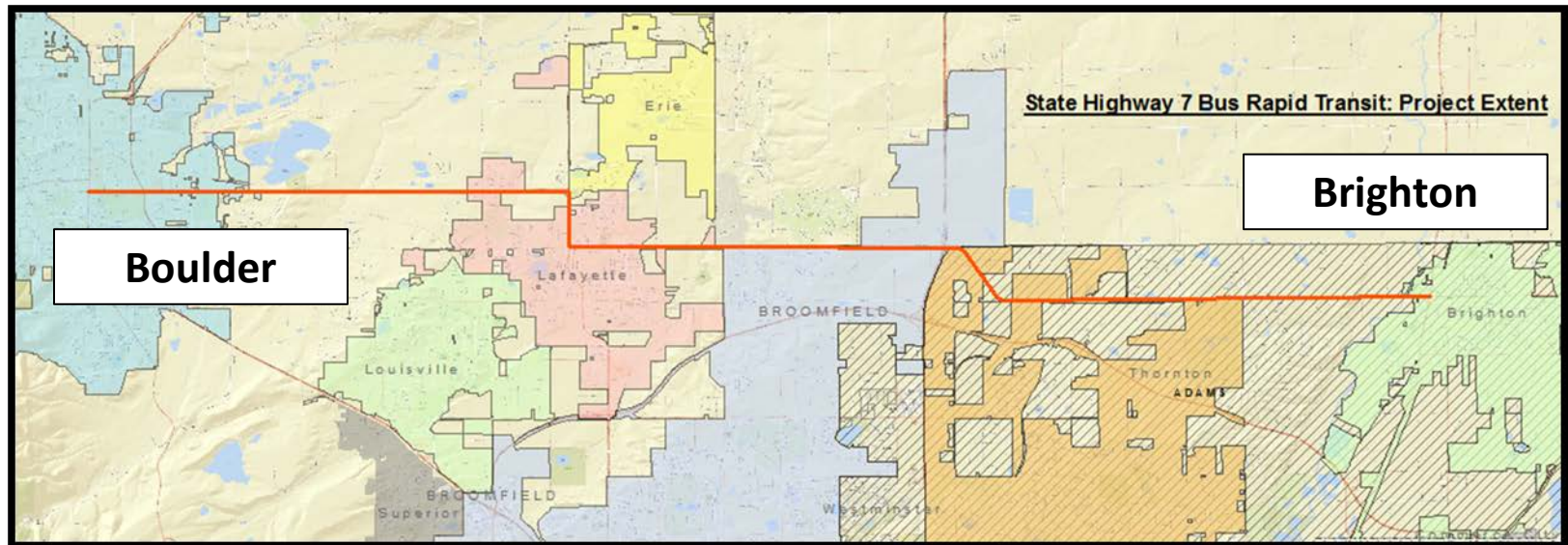


# State Highway 7 Bus Rapid Transit Study



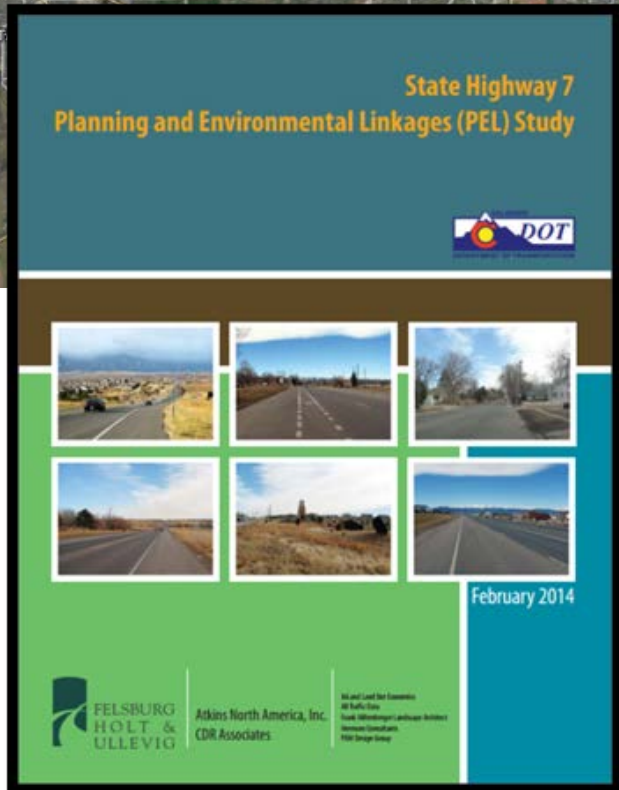
# What we're doing a nutshell...

- Understanding the feasibility of implementing bus rapid transit (BRT) to provide east/west mobility options from Boulder to Brighton
- Planning for multimodal transportation improvements between US 287-75<sup>th</sup> Street





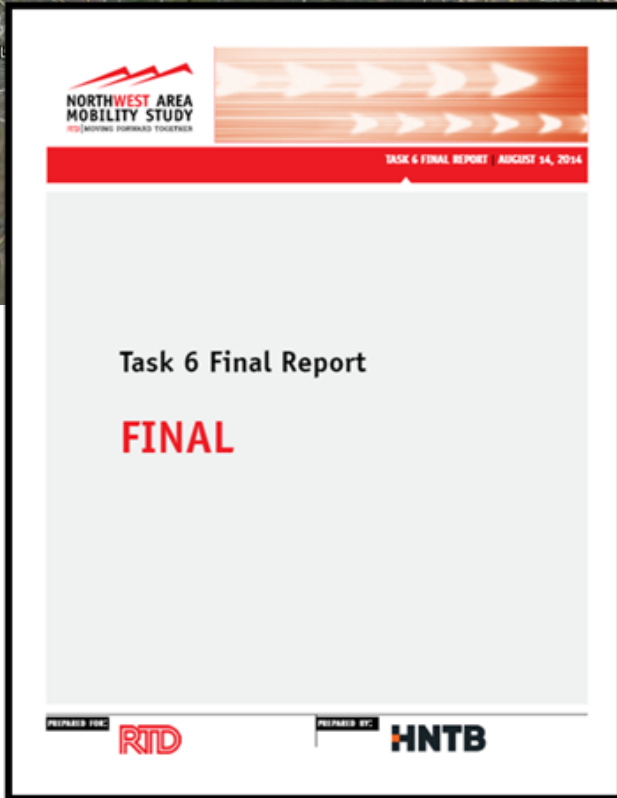
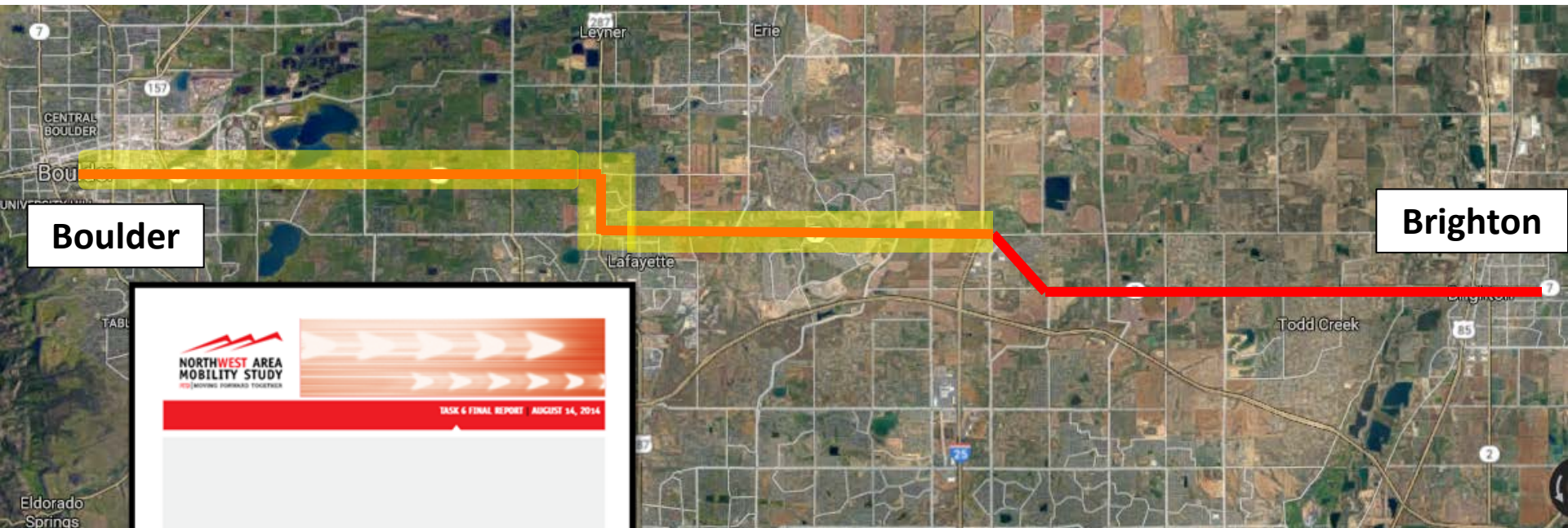
# The SH 7 BRT Study Builds on Recent Efforts



## CDOT SH 7 Planning and Environmental Linkages Study

- Conducted transportation needs analysis
- Identified existing and future corridor conditions
- Collaboratively identified transportation enhancements

# The SH 7 BRT Study Builds on Recent Efforts



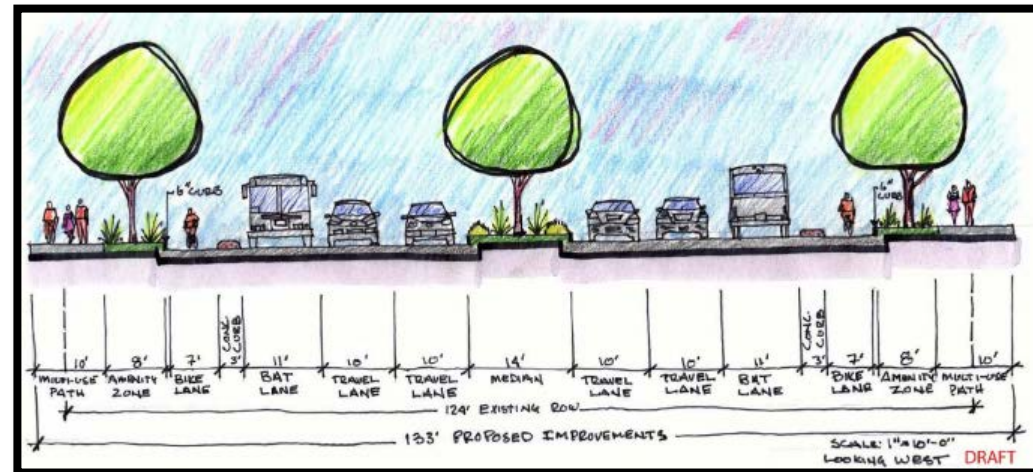
- Northwest Area Mobility Study**
- Preliminary evaluations of BRT feasibility on 6 regional corridors
- SH 7 (Boulder to I-25) showed strongly for BRT feasibility



# Ongoing Studies & Projects on the SH 7 Corridor

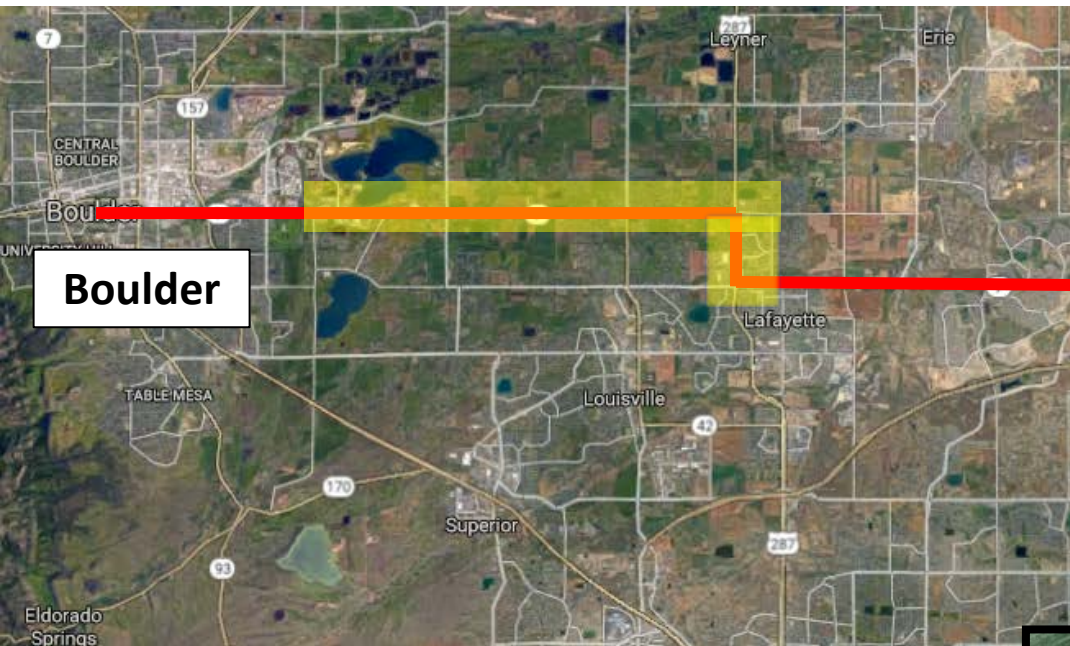


- Envisioning future transportation improvements from Folsom to 75<sup>th</sup> Street
- Evaluating impacts from alternative designs
- Project supports BRT through Boulder





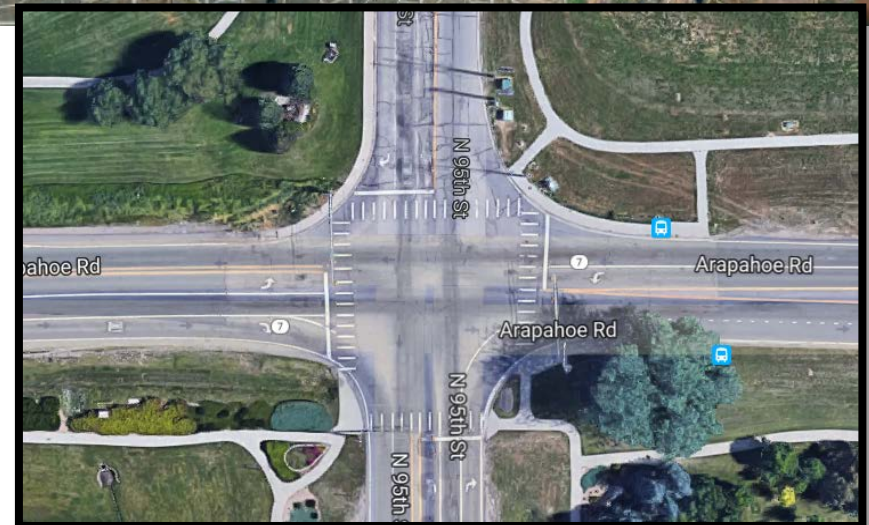
# Ongoing Studies & Projects on the SH 7 Corridor



CDOT- SH 7 Adaptive Signals & Fiber Project (Baseline/US287 to Cherryvale Rd.)

## CDOT Signal Upgrades and Fiber Installation Project (Summer 2017)

- Cherryvale\* to Baseline/US287
- Installing fiber optic communication utilities
- Upgrading signal boxes
- Upgrading signal detection



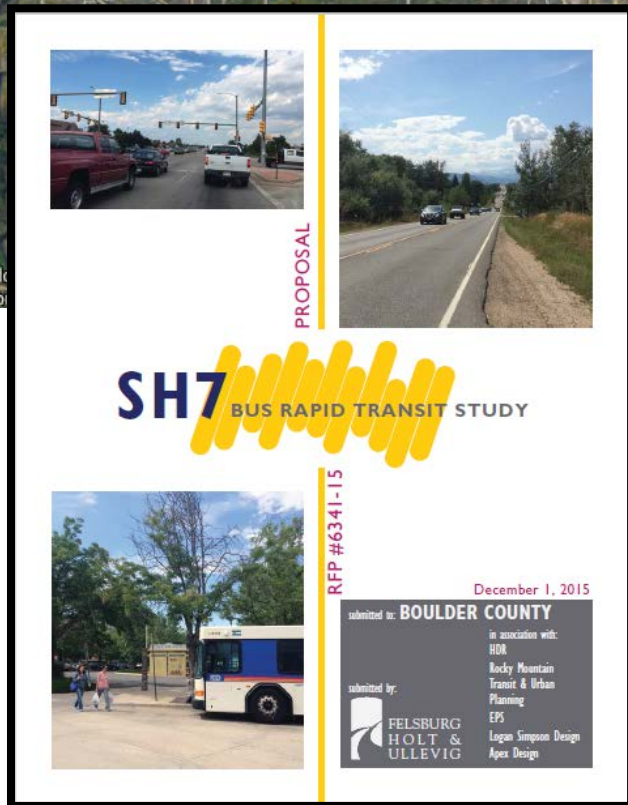


# How the SH 7 BRT Study Fits in:



Boulder

Brighton



- Establishes Feasibility of BRT Linkage for study from Boulder to Brighton 75<sup>th</sup> Street and US 287
- Provides Ridership Projections data
- Makes preliminary estimates for transportation improvements

# Collaboration:

Strong project support from local governments  
and agencies





# Bus Rapid Transit (BRT)

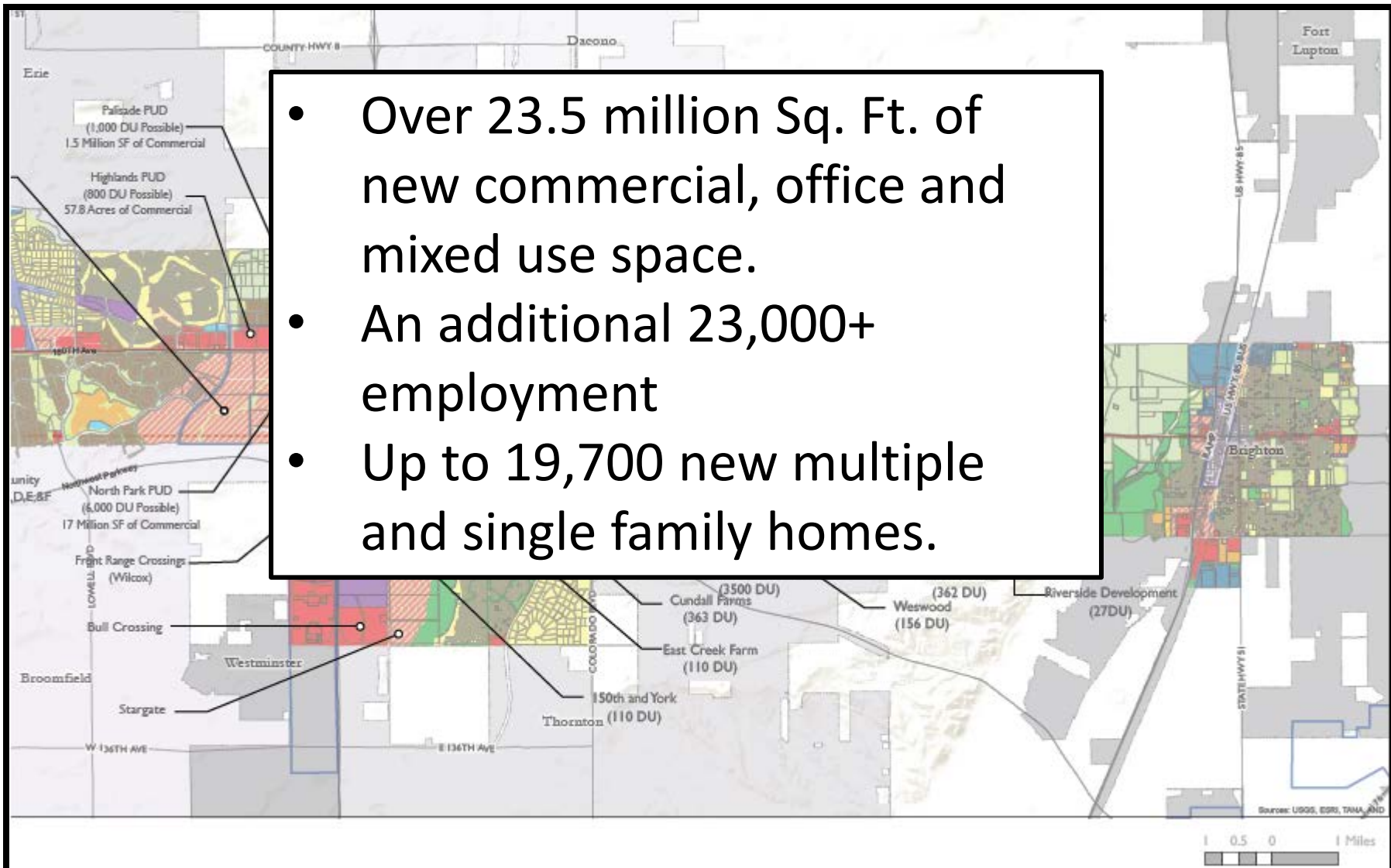
# West Corridor Planned Growth by 2040



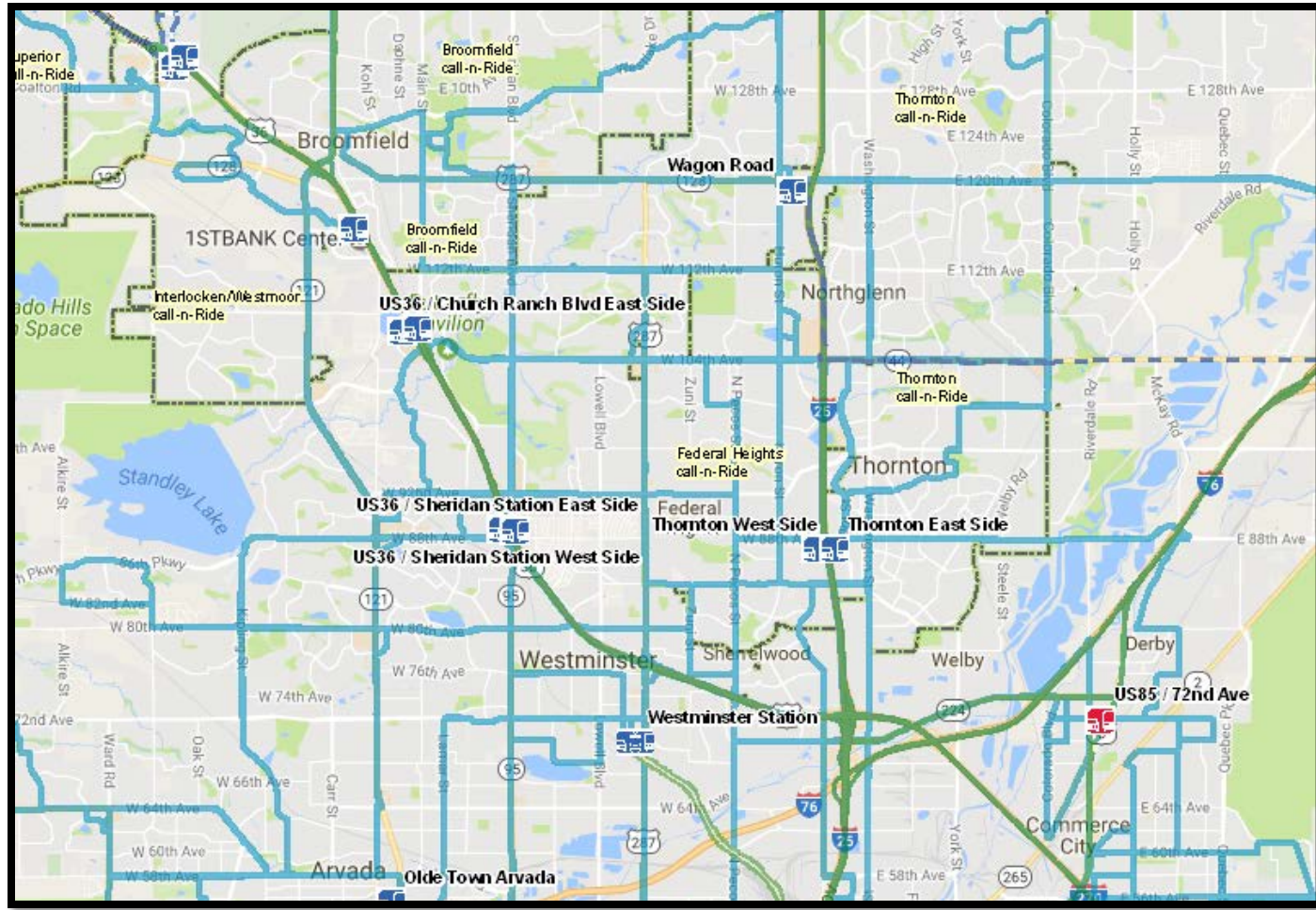


# East Corridor Planned Growth by 2040

- Over 23.5 million Sq. Ft. of new commercial, office and mixed use space.
- An additional 23,000+ employment
- Up to 19,700 new multiple and single family homes.

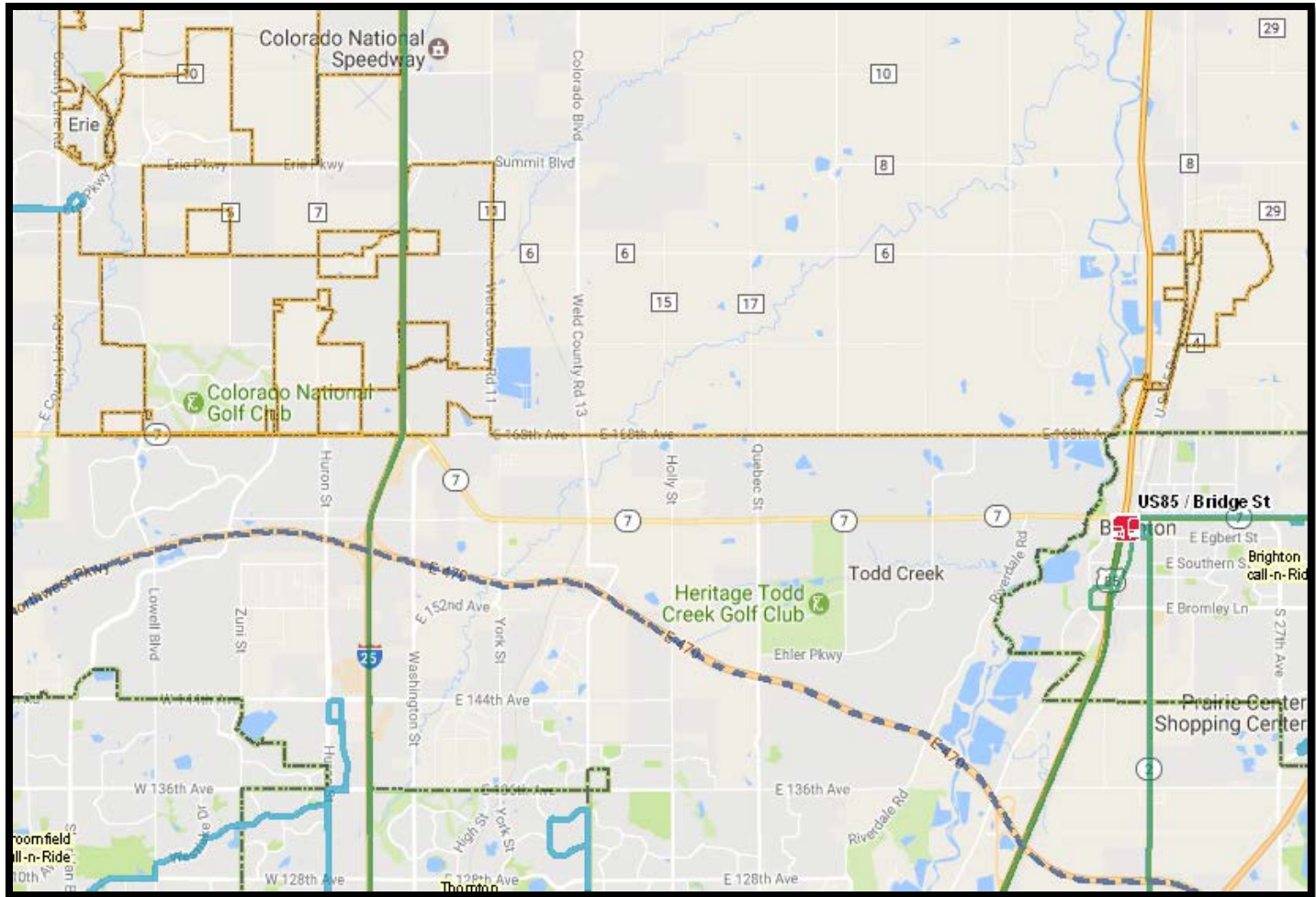


# RTD Route Density in North Denver Metro Area



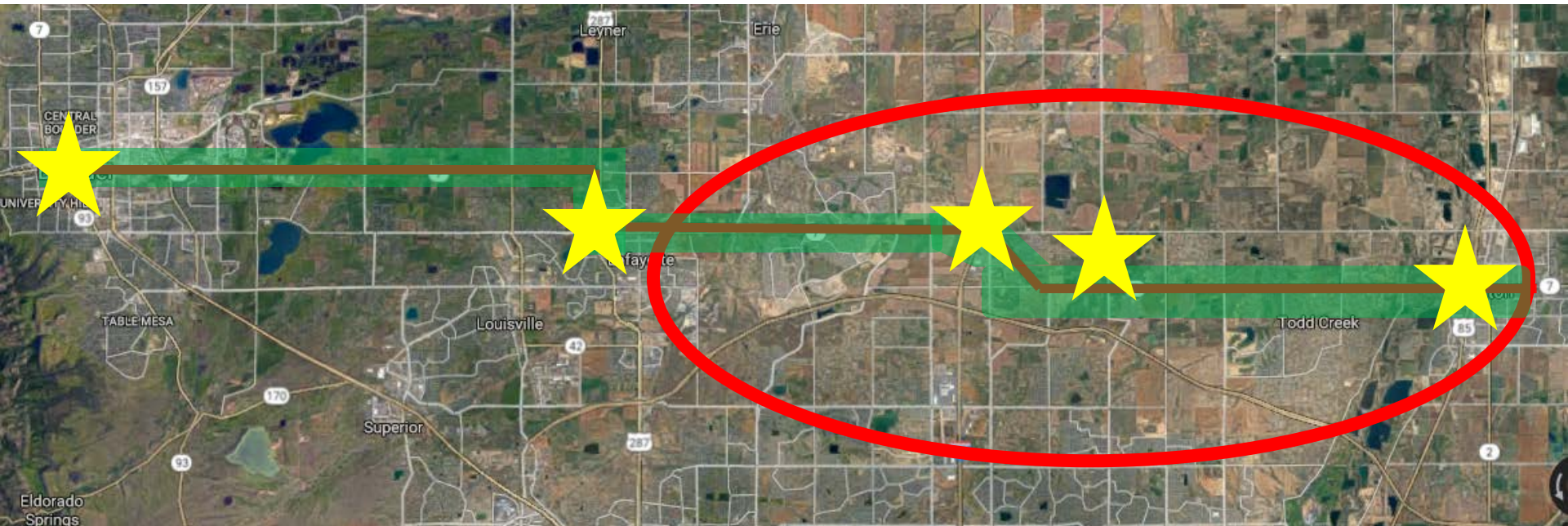


## RTD Route Density around SH 7 & I-25 (same map scale)



# A Need for Transit

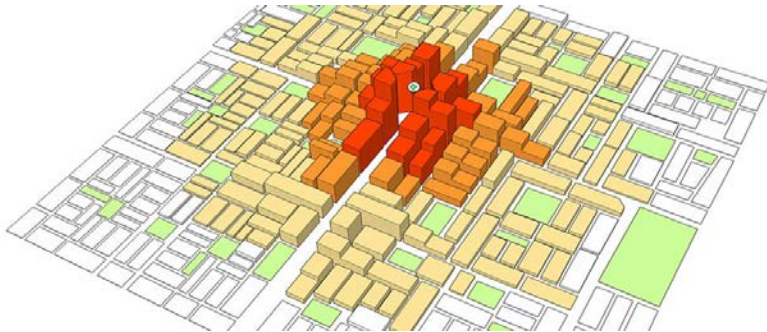
- No east/west transit service east of Lafayette on SH7
- Move more people on the corridor with less need for highway expansion
- SH 7 Transit would provide connections to other transit - North Metro Rail, Bustang, RX/RC, Route 120, L Route, Boulder Transit Routes





# BRT Supportive Development

This is the fastest growing area of Metro  
Denver



But...

Land use development must be  
compatible with transit

Growth needs to focus around nodes (future transit stations)





# Density around Station Areas

Minimum of 17 population + employment per acre  
&  
A minimum of 1.5 Floor Area Ratio (FAR)

2015

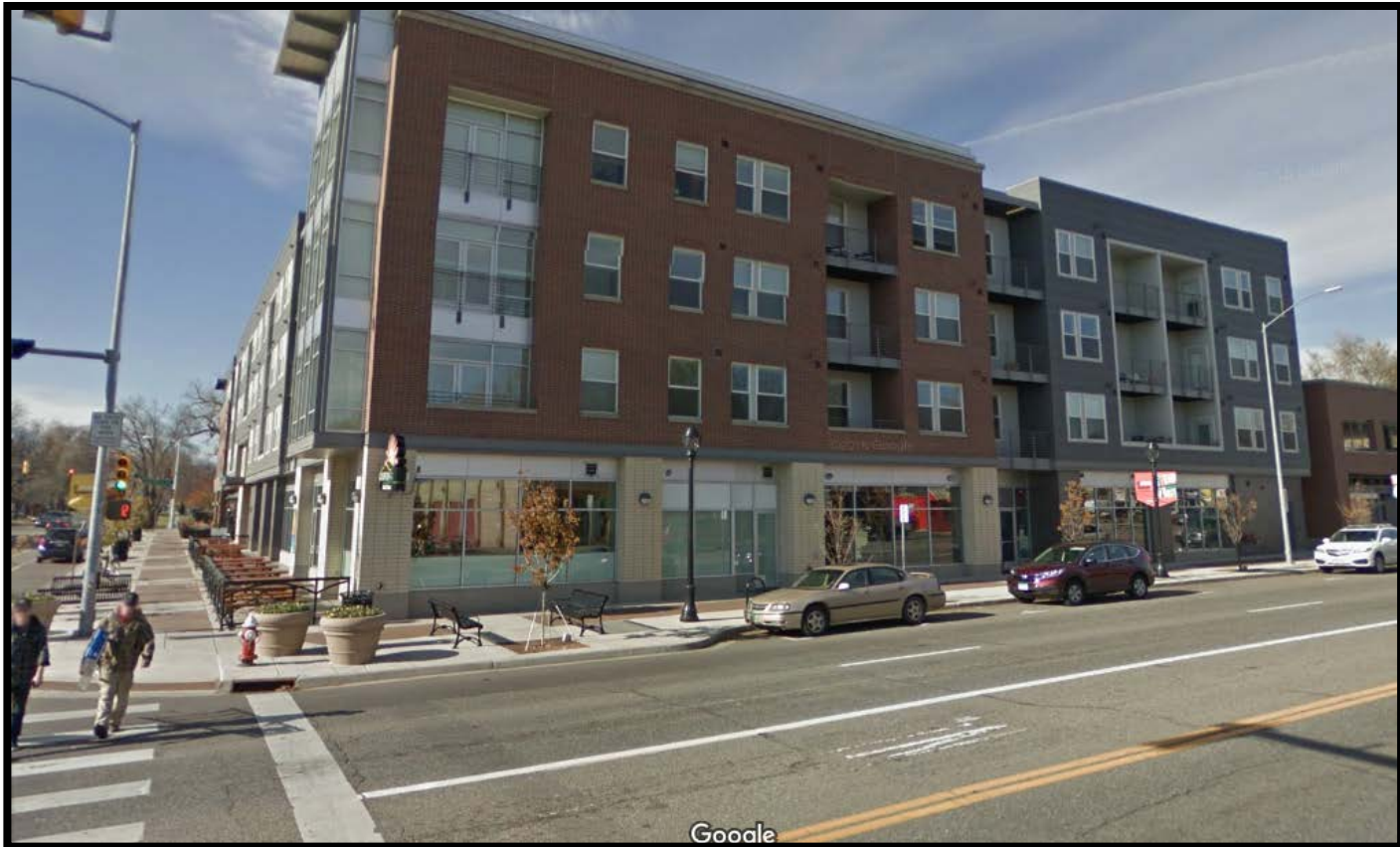


2040



# Mixed Use

- Housing
- Office
- Commercial
- Services





# First and Final Mile

Supportive of walking and biking



# Traits that encourage BRT supportive Land Uses



- Strong real estate market



- Limited developable land



- Land use policies that require density and discourage parking minimums



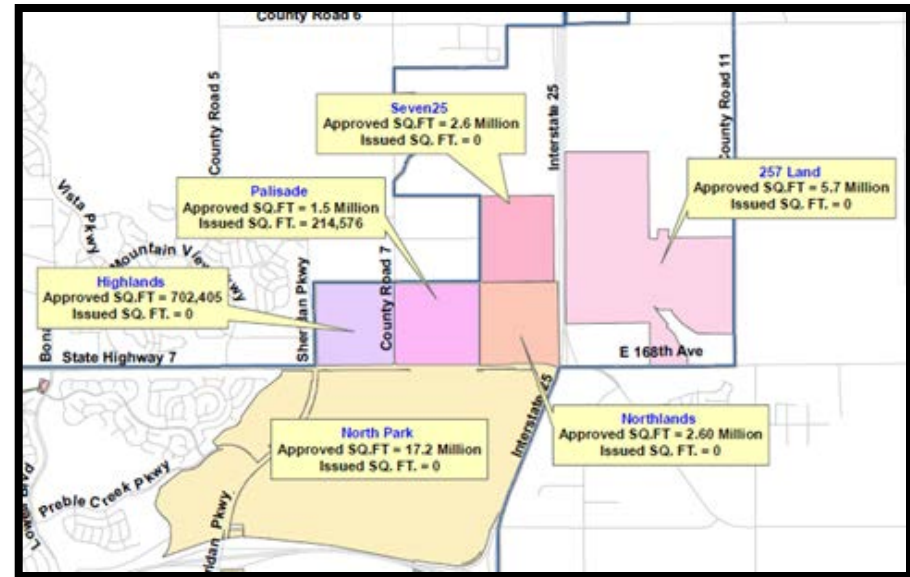
- Good Transit service
  - Frequent and reliable
  - Competitive travel times
  - Multiple destinations
  - Permanent infrastructure investment (nice stations!)



# Development Challenges

- Job growth typically gravitates toward existing job centers
- Competition
- Broomfield and Thornton are pursuing R&D which currently has no track record in the area
- Timing of development is uncertain

Broomfield Planned Dev.



# Phasing

How do we get to BRT supportive land uses?

- Identify preferred station areas and set aside ROW
- Concentrate development & encourage density around station areas
- Ensure pedestrian and bike access to stations
- Surface parking now, structured parking in the future when density warrants
- Municipalities should develop overlay districts around station areas



# Station Area Overlay

- Create regulatory incentives to encourage infill and redevelopment
- Use incentive-based programs to encourage compatible forms and public amenities (i.e. grocery stores)
- Create overlays with higher minimum densities and higher FAR, including Form-Based Code
- Lower parking requirements

## DOWNTOWN BOULDER TRANSIT CENTER

COMPARABLE CONDITION	EXISTING/ZONING	FUTURE LAND USE	BRT OPTIMAL
<b>PARKING</b> Parking Spaces per Square Foot (sf) No Minimum in Downtown	0 - 3.3 spaces per 1,000 sf non-residential 	0 - 3.3 spaces per 1,000 sf non-residential 	<ul style="list-style-type: none"> <li>No minimum parking requirements</li> <li>Shared parking</li> <li>Parking structures</li> </ul>
<b>SETBACK</b> Front Setback No Minimum in Downtown or MU	0' - 25' 	0' - 25' 	<ul style="list-style-type: none"> <li>Reduce setback to encourage a pedestrian scale</li> </ul>
<b>DEVELOPABLE</b> % of Undeveloped Land Available for Development 0%		Redevelopment Options	<ul style="list-style-type: none"> <li>Minimal vacant land or open space within 1/3 mile</li> <li>Infill and redevelopment</li> </ul>
<b>CONNECTIVITY</b> Nodes per Square Mile (mi <sup>2</sup> )	370 Nodes	370 Nodes	<ul style="list-style-type: none"> <li>150 intersections per mi<sup>2</sup> or blocks with less than 4000' in length</li> </ul>
<b>TRANSIT</b> Connections to Other Modes	Local & Regional Bus	Local & Regional Bus	<ul style="list-style-type: none"> <li>Both local and regional transit connections</li> </ul>
<b>BIKE/PEDESTRIAN</b> Walking Connections	Local & Regional Trails	Local & Regional Trails	<ul style="list-style-type: none"> <li>Pedestrian and bike connection trails</li> </ul>
<b>PEDESTRIAN FLOW</b>	Crosswalks, Bridges & Trail Connections	Crosswalks, Bridges & Trail Connections	<ul style="list-style-type: none"> <li>Designs should favor walking or biking over driving</li> </ul>
<b>OVERLAY</b> Existing TOD or Redevelopment Overlay	Central Area General Improvement District	Central Area General Improvement District	<ul style="list-style-type: none"> <li>Existing density supported policies, guidelines, and incentives, and/or TOD overlays</li> </ul>

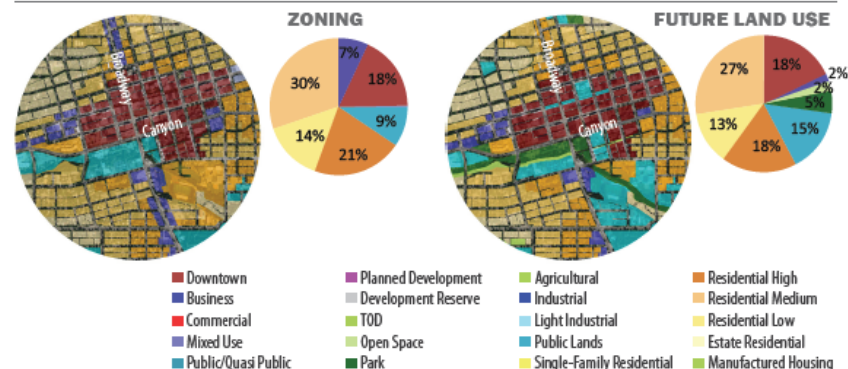
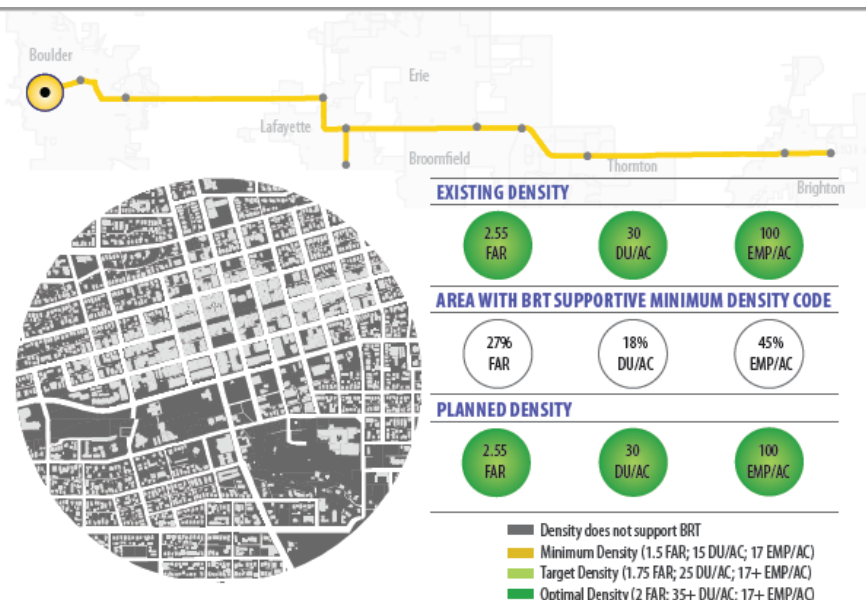
### RECOMMENDATIONS

Continue to build underground parking garages to increase developable land area.

Continue to provide easy bicycle and bus transit both locally and regionally.

Continue to encourage a wide range of land use.

Continue to require minimum setbacks.



Continue to support the Central Area General Improvement District and their efforts to provide ease of mobility to Downtown.

Increase the amount of active alleyways to enhance pedestrian connectivity.

# Station Areas

- Planning for around 10-15 total station areas for the corridor
- Some station areas are determined: I-25, Boulder Transit Center, etc.
- Others will depend on transit routing and will be determined in the Station Area Design Study





# 2040 Ridership Modeling Results & Corridor Travel Times

## Mixed Traffic with Transit Signal Priority and Queue Jumps

**6,100 - 6,500** Boardings per Day  
Peak Hour Travel Times: **76-77 minutes end-to-end**

## Free Flow (Bus on Shoulder or Exclusive lane)

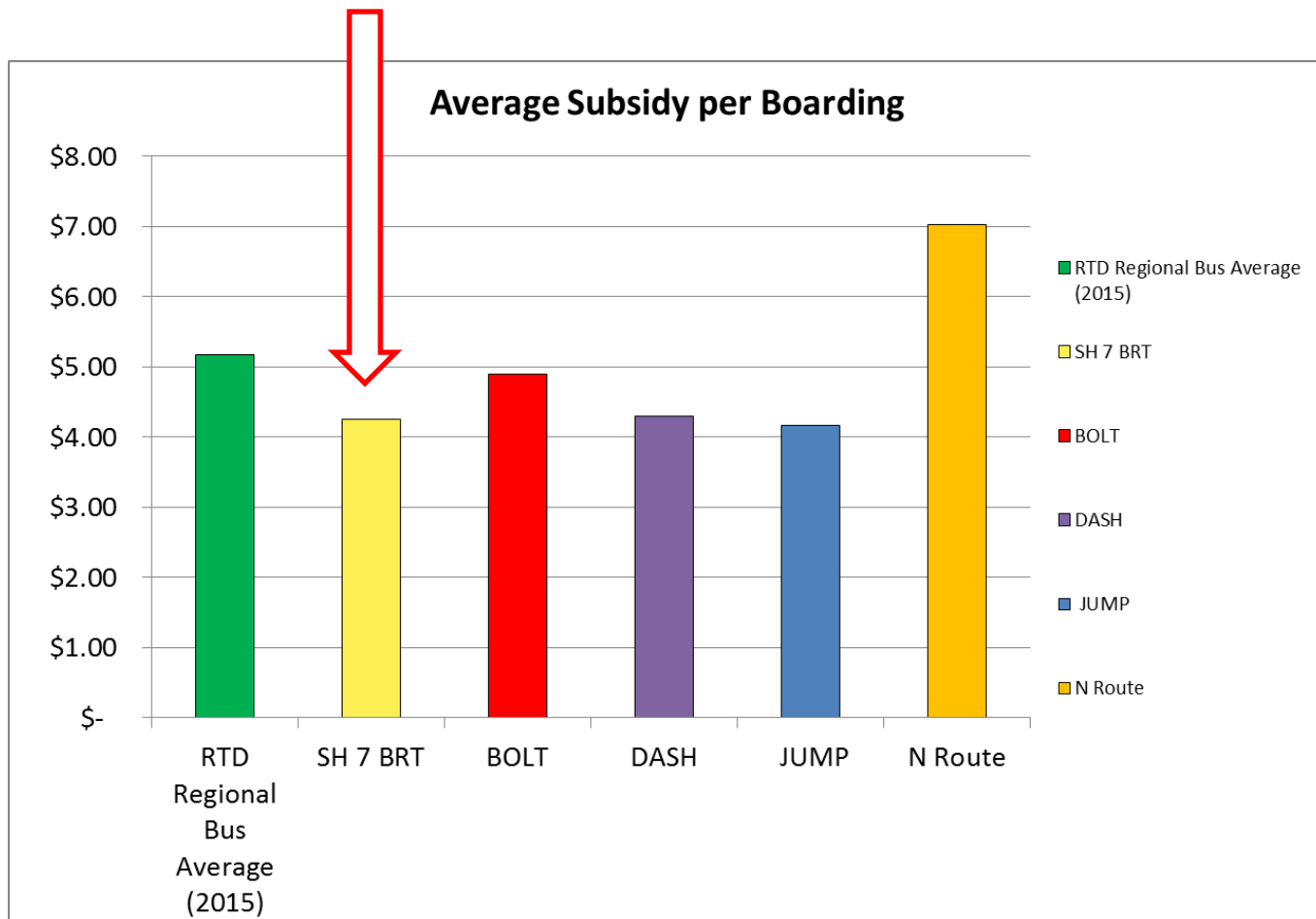
**8,600 – 8,700** Boardings per Day  
Peak Hour Travel Times: **54 minutes**

## Future Projected Automobile Travel Time on the Corridor End-to-End

**84 minutes**

# Costs

SH 7 BRT Boarding Subsidy: \$4.26



# Next Steps

- Initiate **SH 7 Station Area Design** Study (Summer-Fall 2017)
- Establish MOU with corridor partners
- Apply for funding to complete a comprehensive **SH 7 BRT Plan** (2018-2020)
- Pursue opportunities (funding/working with developers) to make incremental transportation system improvements corridor wide
- Work with RTD to establish transit on the eastern portion of the corridor