



COLORADO
Department of
Transportation

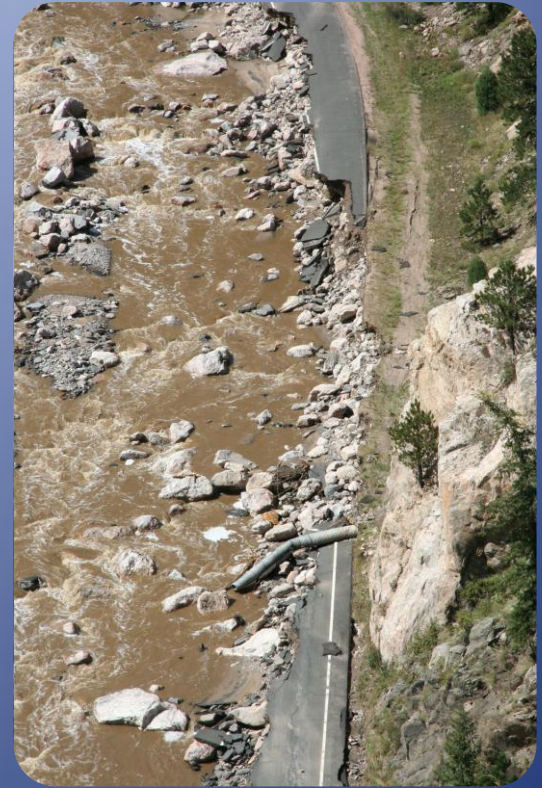
US 34 Interactive Planning Session
September 10, 2014

Scott Ellis, CDOT Resident Engineer



COLORADO

Department of
Transportation



US 34 Big Thompson Canyon
Permanent Repair Project
Loveland to Estes Park



Interactive Planning Session Meeting Agenda

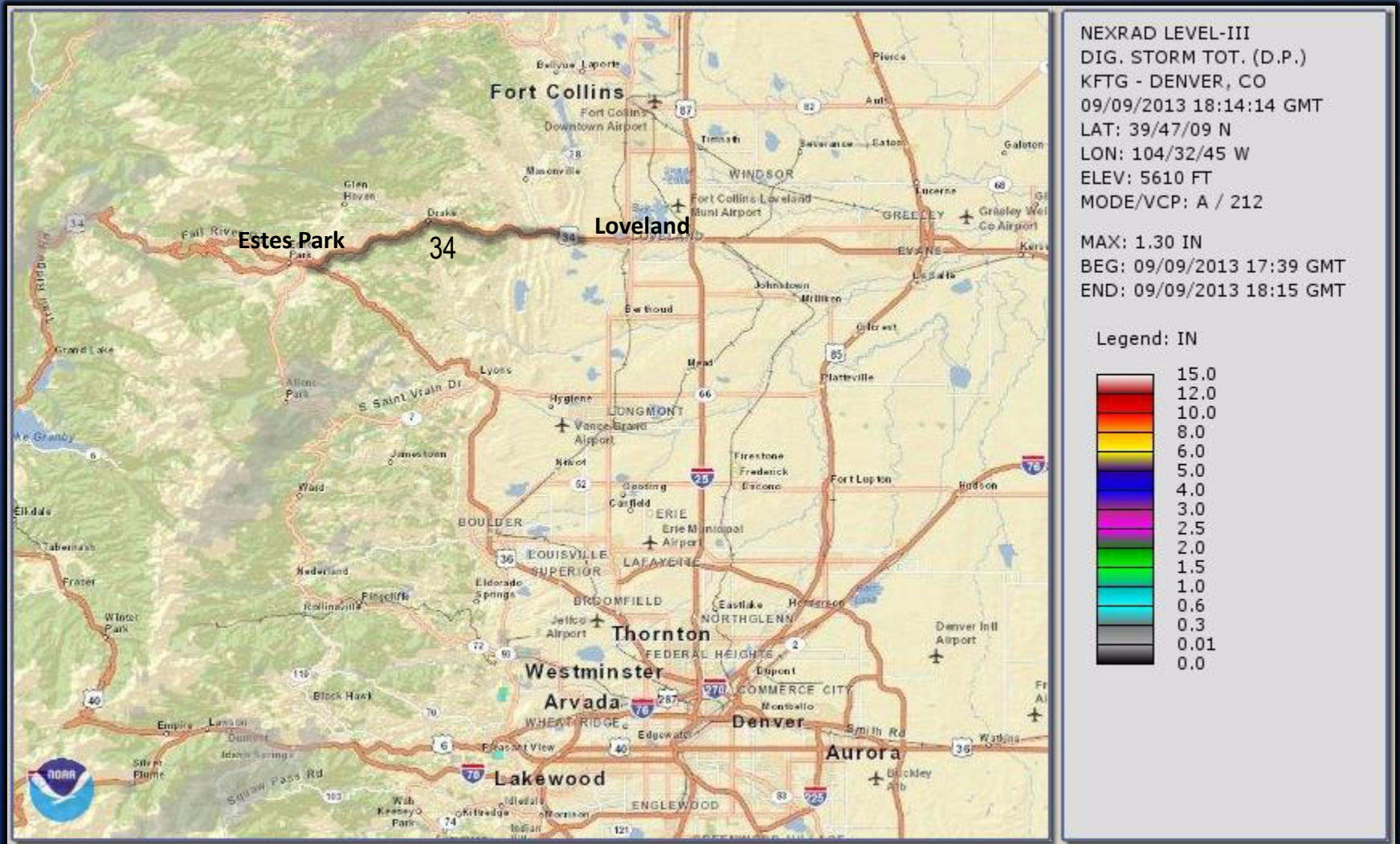
- Introductions
- 2013 Flood Damage to US 34
- Overview of Emergency Repair Project
- Status of Temporary Roadway
- Overview of Permanent Repair Project
- Agency Discussion on US 34 Work
- Communication Plan





FLOOD 2013

Precipitation September 9th – 13th





















































US 34 Big Thompson Canyon



- Open November 21, 2014
- Before Thanksgiving
- 10 Days Early



US 34 Big Thompson Canyon Reconstruction Team

- Kiewit Infrastructure
- Coulson Excavating
- Rocksol Consulting
- Yeh & Associates Consulting
- Atkins Consulting
- Shannon and Wilson
- WLH Construction
- Loveland Ready Mix
- Loveland Barricade
- URS Consulting
- O'Brien Concrete Pumping
- Merrick & Company Surveying
- PSI Testing





Big Thompson Canyon

The Numbers

- 450,000 CY of material moved
- 60,000 Tons of material hauled in
- 2,000 Ft of Wall Repaired
- 24,857 CY of flow fill = 7.65 Olympic Swimming Pools
- 2,656 concrete trucks
- 24 tie-backs repaired
- 6 tie-backs replaced
- 20,100 tons of asphalt
- 15,000 CY of Debris Removed





Big Thompson Canyon Narrows Dille Dam Before





Big Thompson Canyon Narrows Dille Dam After





Big Thompson Canyon Temporary Roadway

- All work is considered temporary
- Temporary roadway was not built to normal CDOT Standards
- Made the best decision with time and resources available
- Safely accommodate traffic
- Remain in place until permanent repairs are made
- Repairs will need to be evaluated for PR project
- Some temporary repairs may be considered permanent





US 34 Big Thompson Canyon

Activity Since Nov. 21

- Prepared for Spring Runoff/Monsoon Season
 - Armored Slopes
 - Removed Debris
 - Reinforced Under the Wall Grade Beam
 - Improving Roadway Drainage



On-Going and Future Activities

- Planning for Permanent Repairs
- Working with Stakeholders
 - Local Agencies
 - Other Governmental Agencies
 - Big Thompson River Restoration Coalition
 - Canyon Residents
- Goal to Start Construction of Permanent Repairs in 2015



FLOOD 2013

US 34 Big Thompson Canyon Flood Damage

PERMANENT RESTORATION PROJECTS COORDINATED BY ICC
US 34 - Loveland, CO to Estes Park, CO
Incident Period : 11 September - 30 September



This Map is Intended For Information Purposes Only.

Sources: Esri, DeLorme, NAVTEQ, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRGAN, GeoBase, Japan, METI, Esri China (Hong Kong), swisstopo, and the GIS User Community.

Map Generated : 2/10/2014



US 34

- Damage Sites
- Project Milepoints

Roads

- US Highway
- State and County





FLOOD 2013

US 34 Big Thompson Canyon Flood Damage

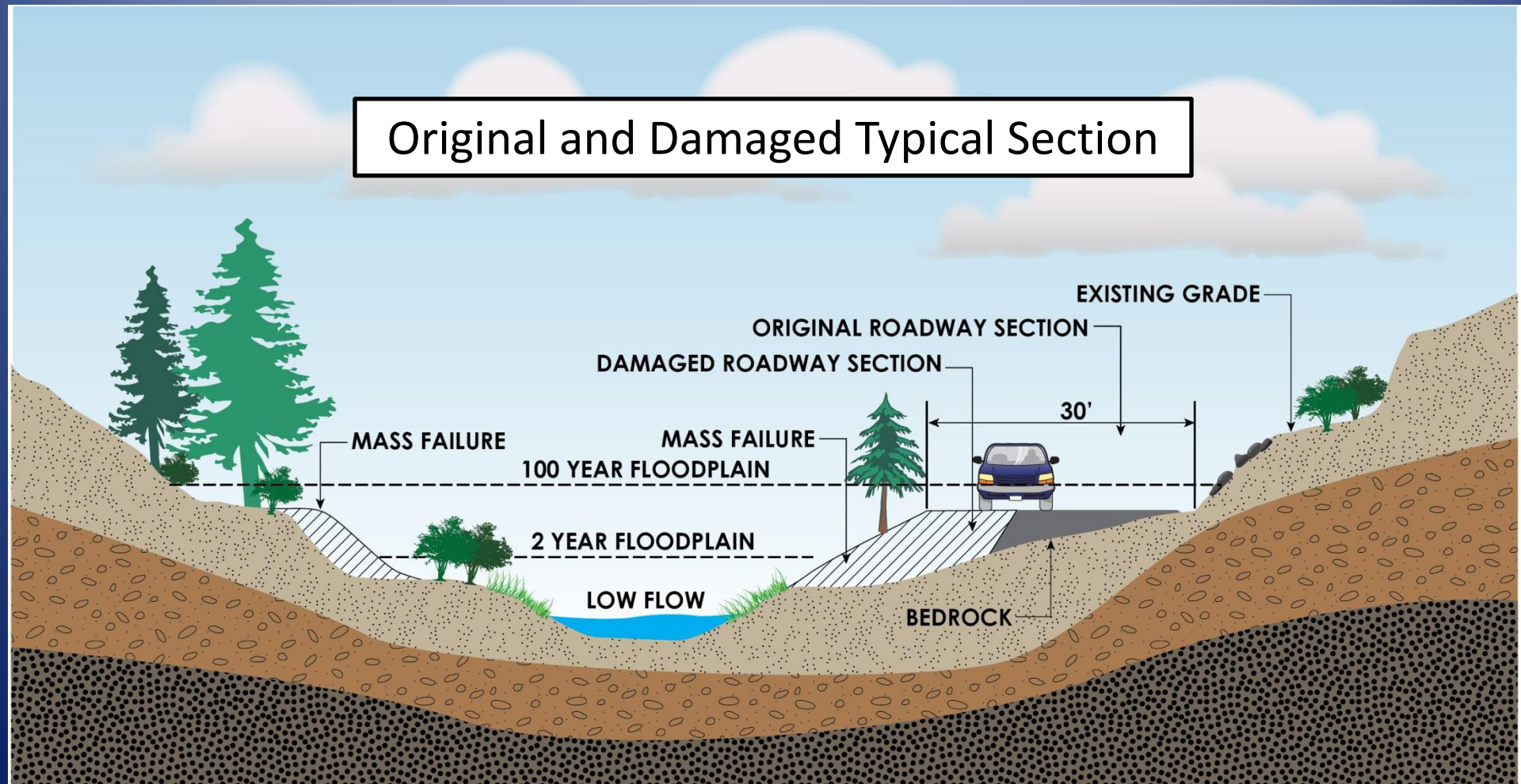
Location	FHWA Determination
MP 65.16-65.17	Not Severe
MP 65.33-66.26	Not Severe
MP 66.33-66.50	Not Severe
MP 66.65-79.10	Severe
MP 80.05-80.40	Severe
MP 81.29-83.18	Severe
MP 85.16-85.17	Severe
MP 85.40-85.46	Severe
MP 86.04-86.20	Severe
MP 86.73-86.83	Severe
MP 86.97-86.98	Not Severe
MP 87.35-87.50	Not Severe



Repair Concept – US 36

Example

Original and Damaged Typical Section

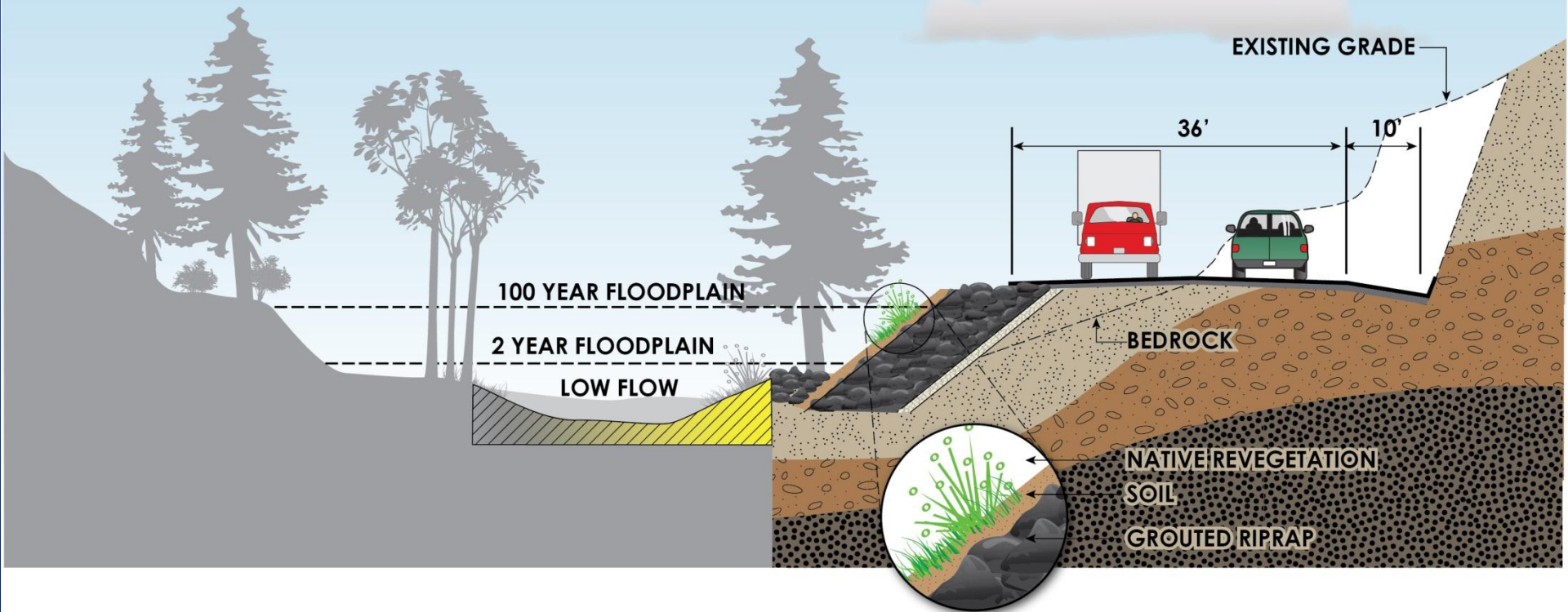




Repair Concept – US 36

Example

Proposed Repair Section





FHWA ER Funding Considerations

- \$450 m identified for CDOT flood recovery
- \$50.5 m identified initially for US 34
- FHWA ER has designated much of the corridor as severe, so:
 - What Permanent Repairs (PR) are recommended to restore the highway in-kind to its pre-disaster conditions to meet CDOT standards and specifications;
 - What Resiliencies, if any, can be introduced to prevent similar flood damages in the future.



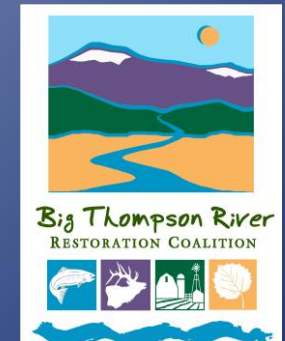
Permanent Project Goals

- Provide a safe and dependable route for local and regional traffic and wherever possible, bring the road to standard, evaluate risk and resiliency elements that reduce the potential for severe damage from future natural disasters.
- Restore areas in the adjacent stream corridor and adjacent lands adversely impacted by the 2013 emergency repairs.

US 34 Big Thompson Canyon Permanent Repair Partners & Stakeholders



- US Federal Highway Administration
- US Forest Service
- US Fish & Wildlife Service
- US Army Corps of Engineers
- US Bureau of Reclamation
- Larimer County
- City of Loveland
- Town of Estes Park
- Big Thompson River Restoration Coalition
- Colorado Parks & Wildlife
- Colorado Department of Natural Resources
- Colorado State Historic Preservation Office





Input from Resource Agencies and Stakeholders

- Does your agency have a vision for the corridor?
- What activities do you have ongoing that will impact CDOT design efforts?
- What work have you completed already that CDOT should be aware of?
- What regulations or restrictions should CDOT be aware of during design?
- When do you want input?



Next Steps

- Establish the project delivery method
- Continue resource data collection and studies
- Conduct public scoping meeting
- Ongoing communication with/Involvement of Stakeholders



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The End

