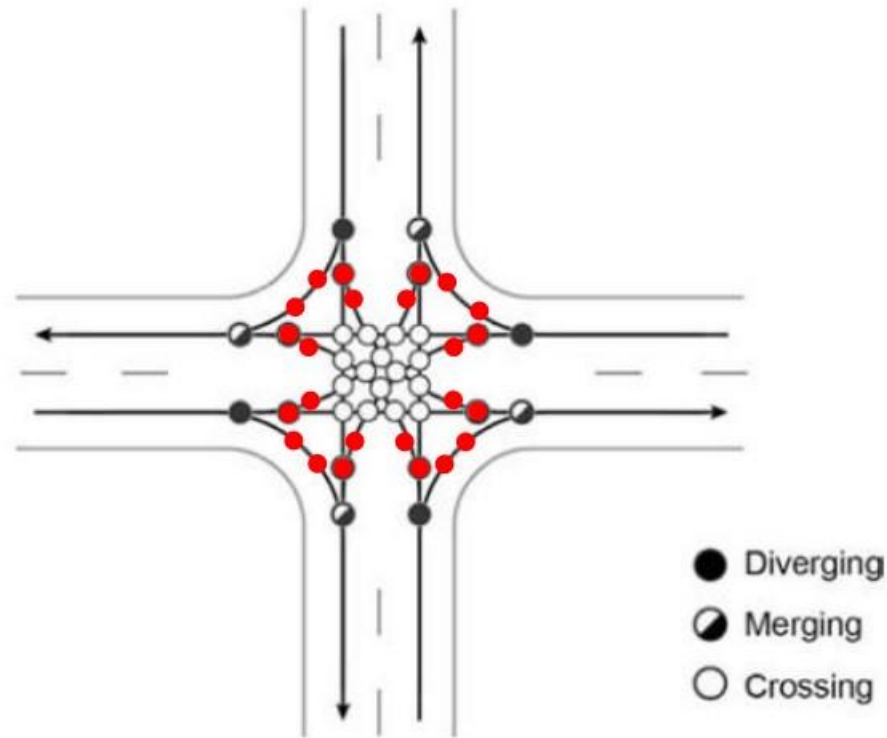
- More access increases potential for vehicle to vehicle, vehicle to pedestrian, vehicle to cyclist collision
- Thornton Vision Zero Action Plan is based on the Federal Highway Administration Safe Systems Approach – **Safer Roads**

- **Roadway Efficiency**

- As the frequency of accesses increases, traffic delays also increases - Congestion



Standard Intersection Conflict Points

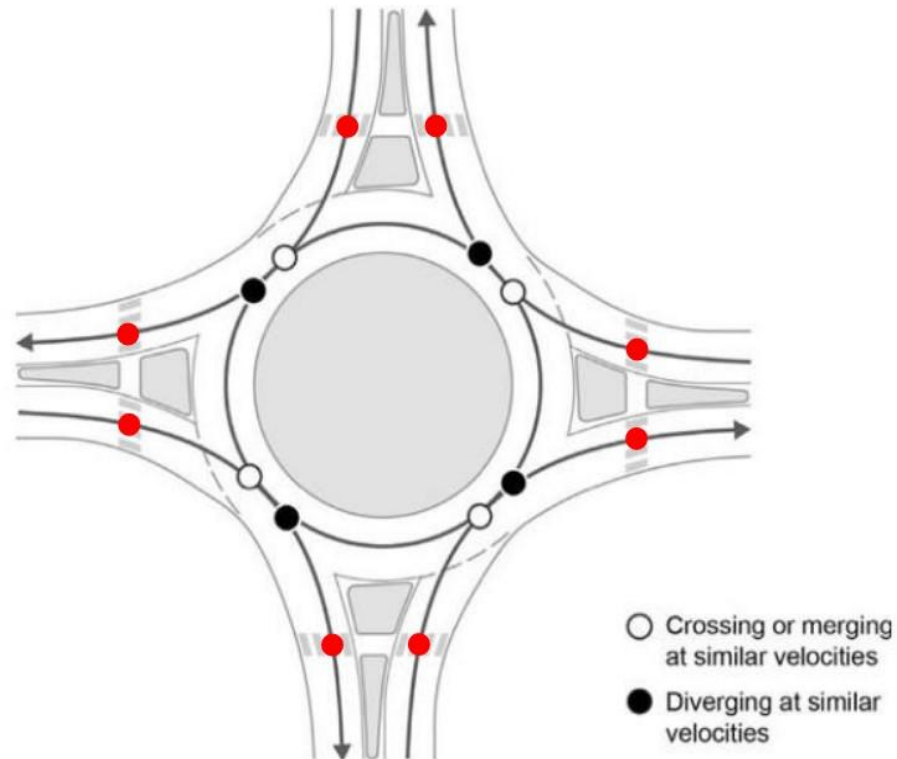


32 Vehicle-Vehicle Conflict Points

24 Vehicle-Pedestrian Conflict Points

NCHRP Report 1043

Roundabout Conflict Points



8 Vehicle-Vehicle Conflict Points

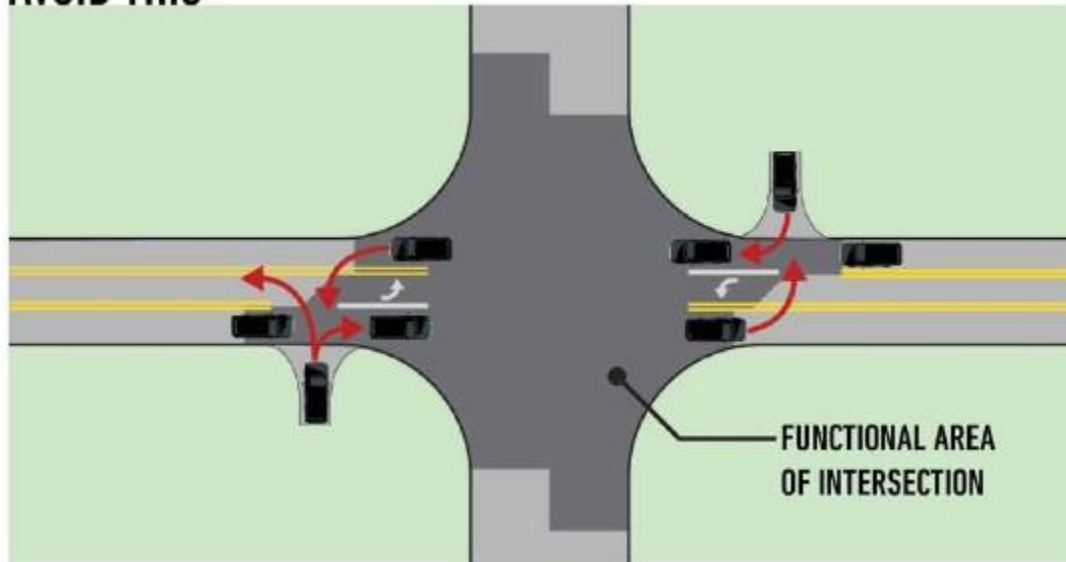
8 Vehicle-Pedestrian Conflict Points

NCHRP Report 1043

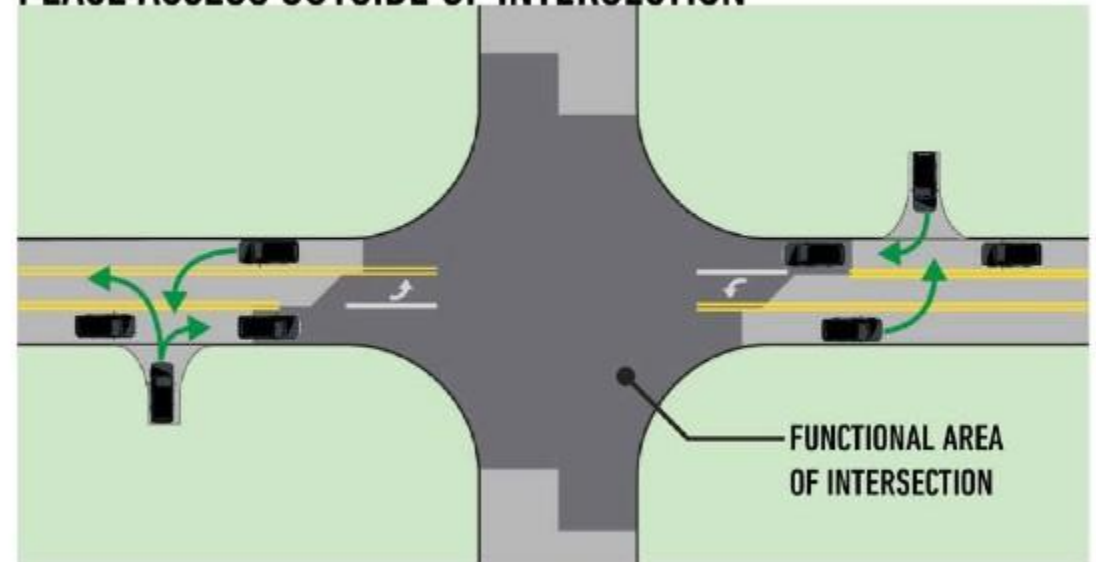
Access Location

Bare Minimum!

AVOID THIS



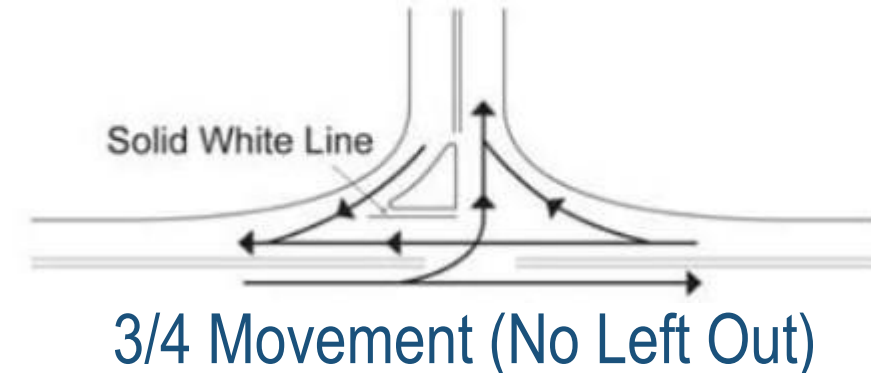
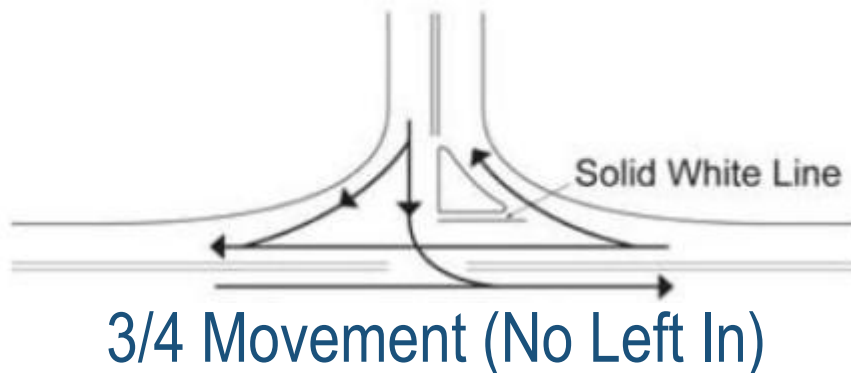
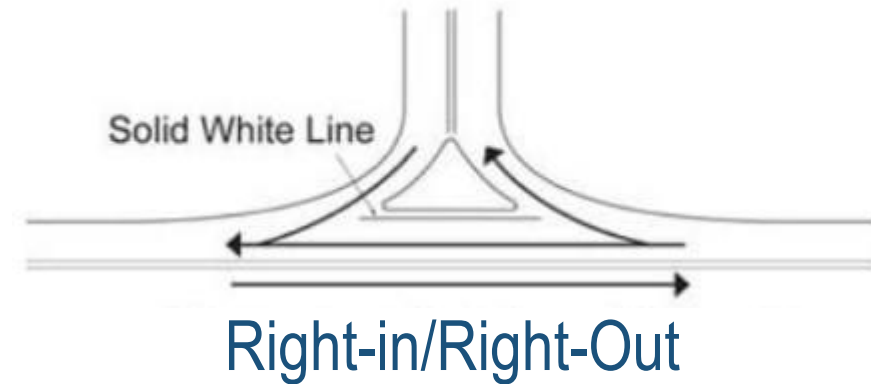
PLACE ACCESS OUTSIDE OF INTERSECTION



Access Restrictions

Movements can be restricted to address safety and operational issues.

- Full Movement
- 3/4 Movement
- Right-in/Right-Out



Access Management – Key Takeaways

- **Safety** needs to be part of the equation when locating access points
 - Pedestrian and cyclist mobility is impacted by accesses
- Access **within the functional area** of an intersection **impacts operation** of the intersection
- **Access restrictions** can help **improve safety and operation**

Traffic Impact Study

What is a traffic impact study (transportation impact study, transportation impact analysis)?

- Development Code
 - A “traffic impact study” is an assessment of a proposed development’s impacts on existing transportation infrastructure and traffic conditions
- In other words
 - Trying to estimate traffic conditions when a development is fully constructed

Traffic Impact Study – Basic Outline

- Data Collection
- Trip Generation
- Existing Condition
- Short-Term Condition
- Long-Term Condition
- Recommended Changes

Data Collection

What type of data is collected?

- Traffic Counts
 - Number of vehicles, pedestrians, and bicycles traveling through intersections and existing accesses during morning and evening peak periods
 - Number of vehicles traveling along surrounding roads in a 24-hour period
- Site Conditions
 - Configuration of existing intersections and accesses
 - Configuration of surrounding roads

Trip Generation

Query Filter

DATA SOURCE:
Trip Generation Manual, 11th Ed
New data edition is available. [Upgrade now.](#)

SEARCH BY LAND USE CODE:

LAND USE GROUP:
(800-899) Retail

LAND USE:
821 - Shopping Plaza (40-150k)

LAND USE SUBCATEGORY:
Supermarket - Yes

SETTING/LOCATION:
General Urban/Suburban

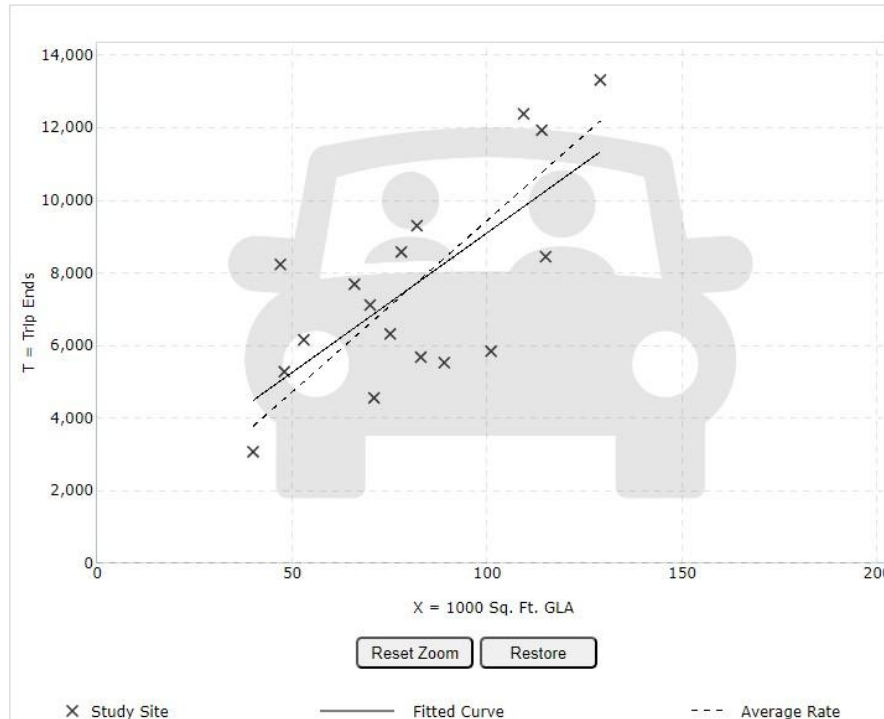
INDEPENDENT VARIABLE (IV):
1000 Sq. Ft. GLA

TIME PERIOD:
Weekday

TRIP TYPE:
Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

Data Plot and Equation



What is trip generation?

- An estimate of the number of vehicle trips (in and out) that a development could have
- Based on studies of other similar developments (Institute of Transportation Engineers Trip Generation Manual)

Existing, Short-Term, Long-Term

Existing Condition

- What do things look like “today”?
- Development is not in place

Short-Term

- What “might” things look like in the near future without the development?
- What “might” things look like in the near future with the development?
- Does the roadway network need to change?

Long-Term

- What “might” things look like in 20 years without the development?
- What “might” things look like in 20 years with the development?
- How does the roadway network need to be configured?

Traffic Impact Study – Importance/Key Takeaways

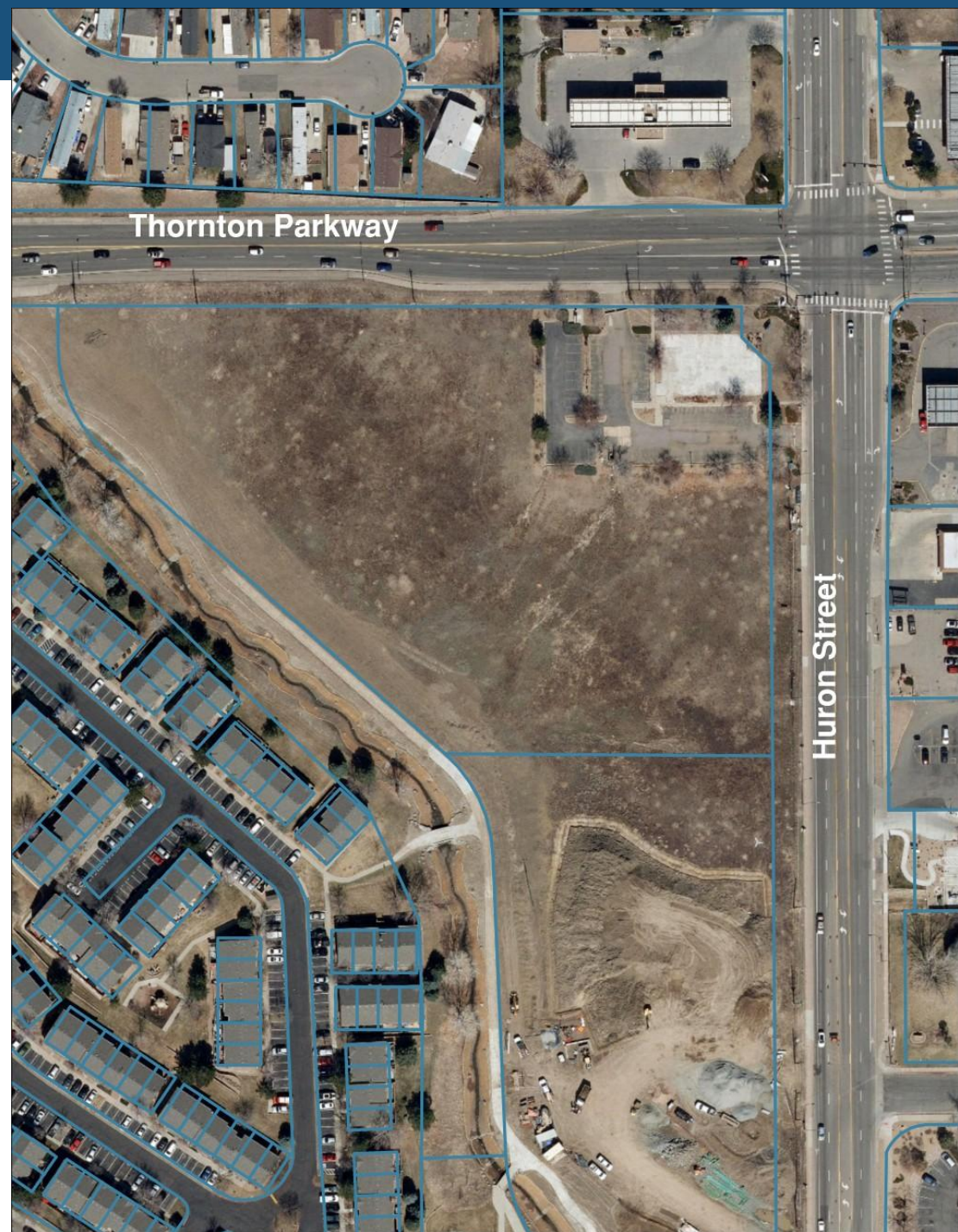
Why is a traffic impact study important?

- **Best reasonable estimate** of traffic conditions resulting from a development (conservative in nature)
- Need to know **what operational issues are possible** when the development first opens and what issues are possible **in the far future**
- Provides information on **what changes need to be made** with the development **to prevent or reduce the impact of any possible issues** (turn lanes, widening, traffic signals, sidewalks, etc.)

Example

Gas Station

Thornton Parkway & Huron Street



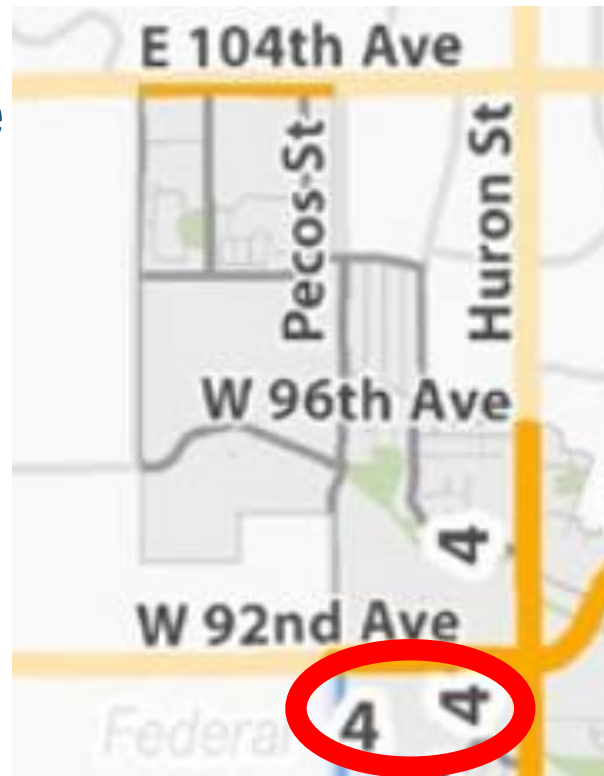
Road Network

Existing Road Network

- 4 lanes on Thornton Parkway
- 4 lanes on Huron Street

Does the road network need to be expanded?

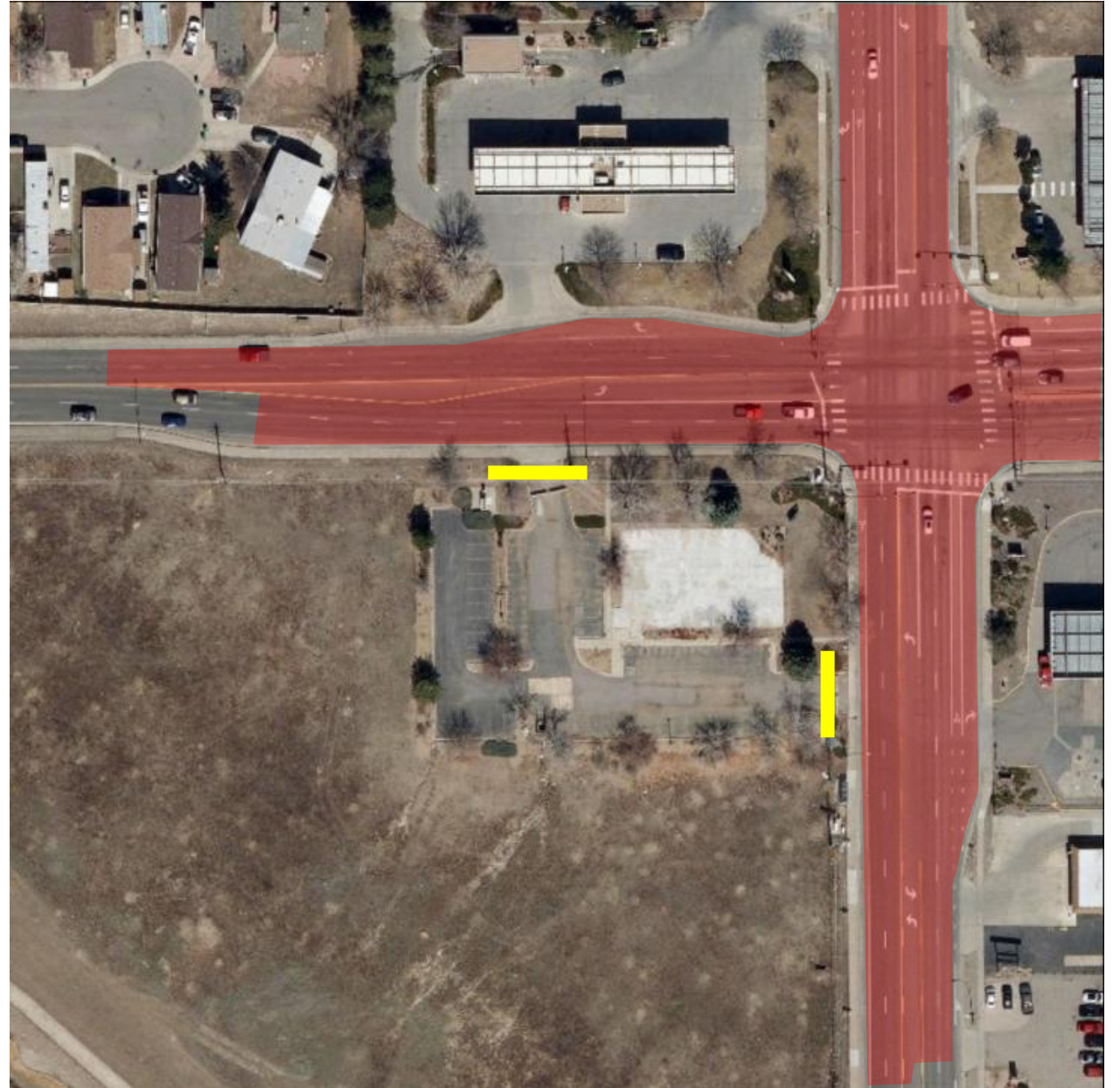
No. Long-term number of lanes is already in place.



Access

Existing Site Access

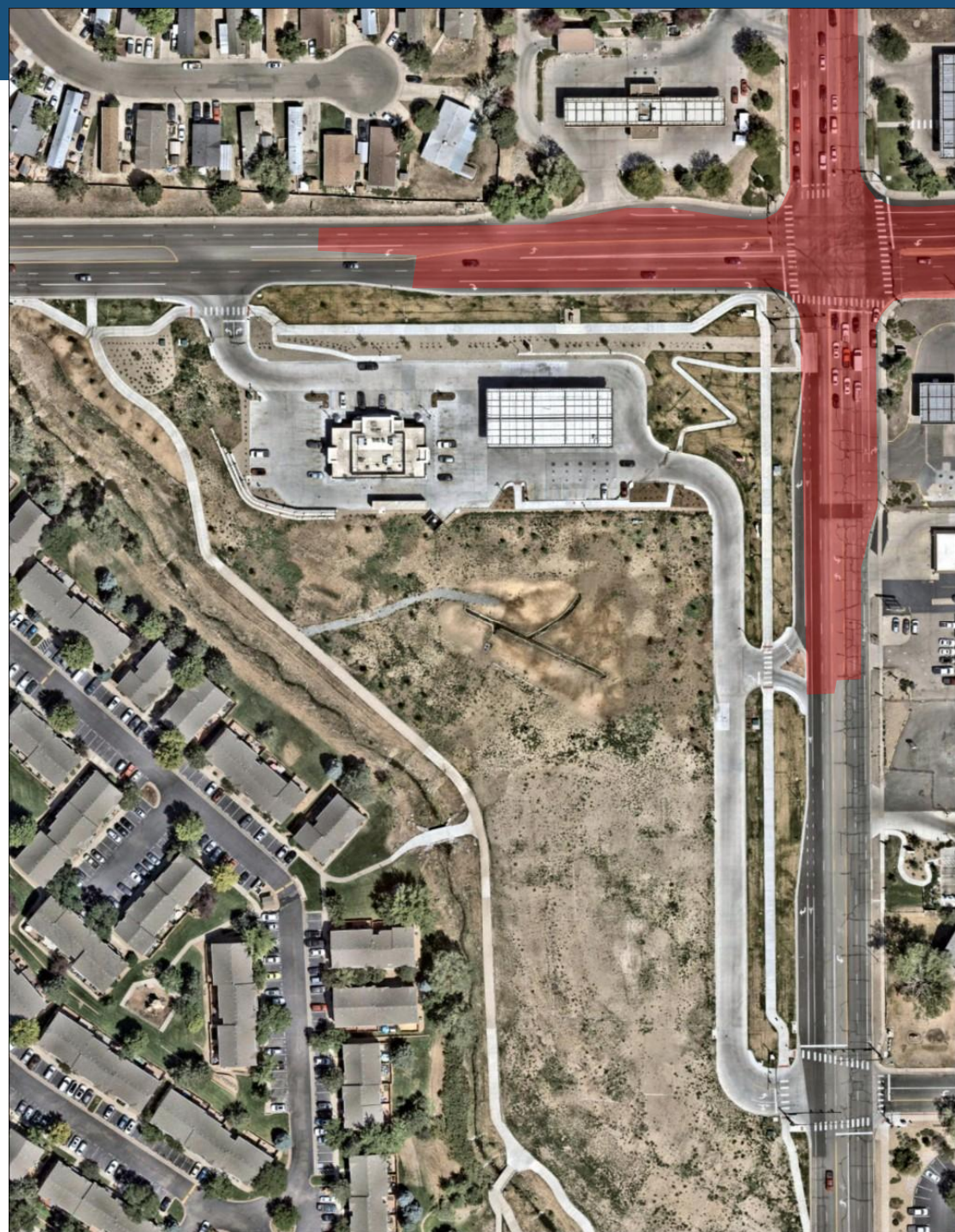
- Right-in/Right-Out on Thornton Parkway
- Right-in/Right-Out on Huron Street
- Located within functional area of Thornton Parkway & Huron Street intersection



Access

Redeveloped Site Access

- Full movement on Thornton Parkway
- Full movement on Huron Street (aligned with 91st Avenue)
- Right-in/Right-out on Huron Street
- Out of or just on edge of functional area of intersection



Class Access Exercise

Mission Trace Shopping Center
What would you change?

