

**MINUTES OF THE CENTRAL WASATCH COMMISSION (“CWC”) MOUNTAIN TRANSPORTATION SYSTEM EXPERT PANEL HELD FRIDAY, SEPTEMBER 18, 2020 AT 2:00 P.M. VIA ZOOM**

**Present:**  Chair Chris Robinson, Co-Chair Jenny Wilson, Mayor Mike Peterson, Mayor Jeff Silvestrini, Mayor Andy Beerman, Mayor Harris Sondak, Mayor Dan Knopp, Commissioner Marci Houseman, Commissioner Jim Bradley, Ex-Officio Carlton Christensen

**Panelist:** Martin Ritter, Ned Hacker, Chris Cushing, Laura Briefer, Carolyn Gonot

**CWC Staff:** Deputy Director Blake Perez, Executive Director Ralph Becker, Communications Director Lindsey Nielsen, Kaye Mickelson CWC Administrator.

The Central Wasatch Commission Mountain Transportation Expert Panel began at approximately 2:15 p.m.

Sandy City Council Member and CWC Commissioner, Marci Houseman introduced the Central Wasatch Commission (“CWC”) Mountain Transportation System Expert Panel. The event was co-moderated by Summit County Council Member and CWC Chair, Chris Robinson. The panel would be recorded and available on the CWC and Utah Public Notice websites. Commissioner Houseman noted that only event panelists, moderators, CWC staff and CWC members would speak during the panel. Audience questions would be used to develop a Frequently Asked Questions document to be released following the panel discussion.

Salt Lake County Mayor and CWC Co-Chair, Jenny Wilson noted that the CWC has worked to implement the Mountain Accord Charter, which laid out consensus proposals to address the following issues specific to the Central Wasatch Mountains:

* Economic viability.
* Environmental sustainability.
* Recreation stewardship; and
* Transportation.

Mayor Wilson reported that transportation and mobility in the Central Wasatch Mountains poses challenges due to:

* Expected population growth.
* Climate change; and
* Increased visitation.

Solutions would need to balance recreational uses, economic development, and protections for the watershed and ecosystem. During the panel discussion, several draft alternatives would be released for review. They were prepared using several guiding documents:

* The Mountain Accord Charter.
* The Utah Transit Authority (“UTA”) Service and Strategic Plan; and
* The Utah Department of Transportation (“UDOT”) Little Cottonwood Canyon EIS Alternatives Report.

Mayor Wilson shared the following three goals for the panel discussion:

* Provide an opportunity for the public to gain a better understanding of the various modes and management strategies that are feasible for a Central Wasatch Transportation System.
* Introduce the Mountain Transportation System (“MTS”) draft alternatives; and
* Open a 30-day public comment period and introduce the Design Your Transit tool.

The following question related to the Mountain Transportation System initiative was raised by the public:

* How does the Mountain Transportation System work and how does it differ from the UDOT Little Cottonwood Canyon Environmental Impact Statement (“EIS”)?
  + Geographically, the Mountain Transportation System is much broader than the EIS. It encompasses both the Wasatch Front and Wasatch Back. Additionally, the decision-makers differ between the MTS and EIS. The CWC and its member jurisdictions will make the final decision for recommendations or proposals for the MTS. UDOT will make the final decisions for issues related to the EIS.

Chair Chris Robinson introduced the following members of the Expert Panel:

* Director of Salt Lake City Department of Public Utilities, Laura Briefer who would discuss the impacts of the watershed.
* Director of Operations and Special Projects, Wasatch Front Regional Council, Ned Hacker who would address regional contexts and how an MTS plan could be implemented.
* Stadler US, Inc. CEO, Martin Ritter who would discuss rail systems.
* The principal of SE Group, Chris Cushing who would discuss aerial systems.
* Utah Transit Authority Executive Director, Carolyn Gonot who would address buses and rail.

CWC Deputy Director, Blake Perez shared the following Mountain Transportation System alternatives and sub-alternatives:

* **Alternative #1: Bus-based**
  + Improve Salt Lake Valley bus service and frequency, particularly along the west to east corridors, to serve more diverse socio-economical communities.
  + Improve frequency and service on the north and south East Bench transit routes to allow access closer to households and to reduce vehicle miles traveled.
  + Support Summit County with the implantation of a Bus Rapid Transit System along Highway 224.
  + Enhance bus service from Quinn’s Junction to Park City.
  + Improve connection frequency between Park City and Salt Lake City to provide transit options for visitors and commuters.
  + Pursue necessary safety, transit, and parking projects in Millcreek Canyon to implement a future shuttle service to the canyon.
  + Reduce on-road parking in Big Cottonwood Canyon and Little Cottonwood Canyon to prevent unsafe conditions and negative impacts on the watershed.
  + Year-round local bus service for Big Cottonwood Canyon and Little Cottonwood Canyon to provide access for recreation and trailheads.
  + Variable tolling in Big Cottonwood Canyon and Little Cottonwood Canyon to flatten the curve on demand when people are accessing the canyons.
  + Seasonal 10-minute frequency Express Bus service from Big Cottonwood Canyon to Solitude and Brighton to offer convenient transit service for ski resort visitors.
  + Seasonal 5-minute frequency Express Bus service to Snowbird and Alta from 2 different transit hubs.
  + Snow sheds to cover Highway 210 from avalanche paths to offer safety and reliability.
  + EIS option for an extended shoulder for Little Cottonwood Canyon to provide priority for transit, pedestrians, and bicyclists.

Mr. Perez shared the cost breakdowns and estimates for implementation, which included capital, operation and maintenance, and lifecycle costs. He noted that the overall costs would be shared in a report published on the CWC website.

* **Alternative #2: Aerial Gondola**
  + Maintains many of the same features of Alternative #1 including Salt Lake Valley, Summit County, and Millcreek mobility improvements; Seasonal Express Bus to resorts, year-round local buses, variable tolling, limited on-road parking, and paid parking at resorts for Big Cottonwood Canyon;
  + Includes an aerial gondola from the mouth of Little Cottonwood Canyon, with an enhanced shuttle program to move riders from the Gravel Pit Transit Hub to the Gondola Loading Station.
  + Year-Round local buses, limited parking, and paid parking at resorts.
  + Snow sheds to offer safety and reliability.
  + Additional bus shuttle service from 9400 South and Highland Drive; and
  + Supplemental information and consideration for a La Caille base station option, which would move the loading station further down the road to La Caille.

Mr. Perez shared the cost breakdowns and estimates for implementation.

* **Alternative #3: Bus/Rail Feature**
  + Maintains many of the same features as Alternative #1, including Salt Lake Valley, Summit County, and Millcreek mobility improvements; Seasonal Express Bus to resorts, year-round local buses, variable tolling, limited on-road parking, and paid parking at resorts for Big Cottonwood Canyon;
  + Cog Rail line to run from the mouth of Little Cottonwood Canyon up to Snowbird and Alta ski areas.
  + Enhanced rail service coming from the Gravel Pit and 9400 South and Highland Drive; and
  + Possible rail alignments for consideration: double track, north of State Road 210, with electrified rail and snow shed; single track, starter line, adjacent to the road with diesel-electric; Rail/Pedestrian/Bicycle corridor avoiding most avalanche paths.

Mr. Perez shared the cost breakdowns and estimates for implementation. He discussed the sub-alternatives for the Mountain Transportation System. He explained that they are interchangeable and could work with any of the alternatives or could not be pursued.

* **Sub-Alternative A:** 
  + Transit/Rail tunnel between Alta and Brighton; and
  + Transit/Rail tunnel only with approximately 3-mile alignment and a travel time of approximately 10 minutes.
* **Sub-Alternative B:** 
  + Base-to-base gondola connection between Alta and Brighton.
  + Approximately 3-mile alignment and a travel time of approximately 15 minutes; and
  + Capacity to move up to 5,000 people.
* **Sub-Alternative C:** 
  + Base-to-base gondola connection between Brighton and Park City.
  + Approximately six-mile alignment and a travel time of approximately 25 minutes; and
  + Capacity to move up to 5,000 people.

Mr. Perez shared the cost breakdowns and estimates for implementation. He noted that supplemental information was available related to the La Caille aerial station option, bus service along 9400 South to the aerial base station, a Tesla and Boring Tunnel concept, refined bus costs and labor, and including snow sheds in aerial alternatives. Next steps would include:

* MTS Alternatives Report posted on the CWC website.
* Design Your Transit tool demonstration and implementation.
* 30-day public comment period.
* Findings and Recommendation report in November 2020; and
* Mountain Transportation System Summit on November 13, 2020, and November 14, 2020, to build a consensus on a regional Mountain Transportation System.

Commissioner Houseman asked Ms. Briefer a question related to transportation and the watershed:

* What are the responsibilities and obligations of Salt Lake City Public Utilities as watershed managers? What are the greatest threats to the watershed? How would transportation solutions impact the watershed?
  + Salt Lake City Public Utilities is a municipal water provider to more than 360,000 people in the Salt Lake Valley. The service area includes Salt Lake City, Millcreek, Holladay, Cottonwood Heights, and other portions of Salt Lake County along the East Bench. From a regulatory perspective, we are considered a Public Water System and must meet Federal and State Safe Drinking Water Act requirements. The Safe Drinking Water Act identifies several strategies, including a source water protection plan, which is included in the Watershed Management Plan for the canyons. The Salt Lake City Public Utilities:
    - Has a water treatment facility and water distribution system.
    - Conducts water quality monitoring throughout the Valley; and
    - Is required to engage with the public about the quality of the water.
  + One of the most important responsibilities is to assess the watersheds for vulnerabilities and mitigate the risk based on the assessments. The primary vulnerabilities of each of the watersheds that could result in degradation and pollution include:
    - Development, which would include roads, buildings, and parking lots.
    - Recreation overuse, which could cause sanitation issues, introduce non-native vegetation, and increase erosion and wildfire risk.
    - The use and transportation of chemicals and raw materials that have pollutant compounds that could become entrained in the water system; and
    - Climate change impacts, which could affect water quality and quantity due to increased temperatures and changes in the hydrologic cycle, impact vegetation, and introduce more extreme wildfire behavior.
  + The work of identifying transportation problems and their solutions is important in the Central Wasatch. This is a unique situation where transportation systems are located in the heart of the source water for more than half a million people. Special care and consideration are required as the transportation solutions implemented could have both short-term and long-term impacts.
  + There are two primary ways that transportation could affect the watershed. They are footprint and land use:
    - Increasing the footprint of corridors and roads. The construction of tunnels and encroachment within riparian areas could negatively affect the watershed and contribute additional pollution vulnerabilities; and
    - Role of transportation and land use. Transportation and land use are interdependent. Solutions that induce additional development pressures in the watershed are a concern as are transportation modes that carry more visitors to the watersheds without a plan to manage increased visitation. This could lead to overuse and eventual degradation.
  + Through the Mountain Accord process, Federal Legislation was proposed to protect the federal lands in these areas. This should be passed to resolve the risk of additional development pressures. Considering transportation solutions presents an opportunity to consider positive watershed contributions as well. For instance, transportation solutions could include:
    - The restoration of land scarred by old roads and development no longer in use.
    - Innovative use of green infrastructure and revegetation of corridor road cuts.
    - Correct sizing of culverts to account for the more intense storms caused by climate change; and
    - Implementation of solutions to help with visitor management.

Chair Robinson asked Mr. Hacker a question related to implementation:

* Please describe for us why it is important to consider a Mountain Transportation System in a regional context. How would an agreed-upon Mountain Transportation System be implemented? How would a regional transportation plan be implemented?
  + The Wasatch Front Regional Council is the Metropolitan Planning Organization for the region, including Salt Lake County, stretching to south Box Elder County, and including Tooele and Morgan Counties. The Regional Council manages both short-range and long-range transportation planning efforts. They look after the process and have a responsibility to ensure all plans meet the air quality standards of the region. The Wasatch Front Regional Council is interested in the proposed projects for the canyons. Since any significant transportation project must be included in the long-range transportation plan before it is implemented, the Council wanted to participate.
  + The Mountain Transportation System fits into the overall transportation system because it is a multi-modal transportation system. It would allow people to travel for work, education, and leisure by all forms of transportation from all corners of the region. With increased use in the canyons, the Mountain Transportation System should be considered, as it has the potential to help ease congestion in the canyons themselves as well as the roads leading up to them. This makes the canyons safer for all users, drivers, hikers, pedestrians, skiers, and cyclists.
  + The Wasatch Front Regional Council has an extensive process and they adopt a new plan every four years. All projects must be financially constrained and meet air quality standards. The proposed project that might come out of the Mountain Transportation System would be vetted through evaluation criteria. The Council looks to all partners to see how it fits into other cities, counties, and transportation partner plans. A project can be added to the plan, but it must fit into a particular phase. The Council has several phases, based on 10-year increments. There would be a time and place within the plan where a particular transportation project would be proposed to be built, pending it is financially constrained and meets air quality standards. Once it is part of the plan, the people who are most interested in implementing the project would do environmental work, similar to what UDOT is doing with the Little Cottonwood Canyon EIS. The plan would eventually need to find funding and then it could be implemented by a particular agency or by several agencies.

Commissioner Houseman asked Ms. Gonot a question about UTA:

* How can UTA play a role in solving transportation problems in the Central Wasatch mountains?
  + The Utah Transit Authority wants to solve transportation problems, particularly in terms of the canyons. Public transit plays a significant role in moving people through the region and this is true up through the canyons as well. UTA has been providing winter service since the 1970s and has a service area that expands from Box Elder County in the north to Santaquin in the south. Resources are balanced to effectively service the transit needs throughout the entire area, with a special focus on the needs of residents who have no other transportation alternative. UTA is keenly aware of the desire for additional transit service in the canyons and is excited to work with local, regional, state, and private partners to find sustainable solutions to mobility challenges.
  + There are several considerations in terms of providing transportation:
    - Connectivity. All alternatives shown included some kind of bus alternative, particularly up to Big Cottonwood Canyon. It is important to understand how to make connections back down into the Valley and have other routes that connect into Salt Lake City and other areas. Potential parking garages and parking hubs have been discussed but it is also important to discuss how to bring people throughout the Valley into the canyon without having to drive. Understanding connections and connectivity is an important consideration.
    - Funding. As a transit agency, UTA is always looking at how to allocate and sustain the services provided. Whether UTA is providing the service or someone else is providing the service, it is important to make sure there is a dedicated funding source to continue to provide public transportation services.
  + Questions had been raised about the seasonal workforce. A lot of the Mountain Transportation System focused on the ski season and the resorts but there were questions about canyon service during the summer and how to train a seasonal workforce. UTA had struggled at times with the latter but had been creative at finding ways to get people to drive the buses in all seasons. UTA continues to look at what the facilities, garage spaces, and the number of buses should look like. It is important to think about the area needed to store and cover all of the buses. Additionally, finding ways to reduce the impact of cars coming close to the mouth of Cottonwood Canyon as well as any other opportunities through the rail system or a bus network should be considered. Public transportation plays a significant role in reducing congestion to the canyons.

Chair Robinson asked Mr. Cushing a question related to aerial transportation:

* Being an aerial expert, what are the benefits of aerial transportation? Why should it be considered as an option and what are its limitations?
  + The SE Group, formally known as Snow Engineering, is a company that was formed back in 1960 for the purpose of helping ski resorts develop. Over that time, it has evolved into a firm that looks at community planning and development, environmental approvals and permitting, and more recently, aerial transportation systems for applications other than skiing. There has been recent growth in the use of aerial transportation worldwide, not only for skiers but for urban applications, recreation, and tourism. Several benefits are associated with aerial systems:
    - Clean and efficient. Aerial systems are powered by clean electric motors and are one of the most efficient forms of transport from the perspective of energy used per passenger delivered.
    - Small footprint. They can be built over virtually any kind of terrain, including avalanche paths and the associated air blast zones. They also have a very small footprint as they are essentially cabling that run over towers. The towers themselves are the main footprint of the system. Each tower can be placed a minimum of 400 feet apart and up to a maximum of half a mile or more, for multi-cable systems.
    - Continuous loading. Aerial systems have high hourly capacity capabilities due to continuous loading. The capacity can reach up to approximately 5,000 people per hour, but it can also be regulated. It can be designed to carry 100 people per hour or up to 5,000 people per hour.
    - Controlled capacity. Once a gondola lift is installed, it can be governed so that at sometimes, it has a higher capacity than others. Cabins can be taken off the line to reduce capacity. This allows it to adapt to seasonal demand.
    - Scenic views. Aerial systems provide beautiful and scenic rides because of the large windows. It is a nice way to pass through the canyons; and
    - Flexibility. There is flexibility in terms of putting in mid-stations for loading or unloading. If there are stations along the line that are needed to put an angle in the lift alignment, those angle stations can be designed where the doors open and people get on and off or they can be designed where the doors don’t open and passengers cannot get on or off. There is a wide level of flexibility with how these systems can be installed and operated to meet the specific needs of an area.
  + There are also limitations associated with aerial systems:
    - Winds. The cabins hang from a cable up in the air, so they can be impacted by storm winds, depending on the technology. There are mono-cable systems, which have just one cable, and then there are multi-cable systems, that are much more stable in terms of high winds and avalanche blast zones.
    - Impacts the view. While the aerial system can make for a scenic ride, there are visual implications. The cables and cabins are visible from further away and this can create a different view than people may be accustomed to.
    - Length limitations. There are practical limitations to the length of a full system and how long it can be, so daisy chaining lifts may be needed for longer applications. This concept can be seen in the analysis for the Little Cottonwood Canyon EIS.
    - Ride time. In some cases, the ride time on a gondola can be longer than it is with ground transportation. The gondolas run at a speed of approximately 10 mph to 18 mph.
    - Unheated cabins. It is impractical to heat the aerial system cabins. In a winter setting, it can become chilly if there is a long ride time.
    - Emergency evacuations. With people hanging in the air, there is the potential need for emergency evacuations. It is very rare and the current systems available mitigate the issue of emergency evacuations, but it is something that needs to be taken into consideration; and
    - Physical distancing. The current need for physical distancing measures would impact the hourly capacity times to ensure more people are not put into a cabin than are comfortable riding together.
  + In the context of this discussion, aerial systems have one of the smaller footprints in terms of impacts on the environment. It is a worthy alternative to consider.

Commissioner Houseman asked Mr. Ritter a question about rail transportation:

* What makes rail systems so great in a mountain setting? What do rail options offer that bus or aerial does not? Are there limitations? What about the technology and particularly Cog rail?
  + Stadler US, Inc. had been building trains for more than 80 years in Europe and began building trains in Utah in 2017. It is a local company in Salt Lake City. Stadler builds electric trains, hydrogen, and battery solutions, and has a few diesel-electric applications. In terms of technology, there are limitations once you go beyond a certain amount of degrees. A Cog system can go up to 45 degrees. There is the possibility of using a mixed Cog rail system. The train could go faster when the area is not as steep and engage the Cog system where the area is steep. Several benefits are associated with rail systems in the mountains:
    - Environmentally friendly. Once the system is in place, it is one of the cleanest ways to move people.
    - Flexible. A train system can run relatively efficiently for both lower capacities and higher capacities. It can bring approximately 8,000 people per hour into the canyons if desired. This would be enough capacity to reduce the number of cars coming into the canyons. It can also run during all seasons and stop almost anywhere, so long as there is a platform.
    - Limited visual impact. From a distance, the rail system will be covered by trees and the natural environment in the canyon. There would also be a relatively small amount of trains running per hour compared to alternative systems.
    - Regional connectivity. The train could go up the canyon, as far as Alta or Brighton, or even beyond that to the airport or downtown area. There are many future possibilities for regional connectivity, which makes it more attractive.
    - Public-private partnerships. A rail system is fairly open for public-private partnerships. There could be investment opportunities, especially when considering regional connectivity. There are not many Cog rail systems left in the United States and it would be an attraction itself to take this type of train up into the mountains; and
    - Comfortable. The train would be heated and more spacious, making it more comfortable than other transportation alternatives.
  + There are also limitations associated with rail systems:
    - Speed limitations. Once engaged in Cog, the speed is limited to approximately 20 mph to 30 mph. The trip would also take longer than a bus or another form of transportation.
    - Track in the canyons. The tracks for the rail system would be in the canyons and there would need to be safety measures put in place around the tracks; and
    - Time to implement. Building a rail system, building the trains, and getting the rail service operating would take at least three years.
  + This is a decision for the future. Most of the Cog rail systems worldwide are 100 years or older. Therefore, this transportation decision would impact future generations as well.

Chair Robinson read a question from the live chat, submitted by Fred Elliott. Ms. Gonot and Mr. Perez responded:

* With Alternative #1: Bus Feature, how are you going to pay for the bus service? The seasonal 10-minute frequency up the canyon is great but one thing I think you are forgetting is the traffic in the canyon. Last year, UTA buses were packed but they were stuck in the canyon, back-to-back, because of the traffic congestion.
  + *Ms. Gonot:* Operation and maintenance is always a consideration. Tolling in the canyon has been looked at and would help to support any kind of transit option. Regardless of the mode, you could fund the operation and maintenance through tolling and price it appropriately. Tolling would help to manage the amount of traffic coming through the canyons and also manage parking demands.
  + *Mr. Perez:* There are a few different strategies that will enhance or improve the mobility of the bus. One is to limit or reduce on-road and formal parking, which would be done through enforcement. Tolling could also spread demand out of peak times. Other strategies would encourage higher-occupancy vehicles or carpooling to help with the mobility of the buses.

Commissioner Houseman read a question previously submitted by the public. Mr. Cushing and Mr. Ritter responded:

* Why isn’t aerial or rail an option for Big Cottonwood Canyon?
  + *Mr. Cushing:* An aerial system for Big Cottonwood Canyon had been looked at, but some things would make it more complicated. For instance, Little Cottonwood Canyon is more of a linear canyon and a gondola system would require one angle to meet the criteria. Big Cottonwood Canyon is more of a snake-like canyon and would require more angles in the line. The length of an aerial system up Big Cottonwood Canyon would be about the same as a system that went up to Little Cottonwood Canyon and from Alta to Brighton. This would impact efficiency in terms of infrastructure and there would also be environmental impacts of having a system that goes up one canyon and across to the other versus having two systems running parallel.
  + *Mr. Ritter:* From a geographic perspective, the canyon is very steep. It would be cheaper to connect Alta to Brighton with the rail system as well.

Chair Robinson read a question from the live chat, submitted by Aaron Dekeyzer. Mr. Perez responded:

* If the goal is to increase services closer to home, why continue the development of parking lots? Senator Kitchen told me that Salt Lake City Council commissioned a study, which found that during peak times, city parking utilization was only 65%. Parking lots are expensive and support a car-centric transportation system, which is what we should be moving away from as we study mobility solutions.
  + *Mr. Perez:* The convenience factor will have to continually be addressed. It is more convenient for people with ski equipment during the winter season to use their car as a locker. That is the challenge with trying to improve transit services from your front door up to the canyons. The gravel pit is a good location to potentially have a transit hub as it is close to both of the canyons and could be a great place for transit to connect to as well. It is not necessarily just the parking stalls, but it is a big policy question and a cultural shift that we need to tackle.

Commissioner Houseman read a question previously submitted by the public. Mr. Ritter and Ms. Gonot responded:

* Is it possible to build a rail line or Bus Rapid Transit along 9400 South to support a high occupancy transit option for the Little Cottonwood Canyon corridor?
  + *Mr. Ritter:* From a technical perspective, it is possible.
  + *Ms. Gonot:* UTA is always up to explore all of the recommendations. It goes back to the parking side of things. Is there a way to extend those connections that are going up the canyons, further into the Valley, and still be a viable and strong connection? If connections were provided down further and people were able to get on a rail or bus system sooner, that is something to look at within the Valley. It is possible, but the question is, how do you make it work and provide that? It might mean spreading parking out at different locations closer to the various areas in the hubs.

Chair Robinson read a question from the live chat, submitted by Max Lundberg. Mr. Ritter and Mr. Cushing responded:

* I am a long-term resident at the mouth of Little Cottonwood Canyon. I have real concerns with how the aerial tram and rail proposals would affect my neighborhood. Both require transfer hubs in my neighborhood. Can you provide more specifics of how you envision these transfer stations operating?
  + *Mr. Ritter:* One of the pros of the rail proposal is that there does not need to be a massive transition station at the mouth of the canyon. It goes back to the discussion about parking as well. We need to look at this as an integrated network rather than getting everybody to one point, putting them on a mode and forgetting about how those people got to the mode. It is less a question about rail or bus or aerial and has more to do with convenient connections. The impact for the communities at the mouth of the canyon should also be considered.
  + *Mr. Cushing:* With any of these systems, the impact has more to do with whether there is parking associated. Depending on the circumstances of the configuration, it is a very quick and easy transition from bus to lift or from bus to rail or from rail to lift, and so on. It is more of a question about the impact on the residents and how many people will be parking cars there or interacting with car transportation.

Commissioner Houseman read a question previously submitted by the public. Mr. Cushing, Mr. Ritter, and Ms. Briefer responded:

* The Central Wasatch Mountains face many potential natural hazards, like wildfires, avalanches, and mudslides. Which modes provide for the best emergency ingress or egress during such a disaster?
  + *Mr. Cushing:* Looking at the alternatives in the Little Cottonwood Canyon EIS, one of the big issues with the aerial system had to do with avalanches. Not necessarily just the snow aspect but the wind blast that goes along with an avalanche occurrence. It would be a similar situation with a landslide. There is not much you can do about fire, as seen in many places in the country, but for avalanche and landslide circumstances, there is an opportunity to span over those natural disaster situations and be protected from them. The gondola technology being considered in the Little Cottonwood Canyon EIS was configured so the lift would span over the slide path and air blast zone. It is a matter of flying over ground base disasters as opposed to needing some type of protection.
  + *Mr. Ritter:* From a rail perspective, there are certain limitations if a natural disaster occurs. There are options in the rail alignment, which would be to avoid areas where there are either mudslides or avalanche risks. Eventually, having a connection between the two canyons, whether that is over the hill or through the mountain, would increase the safety and the number of options between the two canyons.
  + *Ms. Briefer:* Emergency ingress and egress is an emergency management question, to the extent that emergency management vulnerabilities can be identified. The canyons are not just one road serving everyone. There are little roads up the sides and residences in different areas. The solution may not be one-size-fits-all. If there was a way to evaluate ingress and egress as we are looking at transportation and other operational management for different disasters, that would be helpful. The Emergency Manager for Salt Lake County, Clint Mecham prepared something that addressed some of that question. It might be appropriate to share it at some point. This might also be a larger issue than transportation on its own.

Chair Robinson read a question from the live chat, submitted by Pat Shay. Ms. Gonot and Mr. Ritter responded:

* Has anyone analyzed the capital cost as to how it will be financed? Meaning, is it expected to be funded through user’s revenue, taxes, federal funds, or balancing?
  + *Ms. Gonot:* It is a multitude of funding sources, where you need a lot of people to be willing to move a vision forward. Financing always plays a role, particularly if you are looking for a funding source that will come in over time. It will be a matter of vision and then pulling together a multi-faceted funding strategy. It is going to be a matter of public sector funding, tolling, and potential private partnerships or federal funding. It will mean looking at a variety of things and possibly pulling the project apart a little bit so that one area may be competitive in a funding program. It is about getting the vision, trying to pull those funding sources together, and then look at what the options are. You cannot talk too much about financing until you know what transportation mode you are trying to finance.
  + *Mr. Ritter:* Most of the mountain transit systems in Switzerland are privately held. They are money-making machines. The same is applicable for Pikes Peak Cog Railway in Colorado. They just invested $100 million to upgrade the whole system and they are making good money with the railway. It shows that they are still investing and still believe in the future of a Cog railway.

Commissioner Houseman read a question previously submitted by the public. Ms. Briefer, Mr. Ritter, and Mr. Cushing responded:

* Is there consideration being given to visitor use capacity of the Cottonwood Canyons? We have talked a lot about various ways to get more people up the canyons and would love to talk about the capacity of the canyons.
  + *Ms. Briefer:* There is a watershed link to that as well. Lots of recreation without a management plan is a risk in terms of degradation of those watersheds. That is something that Salt Lake City Public Utilities and other organizations have been concerned about. Some of these transportation solutions could induce more use and there is no simple answer to the capacity question. One of the ways Salt Lake City Public Utilities looks at capacity is to look at the capacity of public agencies to manage the use. Right now, some restrooms are not necessarily maintained to certain standards, parking issues at trailheads, non-native invasive species coming in on trails, and not enough public resources to manage them. It is important to look at what kinds of long-term operations and management exist and to think about where the financing will come from. There is a potential for externalities to be borne by the public due to the decisions made on these solutions. They need to be continually addressed.
  + *Mr. Ritter:* Many cars go up the canyons and parking can be a disaster during peak hours. The preliminary thought of any alternative mode is to do it in a better way, not to get more people into the canyon. Some proposed capacities are higher than they are currently, but the main focus is on dealing with the number of cars going into the canyon day in and day out.
  + *Mr. Cushing:* The solution, particularly in Little Cottonwood Canyon, needs to be something that makes people willing to get out of their cars. The biggest challenge is getting people to be comfortable enough with whatever mode of transportation is available. Once that mode is used and understood, there is the ability to manage the capacity. It is important to understand the actual capacity of the canyons and these various modes during each season. That has to be a driver in terms of what transportation system is chosen and how it is managed and operated.
  + *Commissioner Houseman:* It is about finding a better way of getting people up the canyons. It sounds like there is a focus on a more environmentally friendly approach.
  + *Mr. Cushing:* There are people parked along Wasatch Boulevard for miles and it is a terrible situation. A self-regulating system is needed. Rail or aerial systems would be a way to regulate the number of people going into the canyon rather than people driving and parking all day long.
  + *Ms. Briefer:* The implementation of the solution is really important and so is how it is managed in the long-term.

Chair Robinson read a question from the live chat, submitted by George Vargyas. Mr. Perez, Mr. Ritter, Ms. Gonot, and Mr. Cushing responded:

* How will dispersed users in Big Cottonwood Canyon or Little Cottonwood Canyon be helped with aerial systems, rail, or bus?
  + *Mr. Perez:* All of the alternatives call for a local year-round bus that can serve dispersed recreation uses. It would make stops up Big Cottonwood Canyon and Little Cottonwood Canyon year-round for hikers, backcountry skiers, photographers, families, and so on.
  + *Mr. Ritter:* With rail options, you basically have a stop on demand. It may not be a stop that is made all the time and instead, only when someone pushes the button either on the train or on the infrastructure side on the station. Something missing is that visitors cannot bike or hike or run and then take a train to get them back home. There are a lot of options with buses and rail especially.
  + *Ms. Gonot:* For bus alternatives, there is always more flexibility than you would have with a fixed guideway. There might be more options with the bus to be able to pick up dispersed users. They could also be picked up and dropped off to a fixed system.
  + *Mr. Cushing:* With an aerial system, it is much more expensive to add intermediate loading stations. To be beneficial, it would have to be done in connection with a shuttle system.

Commissioner Houseman read a question previously submitted by the public. Mr. Cushing and Mr. Ritter responded:

* What is the construction disruption factor (time and affect) of each of these options? Please consider summer and winter.
  + *Mr. Cushing:* With an aerial system, the construction involves putting in the towers along the alignment as well as the stations at each end. In terms of the options of Little Cottonwood Canyon, none of the towers are on or close to the road. One construction disruption would be additional construction traffic on Highway 210 from construction trucks, but there would be access roads to each tower location. Another disruption would be helicopters. They are used extensively for concrete and hauling steel, so there would be noise impacts related to helicopter work. There would most likely be explosives for the foundations as well. In general, there would be very little impact on the highway from building an aerial system. The only exception would be when the cable is strung across the towers. Roads would need to be closed for some time to get the cable across the road and onto the other side. If there was blasting near the road, there might be some closures associated with that as well. Lift manufacturers estimate it would be a 2-year construction cycle for any of the alternative aerial systems being discussed. That is from when the contract is signed to it being operational but does not include permitting or approvals.
  + *Mr. Ritter:* It is a similar impact perspective for rail, other than the blasting. The timeframe is also similar, except it usually takes about 3 years to design and build the trains themselves. For the rest, it would take approximately 2 construction seasons.

Chair Robinson read a question from the live chat, submitted by Lynn Pace. Mr. Perez, Ms. Gonot, and Mr. Ritter responded:

* Why has the possibility of a Zion’s Park type shuttle not been offered as one of the transportation alternatives? A high-frequency shuttle system would remove most of the cars from the canyons with exceptions for property owners, employees, etc. and the speed of those shuttles would be faster because there would be fewer cars on the road. It would eliminate the need to expand roadway or parking lot capacity and the only cost would be the purchase of the bus shuttles and the development of park and ride locations in the Valley. Why has the alternatives committee overlooked this proposal?
  + *Mr. Perez:* A shuttle type of service will be offered with the local bus, which is a year-round option. This requires a combination of modes rather than just a shuttle. Strategies need to be implemented to limit the cars going up into the canyon as well. Zion National Park has gone as far as to say no cars during a certain part of the year and that may not be feasible for the Cottonwoods or the general public.
  + *Ms. Gonot:* The Zion shuttle is interesting and is also an electric vehicle. At the levels of frequency discussed, the proposal is essentially a shuttle with buses every ten minutes and year-round service. UTA changed service last year from a little over 40 vehicles into the canyons per day to 73 per day, which is quite extensive. What was seen from the start of the ski season until March was very successful. If even more frequency were provided, it would run like a shuttle. Zion does have a no vehicle rule at times, but the canyons would need larger capacity buses rather than the smaller buses they are running. UTA will continue to look at that, but the buses are not far off from being a shuttle with such frequent service.
  + *Mr. Ritter:* From a bus perspective, to look at a battery-driven bus system in the steep canyons would be a challenge. The winter conditions and temperatures would make it difficult to get a clean version of a shuttle system up and running. One of the options is a rail system where the road is. Other than being a rail system, it could also work as a shuttle system. There are options, whether they are bus or rail, to conserve the existing corridor and get a good amount of people into the canyon.
  + *Ms. Gonot:* UTA is moving into the pre-construction stages of the Ogden/Weber State University Bus Rapid Transit. That will run with electric vehicles and it has some very steep grades. UTA will be testing this and looking at the specifications. This would not be to the level of what would be seen in the canyons, but it could indicate potential changes for what the bus design would be for any buses on the electrical vehicle side.

Mr. Perez reported that any unanswered questions would be added to a Frequently Asked Questions document on the CWC website. He introduced the Design Your Transit tool, which would help to supplement the public comment period. Users are given a budget to invest in certain modes and demand management on some of the critical corridors for the Central Wasatch Mountains. There are several options related to connectivity and various transportation types. Some of the objectives include:

* Reduce congestion.
* Limit impacts on the watershed; and
* Improve emergency ingress and egress.

Chair Robinson shared concluding remarks. He noted that the CWC is attempting to determine if there could be a collective vision regarding transportation. He felt it was important to also have a vision for conservation. The CWC believed that transportation and conservation must go hand-in-hand. Chair Robinson hoped the outcome of the Mountain Transportation System Summit on November 13, 2020, and November 14, 2020, would allow Stakeholders and Board Members to develop both a consensus and clear vision.

Communications Director, Lindsey Nielsen noted that the Mountain Transportation System Draft Alternatives Report and the Design Your Transit tool are available on the CWC website. The 30-day public comment period was also open.

CWC Executive Director, Ralph Becker praised the commitment of the Commission. He noted that they were able to tap into an enormous amount of expertise to help shape what possible alternatives might look like. Mr. Becker encouraged the public to submit comments related to the Mountain Transportation System.

The Central Wasatch Commission Mountain Transportation Expert Panel adjourned at approximately 4:09 p.m.

***I hereby certify that the foregoing represents a true, accurate, and complete record of the Central Wasatch Commission Mountain Transportation System Expert Panel held Friday, September 18, 2020.***

Teri Forbes

Teri Forbes

T Forbes Group

Minutes Secretary

Minutes Approved: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_