

APPENDIX C

STAKEHOLDER COORDINATION

Stakeholder Meeting Summary

October 5, 2015 Meeting Summary

Berthoud Pass SCAP

U.S. 40 – CDOT Region 1 & 3

Meeting: Stakeholder Meeting

Locations: Winter Park Town Hall, Council Chambers – 50 Vasquez Road, Winter Park, CO
Clear Creek County Courthouse, Commissioners Board Room – 405 Argentine Street, Georgetown, CO
Remote Access Conferencing

Date: October 5, 2015 from 1:30 to 3:00 PM

Attachments: Meeting sign-in sheet and presentation file

Prepared by: Jodie Snyder, Felsburg Holt & Ullevig

A. Meeting Overview

- Meeting at two locations for convenience of stakeholders given both Clear Creek County (CDOT Region 1) and Grand County (CDOT Region 3) involvement.
- Main focus of the meeting is to inform stakeholders about CDOT's current effort to develop a Sediment Control Action Plan (SCAP) along US 40 Berthoud Pass. Felsburg Holt & Ullevig (FHU) is CDOT's consultant, with Mike Crouse from Clear Creek Consultants completing the major technical work. Yeh and Associates are providing slope stability expertise.
- Meeting began with stakeholder introductions, which included representatives from CDOT staff, City of Northglenn, City of Thornton, Clear Creek County, Denver Water, Grand County, Grand County Water and Sanitation District # 1, Town of Empire, Town of Winter Park, Upper Clear Creek Watershed Association, US Forest Service, Winter Park Resort, and Winter Park Water and Sanitation District. A sign in sheet with contact information is attached.

B. SCAP Overview Presentation

- Clear Creek Consultants' presentation included a summary of:
 - Study area
 - SCAP development process
 - Existing conditions and constraints along US 40 Berthoud Pass
 - BMP examples
- The presentation file is attached.

C. Stakeholder Input and Discussion

- Comments from CDOT Region 1
 - This area of Berthoud Pass is greatly in need of sediment control measures.
 - Requested that CDOT's best practices sediment control BMPs document be utilized for the SCAP and during the design phase.

*Please send comments or revision requests on this meeting summary to jodie.snyder@fhueng.com
These meeting notes will be considered final if no comments are received by November 13, 2015*

- SCAP BMP plans should be reviewed by CDOT Maintenance staff before being submitted as part of the SCAP.
- Requested consideration to avoid conflicts with wildlife (particularly lynx and elk). Avoid putting pond/BMP in a commonly used area by wildlife, especially a migration corridor.
- CDOT Maintenance – Please stay in contact during the process if you plan to include permanent BMPs. Current BMPs are very difficult to clean, please tailor new BMPs to work with the equipment available to maintenance.
- How much sediment has been removed from the Fraser sediment pond? **Response:** Sediment removal is scheduled for next week (2nd week in October). Jen Klaetsch will share the last three years of volumes with stakeholders once available. USFS recollection is that approximately 600 tons were removed in the first year. This past year, about 700 tons were removed.
- Comments from the Town of Empire
 - Why was the length of study (1.3 miles) selected on the east side? **Response:** The highest elevation area is most in need of BMPs. The East Berthoud Pass Improvements Project (completed in 2006) addressed a large portion of Berthoud Pass east at lower elevations, but the project did not address the top 1.3 miles.
- Comments from City of Northglenn
 - Will the draft plan be available online? **Response:** Yes, the draft will be online for stakeholder review, and stakeholders will have the ability to comment on the draft as the SCAP development process continues.
 - Sediment/erosion has been a concern for the Berthoud Pass Ditch adjacent to the old ski lodge.
 - Requested to be included in future discussions and decisions about SCAP activities.
- Comments from Clear Creek County
 - What is the project timeline? **Response:** The draft document is scheduled to be completed by February 2016. Additional stakeholder involvement will occur throughout SCAP development. We will have another stakeholder meeting as the effort progresses.
- Comments from Henderson Mine
 - How will construction activities be phased? Will it delay traffic along Berthoud Pass? When construction funds become available and project activities occur in the future, CDOT will inform stakeholders about possible delays that may be experienced.
- Comments from Winter Park Water and Sanitation
 - The organization has been concerned about sedimentation for a long time and has seen some improvement at their diversion (water supply intake is near Jim Creek). Currently worried about effects between the Fraser River Diversion Dam sedimentation pond and their intake. Would like to be kept involved in the SCAP process.

- Comments from Town of Winter Park
 - Will the SCAP address any rehabilitation to correct the wetland impacts that have already occurred? **Response:** Not directly, but the plan will focus on restricting future sediment erosion in the roadway right of way. Many areas naturally recover once sediment/erosion activities are controlled at the source, so rehabilitation may be unnecessary. Additionally, getting into wetland areas impacted by sedimentation would be very expensive and could likely cause damage by gaining access. In general, the SCAP will be focused on areas close to the roadway.
 - What is the northern terminus of the SCAP? **Response:** Near Jim Creek. The area near Jim Creek and the water treatment plant intake has been surveyed by Clear Creek Consultants for inclusion in the SCAP.
- Comments from Denver Water
 - What is the proposed percent recovery of material/traction sand being applied? **Response:** The SCAP will target a recovery goal of about 80% of material, which seems reasonable based on prior experiences in other locations.
 - What is currently being recovered? **Response:** Very little volume is currently being recovered on the west side of the pass, and capture volumes are not really known. The west side of Berthoud Pass currently only has about 0.5 miles covered by BMPs. On the east side of Berthoud Pass where BMPs were installed with the highway improvement project completed in 2006, about 60-70% of volume is being captured.
 - How will average capture volumes be determined? **Response:** Those volumes will be estimated based on the amount of material applied. 100% is generally infeasible, so 80% will be the long term goal. However, a light winter or low traction sand usage could mean that captured volume could be closer to 90% or even more.

D. Next Steps

- Field reconnaissance is complete. Going forward, a detailed mapbook and specific BMPs will be developed and considered.
- Clear Creek Consultants and CDOT will then start to prioritize what areas have the highest need for BMPs and sediment control.
- Stakeholders agreed that an interim meeting is not necessary, but they would like to be kept informed as SCAP development advances. Information will be shared electronically, and stakeholders will have the opportunity to review the draft SCAP. A meeting will be held to discuss comments after availability of the SCAP draft.



Berthoud Pass Sediment Control Action Plan

Meeting: Project Stakeholder Meeting #1

Location: Georgetown and Winter Park, CO

Date/Time: 10/5/2015 from 1:30 to 3:00

Name	Organization	Role	Phone	Email	Initial
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Francesca Tordonato	CDOT Region 1	Environmental Project Manager / Biologist	720-497-6942	francesca.tordonato@state.co.us	<input type="checkbox"/>
Holly Huyck	CDOT Region 1	Environmental Project Manager / Water Quality	720-497-6934	holly.huyck@state.co.us	<input checked="" type="checkbox"/> <i>HH</i>
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Name	Organization	Role	Phone	Email	Initial
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Name	Organization	Role	Phone	Email	Initial
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James Shockey	Town of Winter Park	Town Planner	970-726-8081	jshockey@wpgov.com	<input checked="" type="checkbox"/> JS
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Kirk Klancke	Trout Unlimited/Friends of the Fraser	Headwaters Chapter President	970-531-7166	kirkklancke@gmail.com	<input type="checkbox"/>
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Jim Ford	Upper Clear Creek Watershed Assoc/Town of Black Hawk	Chair/Water Quality		jford@cityofblackhawk.org	<input type="checkbox"/>

Name	Organization	Role	Phone	Email	Initial
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Chris Brown	USFS Sulphur Ranger District	Hydrologist	970-887-4141	crbrown@fs.fed.us	<input type="checkbox"/>
Craig Magwire	USFS Sulphur Ranger District	District Ranger	970-887-4124	cmagwire@fs.fed.us	<input type="checkbox"/>
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					<input type="checkbox"/>
					<input type="checkbox"/>



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Berthoud Pass Sediment Control Action Plan



SCAP Overview: Presented By Clear Creek Consultants



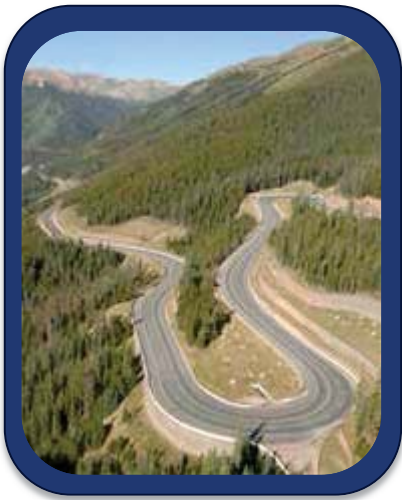
Clear Creek Consultants



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SCAP Background

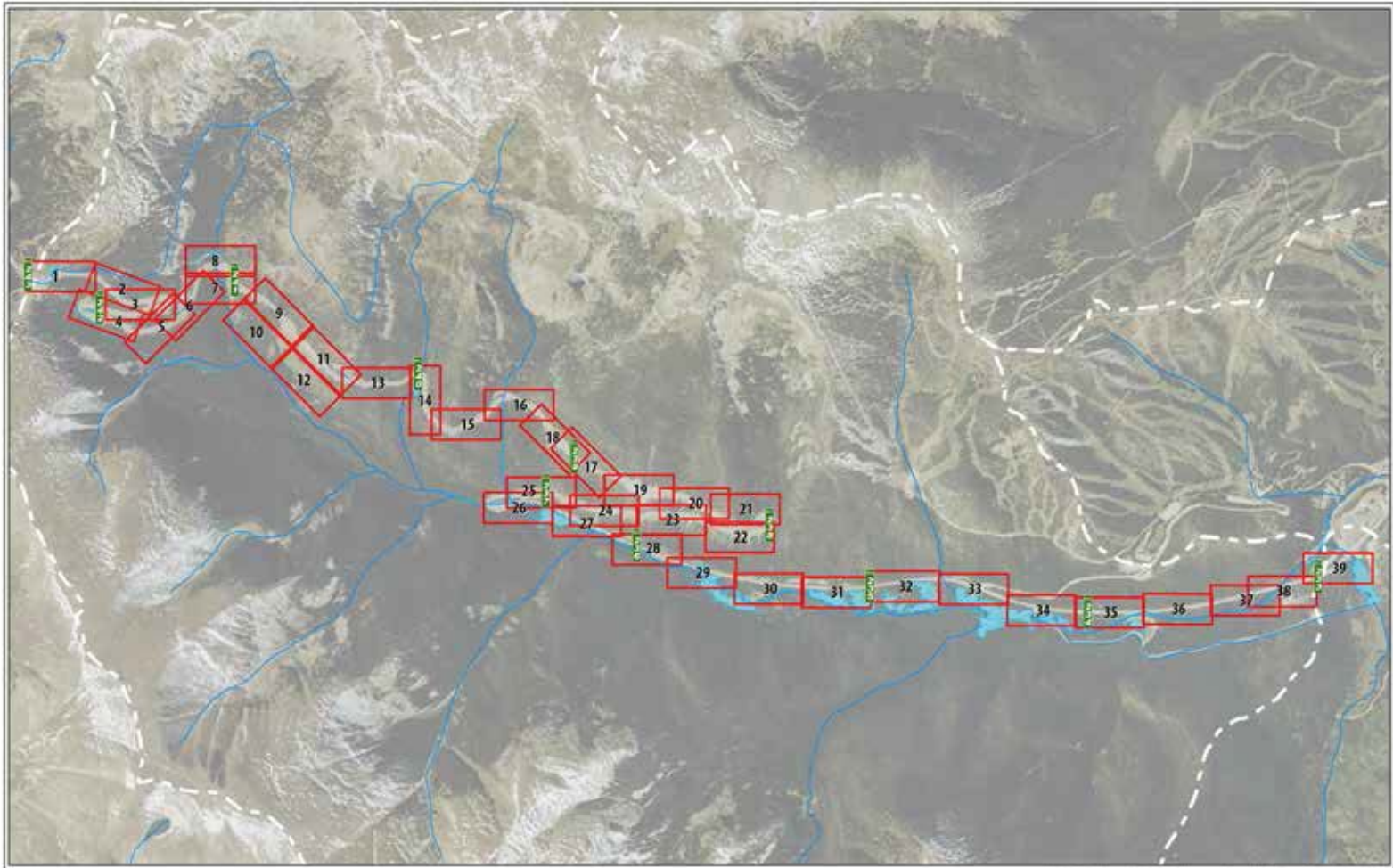


- ❖ Plan to control sediment from winter traction sand and slope erosion
- ❖ 10-miles of US-40 west of Berthoud Pass summit - tributary to Fraser River
- ❖ 1.3-miles of US-40 east of Berthoud Pass summit - tributary to Hoop Creek
- ❖ Elevation ranges from 9,200 to 11,300 feet
- ❖ Study area map on next slide



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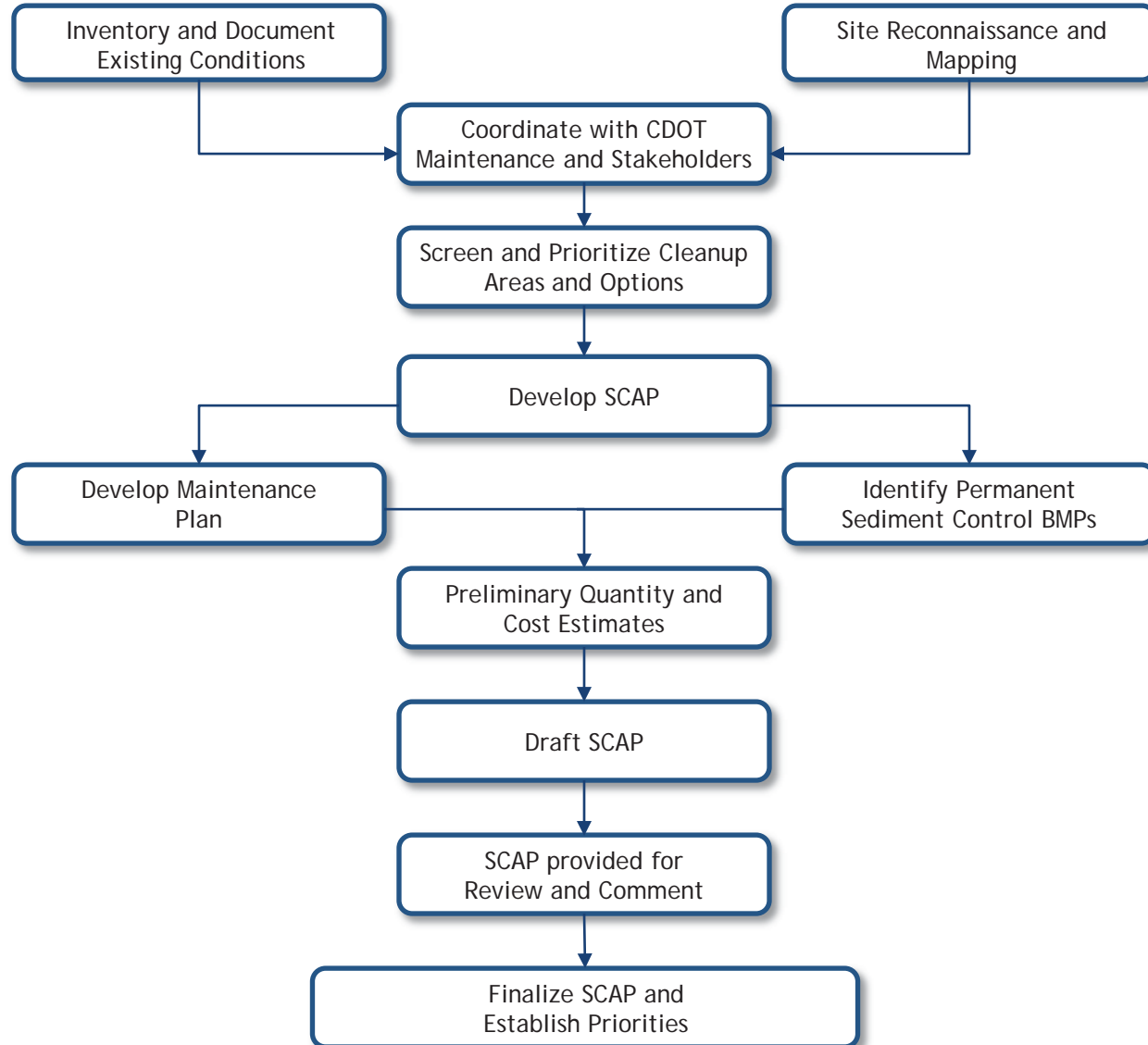
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West Berthoud Pass Sediment Control Action Plan - Map Index



SCAP Development Process





Conditions along US-40 Berthoud Pass

- ❖ Weather conditions, elevation, and gradient affect application of traction sand
- ❖ US-40 was built with minimal drainage infrastructure
- ❖ Highway runoff drains directly into tributary streams
- ❖ Cut and fill slope erosion
- ❖ Limited space for treatment
- ❖ Some BMPs already in place (effectiveness varies)





Heavy Traction Sand Deposits Highway Runoff Drains Directly into Forest



Drains to Forest without Treatment



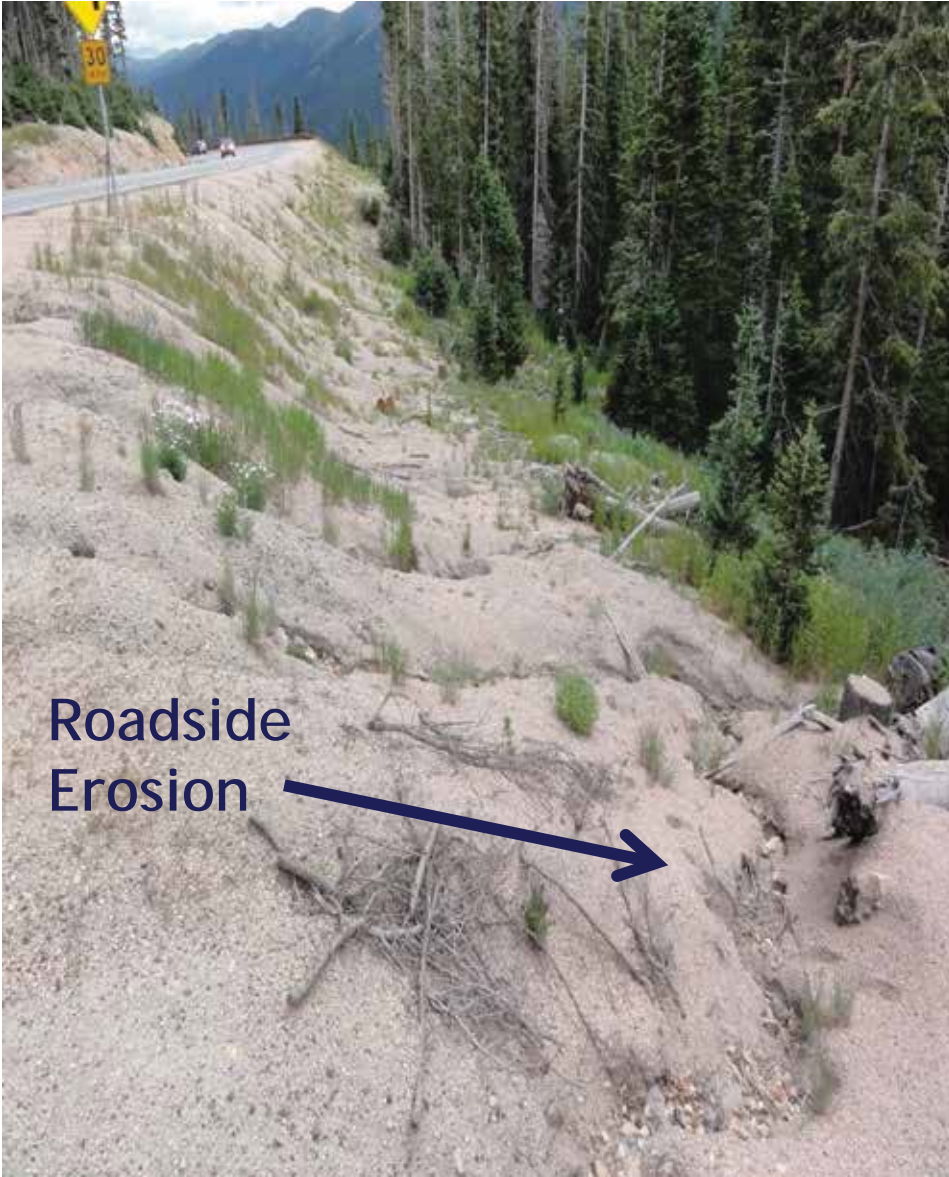
Winter Traction Sand



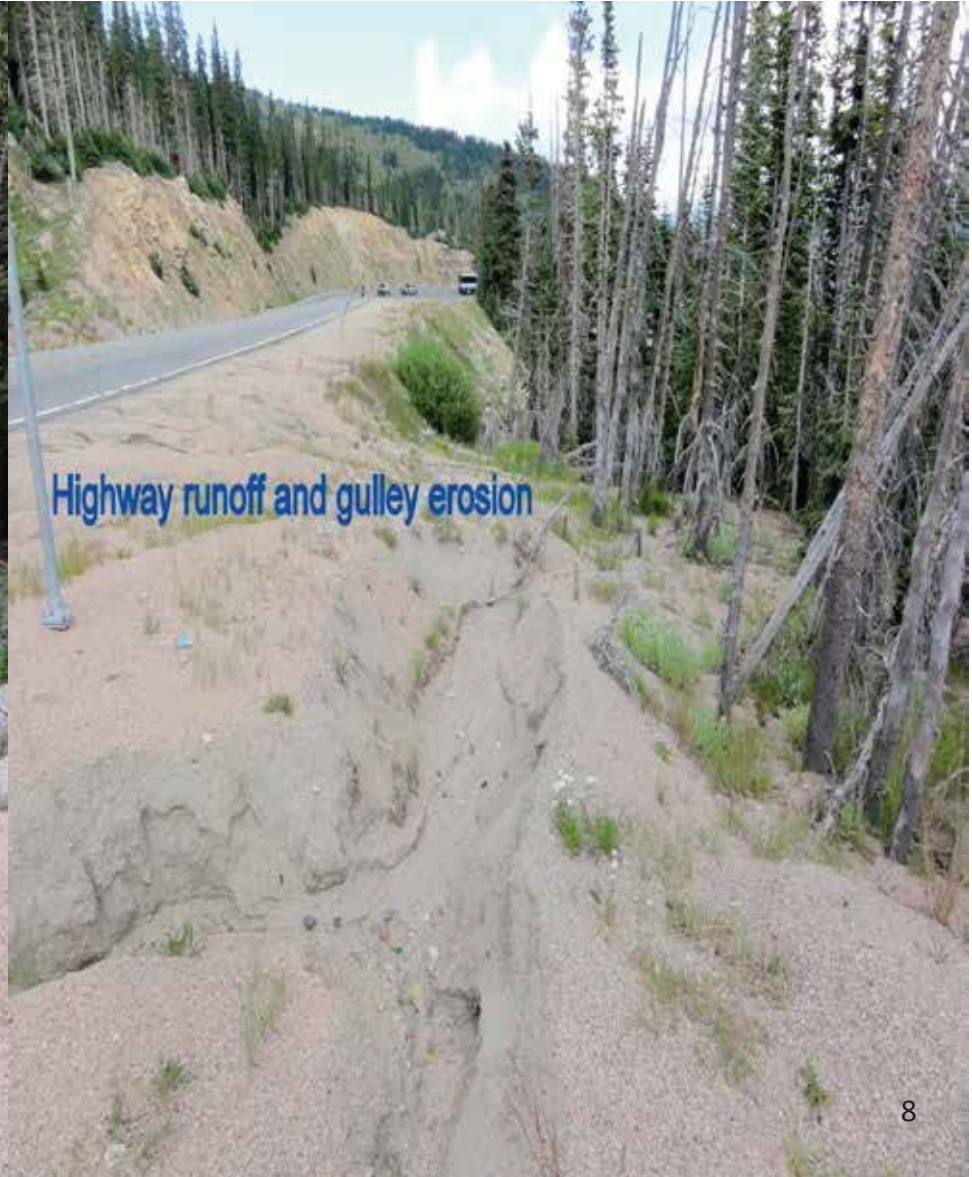
Roadside Erosion



Heavy Sediment Loading Highway Runoff Eroding Through Sand Deposits



Roadside
Erosion



Highway runoff and gulley erosion



Slope Erosion and Sediment Transport

Highway Drainage and Embankment Erosion





Sand Eroding into Wetlands and Streams

Highway Drainage and Sediment Transport



Wetland
Area



Fraser
River





Heavy Sediment Loading Snowmelt and Rainfall Runoff





Limited Space for BMPs



Limited space for
treatment facilities



Winter Traction Sanding Annual Application Data (2008-2015)

Berthoud Pass West 10.3 miles (*MP 232.7 to 243*)

- Average = 339 tons/mile (*FY 2008-2015*)
- Maximum = 684 tons/mile (*FY 2008*)

Berthoud Pass 25.6 miles (*MP 232.7 to 258.3*)

- Average = 245 tons/mile (*FY 2008-2015*)
- Maximum = 418 tons/mile (*FY 2008*)

Used traction sand analysis

- Only slightly elevated levels of oil and grease

Source: CDOT SAP



Sediment Control Challenge

BMPs Must:

- ❖ Be safe to access and easy to maintain
- ❖ Handle moderate to large volumes of sediment
- ❖ Fit in available space along highway right-of-way
- ❖ Be compatible with traffic safety
- ❖ Function in high mountain environment and climate
- ❖ Use passive treatment systems
- ❖ Have adequate storage volume to be maintained 1x per year



Drainage Collection System BMPs

- ❖ Curb and Gutter or Concrete Pan
- ❖ Paved Shoulders and Retaining Walls
- ❖ Snow Storage Areas and Parallel Snow Storage
- ❖ Drainage Rundowns/Slope Drains
- ❖ Slope Stabilization and Revegetation
- ❖ Clean Water Diversion (Highway Bypass)



Concrete Drainage Pan

Drainage Pan
Accommodates
Sweepers



- Prevents channel erosion
- Requires periodic sweeping
- Only needed in priority areas



Paved Shoulder and Retaining Wall





Parallel Snow Storage



Sediment accumulation in snow storage area on Berthoud Pass



Drainage Rundowns/Rock Channels



Boulder Channel Rundown



Buried Pipe Rundown



Clean Water Diversion (Highway Bypass)



Culvert bypasses clean tributary water under highway



Slope Stabilization and Revegetation



Gregg Gargan, CDOT



Treatment System BMPs

- ❖ Detention/Sediment Basins
- ❖ Loading Dock Sediment Trap
- ❖ Inlet Sediment Traps and Sand Cans
- ❖ Shoulder Bench Trap





Sedimentation Basin





Concrete Sediment Basin





Traction Sand Trap – Loading Dock



Berthoud Pass Sediment Trap

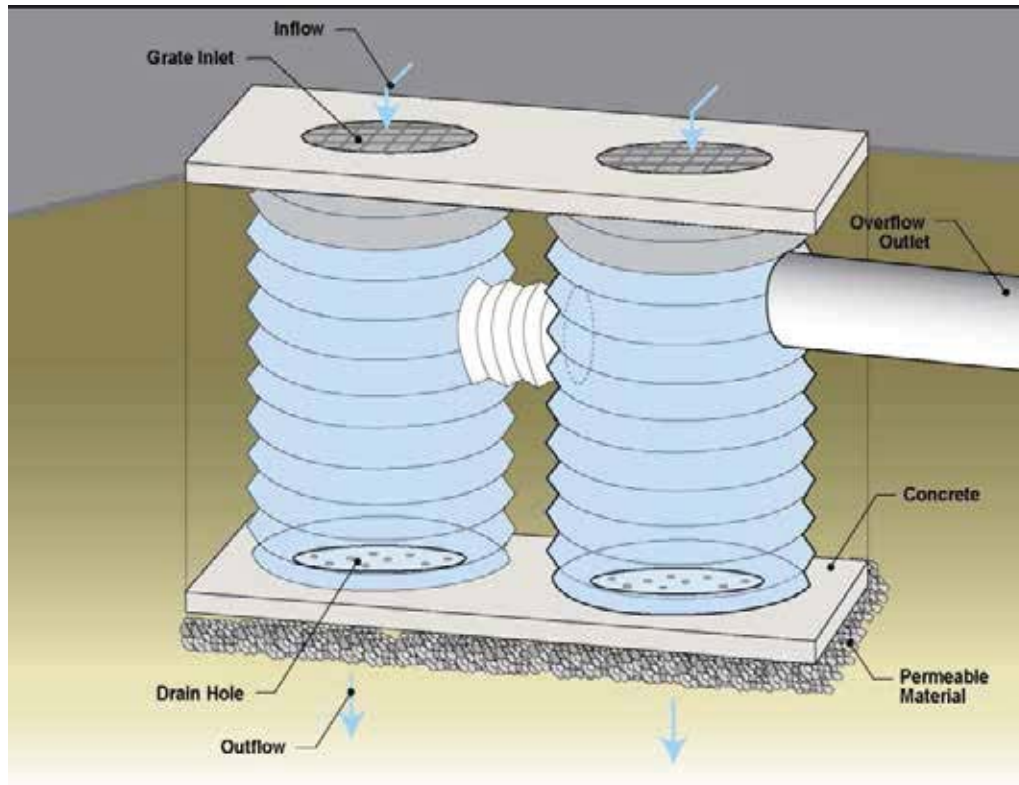


Traction Sand Trap – Loading Dock





Inlet Sediment Trap



Inlet Traps or "Sand Cans" - Double Barrel Modified CMPs



Shoulder Bench Trap for Traction Sand



Graded bench to capture sediment



Non-Structural BMPs

- ❖ Improved Sanding Practices/Training
 - ✓ *Application regulators, calibration, slower speeds*
- ❖ Road-Weather Information System (RWIS)
 - ✓ *Real-time weather forecasting, roadway sensors*
- ❖ Advanced Sanding Truck Technology
 - ✓ *Pavement temp. sensor, friction sensor, GPS/ALV*
- ❖ Roadway Sweeping/Cleanup
- ❖ Anti-icing/Liquid Deicer



Non-Structural BMPs Highway Sweeping



Berthoud Pass Shoulder Sweeping



Stakeholder Input and Discussion



Thanks for your participation.



Next Steps



Stakeholder Reviews

1/7/2016 letter correspondence from Northglenn
12/28/2016 Draft SCAP distribution e-mail to stakeholders
1/20/2017 Clear Creek County e-mail response
1/20/2017 Winter Park Water & Sanitation District letter
1/30/2017 Northglenn review comments
1/30/2017 Grand County review comments



January 7, 2016

Holly Huyck
Colorado Department of Transportation
425A Corporate Circle
Golden, CO 80401

RE: Berthoud Pass Sediment Control Action Plan (SCAP)

Dear Ms. Huyck,

The City of Northglenn appreciates the opportunity to comment on the Colorado Department of Transportation's sediment control planning process on U.S. 40, Berthoud Pass. Northglenn's comments are limited to Berthoud Pass summit and the 1.3 miles of U.S. 40 east of the summit.

The Cities of Northglenn and Golden possess transbasin water rights that are diverted from tributaries to the Frasier River in the Berthoud Pass Ditch and Pipeline (Ditch), under the parking lot at the Continental Divide visitor area, daylighting into Hoop Creek. In 2001, the Cities began the planning process to replace the pipeline and stabilize the top section of Hoop Creek. The planning and construction aspects of the project took multiple years to complete at a construction cost of approximately \$800,000. Our interest is in protecting existing infrastructure including the pipeline, headwall, and Hoop Creek bank stabilization structures. For ease of discussion, Northglenn's comments are structured geographically west to east. Sets of photos from shortly after completion of both the pipeline and Hoop Creek improvements (Figures 2 and 7) are compared to photos taken in September 2015 to illustrate our concerns.

West Side of the Continental Divide Parking Lot

Traction sand has largely covered and filled in the rock retaining wall adjacent to Hwy 40 (Figure 1). Northglenn is concerned that wall stabilization may be compromised; sand can separate boulders through the freezing and thawing process. If the wall gives way, the integrity of our pipeline is in jeopardy. Embankment erosion further jeopardizes wall integrity. Rill erosion is damaging Northglenn's access road to the ditch and the USGS gage (Figure 3). Additionally, excess sand and sediment from the highway creates additional maintenance time and costs annually, for cleaning and maintaining the ditch below this location. Northglenn recognizes that there is likely not sufficient space between the edge of the highway and the rock wall to install

a BMP. The City would like to talk to CDOT about partnering on 1) removal of existing sediment and 2) future maintenance.



Figure 1. Deposition of sand in retaining wall along Highway 40. Rock wall above the culvert is no longer visible due to the quantity of traction sand and small fence is nearly covered, **September 2015.**



Figure 2. View of retaining wall and access road, just after construction, **July 2005.**



Figure 3. View of access road, **September 2015**. Heavy rill erosion has made the road unstable and impassable via vehicle; retaining wall no longer visible.

Continental Divide Parking Lot and Hoop Creek

Traction sand deposition into the west facing boulder retaining wall is causing the same concerns mentioned in the previous section of this letter (Figure 4).



Figure 4. Sand and sediment in the parking lot just above the retaining wall, **September 2015**.

There is a large pile of traction sand in the parking lot (Figure 5). It looks as though sand from this pile has plugged the stormwater inlet immediately down gradient from the pile. The inlet structure needs to be initially cleaned and thereafter regularly cleaned, and the existing pile removed.



Figure 5. Sand stock pile on the parking lot, **September 2015.**

Northglenn staff would like to discuss snow stockpiling practices with CDOT staff. Extensive rill erosion is occurring on the east side of the parking lot above the pipeline headwall (Figure 6). It is believed to be caused by snow melt from stock piled snow. The erosion and entrained sand have covered the rock dissipation wall at the top of the parking lot, logs laid parallel to the slope to slow down runoff have been undercut, established vegetation is largely gone, and the stability of the headwall is threatened (Figures 6 and 8). There is an immediate need to address this concern. Who at CDOT should Northglenn staff contact regarding these concerns?



Figure 6. Rill erosion under log structure placed above pipeline headwall, **September 2015.**

Back cutting of bank stabilization structures was observed at the September 2015 site visit. The source of erosion, be it transbasin diversions, direct highway runoff, or runoff from parking lot sources, is not clear. Addressing snow stockpiling concerns, cleaning of the stormwater inlet, maintenance of the energy dissipation logs, and reestablishing vegetation, are suggested as starting points to limit or slow stormwater runoff.



Figure 7. Erosion control structure above the pipeline headwall, **November 2004**. Large pipeline is the Berthoud Pass Ditch outlet, smaller outlet is the stormwater drain for the parking lot. The stormwater drain is plugged with sediment from the parking lot and is not functioning as designed.



Figure 8. Sediment deposition (bottom of photo) and rill erosion above headwall, **September 2015**. Figure 6 is a closeup of undercutting of log structure caused by the rill erosion.

The City looks forward to hearing back from you regarding our concerns. Should you have any questions, do not hesitate to contact me at: 303.450.4070 or tmoon@northglenn.org.

Regards,

Tamara Moon
Water Resources Administrator
City of Northglenn
Public Works Department
12301 Claude Court
Northglenn, CO 80241

CC: Anne Beirele, City of Golden

From: Jodie.Snyder
To: ["info@centralclearcreeksd.com"](mailto:info@centralclearcreeksd.com); ["abeierle@cityofgolden.net"](mailto:abeierle@cityofgolden.net); ["tpond@cityofgolden.net"](mailto:tpond@cityofgolden.net); ["wstambaugh@cityofgolden.net"](mailto:wstambaugh@cityofgolden.net); ["pw@idahospringsco.com"](mailto:pw@idahospringsco.com); ["kkisselman@northglenn.org"](mailto:kkisselman@northglenn.org); ["sstanley@northglenn.org"](mailto:sstanley@northglenn.org); ["tmoon@northglenn.org"](mailto:tmoon@northglenn.org); ["ssjoholmdehaas@northglenn.org"](mailto:ssjoholmdehaas@northglenn.org); ["mfabisia@cityofwestminster.us"](mailto:mfabisia@cityofwestminster.us); ["bweaver@co.clear-creek.co.us"](mailto:bweaver@co.clear-creek.co.us); ["jsorensen@co.clear-creek.co.us"](mailto:jsorensen@co.clear-creek.co.us); ["ccvsvrk@aol.com"](mailto:ccvsvrk@aol.com); ["info@clearcreekwater.org"](mailto:info@clearcreekwater.org); ["jdavidholm@gmail.com"](mailto:jdavidholm@gmail.com); ["carse@coloradoheadwaterslandtrust.org"](mailto:carse@coloradoheadwaterslandtrust.org); ["lyle.sidener@state.co.us"](mailto:lyle.sidener@state.co.us); ["paul.winkle@state.co.us"](mailto:paul.winkle@state.co.us); ["ben.moline@molsoncoors.com"](mailto:ben.moline@molsoncoors.com); ["kevin.urie@denverwater.org"](mailto:kevin.urie@denverwater.org); ["kmorris@co.grand.co.us"](mailto:kmorris@co.grand.co.us); ["bhutchins@gcws1.com"](mailto:bhutchins@gcws1.com); ["ryan.lokteff@gcwin.org"](mailto:ryan.lokteff@gcwin.org); ["kvecchiarelli@jvajva.com"](mailto:kvecchiarelli@jvajva.com); ["wkbirdlady@aol.com"](mailto:wkbirdlady@aol.com); ["acwiklin@town.fraser.co.us"](mailto:acwiklin@town.fraser.co.us); ["jshockey@wpgov.com"](mailto:jshockey@wpgov.com); ["tim2e@comcast.net"](mailto:tim2e@comcast.net); ["kirkklancke@gmail.com"](mailto:kirkklancke@gmail.com); ["miguel_hamarat@fmi.com"](mailto:miguel_hamarat@fmi.com); ["jford@cityofblackhawk.org"](mailto:jford@cityofblackhawk.org); ["pwu@fs.fed.us"](mailto:pwu@fs.fed.us); ["dsumerlin@fs.fed.us"](mailto:dsumerlin@fs.fed.us); ["crbrown@fs.fed.us"](mailto:crbrown@fs.fed.us); ["cmagwire@fs.fed.us"](mailto:cmagwire@fs.fed.us); ["dkbartlett@fs.fed.us"](mailto:dkbartlett@fs.fed.us); ["kellyllarkin@fs.fed.us"](mailto:kellyllarkin@fs.fed.us); ["manager@wprwater.com"](mailto:manager@wprwater.com); ["DLaraby@winterparkresort.com"](mailto:DLaraby@winterparkresort.com); ["mrwageck@wpwsd.com"](mailto:mrwageck@wpwsd.com)
Cc: ["Klaetsch - CDOT, Jennifer"](#); [Michael Vanderhoof - CDOT](#); ["Gerak - CDOT, Janet"](#); [Attardo - CDOT, Chuck \(Charles\)](#); ["Grant Anderson \(Grant.Anderson@state.co.us\)"](mailto:Grant.Anderson@state.co.us); ["Mike Crouse"](#); ["Rick Andrew"](#); [Thor.Gjelsteen](#)
Subject: Berthoud Pass SCAP -- available for stakeholder review
Date: Wednesday, December 28, 2016 11:24:00 AM
Attachments: [image001.jpg](#)
[BerthoudPassSCAP_Comments.xls](#)

Berthoud Pass SCAP Stakeholder Group,

This message includes an update regarding the Berthoud Pass West Sediment Control Action Plan (SCAP), being developed by the Colorado Department of Transportation (CDOT).

You may recall the SCAP includes planning efforts to study sedimentation from winter traction sand and slope erosion along US 40 MP 232.8 to 244.3 Berthoud Pass West. In turn, the SCAP will identify potential scenarios for enhanced maintenance and sediment control features to be implemented when funding is available.

A stakeholder meeting was held on October 5, 2015 to present an overview of the SCAP effort and to solicit initial feedback from stakeholders. A meeting summary was then provided by e-mail on October 29, 2015 with a goal to keep stakeholders informed as SCAP development progresses. Since October 2015, a preliminary draft of the SCAP was developed and given a preliminary review by CDOT staff. The draft SCAP has been updated and is now available for stakeholder review.

The draft SCAP and appendices are available as a ZIP file for download (click this [link](#)). This download may take several minutes and will prompt you to save a ZIP file named "December2016_SCAP_Review.zip." Opening that ZIP file will provide seven files total: six PDFs comprising the draft SCAP and appendices plus a Google Earth KMZ file.

We are attaching a comment form for your convenience. To facilitate comment tracking, it would be helpful if you would provide your comments on the attached comment form and return it to Jodie Snyder (jodie.snyder@fhueng.com) by January 30, 2017. After comments are received, we will schedule a conference call or meeting, likely in February 2017, to discuss comments and next steps.

Thanks very much for your continued interest in the Berthoud Pass SCAP. CDOT is eager to gather input and suggestions from the stakeholder group. If you have questions or need further information please contact Jen Klaetsch (jennifer.klaetsch@state.co.us), CDOT's project manager, or Jodie Snyder (jodie.snyder@fhueng.com), stakeholder coordinator for the consultant team.

Wishing you a happy holiday season,

Jodie

Jodie A. Snyder, LEED AP | Senior Environmental Planner/Scientist
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Jodie.Snyder@fhueng.com | www.fhueng.com



From: [JoAnn Sorensen](#)
To: [Jodie.Snyder](#)
Subject: RE: Berthoud Pass SCAP -- available for stakeholder review
Date: Friday, January 20, 2017 2:58:45 PM
Attachments: [image002.jpg](#)

Thanks, Jodie. I have no specific comments. As a general comment, I would offer that I think this document is well done, very informative and certainly explains the issues so even a non-technical person like myself gets an understanding of the situation and the issues. I will be interested in the implementation commitments.

Jo Ann Sorensen
Transportation Liaison
Clear Creek County
PO Box 2000
1111 Rose Street
Georgetown, CO 80444

Phone: 303-679-2409
Fax: 303-569-1103



Winter Park Water & Sanitation District
P.O. Box 7, Winter Park, CO 80482

Administration 970.887.2970
Water Plant 970.726.9221
Wastewater Plant 970.726.5041

January 20, 2017

Mrs. Jodie Snyder,
Senior Environmental Planner/Scientist
Felsburg, Holt and Ullevig
6300 S. Syracuse Way, Suite 600
Centennial, CO 80111

Re: CDOT Sediment Control Action Plan

Dear Mrs. Snyder,

This letter is submitted on behalf of Winter Park Water and Sanitation District (District) regarding the draft Sediment Control Action Plan (SCAP). The District is pleased CDOT is looking to help reduce the environmental impact of sediment and traction sand on the west side of Berthoud Pass. It is extremely important to the District that sediment and traction sand be controlled or eliminated in the Fraser River. The District's water supply is a direct diversion on the Fraser River and is directly impacted by sediment. The location of the diversion is within the West Berthoud Pass Planning Area near the northern limit of the SCAP. All sediment and traction sand flowing down river has the potential to affect our water treatment plant facilities.

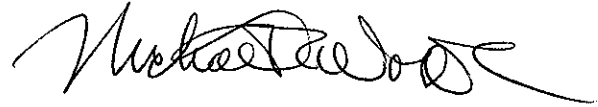
The Best Management Practices (BMP) recommended by the SCAP has the potential to significantly reduce the amount of sediment loading to the river. We recommend these BMP be implemented as soon as possible. Scenario's 3 and 4 seem to offer the best course of action to reduce sediment loading. Scenario 3 seems the most likely to be implemented. Problem areas should be prioritized. Each year priority projects could be budgeted for and undertaken. The report indicates that environmental related maintenance activities are relatively new and no new funding sources have been made available for this important work. Funding for these activities needs to take a higher priority. Also, sand clean up can fall into many Major Program Areas (MPA). Implementation of this SCAP into routine maintenance activities would require an entirely new focus and prioritization of maintenance operations. These maintenance activities need to become part of the routine.

This report indicates the environmental impacts of the use of chemical di-icers is not known. This action plan needs to address this area of concern. The water we divert is our drinking water supply.

Many State and local organizations throughout the Colorado River Basin from the headwaters here in Grand County to the state line have been working to improve the water quality of the Colorado River. Contamination of the river in the headwaters has an environmental, social, and economic impact all throughout the river basin.

Realizing that safety of the traveling public is the top priority it is imperative that CDOT take whatever steps it can to prevent contamination of the headwaters of the Colorado River.

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Michael R. Wageck". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Michael R. Wageck, C.W.P.
District Manager

cc: Board of Directors
Town of Winter Park
Grand County

Berthoud Pass SCAP Review - December 2016/January 2017

Please respond to Jodie Snyder (jodie.snyder@fhueng.com) by January 30, 2017.

YOUR NAME	YOUR ORGANIZATION	SECTION #	PAGE	COMMENT	RESPONSE (PROJECT TEAM)
Moon, Tami	City of Northglenn	Executive Summary	ES-1	3rd paragraph, 1st sentence, Northglenn appreciates CDOT's recognition of the importance for coordination among stakeholders to discuss water quality and develop sediment control strategies. Northglenn looks forward to working w CDOT on sediment control strategies and offers assistance with maintenance activities related to traction sand removal at the Berthoud Pass parking area.	CDOT will continue coordination with Northglenn staff regarding the Berthoud Pass parking area and other issues.
Moon, Tami	City of Northglenn	5.1.2.1 Berthoud Pass East - Hoop Creek	25/26	Paragraph 6, last sentence on page 25 and first paragraph on page 26.... <i>with the exception of Berthoud Pass Ditch branch</i> . Northglenn recognizes that transbasin diversions move sediment. Northglenn contends that the origin of the sediment is both naturally occurring (i.e. from erosion) and from traction sand moved directly off the parking lot after a precipitation event as well as, from the stormwater inlet, currently filled with traction sand due to lack of maintenance. Northglenn is willing to contribute some funding (cash or in-kind) for both removal of the existing traction sand pile (Figure 5 in our comment letter) and cleaning of the stormwater inlet adjacent to the pile.	We agree sediment sources include both channel erosion and traction sand. There are multiple areas of channel erosion at the summit and in the Berthoud Pass Ditch discharge channel. Sediment sources at the summit were identified and BMPs have been recommended (see SCAP Mapbook sheet 2).
Moon, Tami	City of Northglenn	5.2.1.1C - Snow Storage	34	While this section is primarily concerned with snow storage at turnouts and shoulders, Northglenn would like to work with CDOT on snow storage at the pass rest stop. Including siting, maintenance, and potential for inclusion of a retention area in Rest Area improvements.	CDOT will continue coordination with Northglenn staff, and a formal snow storage and retention area will be considered for the Berthoud Pass summit.
Moon, Tami	City of Northglenn	5.2.2.1C - Vacuum Truck	38	Northglenn read with interest CDOT's investment in a vacuum truck and requests that CDOT consider using it to address sand that is entering our transbasin ditch (Figure 1 in comment letter). If the application is not appropriate, Northglenn requests that CDOT work with Northglenn staff to remove existing traction sand and work towards a long term, mitigation solution. removal of sand from the storm water inlet is an ideal use of a vac truck. Northglenn asks CDOT to consider implementing this application as requested in our comment letter.	CDOT will continue coordination with Northglenn staff, looking for opportunities to advance SCAP implementation at the summit.
Moon, Tami	City of Northglenn	6.0 BMP Maintenance Program	65	Bulleted list - Northglenn is highly supportive of and would like to work with CDOT staff regarding maintenance of inlets, sweeping, and removal of sand/sediment materials to permanent disposal areas.	As noted, CDOT will continue coordination with Northglenn on these issues.

Berthoud Pass SCAP Review - December 2016/January 2017

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YOUR NAME	YOUR ORGANIZATION	SECTION #	PAGE	COMMENT	RESPONSE (PROJECT TEAM)
Katherine Morris	Grand County	General Comment	n/a	<p>A statement of applicable water quality standards and the relevance of Colorado's Basic Standards and Methodologies for Surface Water, Regulation 31, which are based upon the Clean Water Act, as they relate to the introduction of sediment may help to make a compelling case to fund sediment control activities.</p> <p>In particular, section 31.11 of this regulation provides the following language: All surface waters of the State are subject to the following basic standards; however, discharge of substances regulated by permits which are within those permit limitations shall not be a basis for enforcement proceedings under these basic standards: (1) Except where authorized by permits, BMP's, 401 Certifications, or plans of operation approved by the Division or other applicable agencies, state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which: (a) For all surface waters except wetlands; (i) can settle to form bottom deposits detrimental to the beneficial uses. Depositions are stream bottom buildup of materials which include but are not limited to anaerobic sludges, mine slurry or tailings, silt, or mud;</p>	This regulatory language has been incorporated into the SCAP.
Katherine Morris	Grand County	General Comment	n/a	<p>The Water Quality Control Commission has developed Policy 98-1 "Guidance for implementation of Colorado's Narrative Sediment Standard Regulation #31, section 31.11(1)(a)(i)". This guidance document for the narrative sediment standard describes sediment thresholds, including weighted average scores based upon macroinvertebrate survival rates, and acceptable levels of percent fines less than 2 millimeters. These thresholds are primarily expected to be implemented through the macroinvertebrate assessment process and the 303(d) (list of threatened and endangered waters) listing process. This information should be useful to understand the impact of current sediment levels in tributary creeks on the west/north side of Berthoud pass, and whether or not they would result in 303(d) listing.</p>	CDOT is familiar with WQCC Policy 98-1 and has worked with this guidance in other mountain highway corridor streams as discussed in Section 5.1.2. We have expanded Section 3.1 with additional language regarding this policy.
Katherine Morris	Grand County	General Comment		<p>In general, Grand County supports the concepts proposed in the SCAP. Comments provided below are to suggest additional ideas, support concepts, correct or expand information provided. There are many concepts presented here that Grand County supports but that have not been specifically called out.</p>	Thank you for this feedback.
Katherine Morris	Grand County	General Comment	n/a	<p>So that the sediment control actions don't appear to be more of a drain on financial resources than they really are, wherever possible it seems as though it would be important to somehow distinguish the additional maintenance and improvements that will be required to accommodate increases in Colorado population from the additional costs resulting from addressing sedimentation.</p>	The planning-level costs identified in the SCAP are for implementation of measures to address sedimentation, not for improvements to accommodate increases in population.
Katherine Morris	Grand County	General Comment	n/a	<p>As a means of bringing CDOT maintenance up to the level that is necessary to keep existing structures functioning as designed, Scenario 2 seems to be the minimum acceptable action as described by the draft SCAP. Obviously, for the health of tributary streams and the Fraser River, scenarios 3 or 4 would be vastly preferable.</p>	Thank you for this feedback.

Berthoud Pass SCAP Review - December 2016/January 2017

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YOUR NAME	YOUR ORGANIZATION	SECTION #	PAGE	COMMENT	RESPONSE (PROJECT TEAM)
Katherine Morris	Grand County	Executive Summary	ES-3	"...and trout populations are showing signs of recovery." This is not a true statement. Colorado Parks and Wildlife has survey data from Idlewild Campground from 2014 and 2016, and trout populations have declined significantly, in some cases by half.	The CPW Fraser River report (Ewert, 2016) covers five fish sampling locations. The Fraser River at Safeway location (in Fraser) has the longest and most consistent history of surveys (2006-2016). The report shows that all subsequent sampling occasions have produced trout population estimates that are greater than 2006. The period of 2013-2016 saw the highest brown trout biomass. The Fraser River at Idlewild Campground location (near Winter Park) has only two fish survey years (2014 and 2016). The report states that "Every parameter of the trout population listed in this table experienced significant declines in 2016." "Because this station was a new location surveyed for the first time in 2014, it is impossible to know which of the two years is out of the ordinary. It is possible that the 2016 data reflects a return to "normal" fish densities for the site and that 2014 happened to be a particularly productive year." "This reach has been the recipient of multiple discharge events in recent years that originate from the Moffat Tunnel. High levels of turbidity have occurred and CPW has received multiple reports from the public and other entities. While we have not observed a direct fish kill as a result of these events, this data appears to provide at least circumstantial evidence of some level of environmental stress or disturbance on the trout population here." The text has been revised to indicate recovery in certain downstream areas.
Katherine Morris	Grand County	1.2	5	"Water remaining in the Fraser River after diversion" also supports populations of rainbow, brown, and brook trout, and other aquatic life. Recreation includes angling and boating, and the river also supports large populations of terrestrial wildlife. Since the report provides a number for the population served by Clear Creek, please include a similar accounting for the population served by Denver Water's diversion and downstream Grand County water users.	The SCAP has been revised to include this information.
Katherine Morris	Grand County	1.3.3	8	Learning by Doing (LBD) is a cooperative effort with interest in maintaining or where possible improving the condition of the Fraser River. LBD is composed of representatives of Colorado Parks and Wildlife, Colorado River Water Conservation District, Denver Water, Grand County, Middle Park Water Conservancy District, Northern Colorado Water Conservancy District, and Trout Unlimited. Notice of this draft SCAP was forwarded to LBD members. LBD meets on a bi-monthly basis, but will likely be interested in tracking SCAP progress.	Thank you for this feedback.
Katherine Morris	Grand County	1.3.4	9	"An integrated approach to sediment control will be required to provide effective water quality protection." --Agree.	Thank you for this feedback.
Katherine Morris	Grand County	2.2	15	See comment on ES-3.	See response on ES-3.

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YOUR NAME	YOUR ORGANIZATION	SECTION #	PAGE	COMMENT	RESPONSE (PROJECT TEAM)
Katherine Morris	Grand County	3.1	17	It is inaccurate to say "there was currently no water quality data available to indicate impairment." The Fraser River is included on Colorado's Section 303(d) list as impaired for aquatic life due to a failing multi-metric index (MMI) score for macroinvertebrates measured at Rendezvous Bridge. The 'provisional' listing is a result of the pollutant of concern not being identified. Data from 2016 indicate further reductions in macroinvertebrate populations. Contact Katherine Morris for the most recent raw data, or see http://co.grand.co.us/778/Water-Reports . The monitoring report for 2016 will be finalized in March. This would perhaps be the section to include water quality standards language and policy 98-1, described above.	The statement has been revised to indicate that no data for a water quality pollutant of concern was identified to indicate impairment. Quotation is from the regulation.
Katherine Morris	Grand County	3.4	19	Please include a discussion of the drinking water supplied by the Fraser River to the people of Grand County, and of the population numbers supplied by Denver Water's diversion. Source Water Protection Plan members include Winter Park Water and Sanitation District, Denver Water, Town of Fraser, Grand County Water and Sanitation District #1, Town of Granby North Service Area, Town of Granby South Service Area, Moraine Park, and Winter Park Ranch Water and Sanitation District.	The requested domestic water supply population estimates have been added.
Katherine Morris	Grand County	4.1	21	There are enough ski areas in Colorado that the problems with sedimentation on Berthoud Pass hardly seem isolated. The SCAP in this section seems to be alluding to the creation of a new MLOS or the acknowledged expansion of the Roadside Facilities MPA: Grand County and probably several other counties in ski country would support this.	Thank you for this feedback.
Katherine Morris	Grand County	4.1	23	Grand County agrees with the statement "...the maintenance program may require a new approach and philosophy regarding maintenance priorities and responsibilities. To be effective, sediment control needs to receive a high priority under the MLOS program during summer months, as snow and ice control is [prioritized] during winter the months."	Thank you for this feedback.
Katherine Morris	Grand County	5.1		The literature review appears to be all in the I-70 corridor. Was there no literature available for the Fraser side?	Project team is not aware of any traction sand or chemical deicer studies in Grand County.
Katherine Morris	Grand County	5.2.2.1	37	Grand County agrees with and has sent letters in the past that support the statement "Highway sweeping on Colorado mountain highways should take place immediately after spring snowmelt has finished (May), when sediment build-up is at its highest, and before heavy monsoon rains occur." The following statements support the opinion voiced above that scenario 2 would be the absolute minimum desirable action by CDOT: "The use of traction sand over a period of many years on high mountain passes such as Berthoud has resulted in partial or complete burial of drainage inlets and culverts in many locations. CDOT maintenance forces have attempted to clear sediment from inlets at most locations but the amount of material is overwhelming. This, in combination with a lack of maintenance funding and planning, has resulted in an ineffective drainage system that can exacerbate channel erosion between inlets – the water cannot drain properly. Cleaning of the existing drainage infrastructure, including any collection and treatment BMPs, is essential for sediment control."	Thank you for this feedback.
Katherine Morris	Grand County	5.3.1.4	43	Grand County supports prioritization of keeping traction sand out of tributary creeks. It would be important to provide clean water bypasses in these sections, and if at all possible to construct these with aquatic organism passage culverts to restore habitat connectivity above and below the roadway and allow for the proper movement of sediments through the culverts, rather than promoting damming of sediments behind culverts, and increasing erosive forces around the culverts.	The plan is to capture roadway runoff and sediment before it enters perennial tributary streams. Some tributary channels are over-steepened where they cross the roadway, causing excessive channel erosion. Channel stabilization is recommended in these areas.

Berthoud Pass SCAP Review - December 2016/January 2017

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YOUR NAME	YOUR ORGANIZATION	SECTION #	PAGE	COMMENT	RESPONSE (PROJECT TEAM)
Katherine Morris	Grand County	5.3.2	44	<p>"Several areas exist where the original drainage design is inadequate, or the drainage system has been altered by sedimentation to the extent that it no longer functions properly." This statement further supports implementation of Scenario 2 at a minimum (to clean out existing drainage), and Scenarios 3 and 4 to the extent that they resolve the drainage and potential related safety or overall integrity issues. (See also p46: "However, the drainage system has been altered from sand deposition along the shoulders. In some cases, cross drains are buried with sediment causing excessive flows downstream.")</p>	Thank you for this feedback.
Katherine Morris	Grand County	5.3.2	45	<p>"By incorporating drainage design considerations, this SCAP also serves to resolve many of the highway drainage problems currently experienced in the Berthoud Pass corridor. Runoff water must be managed in a controlled manner through adequate drainage design. Designs that dissipate hydraulic energy also help to control sediment transport." -- Support!</p>	Thank you for this feedback.