

Gold Line Environmental Impact Statement (EIS)

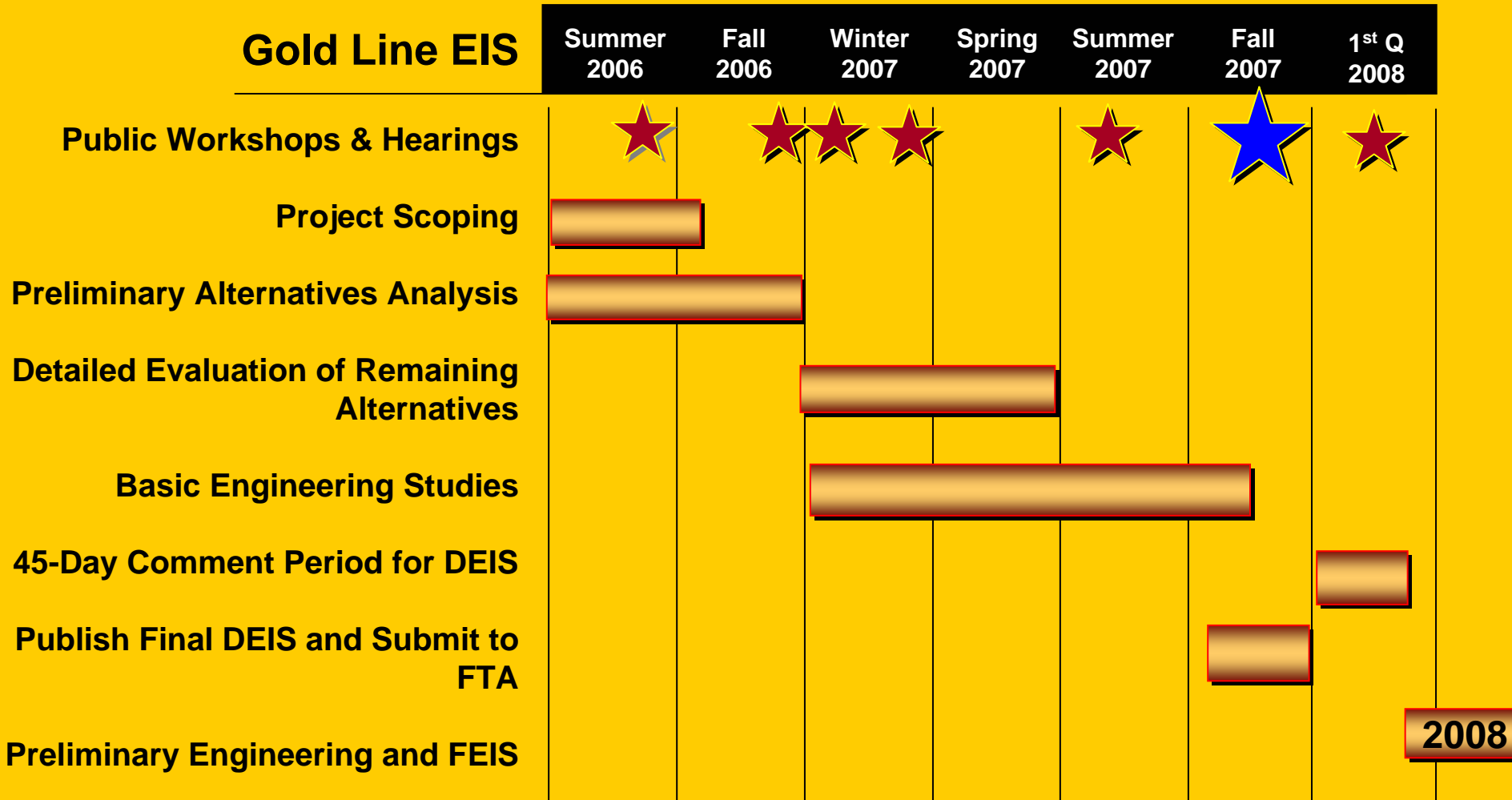
Workshop No. 5 Consequences of the Preferred Alternative

October 2007

Where are we today?
We are on schedule!



Gold Line EIS



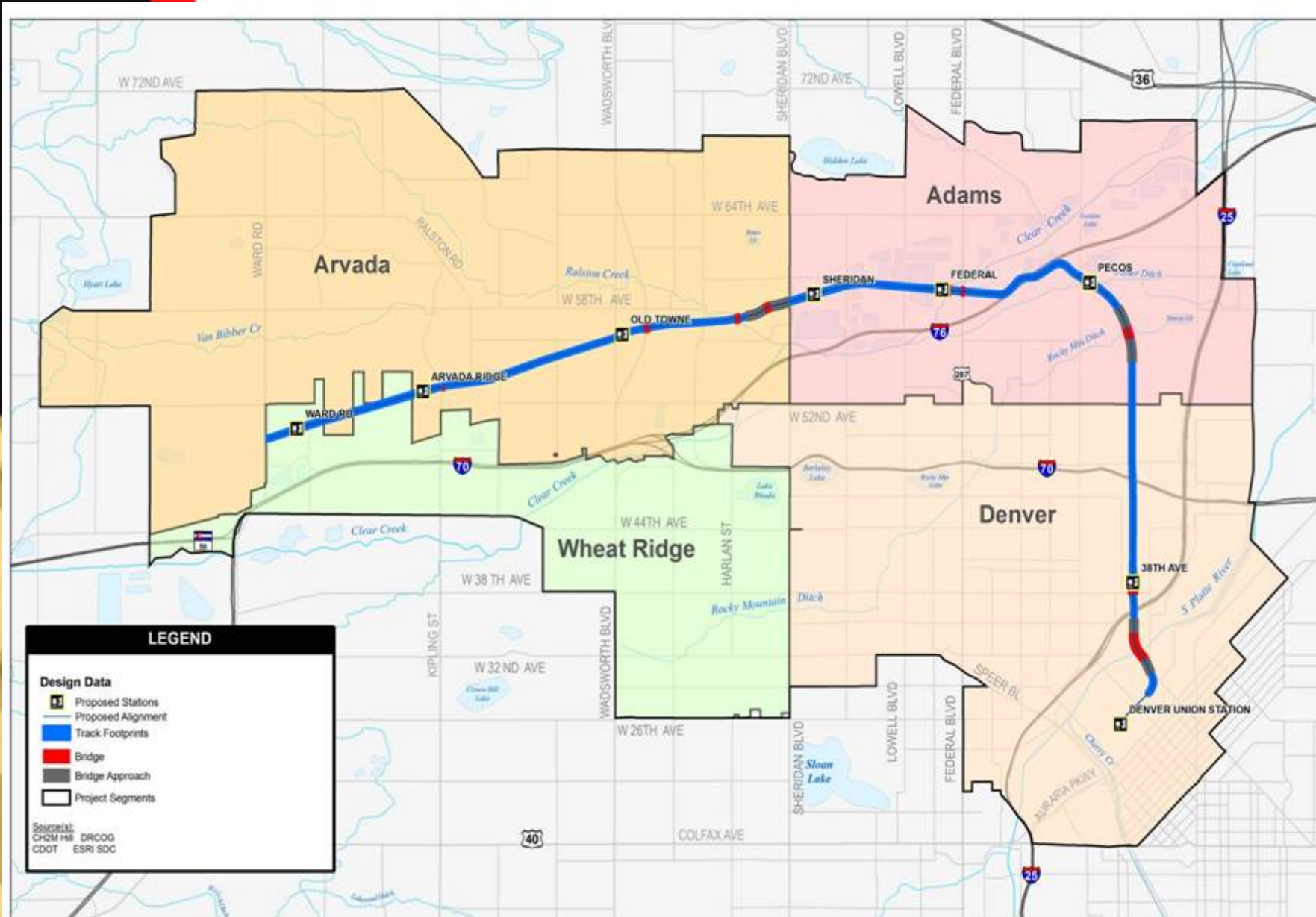
2008

- **Project Introduction**
 - Where is the project?
 - What is the purpose and what are the goals of the project?
- **Alternatives Considered**
 - What Alternatives were looked at?
 - What is the No Action alternative?
 - What is the Preferred Alternative?
- **Environmental Consequences**
 - What things were looked at?
 - What are the benefits of the project?
 - What are the consequences?
- **Public Involvement & Next Steps**

Project Introduction



Where is the project?



What is the purpose and what are the goals of the project?



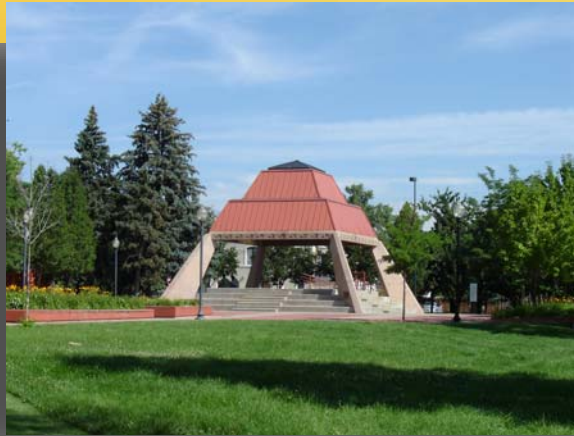
Purpose

- Implement Fixed Guideway Transit Between Denver Union Station and Ward Road

Goals

- Provide a cost-effective transit option
- Provide a high-quality and reliable transit service
- Provide system linkage with other FasTracks corridors
- Fulfill existing land use and TOD plans
- Enhance access to jobs, entertainment, recreation
- Provide equitable transit opportunities
- Minimize environmental impacts
- Improve environmental sustainability

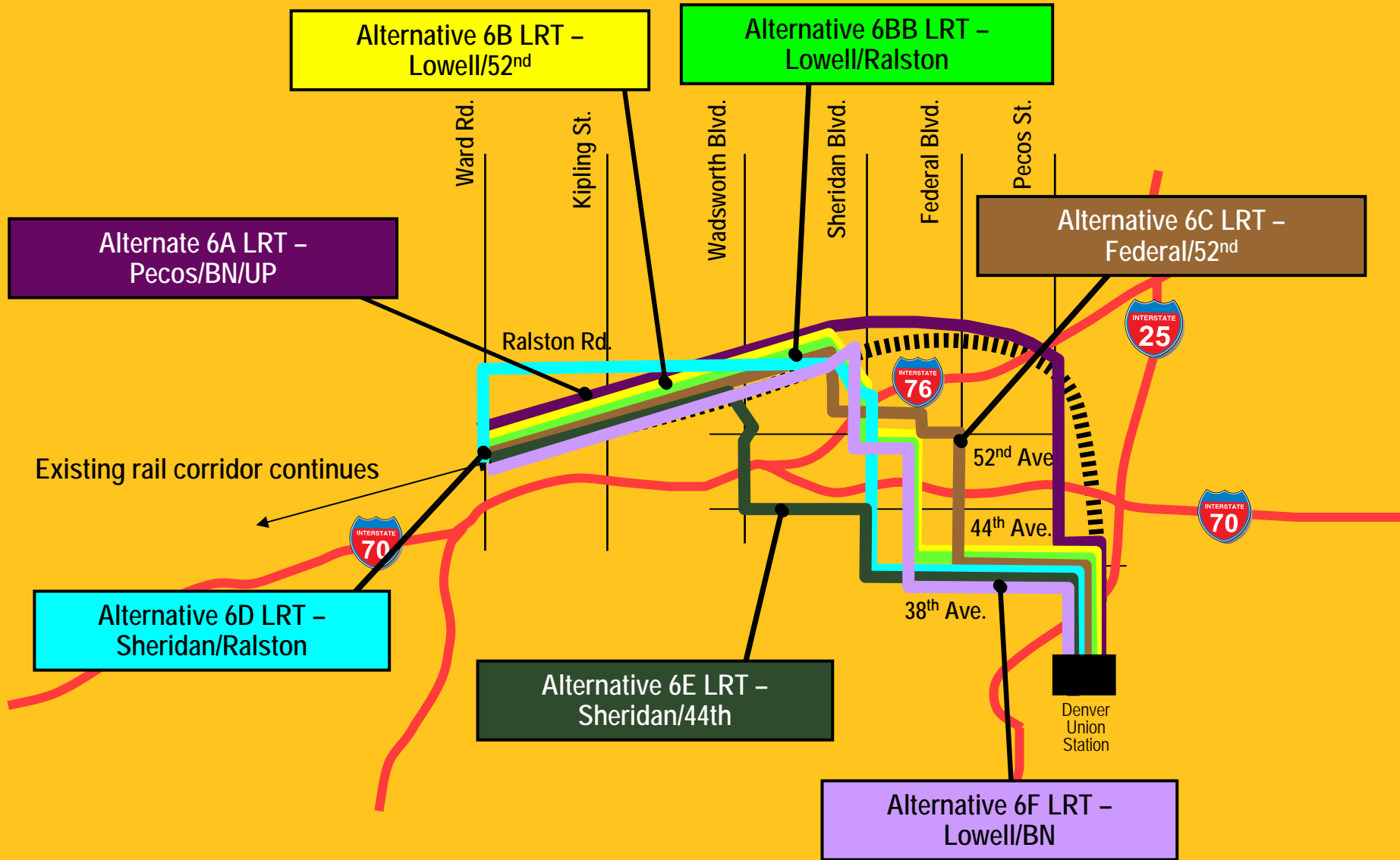
Alternatives Evaluated



What alternatives were considered?

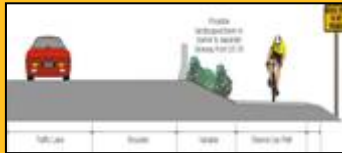
- Incorporated the results of past studies
- The 20 alternatives considered included:
 - Alternative alignments
 - Selected arterials
 - Railroad alignment
 - Alternative technologies
 - Streetcar
 - Light Rail Transit
 - Diesel and Electric Commuter Rail
 - Alternative station locations
 - At least 3 locations for each station

Example of alternatives evaluated in during screening



What technologies did we look at?

TSM Remains



Dropped @ MIS



Evaluated at DEIS



No Action



- **No Action Alternative**

- The No Action does not mean that “nothing happens”
- The No Action includes existing projects and financially committed projects within the study area to respond to the expected growth in the study area
- Provides the benchmark from which the Preferred Alternative is evaluated

- **Preferred Alternative**

- EMU on the Railroad Alignment
 - 7 stations (same as FasTracks)
 - Similar alignment to FasTracks and 2001 Major Investment Study recommendation
 - Similar, but heavier technology, to FasTracks and 2001 Major Investment Study recommendation – meets new railroad requirements.

How are the alternatives compared in the EIS?

- **The No Action and Preferred Alternative** are compared against each other
- **The Alternatives** are compared using the same criteria:
 - Community & agency support
 - Environmental benefits and impacts
 - Transportation benefits and impacts
 - FTA criteria for funding
 - Cost effectiveness
 - Mobility benefits
 - Environmental benefits
 - Other measures (e.g. land use)

Environmental Consequences



What human and environmental things are considered?



Resource Studied	Results Different from the No Action?
Social Impacts	Yes (during construction)
Environmental Justice	No
Land Use	Yes (benefits)
Economic Conditions	No
Land Acquisition	Yes
Historic Resources	Yes
Visual Resources	Yes
Parkland, Open Space	No
Air Quality & Energy	No
Noise & Vibration	Yes
Biological Resources	No
Water Quality/Floodplains	No
Wetlands	Yes
Hazardous Materials	No
Public Safety & Security	No

Why do we have comparatively few environmental impacts?



- Impacts have been reduced because:
 - Significant public input on concerns were addressed through design
 - Conducted Avoidance and Minimization efforts
 - Designed “single track” in areas with constrained Right of Way
 - Preferred Alternative is located in a railroad Right of Way
 - Most station sites are currently in industrial areas

What are the social impacts during construction?

- Construction would require about 36 months
- Approximately 110 acres would be exposed during construction, about ½ in the railroad ROW and ½ for stations
- Where would the affects be most noticed?
 - Denver: Minor effects
 - Adams County: Few community impacts; some impacts to the natural environment
 - Arvada: Most inconvenienced during construction from Lamar to Kipling
 - Wheat Ridge: Minor effects

- Transit supportive land use is a Federal Transit Administration (FTA) funding evaluation criterion
- Community sustainability
- Transit Oriented Development (TOD) saves infrastructure cost and reduces congestion

Preliminary Results

- Preferred Alternative is compatible and supportive of all land use plans in the study area

What land use is planned for the station areas?



Station	Existing Land Use	Planned Land Use
38th Avenue	<p><u>West/Inca</u>: Light industrial/Residential</p> <p><u>East/Fox</u>: Light industrial/Rail yard</p>	<p><u>West/Inca</u>: Urban Neighborhood: Limited Mixed Use w/ Local Retail</p> <p><u>East/Fox</u>: park-n-Ride (Station Area Plan in progress)</p>
Pecos	Industrial	Flex Industrial/Commercial/Open Space
Federal	Industrial/Commercial	Clean Industrial/Commercial/Open Space/TOD Mixed Use
Sheridan	Light industrial	TOD Mixed use
Olde Town	Commercial/Residential	TOD Mixed use
Arvada Ridge	Vacant	TOD Mixed use
Ward Road	Light industrial	TOD Mixed use

Why do we evaluate land acquisition?

- Land acquisition has been one of the top concerns throughout the public process

Preliminary Results

- No homes or residential buildings need to be acquired
- 7-21 businesses may need to be acquired
 - 55-59 acres of commercial/industrial property required for stations

Potential Land Acquisition



Station	Acres	Number of Residences	Number of Businesses
38 th	7	None	3
Pecos East/West	12	None	East = 0 West = 9
Federal East/West	11	None	East = 5 West = 1
Sheridan	11	None	2
Olde Town North/South/West	2	None	North = 1 South or West = 0
Arvada Ridge	3	None	0
Ward	11	None	1

Why do we evaluate historic resources?

- Historic resources are highly regulated through federal law (Section 106)
- Impacts to historic resources are important to study area stakeholders

Preliminary Results

- Potential adverse impact on historic structures on 38th Avenue station parking footprint
- One adverse impact on archaeological site in the railroad right-of-way
- Potential indirect effects from noise (still to be determined)

Why do we evaluate visual resources?

- Rail transit is a major investment that should complement the corridor communities
- Project elements need to be compatible with their surroundings
- Preferred Alternative's Major Visual Elements
 - 10 structures
 - 4 pedestrian bridges
 - 7 transit Stations and park and Ride facilities
 - 3.4 miles of retaining walls
 - 11.2 miles of overhead catenary and track way

Preliminary Results

- No Major Visual Impacts in Denver, Adams County and Wheat Ridge
 - Rail yard setting (Denver)
 - Impacts contained to railroad right of way
 - Station areas are industrial, or redeveloping
- Anticipated sensitivities in Arvada
 - Retaining walls and catenary through historic districts
 - Close proximity to residential land uses

How can visual impacts be mitigated?

Project Element	Mitigation Measure
All urban design issues	<ul style="list-style-type: none">• Station charrettes• Issue Focus Teams
Structures	<ul style="list-style-type: none">• Match existing bridges• Landscape abutments
Retaining walls	<ul style="list-style-type: none">• Retaining wall design• Wall landscaping
Catenary	<ul style="list-style-type: none">• Architectural poles• Catenary design
Track	<ul style="list-style-type: none">• Single track (done)

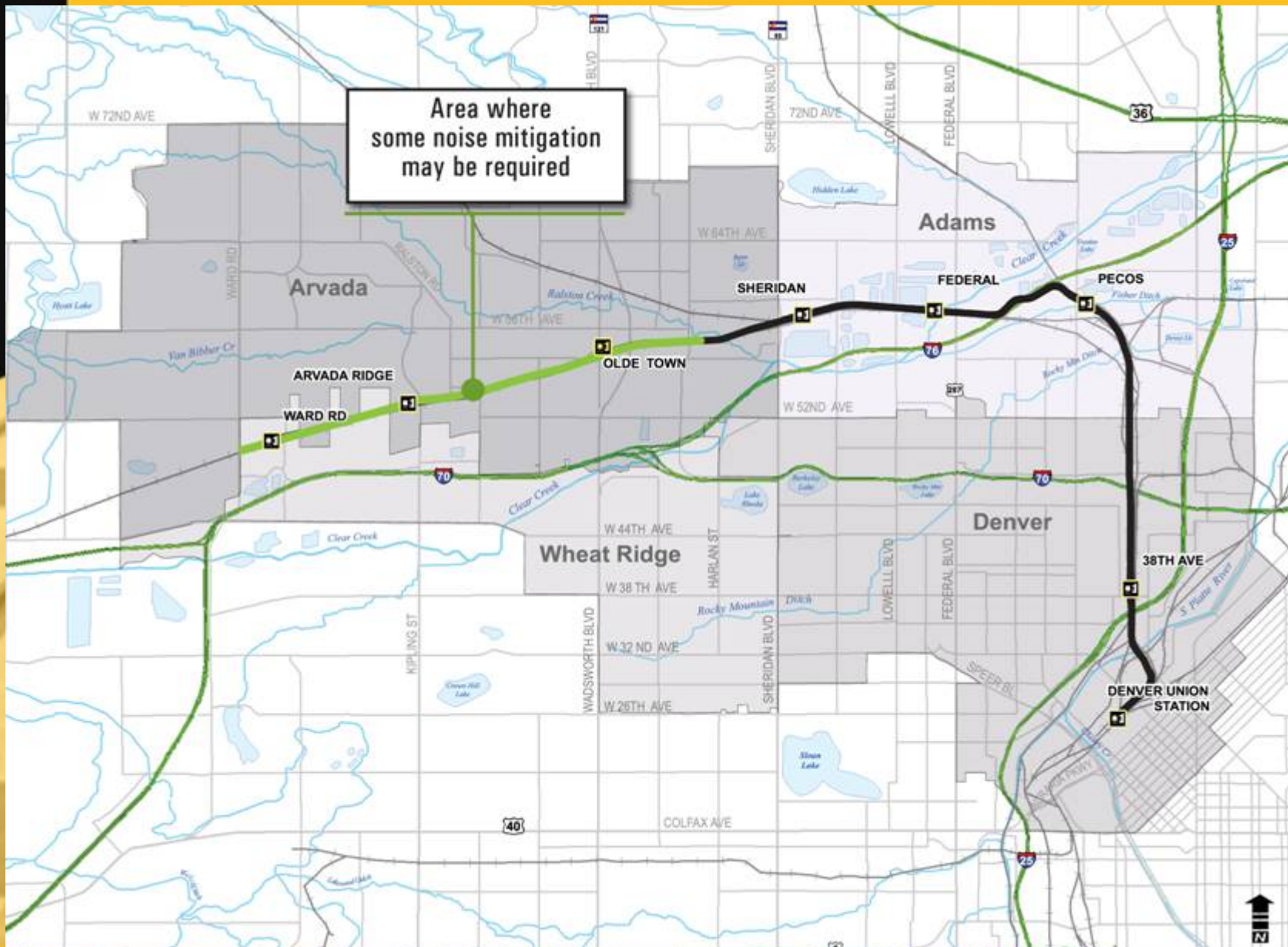
Why do we evaluate noise and vibration?

- This is the principle environmental challenge with rail transit systems
- The challenge is generally due to horn noise
- It has been a major community concern

Areas Requiring Mitigation for Noise



Areas with Moderate Noise Increases



How could we mitigate noise impacts?

- **Quiet Zones**

- Upgrade safety measures at at-grade crossings to a level where FRA will not require trains to sound their horns.
- **All noise impacts are eliminated if these are implemented.**

- **Other Types of Mitigations**

- **Source Mitigation** (e.g. wheel truing, wheel maintenance, rail lubrication, adjusting track radius at turns)
- **Path Mitigation** (e.g. noise reduction walls, alignment alterations, adding ballasts on guideway)
- **Receiver Mitigation** (e.g. upgrade windows in impacted structures to be soundproof)

Areas Requiring Mitigation for Vibration



How could we mitigate vibration impacts?

Location	Proposed Mitigation Measures
Carr—Garrison Street	<ul style="list-style-type: none">• Track vibration isolation treatment (600 feet long) Will require additional geotechnical information.• Turnout modifications
Garrison--Independence	<ul style="list-style-type: none">• Track vibration isolation treatment (1,400 feet long) Will require additional geotechnical information

- Highly regulated
 - “Individual Permit” (takes significant time and regulatory attention)
 - “Nationwide Permit” (requires less time and regulatory attention)
- Provides valuable habitat

Preliminary Results

- Impacts are caused by:
 - Bridge construction over creeks
 - Widening berms supporting the track

Jurisdictional Wetlands Impacts¹

Area	Impact Type	Acreage Estimate
Clear Creek	Alignment/Bridge	.01
Ralston Creek	Alignment/Bridge	.17
Ralston Creek	Alignment/Bridge	.01
Federal West	Station	.01
Total		.20

¹Assumed jurisdictional but USACOE still making determination

Non-Jurisdictional Wetland Impacts²

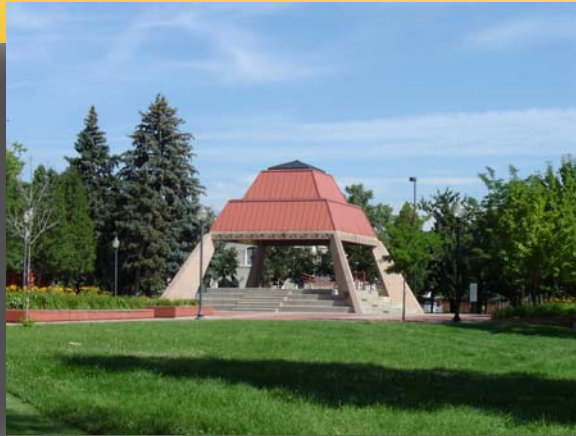


Area	Impact Type	Acreage Estimate
Jim Baker Reservoir	Depression near Track	.30
Olde Town North	Station	.13
Allen-Reno Ditch	Alignment	.32
Swadley Ditch	Alignment	.03
Total		.78

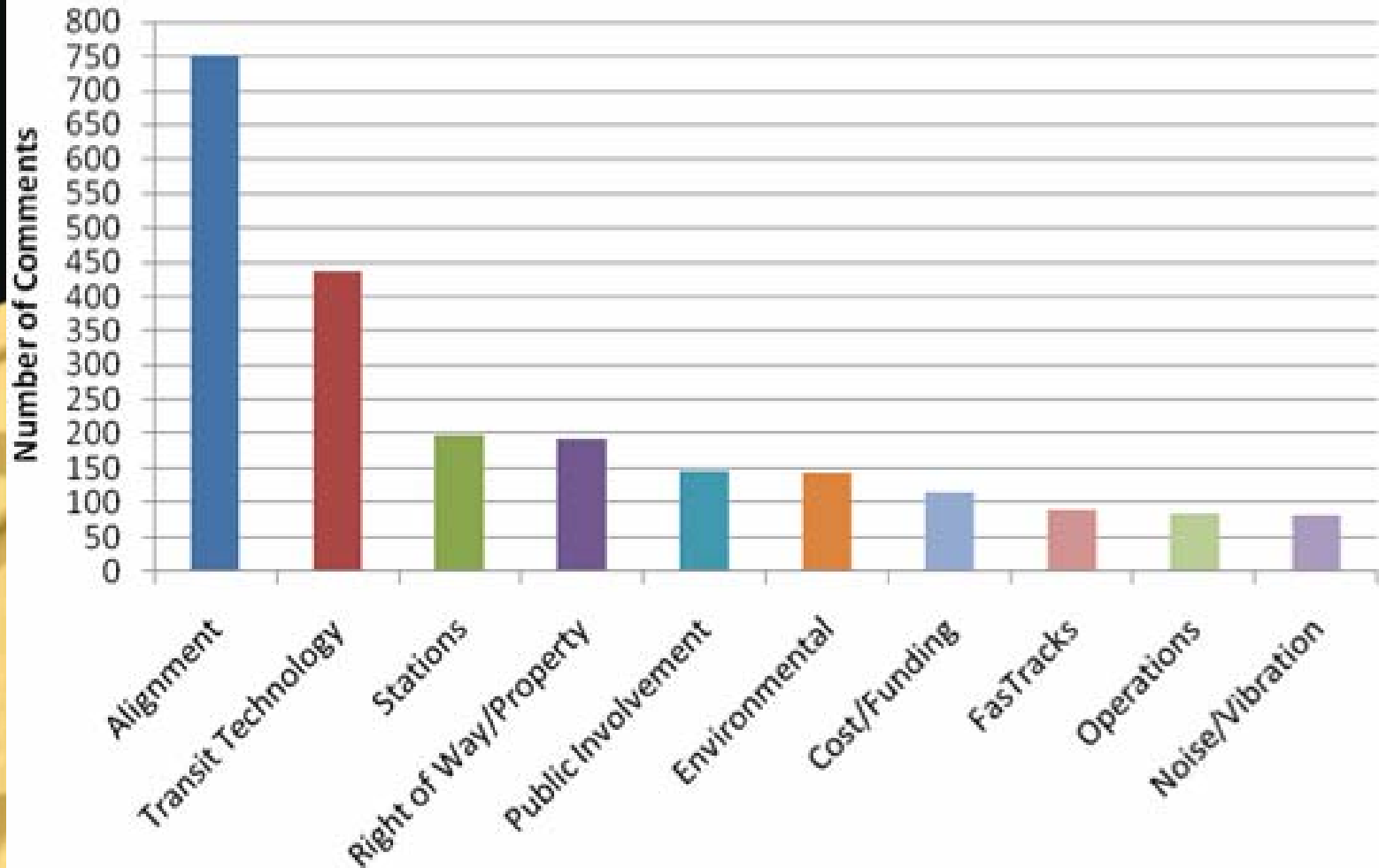
²Assumed non-jurisdictional but USACOE still making determination

- All jurisdictional wetlands must be mitigated for on a 1:1 replacement basis
 - Mitigation is either on-site, within the watershed or by banking
 - USACOE prefers on-site or within the watershed
- All non-jurisdictional wetlands should also be mitigated
 - RTD generally mitigates by purchasing credits in “wetland banks”

Public Involvement and Next Steps



Project issues have remained consistent.....



What are the issues to be resolved with stakeholders?

- Further development and refinement of project mitigation
- Station area planning and design charrettes
- IFT meetings to discuss mitigation measures (noise, construction impacts, etc.) and station designs

What are the key milestones from this point on?



- **January-February 2008** - Draft EIS completed and released
 - EIS available online, at all corridor libraries and at public hearings
 - 45-day public comment period
 - *Online/Email*
 - *By Mail*
 - *Public Hearings*
- **First Quarter 2008** – Public & agency final comments on preliminary station designs
- **June 2008** – Final EIS completed and submitted to FTA
- **September-October 2008** – FTA Decision Document

Public Questions and Comments

(3 minutes each)