



Floyd Hill Design - Maintenance Issue Task Force

Meeting Summary

June 8, 2022, 9 AM to 12:00 PM

CDOT Golden Office – Lookout Mountain Conference Room and Virtual (Zoom)

1. Introductions, Meeting Purpose and Project Updates

The Project Team welcomed all ITF participants and reviewed the agenda for the meeting. The goal of this ITF meeting was to understand issues and provide information to the TT specific to the operations and maintenance of the design alternatives, particularly winter maintenance operations.

2. Discussion of Maintenance Issues along this section of the I-70 Mountain Corridor:

The ITF participants opened discussion around snow maintenance and removal, a key concern for maintaining this section of the I-70 mountain corridor.

- **ITF Question:** Can the shoulders be used for snow storage?
- **Response:** Yes, the 12-foot shoulder is sufficient but shading can affect storage, and there will be some shading on these shoulders.

- **ITF Question:** Can the shoulders be used for snow storage?
- **Response:** Shoveling into the median is possible but not preferable since it can drain and freeze overnight. Shoveling to the median is also challenging for snow plow operations. Drivers prefer to push snow to the outside; trucks operate better pushing to the outside – it is the way drivers are trained and the way the trucks are configured.

- **ITF Question:** What about plowing over roadway, creek, or trail crossings?
- **Response:** Maintenance drivers also do not like plowing over other facilities. Pushing snow over the edge can cause damage to cars below, which is a considerable liability. This would also be an issue where the highway crosses over the Greenway, ensuring snow is not dumped onto unsuspecting Greenway users.



- **ITF Question:** Are there other issues with winter maintenance that the Project should consider?
- **Response:**
- Maintaining bridges in the winter time takes longer- drivers must go slower to shovel on bridges which other drivers may not be aware of.
- Additional equipment for snow removal (spray systems, blowers) may help. They have been used in some other areas but haven't been successfully/regularly employed. These newer systems have had a lot of issues after a year or so.
- Bridge structures will require more deicer because they freeze faster than roadways on the ground. This is something to consider in relation to environmental impacts as well as cost to maintain.
 - **Comment:** Asphalt is definitely easier to maintain in the mountains (Karl, CCC); CDOT would also prefer asphalt, there is a 10 degree difference for temperature of road surface between concrete and asphalt (concrete being colder).
- It may be helpful to talk with the Glenwood Springs Maintenance Supervisor about their current maintenance practices and their thoughts on this project.

ITF Agreement: Winter maintenance and snow removal will be a challenge for this project due to the number and length of bridge structures. Reducing structures is beneficial, and the terraced alignment on balance is preferable to the Canyon Viaduct Alternative for this reason. The locations where roadways are stacked or braided will need to be considered carefully to ensure that snow is not thrown below, compromising facilities under the viaducts. Innovative and purposeful approaches will be needed to safely maintain this section of the I-70 Mountain Corridor during and after the project is complete.

Next Steps:

- Discuss thoughts and challenges with Glenwood Springs Maintenance Supervisor
- Continue to integrate conversations on Operations and Maintenance into the design and construction phases of the project.

5. Attendees

Cindy Neely, Amy Saxton, Karl Schell (Clear Creek County), Sam Hoover (Central City); Anthony Pisano, Matt Aguirre (Atkins); Mandy Whorton (Peak Consulting Group); Jeff Hampton, Tyler Brady, Mike Willyard, Issac Lopez, Ronald Ratzell (CDOT)



Follow up from Don Poole (R3 Maintenance) (via email)

- Freezing and ice on the Viaduct in Glenwood Canyon is definitely an issue.
- Maintenance of this section of the highway sometimes requires up to 60 or 80 gallons [of deicing material] per lane mile to ensure we do not have refreeze.
- Shading and number of bridges within the canyon contribute to the frequency of icy conditions.
- Glenwood Canyon also utilizes a sander truck as a preventative measure when temps are projected to drop.
- The products we use include: cold weather modified Mag chloride, IceKicker (works better at the lower temps), and when it gets too cold for any of these products we will switch over to sand/slicer and just keep sanding until we get temps that are high enough for our liquids to work again.
- It takes more time and de-icer product to maintain Viaducts than highway on grade. Just like any bridge, the Viaducts will freeze before the roadway on grade.
- The vegetation in Glenwood canyon is growing and does not show any pronounced damage due to the de-icing products. There have been some conifer trees alongside the roadways that have died and had to be removed, but it is not clear if these trees died because of mag chloride or other issues.