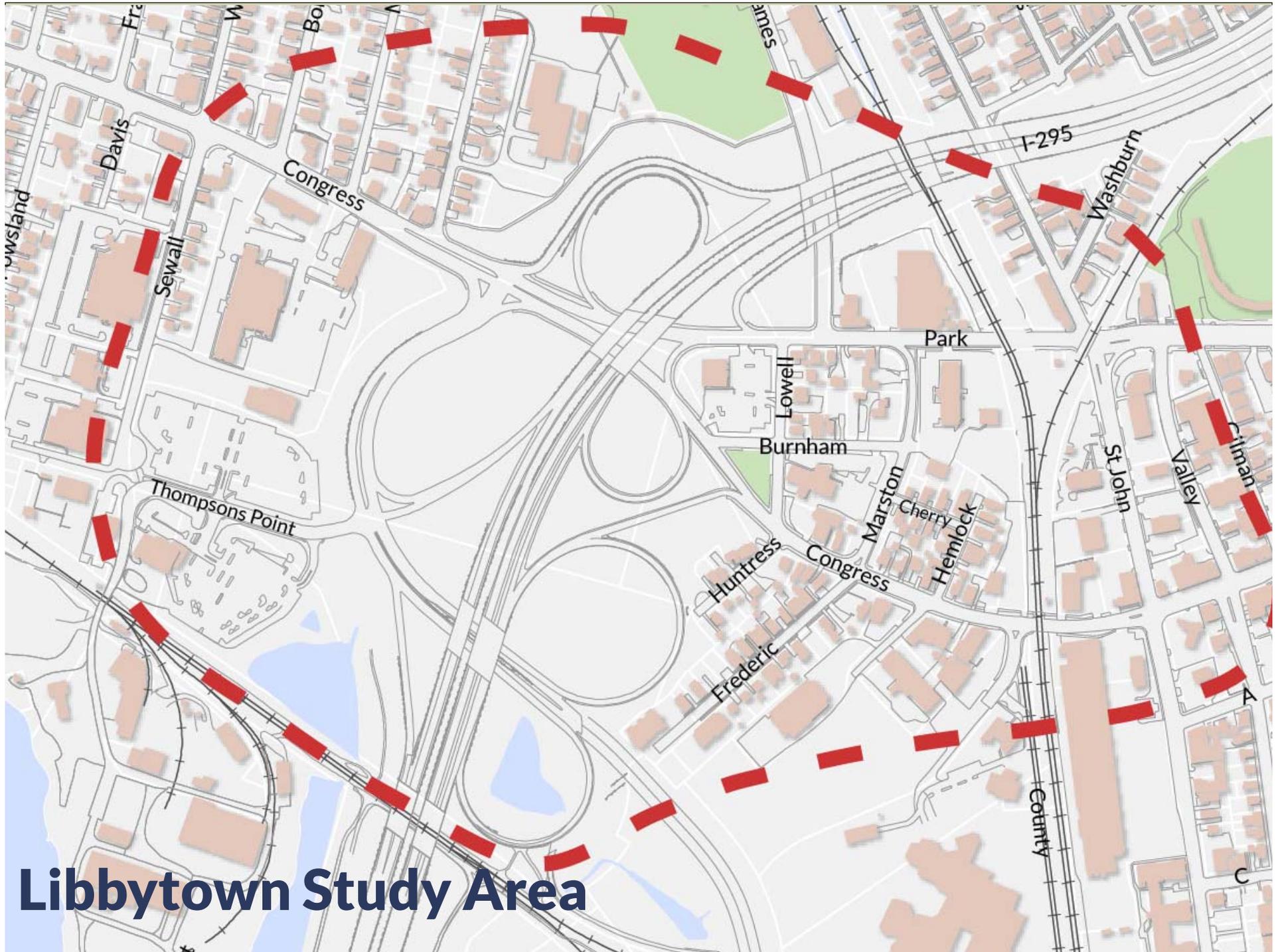


Libbytown Traffic Circulation and Streetscape Study

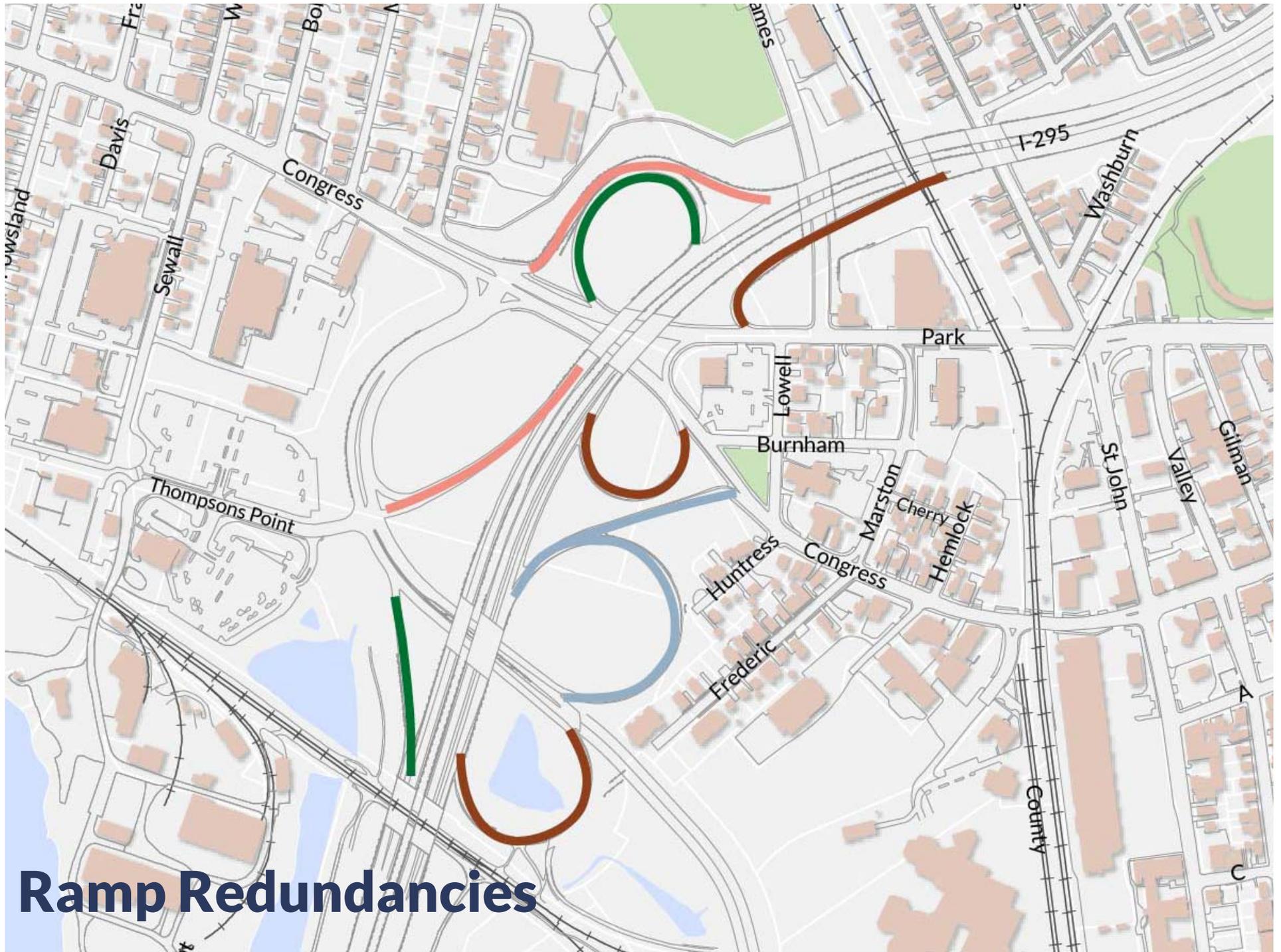
City of Portland and PACTS

28 January 2013





Libbytown Study Area



Ramp Redundancies

Purpose and Need Statement

(revised 1/25/13)

To improve the cohesiveness and livability of Libbytown and adjacent areas of impact by improving the transportation network to the following ends:

- Enhance safety and connectivity for all users
- Support business and economic development with better traffic circulation, increased foot traffic, easier access, and a more financially sustainable road network
- Create a more attractive and inviting streetscape, neighborhood, and public spaces
- Restore connections that were lost to previous highway development

The needs exist due to high crash rates; unsafe and unwelcoming environments for pedestrians, cyclists, and transit users; inconvenient one-way traffic; and a depressed business and real estate climate. Libbytown/SJV have numerous assets that have been thwarted by the transportation network.

Libbytown Traffic Circulation and Streetscape Study

City of Portland and PACTS

Crashes and High Crash Locations

Legend

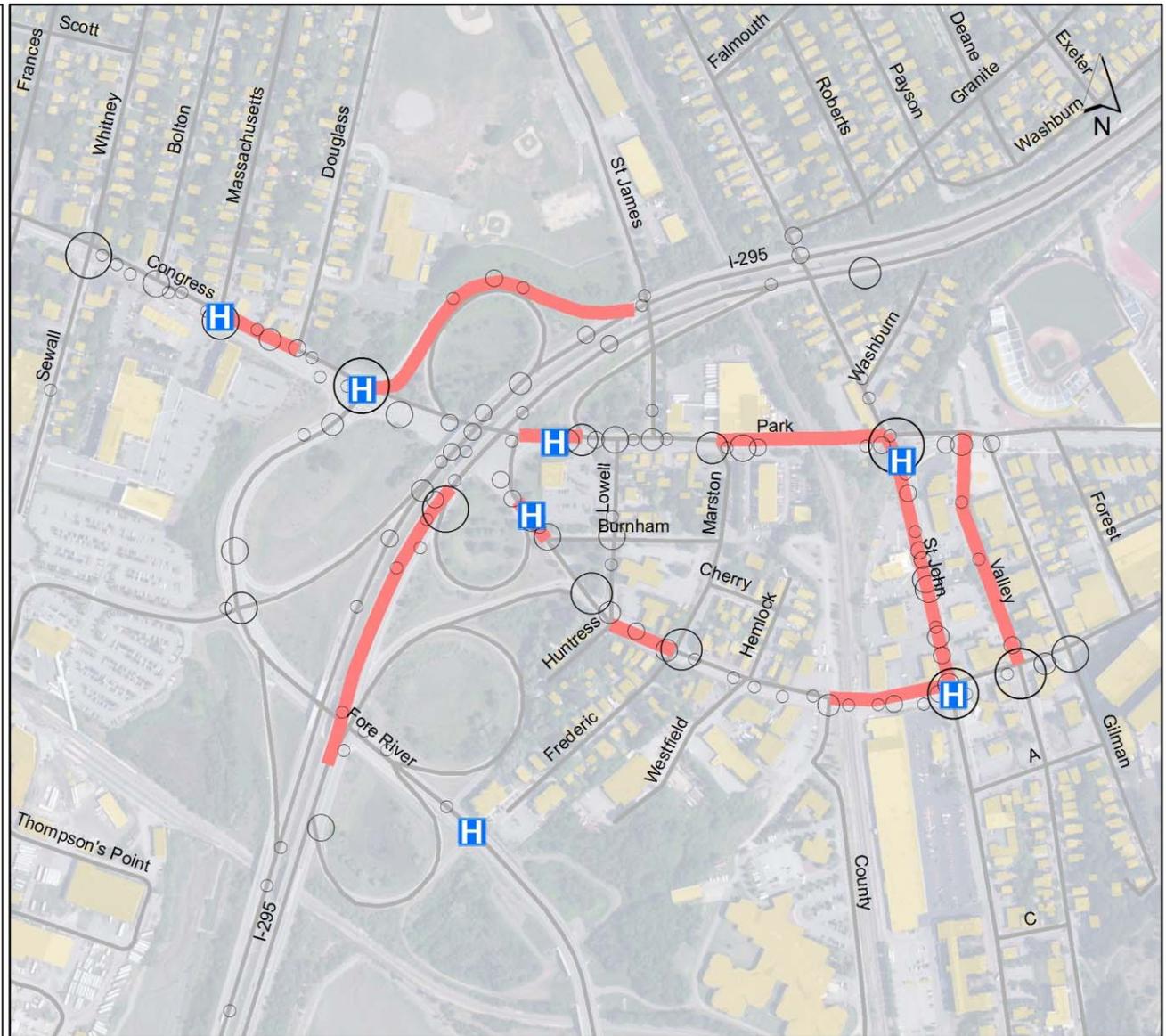
Number of Crashes (2009-2011)

Source: Maine DOT

- 1
- 2
- 3-4
- 5-7
- 8-9
- 10-11
- 12-16
- 17-20
- 21-23
- 24 or more

— High Crash Segments

H Severe Injury Crashes



1,000 500 0 1,000 Feet

What Makes a Good Street?

Design Tools	Pedestrians	Bicycles	Transit	Cars	Development
Low Speeds	✓✓	✓✓	○	○	✓
Two-Way Streets	✓	-	✓✓	-	✓✓
On-Street Parking	✓✓	-	○	-	✓✓
Buildings Facing the Street	✓✓	○	✓	○	✓✓
Streetscape Amenities	✓✓	✓✓	✓	○	✓✓
Roundabouts	○	-	○	✓	✓✓

✓ = Positive

○ = No Effect or Mixed

- = Negative

Pedestrian-Friendly Streets

- Safety: Slow Speeds
- High Connectivity: frequent crossings and direct routes
- Security: lighting, buildings with windows facing the street
- Destinations: Places to walk to



The Importance of Speed

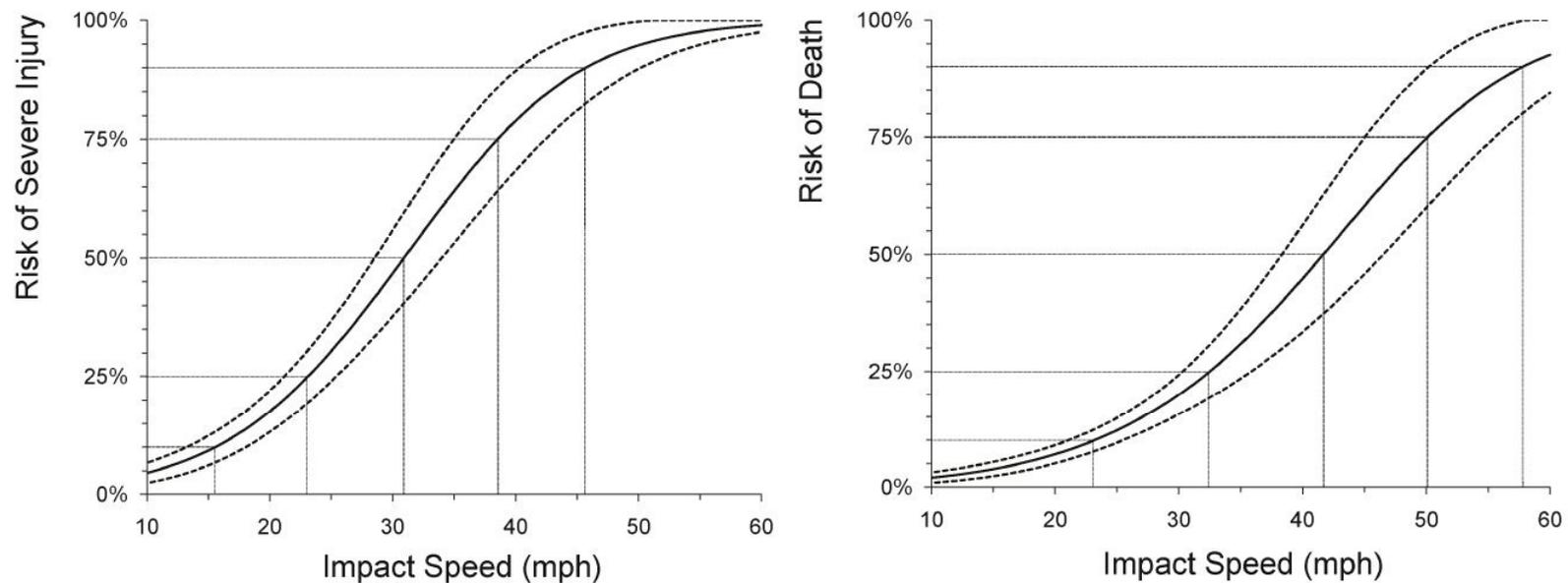


Figure 1. Risk of severe injury (left) and death (right) in relation to impact speed in a sample of 422 pedestrians aged 15+ years struck by a single forward-moving car or light truck model year 1989–1999, United States, 1994–1998. Risks are adjusted for pedestrian age, height, weight, body mass index, and type of striking vehicle, and standardized to the distribution of pedestrian age and type of striking vehicle for pedestrians struck in the United States in years 2007–2009. Dotted lines represent point-wise 95% confidence intervals. Serious injury is defined as AIS score of 4 or greater and includes death irrespective of AIS score.

Width and Enclosure: State Street

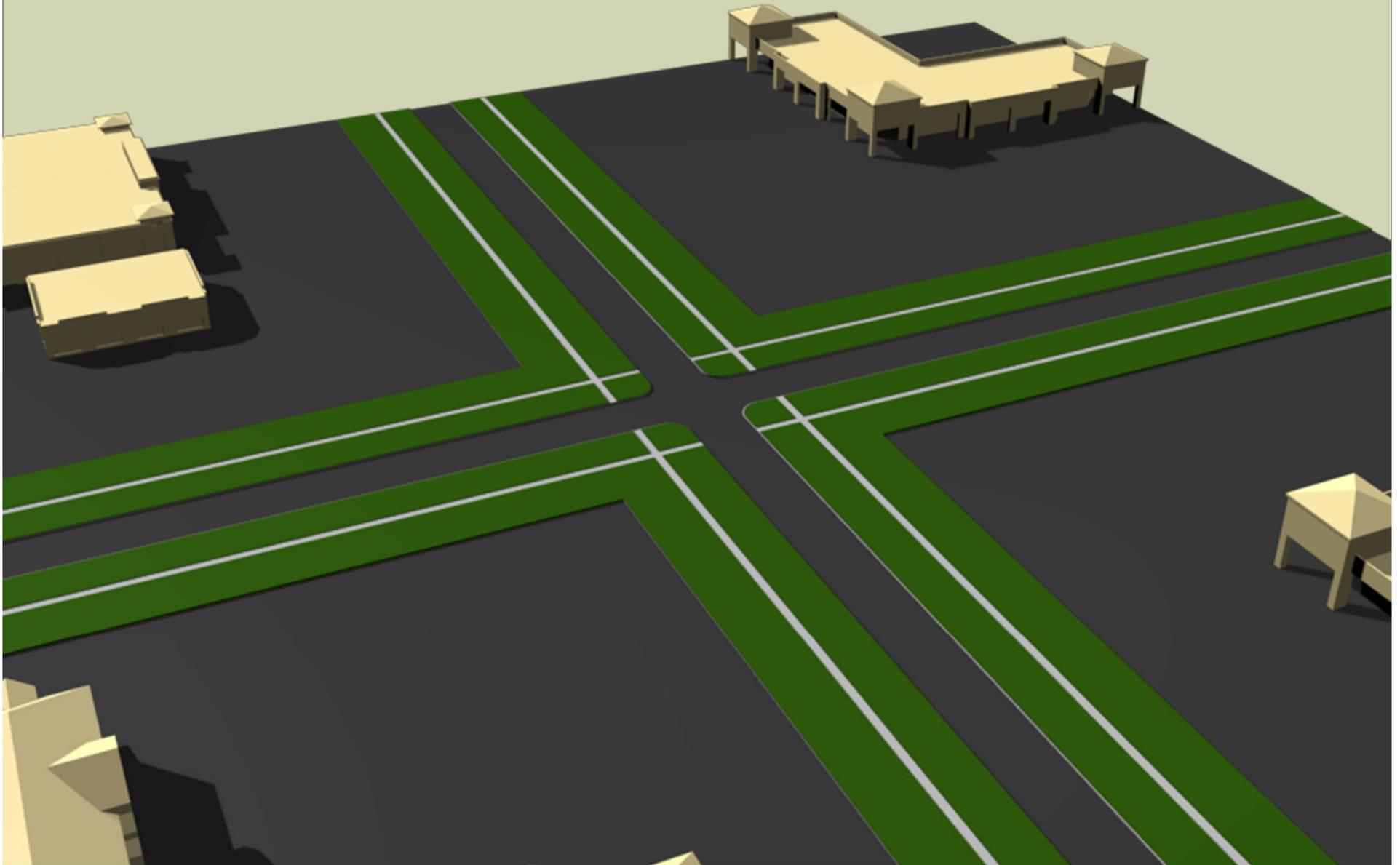


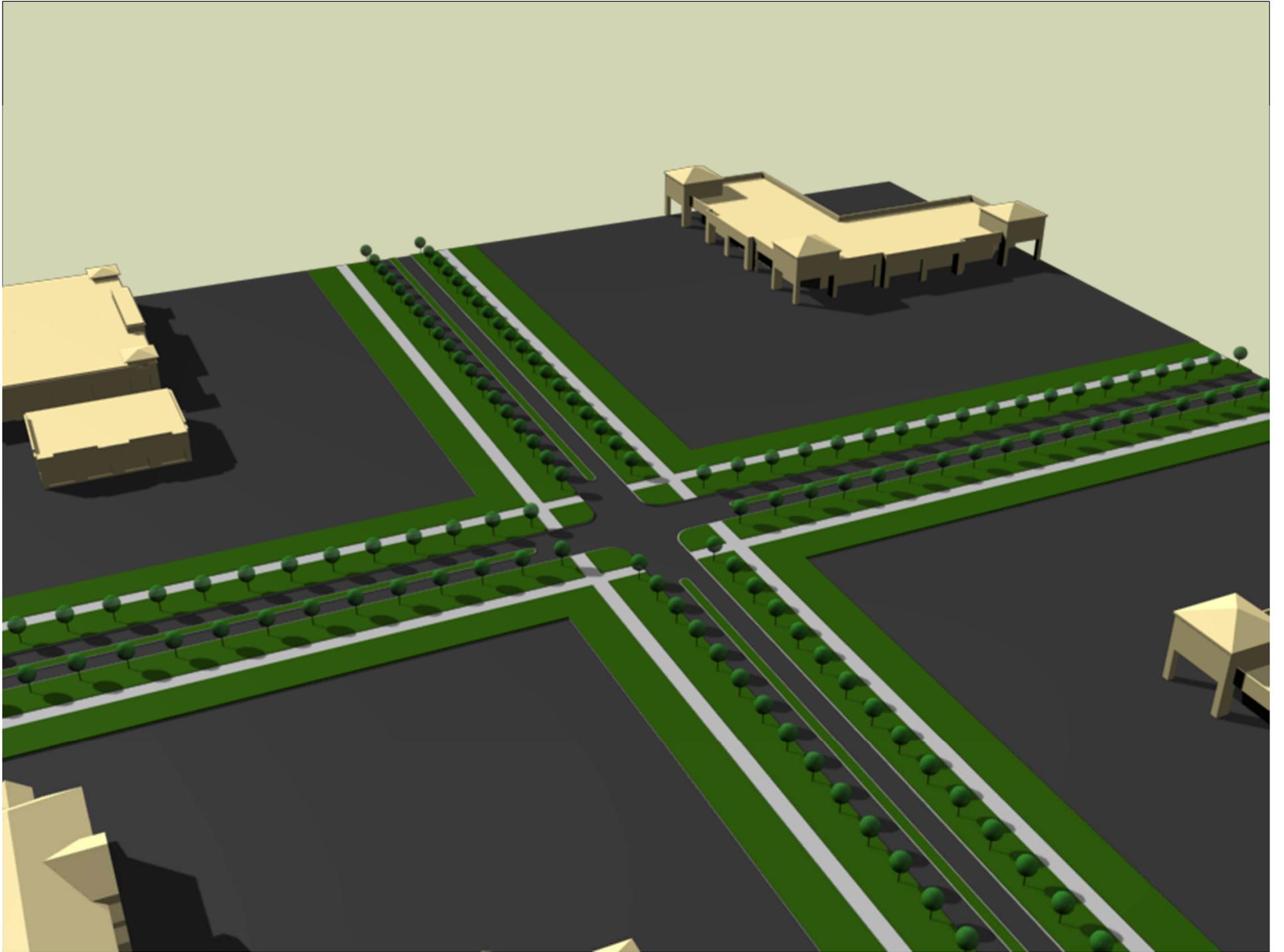
94 feet building to building

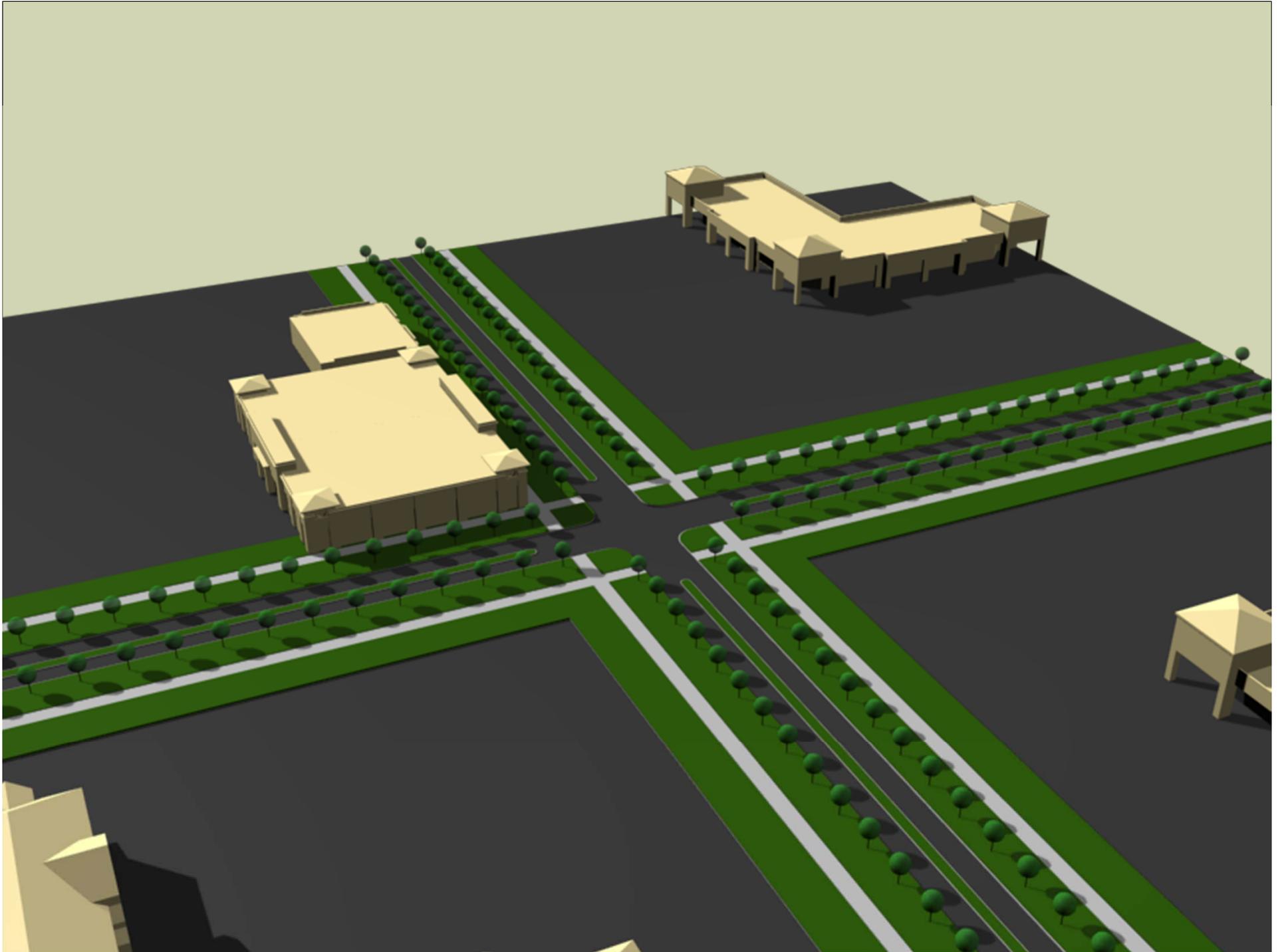
Width and Enclosure: Spring Street Arterial

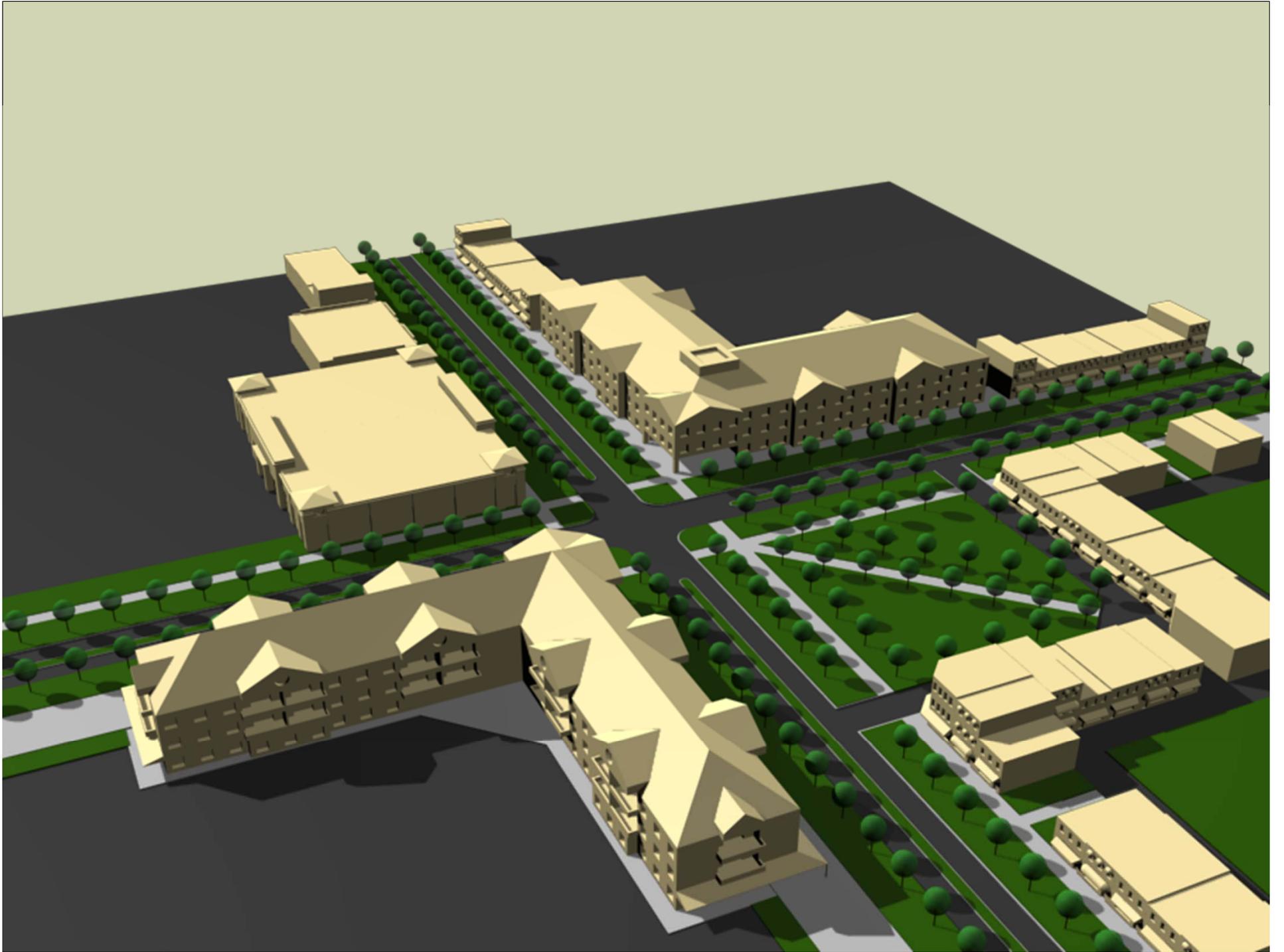


Places to Walk To









Libbytown Traffic Circulation and Streetscape Study

City of Portland and PACTS

Legend

Proposed Pedestrian Improvement Projects



Existing Pedestrian Comfort

— Low

—

—

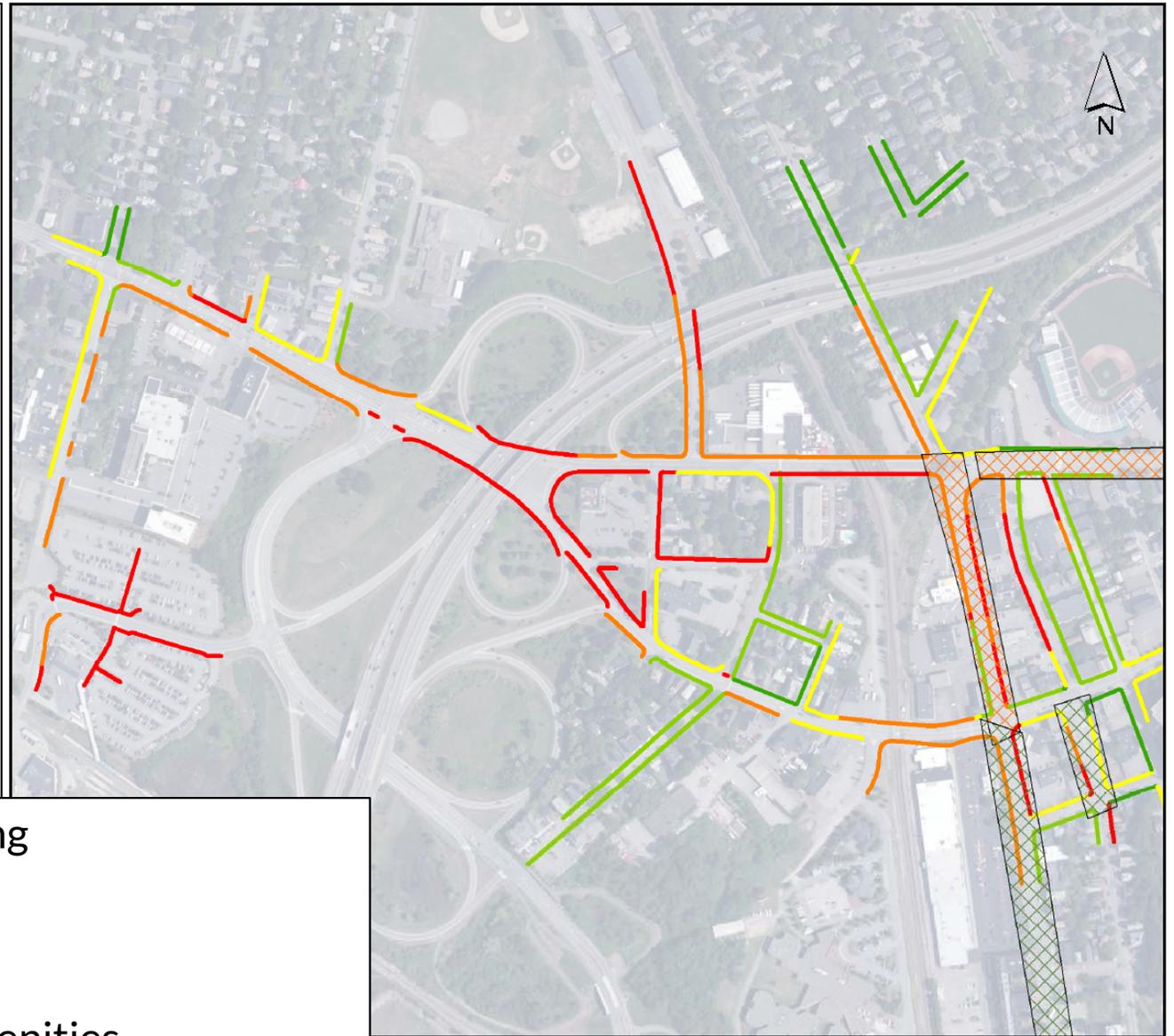
—

— High

Pedestrian Comfort Rating

Based on:

- Speed of traffic
- Presence of buffer
- Trees, Streetscape Amenities
- Buildings with windows facing the street



Current Improvement Projects

Bicyclists

- Different types have different needs

Four Types of Transportation Cyclists in Portland By Proportion of Population



Bicyclists

- **Confident riders:**
bicycle lanes with
slower speed traffic



Bicyclists

- Interested but Concerned: prefer separated facilities or shared use on very low volumes and speed streets



Libbytown Traffic Circulation and Streetscape Study

City of Portland and PACTS

*Existing Condition
Bicycles*

Legend

 Cyclist Accident Location

 Hazardous Bike Routes

 Portland Trails

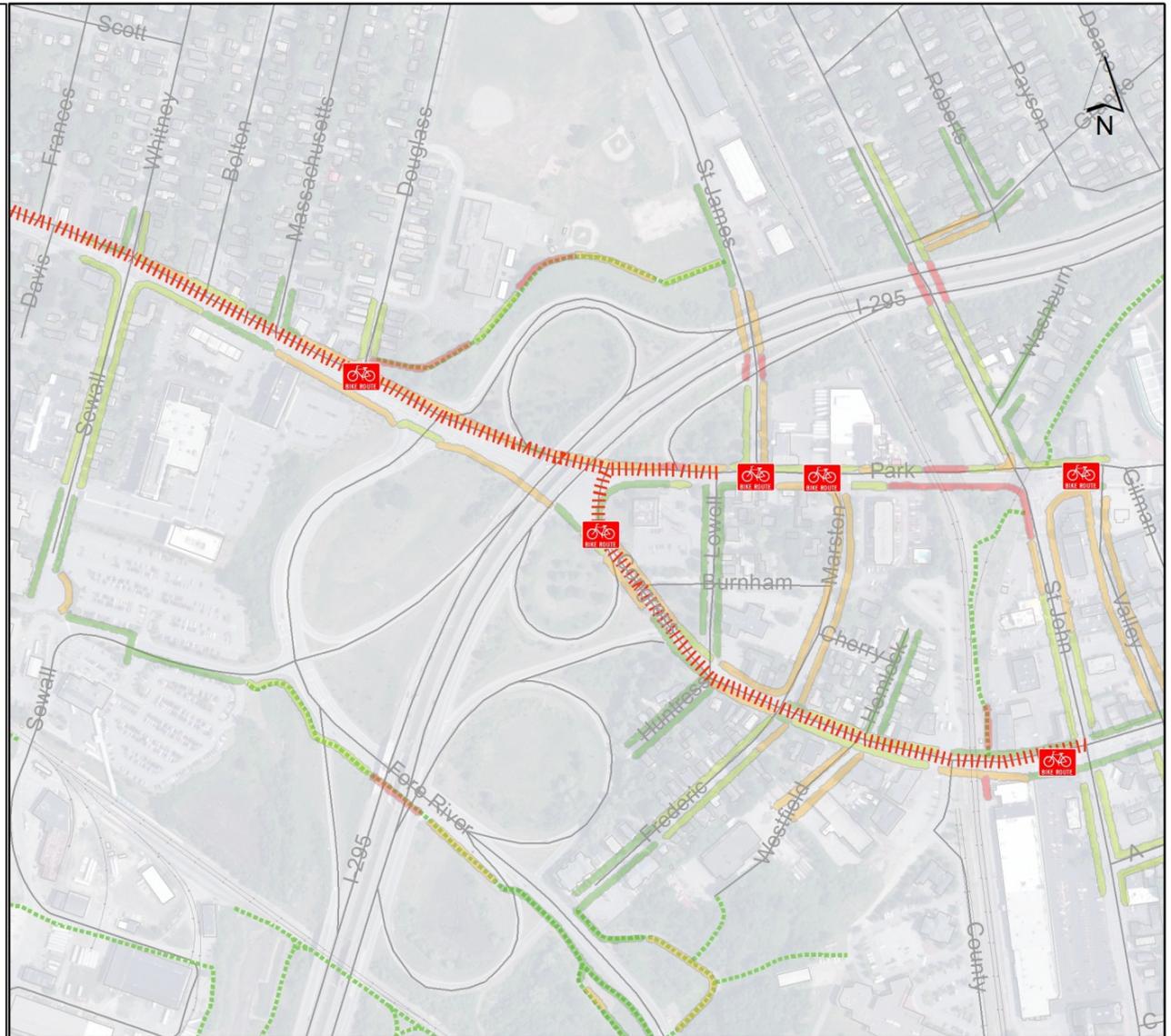
Lighting Quality

 Adequate

 Marginal

 Inadequate

 Unsafe



870 435 0 870 Feet



Transit-Friendly Streets

- Great pedestrian environment
- Density of residences and destinations
- Direct transit routes – without diversions
- Stops allow bus to easily re-enter traffic

Transit Stop Improvements



A Congress St. & Sewall St.



B Congress St. & Massachusetts Ave.



C Portland Transportation Center



D Congress St. & Frederic St.



**Libbytown:
Bus Stop Inventory Plan**
TJD&A 11.13.2012



K Park Ave. & Marston St.



J Park Ave. & Saint John St.



I Saint John St. & Lang's Express



E Saint John St. & Union Station Plaza



F Saint John St. & A St.



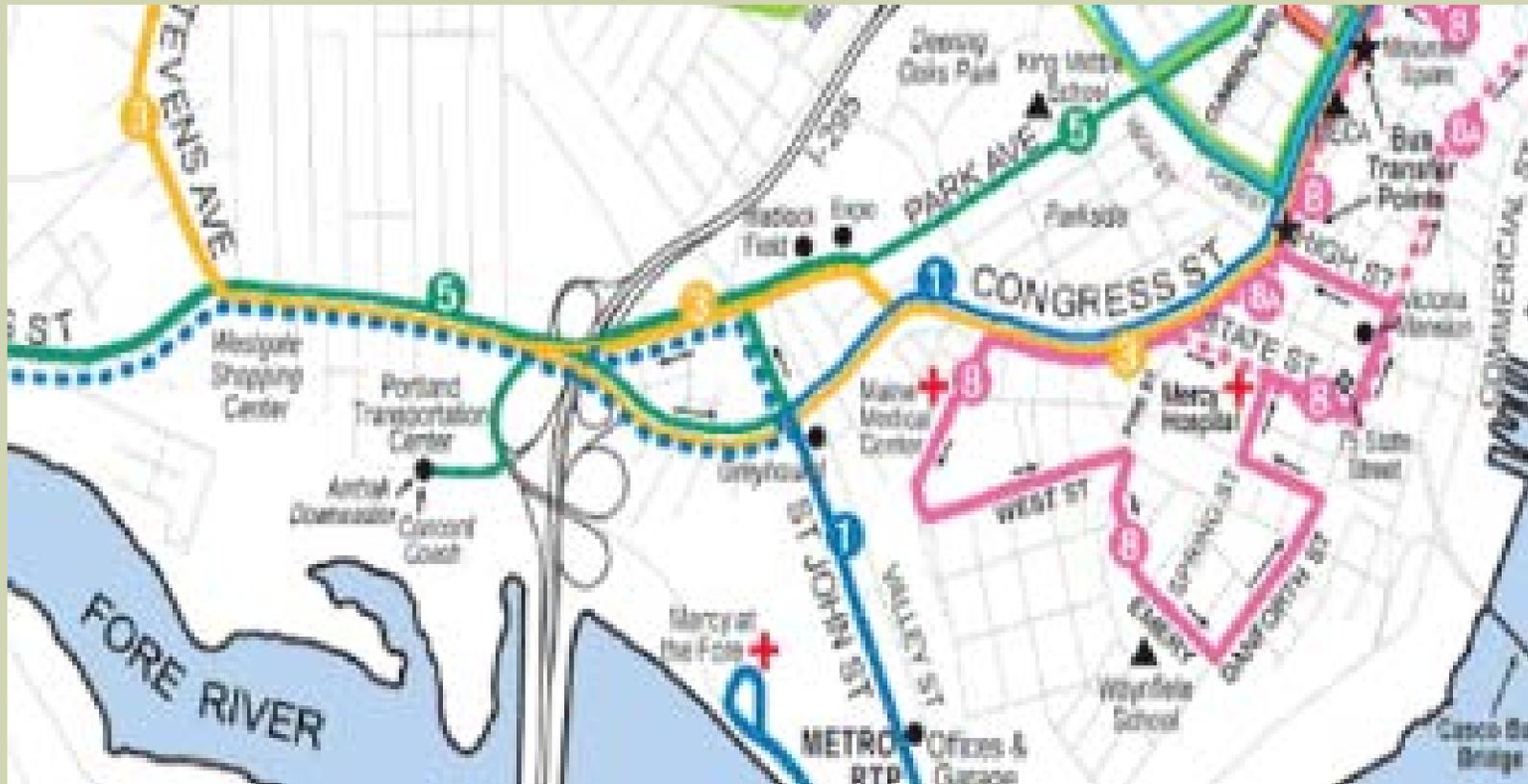
G Congress St. & Gilman St.



H Congress St. & Saint John St.

One Way Streets and Legibility

- Two-way Street Networks are better for buses



What about the Automobile?

- Safety and Convenience
 - Clear sightlines
 - Easy transitions
 - Streets are designed to fit the context and function (i.e. turning lanes where needed, easy access to destinations, major weaving movements not required)
 - Reliable travel times – few incidents and interruptions
 - Slow and steady flow – eco-driving

Libbytown Traffic Circulation and Streetscape Study

City of Portland and PACTS

Crashes and High Crash Locations

Legend

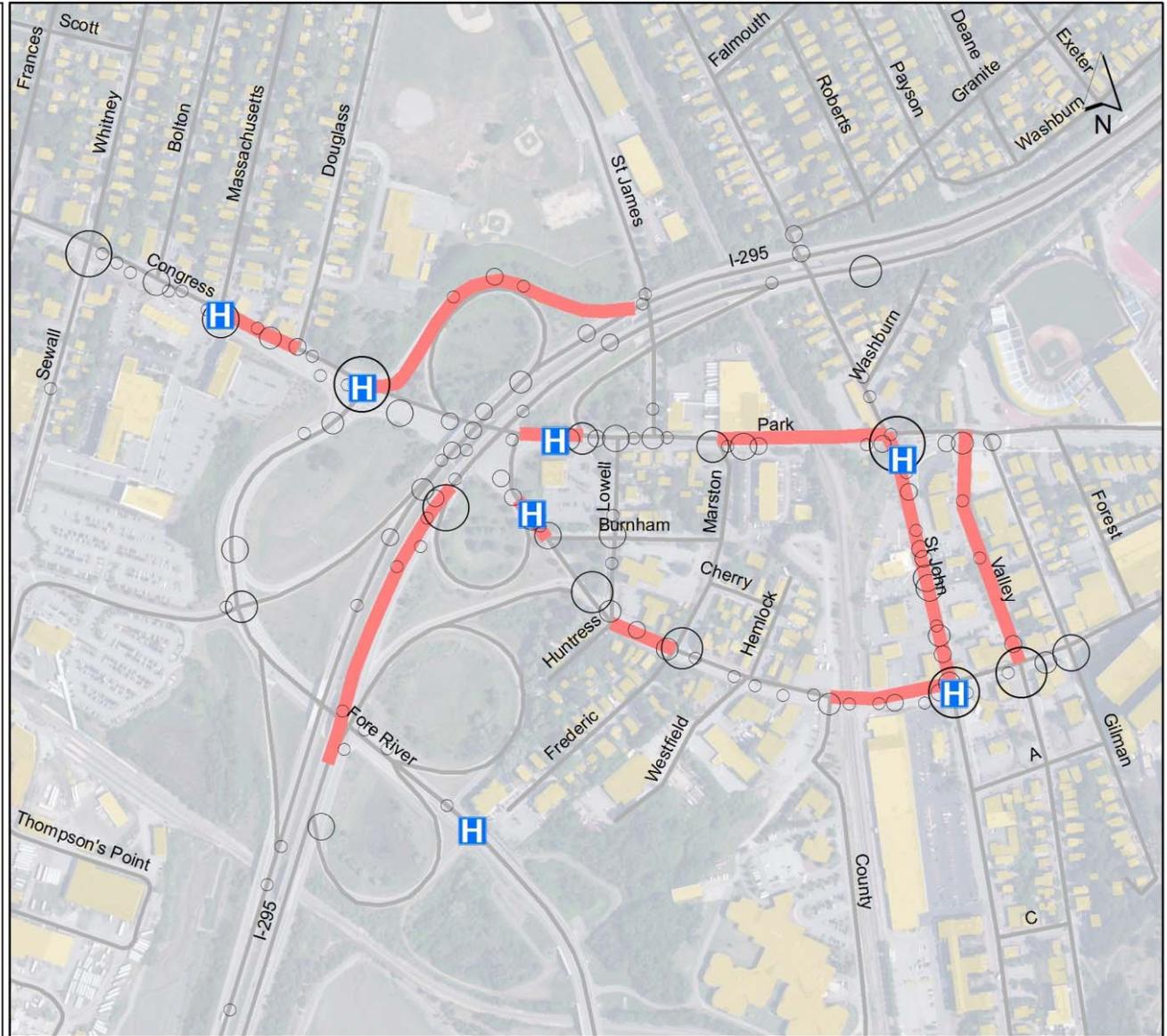
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— High Crash Segments

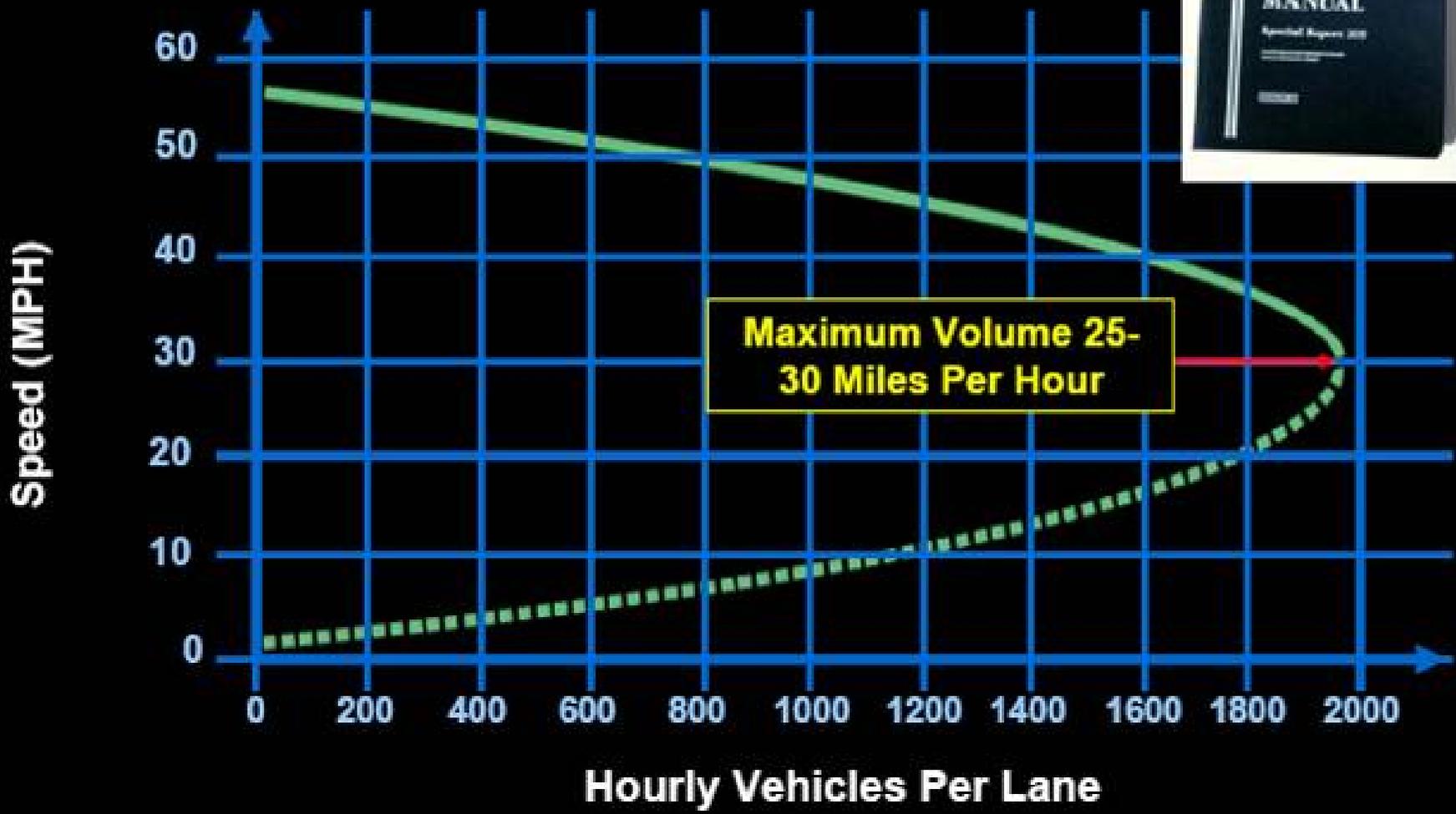
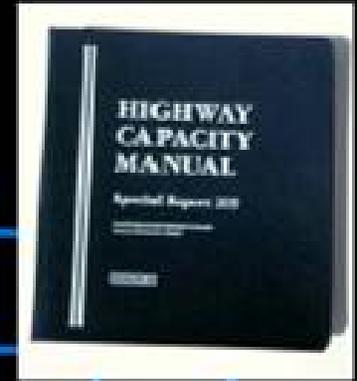
H Severe Injury Crashes



1,000 500 0 1,000 Feet

Speed-flow relationship

Greatest capacity at a calm 25-30 mph



Development Friendly Streets

- High visibility: lots of people passing by at slower speeds
- On-street parking
- Easy accessibility



What Makes a Good Street?

Design Tools	Pedestrians	Bicycles	Transit	Cars	Development
Low Speeds	✓✓	✓✓	0	0	✓
Two-Way Streets	✓	-	✓✓	-	✓✓
On-Street Parking	✓✓	-	0	-	✓✓
Buildings Facing the Street	✓✓	0	✓	0	✓✓
Streetscape Amenities	✓✓	✓✓	✓	0	✓✓
Roundabouts	-/✓	-	0	✓	✓✓

✓ = Positive

0 = No Effect or Mixed

- = Negative

Street Design Considerations

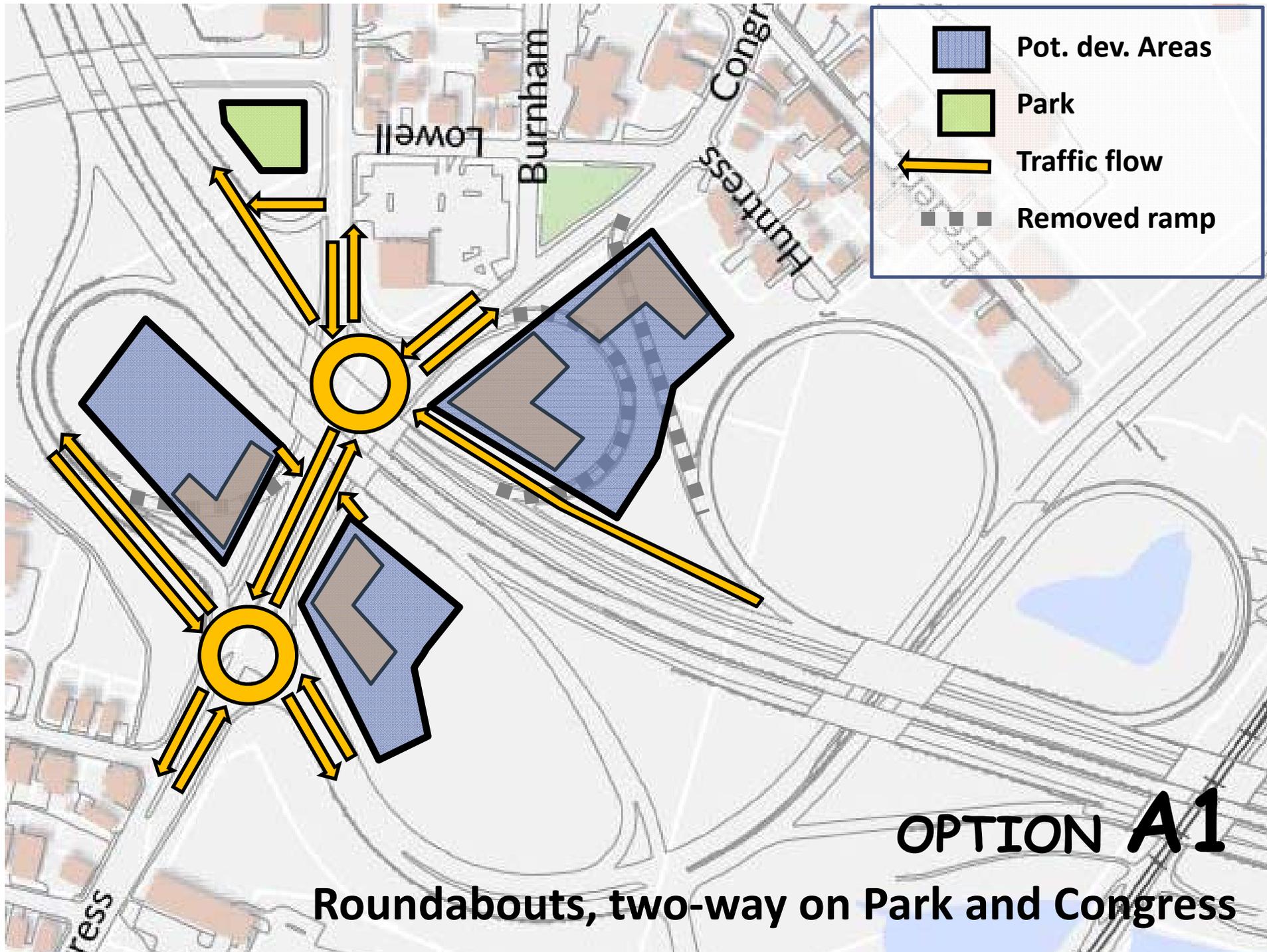
- Two-way streets
 - Reduce speeds, Ease access for vehicles, Shorten trips
- On-street parking
 - Provides buffer for pedestrians, supports development
- Transitions from freeway to street
 - Signalized ramps or Roundabouts (*will need pedestrian signals*)
- Bicycle facilities
 - Lanes, Paths or Boulevards

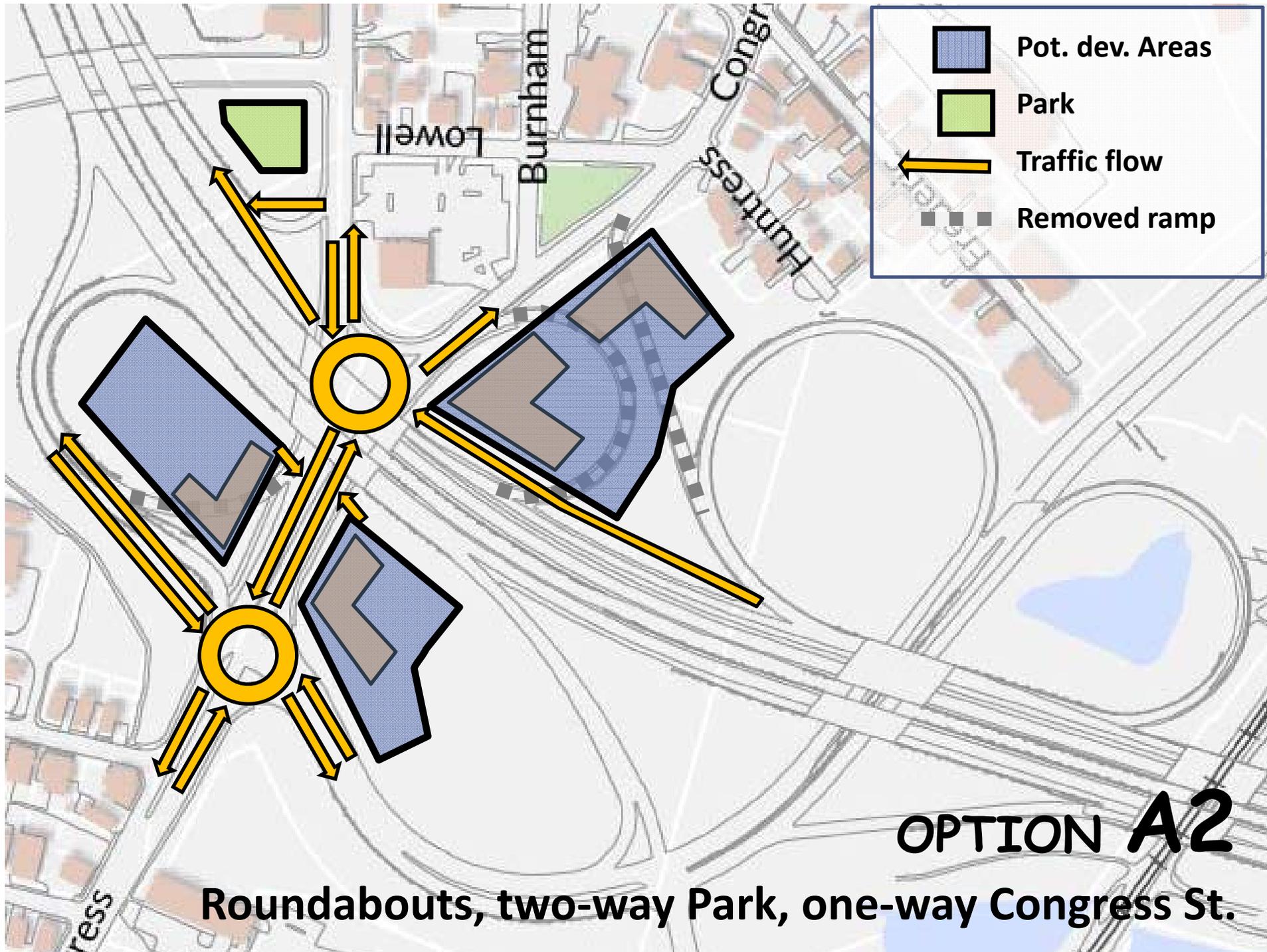


EXISTING CONDITONS



EXISTING CONDITONS





OPTION A2

Roundabouts, two-way Park, one-way Congress St.

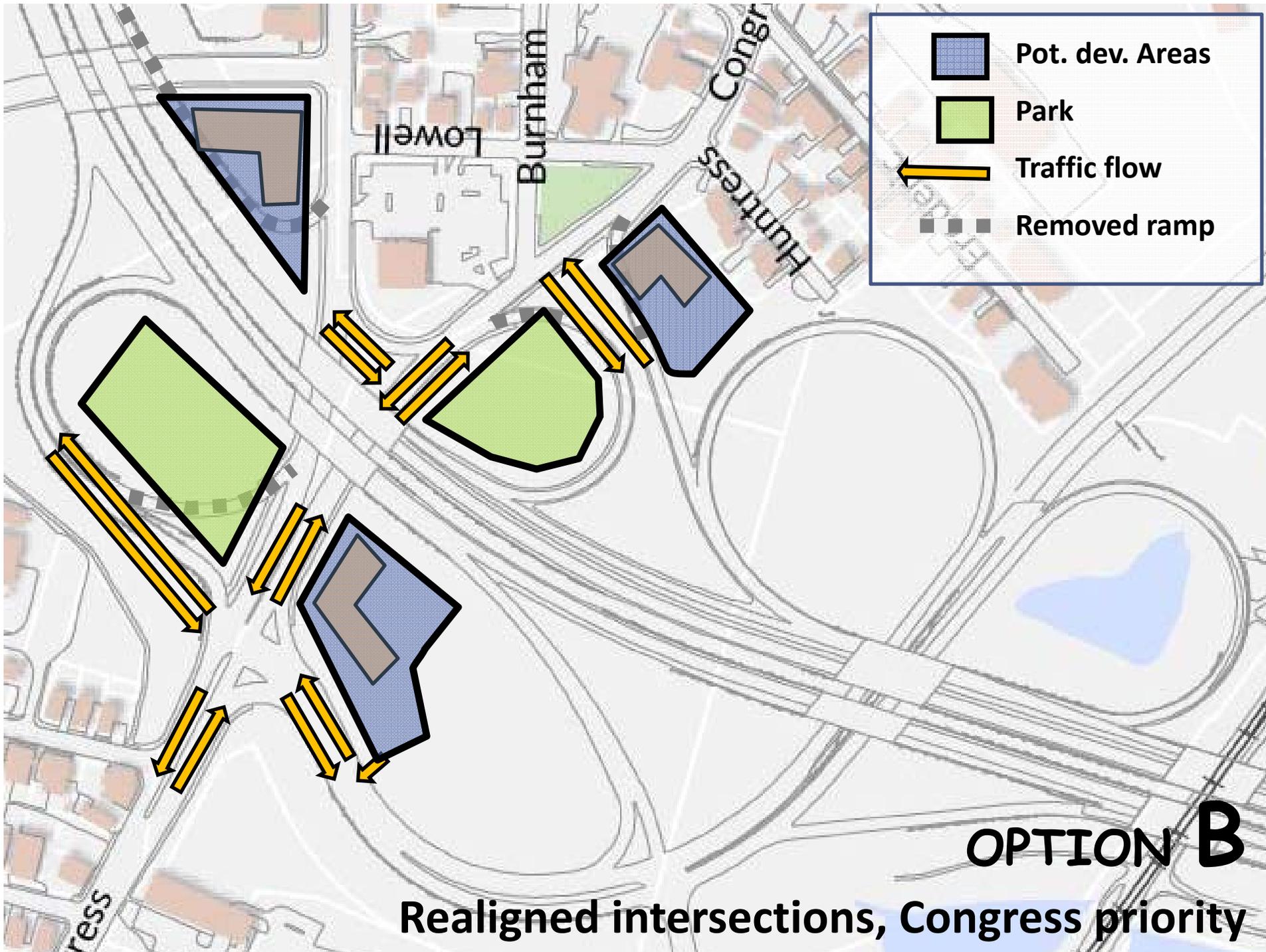
Why Roundabouts?

- Safer than traffic signals on average
- Higher capacity with fewer approach lanes than signals
- Reduce speeds
- Handle high left turning volumes better than signals

Roundabout Considerations

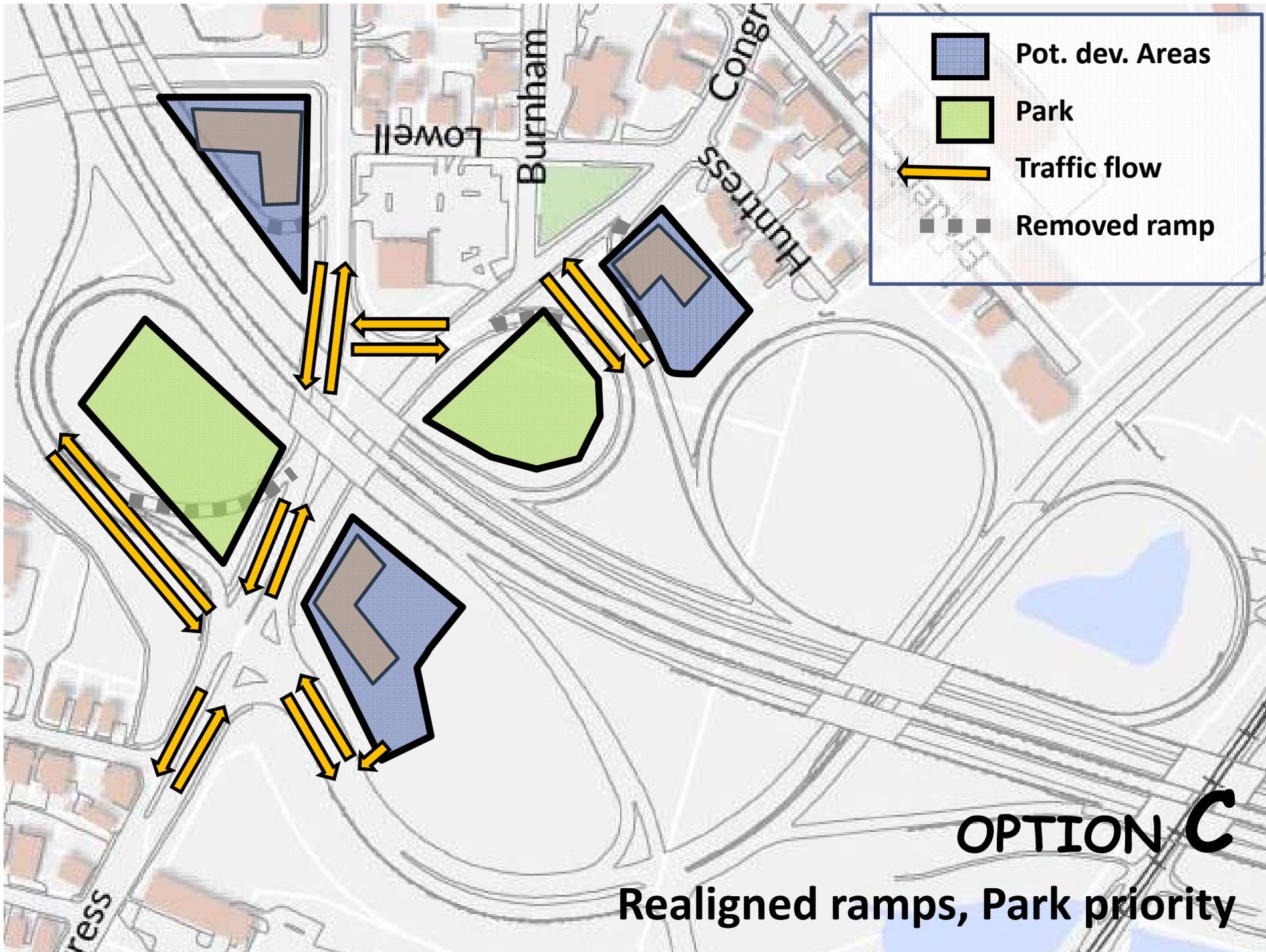
- More space required at node
- Signalized pedestrian crossings will likely be required (signals may require an exclusive pedestrian phase to meet the goals)
- Interstate 295 bridge pier is a constraint

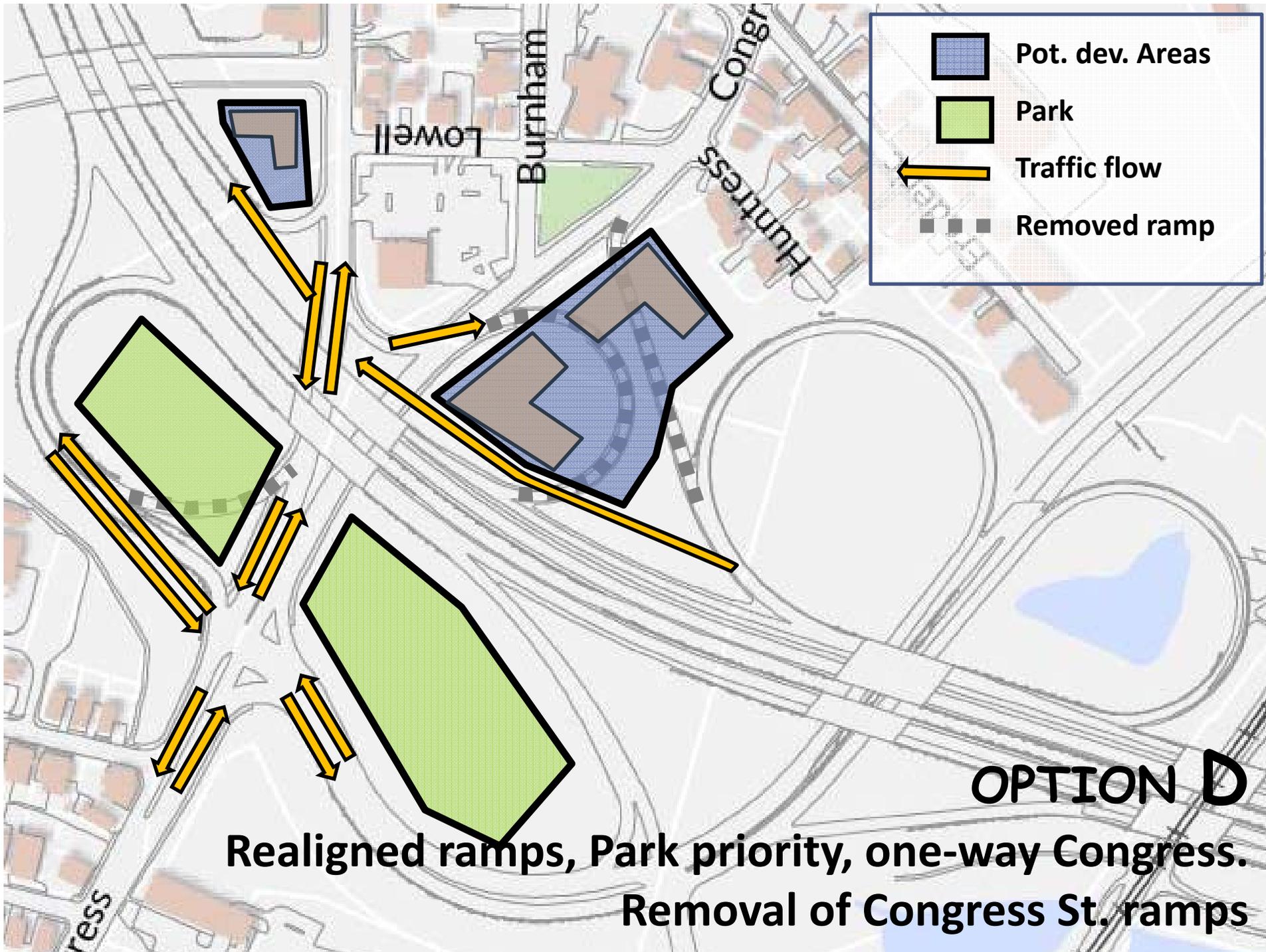




OPTION B

Realigned intersections, Congress priority





Your Charge tonight

- Evaluate Alternatives A through D
- Ramps:
 - What to do with the ramps?
 - Which ones go and which ones stay?
 - How to transition the remaining ramps into the street network?
- One-way versus two-way? Park and Congress?
- Identify Pedestrian Improvements, Bicycle Routes, Development or Conservation Areas