



WELCOME

to the

US 34 Planning and Environmental Linkages Study

PUBLIC MEETING



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PURPOSE AND NEED



» **The purpose of highway improvements is to preserve US 34 as a vital east-west transportation corridor. Improvements will link and move people, goods, and information reliably and adapt to future demands and funding opportunities.**

Highway Improvements are needed to:

Increase Safety

The need for corridor improvements to support the increases in development and travel demand has resulted in safety concerns at intersections and other locations along the US 34 corridor.

Accommodate increased travel and tourism demands to maintain the economic vitality of the region.

Northern Colorado communities are among the fastest growing in the nation. Growth has spurred economic benefits and provides funding to improve infrastructure and amenities that make these communities desirable.

Increase reliability of east-west regional travel, while balancing local access, mobility and freight needs.

Traffic congestion can dampen the benefits of job growth and recreation opportunities that the region provides to new and longtime residents.

US 34 PEL Study Goals and Outcomes

- A Planning and Environmental Linkages (or PEL) study typically identifies transportation and environmental concerns before project construction funding is identified and before specific problems are known.
- The goals and expected outcomes of the US 34 PEL study are:
 - Develop a vision for the US 34 corridor
 - Identify transportation solutions (near, mid, and long-term) and priorities
 - Establish costs and pursue funding for projects
 - Develop implementation strategies
 - Facilitate project development and construction
- The PEL study will leverage past studies and agreements in the corridor, and will identify projects that can move into design and construction immediately.

Related Studies

- **US 85 PEL Study**

This is an ongoing study addressing the safety and operational needs along US 85 in northern Colorado between I-76 and the Town of Nunn. Recommended US 34/US 85 interchange as early action project.

- **US 34 Business Environmental Assessment and Widening Project**

This project widened US 34 Business in west Greeley to four lanes in 2009.

- **North I-25 Environmental Impact Statement**

In 2011, this study approved the following within the US 34 PEL study area: new tolled express lane and general purpose lanes on I-25 north to SH 14; commuter rail from Thornton to Fort Collins; bus service on I-25 from Fort Collins to Denver and on US 85 from Greeley to Denver; and reconstruction of the I-25/ US 34/ Centerra Parkway interchange. The interchange design is underway.

- **SH 402 Environmental Assessment**

In 2008, this study approved widening SH 402 from two to four lanes between US 287 and I-25.

- **SH 402 Access Control Plan**

The City of Loveland and CDOT are currently scoping an Access Control Plan for SH 402 from US 287 to I-25.

- **US 34 Environmental Assessment**

In 2007, this study approved widening US 34 to six lanes between US 287 and LCR 3 in Loveland and Larimer County.

- **O Street Arterial Corridor Study**

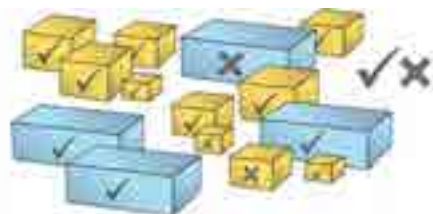
In 2008, Weld County, Greeley, and Windsor completed a study that identified a preferred alignment to connect Crossroads Blvd and O Street between SH 257 and 83rd Avenue.

- **Freedom Parkway Corridor Planning and Access Control Plan**

This is an ongoing planning effort to define a vision, future road connections, and an Access Control Plan for the Freedom Parkway corridor (LCR 18, WCR 54, 37th Street).

ALTERNATIVE DEVELOPMENT PROCESS

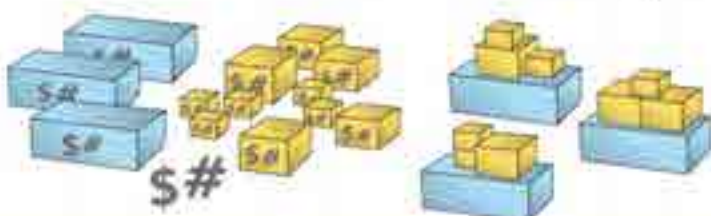
Level 1



Qualitative look at core concepts and supplemental elements.

Level 2

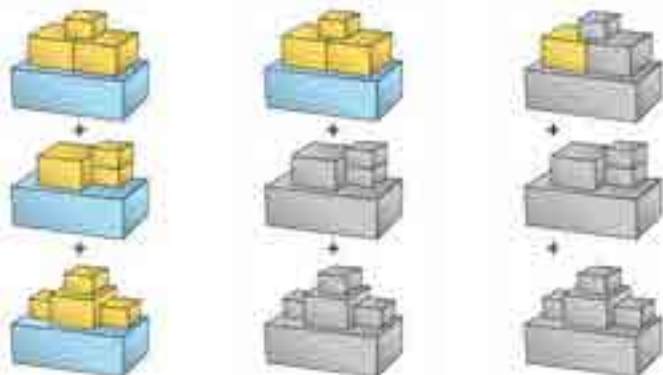
Core Concepts + Supplemental Elements → Assemble Alternatives for Each PEL Segment



Core concepts and supplemental elements that address purpose and need at least partially are characterized *quantitatively* understand costs and benefits.

Level 3

Corridor Alternative → Corridor Alternative Phased by Segment → Corridor Alternative Phased by Element



Alternatives are packaged based on priorities, criteria, and funding available at the time that the projects could be implemented. Could be for a full corridor, a full segment, or an individual element within a segment.

Summary of Alternatives Development Goal is to develop and advance many Alternative Elements

Three Levels of Evaluation:

- » Level 1 - Does the alternative address the Purpose and Need?
- » Level 2 - Incorporates quantitative measures based on advanced traffic and engineering, focus on the corridor segments.
- » Level 3 - Packaged alternatives - how can they be combined? Comparing costs and benefits.

CR 27-Big Thompson Elementary



Near Term

- Consider eastbound left turn lane
- Modify head-in parking

Rossom Drive to Morning Drive



Near Term

- Extend left turn lanes
- Improve shoulders
- Improve westbound lane transition
- Improve roadway drainage

FOOTHILLS SEGMENT

3.1 MILES, LARIMER COUNTY ROAD 27 TO MORNING DRIVE



VISION/EXPECTATIONS

- Implement Access Control Plan
- No new through-lane capacity
- Auxiliary/turn lanes where warranted
- Avoid adding new signals

Wilson Avenue



Near Term/Mid Term

- Improve multi-modal facilities
- Evaluate signal timing
- Improve auxiliary lanes

Taft Avenue

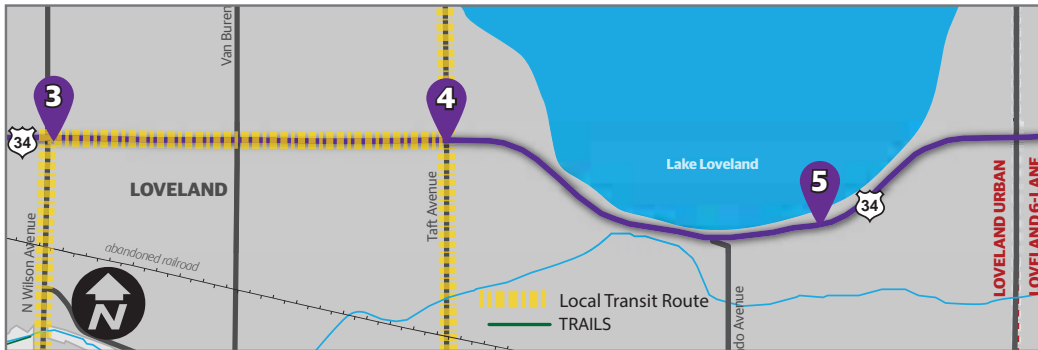


Near Term/Mid Term

- Improve multi-modal facilities
- Evaluate signal timing
- Improve auxiliary lanes

LOVELAND URBAN

3 MILES, MORNING DRIVE TO N. GARFIELD AVENUE



VISION/EXPECTATIONS

- Implement Access Control Plan
- No new through-lane capacity
- Auxiliary/turn lanes where warranted
- Avoid adding new signals
- Add multi-modal components, reduce barrier effect

Lake Loveland



Near Term/ Mid Term

- Improve access to parking areas
- Improve pedestrian crossings

Cleveland-Lincoln (US 287)



Near Term

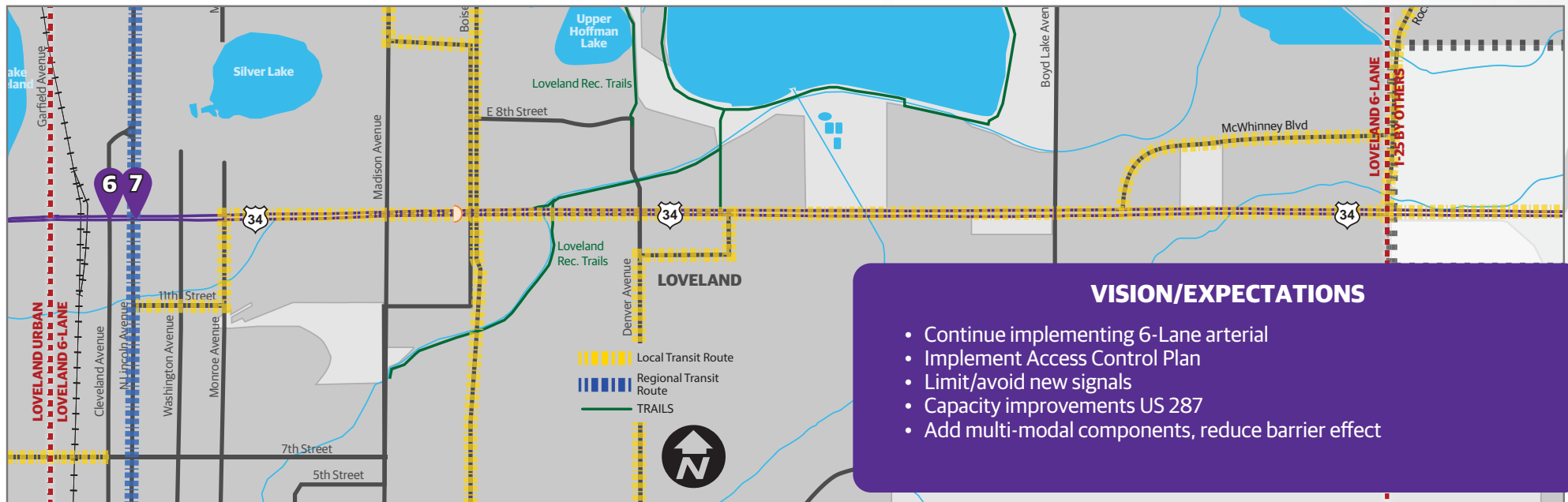
- Possible early project; extend left turn lanes in existing medians

Mid Term /Ultimate-Long Term

- Update options from 1997 East-West Mobility Study
 - Double roundabout
 - Additional turn lanes

LOVELAND 6-LANE

3.8 MILES, N. GARFIELD AVENUE TO ROCKY MOUNTAIN AVENUE



Centerra-Thompson Parkways



Near Term

- I-25 project to add through lanes for
- 6-lanes total

Mid Term

- Possible interchange as funding allows
- Innovative Intersection Strategies

Ultimate-Long Term

- Interchange per access control plan as funding allows

Larimer Parkway



Near Term

- Auxiliary turn lanes (double lefts)

Mid Term

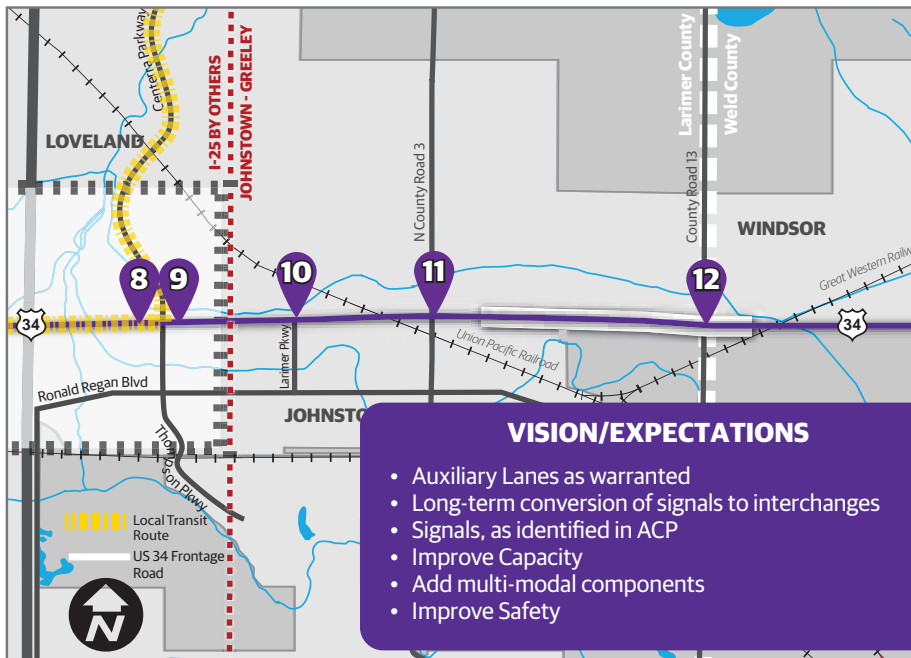
- Possible interchange as funding allows
- Innovative Intersection Strategies in interim

Ultimate-Long Term

- Interchange connected to Centerra-Thompson
- Parkways per access control plan as funding allows

JOHNSTOWN - GREELEY

5.9 MILES, CENTERRA PKWY/THOMPSON PKWY TO EAST OF US 257



VISION/EXPECTATIONS

- Auxiliary Lanes as warranted
- Long-term conversion of signals to interchanges
- Signals, as identified in ACP
- Improve Capacity
- Add multi-modal components
- Improve Safety

UPRR / County Road 3



Near Term

- Consider signalization warranted

Mid-Term

- Possible interchange as funding allows, combine with UPRR grade separation
- Innovative Intersection Strategies in interim

Ultimate-Long Term

- Interchange per access control plan as funding allows, incorporate UPRR grade separation

County Road 13/GWRR



Near Term

- Optimize Signalization

Mid-Term

- Possible interchange as funding allows
- Combine with GWRR grade separation
- Innovative intersection strategies

Ultimate-Long Term

- Interchange per access control plan as funding allows
- Incorporate GWRR grade separation

County Road 15



Near Term

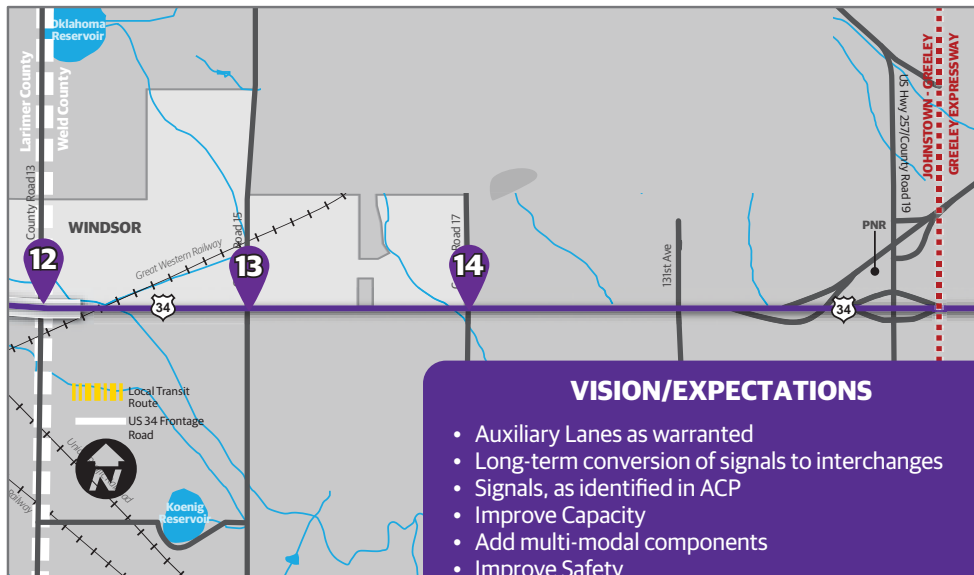
- Modify access (3/4 turn) per access control plan

Mid Term

- Consider innovative intersection strategies (unsignalized)

JOHNSTOWN - GREELEY

5.9 MILES, CENTERRA PKWY/THOMPSON PKWY TO EAST OF US 257



VISION/EXPECTATIONS

- Auxiliary Lanes as warranted
- Long-term conversion of signals to interchanges
- Signals, as identified in ACP
- Improve Capacity
- Add multi-modal components
- Improve Safety

County Road 17



Near Term

- Left turn lane, other signalization strategies

Mid Term

- Additional auxiliary or through lanes at the intersection
- Possible interchange as funding allows
- Innovative intersection strategies

Ultimate-Long Term

- Possible to retain at-grade intersection
- Interchange per access control plan as funding allows

Promontory Parkway



Near Term

- Evaluate for signalization when volumes warrant
- Possible interchange as funding allows
- Innovative Intersection Strategies

Ultimate-Long Term

- Possible to retain at-grade intersection
- Possible Interchange as funding allows

95th Avenue



Near Term

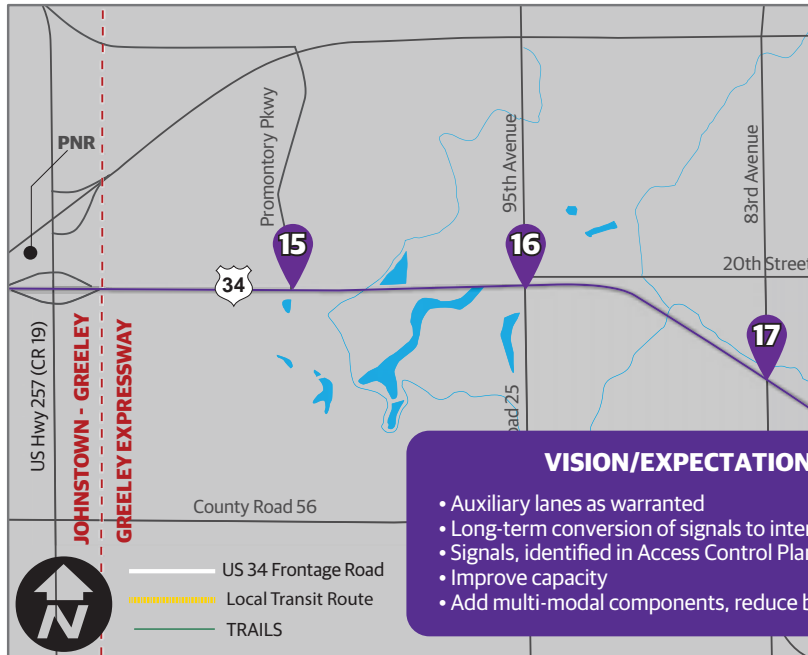
- Modify access (3/4 turn) per access control plan

Mid Term

- Consider innovative intersection strategies (unsignalized)

GREELEY EXPRESSWAY

8.9 MILES, EAST OF US 257 TO WEST OF 11TH AVE



83rd Avenue



Near Term

- Modify auxiliary turn lanes (separate left turns)

Mid Term

- Additional auxiliary or through lanes at the intersection
- Possible interchange as funding allows
- Innovative intersection strategies

Ultimate-Long Term

- Possible to retain at-grade intersection
- Interchange per access control plan as funding allows

71st Avenue



Mid Term

- Consider innovative intersection strategies (unsignalized)

65th Avenue



Near Term

- Modify auxiliary turn lanes (double left turns)

Mid Term

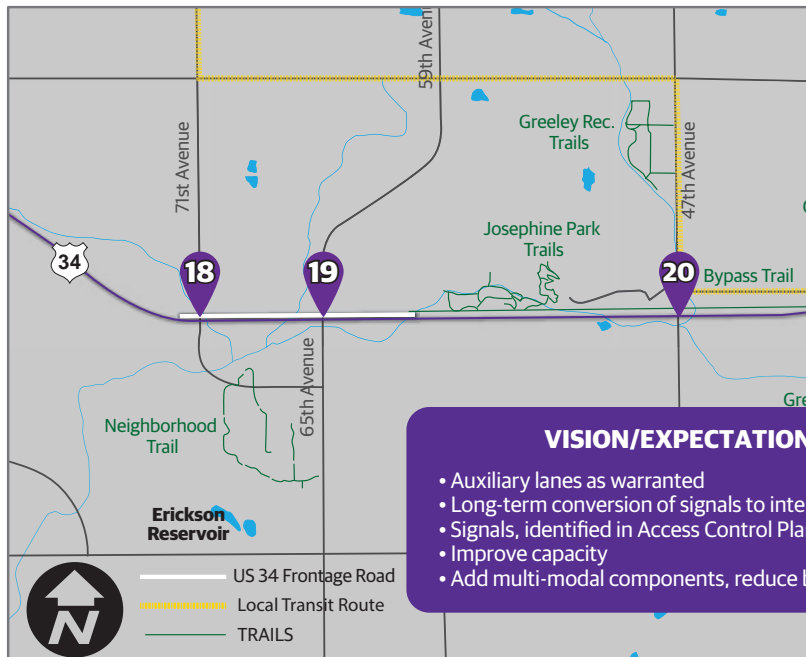
- Additional auxiliary or through lanes at the intersection on US 34
- Possible interchange as funding allows
- Innovative intersection strategies

Ultimate-Long Term

- Possible to retain at-grade intersection
- Interchange per access control plan as funding allows

GREELEY EXPRESSWAY

8.9 MILES, EAST OF US 257 TO WEST OF 11TH AVE



47th Avenue



Mid Term

- Additional auxiliary or through lanes at the intersection
- Possible interchange as funding allows
- Innovative intersection strategies

Ultimate-Long Term

- Possible to retain at-grade intersection
- Interchange per access control plan

35th Avenue



Mid Term

- Additional auxiliary or through lanes at the intersection
- Possible interchange as funding allows
- Innovative intersection strategies

Ultimate-Long Term

- Possible to retain at-grade intersection
- Interchange per access control plan

23rd Avenue



Near Term

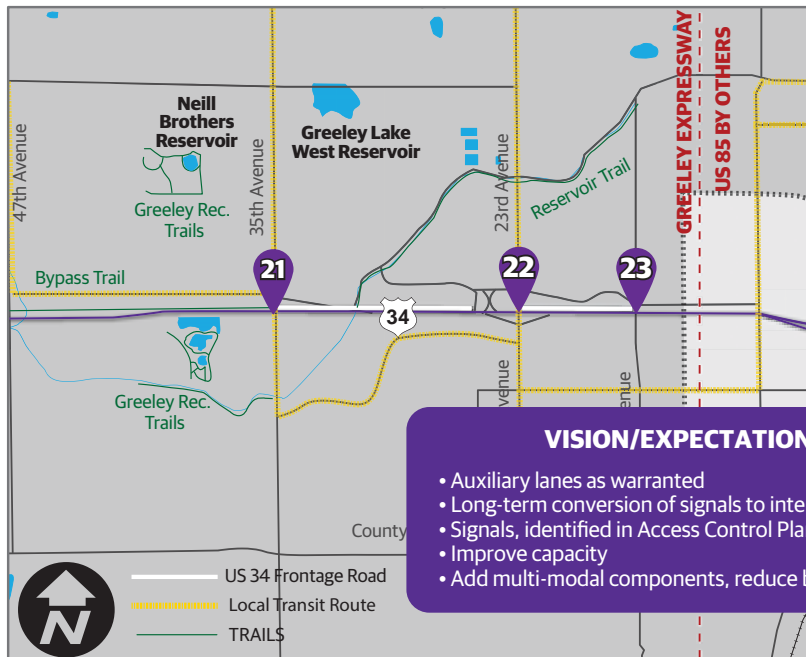
- Modify auxiliary turn lanes at intersections

Mid Term

- Improve westbound off-ramp deceleration lane

GREELEY EXPRESSWAY

8.9 MILES, EAST OF US 257 TO WEST OF 11TH AVE



17th Avenue



Near Term

- Signal strategies for pedestrian accommodation

Mid Term

- Additional auxiliary or through lanes at the intersection
- Innovative intersection strategies

Ultimate-Long Term

- Possible to retain at-grade intersection

Near Term

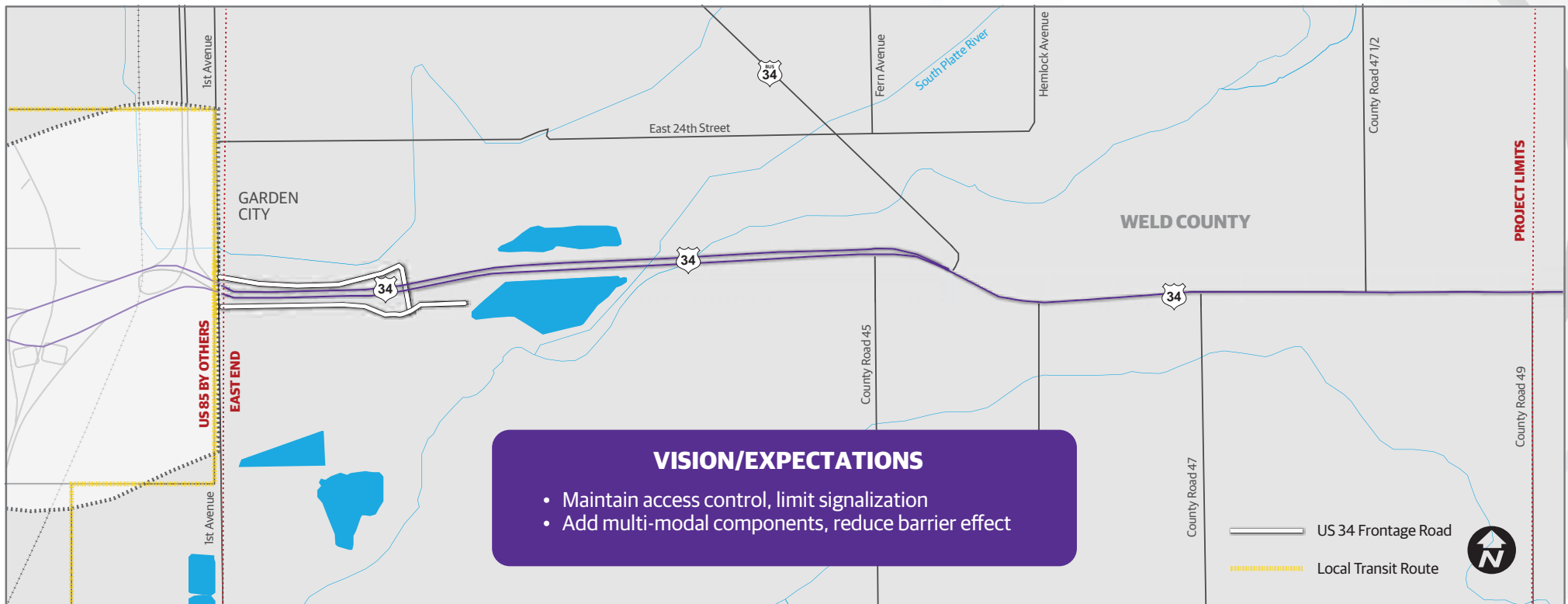
- Continue to enforce existing Access Control Plan
- Monitor crash data to identify potential issues

Mid/Ultimate-Long Term

- New developments; local jurisdiction projects follow Access Control Plan

EAST END

4 MILES, 1ST AVENUE TO WCR 49



INNOVATIVE INTERSECTION AND ACCESS STRATEGIES

EXAMPLES OF REDUCED CONFLICT INTERSECTIONS

AT UNSIGNALIZED INTERSECTIONS:

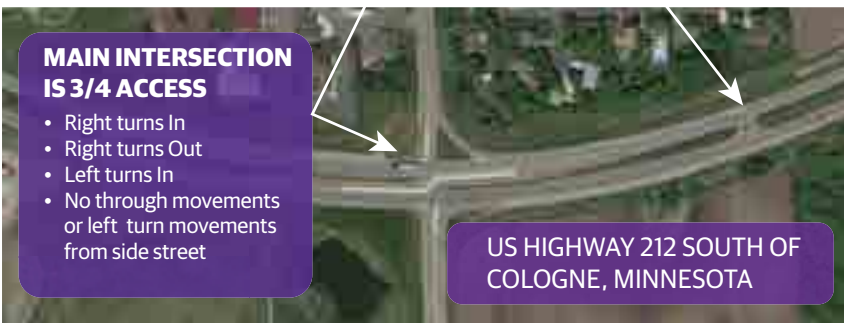
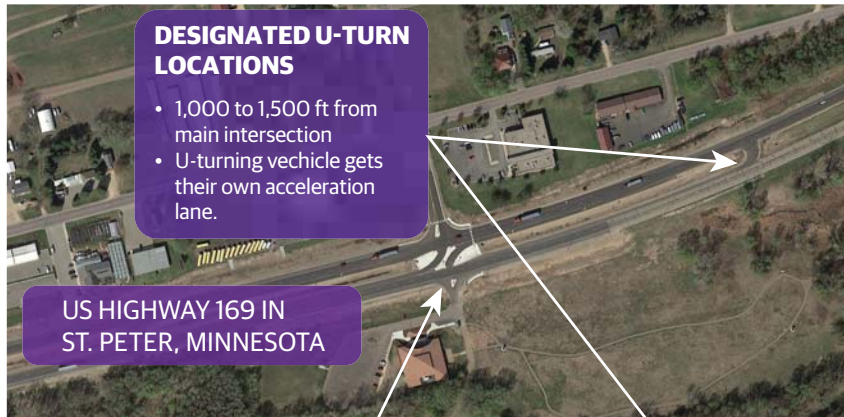
EXAMPLES: CR 15, 95TH, 71ST

Benefits:

- Good safety record
- Good for lower traffic volumes
- Reduced delay

Cautions:

- Out-of-direction travel varies
- U-turn needs acceleration lane



AT SIGNALIZED INTERSECTIONS:

EXAMPLES: ALL CURRENT OR PROPOSED SIGNALS

Benefits:

- Good safety record
- Gets more capacity from existing pavement
- Comparatively low implementation cost
- Reduces delay for US 34 through traffic
- Good for high left turn locations (commercial-retail corridors)

Cautions:

- Out-of-direction travel varies
- Not as well suited to high cross-street volume locations





Access Control Plan

What is an Access Control Plan?

An Access Control Plan controls the location, spacing, design, and operation of driveways, median openings, and street connections to a roadway.

Access Control Plan Benefits

Safety

- Reduces the number of conflict points and potential crashes
- Provides safe access to businesses and residences

Increased Ability to Accommodate Traffic Demands

- Reduces travel times/smoothier traffic flow
- Less air pollution

Good Access Management is Good for Business

- Preserves property values
- A more efficient roadway system captures a broader market area
- Provides a more predictable and consistent development environment

Encourages Use and Development of Local Streets

- Focus through traffic on the highway
- Provide circulation options for local traffic on the local street system

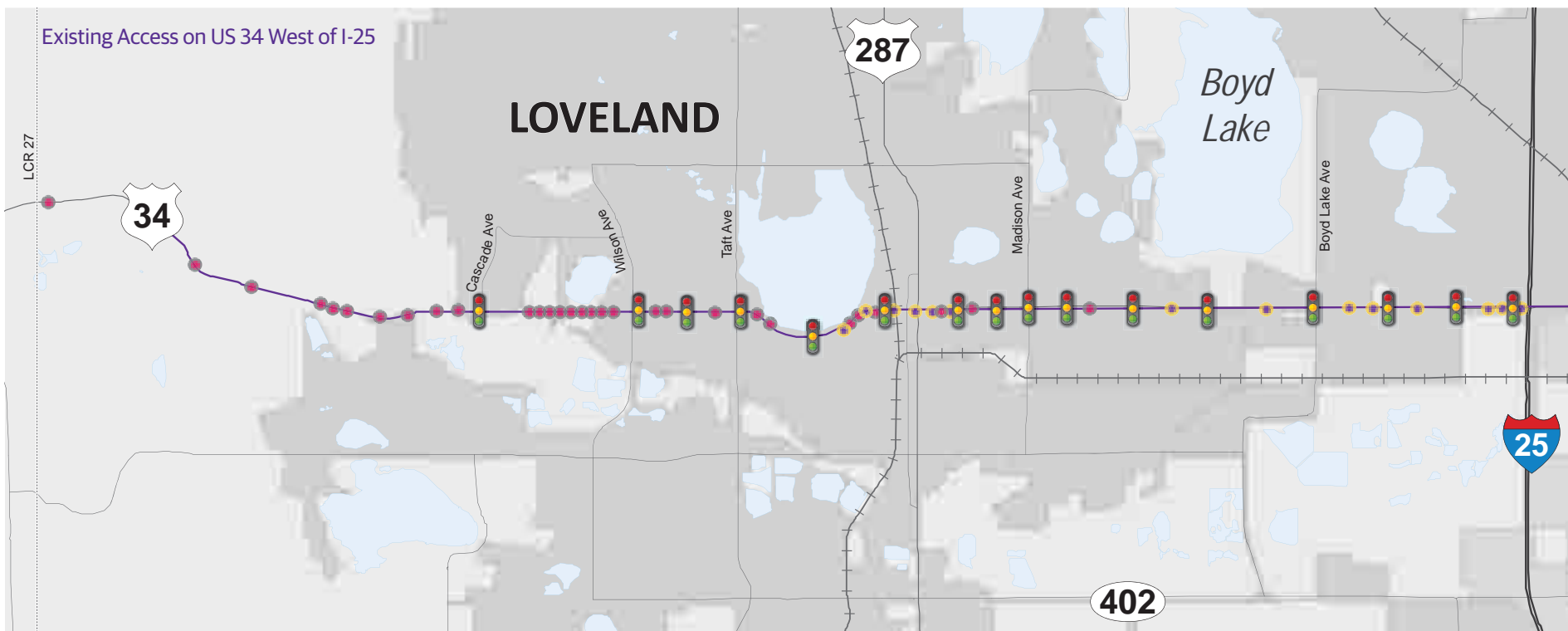
Enhanced Corridor Appearance

- Easily locate businesses
- Opportunities for streetscaping/landscaping



US 34 EXISTING ACCESS LOCATIONS

CDOT and the City of Loveland will develop a new access control plan for US 34 between LCR 27 and I-25.



Existing Traffic Signal



Existing Unsignalized Full Movement Public Road



Existing Restricted Turns on Public Road

Access Category:

» Non-Rural Regional Highway (NR-A) and Rural Regional Highway (R-A)

Segment Characteristics:

» Medium-High Speed/ Medium-High Traffic
 » Urban

Segment Length:

» 10.6 Miles

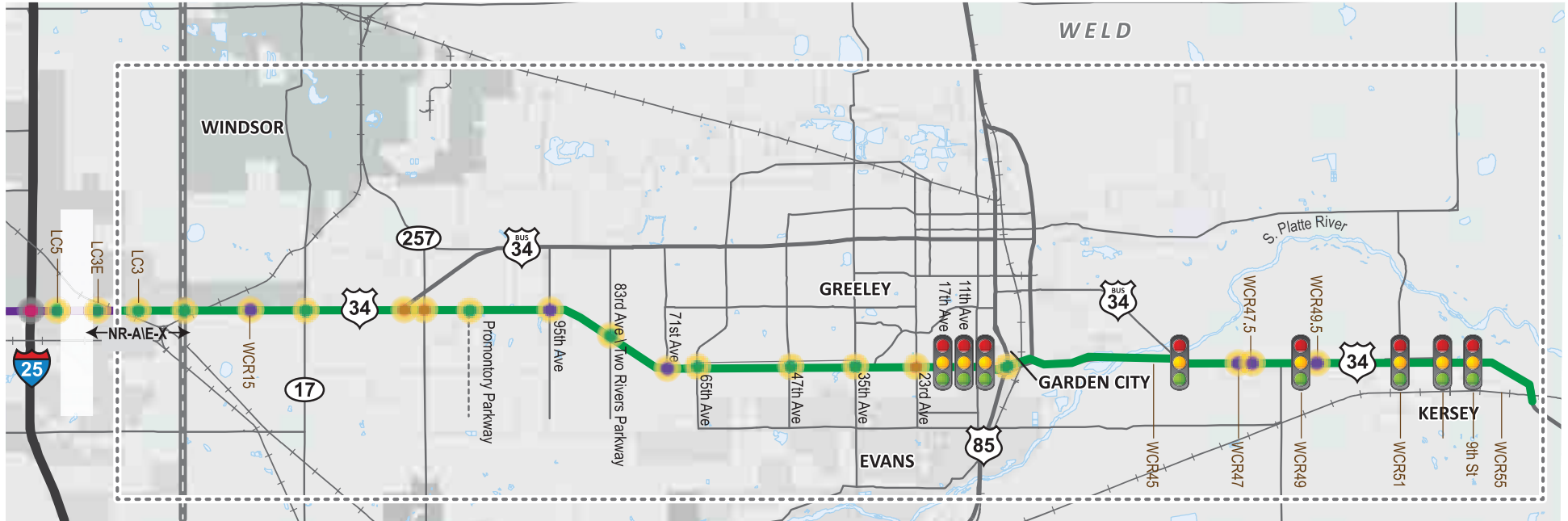
Access Points:*

» 425 Existing Access Points
 » 84 Public Road Access Points (30 Signalized)
 » 186 Business Access Points
 » 98 Residential Access Points
 » Remaining are private roads and field access.

*An Access Point is identified as each location where a vehicle crosses the right-of-way to access the highway, i.e. 4-legged intersection = 2 access points.

US 34 EAST ACCESS CONTROL PLAN

Review the existing US 34 Access Control Plan east of I-25 and make recommendations.



-  Interchange not included in this Study Effort. To be address by a Future Feasibility Study
-  Restricted Turns Intersection
-  Ultimate Interchange Interim Traffic Signal
-  Ultimate Interchange
-  Ultimate Traffic Signal
-  ACP Limits

Access Category:

- » Expressway(E-X) and Non-Rural Regional Highway (NR-A)

Segment Characteristics:

- » Expressway
- » High Speed/High Traffic
- » Low Access

Access Points:*

- » 147 Existing Access Points
- » 65 Public road access points (18 signalized)
- » 54 Field access points
- » Remaining are business, residential, private road, railroad.

Segment Length:

- » 21 Miles

* An access point is identified as a location where a vehicle crosses the highway right-of-way, i.e. one 4-legged intersection = 2 access points.

Access Control Plan Implementation

If nothing changes, nothing changes!

Access Control Plans are long range planning documents for future growth. Existing and new Access Control Plans will be implemented in phases as changes and growth occur along US 34. Portions of the plan will be implemented based on the following triggers:

1. Redevelopment that increases traffic by 20% or more
2. Publicly funded project by City, County, or CDOT
3. Safety or operational issues



Access Control Plans are living documents that **CAN** be amended.

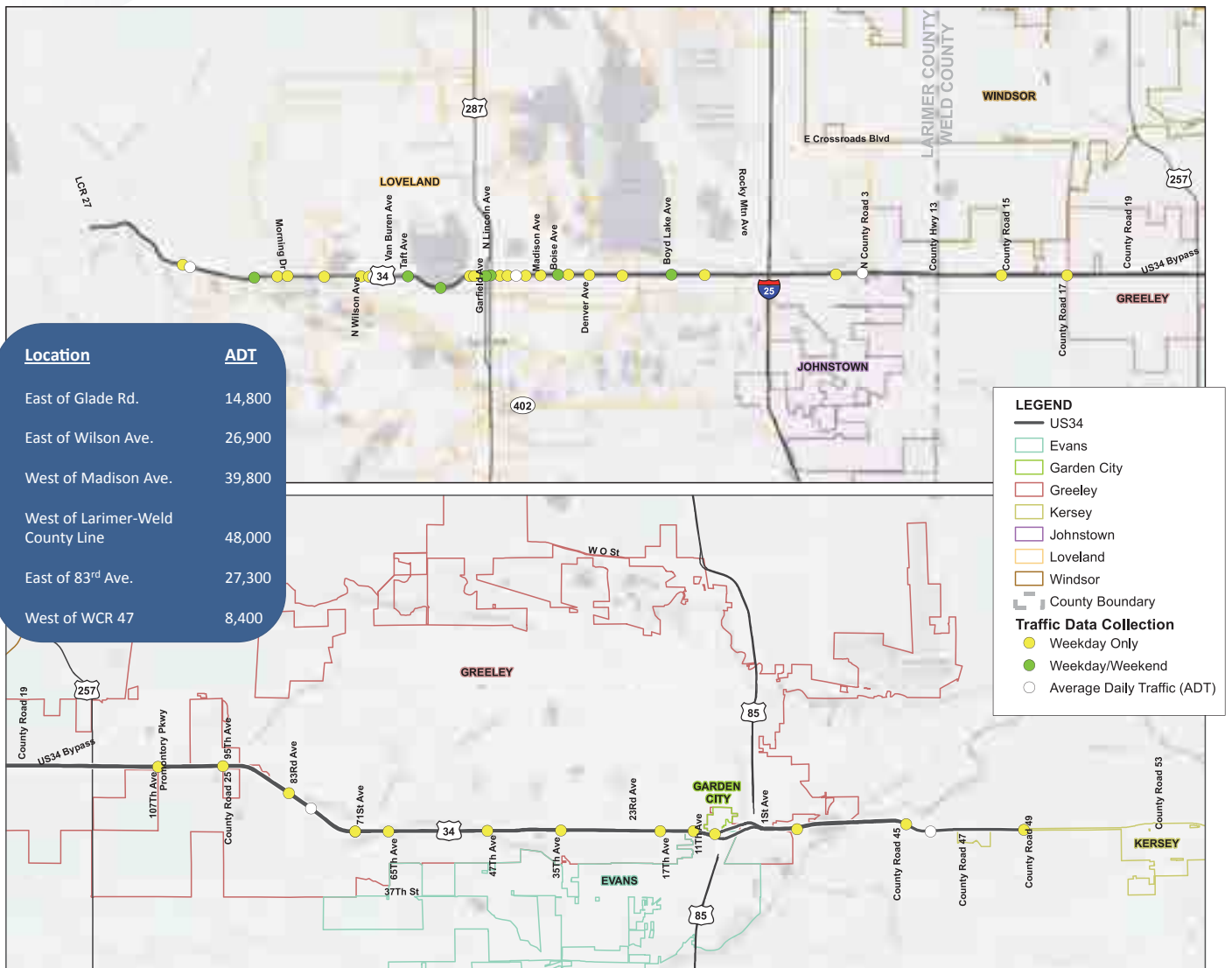
US 34 PEL TRAFFIC DATA

TRAFFIC DATA COLLECTION IS COMPLETE

- » 40 intersections, weekday only (yellow) and weekday/weekend (green)
- » 6 Average Daily Traffic (ADT) locations (white)

Initial Observations:

- » Counts were taken on a good seasonal day
- » The data confirms what we expected
- » Measured volume levels are on par with CDOT estimates
- » Weekday PM volumes are consistently higher than AM
- » Saturday midday volumes (west of I-25) are near PM peak levels
- » Volumes are moderately directional during peaks



Next Steps:

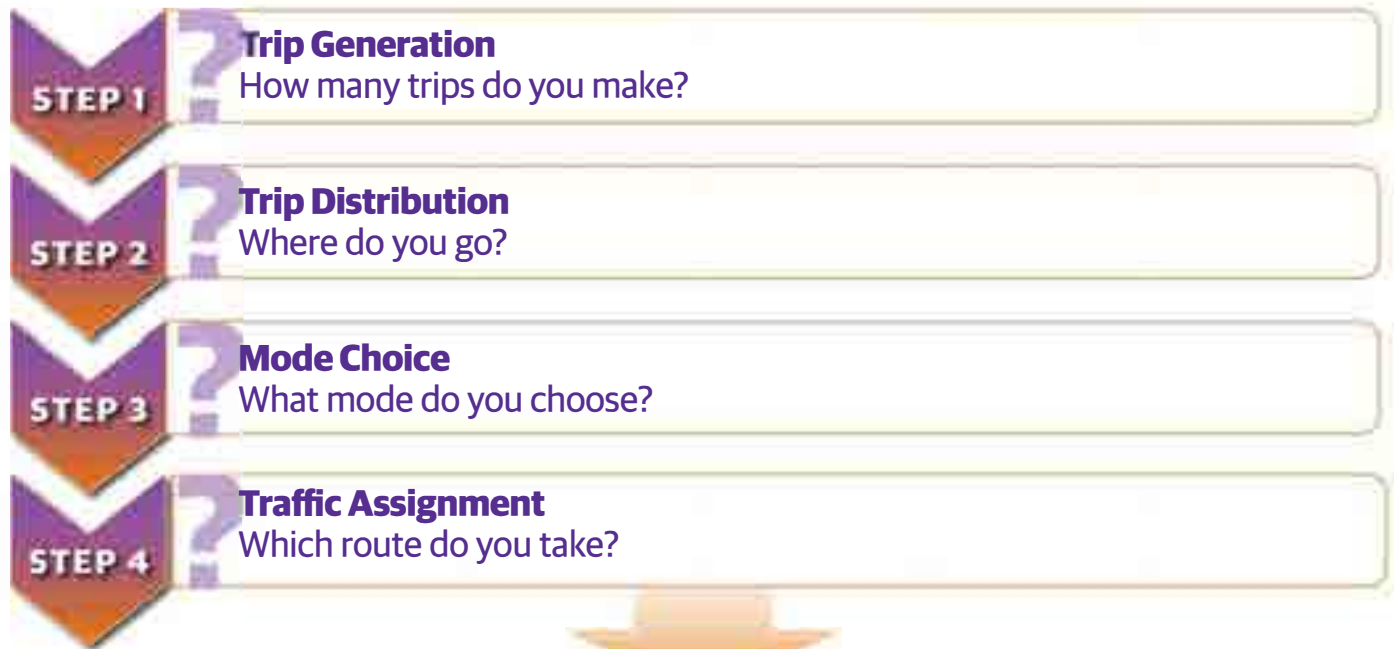
- » Perform analysis of existing traffic data
- » Evaluate future traffic conditions in support of Level 2 evaluation



TRAVEL FORECASTING PROCESS

Travel forecasting allows us to estimate future traffic patterns and volumes, and in turn evaluate how well alternatives address future traffic needs.

4 STEP TRAVEL DEMAND MODEL



**Transportation System Performance
Deficiency Identification
Alternative Evaluation
Project Prioritization**

FUTURE GROWTH

35 to 40 percent of the forecasted regional growth is planned in the Study Area

Expected Regional Growth: 2015 to 2040

- » Population = 360,000 (67% increase)
- » Households = 145,000 (69% increase)
- » Employment = 150,000 (53% increase)

Source: ICF KPMG 2040 Economic and Demographic Forecast

Key areas of change:

- » Area between La Quinta Inn and Rist Benson Reservoir
- » Land east of Denver Avenue
- » Land adjacent to Centerra
- » Development at the I-25/US 34 interchange
- » Land at US 34 and WCR 13
- » Area between 71st and 65th Avenues in Greeley
- » Land adjacent to Weld County Parkway near Kersey

RISK AND RESILIENCY

CDOT and FHWA are identifying human and weather related risks during the planning process to develop a more resilient infrastructure.

Railroad Risks



Flood Risks



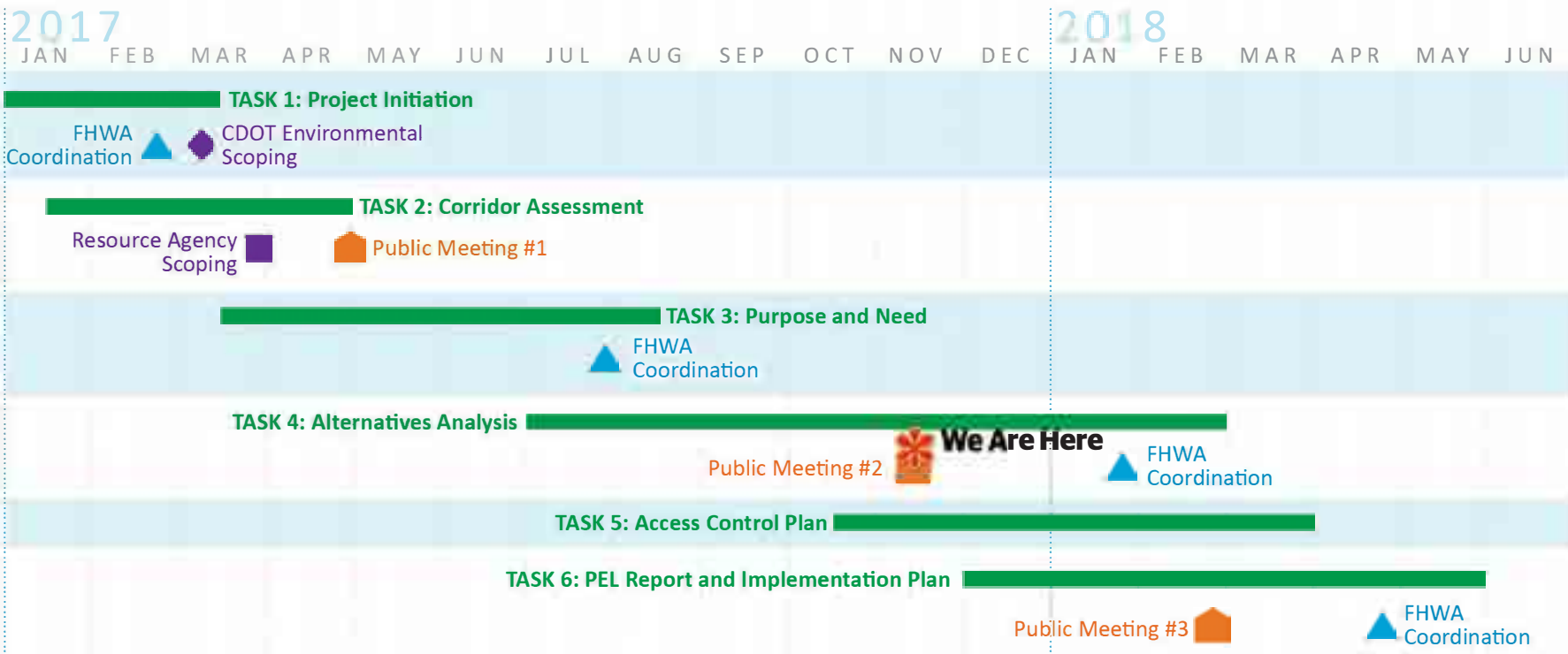
This PEL Study includes an ongoing assessment of risks along US 34 and will evaluate possible solutions to build a more resilient highway corridor.

NEXT STEPS AND SCHEDULE



US 34 Planning and Environmental Linkages Study

- » Evaluate alternatives for the best solutions.
- » Recommend projects for immediate design and construction.
- » Recommend mid-term and long-term projects.
- » Review of existing Access Control Plan and develop new Access Control Plan where needed.
- » PEL study is anticipated to be completed Summer 2018.



We want your input!

- » Fill out a comment form here tonight at the meeting or mail it to us by the date on the comment form
- » Visit the project website at us34pel.codot.us
- » Send us an email at us34@codot.us

Thank you!

