Little Cottonwood Canyon ENVIRONMENTAL IMPACT STATEMENT
S.R. 210 | Wasatch Blvd. to Alta

APPENDIX 32B

Reproductions of Comments on the Draft EIS

Comments 13308–13321

COMMENT #: 13308
DATE: 8/18/21 12:00 PM
SOURCE: Mailed
NAME: Derek Miller

COMMENT:

SALT LAKE
EST. 1887
CHAMBER
UTAH'S BUSINESS LEADER

August 16, 2021

Little Cottonwood Canyon EIS
c/o HDR
2825 E Cottonwood Parkway, Suite 200
Salt Lake City, UT 84121

As a native Utahn, I've enjoyed the enviable quality of life this state has to offer. In my career, I've touted that quality of life to businesses and visitors as a reason to come here to work and play. A key element to that quality is the access to our magnificent mountains, particularly the Cottonwood Canyons. But as Utah grows, we are facing challenges that must be addressed now and with thoughtful planning.

The transportation issues of Little Cottonwood Canyon are at a tipping point and we need a reliable system that can stand the test of time. The Salt Lake Chamber has long been a champion for Utah's multimodal transportation system, which is represented in both the preferred alternatives presented in the Draft EIS. However, I believe one of those alternatives better addresses those challenges, and that is the gondola. 32.2.9D

The gondola is the only option that would complete the task of moving large amounts of people while also protecting the water supply and air quality. Air quality is a paramount concern and must be a top priority in this decision. Electric ski buses that can traverse the steep canyon do not exist and it is unlikely this niche market will spur their development soon. We have to look to an immediately available carbon-neutral system, which the gondola provides. 32.12A, 32.10A, and 32.2.6.3F

The canyons are an economic asset to Utah, and we must have a safe and reliable way of getting employees, visitors, and goods to their destinations at the top. The gondola takes road conditions out of the transportation equation, which is a game-changer for this unique location. Even if it has stopped snowing, the very real threat of avalanches and the time it takes to clear debris from the road are minutes that count in terms of impacts to the environment, the economy, and safety. 32.7A 32.2.6.5Z

This came into clear focus for me personally as my wife and I headed up Little Cottonwood Canyon earlier this year to ski. As we crawled up the canyon, traffic soon came to a halt and we sat there in our idling car waiting for traffic to move. Minutes ticked by as crews worked to clear the road from avalanche debris. After four hours stuck with no way to move forward or turn around, my wife complained that in this same amount of time we could have driven to St. George 300 miles away. Instead, we sat still on a dangerous road spewing emissions into the air just a few miles away from home.

201 South Main Street | Suite 2300 | Salt Lake City, Utah 84111 | Phone 801.364.3631 | Fax 801.328.5098
www.slchamber.com

SALT LAKE
EST. 1887
CHAMBER
UTAH'S BUSINESS LEADER

We can no longer wait. We've brainstormed and studied and talked for years. The time is now to make a decision and take action. Please move forward with the gondola with La Caille Base Station as UDOT's preferred alternative for Little Cottonwood Canyon. 32.2.9D

Sincerely,

Derek Miller

Derek Miller
President & CEO, Salt Lake Chamber

201 South Main Street | Suite 2300 | Salt Lake City, Utah 84111 | Phone 801.364.3631 | Fax 801.328.5098
www.slchamber.com

COMMENT #: 13309
DATE: 9/1/21 10:54 AM
SOURCE: Email
NAME: Brian Tonetti

COMMENT:

To Whom it May Concern,

Please see the attached for a letter outlining the Seven Canyons Trust's comments to the Little Cottonwood EIS. Please let me know if you have any questions.

I appreciate your consideration of our letter.

Thank you!
--
Brian Tonetti
Executive Director

Uncovering & Restoring Our Urban Creeks

INFO@SEVENCANYONSTRUST.ORG
585-703-8582
122 J STREET
SLC, UT 84102

August 24, 2021

Utah Department of Transportation
4501 S 2700 W
Salt Lake City, UT 84114

RE: **Little Cottonwood Draft Environmental Impact Statement Comments**

To Whom It May Concern:

The Seven Canyons Trust is a nonprofit working to uncover and restore the buried and impaired creeks in the Salt Lake Valley.

We support a solution that first and foremost protects the quality of Little Cottonwood Creek, which flows downstream into our communities. Secondly, we support solutions that provide access for all, bridge our east-west divides, and represent action now. Before spending half a billion in public dollars on either of the two preferred alternatives (money that could be used to enhance transit across the Valley), effort should be made to address traffic congestion through existing resources and infrastructure. 32.2.9A 32.2.2PP

We must understand the carrying capacity of Little Cottonwood Canyon—the maximum number of people the canyon can handle before resource degradation. A formal study should be done to inform our long-term decision and its impact. 32.20B

We support an expanded, year-round electric bus system that services dispersed recreation throughout the year, bridging our east-west communities in the Salt Lake Valley, and providing canyon access for all residents. This should be coupled with tolling, carpool requirements, and other traffic mitigation strategies. 32.2.9A, 32.1.2C, 32.2.6.3F, 32.2.6.3C, and

We do not believe a gondola or road widening is the answer at this point. We should exhaust other less expensive options before pursuing permanent changes to our watershed and landscape. 32.2.4A 32.2.9E and 32.2.9C

We stand with Save Our Canyons, Wasatch Backcountry Alliance, Salt Lake Climbers Alliance, and many others who share similar perspectives on the Environmental Impact Statement. 32.12A 32.12B

IT STARTS WITH WATER • WWW.SEVENCANYONSTRUST.ORG

@SEVENCANYONSTRUST

Uncovering & Restoring Our Urban Creeks

INFO@SEVENCANYONSTRUST.ORG
585-703-8582
122 J STREET
SLC, UT 84102

I appreciate your consideration of our letter!

Sincerely,

BRIAN TONETTI
Executive Director

IT STARTS WITH WATER • WWW.SEVENCANYONSTRUST.ORG

@SEVENCANYONSTRUST

COMMENT #: 13310
DATE: 9/1/21 4:09 PM
SOURCE: Email
NAME: Chris McCandless

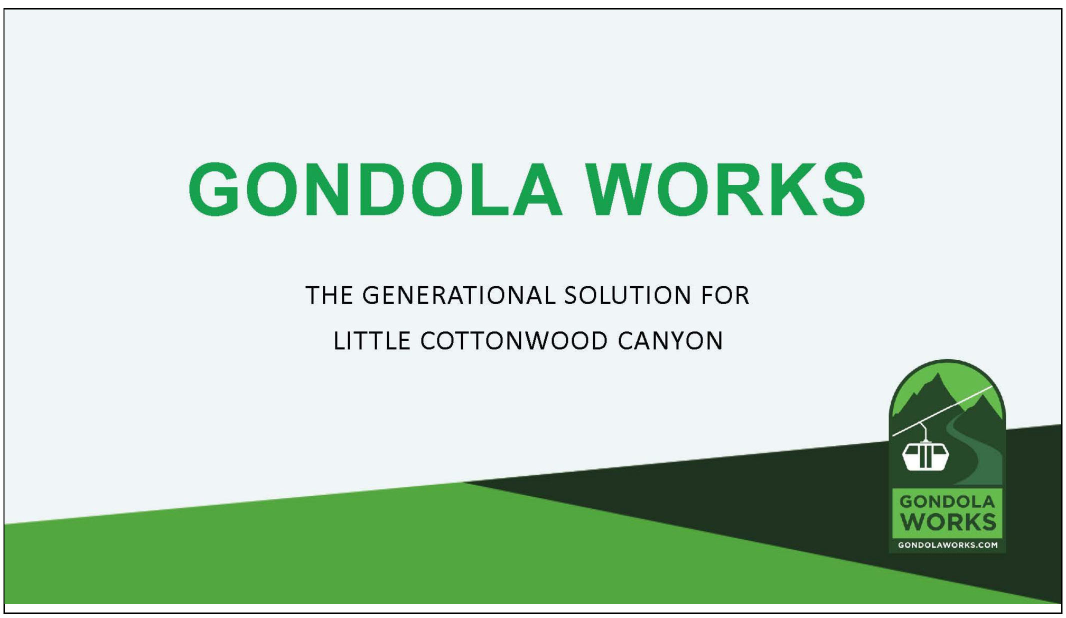
COMMENT:

Josh,

As mentioned in our last conversation, attached is the presentation being used by the Gondola Works coalition. We would like this presentation to be part of the public comments considered in the DEIS evaluation.

As you will note, some of the conclusions in the presentation exceeds the UDOT purpose and need statement but, we felt that if the choice was on the fence line between choosing the bus or gondola, perhaps the added incentives could sway the decision to the gondola side of the aisle.

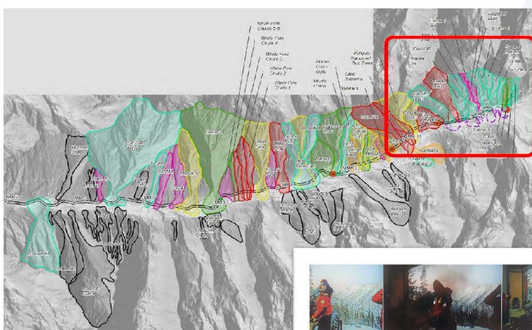
Have a great day - the third is near!
Chris McCandless, President
CW MANAGEMENT CORPORATION

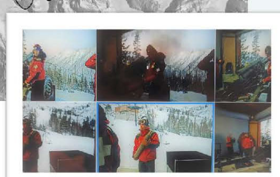


THE PROBLEM

- Little Cottonwood Canyon welcomes over 2 million visitors year-round
- 7,000 vehicles (annual average) travel Little Cottonwood Canyon per day.
- These vehicles produce 70 tons of carbon per day.
- Utah's population is set to double by 2050
- More in canyon cars/buses equals higher fire hazards

THE PROBLEM

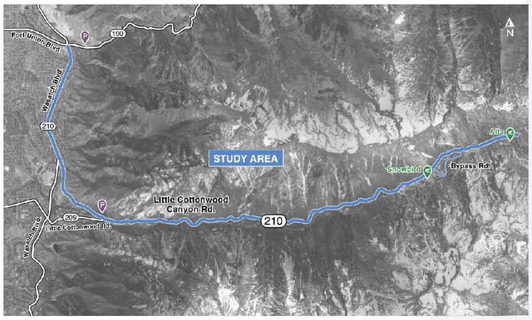




Picture left: AV control team shooting LCC north side from south side at Snowbird

- SR 210 is the most avalanche prone highway in North America
- 57% of the 9 miles of SR 210 is threatened by 64 avalanche paths
- 2800 residents and employees live and work every day in the canyon plus millions of visitors – closing the canyon is not an option.
- Army to eliminate the use of howitzers for avalanche control by as early as 2026. Wilderness AV areas will be very difficult to control creating more-extended road closures and canyon closures and delays.

THE UDOT PROCESS



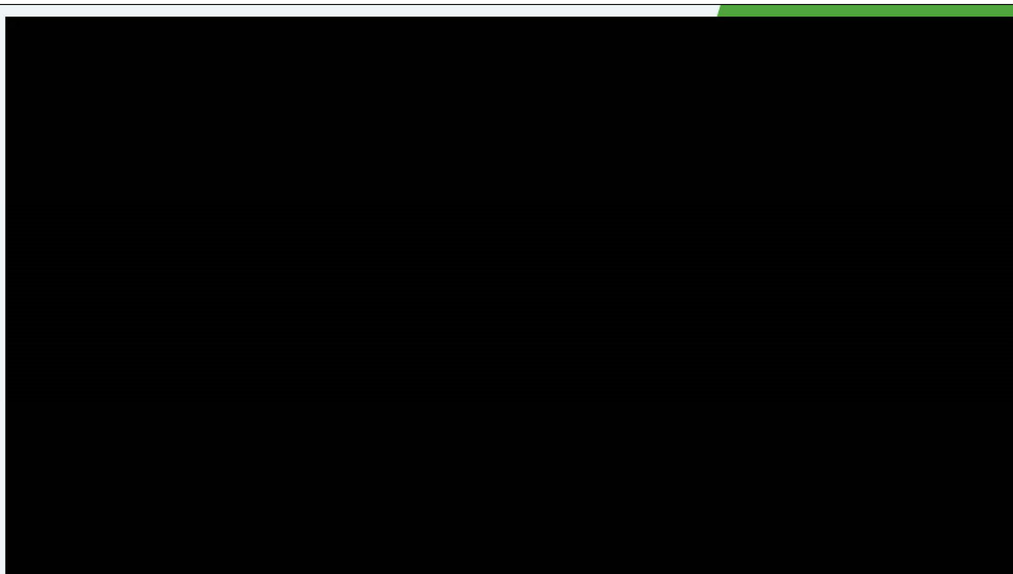
Little Cottonwood Canyon ENVIRONMENTAL IMPACT STATEMENT
S.R. 210 | Wasatch Blvd. to Alta

UDOT has identified two preferred alternatives as part of its Environmental Impact Statement:

1. Road widening & enhanced bus service
2. Gondola from La Caille Base station

Public comment period is open:

June 25, 2021 – September 3, 2021



THE COMPARISON

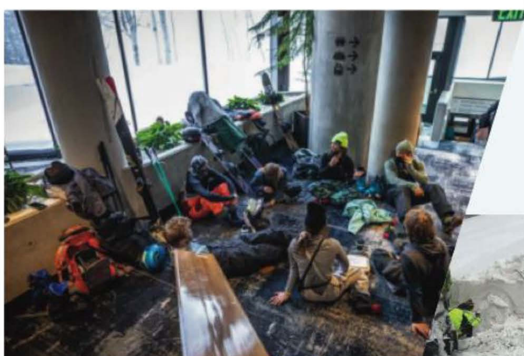
Snow Sheds

3,100 feet of cement tunnels covering the road that address only 7 of 64 avalanche paths

- Required with road-based option
- Not needed, could reallocate $86M from the cost

32.2.6.5Z

THE COMPARISON



Emergency Egress

Gondola is the **ONLY OPTION** that provides secondary route in/out of canyon in case of emergency and bad weather

- Over a 3-day period in February 2021, 2,000+ people were trapped in LCC with no emergency egress.
- 6 days between food deliveries

32.2.6.5H

THE COMPARISON

System Reliability & Capacity

Bus

- Capacity max 1,050 people/hour
- Can't run when road is closed
- Snow conditions will slow or stop service
- Bus arrives every 5 minutes (alternating resort destination)

Gondola

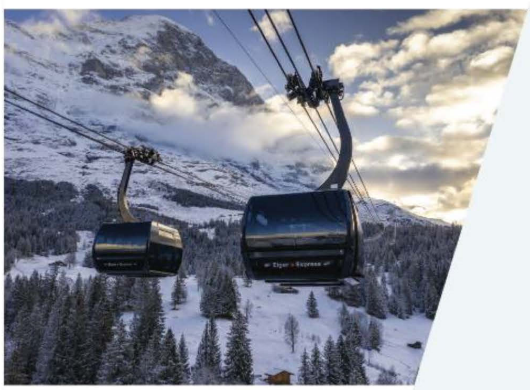
- Seats 24 people per cabin +8 standing
- Capacity flexible scale to 3,600 pph
- 3S gondola cabins arrive every 30 seconds
- Runs in high wind (60 mph sustained) & snow

32.2.6.5N

32.2.6.3P

32.2.6.5K

THE COMPARISON



Cost

Tolling would be implemented for both options. Fares for users have not yet been determined.

Bus

- $510 million
- $11 million operation & maintenance (winter only)
- UTA operation
- Fares subsidized by all Utah residents

Gondola

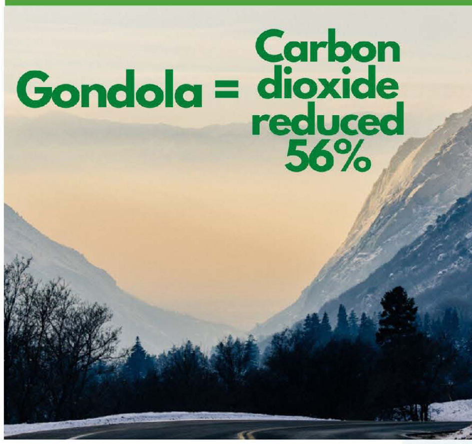
- $506 million (without snow sheds)
- $7.6 million operation & maintenance (winter only) and **$6 million with resort subsidy**
- Public/private partnerships available, including resort contributions

32.2.6.5Z

32.2.7A

32.2.7N

THE COMPARISON



Air Quality

- Steep terrain requires diesel buses, electric doesn't have enough power or battery life
- Produce 5x more CO_2 than gondola over 30-year period

- Carbon-neutral, electric system
- Gondola cars generate electricity for in-cabin functions
- Most environmentally friendly option

32.2.6.3F

32.10A

THE COMPARISON

Environment & Watershed Protection

- Doubles road width entire length of canyon
- 42+ acres of canyon land destroyed
- 5 trails or boulders impacted
- Requires hillside stabilization and retaining walls
- Several years of construction impact

- No impact to watershed, habitat, wildlife
- 22 acres of canyon land impacted
- 1 trail or boulder impacted
- Requires 22 towers, with minimal impact
- Watershed protection on hundreds of acres

32.12A, 32.12B, 32.4A, 32.4B 32.17A, 32.17B, 32.2.7C

LCC ROW EXPANSION

Picture to left: Four lane highway in Provo Canyon

Expanded Road Rendering:

- Rendering is the mile seven area.
- Significant retaining walls and over-excavation 32.17A
- Reduction of width to the pedestrian and bike lanes (cars will use the bus lanes to pass making bike travel hazardous) 32.17B

Picture to right: Existing ROW

THE COMPARISON

Peds, Cars & Buses

- 2 regional mobility hubs:
  - Granite Pit (1,500 parking stalls)
  - 9400 S Highland Dr (1,000 parking stalls)
- La Caille base station includes: 32.2.6.5J
  - Passenger drop off
  - Bus right-off lanes
  - Pedestrian tunnel
  - Below road grade parking structure
  - Up to 1,800 parking stalls
  - Lockers & amenities

THE COMPARISON

Travel Time

Both options would drop passengers at Snowbird and Alta resorts.

- From regional hubs:
  - 36 minutes
- 2 regional mobility hubs:
  - Granite Pit
  - 9400 S Highland Dr
- Extra walking time needed to ski lifts

- From La Caille base station:
  - Snowbird = 30.5 minutes
  - Alta = 36.5 minutes
  - Immediate mountainside access – no walking

32.2.6.3P

32.2.6.5O

THE COMPARISON

	Intersection	Level of Service						
		Existing (2020)		Future (2025)			Future (2050)	
		BG	Mit BG	BG	Mit BG	PP	BG	PP
1	Wasatch Boulevard / S.R. 210	F	C	C	C	C	C	C
2	La Caille Access / Wasatch Boulevard	b	a	b	b	c	c	c
3	S.R. 209 / S.R. 210	f	e	e	C	B	D	C
4	La Caille Lane (Project Access)/ S.R. 210	b	b	b	b	A	c	A
5	P1 Out / S.R. 210	-	-	-	-	a	-	a
6	P1 In / S.R. 210	-	-	-	-	a	-	a
7	P2 / S.R. 210	-	-	-	-	a	-	a
8	P6 / La Caille Lane	-	-	-	-	a	-	a
9	P5 / La Caille Lane	-	-	-	-	a	-	a

1. Intersection LOS values represent the overall intersection average for roundabout, signalized, and all-way stop-controlled (AWSC) intersections (uppercase letter) and the worst movement for all other unsignalized intersections (lowercase letter)
2. BG = Background (without project traffic), PP = Plus Project (with project traffic)

Source: Hales Engineering, September 2020

Reduced Traffic Impact

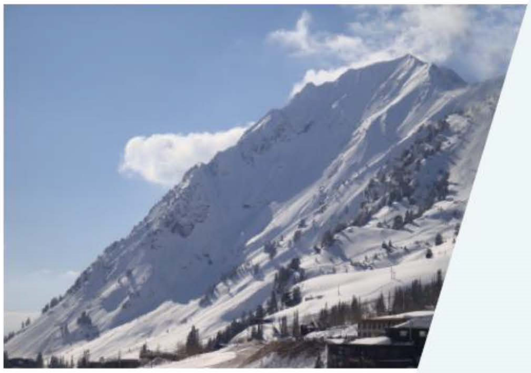
- Added bus service from regional mobility hubs
- Eliminates car/truck passing lanes in canyon
- Marginalizes bike lanes

- Up to 1,400 vehicles per hour decrease
- Traffic study shows La Caille Base Station provides A-C level of service for all intersections through 2050
- Access to base station thru trails, mobility hubs, light rail and airport

*Traffic study by Hales Engineering

32.9A, 32.9B,
32.2.6.5N
32.2.6.5E

THE DETAILS



Private Support

- Public/private partnership opportunities
- Any option will be a state project just like other UDOT transportation projects
- Gondola is the only option that could have several revenue streams 32.2.7N
- Snowbird and Alta will be a large contributor, paying for season pass holders and employees just as they do now for UTA bus service
- Operating costs confined to canyon users vs. Bus to all County taxpayers
- **If gondola goes forward, Mt. Superior and adjacent land will be placed in a permanent conservation easement**

JOIN US

gondolaworks.com

GONDOLA WORKS
GONDOLAWORKS.COM

COMMENT #: 13311
DATE: 9/2/21 12:00 PM
SOURCE: Mailed
NAME: Dennis Astill

COMMENT:

ASTILL LAW
FIRM

7730 S. Union Park Avenue
Suite 130
Midvale, Utah 84047

September 2, 2021

****via email & US mail****

Little Cottonwood Canyon EIS
c/o HDR
2825 E Cottonwood Parkway, Suite 200
Cottonwood Heights, UT 84121
littlecottonwoodeis@utah.gov

RE: ***Public Comment to Little Cottonwood Canyon EIS***

Dear Persons,

I am writing this letter, to provide comments for and on behalf of Walker Development, LLC, the owner of property where the designated "preferred mobility hub" is contemplated near Wasatch Boulevard and Fort Union Boulevard (the mouth of Big Cottonwood Canyon). The following constitute comments from Walker Development and the owners thereof:

1. The mobility hub near the intersection of Big Cottonwood Canyon and Fort Union Boulevard is a flawed concept, severely impacts and needlessly damages the premier parcel of land on the northeast corner of that intersection, and further stresses winter ski traffic and local traffic to and around Big Cottonwood Canyon and its ski resorts.

A. Flawed Concept. The supposed intent in diverting Little Cottonwood ski traffic to the northeast corner of that intersection is based on ski traffic counts for those desiring access to Little Cottonwood Canyon. It ignores both ski accessing Big Cottonwood Canyon and and local traffic, which will continue to result in traffic from the north backing up to the nearest exit from the I-215 freeway. Today it backs up because there is a four-lane intersection with vehicles attempting to access both canyons from I-215 and from Fort Union Boulevard, as well as Wasatch Boulevard coming from the south. The proposal only addresses one minor subset of the traffic, *i.e.,* those continuing to Little Cottonwood Canyon. The impact is minuscule. 32.2.6.2.1L

Further, the method of removing that minor subset of automobile ski traffic will still result in delays and backing up to I-215. The vehicles must enter a deceleration lane, then make a left turn under Wasatch Boulevard to access the proposed hub on the east side. They then proceed to a surface street which accesses the proposed parking area.

We fail to see how this removes traffic without backing traffic up, in fact, a prominent engineer who had studied the area extensively commented on this and was ignored. Alternative recommendations were made by the affected landowner and the local City Engineer and others to create a similar or larger structure on the west side of Wasatch Boulevard, which we believe would avoid much of the immediate traffic jams because of the immediate access to a parking structure without traveling through an intersection and along surface streets. We will provide engineering drawings with this comment to demonstrate this more direct approach.

32.2.6.2.1L
32.2.6.2.1D
32.2.2VVV

B. <u>Severe Land Impact and Damages.</u> The proposed land impacted by the mobility hub is one of the premier locations in the Salt Lake Valley, slated for multiuse commercial, retail and high density housing as shown on the city master plans. The opposite side (west of the proposed site) would impact virtually no one, would be much more economical and sightly for the residents and visitors. Damage to the land surrounding the proposed mobility hub would be severe. Further, drawing in more traffic, not less to the intersection and property ignores the reality of the anticipated property development itself. If UDOT is looking for a solution extending into the future, it is ignoring the short and long-term impacts that this property will have and ignoring impacts on Big Cottonwood Canyon.

32.4S
32.2.6.2L
32.20D

In fact, it is irresponsible on its face to ignore the traffic challenges at Big Cottonwood Canyon for the benefit of Little Cottonwood Canyon. To be blunt, it seems that a biased and one-sided view and one wonders why only one Canyon's problems are being addressed.

32.1.1A

C. <u>Cost Impact to UDOT</u>. Our own preliminary plans for the preferred alternative show that property development will add thousands of visits per day to Wasatch Boulevard and that property values will be in the neighborhood of $1,000,000 or more per acre. The property is over 300 acres. The anticipated taking of approximately 23+ acres is not the end of the costs. It will take from the value of the entire parcel and development. While some may look at this as "just money", this is not the best alternative for taxpayers. For example, using similar design configurations, a county golf course at the 6200 S. off-ramp would cost less, impact no prime development land, and remove the traffic before it even reaches Wasatch Boulevard. This would benefit both canyons and cost UDOT and Utah taxpayers far less.

32.4S
32.2.6.2.1M

2. During public meetings, designers and planners came prepared to advocate for their position and refused to listen to any of the affected parties. It seems obvious that they saw a gravel pit (which is quickly winding down and is open for development) and decided they could do anything they want to that land. They openly and misguidedly thought somehow this would enhance the land. They obviously have no experience in the development world and they could not be more wrong.

32.2.6.2.1L

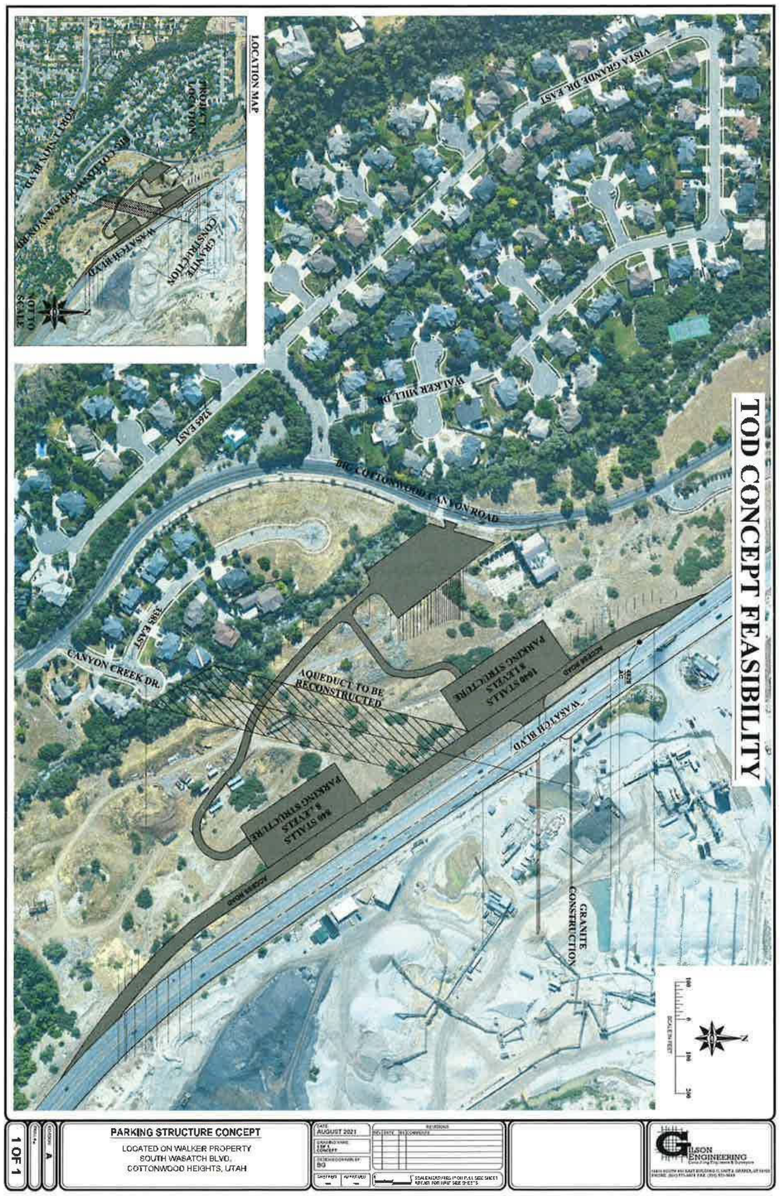
In summary, this project does not mitigate traffic concerns or provide long term solutions. It ignores the current massive problem at the entrance to Big Cottonwood Canyon and the impacts to land. It appears to have been sited solely to improving traffic flow to Little Cottonwood Canyon. As indicated, it will cost more for the State of Utah, solve few of the impending problems, and will not be a long-term viable solution for traffic flow.

32.2.6.2.1L
32.1.1A

Sincerely

Dennis M. Astill

DMA/ss
cc: Douglas M. Shelby


TOD CONCEPT FEASIBILITY
PARKING STRUCTURE CONCEPT
LOCATED ON WALKER PROPERTY
SOUTH WASATCH BLVD.
COTTONWOOD HEIGHTS, UTAH
AUGUST 2021
1 OF 1
GILSON ENGINEERING

COMMENT #: 13312
DATE: 9/2/21 12:22 PM
SOURCE: Email
NAME: Ross Chambless

COMMENT:

Dear UDOT Personnel and Consultant Team,

Please accept this letter on behalf of these members of the Utah House Democratic Caucus addressing their concerns with both of the current transportation proposals for Little Cottonwood Canyon.

Thank you,
Ross Chambless

House of Representatives *State of Utah*
UTAH STATE CAPITOL • PO BOX 145030
350 N STATE STREET, SUITE 350
SALT LAKE CITY, UTAH 84114-5030 • (801) 538-1029

To: UDOT LCC EIS Consultant Team

September 2, 2021

Dear UDOT Personnel and Consultant Team,

We appreciate your time-intensive and thoughtful approach to resolving the critical issue of managing the vehicle over-crowding of Little Cottonwood Canyon. The canyon is a treasured destination for our Wasatch Front constituents and millions of out-of-state visitors alike through all seasons of the year. Sadly, we all recognize we are "loving our canyon to death." We need to provide the public with a sustainable, cost-effective, inclusive, and reliable transportation solution that also enhances the experience of canyon visitors.

The stated purpose of the EIS, "to provide an integrated transportation system that improves the reliability, mobility and safety for all users," does not account for the fact that the canyon is a place for environmental preservation and solitude, as well as recreation of all kinds. If this project becomes about moving more people in and out of the canyon at faster rates, then we are not "preserving the values of the Wasatch Mountains."

32.1.2B
32.20A
32.20C
32.2.9C, 32.2.9E

Both of the currently "preferred alternatives" are problematic. Both would result in significant environmental impacts that endanger our watershed and fail to address the year-round needs and access for all recreational interests, including those of underserved populations.

32.4I, 32.12A,
32.12B, 32.1.2C,
32.1.2D, 32.5A

We do not support the proposed gondola option as it is costly and caters mostly to the ski resorts at the top of the canyon and ignores the many and varying year-round recreational interests throughout the canyon that also must be addressed. Furthermore, the "Enhanced Bus Service in Peak-Period Shoulder Lane (PPSL)" alternative as proposed would inflict an unacceptable level of costly environmental impacts by expanding the road and adding snow sheds in some places.

32.1.2D, 32.2.7A,
32.7B, 32.7C
32.4I

We believe a third option exists: one that is less expensive; less environmentally impactful; more inclusive; and could be more quickly implemented. We support a modified Enhanced Bus Alternative that takes a phased approach. This alternative would involve the following:

32.2.9A, 32.29R
32.2.9A

- NOT widening the existing road to add a shoulder lane, except at certain points needed for making stop areas more efficient.
- NOT constructing snow shed overhangs which will be costly and unnecessary as roads can be managed with normal snowplow clearance. 32.2.9J
- Implement tolling and, at certain times, restrictions on single-occupancy vehicles, along with bus-only access at designated times to reduce vehicle traffic. 32.2.4A
- Busses should use the cleanest, most efficient technology possible to minimize emissions, and provide year-round service and enhance access to all areas of the canyon as a reliable alternative to private vehicles. 32.2.2B 32.2.6.3F
- Enforce parking violations and provide better information systems for canyon users. 32.2.2M

This approach would allow us to proceed relatively quickly with an incremental plan that increases access and convenience for all recreational interests year-round in a manner that is fair, sustainable, and which preserves some of the solitude and environmental integrity of the place. It would also minimize costly and potentially destructive environmental impacts to the canyon and prioritizes the preservation of our critical watershed – the source of our public drinking water – which is in the best long-term interests of our state.

32.2.7C
32.1.2C
32.4I
32.12A
32.12B

We appreciate your consideration of this modified alternative,

Signed, Members of the Utah House Democratic Caucus

State Representative Gay Lynn Bennion
State Representative Joel Briscoe
State Representative Clare Collard
State Representative Jennifer Dailey-Provost
State Representative Suzanne Harrison
State Representative Sandra Hollins
State Representative Carol Spackman Moss
State Representative Doug Owens
State Representative Stephanie Pitcher
State Representative Angela Romero
State Representative Elizabeth Weight

COMMENT #: 13313
DATE: 9/2/21 2:05 PM
SOURCE: Email
NAME: Dave Fields

COMMENT:

Josh and Vince,
Please find Snowbird's feedback on the LCC DEIS.
Thank you for all of your hard work on this project.
Dave

August 2, 2021

snowbird
ski and summer resort

Little Cottonwood Canyon EIS
C/O HDR
2825 E. Cottonwood Parkway, Ste. 200
Cottonwood Heights, UT
84121

Dear Little Cottonwood Canyon EIS Team,

Please accept the following comments regarding the Utah Department of Transportation Little Cottonwood Canyon EIS. Snowbird's owners, management, and employees appreciate the significant time and resources UDOT has put into this process and look forward to a transportation solution in Little Cottonwood Canyon that is safer, more efficient, and reliable.

After decades of transportation study and analysis in Little Cottonwood Canyon, Snowbird supports the gondola with La Caille base station option. Snowbird's founders worked with architects and engineers in the late 60's and early 70's on a canyon aerial transportation system because it was obvious that a steep, two-lane highway with 64 avalanche paths was not suitable, safe or reliable for vehicles. 32.2.9D

Tolling

For many years, Snowbird has voiced its support for tolling as a part of a Little Cottonwood Canyon transportation solution, but, as I have frequently stated, I do not believe tolling is an independent solution. We see tolling as one piece of a larger transportation solution as it motivates canyon visitors to get out of their vehicles and into a SR 210 mass transit solution. 32.2.4A, 32.5A, 32.2.2Y, 32.1.1A, 32.20D

Snowbird does not support tolling prior to the implementation of a viable mass transit system. Tolling below Snowbird Entry 1 is simply a "skier tax." Other canyons, such as Millcreek, toll all visitors beginning at the mouth. Hence, tolling at the base of Little Cottonwood Canyon would be a fee for skiers and disbursed recreationalists throughout the canyon. When tolling is implemented, it should address recreation in Little and Big Cottonwood canyons alike.

Roadside parking

Both UDOT and the US Forest Service have identified a common goal to eliminate roadside parking. At Snowbird, the roadside parking accounts for a significant amount of our parking for summer and winter activities. Any actions taken to reduce roadside parking cannot precede the implementation of an effective canyon transit system without causing significant harm to Snowbird's viability and reducing access to public lands for canyon visitors. 32.2.9H

Avalanche mitigation

U.S. military artillery has been the backbone of avalanche control in Little Cottonwood Canyon. However, its future is uncertain as the supply of munitions and liability threaten artillery programs around the country. Many of the avalanche starting zones in Little Cottonwood Canyon are in wilderness

SNOWBIRD RESORT LLC
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areas, which precludes the installation of remote avalanche control devices (RACs). Without a change in federal legislation allowing for the installation of RACs in wilderness, a suspension or cessation of artillery-based avalanche control would create a hazardous situation in Little Cottonwood Canyon. Other forms of avalanche control like helicopter bombing is highly weather dependent. Ski patrol avalanche control routes with hand charges are not feasible due to ridgeline terrain and mid-slope starting zones. For example, if the artillery program is no longer in use and UDOT has selected an expanded road and bus option, this transportation option will not provide an emergency ingress/egress during storms. Little Cottonwood Canyon could remain closed for days at a time until the weather allows for helicopter bombing. A gondola can operate in most weather conditions including when the road is not available due to an unacceptable avalanche hazard index. 32.7A, 32.2.6.5H, 32.2.2VV, 32.2.6.3P

Emergency egress

Over the past 50 years of operation in the canyon, we have seen annual snowfall decline significantly, yet weather events are becoming more volatile. In the past two winters, we experienced extended road closures due to avalanche slides – one of two days and another of three days. Heavy rainfall also caused a debris slide covering the road for multiple days and, when finally open, continued to restrict movement in and out of the canyon for days. We are experiencing changes in the canyon climate that can threaten the health and safety of canyon residents and guests. During the last three-day road closure, we had multiple medical events including one that required snowcat evacuation only accomplished after a six-hour delay due to extreme avalanche conditions. A gondola would provide emergency egress in extreme weather situations at all hours of the day and night. Expanded bus service does not improve our ability to address emergency services. 32.2.6.5H 32.2.6.5K

Avalanche hazard index

The avalanche hazard index includes many factors such as the number of people exposed to a potential slide. Adding two lanes to SR 210 and filling that lane with buses only compounds the avalanche hazard index. A gondola reduces vehicular traffic, thus reducing the avalanche hazard index with enhanced canyon access. 32.1.2D 32.7A

Scalability

The purpose and need defined for the UDOT LCC EIS is narrow. Yet, the Wasatch Front population is forecasted to double by 2050. This growth will multiply today's traffic, parking and access challenges. A significant capital investment by UDOT will address growth, and if done well, can evolve over time. The ability to expand bus is not efficient. The Utah Transit Authority has stated that bus headway is limited to every 5 minutes. A busy winter weekend day in the canyon will have 7,000 vehicles per day traveling up and down Little Cottonwood Canyon. If one day our goal is to take half of the vehicles off the highway, UTA would need to purchase 126 buses (up and down) with an occupancy of 50 people per bus. These 126 buses would be traveling 10.5 hours up and 10.5 hours down given the 5-minute headway limitation. 32.2.6.3N

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Conversely, a gondola increases capacity by simply adding cabins. Skiers arrive in the morning and depart in the afternoon; no more buses, no more congestion, no more pollution. Gondola provides a sensible solution for visitors' arrival and departure pattern. 32.2.6.5A 32.2.6.5N

Land Preservation

Snowbird and its stakeholders are committed to a generational solution; one that addresses the unique conditions of Little Cottonwood Canyon. With a gondola implementation, Snowbird will place approximately 1,100 acres of its private land originally designated for the Mtn. Accord and Central Wasatch Commission land exchange in a conservation easement. Providing perennial protection to these lands, which include Mt. Superior, is a win for the community, backcountry skiers, hikers, and all who appreciate the majesty of this iconic peak. 32.29F

Base Station

Snowbird has purchased approximately 5 acres in preparation for the location of the La Caille gondola base station. Snowbird is holding this land to be made available upon the conclusion of the UDOT LCC EIS process. Either through sale or donation, Snowbird is committed to providing a thoughtful, long-term canyon transportation solution. If the gondola is not selected for transportation, Snowbird will pursue other uses of the land. 32.2.7A

Dispersed recreation

The majority of dispersed recreation in the upper half of Little Cottonwood Canyon occurs in three primary areas – White Pine, Grizzly Gulch and Albion Basin. Grizzly Gulch and Albion Basin will be easily accessible from the proposed location of the Alta gondola station. Snowbird can provide summer and winter access from the Snowbird gondola station to the White Pine Trailhead. A transit solution to bring winter backcountry users back to the station at Snowbird will need to be determined. Snowbird is committed to exploring a transportation solution for White Pine trailhead users. 32.2.6.5AA

I am mindful of the many hours you have invested into providing a process that is thorough, transparent and inclusive. I commend you for how you have navigated a very difficult, yet important task and process.

Sincerely,

Dave Fields
President/GM
Snowbird

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COMMENT #: 13314
DATE: 9/2/21 8:22 PM
SOURCE: Email
NAME: Chris McCandless

COMMENT:

Josh,

The end is near!

As I was writing my last thoughts to send you guys, I was wondering if we ever sent you the Hales Engineering Traffic Impact Study as it relates to the LaCaille Base Station. With all the assumptions by folks that I am certain are making traffic related statements, we want the TIS we prepared to be part of the public comment to counter some of the inaccurate non-science based statements. To that end, please accept the LaCaille Base Station Traffic Impact Study and include it as a comment/information that should be used in considering the two alternatives as stated in the DEIS.

Thanks again for all you and the team have done.

Chris McCandless, President
CW MANAGEMENT CORPORATION

HALES ENGINEERING
innovative transportation solutions

32.2.6.5E

La Caille Station

Traffic Study

Sandy, Utah

September 18, 2020

UT20-1706

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EXECUTIVE SUMMARY

This study addresses the traffic impacts associated with the proposed La Caille development located in Sandy, Utah. The La Caille project is located along S.R. 210, to the south of Granite Bench Lane.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2020), future (2025), and future (2050) conditions with and without the proposed project and to recommend mitigation measures as needed. The morning peak hour level of service (LOS) results are shown in Table ES-1. Recommended storage lengths are shown in Table ES-2.

Table ES-1: Morning Peak Hour Level of Service Results

	Intersection	Level of Service						
		Existing (2020)		Future (2025)			Future (2050)	
		BG	Mit BG	BG	Mit BG	PP	BG	PP
1	Wasatch Boulevard / S.R. 210	F	C	C	C	C	C	C
2	La Caille Access / Wasatch Boulevard	b	a	b	b	c	c	c
3	S.R. 209 / S.R. 210	f	e	e	C	B	D	C
4	La Caille Lane (Project Access)/ S.R. 210	b	b	b	b	A	c	A
5	P1 Out / S.R. 210	-	-	-	-	a	-	a
6	P1 In / S.R. 210	-	-	-	-	a	-	a
7	P2 / S.R. 210	-	-	-	-	a	-	a
8	P6 / La Caille Lane	-	-	-	-	a	-	a
9	P5 / La Caille Lane	-	-	-	-	a	-	a

1. Intersection LOS values represent the overall intersection average for roundabout, signalized, and all-way stop-controlled (AWSC) intersections (uppercase letter) and the worst movement for all other unsignalized intersections (lowercase letter)
2. BG = Background (without project traffic), PP = Plus Project (with project traffic)

Source: Hales Engineering, September 2020

Table ES-2: Recommended Storage Lengths

	Intersection	Recommended Storage Lengths (feet)															
		Northbound				Southbound				Eastbound				Westbound			
		LT		RT		LT		RT		LT		RT		LT		RT	
		E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
1	Wasatch Boulevard / S.R. 210	-	100	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	La Caille Lane / S.R. 210	-	150	-	-	-	-	-	-	-	-	-	-	-	150	-	-
3	S.R. 209 / S.R. 210	-	-	-	200	-	-	-	-	-	-	-	-	-	-	-	-
4	P2 In / S.R. 210	-	-	-	-	-	-	-	-	-	-	-	100	-	-	-	-

1. Storage lengths are based on 95th percentile queue lengths and do not include required deceleration / taper distances
2. E = Existing storage length (approximate), if applicable; P = proposed storage length for new turn lanes or changes to existing turn lanes, if applicable

Source: Hales Engineering, September 2020

SUMMARY OF KEY FINDINGS & RECOMMENDATIONS

Project Conditions

- The development will consist of a gondola, a hotel, residential single-family units, and a restaurant.
- The project is anticipated to generate approximately 3,902 weekend daily trips, including 504 trips in the morning peak hour, and 605 trips in the evening peak hour in 2025
- The project is anticipated to generate approximately 4,463 weekend daily trips, including 646 trips in the morning peak hour, and 743 trips in the evening peak hour in 2050

2020	Background
Assumptions	• 30th busiest peak hour volume assumed per Little Cottonwood Environmental Impact Statement (EIS)
Findings	• Poor LOS at Wasatch Blvd / S.R. 210 and S.R. 209 / S.R. 210
Mitigations	• **Wasatch Boulevard:** Widen to accommodate second southbound thru lane at the Wasatch Boulevard / S.R. 210 intersection per the imbalanced lane alternative in the EIS and carry lane several hundred feet before merging • **S.R. 209 / S.R. 210:** Add separate northbound right-turn pocket with 200 feet of storage

2025	Background	Plus Project
Assumptions	• 1.2% growth rate per EIS	• Trips to gondola removed from S.R. 209 / S.R. 210 intersection and rerouted accordingly • 5-minute bus headway
Findings	• Poor LOS at S.R. 209 / S.R. 210	• Acceptable LOS
Mitigations	• S.R. 209 / S.R. 210: Signalize	• None

2050	Background	Plus Project
Assumptions	• **Wasatch Boulevard:** Widen to 5 lanes per WFRC RTP through study area • **Wasatch Boulevard / S.R. 210:** Convert to conventional intersection and install dual left-turn lanes on the eastbound approach and a left-turn lane on the northbound approach	• None
Findings	• Acceptable LOS	• Acceptable LOS
Mitigations	• See EIS	• None

Gondola Advantages

- Increased consistency and reliability of travel time
- The ability to operate during avalanche clearing/control
- Increased safety
- Reduced delay during periods of S.R. 210 closure
- Less expensive than preferred bus alternative in capital and O&M costs
- Ultimate ridership capacity of 5,000 people per hour per direction

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I. INTRODUCTION

A. Purpose

This study addresses the traffic impacts associated with the proposed La Caille development located in Sandy, Utah. The proposed project is located along S.R. 210, to the south of Granite Bench Lane. Figure 1 shows a vicinity map of the proposed development.

The purpose of this traffic impact study is to analyze traffic operations at key intersections for existing (2020), future (2025), and future (2050) conditions with and without the proposed project and to recommend mitigation measures as needed.

Figure 1: Vicinity map showing the project location in Sandy, Utah

B. Scope

The study area was defined based on conversations with the development team. This study was scoped to evaluate the traffic operational performance impacts of the project on the following intersections:

- Wasatch Boulevard / S.R. 210
- La Caille Access / Wasatch Boulevard

- S.R. 209 / S.R. 210
- Project Access / S.R. 210

C. Analysis Methodology

Level of service (LOS) is a term that describes the operating performance of an intersection or roadway. LOS is measured quantitatively and reported on a scale from A to F, with A representing the best performance and F the worst. Table 1 provides a brief description of each LOS letter designation and an accompanying average delay per vehicle for both signalized and unsignalized intersections.

The *Highway Capacity Manual* (HCM), 6th Edition, 2016 methodology was used in this study to remain consistent with "state-of-the-practice" professional standards. This methodology has different quantitative evaluations for signalized and unsignalized intersections. For signalized, roundabout, and all-way stop-controlled (AWSC) intersections, the LOS is provided for the overall intersection (weighted average of all approach delays). For all other unsignalized intersections, LOS is reported based on the worst movement.

Using Synchro/SimTraffic software, which follow the HCM methodology, the peak hour LOS was computed for each study intersection. Multiple runs of SimTraffic were used to provide a statistical evaluation of the interaction between the intersections. The detailed LOS reports are provided in Appendix B. Hales Engineering also calculated the 95th percentile queue lengths for the study intersections using SimTraffic. The detailed queue length reports are provided in Appendix D.

D. Level of Service Standards

For the purposes of this study, a minimum acceptable intersection performance for each of the study intersections was set at LOS D. If levels of service E or F conditions exist, an explanation and/or mitigation measures will be presented. A LOS D threshold is consistent with "state-of-the-practice" traffic engineering principles for urbanized areas.

Table 1: Level of Service Description

LOS		Description of Traffic Conditions	Average Delay (seconds/vehicle)	
			Signalized Intersections	Unsignalized Intersections
A		Free Flow / Insignificant Delay	≤ 10	≤ 10
B		Stable Operations / Minimum Delays	> 10 to 20	> 10 to 15
C		Stable Operations / Acceptable Delays	> 20 to 35	> 15 to 25
D		Approaching Unstable Flows / Tolerable Delays	> 35 to 55	> 25 to 35
E		Unstable Operations / Significant Delays	> 55 to 80	> 35 to 50
F		Forced Flows / Unpredictable Flows / Excessive Delays	> 80	> 50

Source: Hales Engineering Descriptions, based on the *Highway Capacity Manual* (HCM), 6th Edition, 2016 Methodology (Transportation Research Board)

II. EXISTING (2020) BACKGROUND CONDITIONS

A. Purpose

The purpose of the background analysis is to study the intersections and roadways during the peak travel periods of the day with background traffic and geometric conditions. Through this analysis, background traffic operational deficiencies can be identified, and potential mitigation measures recommended. This analysis provides a baseline condition that may be compared to the build conditions to identify the impacts of the development.

B. Roadway System

The primary roadways that will provide access to the project site are described below:

S.R. 210 – is a state-maintained roadway (classified by UDOT access management standards as a "System Priority – Urban Importance" facility, or access category 3 roadway). S.R. 210 has one travel lane in each direction with left-turn lanes at intersections. As identified and controlled by UDOT, a "System Priority – Urban Importance" access classification identifies minimum signalized intersection spacing of one-half mile (2,640 feet) and other streets and driveways are typically not allowed. The posted speed limit on S.R. 210 is 50 mph.

Wasatch Boulevard – is a city-maintained roadway which is classified by the Sandy City Master Transportation Plan (July 2009) as a "major collector." The roadway has one travel lane in each direction separated by a center two-way left-turn lane (TWLTL) north of the existing La Caille access. To the south of the access, there are two southbound lanes and one northbound lane without a TWLTL. The posted speed limit is 35 mph in the study area.

As of this writing, a project is under construction at the mouth of Little Cottonwood Canyon on the east side of the S.R. 209 / S.R. 210 intersection. The acceleration lane for the northbound approach is being extended to allow for more merging time. This project was assumed to be completed for the existing (2020) background scenario.

C. Traffic Volumes

Weekday morning (7:00 to 9:00 a.m.) and evening (4:00 to 6:00 p.m.) peak period traffic counts were performed at the following intersections:

- Wasatch Boulevard / S.R. 210
- La Caille Access / Wasatch Boulevard
- S.R. 209 / S.R. 210
- Project Access / S.R. 210

The counts were performed on Thursday, April 15, 2020. The morning peak hour was determined to be between 8:00 and 9:00 a.m., and the evening peak hour was determined to be between 4:45 and 5:45 p.m. While the evening peak hour volumes were higher than the morning peak hour volumes, the morning peak hour volumes were used for the purposes of this analysis as queueing is known to be worse during peak ski season in winter months.

Hales Engineering made seasonal adjustments to the observed traffic volumes. According to the Little Cottonwood Environmental Impact Statement, UDOT uses the 30th busiest hour for its design, in which 1,061 vehicles were counted going into Little Cottonwood Canyon on S.R. 210 in the eastbound direction in 2017. The 30th highest hour was on a weekend from 10:00 to 11:00 a.m., which was studied in the analyses. For the existing (2020) background analysis, these volumes were increased at the established annual growth rate of 1.2% to 1,100 eastbound vehicles during the morning peak hour. The counted volumes were increased by 345% accordingly on the eastbound left and thru movements and the northbound right movement at the S.R. 209 / S.R. 210 intersection. Southbound thru movements were also increased to match at the Wasatch Boulevard / S.R. 210 intersection.

The remaining movements were also adjusted according to monthly traffic volume data obtained from a nearby UDOT automatic traffic recorder (ATR) on S.R. 210 (ATR #317). In 2017, traffic volumes on an August weekday were equal to approximately 61% of February weekend traffic volumes. The remaining observed traffic volumes were adjusted accordingly to determine turning movement counts at the study intersections.

Figure 2 shows the existing morning peak hour volumes as well as intersection geometry at the study intersections.

D. Level of Service Analysis

Hales Engineering determined that the Wasatch Boulevard / S.R. 210 and S.R. 209 / S.R. 210 intersections are currently operating at poor levels of service during the morning peak hour, as shown in Table 2.

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. Some significant queueing was observed during the morning peak hour at the Wasatch Boulevard / S.R. 210 intersection (0.4 miles, southbound approach and 0.3 miles, eastbound approach) and at the S.R. 209 / S.R. 210 intersection (0.3 miles, northeast-bound approach).

Sandy La Caille TS
Existing (2020) Background

Morning Peak Hour
Figure 2

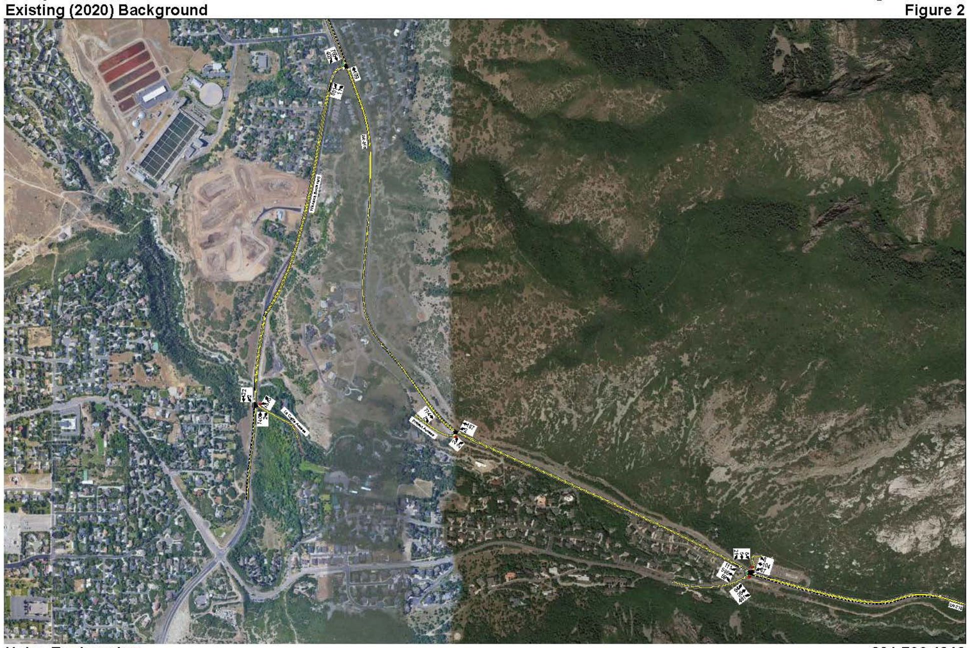

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Table 2: Existing (2020) Background Morning Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Wasatch Boulevard / S.R. 210	Signal	-	>80	F
La Caille Access / Wasatch Boulevard	WB Stop	WBL	11.0	b
S.R. 209 / S.R. 210	NE/SW Stop	NEL	>50	f
Project Access / S.R. 210	WB Stop	WBL	14.4	b

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

F. Mitigation Measures

It is recommended that Wasatch Boulevard be widened to accommodate a second southbound thru lane according to the Imbalanced-Lane alternative in the Little Cottonwood Environmental Impact Statement. It is recommended that the second thru lane be carried through the Wasatch Boulevard / S.R. 210 intersection several hundred feet before it merges. It is anticipated that it would extend all the way to the P2 entrance as a trap right-turn lane in plus project conditions.

While the S.R. 209 / S.R. 210 intersection does not warrant a signal, mitigations can be made to improve its operation. It is recommended that that a right-turn pocket be installed with 200 feet of storage. It is anticipated that this will reduce the northeast-bound 95th percentile queue length to 200 feet. With the proposed improvements, the Wasatch Boulevard / S.R. 210 intersection is anticipated to operate at LOS C, as shown in Table 3.

Table 3: Mitigated Existing (2020) Background Morning Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Wasatch Boulevard / S.R. 210	Signal	-	22.4	C
La Caille Access / Wasatch Boulevard	WB Stop	WBL	8.8	a
S.R. 209 / S.R. 210	NE/SW Stop	NEL	49.5	e
Project Access / S.R. 210	WB Stop	NEL	11.4	b

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

III. FUTURE (2025) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2025) background analysis is to study the intersections and roadways during the peak travel periods of the day for future background traffic and geometric conditions. Through this analysis, future background traffic operational deficiencies can be identified, and potential mitigation measures recommended.

B. Roadway Network

According to the Wasatch Front Regional Council (WFRC) Regional Transportation Plan, there are no projects planned before 2025 in the study area. Therefore, no changes were made to the roadway network for the future (2025) analysis.

C. Traffic Volumes

Hales Engineering utilized the 1.2% annual growth rate established in the Little Cottonwood Environmental Impact Statement to project the future turn volumes at the study intersections. Future (2025) morning peak hour turning movement volumes are shown in Figure 3.

D. Level of Service Analysis

Hales Engineering determined that the S.R. 209 / S.R. 210 intersection is anticipated to operate at a poor LOS during the morning peak hour in future (2025) background conditions, as shown in Table 4. These results serve as a baseline condition for the impact analysis of the proposed development for future (2025) conditions.

E. Queuing Analysis

Hales Engineering calculated the 95^{th} percentile queue lengths for each of the study intersections. Some significant queuing is anticipated during the morning peak hour at the Wasatch Boulevard / S.R. 210 intersection, with queue lengths of 330 feet on the southbound approach and 750 feet on the eastbound approach.

F. Mitigation Measures

According to the Utah MUTCD, the anticipated future (2025) background volumes at the S.R. 209 / S.R. 210 intersection warrant a signal. It is therefore recommended that the intersection be signalized with permissive/protected left-turn phasing on the westbound approach.

With the proposed improvement, all intersections are anticipated to operate at an acceptable LOS, as shown in Table 5.

Sandy La Caille TS
Future (2025) Background

Morning Peak Hour
Figure 3

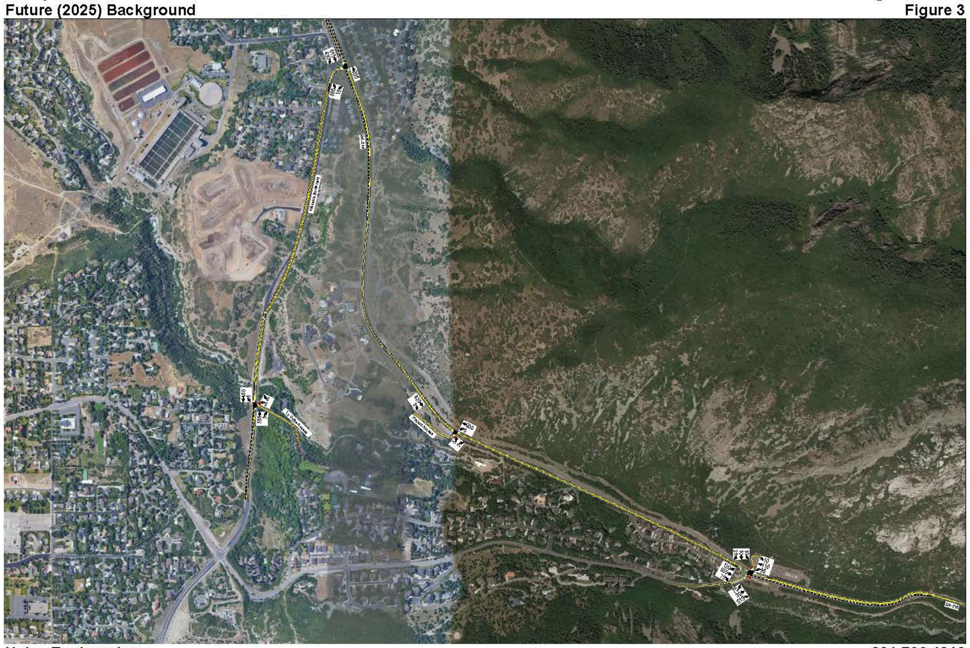

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Table 4: Future (2025) Background Morning Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Wasatch Boulevard / S.R. 210	Signal	-	28.7	C
La Caille Access / Wasatch Boulevard	WB Stop	WBL	13.6	b
S.R. 209 / S.R. 210	NE/SW Stop	NEL	44.0	e
Project Access / S.R. 210	WB Stop	NEL	13.4	b

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

Table 5: Mitigated Future (2025) Background Morning Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Wasatch Boulevard / S.R. 210	Signal	-	27.5	C
La Caille Access / Wasatch Boulevard	WB Stop	WBL	13.2	b
S.R. 209 / S.R. 210	Signal	-	23.2	C
Project Access / S.R. 210	WB Stop	NEL	11.2	b

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

IV. PROJECT CONDITIONS

A. Purpose

The project conditions discussion explains the type and intensity of development. This provides the basis for trip generation, distribution, and assignment of project trips to the surrounding study intersections defined in Chapter I.

B. Project Description

The proposed La Caille project is located along S.R. 210, to the south of Granite Bench Lane. The development will consist of a gondola, residential single-family units, a hotel, and a restaurant. A concept plan for the proposed development is provided in Appendix C. The proposed land use for the development has been identified in Table 6.

Table 6: Project Land Uses

Land Use	Intensity
Single-family detached housing	50 Units
Hotel	75 Rooms
Restaurant	15,000 sq. ft.
Gondola	1,888 Parking Stalls

C. Trip Generation

Trip generation for the site was calculated using trip generation rates published in the Institute of Transportation Engineers (ITE), *Trip Generation*, 10th Edition, 2017. Trip generation for the proposed project site, not including the gondola, is included in Table 7.

Gondola trip generation was based on numbers displayed in the EIS and verified by data collection and calculated rates from other gondolas. UDOT projects a 2050 hourly ridership of 1,050 people per hour and 341 vehicles during the morning peak hour that would go up the canyon. It was assumed that 34 vehicles would exit the gondola site based on data from other gondolas, which accounts for ride hailing services, taxis, and any exiting employees.

Additionally, because the parking lot at the mouth of the canyon would be removed if the La Caille station were to be implemented, the trips into the parking lot were routed into the gondola station as well as the gondola will have additional capacity. In the future (2050) plus project scenario, an additional 165 trips were routed into the development.

Bus data were copied from the EIS as well, which assumes a 5-minute headway. This translates to 12 buses per hour in either direction.

These numbers were reduced for the future (2025) plus project conditions based on the 1.2% projected growth rate of vehicles up Little Cottonwood Canyon. In this case, it was assumed that 253 vehicles would enter the gondola site and that 25 vehicles would exit the site during the morning peak hour.

Table 7: Site Trip Generation

Trip Generation Sandy - La Caille TIS								
Weekday Daily Land Use[1]	# of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	**Total Daily Trips**
Single-Family Detached Housing (210)	42	Dwelling Units	470	50%	50%	235	235	**470**
Quality Restuaruant (931)	15	1,000 Sq. Ft. GFA	1258	50%	50%	629	629	**1,258**
Hotel (310)	75	Rooms	420	50%	50%	210	210	**420**
Total			**2,148**			**1,074**	**1,074**	**2,148**
Morning Peak Hour Land Use[1]	# of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	**Total AM Trips**
Single-Family Detached Housing (210)	42	Dwelling Units	36	25%	75%	9	27	**36**
Quality Restuaruant (931)	15	1,000 Sq. Ft. GFA	12	50%	50%	6	6	**12**
Hotel (310)	75	Rooms	34	59%	41%	20	14	**34**
Total			**82**			**35**	**47**	**82**
Evening Peak Hour Land Use[1]	# of Units	Unit Type	Trip Generation	% Entering	% Exiting	Trips Entering	Trips Exiting	**Total PM Trips**
Single-Family Detached Housing (210)	42	Dwelling Units	46	63%	37%	29	17	**46**
Quality Restuaruant (931)	15	1,000 Sq. Ft. GFA	118	67%	33%	79	39	**118**
Hotel (310)	75	Rooms	32	51%	49%	16	16	**32**
Total			**196**			**124**	**72**	**196**

1. Land Use Code from the Institute of Transportation Engineers (ITE) *Trip Generation*, 10th Edition, 2017.

SOURCE: Hales Engineering, August 2020

The total trip generation for the development in 2025 is as follows:

- Daily Trips: 3,902
- Morning Peak Hour Trips: 504
- Evening Peak Hour Trips: 605

The total trip generation for the development in 2050 is as follows:

- Daily Trips: 4,463
- Morning Peak Hour Trips: 646
- Evening Peak Hour Trips: 743

D. Trip Distribution and Assignment

Project traffic is assigned to the roadway network based on the type of trip and the proximity of project access points to major streets, high population densities, and regional trip attractions. Existing travel patterns observed during data collection also provide helpful guidance to establishing these distribution percentages, especially near the site. Trip distribution was also based on the fact that the primary access to the gondola parking structure is to and from the north on S.R. 210. The resulting distribution of project generated trips during the morning peak hour is shown in Table 8.

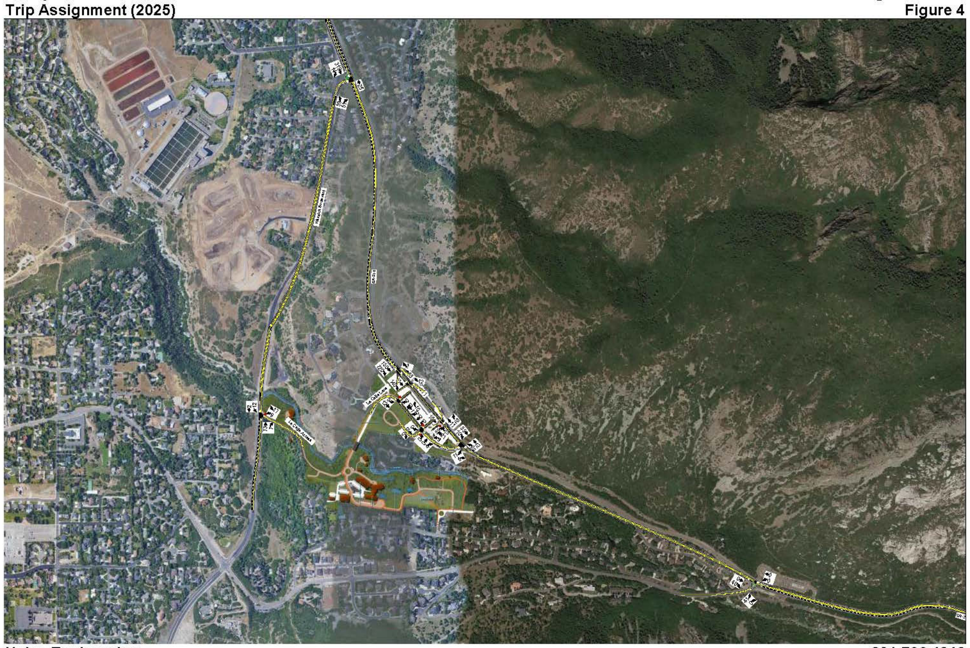
Table 8: Trip Distribution

Direction	% To/From Project
North	70%
South	20%
West	10%

These trip distribution assumptions were used to assign the morning peak hour generated traffic at the study intersections to create trip assignment for the proposed development. Because some of the trips were related to new homes on the south end of the site, 2 entering trips and 5 exiting trips were not included as they would be routed through intersections not included in the analysis. Trip assignment for the development in 2025 and 2050 are shown in Figure 4 and Figure 5, respectively.

Sandy La Caille TS
Trip Assignment (2025)

Morning Peak Hour
Figure 4



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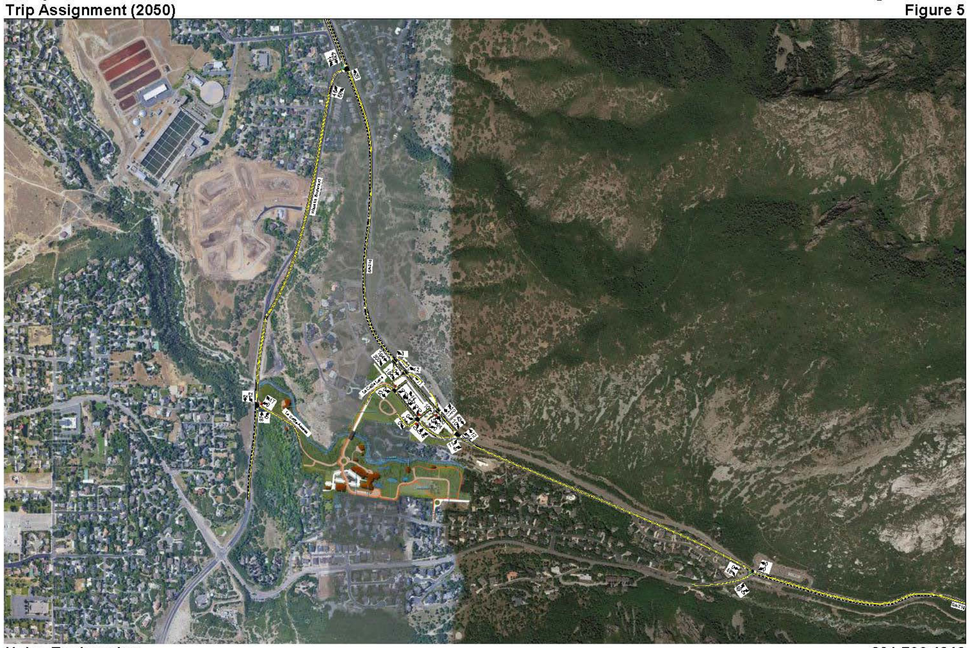
Sandy La Caille TS
Trip Assignment (2050)

Morning Peak Hour
Figure 5



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E. Access

The proposed access for the site will be gained at the following locations (see also concept plan in Appendix C):

S.R. 210:

- La Caille Lane will be located approximately 3,800 feet northwest of the S.R. 209 / S.R. 210 intersection. It will access the project on the southwest side of S.R. 210. It is anticipated that the access will be signalized.
- Various other accesses will be located along S.R. 210, both to the first and second levels of parking. Bus pullouts are also planned along either side of S.R. 210, which were included in the analyses for the project. The primary accesses to the second level of the parking structure are on the northwest end of the site and include one-way tunnels on either side of S.R. 210. The access to the first level of the parking structure is located on the northwest end of the structure and is restricted to right-in movements only. A second access is located on the southeast end and is restricted to right-out movements only.

Wasatch Boulevard:

- The La Caille Access is an existing brick road on the east side of Wasatch Boulevard. The access is be stop-controlled.

Two other accesses to the parking structure are located on La Caille Lane and are currently planned to connect to the 5th and 6th levels of the structure.

F. Auxiliary Lane Requirements

Based on Administrative Rule R930-6, the following auxiliary lanes may be required for the proposed accesses onto S.R. 210 (UDOT Access Category 3 roadway):

Left-turn Deceleration Lane:

- Required when the projected peak hour left-turn ingress volume is greater than 5 vph. As shown in Figure 5, it is anticipated that this volume will be met during the morning peak hour at the La Caille Lane / S.R. 210 intersection. Therefore, a left-turn lane may be required at this location.

Right-turn Deceleration Lane:

- Required when the projected peak hour right-turn ingress volume is greater than 10 vph. As shown in Figure 5, it is anticipated that this peak hour volume will be met during the morning peak hour at the accesses on S.R. 210. Therefore, right-turn deceleration lanes may be required at these locations. The additional lane on eastbound S.R. 210 would fill this requirement at the La Caille Lane / S.R. 210 intersection.

Right-turn Acceleration Lane:

- Required when the projected peak hour right-turn egress volume is greater than 10 vph. While it is not anticipated that this peak hour volume will be met during the morning peak hour at the northbound P2 access onto S.R. 210, it is likely that it will be met during the evening peak hour. Additionally, it is anticipated that the volume will be met during the morning peak hour at the P1 Out / S.R. 210 and La Caille Lane / S.R. 210 intersections. Therefore, right-turn acceleration lanes may be required at these locations. The proposed lane from the bus turnout could potentially serve as an acceleration lane at the P1 Out / S.R. 210 intersection.

Left-turn Acceleration Lane:

- May be required if such a design will be a benefit to the safety and operation of the roadway.

V. FUTURE (2025) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the future (2025) plus project analysis is to study the intersections and roadways during the peak travel periods of the day for future background traffic and geometric conditions plus the net trips generated by the proposed development. This scenario provides valuable insight into the potential impacts of the proposed project on future background traffic conditions.

B. Roadway Network

In the current plans, the La Caille Lane / S.R. 210 intersection is drawn as a High-T intersection. However, because there are so many merging/diverging points nearby, from a safety standpoint, it is recommended that it be constructed as a conventional intersection. For this reason, it was analyzed as such.

While the anticipated morning peak hour volumes at the La Caille Lane / S.R. 210 intersection for future (2025) background conditions do not warrant signalization, it is anticipated that evening peak hour volumes will as vehicles exit the parking structure and return to S.R. 210. This intersection was analyzed with a traffic signal.

C. Traffic Volumes

Hales Engineering added the project trips discussed in Chapter III to the future (2025) background traffic volumes to predict turning movement volumes for future (2025) plus project conditions. Trips to the gondola were removed from the S.R. 209 / S.R. 210 intersection and rerouted accordingly. Future (2025) plus project morning peak hour turning movement volumes are shown in Figure 6.

D. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the morning peak hour in future (2025) plus project conditions, as shown in Table 9. It is anticipated that, to some extent, the evenly spaced arrival of gondolas to the station will meter traffic arrival at the project site. Any improvement in LOS is likely due to the gondola diverting trips to and from Little Cottonwood Canyon.

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. Some significant queuing is anticipated during the morning peak hour at the Wasatch Boulevard / S.R. 210 intersection (300 feet, southbound approach and 660 feet, eastbound approach).

F. Mitigation Measures

No mitigation measures are recommended.

Table 9: Future (2025) Plus Project Morning Peak Hour LOS

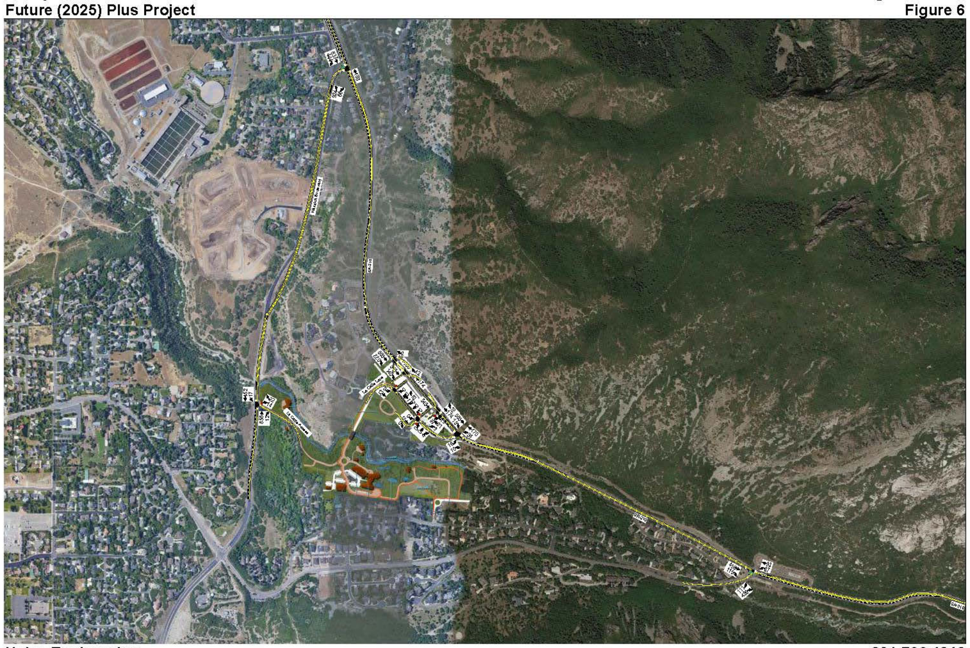
Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Wasatch Boulevard / S.R. 210	Signal	-	26.8	C
La Caille Access / Wasatch Boulevard	WB Stop	WBL	18.6	c
S.R. 209 / S.R. 210	Signal	-	19.4	B
La Caille Lane / S.R. 210	Signal	-	2.3	A
P1 Out / S.R. 210	NEB Stop	NER	2.2	a
P1 In / S.R. 210	Free	SER	0.9	a
P2 / S.R. 210	WB Yield	SET	1.9	a
P6 / La Caille Lane	SWB Stop	NWT	0.1	a
P5 / La Caille Lane	SWB/NEB Stop	NER	2.7	a

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

Sandy La Caille TS
Future (2025) Plus Project

Morning Peak Hour
Figure 6



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VI. FUTURE (2050) BACKGROUND CONDITIONS

A. Purpose

The purpose of the future (2050) background analysis is to study the intersections and roadways during the peak travel periods of the day for future background traffic and geometric conditions. Through this analysis, future background traffic operational deficiencies can be identified, and potential mitigation measures recommended.

B. Roadway Network

According to the Wasatch Front Regional Council (WFRC) Regional Transportation Plan, Wasatch Boulevard is planned to be widened to 5 lanes from Bengal Boulevard to S.R. 209. For this reason, the Wasatch Boulevard / S.R. 210 intersection was changed from a High-T to a conventional intersection to accommodate the extra lanes. For the analysis, a northbound left-turn lane was installed, and dual left-turn lanes were installed on the eastbound approach. The channelized free right-turn on the southbound approach was kept for operational purposes.

C. Traffic Volumes

Hales Engineering utilized the 1.2% annual growth rate established in the Little Cottonwood Environmental Impact Statement to project the future turn volumes at the study intersections. Future (2050) background morning peak hour turning movement volumes are shown in Figure 7.

D. Level of Service Analysis

Hales Engineering determined that the S.R. 209 / S.R. 210 intersection is anticipated to operate at LOS E during the morning peak hour in future (2050) background conditions, as shown in Table 10. These results serve as a baseline condition for the impact analysis of the proposed development for future (2050) conditions.

E. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. Some significant queuing is anticipated during the morning peak hour at the Wasatch Boulevard / S.R. 210 intersection (380 feet, southbound approach and 310 feet, eastbound approach) and at the S.R. 209 / S.R. 210 intersection (1,000 feet, eastbound approach).

F. Mitigation Measures

Any further mitigations to the S.R. 209 / S.R. 210 intersection for queuing would fall under the alternatives listed in the Little Cottonwood Environmental Impact Statement. For this reason, it is recommended that a gondola or extensive bus use be implemented to decrease traffic volumes.

Sandy La Caille TS
Future (2050) Background

Morning Peak Hour
Figure 7

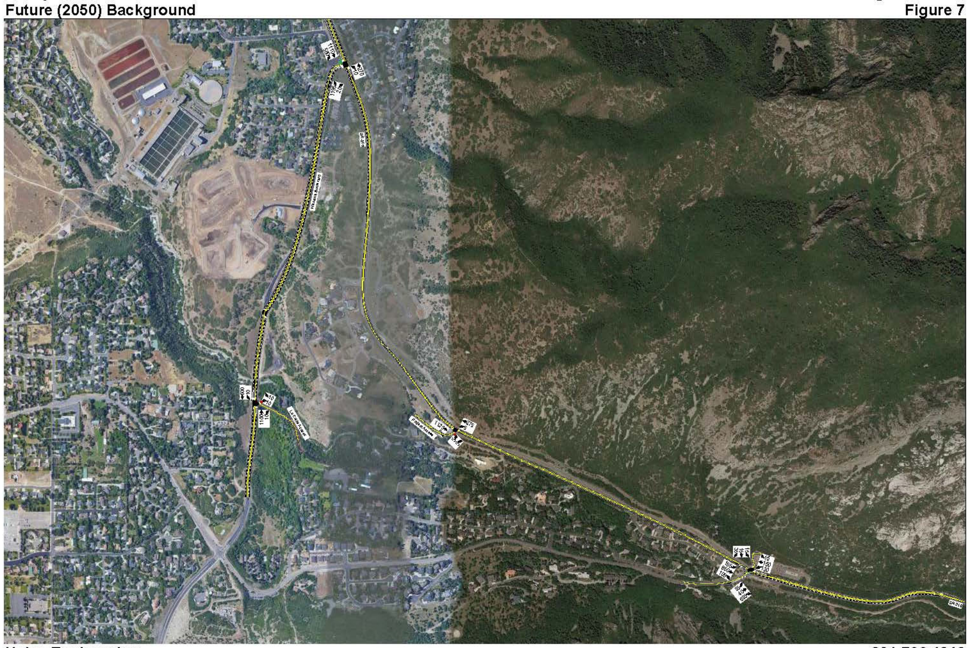

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Table 10: Future (2050) Background Morning Peak Hour LOS

Intersection		Level of Service		
Description	Control	Movement[1]	Aver. Delay (Sec. / Veh.)	LOS[2]
Wasatch Boulevard / S.R. 210	Signal	-	27.7	C
La Caille Access / Wasatch Boulevard	WB Stop	WBL	24.8	c
S.R. 209 / S.R. 210	Signal	-	38.8	D
Project Access / S.R. 210	WB Stop	NEL	18.9	c

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

VII. FUTURE (2050) PLUS PROJECT CONDITIONS

A. Purpose

The purpose of the future (2050) plus project analysis is to study the intersections and roadways during the peak travel periods of the day for future background traffic and geometric conditions plus the net trips generated by the proposed development. This scenario provides valuable insight into the potential impacts of the proposed project on future background traffic conditions.

B. Traffic Volumes

Hales Engineering added the project trips discussed in Chapter III to the future (2050) background traffic volumes to predict turning movement volumes for future (2050) plus project conditions. Future (2050) plus project morning peak hour turning movement volumes are shown in Figure 8.

C. Level of Service Analysis

Hales Engineering determined that all intersections are anticipated to operate at acceptable levels of service during the morning peak hour in future (2050) plus project conditions, as shown in Table 11. Any improvement in LOS is likely due to the gondola diverting trips to and from Little Cottonwood Canyon.

D. Queuing Analysis

Hales Engineering calculated the 95th percentile queue lengths for each of the study intersections. Some significant queuing is anticipated during the morning peak hour at the S.R. 209 / S.R. 210 intersection (330 feet, eastbound approach).

E. Mitigation Measures

No mitigation measures are recommended.

F. Recommended Storage Lengths

Hales Engineering determined recommended storage lengths based on the 95th percentile queue lengths given in the future (2050) plus project scenario. These storage lengths do not include the taper length. Recommended storage lengths for the study intersections are shown in Table 12. Intersections shown in Table 12 include new intersections and existing intersections that have recommended storage length changes.

Sandy La Caille TS
Future (2050) Plus Project

Morning Peak Hour
Figure 8

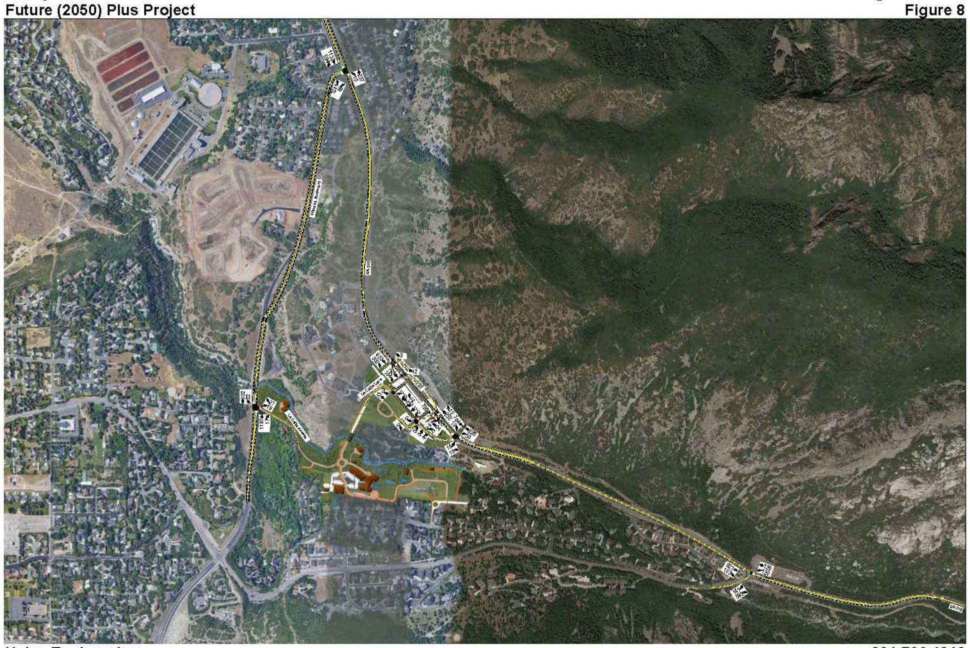

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Table 11: Future (2050) Plus Project Morning Peak Hour LOS

Intersection		Level of Service		
Description	**Control**	**Movement[1]**	**Aver. Delay (Sec. / Veh.)**	**LOS[2]**
Wasatch Boulevard / S.R. 210	Signal	-	24.4	C
La Caille Access / Wasatch Boulevard	WB Stop	WBL	21.7	c
S.R. 209 / S.R. 210	Signal	-	25.3	C
La Caille Lane / S.R. 210	Signal	-	2.6	A
P1 Out / S.R. 210	NEB Stop	NER	2.3	a
P1 In / S.R. 210	Free	SER	1.0	a
P2 / S.R. 210	WB Yield	SET	2.1	a
P6 / La Caille Lane	SWB Stop	NWT	0.2	a
P5 / La Caille Lane	SWB/NEB Stop	NER	2.5	a

1. Movement indicated for unsignalized intersections where delay and LOS represents worst movement. SBL = Southbound left movement, etc.
2. Uppercase LOS used for signalized, roundabout, and AWSC intersections. Lowercase LOS used for all other unsignalized intersections.

Source: Hales Engineering, September 2020

Table 12: Recommended Storage Lengths

	Intersection	Recommended Storage Lengths (feet)															
		Northbound				Southbound				Eastbound				Westbound			
		LT		RT		LT		RT		LT		RT		LT		RT	
		E	P	E	P	E	P	E	P	E	P	E	P	E	P	E	P
1	Wasatch Boulevard / S.R. 210	-	**100**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2	La Caille Lane / S.R. 210	-	**150**	-	-	-	-	-	-	-	-	-	-	-	**150**	-	-
3	S.R. 209 / S.R. 210	-	-	-	**200**	-	-	-	-	-	-	-	-	-	-	-	-
4	P2 In / S.R. 210	-	-	-	-	-	-	-	-	-	-	-	**100**	-	-	-	-

1. Storage lengths are based on 95th percentile queue lengths and do not include required deceleration / taper distances
2. E = Existing storage length (approximate), if applicable; P = proposed storage length for new turn lanes or changes to existing turn lanes, if applicable

Source: Hales Engineering, September 2020

VIII. LA CAILLE GONDOLA ADVANTAGES

A. Purpose

The purpose of this chapter is to outline the reasons why a gondola may be preferable to the alternatives of taking no action or increasing bus service and improving bus infrastructure. The construction of a gondola system would have several benefits, which are shown in this chapter. While UDOT chose to evaluate gondola alternative 3B with a base station at the mouth of Little Cottonwood Canyon, the La Caille site would provide additional benefits, such as increased parking and better public transit integration.

B. Enhanced Bus Comparison

Enhanced bus scenarios have been analyzed as a part of the preliminary documents for the Little Cottonwood Canyon EIS. In the scenario with the highest bus volume, the bus ridership is the same as the projected ridership for the gondola. In addition, the volume of personal vehicles going up the canyon was projected to be the same.

A small analysis was run to compare the difference in traffic conditions with the bus scenario and the gondola scenario at the S.R. 209 / S.R. 210 intersection. It was determined that the projected 24 buses per hour would increase the volume-to-capacity (V/C) ratio of the eastbound through movement by 0.03 compared to the gondola scenario, meaning that the difference between the two, from a morning peak hour traffic perspective, would be almost negligible at this intersection.

The primary advantage that the gondola will have over the enhanced bus alternative without widening is on days when Little Cottonwood Canyon is closed either due to an avalanche or avalanche control. It is common knowledge that on some mornings during the winter season that traffic will back up for miles outside of the canyon, and the gondola could serve to mitigate it as it can remain operational while S.R. 210 is closed.

Snow sheds were evaluated with one of the enhanced bus scenarios that proposed widening S.R. 210 with a bus lane. While this would mitigate the potential issues with avalanche-related queueing, both the capital costs and the operational/maintenance costs were projected to be significantly higher than the gondola alternative in the EIS. Additionally, while avalanche-related canyon closures would be mitigated in this bus alternative, road closures due to crashes would not.

C. Gondola Advantages

As outlined in the preliminary documents for the Little Cottonwood Canyon EIS, a gondola system through Little Cottonwood Canyon is a viable alternative to increase the capacity of traffic flow in the canyon now and in the future. The gondola has been identified by UDOT as the most feasible Aerial Transit System (ATS) for the canyon.

The following sections outline some of the advantages of a gondola system:

High person travel capacity: The proposed tri-cable (3S) gondola system has a maximum hourly capacity of approximately 5,000 people per hour per direction. With the 30^{th}-busiest hour in 2050 having a projected demand of 3,200 people per hour (equivalent to 1,555 vehicles per hour), the gondola could handle this demand on its own if needed. UDOT indicated that there would be about 1,050 people on gondolas in the peak hour.

Mitigates avalanche impact: Because the gondola travels above ground, avalanches will not impact the operation. When an avalanche closes S.R. 210, the gondola could provide a great benefit to the corridor by carrying the anticipated future demand through the canyon.

Consistent travel time: Without a gondola, travel times will vary based on the demand, crashes in the canyon, or avalanche conditions. A gondola would provide a consistent travel time for riders to expect, even when demand is high. Also, as outlined in the *Alternatives Development and Screening Report*, gondola alternative 2 has the third-fastest travel time to Alta.

Mitigate parking issues near the ski resorts: In existing conditions, the parking at the resorts fills quickly on busy ski days. This causes drivers to park unsafely along S.R. 210 adjacent to the ski resorts. With a gondola, the ski resorts could charge for parking and S.R. 210 could be tolled to incentivize people to ride the gondola, eliminating existing parking issues in the canyon.

Provide safer alternative to driving in adverse conditions: In 2018, there were 52 crashes on S.R. 210 in Little Cottonwood Canyon. Half of these crashes (26) occurred when the roadway surface was icy, snowy, or wet. Approximately one-third of the crashes (17) occurred when it was actively snowing. As traffic continues to grow each year in the canyon, the risk for crashes will continue to increase. Providing a gondola system to ride as an alternative to driving would give drivers a safer alternative to driving up the canyon, especially for those that may not have vehicles or tires that handle well in snowy conditions.

Overall cost: As outlined in the *Alternatives Development and Screening Report*, gondola alternative 2 has the second-lowest capital cost and tied for the lowest operation and maintenance (O&M) cost out of all the alternatives. The report identified alternative 3B as having the second lowest capital cost erroneously, as 3B actually tied for the third-lowest capital cost behind alternative 2. Alternative 2 listed a capital cost between $299.8 million and $329.7 million, and O&M costs between $3.1 and $3.5 million. Alternative 3B listed a capital cost between $312.2 million and $343.4 million, and O&M costs between $4.1 and $4.5 million.

Scenic draw for skiers: One minor advantage the gondola provides compared to other alternatives is the scenic ride that will be provided with the gondola through the canyon. This may draw more riders than an enhanced bus system would and decrease roadway traffic demand even more.

D. La Caille Base Station Benefits

Though UDOT chose to move forward with gondola alternative 3B (additional parking at gravel pit and bussing to base station at mouth of the canyon) in the EIS, it is recommended that UDOT reconsider gondola alternative 2, which could utilize the site being proposed by CW Management. Corp.

The following sections outline the benefits of a base station on North Little Cottonwood Road at the La Caille site:

Parking supply: The proposed concept shows a parking structure with 1,888 parking stalls adjacent to the gondola with easy access from each parking level to the gondola. Implementing this parking at the site plus other parking at the mobility hubs will provide sufficient parking for the demand and decrease the parking need at the resorts.

Public transit integration: The concept proposes a high public transit capacity for buses dropping off and picking up at the gondola site. This will provide a good connection from the base station to the outer mobility hubs for riders to travel to and from the gondola.

Traffic congestion impact: The *Alternatives Development and Screening Report* assumes that a base station on North Little Cottonwood Road would not change the existing travel patterns that result in high traffic volumes at the entrance of Little Cottonwood Canyon, and marks alternative 2 as having a "high" impact on traffic congestion. However, by having the base station approximately three-quarters of a mile northwest of the entrance to the canyon, the bottleneck S.R. 209 / S.R. 210 intersection will experience a sharp decrease in traffic volumes, resulting in less congestion. Traffic coming from Interstate 215 (I-215) on Wasatch Boulevard can make a right turn into the site prior to arriving at the S.R. 209 / S.R. 210 intersection. The proposed traffic signal at the site can facilitate left-turn movements out of the site in the afternoon and evening hours for cars to go back to Interstate 215 (I-215).

APPENDIX A

Turning Movement Counts

TrafficCounts

2364 North 1450 East
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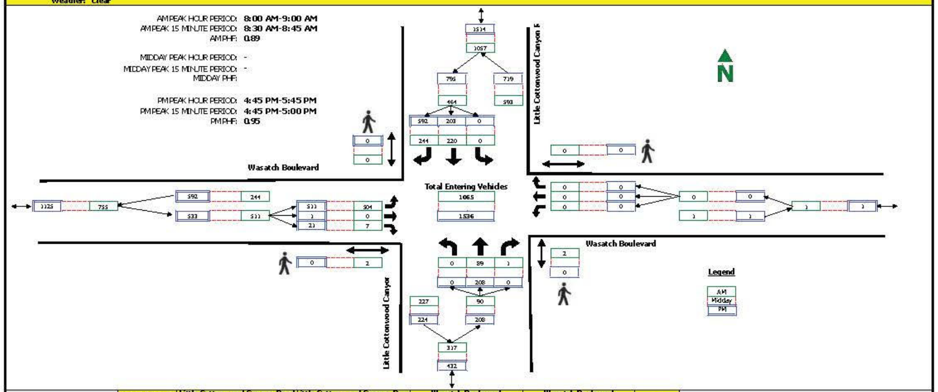
Intersection Turning Movement Summary

Intersection:	Little Cottonwood Canyon Road / Wasatch Boulevard	Date:	8-4-20, Tue
North/South:	Little Cottonwood Canyon Road	Day of Week Adjustment:	100.0%
East/West:	Wasatch Boulevard	Month of Year Adjustment:	100.0%
Jurisdiction:	Sandy	Adjustment Station #:	0
Project Title:	Sandy La Caille TS	Growth Rate:	0.0%
Project No:	UT20-1706	Number of Years:	0
Weather:	Clear		

AM PEAK HOUR PERIOD: 8:00 AM-9:00 AM
AM PEAK 15 MINUTE PERIOD: 8:30 AM-8:45 AM
AM PHF: 0.89

MIDDAY PEAK HOUR PERIOD: -
MIDDAY PEAK 15 MINUTE PERIOD: -
MIDDAY PHF:

PM PEAK HOUR PERIOD: 4:45 PM-5:45 PM
PM PEAK 15 MINUTE PERIOD: 4:45 PM-5:00 PM
PM PHF: 0.95



RAW COUNT SUMMARIES	Little Cottonwood Canyon Road Northbound				Little Cottonwood Canyon Road Southbound				Wasatch Boulevard Eastbound				Wasatch Boulevard Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00 - 7:15	0	12	0	5	0	48	28	0	87	0	9	0	0	0	0	0	184
7:15 - 7:30	0	25	0	0	0	45	60	0	116	0	4	0	0	0	0	0	250
7:30 - 7:45	0	28	0	0	0	49	49	0	125	0	3	0	0	0	0	0	254
7:45 - 8:00	0	21	0	1	0	30	50	0	122	0	4	0	0	0	0	0	227
8:00 - 8:15	0	13	0	0	0	53	60	0	122	0	3	0	0	0	0	0	251
8:15 - 8:30	0	32	0	0	0	59	52	0	111	0	1	0	0	0	0	0	255
8:30 - 8:45	0	18	1	0	0	64	73	0	143	0	1	0	0	0	0	0	300
8:45 - 9:00	0	26	0	2	0	44	59	0	128	0	2	2	0	0	0	0	259
MIDDAY PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00 - 16:15	0	39	0	0	0	48	112	0	102	0	3	0	0	0	0	0	304
16:15 - 16:30	0	52	0	0	0	48	114	0	99	18	1	0	0	0	0	0	332
16:30 - 16:45	0	46	0	0	0	43	110	0	134	0	5	0	0	0	0	0	338
16:45 - 17:00	0	56	0	0	0	36	145	0	162	0	5	0	0	0	0	0	404
17:00 - 17:15	0	56	0	0	0	55	146	0	112	0	10	0	0	0	0	0	379
17:15 - 17:30	0	46	0	0	0	67	150	0	123	1	4	0	0	0	0	0	391
17:30 - 17:45	0	50	0	0	0	45	151	0	114	0	2	0	0	0	0	0	362
17:45 - 18:00	0	37	0	0	0	58	146	0	128	0	4	0	0	0	0	0	373

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

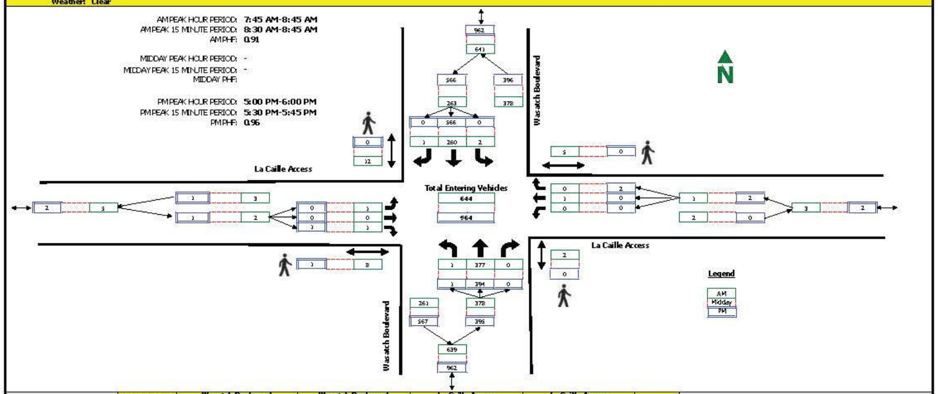
Intersection Turning Movement Summary

Intersection:	**Wasatch Boulevard / La Caille Access**	**Date:**	**8-4-20 Tue**
North/South:	**Wasatch Boulevard**	**Day of Week Adjustment:**	**100.0%**
East/West:	**La Caille Access**	**Month of Year Adjustment:**	**100.0%**
Jurisdiction:	**Sandy**	**Adjustment Station #:**	**0**
Project Title:	**Sandy La Caille TS**	**Growth Rate:**	**0.0%**
Project No:	**UT20-1706**	**Number of Years:**	**0**
Weather:	**Clear**		

AM PEAK HOUR PERIOD: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:30 AM-8:45 AM**
AM PHF: **0.91**

MIDDAY PEAK HOUR PERIOD: -
MIDDAY PEAK 15 MINUTE PERIOD: -
MIDDAY PHF:

PM PEAK HOUR PERIOD: **5:00 PM-6:00 PM**
PM PEAK 15 MINUTE PERIOD: **5:30 PM-5:45 PM**
PM PHF: **0.96**



RAW COUNT SUMMARIES	Wasatch Boulevard Northbound				Wasatch Boulevard Southbound				La Caille Access Eastbound				La Caille Access Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00 - 7:15	0	77	0	0	0	32	0	0	0	1	0	1	0	2	0	0	112
7:15 - 7:30	3	91	0	0	0	55	0	2	0	1	1	2	0	1	0	0	152
7:30 - 7:45	1	98	2	0	2	57	0	3	0	0	0	1	0	0	0	1	160
7:45 - 8:00	1	92	0	0	1	57	0	3	0	0	0	2	0	1	0	3	152
8:00 - 8:15	0	104	0	0	0	69	1	7	0	0	0	4	0	0	0	0	174
8:15 - 8:30	0	84	0	0	0	57	0	2	1	0	0	1	0	0	0	2	142
8:30 - 8:45	0	97	0	2	1	77	0	0	0	0	1	1	0	0	0	0	176
8:45 - 9:00	0	92	0	2	1	59	0	0	0	0	0	0	0	0	0	2	152
MIDDAY PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00 - 16:15	0	72	0	0	1	110	0	0	0	0	1	0	2	0	4	0	190
16:15 - 16:30	1	86	1	0	0	108	0	0	0	0	0	0	0	0	1	0	197
16:30 - 16:45	0	99	0	0	0	127	0	0	0	0	0	1	0	0	0	0	226
16:45 - 17:00	0	70	2	0	0	134	0	0	0	0	0	0	0	0	0	0	206
17:00 - 17:15	0	83	0	0	0	137	0	0	0	0	0	0	0	0	0	0	220
17:15 - 17:30	0	104	0	0	0	143	0	0	0	0	0	0	0	0	0	0	247
17:30 - 17:45	1	106	0	0	0	142	0	0	0	0	0	1	0	0	1	0	250
17:45 - 18:00	0	101	0	0	0	144	0	0	0	0	1	0	0	0	1	0	247

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

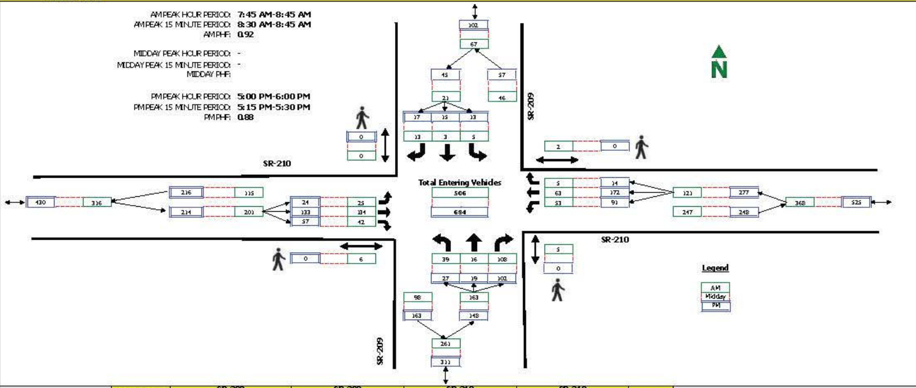
Intersection Turning Movement Summary

Intersection:	SR-209 / SR-210	**Date:**	8-4-20, Tue
North/South:	SR-209	**Day of Week Adjustment:**	100.0%
East/West:	SR-210	**Month of Year Adjustment:**	100.0%
Jurisdiction:	Sandy	**Adjustment Station #:**	0
Project Title:	Sandy La Caille TS	**Growth Rate:**	0.0%
Project No:	UT20-1706	**Number of Years:**	0
Weather:	Clear		

AM PEAK HOUR PERIOD: **7:45 AM-8:45 AM**
AM PEAK 15 MINUTE PERIOD: **8:30 AM-8:45 AM**
AM PHF: **0.92**

MIDDAY PEAK HOUR PERIOD: -
MIDDAY PEAK 15 MINUTE PERIOD: -
MIDDAY PHF:

PM PEAK HOUR PERIOD: **5:00 PM-6:00 PM**
PM PEAK 15 MINUTE PERIOD: **5:15 PM-5:30 PM**
PM PHF: **0.88**



RAW COUNT SUMMARIES	SR-209 Northbound				SR-209 Southbound				SR-210 Eastbound				SR-210 Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00 - 7:15	4	1	26	4	0	1	2	0	0	32	14	0	7	20	0	0	107
7:15 - 7:30	17	0	20	0	0	2	0	0	5	26	20	0	11	11	1	0	113
7:30 - 7:45	8	4	24	2	0	0	0	0	1	27	14	0	15	11	3	0	107
7:45 - 8:00	10	8	25	2	0	0	1	0	8	16	5	2	17	13	2	0	105
8:00 - 8:15	10	5	24	2	2	3	3	0	10	36	12	4	8	14	1	2	128
8:15 - 8:30	8	1	28	0	3	0	5	0	6	37	19	0	12	16	1	0	136
8:30 - 8:45	11	2	31	1	0	0	4	0	1	45	6	0	16	20	1	0	137
8:45 - 9:00	6	0	26	3	0	0	0	0	0	34	8	3	7	15	1	0	97
MIDDAY PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00 - 16:15	11	2	14	0	1	2	1	0	2	30	5	0	24	50	1	0	143
16:15 - 16:30	12	2	18	0	2	3	3	0	4	31	10	0	35	39	2	0	161
16:30 - 16:45	9	3	16	0	3	2	6	0	8	24	13	0	31	38	3	0	156
16:45 - 17:00	7	7	21	0	1	4	4	0	4	26	9	0	17	48	0	0	148
17:00 - 17:15	4	5	18	0	2	4	10	0	10	27	10	0	29	45	7	0	171
17:15 - 17:30	7	7	36	0	4	2	2	0	6	37	11	0	26	54	3	0	195
17:30 - 17:45	6	3	20	0	6	6	3	0	5	41	18	0	17	41	2	0	168
17:45 - 18:00	10	4	28	0	1	3	2	0	3	28	18	0	19	32	2	0	150

TrafficCounts

2364 North 1450 East
Lehi, UT 84043
801.636.0891

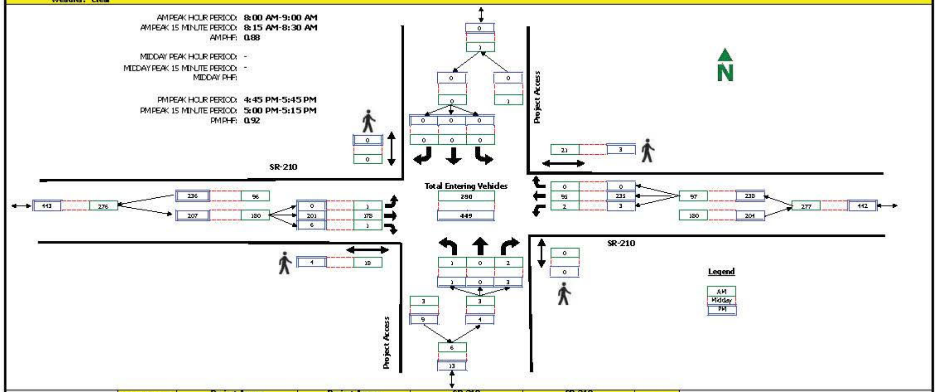
Intersection Turning Movement Summary

Intersection:	Project Access / SR-210	Date:	8-4-20, Tue
North/South:	Project Access	Day of Week Adjustment:	100.0%
East/West:	SR-210	Month of Year Adjustment:	100.0%
Jurisdiction:	Sandy	Adjustment Station #:	0
Project Title:	Sandy La Caille TS	Growth Rate:	0.0%
Project No:	UT20-1706	Number of Years:	0
Weather:	Clear		

AM PEAK HOUR PERIOD: 8:00 AM-9:00 AM
AM PEAK 15 MINUTE PERIOD: 8:15 AM-8:30 AM
AM PHF: 0.88

MIDDAY PEAK HOUR PERIOD: -
MIDDAY PEAK 15 MINUTE PERIOD: -
MIDDAY PHF:

PM PEAK HOUR PERIOD: 4:45 PM-5:45 PM
PM PEAK 15 MINUTE PERIOD: 5:00 PM-5:15 PM
PM PHF: 0.92



RAW COUNT SUMMARIES	Project Access Northbound				Project Access Southbound				SR-210 Eastbound				SR-210 Westbound				TOTAL
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
AM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
7:00 - 7:15	0	1	1	0	0	0	0	0	0	34	0	9	0	6	0	4	42
7:15 - 7:30	0	0	2	0	0	0	0	0	0	37	0	16	0	16	0	9	55
7:30 - 7:45	1	0	0	0	0	0	0	0	0	30	0	15	1	19	1	8	52
7:45 - 8:00	0	0	1	0	0	0	0	0	0	29	0	5	0	13	1	5	44
8:00 - 8:15	0	0	1	0	0	0	0	0	1	32	0	7	0	19	0	11	53
8:15 - 8:30	0	0	1	0	0	0	0	0	0	54	1	7	1	23	0	5	80
8:30 - 8:45	0	0	0	0	0	0	0	0	0	58	0	1	0	18	0	0	76
8:45 - 9:00	1	0	0	0	0	0	0	0	0	34	0	3	1	35	0	5	71
MIDDAY PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
9:00 - 9:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 - 9:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 - 9:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 - 10:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 - 10:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:15 - 10:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:30 - 10:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10:45 - 11:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:00 - 11:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:15 - 11:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:30 - 11:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11:45 - 12:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:00 - 12:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:15 - 12:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:30 - 12:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12:45 - 13:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:00 - 13:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:15 - 13:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:30 - 13:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13:45 - 14:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:00 - 14:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:15 - 14:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:30 - 14:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14:45 - 15:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:00 - 15:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:15 - 15:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:30 - 15:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15:45 - 16:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PM PERIOD COUNTS																	
Period	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**I**	**J**	**K**	**L**	**M**	**N**	**O**	**P**	**TOTAL**
16:00 - 16:15	0	0	1	0	0	0	0	0	0	35	1	1	1	45	0	2	83
16:15 - 16:30	2	0	1	0	0	0	0	0	0	45	0	0	0	57	0	1	105
16:30 - 16:45	0	0	0	0	0	0	0	0	0	42	0	2	0	49	0	0	91
16:45 - 17:00	0	0	0	0	0	0	0	0	0	42	2	2	0	61	0	1	105
17:00 - 17:15	1	0	0	0	0	0	0	0	0	53	0	1	2	66	0	0	122
17:15 - 17:30	0	0	0	0	0	0	0	0	0	56	3	0	1	60	0	2	120
17:30 - 17:45	0	0	3	0	0	0	0	0	0	50	1	1	0	48	0	0	102
17:45 - 18:00	0	0	2	0	0	0	0	0	0	48	2	6	0	46	0	1	98

APPENDIX B

LOS Results

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Existing (2020) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: **SR-210 & Wasatch Boulevard**
Type: **Signalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	189	193	102	1.1	*A*
	Subtotal	189	193	102	1.1	*A*
SB	T	765	730	95	117.6	*F*
	R	403	380	94	51.1	*D*
	Subtotal	1,168	1,110	95	94.8	*F*
EB	L	831	793	95	102.9	*F*
	R	11	10	89	82.9	*F*
	Subtotal	842	803	95	102.7	*F*
Total		2,199	2,106	96	89.9	*F*

Intersection: **Wasatch Boulevard & La Caille Access**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	740	738	100	1.1	*A*
	R	2	2	100	0.9	*A*
	Subtotal	742	740	100	1.1	*A*
SB	L	2	2	100	5.8	*A*
	T	422	398	94	1.3	*A*
	Subtotal	424	400	94	1.3	*A*
WB	***L***	***2***	***2***	***100***	***11.0***	***B***
	R	2	2	100	5.7	*A*
	Subtotal	4	4	100	8.4	*A*
Total		1,170	1,144	98	1.2	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project:	Sandy La Caille TS
Analysis Period:	*Existing (2020) Background*
Time Period:	*Morning Peak Hour*
Project #:	*UT20-1706*

Intersection: SR-209 & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	L	111	104	94	9.7	*A*
	T	597	572	96	12.1	*B*
	R	69	64	93	9.1	*A*
	Subtotal	777	740	95	11.5	*B*
WB	L	87	85	98	9.5	*A*
	T	104	107	103	1.2	*A*
	R	8	9	109	0.6	*A*
	Subtotal	199	201	101	4.7	*A*
NE	***L***	***64***	***61***	***96***	***154.3***	***F***
	T	26	23	88	152.2	*F*
	R	481	456	95	125.5	*F*
	Subtotal	571	540	95	129.9	*F*
SW	L	8	8	97	15.4	*C*
	T	5	6	114	19.2	*C*
	R	21	24	114	3.8	*A*
	Subtotal	34	38	112	8.7	*A*
Total		1,581	1,519	96	56.3	*F*

Intersection: Project Access & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	T	774	737	95	2.2	*A*
	R	2	2	100	0.8	*A*
	Subtotal	776	739	95	2.2	*A*
WB	***L***	***2***	***1***	***50***	***14.4***	***B***
	T	187	191	102	1.6	*A*
	Subtotal	189	192	102	1.7	*A*
NE	L	2	1	50	6.2	*A*
	R	2	3	150	4.8	*A*
	Subtotal	4	4	100	5.2	*A*
Total		969	935	96	2.1	*A*

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Delay (hr)	1.4	0.0	0.0	0.3	0.1	1.8
Denied Del/Veh (s)	6.1	9.2	0.0	1.3	1.3	3.0
Total Delay (hr)	24.3	0.2	0.1	25.6	5.7	55.9
Total Del/Veh (s)	102.9	82.9	1.1	117.6	51.1	89.9
Vehicles Entered	826	10	193	758	392	2179
Vehicles Exited	793	10	193	730	380	2106
Hourly Exit Rate	793	10	193	730	380	2106
Input Volume	831	11	189	765	403	2199
% of Volume	95	89	102	95	94	96

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	0.6	0.5	0.2	0.0	0.4
Total Delay (hr)	0.0	0.0	0.2	0.0	0.0	0.1	0.4
Total Del/Veh (s)	11.0	5.7	1.1	0.9	5.8	1.3	1.2
Vehicles Entered	2	2	736	2	2	398	1142
Vehicles Exited	2	2	738	2	2	398	1144
Hourly Exit Rate	2	2	738	2	2	398	1144
Input Volume	2	2	740	2	2	422	1170
% of Volume	100	100	100	100	100	94	98

3: SR-209 & SR-210 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.5	0.1	0.2	0.1
Total Delay (hr)	0.3	2.0	0.2	0.2	0.0	0.0	3.0	1.1	18.4	0.0	0.0	0.0
Total Del/Veh (s)	9.7	12.1	9.1	9.5	1.2	0.6	154.3	152.2	125.5	15.4	19.2	3.8
Vehicles Entered	103	574	65	85	107	9	64	25	490	8	6	24
Vehicles Exited	104	572	64	85	107	9	61	23	456	8	6	24
Hourly Exit Rate	104	572	64	85	107	9	61	23	456	8	6	24
Input Volume	111	597	69	87	104	8	64	26	481	8	5	21
% of Volume	94	96	93	98	103	109	96	88	95	97	114	114

3: SR-209 & SR-210 Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	25.3
Total Del/Veh (s)	56.3
Vehicles Entered	1560
Vehicles Exited	1519
Hourly Exit Rate	1519
Input Volume	1581
% of Volume	96

4: Project Access & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.5	0.0	0.0	0.1	0.0	0.0	0.5
Total Del/Veh (s)	2.2	0.8	14.4	1.6	6.2	4.8	2.1
Vehicles Entered	738	2	1	191	1	3	936
Vehicles Exited	737	2	1	191	1	3	935
Hourly Exit Rate	737	2	1	191	1	3	935
Input Volume	774	2	2	187	2	2	969
% of Volume	95	100	50	102	50	150	96

Total Network Performance

Denied Delay (hr)	2.0
Denied Del/Veh (s)	2.6
Total Delay (hr)	91.7
Total Del/Veh (s)	108.7
Vehicles Entered	2832
Vehicles Exited	2717
Hourly Exit Rate	2717
Input Volume	13121
% of Volume	21

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	SB	SB
Directions Served	L	R	T	R
Maximum Queue (ft)	350	1574	2130	750
Average Queue (ft)	337	749	920	305
95th Queue (ft)	391	1710	2229	913
Link Distance (ft)		2844	5004	
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250			650
Storage Blk Time (%)	45		24	
Queuing Penalty (veh)	5		98	

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	18	18
Average Queue (ft)	2	1
95th Queue (ft)	9	9
Link Distance (ft)	634	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SR-209 & SR-210

Movement	EB	EB	WB	WB	NE	SW
Directions Served	L	TR	L	TR	LTR	LTR
Maximum Queue (ft)	42	142	74	2	1375	37
Average Queue (ft)	10	25	22	0	605	14
95th Queue (ft)	32	92	55	2	1350	31
Link Distance (ft)		3539		1979	13893	234
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100		125			
Storage Blk Time (%)		0				
Queuing Penalty (veh)		1				

Intersection: 4: Project Access & SR-210

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	17	18
Average Queue (ft)	1	2
95th Queue (ft)	16	12
Link Distance (ft)	3539	562
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 104

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Mitigated Existing (2020) Background*
Time Period: *Morning Peak Hour* **Project #:** *UT20-1706*

Intersection: SR-210 & Wasatch Boulevard
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	189	185	98	1.1	*A*
	Subtotal	189	185	98	1.1	*A*
SB	T	765	754	99	29.0	*C*
	R	403	397	99	7.9	*A*
	Subtotal	1,168	1,151	99	21.7	*C*
EB	L	831	834	100	28.1	*C*
	R	11	10	89	10.5	*B*
	Subtotal	842	844	100	27.9	*C*
Total		2,199	2,180	99	22.4	*C*

Intersection: Wasatch Boulevard & La Caille Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	740	740	100	1.1	*A*
	R	2	2	100	0.5	*A*
	Subtotal	742	742	100	1.1	*A*
SB	L	2	1	50	7.5	*A*
	T	422	420	99	1.5	*A*
	Subtotal	424	421	99	1.5	*A*
WB	***L***	***2***	***1***	***50***	***8.8***	***A***
	R	2	3	150	6.7	*A*
	Subtotal	4	4	100	7.2	*A*
Total		1,170	1,167	100	1.2	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project:	Sandy La Caille TS	
Analysis Period:	*Mitigated Existing (2020) Background*	
Time Period:	*Morning Peak Hour*	Project #: *UT20-1706*

Intersection: SR-209 & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	L	111	112	101	8.2	*A*
	T	597	589	99	10.5	*B*
	R	69	64	93	8.2	*A*
	Subtotal	777	765	98	10.0	*A*
WB	L	87	85	98	9.0	*A*
	T	104	102	98	1.2	*A*
	R	8	8	97	0.5	*A*
	Subtotal	199	195	98	4.6	*A*
NE	***L***	***64***	***64***	***100***	***49.5***	***E***
	T	26	26	100	48.1	*E*
	R	481	484	101	28.5	*D*
	Subtotal	571	574	101	31.7	*D*
SW	L	8	8	97	21.2	*C*
	T	5	4	76	30.0	*D*
	R	21	21	100	4.7	*A*
	Subtotal	34	33	97	11.8	*B*
Total		1,581	1,567	99	17.6	*C*

Intersection: Project Access & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	T	774	763	99	1.8	*A*
	R	2	2	100	1.0	*A*
	Subtotal	776	765	99	1.8	*A*
WB	L	2	1	50	7.8	*A*
	T	187	185	99	1.6	*A*
	Subtotal	189	186	98	1.6	*A*
NE	***L***	***2***	***1***	***50***	***11.4***	***B***
	R	2	2	100	8.1	*A*
	Subtotal	4	3	75	9.2	*A*
Total		969	954	98	1.8	*A*

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.6	0.1	0.0	0.2	0.2	0.3
Total Delay (hr)	6.7	0.0	0.1	6.2	0.9	13.9
Total Del/Veh (s)	28.1	10.5	1.1	29.0	7.9	22.4
Vehicles Entered	835	10	186	754	400	2185
Vehicles Exited	834	10	185	754	397	2180
Hourly Exit Rate	834	10	185	754	397	2180
Input Volume	831	11	189	765	403	2199
% of Volume	100	89	98	99	99	99

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	0.6	0.3	0.0	0.0	0.4
Total Delay (hr)	0.0	0.0	0.2	0.0	0.0	0.2	0.4
Total Del/Veh (s)	8.8	6.7	1.1	0.5	7.5	1.5	1.2
Vehicles Entered	1	3	739	2	1	420	1166
Vehicles Exited	1	3	740	2	1	420	1167
Hourly Exit Rate	1	3	740	2	1	420	1167
Input Volume	2	2	740	2	2	422	1170
% of Volume	50	150	100	100	50	99	100

3: SR-209 & SR-210 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.2	0.1	0.1
Total Delay (hr)	0.3	1.8	0.1	0.2	0.0	0.0	0.9	0.4	4.1	0.0	0.0	0.0
Total Del/Veh (s)	8.2	10.5	8.2	9.0	1.2	0.5	49.5	48.1	28.5	21.2	30.0	4.7
Vehicles Entered	112	591	64	85	101	8	63	26	484	8	4	21
Vehicles Exited	112	589	64	85	102	8	64	26	484	8	4	21
Hourly Exit Rate	112	589	64	85	102	8	64	26	484	8	4	21
Input Volume	111	597	69	87	104	8	64	26	481	8	5	21
% of Volume	101	99	93	98	98	97	100	100	101	97	76	100

3: SR-209 & SR-210 Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	7.9
Total Del/Veh (s)	17.6
Vehicles Entered	1567
Vehicles Exited	1567
Hourly Exit Rate	1567
Input Volume	1581
% of Volume	99

4: Project Access & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.4	0.0	0.0	0.1	0.0	0.0	0.5
Total Del/Veh (s)	1.8	1.0	7.8	1.6	11.4	8.1	1.8
Vehicles Entered	763	2	1	186	1	2	955
Vehicles Exited	763	2	1	185	1	2	954
Hourly Exit Rate	763	2	1	185	1	2	954
Input Volume	774	2	2	187	2	2	969
% of Volume	99	100	50	99	50	100	98

Total Network Performance

Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.5
Total Delay (hr)	33.0
Total Del/Veh (s)	39.3
Vehicles Entered	2828
Vehicles Exited	2824
Hourly Exit Rate	2824
Input Volume	13121
% of Volume	22

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	SB	SB
Directions Served	L	R	T	T
Maximum Queue (ft)	350	575	343	295
Average Queue (ft)	273	106	176	120
95th Queue (ft)	389	430	290	246
Link Distance (ft)		2832	5003	5003
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250			
Storage Blk Time (%)	13			
Queuing Penalty (veh)	1			

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	16	18
Average Queue (ft)	2	1
95th Queue (ft)	10	8
Link Distance (ft)	634	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SR-209 & SR-210

Movement	EB	EB	WB	WB	NE	NE	SW
Directions Served	L	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	64	127	69	18	163	253	50
Average Queue (ft)	10	22	21	1	53	106	13
95th Queue (ft)	40	83	51	15	103	202	33
Link Distance (ft)		3539		2095	13893		233
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100		125			200	
Storage Blk Time (%)		0	0	0	0	1	
Queuing Penalty (veh)		0	0	0	0	1	

Intersection: 4: Project Access & SR-210

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	22	18
Average Queue (ft)	1	2
95th Queue (ft)	13	12
Link Distance (ft)	3539	562
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 4

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-210 & Wasatch Boulevard
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	206	204	99	1.2	*A*
	Subtotal	206	204	99	1.2	*A*
SB	T	815	824	101	37.2	*D*
	R	430	429	100	8.6	*A*
	Subtotal	1,245	1,253	101	27.4	*C*
EB	L	885	890	101	36.8	*D*
	R	15	14	95	17.9	*B*
	Subtotal	900	904	100	36.5	*D*
Total		2,350	2,361	100	28.7	*C*

Intersection: Wasatch Boulevard & La Caille Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	785	789	100	1.2	*A*
	R	5	7	133	0.7	*A*
	Subtotal	790	796	101	1.2	*A*
SB	L	5	5	95	7.3	*A*
	T	450	448	100	1.5	*A*
	Subtotal	455	453	100	1.6	*A*
WB	***L***	***5***	***5***	***95***	***13.6***	***B***
	R	5	6	114	6.8	*A*
	Subtotal	10	11	110	9.9	*A*
Total		1,256	1,260	100	1.4	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-209 & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	L	120	123	102	9.4	*A*
	T	635	638	100	11.8	*B*
	R	75	72	96	9.2	*A*
	Subtotal	830	833	100	11.2	*B*
WB	L	95	92	97	12.3	*B*
	T	110	111	101	1.4	*A*
	R	10	10	98	0.7	*A*
	Subtotal	215	213	99	6.1	*A*
NE	***L***	***70***	***68***	***97***	***44.0***	***E***
	T	30	31	102	39.1	*E*
	R	515	522	101	6.5	*A*
	Subtotal	615	621	101	12.2	*B*
SW	L	10	10	98	22.5	*C*
	T	10	11	107	29.2	*D*
	R	25	25	100	8.1	*A*
	Subtotal	45	46	102	16.3	*C*
Total		1,706	1,713	100	11.1	*B*

Intersection: Project Access & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	T	825	832	101	2.1	*A*
	R	5	6	114	1.1	*A*
	Subtotal	830	838	101	2.1	*A*
WB	L	5	5	95	5.9	*A*
	T	200	198	99	1.8	*A*
	Subtotal	205	203	99	1.9	*A*
NE	***L***	***5***	***4***	***76***	***13.4***	***B***
	R	5	4	76	10.1	*B*
	Subtotal	10	8	80	11.8	*B*
Total		1,046	1,049	100	2.1	*A*

Sandy La Caille TS
Future (2025) Background

Morning Peak Hour
09/04/2020

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.6	0.1	0.0	0.2	0.3	0.3
Total Delay (hr)	9.3	0.1	0.1	8.7	1.1	19.2
Total Del/Veh (s)	36.8	17.9	1.2	37.2	8.6	28.7
Vehicles Entered	891	14	203	821	431	2360
Vehicles Exited	890	14	204	824	429	2361
Hourly Exit Rate	890	14	204	824	429	2361
Input Volume	885	15	206	815	430	2350
% of Volume	101	95	99	101	100	100

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.1	0.6	0.6	0.4	0.0	0.4
Total Delay (hr)	0.0	0.0	0.3	0.0	0.0	0.2	0.5
Total Del/Veh (s)	13.6	6.8	1.2	0.7	7.3	1.5	1.4
Vehicles Entered	5	6	789	7	5	449	1261
Vehicles Exited	5	6	789	7	5	448	1260
Hourly Exit Rate	5	6	789	7	5	448	1260
Input Volume	5	5	785	5	5	450	1256
% of Volume	95	114	100	133	95	100	100

3: SR-209 & SR-210 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	1.3	1.3	3.4	0.1	0.1	0.2
Total Delay (hr)	0.3	2.1	0.2	0.3	0.0	0.0	0.8	0.3	0.9	0.1	0.1	0.1
Total Del/Veh (s)	9.4	11.8	9.2	12.3	1.4	0.7	44.0	39.1	6.5	22.5	29.2	8.1
Vehicles Entered	122	642	73	92	111	10	67	32	522	10	10	24
Vehicles Exited	123	638	72	92	111	10	68	31	522	10	11	25
Hourly Exit Rate	123	638	72	92	111	10	68	31	522	10	11	25
Input Volume	120	635	75	95	110	10	70	30	515	10	10	25
% of Volume	102	100	96	97	101	98	97	102	101	98	107	100

3: SR-209 & SR-210 Performance by movement

Movement	All
Denied Delay (hr)	0.5
Denied Del/Veh (s)	1.1
Total Delay (hr)	5.3
Total Del/Veh (s)	11.1
Vehicles Entered	1715
Vehicles Exited	1713
Hourly Exit Rate	1713
Input Volume	1706
% of Volume	100

4: Project Access & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.2	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.5	0.0	0.0	0.1	0.0	0.0	0.6
Total Del/Veh (s)	2.1	1.1	5.9	1.8	13.4	10.1	2.1
Vehicles Entered	830	6	5	199	5	4	1049
Vehicles Exited	832	6	5	198	4	4	1049
Hourly Exit Rate	832	6	5	198	4	4	1049
Input Volume	825	5	5	200	5	5	1046
% of Volume	101	114	95	99	76	76	100

Total Network Performance

Denied Delay (hr)	0.9
Denied Del/Veh (s)	1.1
Total Delay (hr)	36.7
Total Del/Veh (s)	40.8
Vehicles Entered	3082
Vehicles Exited	3081
Hourly Exit Rate	3081
Input Volume	14092
% of Volume	22

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	SB	SB
Directions Served	L	R	T	T
Maximum Queue (ft)	350	767	417	377
Average Queue (ft)	301	225	219	162
95th Queue (ft)	394	751	349	304
Link Distance (ft)		2832	5003	5003
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250			
Storage Blk Time (%)	20			
Queuing Penalty (veh)	3			

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	16	33
Average Queue (ft)	5	3
95th Queue (ft)	17	19
Link Distance (ft)	634	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SR-209 & SR-210

Movement	EB	EB	WB	NE	NE	SW
Directions Served	L	TR	L	LT	R	LTR
Maximum Queue (ft)	48	153	80	151	182	58
Average Queue (ft)	10	31	24	63	67	17
95th Queue (ft)	33	110	59	125	144	40
Link Distance (ft)		3534		748		234
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100		125		200	
Storage Blk Time (%)		1	0	1	0	
Queuing Penalty (veh)		1	0	3	0	

Intersection: 4: Project Access & SR-210

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	50	24
Average Queue (ft)	4	5
95th Queue (ft)	25	20
Link Distance (ft)	3534	562
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 7

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Mitigated Future (2025) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-210 & Wasatch Boulevard
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	206	211	103	1.2	*A*
	Subtotal	206	211	102	1.2	*A*
SB	T	815	826	101	36.4	*D*
	R	430	433	101	8.9	*A*
	Subtotal	1,245	1,259	101	26.9	*C*
EB	L	885	881	100	34.7	*C*
	R	15	16	108	16.8	*B*
	Subtotal	900	897	100	34.4	*C*
Total		2,350	2,367	101	27.5	*C*

Intersection: Wasatch Boulevard & La Caille Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	785	785	100	1.3	*A*
	R	5	7	133	0.9	*A*
	Subtotal	790	792	100	1.3	*A*
SB	L	5	4	76	10.2	*B*
	T	450	455	101	1.5	*A*
	Subtotal	455	459	101	1.6	*A*
WB	***L***	***5***	***4***	***76***	***13.2***	***B***
	R	5	5	95	5.1	*A*
	Subtotal	10	9	90	8.7	*A*
Total		1,256	1,260	100	1.4	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Mitigated Future (2025) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-209 & SR-210
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	L	120	114	95	18.2	*B*
	T	635	649	102	23.4	*C*
	R	75	79	105	14.8	*B*
	Subtotal	830	842	101	21.9	*C*
WB	L	95	95	100	18.6	*B*
	T	110	106	97	4.7	*A*
	R	10	10	98	1.6	*A*
	Subtotal	215	211	98	10.8	*B*
NE	L	70	74	106	42.7	*D*
	T	30	29	96	41.0	*D*
	R	515	525	102	26.9	*C*
	Subtotal	615	628	102	29.4	*C*
SW	L	10	12	117	21.1	*C*
	T	10	12	117	21.8	*C*
	R	25	26	104	5.6	*A*
	Subtotal	45	50	111	13.2	*B*
Total		1,706	1,731	101	23.2	*C*

Intersection: Project Access & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	T	825	837	101	2.0	*A*
	R	5	6	114	0.9	*A*
	Subtotal	830	843	102	2.0	*A*
WB	L	5	5	95	9.2	*A*
	T	200	205	102	2.7	*A*
	Subtotal	205	210	102	2.9	*A*
NE	***L***	***5***	***5***	***95***	***11.2***	***B***
	R	5	6	114	7.5	*A*
	Subtotal	10	11	110	9.2	*A*
Total		1,046	1,064	102	2.3	*A*

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.6	0.1	0.0	0.2	0.3	0.3
Total Delay (hr)	8.7	0.1	0.1	8.6	1.1	18.5
Total Del/Veh (s)	34.7	16.8	1.2	36.4	8.9	27.5
Vehicles Entered	883	16	210	828	434	2371
Vehicles Exited	881	16	211	826	433	2367
Hourly Exit Rate	881	16	211	826	433	2367
Input Volume	885	15	206	815	430	2350
% of Volume	100	108	103	101	101	101

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.1	0.1	0.7	0.5	0.2	0.0	0.4
Total Delay (hr)	0.0	0.0	0.3	0.0	0.0	0.2	0.5
Total Del/Veh (s)	13.2	5.1	1.3	0.9	10.2	1.5	1.4
Vehicles Entered	4	5	784	6	4	454	1257
Vehicles Exited	4	5	785	7	4	455	1260
Hourly Exit Rate	4	5	785	7	4	455	1260
Input Volume	5	5	785	5	5	450	1256
% of Volume	76	95	100	133	76	101	100

3: SR-209 & SR-210 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.1	0.2	0.1
Total Delay (hr)	0.6	4.3	0.3	0.5	0.1	0.0	0.9	0.4	4.2	0.1	0.1	0.0
Total Del/Veh (s)	18.2	23.4	14.8	18.6	4.7	1.6	42.7	41.0	26.9	21.1	21.8	5.6
Vehicles Entered	114	650	79	95	106	10	73	30	526	12	12	26
Vehicles Exited	114	649	79	95	106	10	74	29	525	12	12	26
Hourly Exit Rate	114	649	79	95	106	10	74	29	525	12	12	26
Input Volume	120	635	75	95	110	10	70	30	515	10	10	25
% of Volume	95	102	105	100	97	98	106	96	102	117	117	104

3: SR-209 & SR-210 Performance by movement

Movement	All
Denied Delay (hr)	0.1
Denied Del/Veh (s)	0.2
Total Delay (hr)	11.6
Total Del/Veh (s)	23.2
Vehicles Entered	1733
Vehicles Exited	1731
Hourly Exit Rate	1731
Input Volume	1706
% of Volume	101

4: Project Access & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.5	0.0	0.0	0.2	0.0	0.0	0.7
Total Del/Veh (s)	2.0	0.9	9.2	2.7	11.2	7.5	2.3
Vehicles Entered	836	6	5	203	5	6	1061
Vehicles Exited	837	6	5	205	5	6	1064
Hourly Exit Rate	837	6	5	205	5	6	1064
Input Volume	825	5	5	200	5	5	1046
% of Volume	101	114	95	102	95	114	102

Total Network Performance

Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.6
Total Delay (hr)	43.4
Total Del/Veh (s)	47.1
Vehicles Entered	3097
Vehicles Exited	3096
Hourly Exit Rate	3096
Input Volume	14092
% of Volume	22

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	SB	SB
Directions Served	L	R	T	T
Maximum Queue (ft)	350	753	387	347
Average Queue (ft)	301	209	218	163
95th Queue (ft)	399	652	352	306
Link Distance (ft)		2832	5003	5003
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250			
Storage Blk Time (%)	20			
Queuing Penalty (veh)	3			

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	18	33
Average Queue (ft)	4	4
95th Queue (ft)	15	20
Link Distance (ft)	634	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SR-209 & SR-210

Movement	EB	EB	WB	WB	NE	SW
Directions Served	L	TR	L	TR	LT	LTR
Maximum Queue (ft)	199	456	76	74	118	57
Average Queue (ft)	46	161	33	20	46	17
95th Queue (ft)	138	339	66	53	90	41
Link Distance (ft)		3539		2079	13898	234
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)	100		125			
Storage Blk Time (%)	0	13		0		
Queuing Penalty (veh)	0	16		0		

Intersection: 4: Project Access & SR-210

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	60	24
Average Queue (ft)	5	6
95th Queue (ft)	33	22
Link Distance (ft)	3539	562
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 19

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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-210 & Wasatch Boulevard
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	188	182	97	1.7	A
	Subtotal	188	182	97	1.7	A
SB	T	837	859	103	34.6	C
	R	444	447	101	9.1	A
	Subtotal	1,281	1,306	102	25.9	C
EB	L	924	922	100	33.7	C
	R	66	68	103	18.2	B
	Subtotal	990	990	100	32.6	C
Total		2,459	2,478	101	26.8	C

Intersection: Wasatch Boulevard & La Caille Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	858	858	100	1.5	A
	R	12	12	98	1.0	A
	Subtotal	870	870	100	1.5	A
SB	L	17	14	84	8.7	A
	T	452	458	101	1.6	A
	Subtotal	469	472	101	1.8	A
WB	***L***	***14***	***16***	***116***	***18.6***	***C***
	R	22	22	100	10.0	A
	Subtotal	36	38	106	13.6	B
Total		1,375	1,380	100	1.9	A

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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Plus Project*
Time Period: *Morning Peak Hour* Project #: *UT20-1706*

Intersection: **SR-209 & SR-210**
Type: **Signalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	T	463	469	101	15.9	*B*
	R	115	120	105	9.2	*A*
	Subtotal	578	589	102	14.5	*B*
WB	L	87	89	103	9.5	*A*
	T	93	90	97	2.6	*A*
	Subtotal	180	179	99	6.0	*A*
NE	L	111	110	99	44.9	*D*
	R	439	440	100	24.2	*C*
	Subtotal	550	550	100	28.3	*C*
Total		1,307	1,318	101	19.4	*B*

Intersection: **SR-210 & La Caille Lane**
Type: **Signalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	L	16	15	95	23.9	*C*
	R	10	12	117	2.5	*A*
	Subtotal	26	27	104	14.4	*B*
NW	L	34	36	105	7.6	*A*
	T	172	164	95	1.5	*A*
	Subtotal	206	200	97	2.6	*A*
SE	T	570	580	102	1.7	*A*
	R	15	14	95	0.5	*A*
	Subtotal	585	594	102	1.7	*A*
Total		817	821	100	2.3	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: **P1 Out & SR-210**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NW	T	176	170	97	0.7	A
	R	12	10	82	0.4	A
	Subtotal	188	180	96	0.7	A
SE	T	543	556	102	1.1	A
	Subtotal	543	556	102	1.1	A
NE	***R***	***35***	***33***	***94***	***2.2***	***A***
	Subtotal	35	33	94	2.2	A
Total		766	769	100	1.1	A

Intersection: **SR-210 & P1 In**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
WB	R	12	12	98	0.1	A
	Subtotal	12	12	100	0.1	A
NW	T	174	168	96	0.4	A
	Subtotal	174	168	97	0.4	A
SE	T	554	567	102	0.3	A
	R	***140***	***144***	***103***	***0.9***	***A***
	Subtotal	694	711	102	0.4	A
Total		880	891	101	0.4	A

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: **P2 In & SR-210 & P2 Out**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
WB	R	2	2	100	0.8	A
	Subtotal	2	2	100	0.8	A
NW	T	186	180	97	0.1	A
	Subtotal	186	180	97	0.1	A
SE	***T***	***683***	***701***	***103***	***1.9***	***A***
	R	220	226	103	1.2	A
	Subtotal	903	927	103	1.7	A
Total		1,092	1,109	102	1.5	A

Intersection: **La Caille Lane & P6**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NW	***T***	***12***	***12***	***104***	***0.1***	***A***
	R	10	11	107	0.1	A
	Subtotal	22	23	105	0.1	A
SE	T	12	12	98	0.0	A
	Subtotal	12	12	100	0.0	A
Total		34	35	103	0.1	A

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2025) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: P5 & La Caille Lane
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NW	L	3	2	67	2.3	A
	T	31	35	112	0.6	A
	R	15	13	88	0.5	A
	Subtotal	49	50	102	0.6	A
SE	T	12	12	98	0.0	A
	Subtotal	12	12	100	0.0	A
NE	***R***	***4***	***4***	***100***	***2.7***	***A***
	Subtotal	4	4	100	2.7	A
Total		65	66	101	0.6	A

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBT	SBT	SBR	All
Denied Delay (hr)	0.1	0.0	0.0	0.1	0.0	0.2
Denied Del/Veh (s)	0.5	0.2	0.0	0.2	0.3	0.3
Total Delay (hr)	8.8	0.3	0.1	8.5	1.2	18.9
Total Del/Veh (s)	33.7	18.2	1.7	34.6	9.1	26.8
Vehicles Entered	919	68	182	857	446	2472
Vehicles Exited	922	68	182	859	447	2478
Hourly Exit Rate	922	68	182	859	447	2478
Input Volume	924	66	188	837	444	2459
% of Volume	100	103	97	103	101	101

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.2	0.0	0.0	0.0	0.2
Denied Del/Veh (s)	0.1	0.1	0.7	0.7	0.1	0.0	0.5
Total Delay (hr)	0.1	0.1	0.4	0.0	0.0	0.2	0.8
Total Del/Veh (s)	18.6	10.0	1.5	1.0	8.7	1.6	1.9
Vehicles Entered	15	21	859	12	14	458	1379
Vehicles Exited	16	22	858	12	14	458	1380
Hourly Exit Rate	16	22	858	12	14	458	1380
Input Volume	14	22	858	12	17	452	1375
% of Volume	116	100	100	98	84	101	100

3: SR-209 & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.4	0.4	0.2
Total Delay (hr)	2.1	0.3	0.2	0.1	1.5	3.2	7.4
Total Del/Veh (s)	15.9	9.2	9.5	2.6	44.9	24.2	19.4
Vehicles Entered	470	119	89	90	110	438	1316
Vehicles Exited	469	120	89	90	110	440	1318
Hourly Exit Rate	469	120	89	90	110	440	1318
Input Volume	463	115	87	93	111	439	1307
% of Volume	101	105	103	97	99	100	101

4: SR-210 & La Caille Lane Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	1.6	0.0	0.0	0.1	0.0	0.0
Total Delay (hr)	0.1	0.0	0.3	0.0	0.1	0.1	0.5
Total Del/Veh (s)	23.9	2.5	1.7	0.5	7.6	1.5	2.3
Vehicles Entered	15	12	580	14	36	164	821
Vehicles Exited	15	12	580	14	36	164	821
Hourly Exit Rate	15	12	580	14	36	164	821
Input Volume	16	10	570	15	34	172	817
% of Volume	95	117	102	95	105	95	100

5: P1 Out & SR-210 Performance by movement

Movement	SET	NWT	NWR	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.6	0.1	0.0
Total Delay (hr)	0.2	0.0	0.0	0.0	0.2
Total Del/Veh (s)	1.1	0.7	0.4	2.2	1.1
Vehicles Entered	555	170	10	33	768
Vehicles Exited	556	170	10	33	769
Hourly Exit Rate	556	170	10	33	769
Input Volume	543	176	12	35	766
% of Volume	102	97	82	94	100

6: SR-210 & P1 In Performance by movement

Movement	WBR	SET	SER	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.1
Total Del/Veh (s)	0.1	0.3	0.9	0.4	0.4
Vehicles Entered	12	567	144	168	891
Vehicles Exited	12	567	144	168	891
Hourly Exit Rate	12	567	144	168	891
Input Volume	12	554	140	174	880
% of Volume	98	102	103	96	101

7: P2 In & SR-210 & P2 Out Performance by movement

Movement	WBR	SET	SER	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.4	0.1	0.0	0.5
Total Del/Veh (s)	0.8	1.9	1.2	0.1	1.5
Vehicles Entered	2	702	226	181	1111
Vehicles Exited	2	701	226	180	1109
Hourly Exit Rate	2	701	226	180	1109
Input Volume	2	683	220	186	1092
% of Volume	100	103	103	97	102

8: La Caille Lane & P6 Performance by movement

Movement	SET	NWT	NWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.0	0.1	0.1	0.1
Vehicles Entered	12	12	11	35
Vehicles Exited	12	12	11	35
Hourly Exit Rate	12	12	11	35
Input Volume	12	12	10	34
% of Volume	98	104	107	103

9: P5 & La Caille Lane Performance by movement

Movement	SET	NWL	NWT	NWR	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.0	2.3	0.6	0.5	2.7	0.6
Vehicles Entered	12	2	35	13	4	66
Vehicles Exited	12	2	35	13	4	66
Hourly Exit Rate	12	2	35	13	4	66
Input Volume	12	3	31	15	4	65
% of Volume	98	67	112	88	100	101

Total Network Performance

Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.6
Total Delay (hr)	38.9
Total Del/Veh (s)	41.4
Vehicles Entered	3166
Vehicles Exited	3173
Hourly Exit Rate	3173
Input Volume	16180
% of Volume	20

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	SB	SB
Directions Served	L	R	T	T
Maximum Queue (ft)	350	743	334	338
Average Queue (ft)	307	230	177	187
95th Queue (ft)	402	661	295	307
Link Distance (ft)		2832	5003	5003
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)	250			
Storage Blk Time (%)	20			
Queuing Penalty (veh)	13			

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	NB	SB
Directions Served	LR	TR	L
Maximum Queue (ft)	48	2	40
Average Queue (ft)	14	0	9
95th Queue (ft)	34	2	34
Link Distance (ft)	634	1019	
Upstream Blk Time (%)			
Queuing Penalty (veh)			
Storage Bay Dist (ft)			120
Storage Blk Time (%)			
Queuing Penalty (veh)			

Intersection: 3: SR-209 & SR-210

Movement	EB	WB	WB	NE
Directions Served	TR	L	T	L
Maximum Queue (ft)	256	77	46	148
Average Queue (ft)	105	35	11	65
95th Queue (ft)	203	62	37	114
Link Distance (ft)	2647		2117	13878
Upstream Blk Time (%)				
Queuing Penalty (veh)				
Storage Bay Dist (ft)		125		
Storage Blk Time (%)		0		
Queuing Penalty (veh)		0		

Intersection: 4: SR-210 & La Caille Lane

Movement	EB	EB	SE	SE	NW	NW
Directions Served	L	R	T	TR	L	T
Maximum Queue (ft)	42	25	108	38	70	59
Average Queue (ft)	11	7	22	3	15	7
95th Queue (ft)	35	25	75	21	46	34
Link Distance (ft)	440		274	274		840
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		200			200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: P1 Out & SR-210

Movement	NE
Directions Served	R
Maximum Queue (ft)	42
Average Queue (ft)	17
95th Queue (ft)	39
Link Distance (ft)	101
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 6: SR-210 & P1 In

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 7: P2 In & SR-210 & P2 Out

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 8: La Caille Lane & P6

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 9: P5 & La Caille Lane

Movement	NE
Directions Served	LTR
Maximum Queue (ft)	28
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	365
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Network Summary

Network wide Queuing Penalty: 13

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2050) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-210 & Wasatch Boulevard
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	L	10	10	98	67.1	*E*
	T	270	267	99	17.6	*B*
	Subtotal	280	277	99	19.4	*B*
SB	T	1,110	1,120	101	36.8	*D*
	R	580	581	100	12.7	*B*
	Subtotal	1,690	1,701	101	28.6	*C*
EB	L	1,195	1,195	100	28.6	*C*
	R	20	20	101	7.8	*A*
	Subtotal	1,215	1,215	100	28.3	*C*
Total		3,185	3,193	100	27.7	*C*

Intersection: Wasatch Boulevard & La Caille Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	1,100	1,104	100	0.7	*A*
	R	10	9	88	0.5	*A*
	Subtotal	1,110	1,113	100	0.7	*A*
SB	L	10	9	88	9.7	*A*
	T	600	602	100	1.3	*A*
	Subtotal	610	611	100	1.4	*A*
WB	***L***	***10***	***9***	***88***	***24.8***	***C***
	R	10	10	98	8.3	*A*
	Subtotal	20	19	95	16.1	*C*
Total		1,741	1,743	100	1.1	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2050) Background*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: **SR-209 & SR-210**
Type: **Signalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	L	165	164	100	39.3	*D*
	T	860	859	100	45.6	*D*
	R	105	109	104	37.5	*D*
	Subtotal	1,130	1,132	100	43.9	*D*
WB	L	130	120	92	39.2	*D*
	T	150	145	97	5.4	*A*
	R	15	17	115	2.7	*A*
	Subtotal	295	282	96	19.6	*B*
NE	L	95	96	101	74.8	*E*
	T	40	40	101	81.2	*F*
	R	695	700	101	31.3	*C*
	Subtotal	830	836	101	38.7	*D*
SW	L	15	15	102	46.6	*D*
	T	15	15	102	49.9	*D*
	R	35	34	96	15.2	*B*
	Subtotal	65	64	98	30.7	*C*
Total		2,320	2,314	100	38.8	*D*

Intersection: **Project Access & SR-210**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
EB	T	1,125	1,135	101	2.2	*A*
	R	5	6	114	0.9	*A*
	Subtotal	1,130	1,141	101	2.2	*A*
WB	L	5	5	95	8.6	*A*
	T	276	274	99	3.1	*A*
	Subtotal	281	279	99	3.2	*A*
NE	***L***	***5***	***4***	***76***	***18.9***	***C***
	R	5	5	95	9.4	*A*
	Subtotal	10	9	90	13.6	*B*
Total		1,422	1,429	100	2.4	*A*

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.3	0.4	0.2
Total Delay (hr)	9.7	0.0	0.2	1.3	11.8	2.1	25.1
Total Del/Veh (s)	28.6	7.8	67.1	17.6	36.8	12.7	27.7
Vehicles Entered	1197	20	11	266	1121	581	3196
Vehicles Exited	1195	20	10	267	1120	581	3193
Hourly Exit Rate	1195	20	10	267	1120	581	3193
Input Volume	1195	20	10	270	1110	580	3185
% of Volume	100	101	98	99	101	100	100

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.1	0.0	0.0	0.0	0.1
Denied Del/Veh (s)	0.1	0.2	0.2	0.3	0.1	0.0	0.1
Total Delay (hr)	0.1	0.0	0.2	0.0	0.0	0.2	0.6
Total Del/Veh (s)	24.8	8.3	0.7	0.5	9.7	1.3	1.1
Vehicles Entered	9	10	1103	9	9	602	1742
Vehicles Exited	9	10	1104	9	9	602	1743
Hourly Exit Rate	9	10	1104	9	9	602	1743
Input Volume	10	10	1100	10	10	600	1741
% of Volume	88	98	100	88	88	100	100

3: SR-209 & SR-210 Performance by movement

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NEL	NET	NER	SWL	SWT	SWR
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.8	0.8	0.2	0.1	0.2
Total Delay (hr)	1.8	11.2	1.2	1.3	0.2	0.0	2.2	1.0	6.6	0.2	0.2	0.1
Total Del/Veh (s)	39.3	45.6	37.5	39.2	5.4	2.7	74.8	81.2	31.3	46.6	49.9	15.2
Vehicles Entered	165	864	110	120	145	17	98	39	704	15	15	34
Vehicles Exited	164	859	109	120	145	17	96	40	700	15	15	34
Hourly Exit Rate	164	859	109	120	145	17	96	40	700	15	15	34
Input Volume	165	860	105	130	150	15	95	40	695	15	15	35
% of Volume	100	100	104	92	97	115	101	101	101	102	102	96

3: SR-209 & SR-210 Performance by movement

Movement	All
Denied Delay (hr)	0.2
Denied Del/Veh (s)	0.3
Total Delay (hr)	26.1
Total Del/Veh (s)	38.8
Vehicles Entered	2326
Vehicles Exited	2314
Hourly Exit Rate	2314
Input Volume	2320
% of Volume	100

4: Project Access & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.1	0.1	0.0
Total Delay (hr)	0.7	0.0	0.0	0.2	0.0	0.0	1.0
Total Del/Veh (s)	2.2	0.9	8.6	3.1	18.9	9.4	2.4
Vehicles Entered	1134	6	5	271	4	5	1425
Vehicles Exited	1135	6	5	274	4	5	1429
Hourly Exit Rate	1135	6	5	274	4	5	1429
Input Volume	1125	5	5	276	5	5	1422
% of Volume	101	114	95	99	76	95	100

Total Network Performance

Denied Delay (hr)	0.5
Denied Del/Veh (s)	0.4
Total Delay (hr)	75.2
Total Del/Veh (s)	60.7
Vehicles Entered	4155
Vehicles Exited	4133
Hourly Exit Rate	4133
Input Volume	19200
% of Volume	22

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T
Maximum Queue (ft)	333	364	42	55	202	451	415
Average Queue (ft)	210	228	7	13	90	271	216
95th Queue (ft)	306	322	29	41	172	407	363
Link Distance (ft)		2821	2821		1661	4997	4997
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250			100			
Storage Blk Time (%)	2	5			7		
Queuing Penalty (veh)	12	29			1		

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	41	33
Average Queue (ft)	8	7
95th Queue (ft)	26	27
Link Distance (ft)	614	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SR-209 & SR-210

Movement	EB	EB	WB	WB	NE	NE	SW
Directions Served	L	TR	L	TR	LT	R	LTR
Maximum Queue (ft)	200	1061	158	144	247	30	105
Average Queue (ft)	102	446	60	31	100	1	30
95th Queue (ft)	237	1008	118	90	195	31	71
Link Distance (ft)		3539		2083	13898		233
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	100		125			200	
Storage Blk Time (%)	1	27	2	0	1		
Queuing Penalty (veh)	5	44	3	0	7		

Intersection: 4: Project Access & SR-210

Movement	WB	NE
Directions Served	LT	LR
Maximum Queue (ft)	60	25
Average Queue (ft)	5	5
95th Queue (ft)	32	20
Link Distance (ft)	3539	562
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 10: Bend

Movement	EB	EB
Directions Served	T	
Maximum Queue (ft)	459	82
Average Queue (ft)	39	3
95th Queue (ft)	286	70
Link Distance (ft)	2083	2083
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		
Storage Blk Time (%)		
Queuing Penalty (veh)		

Network Summary

Network wide Queuing Penalty: 101

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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2050) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-210 & Wasatch Boulevard
Type: Signalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	L	10	11	107	46.9	*D*
	T	237	234	99	15.7	*B*
	Subtotal	247	245	99	17.1	*B*
SB	T	1,132	1,126	99	27.0	*C*
	R	594	597	100	12.4	*B*
	Subtotal	1,726	1,723	100	21.9	*C*
EB	L	1,241	1,258	101	30.1	*C*
	R	88	89	101	11.5	*B*
	Subtotal	1,329	1,347	101	28.9	*C*
Total		3,302	3,315	100	24.4	*C*

Intersection: Wasatch Boulevard & La Caille Access
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NB	T	1,197	1,215	101	0.4	*A*
	R	17	18	107	0.1	*A*
	Subtotal	1,214	1,233	102	0.4	*A*
SB	L	22	23	105	13.1	*B*
	T	602	605	101	1.2	*A*
	Subtotal	624	628	101	1.6	*A*
WB	***L***	***19***	***17***	***91***	***21.7***	***C***
	R	27	29	107	8.1	*A*
	Subtotal	46	46	100	13.1	*B*
Total		1,884	1,907	101	1.1	*A*

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2050) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: SR-209 & SR-210
Type: Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
EB	T	628	626	100	21.3	*C*
	R	153	153	100	13.7	*B*
	Subtotal	781	779	100	19.8	*B*
WB	L	120	121	101	15.6	*B*
	T	126	128	101	3.3	*A*
	Subtotal	246	249	101	9.3	*A*
NE	L	141	142	101	62.8	*E*
	R	593	595	100	29.3	*C*
	Subtotal	734	737	100	35.8	*D*
Total		1,761	1,765	100	25.3	*C*

Intersection: SR-210 & La Caille Lane
Type: Signalized

Approach	Movement	Demand Volume	Volume Served		Delay/Veh (sec)	
			Avg	%	Avg	LOS
EB	L	16	15	95	38.0	*D*
	R	10	11	107	2.7	*A*
	Subtotal	26	26	100	23.1	*C*
NW	L	39	41	106	10.1	*B*
	T	230	233	101	1.8	*A*
	Subtotal	269	274	102	3.0	*A*
SE	T	772	773	100	1.8	*A*
	R	15	15	102	0.5	*A*
	Subtotal	787	788	100	1.8	*A*
Total		1,082	1,088	101	2.6	*A*

HALES ENGINEERING
innovative transportation solutions

SimTraffic LOS Report

Project:	Sandy La Caille TS	
Analysis Period:	*Future (2050) Plus Project*	
Time Period:	*Morning Peak Hour*	Project #: *UT20-1706*

Intersection: P1 Out & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NW	T	233	232	100	0.8	A
	R	12	15	122	0.4	A
	Subtotal	245	247	101	0.8	A
SE	T	736	738	100	1.3	A
	Subtotal	736	738	100	1.3	A
NE	***R***	***43***	***41***	***96***	***2.3***	***A***
	Subtotal	43	41	95	2.3	A
Total		1,024	1,026	100	1.2	A

Intersection: P1 In & SR-210
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
WB	R	12	12	98	0.1	A
	Subtotal	12	12	100	0.1	A
NW	T	232	230	99	0.4	A
	Subtotal	232	230	99	0.4	A
SE	T	751	752	100	0.3	A
	R	***184***	***178***	***97***	***1.0***	***A***
	Subtotal	935	930	99	0.4	A
Total		1,179	1,172	99	0.4	A

HALES ENGINEERING innovative transportation solutions

SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2050) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: P2 In & SR-210 & P2 Out
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
WB	R	3	4	133	0.6	A
	Subtotal	3	4	133	0.6	A
NW	T	244	242	99	0.2	A
	Subtotal	244	242	99	0.2	A
SE	***T***	***920***	***920***	***100***	***2.1***	***A***
	R	300	296	99	1.5	A
	Subtotal	1,220	1,216	100	2.0	A
Total		1,468	1,462	100	1.6	A

Intersection: La Caille Lane & P6
Type: Unsignalized

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NW	***T***	***10***	***10***	***98***	***0.2***	***A***
	R	14	15	109	0.1	A
	Subtotal	24	25	104	0.1	A
SE	T	12	12	98	0.0	A
	Subtotal	12	12	100	0.0	A
Total		36	37	102	0.1	A

HALES ENGINEERING
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SimTraffic LOS Report

Project: Sandy La Caille TS
Analysis Period: *Future (2050) Plus Project*
Time Period: *Morning Peak Hour*
Project #: *UT20-1706*

Intersection: **P5 & La Caille Lane**
Type: **Unsignalized**

Approach	Movement	Demand Volume	Volume Served Avg	Volume Served %	Delay/Veh (sec) Avg	Delay/Veh (sec) LOS
NW	T	34	36	107	0.7	A
	R	20	20	101	0.6	A
	Subtotal	54	56	104	0.7	A
SE	T	12	12	98	0.0	A
	Subtotal	12	12	100	0.0	A
NE	***R***	***4***	***4***	***100***	***2.5***	***A***
	Subtotal	4	4	100	2.5	A
Total		70	72	103	0.6	A

1: SR-210 & Wasatch Boulevard Performance by movement

Movement	EBL	EBR	NBL	NBT	SBT	SBR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.1	0.1	0.2
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.3	0.4	0.2
Total Delay (hr)	10.7	0.3	0.2	1.0	8.7	2.1	23.0
Total Del/Veh (s)	30.1	11.5	46.9	15.7	27.0	12.4	24.4
Vehicles Entered	1256	89	12	234	1126	598	3315
Vehicles Exited	1258	89	11	234	1126	597	3315
Hourly Exit Rate	1258	89	11	234	1126	597	3315
Input Volume	1241	88	10	237	1132	594	3302
% of Volume	101	101	107	99	99	100	100

2: Wasatch Boulevard & La Caille Access Performance by movement

Movement	WBL	WBR	NBT	NBR	SBL	SBT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.2	0.1	0.0	0.0	0.2	0.0	0.0
Total Delay (hr)	0.1	0.1	0.1	0.0	0.1	0.2	0.6
Total Del/Veh (s)	21.7	8.1	0.4	0.1	13.1	1.2	1.1
Vehicles Entered	17	29	1214	18	23	606	1907
Vehicles Exited	17	29	1215	18	23	605	1907
Hourly Exit Rate	17	29	1215	18	23	605	1907
Input Volume	19	27	1197	17	22	602	1884
% of Volume	91	107	101	107	105	101	101

3: SR-209 & SR-210 Performance by movement

Movement	EBT	EBR	WBL	WBT	NEL	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.1	0.1
Denied Del/Veh (s)	0.0	0.0	0.0	0.0	0.6	0.6	0.2
Total Delay (hr)	3.8	0.6	0.5	0.1	2.7	5.2	12.8
Total Del/Veh (s)	21.3	13.7	15.6	3.3	62.8	29.3	25.3
Vehicles Entered	628	153	122	128	140	593	1764
Vehicles Exited	626	153	121	128	142	595	1765
Hourly Exit Rate	626	153	121	128	142	595	1765
Input Volume	628	153	120	126	141	593	1761
% of Volume	100	100	101	101	101	100	100

4: SR-210 & La Caille Lane Performance by movement

Movement	EBL	EBR	SET	SER	NWL	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	1.3	0.0	0.0	0.0	0.0	0.0
Total Delay (hr)	0.2	0.0	0.4	0.0	0.1	0.1	0.8
Total Del/Veh (s)	38.0	2.7	1.8	0.5	10.1	1.8	2.6
Vehicles Entered	15	11	773	15	40	233	1087
Vehicles Exited	15	11	773	15	41	233	1088
Hourly Exit Rate	15	11	773	15	41	233	1088
Input Volume	16	10	772	15	39	230	1082
% of Volume	95	107	100	102	106	101	101

5: P1 Out & SR-210 Performance by movement

Movement	SET	NWT	NWR	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.3	0.1	0.0
Total Delay (hr)	0.3	0.0	0.0	0.0	0.3
Total Del/Veh (s)	1.3	0.8	0.4	2.3	1.2
Vehicles Entered	737	232	15	41	1025
Vehicles Exited	738	232	15	41	1026
Hourly Exit Rate	738	232	15	41	1026
Input Volume	736	233	12	43	1024
% of Volume	100	100	122	96	100

6: P1 In & SR-210 Performance by movement

Movement	WBR	SET	SER	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.1	0.0	0.0	0.1
Total Del/Veh (s)	0.1	0.3	1.0	0.4	0.4
Vehicles Entered	12	752	179	230	1173
Vehicles Exited	12	752	178	230	1172
Hourly Exit Rate	12	752	178	230	1172
Input Volume	12	751	184	232	1179
% of Volume	98	100	97	99	99

7: P2 In & SR-210 & P2 Out Performance by movement

Movement	WBR	SET	SER	NWT	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0	0.0
Total Delay (hr)	0.0	0.5	0.1	0.0	0.7
Total Del/Veh (s)	0.6	2.1	1.5	0.2	1.6
Vehicles Entered	4	920	295	242	1461
Vehicles Exited	4	920	296	242	1462
Hourly Exit Rate	4	920	296	242	1462
Input Volume	3	920	300	244	1468
% of Volume	133	100	99	99	100

8: La Caille Lane & P6 Performance by movement

Movement	SET	NWT	NWR	All
Denied Delay (hr)	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.1	0.0	0.0	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.0	0.2	0.1	0.1
Vehicles Entered	12	10	15	37
Vehicles Exited	12	10	15	37
Hourly Exit Rate	12	10	15	37
Input Volume	12	10	14	36
% of Volume	98	98	109	102

9: P5 & La Caille Lane Performance by movement

Movement	SET	NWT	NWR	NER	All
Denied Delay (hr)	0.0	0.0	0.0	0.0	0.0
Denied Del/Veh (s)	0.0	0.0	0.0	0.1	0.0
Total Delay (hr)	0.0	0.0	0.0	0.0	0.0
Total Del/Veh (s)	0.0	0.7	0.6	2.5	0.6
Vehicles Entered	12	36	20	4	72
Vehicles Exited	12	36	20	4	72
Hourly Exit Rate	12	36	20	4	72
Input Volume	12	34	20	4	70
% of Volume	98	107	101	100	103

Total Network Performance

Denied Delay (hr)	0.4
Denied Del/Veh (s)	0.4
Total Delay (hr)	53.1
Total Del/Veh (s)	42.4
Vehicles Entered	4218
Vehicles Exited	4222
Hourly Exit Rate	4222
Input Volume	23600
% of Volume	18

Intersection: 1: SR-210 & Wasatch Boulevard

Movement	EB	EB	EB	NB	NB	SB	SB
Directions Served	L	L	R	L	T	T	T
Maximum Queue (ft)	318	482	196	52	194	287	305
Average Queue (ft)	201	233	39	11	82	167	177
95th Queue (ft)	300	461	214	38	159	251	264
Link Distance (ft)		2821	2821		2657	4997	4997
Upstream Blk Time (%)							
Queuing Penalty (veh)							
Storage Bay Dist (ft)	250			100			
Storage Blk Time (%)	2	4			5		
Queuing Penalty (veh)	15	28			0		

Intersection: 2: Wasatch Boulevard & La Caille Access

Movement	WB	SB
Directions Served	LR	L
Maximum Queue (ft)	59	58
Average Queue (ft)	18	16
95th Queue (ft)	41	46
Link Distance (ft)	643	
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)		120
Storage Blk Time (%)		
Queuing Penalty (veh)		

Intersection: 3: SR-209 & SR-210

Movement	EB	WB	WB	NE	NE
Directions Served	TR	L	T	L	R
Maximum Queue (ft)	442	109	82	196	29
Average Queue (ft)	160	50	18	100	1
95th Queue (ft)	331	93	57	165	30
Link Distance (ft)	2632		2072	13880	
Upstream Blk Time (%)					
Queuing Penalty (veh)					
Storage Bay Dist (ft)		125			200
Storage Blk Time (%)		0	0	0	
Queuing Penalty (veh)		0	0	2	

Intersection: 4: SR-210 & La Caille Lane

Movement	EB	EB	SE	SE	NW	NW
Directions Served	L	R	T	TR	L	T
Maximum Queue (ft)	39	23	111	39	62	85
Average Queue (ft)	12	6	24	3	20	9
95th Queue (ft)	35	23	81	19	50	44
Link Distance (ft)	440		274	274		866
Upstream Blk Time (%)						
Queuing Penalty (veh)						
Storage Bay Dist (ft)		200			200	
Storage Blk Time (%)						
Queuing Penalty (veh)						

Intersection: 5: P1 Out & SR-210

Movement	NW	NE
Directions Served	R	R
Maximum Queue (ft)	8	41
Average Queue (ft)	0	21
95th Queue (ft)	8	42
Link Distance (ft)		101
Upstream Blk Time (%)		
Queuing Penalty (veh)		
Storage Bay Dist (ft)	50	
Storage Blk Time (%)	0	
Queuing Penalty (veh)	0	

Intersection: 6: P1 In & SR-210

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 7: P2 In & SR-210 & P2 Out

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 8: La Caille Lane & P6

Movement
Directions Served
Maximum Queue (ft)
Average Queue (ft)
95th Queue (ft)
Link Distance (ft)
Upstream Blk Time (%)
Queuing Penalty (veh)
Storage Bay Dist (ft)
Storage Blk Time (%)
Queuing Penalty (veh)

Intersection: 9: P5 & La Caille Lane

Movement	NE
Directions Served	LTR
Maximum Queue (ft)	31
Average Queue (ft)	4
95th Queue (ft)	20
Link Distance (ft)	365
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

Intersection: 10: Bend

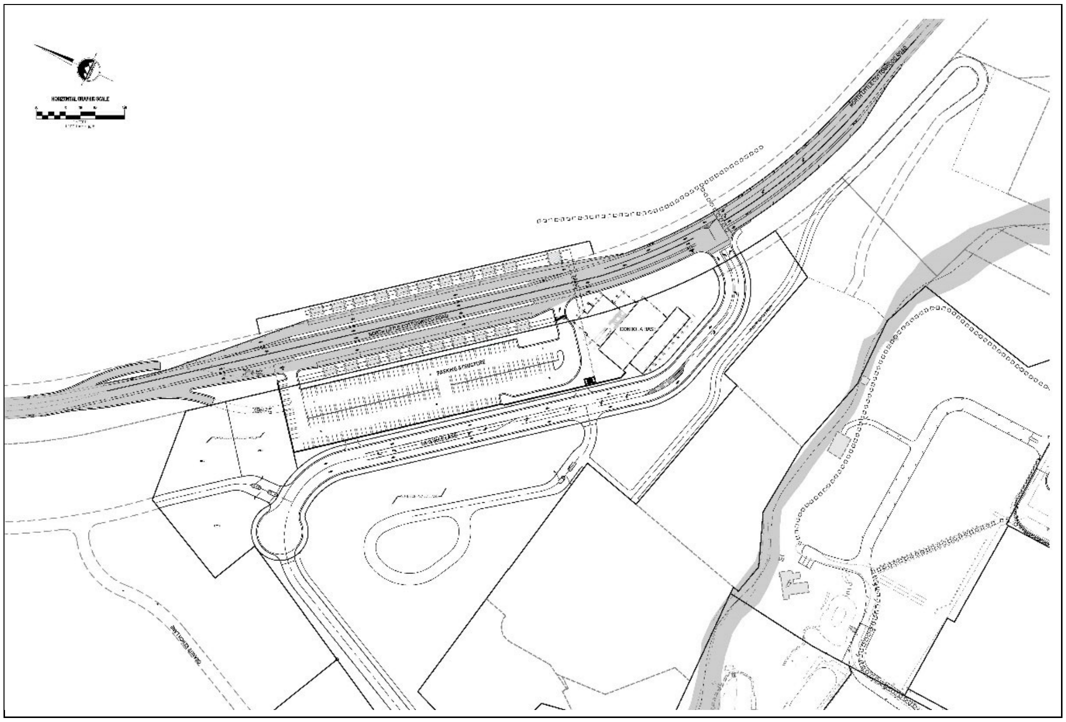
Movement	EB
Directions Served	T
Maximum Queue (ft)	4
Average Queue (ft)	0
95th Queue (ft)	4
Link Distance (ft)	2072
Upstream Blk Time (%)	
Queuing Penalty (veh)	
Storage Bay Dist (ft)	
Storage Blk Time (%)	
Queuing Penalty (veh)	

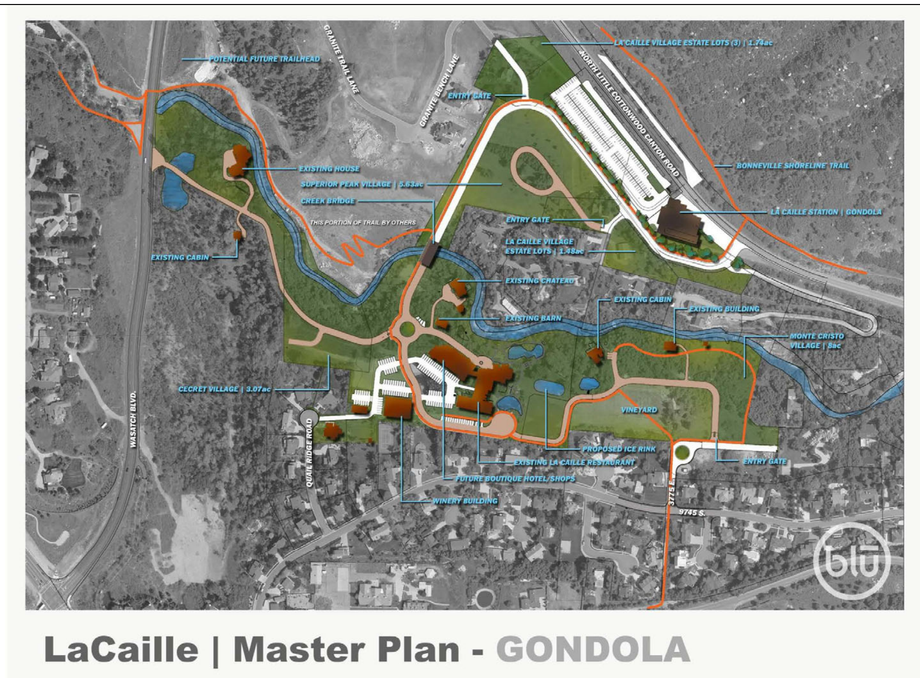
Network Summary

Network wide Queuing Penalty: 46

APPENDIX C

Site Plan





POTENTIAL FUTURE TRAILHEAD
GRANITE TRAIL LANE
GRANITE BENCH LANE
ENTRY GATE
LA CAILLE VILLAGE ESTATE LOTS (3) | 1.74ac
NORTH LITTLE COTTONWOOD CANYON ROAD
BONNEVILLE SHORELINE TRAIL
EXISTING HOUSE
SUPERIOR PEAK VILLAGE | 5.63ac
CREEK BRIDGE
THIS PORTION OF TRAIL BY OTHERS
ENTRY GATE
LA CAILLE STATION | GONDOLA
LA CAILLE VILLAGE ESTATE LOTS | 1.48ac
EXISTING CABIN
EXISTING CHATEAU
EXISTING CABIN
EXISTING BUILDING
EXISTING BARN
MONTE CRISTO VILLAGE | 8ac
CECRET VILLAGE | 3.07ac
VINEYARD
WASATCH BLVD.
QUAIL RIDGE ROAD
PROPOSED ICE RINK
ENTRY GATE
EXISTING LA CAILLE RESTAURANT
FUTURE BOUTIQUE HOTEL/SHOPS
WINERY BUILDING
3775 E.
9745 S.
LaCaille | Master Plan - GONDOLA

APPENDIX D

95th Percentile Queue Length Reports

SimTraffic Queueing Report

Project: Sandy La Caille TS

Analysis: Existing (2020) Background

Time Period: Morning Peak Hour

95th Percentile Queue Length (feet)

HALES ENGINEERING innovative transportation solutions

Project #: UT20-1706

Intersection	NE		SB			[illegible]	EB			WB			
	LR	LTR	L	R	T	LTR	L	R	TR	L	LR	LT	TR
01: SR-210 & Wasatch Boulevard	--	--	--	913	2,229	--	391	1,710	--	--	--	--	--
02: Wasatch Boulevard & La Caille Access	--	--	9	--	--	--	--	--	--	--	9	--	--
03: SR-209 & SR-210	--	1,350	--	--	--	31	32	--	92	55	--	--	2
04: Project Access & SR-210	12	--	--	--	--	--	--	--	--	--	--	16	--

SimTraffic Queueing Report

Project: Sandy La Caille TS

Analysis: Mitigated Existing (2020) Background

Time Period: Morning Peak Hour

95th Percentile Queue Length (feet)

HALES ENGINEERING innovative transportation solutions

Project #: UT20-1706

Intersection	NE			SB		[illegible]	EB			WB			
	LR	LT	R	L	T	LTR	L	R	TR	L	LR	LT	TR
01: SR-210 & Wasatch Boulevard	--	--	--	--	268	--	389	430	--	--	--	--	--
02: Wasatch Boulevard & La Caille Access	--	--	--	8	--	--	--	--	--	--	10	--	--
03: SR-209 & SR-210	--	103	202	--	--	33	40	--	83	51	--	--	15
04: Project Access & SR-210	12	--	--	--	--	--	--	--	--	--	--	13	--

SimTraffic Queueing Report
Project: Sandy La Caille TS
Analysis: Future (2025) Background
Time Period: Morning Peak Hour
95th Percentile Queue Length (feet)

HALES ENGINEERING
innovative transportation solutions

Project #: UT20-1706

Intersection	NE			SB		W	EB			WB		
	LR	LT	R	L	T	LTR	L	R	TR	L	LR	LT
01: SR-210 & Wasatch Boulevard	--	--	--	--	327	--	394	751	--	--	--	--
02: Wasatch Boulevard & La Caille Access	--	--	--	19	--	--	--	--	--	--	17	--
03: SR-209 & SR-210	--	125	144	--	--	40	33	--	110	59	--	--
04: Project Access & SR-210	20	--	--	--	--	--	--	--	--	--	--	25

SimTraffic Queueing Report
Project: Sandy La Caille TS
Analysis: Mitigated Future (2025) Background
Time Period: Morning Peak Hour
95th Percentile Queue Length (feet)

HALES ENGINEERING
innovative transportation solutions

Project #: UT20-1706

Intersection	NE		SB		W	EB			WB			
	LR	LT	L	T	LTR	L	R	TR	L	LR	LT	TR
01: SR-210 & Wasatch Boulevard	--	--	--	329	--	399	652	--	--	--	--	--
02: Wasatch Boulevard & La Caille Access	--	--	20	--	--	--	--	--	--	15	--	--
03: SR-209 & SR-210	--	90	--	--	41	138	--	339	66	--	--	53
04: Project Access & SR-210	22	--	--	--	--	--	--	--	--	--	33	--

SimTraffic Queueing Report
Project: Sandy La Caille TS
Analysis: Future (2025) Plus Project
Time Period: Morning Peak Hour
95th Percentile Queue Length (feet)

HALES ENGINEERING
innovative transportation solutions

Project #: UT20-1706

Intersection	NB	NE			NW		SB		SE		EB			WB		
	TR	L	LTR	R	L	T	L	T	T	TR	L	R	TR	L	LR	T
01: SR-210 & Wasatch Boulevard	--	--	--	--	--	--	--	301	--	--	402	661	--	--	--	--
02: Wasatch Boulevard & La Caille Access	2	--	--	--	--	--	34	--	--	--	--	--	--	--	34	--
03: SR-209 & SR-210	--	114	--	--	--	--	--	--	--	--	--	--	203	62	--	37
04: SR-210 & La Caille Lane	--	--	--	--	46	34	--	--	75	21	35	25	--	--	--	--
05: P1 Out & SR-210	--	--	--	39	--	--	--	--	--	--	--	--	--	--	--	--
09: P5 & La Caille Lane	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--

SimTraffic Queueing Report
Project: Sandy La Caille TS
Analysis: Future (2050) Background
Time Period: Morning Peak Hour
95th Percentile Queue Length (feet)

HALES ENGINEERING
innovative transportation solutions

Project #: UT20-1706

Intersection	NB		NE			SB		SW	EB			WB			
	L	T	LR	LT	R	L	T	LTR	L	R	TR	L	LR	LT	TR
01: SR-210 & Wasatch Boulevard	41	172	--	--	--	--	385	--	314	29	--	--	--	--	--
02: Wasatch Boulevard & La Caille Access	--	--	--	--	--	27	--	--	--	--	--	--	26	--	--
03: SR-209 & SR-210	--	--	--	195	31	--	--	71	237	--	1,008	118	--	--	90
04: Project Access & SR-210	--	--	20	--	--	--	--	--	--	--	--	--	--	32	--

SimTraffic Queueing Report

Project: Sandy La Caille TS

Analysis: Future (2050) Plus Project

Time Period: Morning Peak Hour

95th Percentile Queue Length (feet)

HALES ENGINEERING
innovative transportation solutions

Project #: UT20-1706

Intersection	NB		NE			NW			SB		SE		EB			WB		
	L	T	L	LTR	R	L	R	T	L	T	T	TR	L	R	TR	L	LR	T
01: SR-210 & Wasatch Boulevard	38	159	--	--	--	--	--	--	--	258	--	--	381	214	--	--	--	--
02: Wasatch Boulevard & La Caille Access	--	--	--	--	--	--	--	--	46	--	--	--	--	--	--	--	41	--
03: SR-209 & SR-210	--	--	165	--	30	--	--	--	--	--	--	--	--	--	331	93	--	57
04: SR-210 & La Caille Lane	--	--	--	--	--	50	--	44	--	--	81	19	35	23	--	--	--	--
05: P1 Out & SR-210	--	--	--	--	42	--	8	--	--	--	--	--	--	--	--	--	--	--
09: P5 & La Caille Lane	--	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--

COMMENT #: 13315
DATE: 9/2/21 9:40 PM
SOURCE: Website
NAME: Gay Lynn Bennion

COMMENT:

To: UDOT LCC EIS Consultant Team
September 2, 2021
Dear UDOT Personnel and Consultant Team,
We appreciate your time-intensive and thoughtful approach to resolving the critical issue of managing the vehicle over-crowding of Little Cottonwood Canyon. The canyon is a treasured destination for our Wasatch Front constituents and millions of out-of-state visitors alike through all seasons of the year. Sadly, we all recognize we are "loving our canyon to death." We need to provide the public with a sustainable, cost-effective, inclusive, and reliable transportation solution that also enhances the experience of canyon visitors. **(32.1.2B)**

The stated purpose of the EIS, "to provide an integrated transportation system that improves the reliability, mobility and safety for all users," does not account for the fact that the canyon is a place for environmental preservation and solitude, as well as recreation of all kinds. **(32.1.2B)** If this project becomes about moving more people in and out of the canyon at faster rates, then we are not "preserving the values of the Wasatch Mountains." Both of the currently "preferred alternatives" are problematic. Both would result in significant environmental impacts that endanger our watershed and fail to address the year-round needs and access for all recreational interests, including those of underserved populations. **(32.20A, 32.20C, 32.2.9C, 32.2.9E, 32.4I, 32.12A, 32.12B, 32.1.2C, 32.1.2D, 32.5A)**

We do not support the proposed gondola option as it is costly and caters mostly to the ski resorts at the top of the canyon and ignores the many and varying year-round recreational interests throughout the canyon that also must be addressed. Furthermore, the "Enhanced Bus Service in Peak-Period Shoulder Lane (PPSL)" alternative as proposed would inflict an unacceptable level of costly environmental impacts by expanding the road and adding snow sheds in some places. **(32.1.2C, 32.4I, 32.2.9J, 32.7B, and 32.7C)**

We believe a third option exists: one that is less expensive; less environmentally impactful; more inclusive; and could be more quickly implemented. We support a modified Enhanced Bus Alternative that takes a phased approach. **(32.2.9A and 32.2.9R)** This alternative would involve the following:
- NOT widening the existing road to add a shoulder lane, except at certain points needed for making stop areas more efficient. **(32.2.9A)**
- NOT constructing snow shed overhangs which will be costly and unnecessary as roads can be managed with normal snowplow clearance. **(32.2.9J)**
- Implement tolling and, at certain times, restrictions on single-occupancy vehicles, along with bus-only access at designated times to reduce vehicle traffic. **(32.2.4A)**
- Busses should use the cleanest, most efficient technology possible to minimize emissions, and provide year-round service and enhance access to all areas of the canyon as a reliable alternative to private vehicles. **(32.2.2B)**
- Enforce parking violations and provide better information systems for canyon users. **(32.2.2M)** This approach would allow us to proceed relatively quickly with an incremental plan that increases access and convenience for all recreational interests year-round in a manner that is fair, sustainable, and which preserves some of the solitude and environmental integrity of the place. It would also minimize costly and potentially destructive environmental impacts to the canyon, and prioritizes the preservation of our

critical watershed - the source of our public drinking water - which is in the best long-term interests of our state. **(32.2.7C, 32.1.2C, 32.4I, 32.12A, and 32.12B)**

We appreciate your consideration of this modified alternative,

Signed,
State Representative Gay Lynn Bennion
State Representative Joel Briscoe
State Representative Clare Collard
State Representative Jennifer Dailey-Provost
State Representative Suzanne Harrison
State Representative Sandra Hollins
State Representative Carol Spackman Moss
State Representative Doug Owens
State Representative Stephanie Pitcher
State Representative Angela Romero
State Representative Elizabeth Weight

COMMENT #: 13316
DATE: 9/3/21 6:30 AM
SOURCE: Email
NAME: Lindsey Madsen

COMMENT:

All,

Please find attached a letter from Sandy City Mayor and Sandy City Council, in response to the Little Cottonwood Canyon EIS for potential transportation improvements.

Thank you,
Lindsey

SANDY CITY ADMINISTRATION

KURT BRADBURN
MAYOR

MATTHEW HUISH
CHIEF ADMINISTRATIVE OFFICER

Utah Department of Transportation
Little Cottonwood Canyon EIS
c/o HDR
2825 East Cottonwood Parkway, Suite 2000
Cottonwood Heights, Utah 84121

To Whom it may concern:

These comments are submitted on behalf of Sandy City in response to the Utah Department of Transportation draft Environmental Impact Statement prepared for potential transportation improvements within Little Cottonwood Canyon. In that draft EIS, UDOT has identified two preferred canyon transportation alternatives: enhanced bus service (with roadway widening); or a gondola.

1. **Sandy City does not presently support or oppose either of the proposed alternatives.** We recognize that there are pros and cons to each of the proposals, and depending upon how the selected transportation plan is implemented, either alternative could have significant long term consequences for Sandy City. We continue to support the goals of the Mountain Accord and the completion of a visitor use capacity study for Little Cottonwood Canyon. 32.20B

2. We also want to reiterate our concerns about several **key priorities for Sandy City, regardless of which transportation alternative is ultimately selected,** and how the implementation of the selected transportation mode may impact the City.

a. **Water quality.** Protection of the Little Cottonwood Canyon watershed is our top priority. We believe that getting people into the canyon is secondary to getting safe and clean water out of the canyon. On any given day, Sandy City receives 100% of its water from Little Cottonwood Creek, and the water flowing past the ski resorts may arrive at Sandy City taps in as little as 4 hours. Regardless of which transportation alternative is selected, every precaution and best` management practices must be used to minimize any negative impact to the stream and the watershed, both in the design and construction of the transportation improvements. 32.12A 32.12B

b. **Connection to the Sandy City transportation system.** We believe that UDOT's current study is inadequate alone because it only focuses on Wasatch Boulevard (from the north) and the Little Cottonwood Canyon road. Any canyon transportation system selected will not be successful unless it also analyzes and considers any traffic improvements needed to connect to that system, with improvements to 9400 South, Wasatch Boulevard (from the south), and the parking/mobility hub located at 9400 South and Highland Drive. While we support and acknowledge the need to study and plan for canyon transportation improvements, we also request that UDOT immediately initiate a corresponding study of the transportation improvements that will be needed within Sandy City. 32.7E

10000 Centennial Parkway | Sandy, Utah 84070-4148 | p: 801.568.7100 | sandy.utah.gov

c. **Getting cars off the road and reducing congestion.** Regardless of which canyon transportation mode is selected, we believe that UDOT should immediately explore and implement other available means to incentivize the use of alternate transportation methods, such as tolling, elimination of roadside parking, charging for parking at the ski resorts, limited hours of access for private vehicles, increased frequency of bus service, variable traffic lanes, allowing any ski pass to be used as a transit pass, etc. These canyon transportation strategies can and should be utilized immediately, as a "first phase" of the transportation strategy, even before the long term canyon transportation mode is designed and constructed.

32.29R, 32.2.4A, 32.2.9O, 32.2.9P, 32.2.2D, and 32.2.2K

d. **Improve the experience of canyon visitors.** In addition to transportation improvements, we should also focus our collective efforts to enhance the overall experience for visitors, not just with facilities and amenities at the ski resorts and in the canyon, but also in the surrounding communities.

Thank you for your consideration of these issues. We look forward to continued dialogue with UDOT as we work together to address these important priorities.

Kurt Bradburn
Mayor, Sandy City

Alison Stroud
Chair, Sandy City Council

COMMENT #: 13317
DATE: 9/3/21 11:19 AM
SOURCE: Email
NAME: Chris Adams

COMMENT:

Hello,

Attached please find the joint comment for the UDOT Draft EIS for Little Cottonwood Canyon from Wasatch Backcountry Alliance & Winter Wildlands Alliance. Please confirm receipt of this email so we know our comment has been received.

Thanks,
Chris

September 3, 2021

Little Cottonwood Canyon EIS Team
c/o HDR and the Utah Department of Transportation
2825 East Cottonwood Parkway, Suite 200
Cottonwood Heights, UT 84121
LittleCottonwoodEIS@Utah.gov

Dear LCC EIS Team and Decisionmakers,

Wasatch Backcountry Alliance (WBA) is the collective voice for human-powered individuals and organizations who recreate in and share a love of the natural wonders and priceless recreational opportunities in the backcountry of the Central Wasatch. Winter Wildlands Alliance (WWA) is a national alliance of grassroots organizations, environmental advocates, backcountry skiers and snowboarders, and individuals who are devoted to protecting, preserving, and sharing access to quiet places in the mountains.

We appreciate the extended opportunity to carefully review and provide actionable comments (Attachment A) on UDOT's draft Environmental Impact Statement (EIS) document and proposed/preferred alternatives, with references to the EIS itself and our comments as to the issue with that section. We also included our more general impressions, preferences and concerns as provided in this transmittal letter. Our simple, core mission and interest is to preserve and protect the beauty and wonder of the Central Wasatch, and the quality of people's access to and experiential opportunities therein, and to participate in this community effort to identify a solution that meets the stated purpose and need of the EIS for this project.

WBA and WWA firmly believe that before any transportation system is selected there must be a thorough analysis of the purpose and need of the entire tri-canyon transportation system, as well as the overall carrying capacity of the Cottonwood Canyons and Millcreek. This will help establish the volume of people that needs to be moved by the system, which will in turn help determine which transportation system best fits that purpose and need. We implore UDOT, the Central Wasatch Commission, the US Forest Service and Salt Lake County to undertake a 32.1.1C purpose and need assessment for the tri-canyon area in total as well as an LCC carrying capacity analysis that would be used as a baseline by the various stakeholders for decision making. As we consider the best solution to the traffic problems in Little Cottonwood Canyon, it's important that decisions are based on facts and are clear of political or private business bias. The outcome of UDOT's process will be expensive, costing every Utahn nearly $200 each in taxpayer dollars. The wrong solution threatens to spend hundreds of millions of dollars toward an alternative that may not alleviate the current traffic issues, and in the case of the gondola, would permanently scar the canyon.

32.1.1C
32.20B

32.7B, 32.7C,
32.17A, 32.2.9E

UDOT's first option is an enhanced bus service, with road widening and installation of avalanche sheds. UDOT correctly states the bus option is the best for improved mobility. The second is a gondola that stretches from the canyon entrance to Alta, includes snowsheds and road modifications, an option which UDOT says will result in improved reliability. We strongly disagree with this assertion, and think the reliability of the gondola has been overstated.

32.2.6.5K

To be blunt: the gondola is not an effective transportation solution. It's a purpose-built ski lift serving to primarily boost the profits of a few private companies. By only operating during the winter ski resort season, the gondola will not help address the very real traffic issues in the summer, nor will it stop at any dispersed trailheads, even the wildly popular (and very crowded) White Pine. This means if you want to avoid driving your car to any other trailhead, take in Alta's July wildflowers or Snowbird's Oktoberfest, the gondola will sit as a mocking, idle eyesore on its 200-foot towers as you are forced to continue driving your car. As if that is not enough, it is also being touted by its supporters as a tourism tool in and of itself, which seems to have been adopted by UDOT yet was not a specific component of the original Purpose and Need.

32.1.2B, 32.1.2D,
32.2.7A, 32.7B,
32.7C, 32.2.6.5F
32.1.2C, 32.2.6.5G
32.1.2B

If the goal of the EIS is to improve both reliability and mobility in LCC, travel times for each alternative is important in selecting a solution that will get people out of their cars to ride public transit. UDOT estimates the gondola will take 55 to 59 minutes to ride, as compared to 38 minutes to ride the bus, and 36 minutes for private vehicles. Limited gondola station parking and fees will force many to park at a distant parking lot to take a bus to the base station, all before stepping onto the gondola. Riding the gondola means people will arrive up to 23 minutes later than all other alternatives (even later for those who need to take the additional bus to the base station). Additionally, riding the gondola requires at least one transfer and possibly two, depending on where people park. Families with children or people with a lot of gear will see this as a major inconvenience, which will in turn deter use. This is not a commute to work for most of the intended users; it's a system used by people who have limited time to recreate and are competing for scarce resources. Therefore, adding complexity – and potential costs – to canyon travel will not necessarily incentivize them to leave their car to ride the gondola, knowing the challenges that go with it and the fact that they'll arrive 20-30 minutes later than all other options.

32.2.6.4A
32.2.6.5J

32.2.4A

UDOT says the gondola is the most reliable option during high avalanche danger. However, the gondola will not run every time avalanche teams use artillery for avalanche control, and when avalanche shooting over the gondola takes place, cabins must be unloaded from cables, cables and towers must be inspected and then cars reloaded onto cables before gondola operations

32.2.6.5H
32.2.6.5K

resume. Further, when avalanche conditions are very high and an interlodge order is in effect (all canyon users legally required to be inside), the gondola will not run. Storms with high wind/lightning/ice events, mechanical issues/power outages may also stop the gondola. With the variety of conditions that will stop the gondola, the purported reliability advantage is eroded.

We need solutions now. Adding more buses to the existing roadway can be more quickly
implemented, while providing more long-term flexibility. WBA and WWA firmly believe that 32.2.7C, 32.2.6.3D
buses can be successful without widening the road if UDOT employs other traffic-control
methods to restrict/reduce vehicle traffic on Hwy 210. Expanded bus service that picks people
up from numerous locations across the valley, ie. downtown, U of U, Olympus Cove, Sandy City, 32.2.9A
etc., that is closer to "door-to-door" would be more efficient than forcing people to park at one
of two transportation nodes, and would in turn encourage use and alleviate near-canyon traffic
issues. UDOT was tasked and funded by the Utah State Legislature to explore tolling/paid 32.2.2I
parking for private vehicles, yet the Draft EIS did not address this concept in detail. When UTA
added more buses two seasons ago with an increase in funding from the state and the
community, those buses were utilized. Tolling vehicles, adding more buses, giving priority to 32.2.4A
buses during peak usage, and more comprehensive enforcement of the personal-car tire
traction policies is a combination that addresses the problem at lower costs and is a shorter-
term, scalable, mutable solution that can be adaptable as citizens' usage changes over time.
Some people roll their eyes at buses, but Utah has never invested enough resources to make 32.2.9A, 32.2.4A,
the canyon ski bus system truly effective. UDOT now has the opportunity to change that. And 32.2.2M
unlike GondolaWorks, UTA is not allowed to make flashy videos about bus service or openly
lobby decision-makers about why their solution should be selected.

Addressing the traffic issues plaguing the Central Wasatch is a once in a generation opportunity. We thank UDOT for its efforts and consideration of input from Wasatch Backcountry Alliance and the Winter Wildlands Alliance. Please do not hesitate to contact us if you have any questions or would like to discuss further.

Respectfully,

Christopher Adams — Todd Walton

Chris Adams
Board President
Wasatch Backcountry Alliance

Todd Walton
Executive Director
Winter Wildlands Alliance

ATTACHMENT A[1]

Tabulation of Comments with DEIS Citations and Impact on the Analysis & Decision Document

COMMENT	DEIS CITATION	IMPACT	
ENVIRONMENTAL JUSTICE. The EJ and public outreach methodology used in the draft EIS is inadequate. It appears as the EJ impact analysis area missed obtaining critical input from EJ individuals and populations that use LCC, but do not live anywhere near the canyon or canyon mouth.	5.3.2	The preferred alternatives are likely to create additional barriers to LCC access by EJ populations who currently recreate in LCC. Traditional EJ analysis methodologies for transportation projects are inadequate to obtain meaningful input and data to assure new barriers are avoided.	32.5B
LIMIT SKIERS. This alternative evaluates the effect of limiting skier numbers in lieu of making roadway improvements. This considered limiting ticket sales, a vehicle reservation system, a high toll, parking fees as a function of occupancy, odd-even plate days, and canyon closures as a function of parking capacity. The document states these strategies would not reduce peak-hour congestion.	Table 2.2-9	Our review could not locate sufficient details in the document to indicate how utilizing all of these strategies would have no positive effect. These conclusions are confusing and insufficient. Requesting clarity as to if the strategies were evaluated individually, or in the aggregate?	32.2.2K
RECREATION RESOURCES IN THE COMMUNITY IMPACT ANALYSIS AREA. Acreage or miles in Analysis Area for backcountry is listed as "Not available." The entire length of SR 210 should be listed as mileage in analysis area for backcountry terrain accessible from SR 210. The alternatives will clearly impact	Table 4.3-1.	The document is inconsistent where it relies on information from two participating agencies on the topic of a trailhead important to our dispersed user group. Which is it? Does the access exist or not? Our members can assure it does, historically. UDOT and the USFS should get together and align on	32.4W

[1] These public comments have been prepared based on a multi-disciplinary, team-wide review by Board members of the Wasatch Backcountry Alliance and Winter Wildlands Alliance, in the context of its primary mission and member interests. They have also been prepared with an eye to those comments which could provide new or corrected facts, new or corrected assumptions, or to point out concerns with methodology (inconsistencies, imbalance, thoroughness) where those findings could potentially impact decisions around alternative selection and implementation. We welcome the chance to discuss or elaborate further on these comments if that would inform your analysis and decision.

parking and access, as stated in the document.		whether there's a trailhead in upper LCC because according to UDOT in this section there is. Albion Meadows Trail (USDA Forest Service Trail 1006). This trail extends due south from S.R. 210 just west of Albion Basin Road. Access is from the paved Albion parking lot at Alta ski resort. Little Cottonwood Canyon Alta-Brighton Trail (USDA Forest Service Trail 1007). This trail extends north of S.R. 210 across from the Albion Meadows Trailhead.	32.4X
LAWS AND REGULATIONS RELATED TO WATER QUALITY. We concur with the assertions made in previous public comments by Salt Lake City Public Utilities regarding the importance and legal precedence around the protection of our urban water supply. The DEIS presents a thorough and comprehensive presentation of all relevant rules and regulations, and lays out with conventional analyses how the preferred alternatives can be constructed and operated without impacting the water supply source.	Table 12.2-1	However, the analysis fails to adequately weigh the true importance of drinking water to this community. When compared to the winter traffic congestion issues addressed by this DEIS process, the long-term availability of potable water supplies is far more critical to preserve than any inconvenience represented by our inability to solve our traffic and parking challenges. Recent weather events and trends seem to underscore this distinction. The DEIS fails to adequately consider the indirect and cumulative effects of accommodating more and more uses in LCC, without regard to any environmental capacity limitations, such as pressures and impacts to our drinking water supply.	32.12A, 32.12B, 32.20A, 32.20B, 32.20C
ROADWAY SAFETY. A significant factor leading to traffic congestion and reflective of the project Purpose and Need, is the importance of winter traffic flow and reliability. UDOT and SLCO have made strides in recent years with the adoption of various traction laws and requirements. The DEIS presents useful data and	1.4.3.2.3	The document acknowledges this contributory problem, but does not adequately evaluate the potential for policy and enforcement enhancements to contribute substantively toward meeting the purpose and need.	32.2.2M

acknowledges the role of weather-related traffic impacts, but does not analyze for enhanced traction enforcement or related solutions.			
SKIER RESERVATION SYSTEM. This section analyzed a system similar to that which Snowbird implemented in 2020. The document concludes that such a system "would not reduce peak-period traffic.	2.2.4.2	This finding is counter to that which our members observed last year. We believe this program resulted in many patrons arriving later in the morning as they knew they had a guaranteed parking spot, thereby lessening traffic in the peak-period traffic hours. Our review could not find the necessary details or related assumptions upon which this finding is asserted. Further, even though UDOT does not have the authority to require the ski areas to implement such a system, the very existence of a gondola alternative which primarily serves the ski area indicates there is a will and means to compel the ski areas to cooperate and consider a range of alternatives that would meet the common interest around the purpose and need.	32.2.2K
REGIONAL. The Central Wasatch Mountains and canyons (Millcreek, Big Cottonwood, and Little Cottonwood) are a unique recreation amenity close to a major metropolitan area. A survey conducted by the University of Utah (2015) for the Central Wasatch found the following: 65% of the respondents said that recreating on public land plays a large role in their physical and mental well-being. This response represents our membership precisely.	4.3.2.2.2	The selected alternative should not create barriers that do not currently exist for access and use of public lands by dispersed users, without adequate impact analysis. This is particularly important for environmental justice user populations as mentioned elsewhere in this public comment document.	32.4A, 32.4B, 32.4G, 32.4P, 32.5A
LAND USE. This analysis concludes that the projected demand increase will likely necessitate that developed ski areas may want to add "lift	20.4.2.2.1	By deferring any consideration of the indirect and cumulative impacts of encouraging more visitation on the ski areas, - and the	

capacity," "other facilities," and "lodge capacity." The document suggests this does not require indirect analysis, as it can be considered in later agency master planning processes. This is a clear and direct violation of the obligation to not partition projects, and avoid consideration of indirect and cumulative impacts in this decision making document.		resulting expansion of the ski area facility footprint - this DEIS is inherently unable to adequately consider all related impacts. The document seems to "serve up" to the benefit of the ski areas a basis to allow the USFS to approve future expansion, without the burden of considering impacts in this decision document.	32.20C
RECREATION WINTER. This section of the indirect effects analysis, again, correctly assumes increased visitor numbers, and the predictable need and allowability (even obligation?) for the ski areas to accommodate that growth - but there is no analysis or consideration of that in the decision document. The basis for not including that - "it isn't certain" - is an unacceptable basis for such a central item.	20.4.2.2.2	By deferring any consideration of the indirect and cumulative impacts of encouraging more visitation on the ski areas, - and the resulting expansion of the ski area facility footprint - this DEIS is inherently unable to adequately consider all related impacts. Again, the document anticipates a partitioned impact and project remedy (facility expansion) will likely be reviewed by the USFS and approved, without the burden of considering impacts in this document.	32.20C
TOLLING. We concur that backcountry skiers would be negatively impacted in the morning (7 AM to 10 AM) for access to the upper part of Little Cottonwood Canyon since the bus service would service the resorts only, causing backcountry skiers who use the bus to walk greater distances to access trails. Our organization does not oppose tolling strategies, unless dispersed users are inequitably singled out.	4.4.2.2.3 and 4.4.2.5.2	Walking long distances on pavement to access dispersed public land areas is counter-intuitive and counter-productive to human-powered recreation. It can be done, but this impact should be avoided or minimized unless a similar barrier is presented to developed ski area users.	32.4Y
WINTER VISITATION. This analysis underestimates the projected visitation. Ski industry trends have consistently reported growth for the last several years. The reliance on 2017-2018 data is likely to result in an	20.4.1.2.1	By underreporting use, impacts, and failing to base the analysis on future growth potential, there is a risk of over-reporting the alternatives ability to meet the Purpose and Need. The fact that	

underestimate of future projections. Further, this entire analysis disregards dispersed canyon users. Lack of data is an insufficient basis to underreport user impacts. More than 14,000 paper copies and an estimated 6,000 digital app versions of the Wasatch Backcountry Skiing Map (Achelis, 4th Ed., 2019) have been sold, among millions of dollars in backcountry tools and gear. This represents powerful evidence of the scale and value of dispersed recreationists in LCC. Our respective organizations enjoy and inform over 30,000 followers on social media and via email communications.		ski area user data is more readily available than dispersed user data should not result in an analysis that leads to an alternative that is arguably biased to one user group. As further evidence of the intrusion of the gondola alternative on dispersed users, one of our backcountry enthusiasts has prepared a draft map showing the proximity of the proposed tower locations to wilderness areas and existing trails used by human powered recreationists (Attachment B). Based on this map, WBA conservatively estimates that more than 30 backcountry ski runs in LCC will be negatively impacted if the gondola solution is implemented. A more thorough analysis is required.	32.20M 32.4Z
The two solutions provided are focused on peak usage on weather-compromised days, despite the fact that actual peak usage on storm days are relatively rare events. This is akin to oversized parking lots to account for Black Friday and the day after Christmas. A massive public expenditure to account for these outlier events without taking into account the vast majority of "down days" has no accounting in the document.	Chapter 23	This Chapter avoids the obvious issue of "irreversible and irretrievable" loss of fiscal resources. If this community invests in either of the preferred alternatives – which arguably address traffic and mobility in only a limited scope and scale regionally – the community is in a significantly weaker fiscal position to address regionally critical growth challenges.	32.23A
GONDOLA VIEWSHED. We concur that the gondola would "have a negative impact for dispersed recreation occurring beyond the ski areas because of long-term changes to the viewshed, that "recreating in Little Cottonwood Canyon near the gondola system (towers and cabins)	4.4.4.2.2	The document asserts – in an inappropriately equivalent manner – that some "residents" would find the gondola as disruptive to the natural setting of the area and its rural nature, while "some residents" who recreate in Little Cottonwood Canyon might see the	

will detract from LCC views, and result in a "reduced outdoor recreation experience".		location as a benefit because they would live within walking distance of the station. This statement is misleading and unhelpful to the analysis, as the number of individuals passing by this area and accessing these impacted viewsheds far exceeds the total number of residents in close proximity to the gondola access point. An impression of equivalency is suggested which is inappropriate and biased.	32.17A
TRAILHEAD PARKING ALTERNATIVES All alternatives reduce total canyon parking available for dispersed users, and no reasonable mitigation is suggested. An inadequate number of new parking spaces is suggested at Tanners (when other access is eliminated, users will quickly overwhelm the few spaces provided). Tanners, White Pine, Coal Pit and the Great White Icicle winter climbing area are very popular and traditional access points that will be effectively eliminated.	4.4.2.5	The impact from lost access will disproportionately impact dispersed users throughout the year. Imagine if one of the preferred alternatives was installed to accommodate ski area access, and then taken away. That is the effect of these lost access points on dispersed users. This impact will be devastating to backcountry users.	32.4P
WASATCH BLVD. & HWY 210. We share the concern and interest of community residents who place a high value on natural open spaces and the views of the surrounding undeveloped mountains. Protection of streams, natural vegetation, open spaces, and scenic views with ridgeline protection measures is important to both residents and our constituency.	4.3.2.1	The value of these views is hard to quantify, but it must be attempted in order for the analysis to be based on a fair and balanced consideration of project impacts. Evidence of this value can be found in real estate, State investments in tourism, and indirect economic impacts across ALL user groups, not just developed ski area users.	32.1.2D 32.29G
VISUAL RESOURCES. The visual impacts section uses several standard assessment tools to rationalize making the visual impacts of gondola alternatives and the	Chapter 17	While the document authors have cited standard methods, we are concerned that no tool exists that could adequately evaluate gondola infrastructure from all the	

snowsheds/enhanced bus alternatives somewhat equal. This results in the perception that the visual intrusions of an aerial structure and the visual intrusions of the snowsheds plus an additional lane are roughly equal.		viewpoints that dispersed users do access. The selection of KOPs (Key Observation Points) and the interpretation of how the alternatives would affect the viewshed are subjective. This section uses a convincingly objective analysis matrix based on subjective base data to support conclusions which make the two alternatives largely equal in impact. If the gondola is favored over the enhanced bus, it could be argued – inappropriately in our opinion – that the former is no more visually intrusive than the latter. We believe the visual impact of any overhead structure as viewed from the road would be significantly greater than the visual intrusions of the snowsheds and the additional lane as viewed from the road – the perspective of most visitors at least for now.
VISUAL METHODOLOGY. In this section the point is made that the FHWA can affect a land transfer from the USFS to FHWA, to UDOT that would make the issue of visual standards – the USFS SIOs, moot.	17.4.1	Ownership will largely be transparent to any dispersed user from a variety of viewpoints. Visitors to LCC will be impacted by any infrastructure that is constructed, no matter where it is located and who owns the land after a transfer. A change in ownership would at the very least represent an indirect visual impact, and/or a cumulative impact, which has not been evaluated. The standard methods used do not appear to be designed to assess the impacts of aerial transportation systems. If mis-applied, this

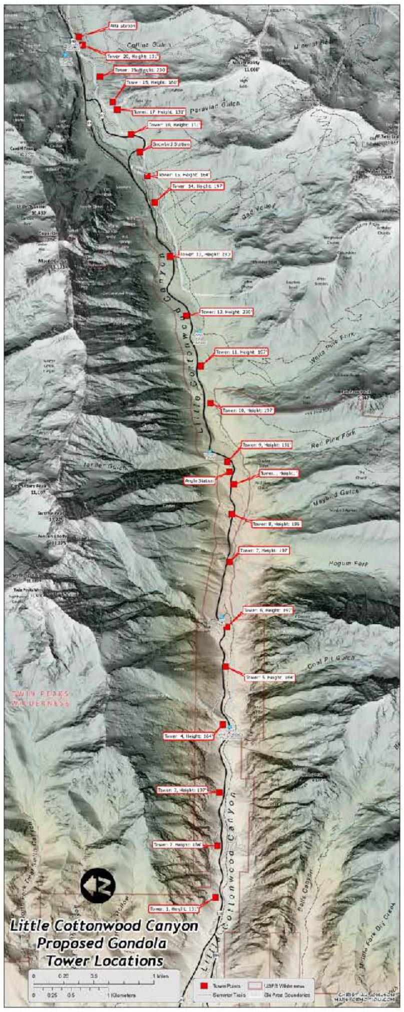
32.17A
32.17B
32.17C
32.17I

32.17J
32.17F

		portion of the analysis may be flawed in that it doesn't adequately assess the visual impacts of ground to air and it can't adequately address the visual impacts of air to ground. NONE of the KOPs use an aerial perspective so that analysis is missing. 32.17K
FOREST PLAN AMENDMENTS. USC 23 section 317 allows the FHWA to acquire right-of-ways on forest lands. This would be necessary for the additional roadway right of ways.	Chapter 28 USC 23 Section 317	We note that while conventional takings, easements and exchanges are normal and common along roadway rights of way, we are curious if the code anticipates and was intended for such a broad interpretation as to accommodate a resort/tourist amenity such as the gondola? If such a transaction is complex, the document and analysis should analyze the impacts of that more substantively for cost, policy implications, and schedule impacts. 32.28B
HAZARDOUS WASTE IMPACTS. The presence of hazardous waste site conditions at Gondola Alternative B's La Caille location is well documented.	Figure 16.3.2	However, the document does not appear to adequately factor the potential exposure risks (air and water, temporary and ongoing) that could result from a large-scale disturbance of these impacted soils. 32.16E

ATTACHMENT B

Backcountry Use & Tower Proximity Map (C. Johnson – DRAFT)



COMMENT #: 13318
DATE: 9/3/21 11:22 AM
SOURCE: Email
NAME: Eric Murdock

COMMENT:

Access Fund, America's national climbing advocacy organization and Gate Buttress lessee, appreciates the opportunity to submit the attached comments on the UDOT Little Cottonwood Canyon EIS. Thanks in advance for your consideration and feel free to reach out to me with any questions.
Best,

ACCESS FUND

September 3, 2021

Little Cottonwood Canyon EIS
Utah Department of Transportation
c/o HDR
2825 E Cottonwood Parkway, Suite 200
Cottonwood Heights, UT 84121

RE: Access Fund Comments regarding Little Cottonwood Canyon Transportation Alternatives Draft Environmental Impact Statement

UDOT Planners,

The Access Fund welcomes this opportunity to provide comments to the Utah Department of Transportation's (UDOT) Little Cottonwood Canyon (LCC) Draft Environmental Impact Statement (DEIS). The Wasatch Mountains and Little Cottonwood Canyon in particular host nationally significant climbing resources that have a long history and attract visitors from all over the world, contributing significantly to the local economy. The Access Fund is concerned that the narrowly conceived preferred alternatives for this DEIS focus far too much on the needs of two ski areas at the head of Little Cottonwood Canyon at the expense of dispersed recreational users who visit the entire canyon. Access Fund and Salt Lake Climbers Alliance are lessees for 140 acres in LCC.[1] The parcel, known as the Gate Buttress, is about one mile up LCC canyon and has been popular with generations of climbers because of its world-class granite. These unnecessary proposals would destroy climbing resources, significantly impair the canyon's natural experience, limit parking and damage trails in a highly popular recreation area (including Gate Buttress), and otherwise reduce access opportunities for underprivileged people with limited financial means.

32.1.2B, 32.1.2D, 32.2.7A, 32.7A, and 32.7C

32.4A, 32.4B, 32.4I, 32.4N, and 32.4P

The Access Fund

The Access Fund is a national advocacy organization whose mission keeps climbing areas open and conserves the climbing environment. A 501(c)(3) nonprofit and accredited land trust representing millions of climbers nationwide in all forms of climbing—rock climbing, ice climbing, mountaineering, and bouldering—the Access Fund is a US climbing advocacy organization with over 20,000 members and 131 local affiliates. Access Fund provides climbing management expertise, stewardship, project-specific funding, and educational outreach. Utah is one of Access Fund's largest member states and many of our members climb regularly in Little Cottonwood Canyon. For more information about Access Fund, visit www.accessfund.org.

[1] See: https://www.accessfund.org/news-and-events/news/climbers-partner-with-lds-church-on-stewardship-of-little-cottonwood-canyon-climbing

The Access Fund supports the position of the Salt Lake Climbers Alliance (SLCA),[2] and hereby incorporates their comment letter by reference into our comment letter. Specifically, we endorse SLCA's proposal that before any permanent changes are made to Little Cottonwood Canyon, a new alternative must be considered that is based on an expanded bus service coupled with traffic mitigation strategies and addresses the needs of dispersed recreation. The DEIS's highly destructive Preferred Alternatives should only be considered after less impactful options have been implemented and shown not to be effective. The climbing resources that will be damaged by these proposed alternatives are highly significant and valued by local climbers and climbers visiting from around the country.

32.1.2B, 32.2.9A, 32.2.2PP, 32.2.6.3C, 32.2.4A

32.29R, 32.4A, 32.4B

Little Cottonwood Canyon Climbing History

Climbing and mountaineering in the United States has a long and storied history, originating with Native American explorers who summited alpine peaks and scaled canyon walls, on through Anglo-European adventurers who scaled summits in the Sierra Nevada and Rocky Mountains in the 1800s such as Cathedral Peak, Longs Peak, and the Grand Teton. Into the 1900s gear and skill progressed, ushering in more technical and daring ascents on larger climbs in Yosemite and mountain ranges throughout the Rockies, Sierras, Cascades and Alaska. Many highly technical climbs were also achieved by the mid-1900s at places like the Shawangunks, NY and Devils Tower (Bear Lodge), WY, among others. By the 1950s and 1960s Yosemite's El Capitan and Half Dome were climbed as well as the Diamond on Longs Peak and the Great White Throne in Zion National Park. By the 1970s, climbers were simultaneously climbing at much higher technical grades while also moving towards a "clean climbing" ethic.

Since at least the 1950s many climbs were established in Utah's Wasatch Mountains, especially on the high-quality granite found in Little Cottonwood Canyon,[3] which became the training ground for a local group of climbers known as the Alpenbock Climbing Club. Especially during the 1960s, the Alpenbock Climbing Club was a prolific source of first ascents, scaling many routes that remain classics today including *The Coffin*, the Wilson-Love Route, *The Sail*, *S-Crack* on the Thumb, and various routes on the Gate Buttress. Increasingly difficult routes were established from the late 1960s into the 1970s such as *Dorsal Fin*, *Mexican Crack*, The Green Adjective, *Split Fingers*, *Butterfingers*, and *Fallen Arches* were as difficult and high quality as any climbs in the country. Even more advanced climbs were established since the 1980s and beyond. As climbers worked through the grades, the interest in and popularity of bouldering also took hold in LCC, which boasts extensive bouldering areas such as 5 Mile Boulders, White Pine Boulders, Cabbage Patch Boulders, the Gate Boulders, the Secret Garden where the problem *Copperhead* (V10) can be found—a seminal climb in the experience of Nathaniel Coleman, a recent US silver medal winner in the 2021 Tokyo Olympics. All of the climbs listed here would be impacted in some way, either through direct destruction or by the industrialization of the area resulting from UDOT's preferred alternatives.

32.4A, 32.4B, 32.26B, and 32.26E

UDOT's Preferred Alternatives Will Cause Significant Damage to Climbing Resources

[2] See https://www.saltlakeclimbers.org/lcc-udot-eis.
[3] See https://www.mountainproject.com/area/105739277/little-cottonwood-canyon.

The Salt Lake Climbers Alliance estimates that 29 boulders and 131 bouldering problems would be impacted by the road-widening alternative: "Boulders located within areas of direct impacts from roadway widening would be removed, destroyed, or buried by fill. Newly built trail segments lost to hillside cuts would be rerouted." And 35 boulders and 142 problems would be impacted by the gondola alternative due to their location under the gondola alignment/inside the easement, and/or being located inside the proposed park and ride station footprint. Additionally, trailhead parking and access trails would also be significantly limited by these proposals, especially under the gondola alternative where the canyon itself would transform into an industrial atmosphere with new piles of construction debris, retaining walls, gondola towers, slope destabilization/erosion, forever degrading the unique and historic experience of climbing in LCC.

32.4A, 32.4B, 32.4I

Well before climbing became an Olympic event, the sport had been growing dramatically in popularity all across the country and in the Salt Lake City area, with as many as 30,000 estimated climbers visiting LCC every year. Multiple climbing gyms have sprouted up in every city across the country, climbing guides are busy nearly everywhere, and even major Oscar-winning motion pictures feature climbing—all which contribute to the $12 billion[4] generated every year by the sport.

32.6D

Unfortunately, UDOT's DEIS fails to recognize the importance of the climbing resource in LCC—with its rich history, high quality, popularity, and economic contributions. Indeed, according to analyses done by the Salt Lake Climbers Alliance not only would hundreds of bouldering problems be impacted, but basic access to various trailheads within the canyon would be limited to serve the needs of 2 ski areas at the top of the canyon. Not only do these limited transportation alternatives fail the needs of dispersed recreational users such as climbers, but also does a dis-service to under-privileged communities who may not be able to afford expensive ski tickets but want to visit their public lands especially in the lower canyon.

32.4A, 32.4B, 32.1.2D, 32.7C, 32.5A, 32.26B, and 32.26E

By imposing additional financial costs, whether it be a toll, gondola fee, or bus fare, UDOTs proposals systemically disenfranchise lower income visitors (more likely to also be people of color) who wish to access LCC. This perpetuates wider environmental justice trends in which those of lower socioeconomic status and of racial and/or ethnic minority identities are not only more likely to be exposed to environmental hazards, but also have a harder time accessing environmental amenities.

32.5A

Summary of Access Fund position

Access Fund supports the Salt Lake Climbers Alliance position related to UDOT's preferred alternatives, to wit:

1) Access Fund opposes the Enhanced Bus Peak Period (Shoulder Lane Expansion) Alternative that would result in the unnecessary destruction of many climbing resources. UDOT failed to consider a reasonable range of alternatives due to its purpose and need

32.2.9C, 32.4A

[4] See national Bureau of Economic Analysis report: https://www.bea.gov/data/special-topics/outdoor-recreation

statement being too narrow. Access Fund also opposes UDOT's Gondola Alternative that 32.1.2H, 32.2.9E
will also result in the unnecessary destruction of many climbing resources. Here again,
UDOT failed to consider a reasonable range of alternatives due to its narrow purpose and
need statement.

2) Access Fund opposes UDOT's proposed trailhead parking and access "improvements"
for the Gate Buttress parking lot which would severely limit parking, while threatening 32.4N, 32.1.2H
roadside climbing resources and access trails. Access Fund, a lessee of Gate Buttress,
would be significantly harmed by the proposed changes because the climbing experience
at Gate Buttress would be measurably diminished. Access Fund believes that the purpose
and need statement for UDOT's EIS is too narrowly defined and thus significantly limits
the range of alternatives UDOT considered in the LCC DEIS including lesser destructive 32.28C
alternatives supported by Access Fund and SLCA, among others. Also, UDOT's U.S.
Forest Service partner also fails to meet its obligations under the National Environmental
Policy Act by seeking to make decisions based on a Forest Plan that is nearly 20 years
old.

* * *

Access Fund urges UDOT and its partners to reconsider its range of alternatives and analyze the
needs of the dispersed recreation community as well as for potential visitors with limited
financial means. We support an alternative analysis based on enhanced bus service combined 32.1.2D, 32.5A,
with other traffic mitigation strategies. The preferred alternatives offered by UDOT address a 32.2.9A, 32.2.4A,
traffic problem primarily focused on the 30 busiest days during the winter ski season. This DEIS 32.1.2C
must address the transportation needs in the canyon year-round for all users.

Sincerely,

Chris Winter
Access Fund Executive Director

Cc: Salt Lake Climbers Alliance

4

COMMENT #: 13319
DATE: 9/3/21 11:36 AM
SOURCE: Email
NAME: Margaret Bourke

COMMENT:

Please find attached my comments on the referenced DEIS.

Margaret Bourke
[redacted]

Josh Van Jura, EIS Project Manager
Executive Director Carlos Braceras
Utah Department of Transportation
4501 South 2700 West
Salt Lake City, UT 84114

Dear Messieurs Van Jura and Braceras

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS)prepared by Utah Department of Transportation (UDOT) in June 2021. I hope that once UDOT reaches a single preferred alternative, the public will be given an opportunity to comment on that alternative, fleshed out with details missing from this draft, before a Record of Decision is made. 32.29T

But, before either of those events, I do NOT vote on an alternative action or "no-action." Instead, I provide information for the team to consider before a final decision. I share my thoughts on the preferred alternatives, environmental impacts and other transportation performance considerations contained in the Draft EIS before us. I understand my comments, like all others, will be a matter of public record, subject to public release. However, please remove my street and email addresses from the formal public release, whether on the project website, or otherwise, absent written permission from me ahead of any such release. 32.2.9N

My comments relate to several themes: completeness, ripeness and analysis.

1. Alta is a community

I am most familiar with Alta, the town in which I live. We are a small, rural community, with 228 residents in the 2020 Census. While this DEIS is massive in length, I find it is missing many details. Because of these holes in analysis and recognition, I have difficulty commenting on something which does not exist. I note here some of those holes, but even with a 45 day, expanded comment period, I have found it an insufficient time period to comment on a report of this size and scope. I provide comments on what IS in the draft, though incomplete, primarily as they relate to Alta.

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As mentioned above, Alta is a town where people live. We have a school, a church, a medical clinic, a community center, and post office, as well as businesses, one of which is a ski area. UDOT's characterization of Alta misses all save the latter, the ski lift company. Looking at Chapter 4, not residents, nor the people using the school, church, medical clinic, post office or community center are mentioned. It is no surprise then that impacts thereon are also missing. (See §4-3-2, map 4-17; 4.3.5.2.1). Further the "no impact alternative" at § 4.4.1, also miss-identifies our community. Failing to adequately account for the fact that Alta is a residential community, NOT merely a resort, unlike Snowbird, what impact does this have on the analysis or conclusions? 32.4F, 32.4CC, 32.4DD, 32.4EE

2. The environment is not in homeostasis, but ever-changing.

Environmental impacts from extended droughts, climate fluctuations and changes to ski season lengths, both in the late fall and mid-to-late spring all have an effect on the number of days of a ski season. The DEIS fails to address this, despite the January 2021 Kem C. Gardner Policy Institutes' Utah Roadmap analysis and statements. That Roadmap identified challenges from growth and development that accompanies growth. (*Id.*, p. 4). The report notes growth leads to development which in turn leads to:

> "more people, more buildings, more traffic, more economic activity – bring[ing] many challenges, as well as many opportunities for a prosperous future . A potential obstacle to Utah achieving its full economic potential, though, is the need for an even more ambitious, comprehensive, and coordinated strategy to … address changing climate causes and impacts ."

The Roadmap continues by noting the climate in Utah is changing.

> "[O]ver the past century, the state has warmed about 2° F . In Utah and throughout the western U .S ., heat waves are becoming more common, snow is melting earlier in the spring, flash floods occur more frequently, and tinder-dry conditions contribute to more-frequent and more-severe wildfires." (*Id*. p. 6.) 32.2.2E

Even the National League of Women Voters platform, supported by the Utah chapter, recognizes natural resources should be managed as

> "interrelated parts of life-supporting ecosystems. Resources should be conserved and protected to assure their future availability. Pollution of these resources should be controlled to preserve the physical, chemical and biological integrity of ecosystems and to protect public health." [This involves specifically] engaging in the public defense of the ecological integrity of threatened ecosystems and watersheds, [such as] Wasatch Canyons. (*Id*.)

The League works to preserve fragile ecosystems from the effects of climate change and growth.

Does the DEIS address preserving the fragile ecosystems from currently understood climate change effects and growth? The DEIS notes that it is there responsibility of the for-profit ski areas, operating under special use permits from the USFS, to manage visitor experience on those lands. However, the management analysis appears singularly focused on a resort patron, not the wildlife observer, the back-country skier, the hiker, the rock climber, the geologist, the wildlife, nor the fragile ecosystem. How is the preservation of the ecosystem to be balanced against the economic interest of these ski areas? What metric is to be applied, over what time horizon? 32.13A, 32.13B 32.4I, 32.17A, 32.17B, 32.20A, 32.20C

The Gardner Institute's Utah Roadmap, identifies changing climate effects to health, extreme weather events, and more. Declining snowpack is documented. The snowpack decreased nearly 80% ,between 1955 and 2013. Does the DEIS analyze the effects of this snowpack change to the ski experience, the water or the interrelated ecosystem? Will 80% of Utah's water supply continue to come from melting snowpack; has this compromise to the supply of water from decreasing snowpack levels been addressed in the DEIS? The Roadmap also notes that the snowpack levels decline due to "warmer spring weather and warmer winters." These two factors combine to "cause shorter ski seasons, greater utilization of snow-making equipment at Utah resorts, and increased avalanche risk." (Utah Roadmap, *supra*, p. 7.) Has this DEIS addressed these scientific findings? 32.2.2E, 32.12A, 32.12B, 32.13A, 32.13B

32.12H, 32.7A

Not only does the report note declining snowpack, it also highlights warmer, drier conditions with

> "forests more susceptible to disease and pests, such as bark beetles, as drought reduces the ability of trees to defend themselves." (*Id.*) Wildfires are more frequent, more intense and larger…, flash floods are increasing, up six-fold over the past 20 years,… winter storms are becoming less frequent, but more intense…[which] can damage public infrastructure, interrupt business…." (*Id.*)

Despite these dire statements of fact, the report encourages hope due to Utah Transit Authority (UTA) now having 54 electric-hybrid buses, 3 fully electric buses and 47 buses powered by natural gas, plus a plan to expand its green fleet. (*Id.* p. 10) None of this is

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mentioned in the DEIS. Rather, UDOT presumes UTA will use diesel vehicles in the enhanced bus proposed alternative. Would there be a different analysis, with "greener" technologies? Are costs equivalent? Does the air quality evaluation change if green vehicles were used? 32.2.6.3F

The DEIS also fails to mention that Solitude instituted a parking fee program for the winter of 2020-21. The program established a rate structure where the fee fell inversely with the number of occupants in the vehicle. While Solitude is a ski resort, and in Big Cottonwood Canyon, it too experiences congestion and insufficient parking for all who wanted to park there. The resort began its problem solving with a goal to "reduce air emissions, improve air quality, and reduce traffic congestion and the unnecessary idling it causes." (Utah Roadmap, *supra*, p. 12.) Having thus framed the goal, Solitude was able to envision and implement a travel and parking plan. 32.2.4D, 32.2.4A

How was this recent example treated in the DEIS; was it praised, supported, or rejected? I couldn't tell, but it appears to have been ignored, despite the project operating for a full season before this DEIS was released. Did Solitude's program reduce air pollutants and traffic congestion? What costs were associated with the program either directly or indirectly? Did it involve millions of taxpayer dollars on the effort? Would such a program work in LCC? If so, could it be implemented now? Was this "experiment" all but ignored? 32.2.2K, 32.2.4D, and 32.2.4A

Many of the environmental concerns and conclusions in the Roadmap are supported in the recently published United Nations Intergovernmental Report. This report makes clear, as does the continuing drought, and the unhealthy air quality many days this summer from evermore frequent and larger scale wildfires, plus the falling level of the Great Salt Lake, climate change is upon us, now. Now is the time to act to reduce climate effects . Does this DEIS fully address this topic? If the scope of the DEIS were not narrowed to traffic movement as the "purpose and need," would the DEIS still reach the same conclusions? 32.10A, 32.2.2E

Framing the problem as it has, UDOT concluded it would be "unacceptable" for extended travel times of 80 minutes, for 50 days of a 150 day ski season. This is the "condition" that needs remedying, by spending 1/2 billion construction dollars. If the "problem" were framed as preserving the natural environment and reducing air pollution along with reducing traffic congestion, are other "solutions" possible, or even likely preferred? 32.1.2B 32.1.4F, 32.10A

UDOT's "problem statement" seems ill-conceived. If the ski season were but 100 days, are the discussed impacts the same? Does the expense and potential environmental consequences of the considered alternatives continue to justify the significant initial and long term impacts? Is the problem really a matter of improving access to two ski lift company's business? Does focusing on a business, or in fact two businesses, address impacts to Alta's community and the greater environment? What are the impacts in character, scale, visual alterations, and environment within the community of Alta? Will lodges and restaurants in Alta see guests taking either the proposed bus or the gondola for a week's stay, hauling luggage, in and out of trains, buses and gondola cabins? Similarly, will a family of 4, 5 or 6, find it "unacceptably" unwieldy to use multiple modes transportation: transferring from private vehicle to a train, a bus, a gondola, or transfers even from one bus to another? Will people consider taking UTA's TRAX, or Frontrunner, when these modes do not take them to their destination? Will people consider other modes to arrive at the base of the gondola station? Will they transfer from those conveyances, or continue to drive or take private transportation solutions, as they do now? Calculating travel times from the Gondola park n'ride lot fails to capture the entire travel time, staring from one's home or place of lodging.

32.1.2B

32.1.2B, 32.1.2D, 32.2.7A, 32.7B, and 32.7C

32.2.4A, 32.2.2L

32.2.4A

32.2.6H

Establishing new parking lots at the Gravel pit, and La Caille base station, did UDOT perform a "capacity" analysis? It has determined roughly 1500 vehicle spaces are needed at each location. Yet, the "capacity" of the gondola is 1500/hour, at a minimum. Operating limits are 5,500 people per hour, with the Doppelmayr 3S system , the system specified by GondolaWorks, the sponsor of the La Caille preferred gondola alternative. The parking planned for this alternative is wholly inadequate, leading either to lengthy delays, people circling lots waiting for a spot to open, or abandoning the mode, and driving up LCC.

32.2.6.5J, 32.2.6.5N, 32.2.6.1C 32.2.6.5C

Capacity limits are commonly used by recreation sites in the National Park Service. Arches National Park, as reported July 21st of this year, frequently reaching capacity in parking and on trails by 8 AM. A July 27, 2021 article concluded Teton National Park was studying effects from increasing numbers of tourists, never seen in the 92 year history of the park. National parks are "drowning in tourists," reported Axios, July 28, 2021; resulting in limits being set and closing access "to avoid the danger of eroding the land." A similar conclusion is presented in Outside magazine's June 25, 2021 article discussing increases in hiking and other outdoor usage which began pre-pandemic and is not expected to fall even post-pandemic, whenever that is. Rather, Outside suggests land managers will likely better manage visitation through permit or reservation systems and environmental education. State parks are not faring better; Colorado's Barr Lake, the state's 10-largest state park has seen an enormous influx of people, far more than its 43 year history according to a June 2021 article in Westword. A similar story was told July 9 on NPR, entitled "An explosion in visitors is threatening the very thing National Parks try to protect." All of these articles demonstrate setting capacity limits needs to involve more than a site specific approach, the broader "picture" has to be addressed. Has that been done in LCC, as envisioned by the DEIS? 32.20B, 32.20C

All of these articles share a common theme; uncontrolled numbers of visitors can threaten the very thing visitors have come to enjoy. The environment, the ecology, the beauty, the tranquility, these are all potentially detrimentally affected when the number of visitors is not managed appropriately to the resource and available amenities. Where is the visitor capacity analysis in the DEIS? What is the number of visitors LCC can accommodate without harming the watershed? What is the number of people capable of being accommodated with the existing infrastructure in the ski areas? What is the number the backcountry can accommodate? Are there adequate sanitation facilities for all visitors, resort and backcountry? Is there sufficient water available for residents of LCC and Salt Lake City, even in extended droughts such that water can be allocated to tourists and recreational users , plus irrigation water for lawns in LCC? 32.20B, 32.20A, 32.20C

Indirect effects

These effects are defined as later in time and farther removed, but nonetheless still reasonably foreseeable. (40 CFR §1508.8) The DEIS recognizes that growth-inducing effects and others related to induced changes in the area of land use, population density, or growth rate and related effects in air, water and other natural systems, including the ecosystem. The canyon is said to be the home to 2 international ski resorts and parts of 2 wilderness areas. These statement does not mention effects to communities nor residents. Are they ignored in this study and analysis? The DEIS remarks on the watershed nature of the canyon. However, despite its watershed quality, the DEIS includes a false statement that the canyon does not allow dogs. A limited number, by ordinance, of Alta residents as well as the canyon ski areas snow safety canine, have been granted special status with Salt Lake Valley Health Department per Watershed Regulation #14. (See §4.3.2). These does are present, by permit. 32.4O 32.12I

The DEIS uses numbers for the 2017-2018 ski season. (20.3.2) That year was a low snow year with Alta seeing an annual snowfall of only 388 inches. Snow measurements for the years before and after this selected year were all higher: 2016-17 saw 596.5" and 2018-19 saw 626". Does using a low snow year, result in higher, lower or the same number of the visitors as a season with more or less snow? For the selected year, the reported combined LCC ski area visitors totaled 853,000. Looking at data from 5 years rather than that single year, 17-18 has the lowest number of skiers. The range from 2013-2014 through 2016-2017, the years before the year analyzed in the report average 917,000 skiers. Taking all five years, and averaging the total skier , the number is 904,000. Is there a reason that 2017-18 was selected? 32.20O

The DEIS also referenced travel data from 2016-2017. The DEIS concluded vehicle trips were 1.2 million, carrying approximately 2.1 million visitors. These numbers were said to be distributed equally between summer and winter. If one doubles 853,000 skiers, the total is 1.7 million annual visitors, not 2.1 million. 32.20P

Table 20.4-1 discusses operations to meet the "30th highest hour traffic volume demand." That is said to occur on 49 days, identified as weekends and holidays. That table depicts total skiers from roadside parking, transit, reduced resort employee trips for total skier capacity with existing infrastructure and with the alternatives. Based on the 49 days evaluated that would result instead of roughly 10K skiers existing, to 12K skiers. What is the effect if it were to use data not from 10 years ago, or low snow years? Would the skier numbers be similar, higher, or lower? What is the impact from those different numbers of skiers? 32.20Q

As for the gondola alternative, what are the planned night operations, what about Snowbird's Oktoberfest operations which occur from August through September on weekends? Bicycles would not be allowed on the gondolas. How many vehicle trips involve vehicles carrying bicycles into LCC? The summer gondola is said to merely add 198 people per day. Alta Ski Lifts (ASL) does not operate a "summer resort." Snowbird does. ASL does not have lodging nor food operations in the summer, other than an occasional food trailer with limited menu and hours. What are the effects on soil erosion into the streams, what about the water quality impacts to the watershed, effects on vegetation, spreading of invasive species, potential disturbances to wildlife and habitat, even assuming only 200 additional people in LCC? 32.20A

While adding less than 200 people to the summer visitation is a small addition, has it been evaluated in combination with all the growth in summer visitation? Was there any analysis about the growth in visitation in Albion Basin year-over-year? The Town of Alta 32.20A managed a free summer program for many years. Average annual visitor growth rate from 2011 - 2017 was about 16% a year. This number is low as it was obtained by counting vehicles passing the staff operating a part-time information booth, prior to driving into Albion Basin. Since that time, ASL has taken over operation of z summer program. Have those numbers remained constant, has the growth trend continued? What effect might there be to an annual growth of 16%, on top of the 200 visitors for the alternatives discussed in the DEIS? 32.20B, 32.20A

Population in Salt Lake and Utah counties is projected to grow 36 % and 108%, respectively, from 2017 through 2050; does UDOT and this DEIS anticipate travelers into LCC to also continue to grow? (Table 1.4-1) An *Envision 2010* study suggested the population will double in the next 30-40 years. Again, the DEIS used old data. Would the results be the same if the Kem C. Gardner January 2021 report were? Are the numbers consistent with each other? What effect might there be to use more up-to-date figures? How were the effects of climate change considered? What about the effects to worsening air quality, water shortages, or a global pandemic restricting economic growth in many sectors for an uncertain length of time going forward, or based on recent data? 32.1.2H, 32.1.2I, 32.1.2B

Trailhead parking is indeed limited in the summer; as it is in most seasons; there are, and always will be, a finite number of spaces. Safety, erosion on trails, spider trails and user-created trails all have a negative impact on the environment and ecosystem, I agree. Was there any analysis to these effects to summer businesses; what is the indirect effect of recreational visitation in the summer on businesses? What effect will there be even if additional trailhead parking spots are added? Will there be sufficient parking spaces for all who might want to use the trailheads? How does the DEIS address, "Build it and they will come," as Kevin Costner's character said in the movie *Field of Dreams*? 32.4P, 32.2.6.2.4A

The gondola alternative is said to possibly include summer operations, although not necessarily subsidized by resorts. (20.4.1.2) Would such operation lead to induced recreational users? What is the analysis of indirect effects from such "seasonal" operation continuing? Why restrict analysis of the modes with one operating in winter only and the other in both winter and summer? Many people, if not all, are cost-sensitive when selecting choices. If not subsidized, would there be any incentive to ride a gondola in the summer, or even a bus? 32.20A, 32.1.2C, 32.2.6.3.C, 32.2.6.5F

Finally, the DEIS concludes the gondola does not induce development as the La Caille Center and Village will be built, even absent the gondola. What evidence supports the financial capability or commitment, to achieve this development, the zoning, and other measures, to demonstrate the accuracy of this conclusion? Would there be enough funding absent moneys from UDOT, the FHWA, resort money, and taxpayer funds for both construction and operation of the gondola? 32.20R

Impacts in Alta

3. DEIS Limitations

In designing transportation alternatives, considering cultural resources and impacts thereto is important. Suggesting mitigation measures to minimize harm and proposing alternatives to the overall harm is mandated in the act creating the federal Department of Transportation and the LWCF program established the year before. Minimizing the harm is then necessary and laudable. The department was created with the intent to increase pubic safety and accessibility. On the other hand, LWCF, was created in a,

> "bipartisan commitment to safeguard our natural areas, water resources and cultural heritage, and to provide recreation opportunities to all Americans. Using zero taxpayer dollars, the fund invests earnings from offshore oil and gas leasing to help strengthen communities, preserve our history and protect our national endowment of lands and waters. 32.26F

Here, UDOT has only used the cultural resources listed in the chapter dealing with hazardous materials and waste sites. Does that chapter, or, chapter 26, consider the "Thomas Moore toilets" in Alta, a historic structure along U-210? Was the 100' buffer zone applied along U-210? If not considered, why effect once it is considered? Where is the final gondola tower and Alta station terminus relative to the Thomas Moore structure? What is the likely impact to that cultural resource? What mitigation measures might need to be applied to protect that cultural heritage site? 32.15C

What is the significance of the LWCF program and processes being part of the National Park Service, an agency within the Department of Interior, rather than under the Department of Agriculture, which regulates the national forests through the Organic Act? Are mandates and directions different by the legislation establishing these agencies. How have the NPS policies, practices and mandates been addressed here? 32.26C Table 26.8.1 does not mention the Alta Lodge as a historic property either. The mitigation for the Alta Lodge property is merely to design a single-pole tower, rather than a 4-legged lattice tower to "reduce visual impacts." However, that tower remains ten stories above the ground. It is sited in the direction the Alta Lodge has installed nearly all windows for its guest rooms and located an outdoor patio. Is a single pole, both visually and impacts from 32.26C, 32.4O noise and thousands of people queuing for that station, a significant reduction/mitigation? Has the proximity of the Alta Gondola station been considered as those people enter and exit that structure?

The DEIS mentions the need for an easement of .35 acres from an Alta private property, the Alta Lodge. This easement is said to be for gondola cables. (Table 26.5-8.) In addition, a separate acquisition is necessary from the same property owner, of .06 acres for a tower. What about a view easement for the proposed Alta gondola terminus station? How will the gondola descend from that tower, 10 stories high, to the terminus which presumably places the riders close to ground/snow level? What avoidance alternative was considered here? Final design is said to minimize impacts to the transfer tow infrastructure at ASL. (Table 26.8-2). What is the impact to Alta's Rustler Lodge view shed, or the chairlift to that lodge, located not far to the East? What is the impact to the parking lot, both public and private, to the North of this tower and terminus station? These infrastructures are not mentioned; were then ignored? Are these properties within the 100' buffer zone of these two gondola proposed infrastructure activities? If so, what impact might there be and how will that/those impacts be mitigated? 32.17A

Recreation resources within Alta include the Alta Brighton Trail, FS #1007. (Table 26.4-2) How was this trail identified to have access from only part of the "Flagstaff Trailhead?" Access to the trail into Grizzly Gulch is also available, signed by USFS signage. This spur is managed by the USFS from a trailhead, along U-210, North of the Snowpine Lodge, and West of the Bay City Tunnel building. Why is there no reference to this trailhead/access point? This same Flagstaff trailhead is said to "also serve [ ] Snakepit Trail (USDA Forest Service #1015) and Albion Meadows Trail (USDA Forest Service #1006.)" Can a trailhead in the canyon, on the North side of the highway, serve these two referenced trails that are on the South side of the highway absent a bridge of connection? Trails from roads #1016 and #1015 are accessed directly from the ASL special use permit ski area. Is there a link from these two FS roads to the Flagstaff trail? Could it be that first required going up to Twin Lakes Pass trail, then a traverse of Wolverine Cirque, remaining on the Patsey Marley ridge, to Catherine's Pass, and then descend into Alta via the Albion Meadows trail, switching to the Snakepit Trail near the bottom? How can that be the case for a trail said to be 1.7 miles in length? This listing does not make sense. Was there consideration given to the separate trails to Catherine's Pass, Snakepit, Albion Meadows, or a trail informally known as "Barb's trail," or merely to the Twin Lakes Pass trail? 32.4FF

Was the analysis of recreation facilities within the Town of Alta confined to facilities managed by ASL? What about the Town of Alta park? Was that considered? 32.4DD, 32.4FF

Was consideration given to the historic Alta City site from the late 1800's and early 1900's? What archeological analysis was applied? As discussed *infra*, similar to the SIO analysis finding "unacceptably low" view integrity, would this archeological site need to have be given another *exception?* (Table 26.4.1). An *exception* is offered for the historic Bay City Mine and Tunnel, also located in Alta. This historic structure was not considered in entirety, only the entrance. Narrowing the scope thus, historic impact and analysis are excluded simply because the entrance is not historic, but a modern building. Where is the analysis of the effects on the historic portion of the mine itself from the proposed activities? What about vibrations, noise, effects to air quality or other measures which might affect "safeguard[ing] our natural areas, water resources and cultural heritage"? 32.15B, 32.26D

Is the analysis complete on "irreversible and irretrievable commitment of resources" for this project? This "chapter" is but one page long; does that suggest by "size," the absence of a thorough analysis; as the DEIS in totality is many hundreds of pages? The DEIS concludes that even once built, should there be a greater need for the use of the land or roadway in the future, or a gondola no longer needed, "the land could be converted to a natural state or another use." The DEIS then continues by stating, "there is no reason to believe that such conversion would *ever* be necessary or desirable." (Emphasis added.) Where is the consideration of the changes referenced in the recent report of the UN IPCC, or even the Kem C. Gardner Policy Institute report? Is it reasonable to claim successful reversal to a "natural state" in a sensitive ecosystem? Was it not because of old mining operations and both surface and subsurface conditions, that the USFS concluded the proposed land exchanges from ASL would be disallowed? 32.23B

Examining the cost for consumed fossil fuels and construction materials is not the only measure of irretrievability. What about the effects to the air quality and watershed from the construction processes? Are these irreversibly or negatively committed for this project? LCC is characterized as a sensitive high-alpine setting. Trees are near the upper elevation of survivability. What is the survivability of trees planted by ASL, numbered at the thousands of trees annually? Do those trees, planted by "experts" survive for 10 years, let alone the lifespan of earlier conifers in this forest environment? What supports the statement that there is no reason to believe a conversion would ever be necessary or desirable? 32.10A, 32.12A, 32.12B, 32.19A 32.23B

With increases in avalanches, flooding and debris flows, would infrastructure no longer considered safe to operate be simply left in place? Chernobyl was built as a "forever" structure, perhaps with no idea there would ever be a reason to convert the site to another use, or restore it to prior development. Is that the metric UDOT is seeking here? Where is the analysis of the irreversible and irretrievable loss of trees, wildlife habitat and vegetation? Where is the analysis of the likelihood that those items, having been lost, could be "restored?" 32.23B, 32.13A, 32.13B

Where is the economic and environmental cost information for this "chapter"? Ecological changes are occurring as a result of climate change. Where is the analysis of the effects of that change on the ability to "convert" land disturbed? What supports the conclusion that removal of infrastructure, leads to that land being converted "to a natural state"? Evidence of mining operations, abandoned for more than 100 years, remain evident in LCC. What consideration was given to this reality? Is "conversion" realistic? 32.23B

4. **Views and view-shed**.

"Why are we managing scenery? So that out children and grandchildren can enjoy the beauty and spirit of the national forests, just as we have enjoyed them." (Landscape Aesthetics: A Handbook for Scenery Management,USDA Forest Service, 1995)

"You might think that scenery is too subjective to manage (e.g., "beauty is in the eye of the beholder"). However, scenery management on National Forest System lands is a logical and orderly system based on research, which consistently shows that people need and appreciate natural-appearing landscapes, and dislike changes that contrast with or are out of character with these landscapes.

"The Forest Service has been managing scenic resources since 1974, when the Visual Resource Management System was published. In the early 1980s, the [ ] National Forest was mapped using this system, and "Visual Quality Objectives" were established in the [ ] Forest Plan. Over the following years the Forest Service developed a new system, guided by 20 years of experience with the old system, substantial advances in research and technology and a significant increase in demand for high-quality scenery. The SMS was unveiled....

"Scenic Resource inventory leads to mapping of scenic classes, the importance of the scene in that area from extremely high level of scenic importance to only moderate importance (5 levels) evaluating inherent scenic attractiveness, (distinctive, typical or indistinctive) concern levels

> and scenic classes from high sensitivity too low. It is form [sic] this that SIO's are established so first managers are guided towards maintaining, restoring and enhancing scenic resources. Projects can then be analyzed for new uses or facility proposals and scenic resources can be monitored over time." Coronado National Forest

The management of scenic resources is required by many laws, including the National Environmental Policy Act of 1969, the Forest and Rangeland Renewable Resources Planning Act of 1974, as amended by the National Forest Management Act of 1976. These acts ensure equal treatment of scenic resources with other resources. (*Id.*)

The Uinta-Wasatch-Cache National Forest (UWCNF) uses the same system as Coronado National Forest. The 18 year old Forest Plan here, describes the future condition for LCC as an area "that will continue to be a valuable and pleasurable natural backdrop for the urban area," with views "carefully managed to sustain scenic resources." (§17.3, quoting from the 2003 Forest Plan.) Has this scenic resource been treated equally with other resources in this DEIS? How has "scenic resource" been given equal resource treatment when the "plan" is to *exempt* a facility or structure forecasted to be of "unacceptably low" level of scenic integrity? 32.17A, 32.17B

The two wilderness areas in LCC were specifically excluded from the analysis. (17.3.3). This was because creation of those areas was "not intended to create buffers to preclude non-wilderness activities beyond their boundaries." (*Id.*, citing Public Law 98-428.) Although not in the purpose of the wilderness creation, should the effects from noise and reduced view contrasts nonetheless be considered because recreational users go to those areas to escape infrastructure and "urban" landscapes? 32.17A, 32.17B

UDOT identified the USDA's Standard S22 for Scenery Management:

> "Unacceptably Low scenic integrity refers to landscapes where the valued landscape character being viewed appears extremely altered. Deviations are extremely dominant and borrow little if any form, line, color, texture, pattern, or scale from the landscape character. Landscapes at this level of integrity need rehabilitation. This level should be used only to inventory existing integrity. It must not be used as a management objective (USDA Forest Service 1995)."

If the only way the gondola alternative could be implemented is to either ignore this standard, or, simply write in an exemption, does that suggest the alternative is no longer acceptable? The latter is what has been proposed. What other impacts might there be 32.28F from this exemption? Are there no other impacts or effects from the suggestion to amend the Forest Plan? Is it sufficient to merely add "This standard does not apply to the activities approved for the Utah Department of Transportation's S.R.210 Project (Record of Decision, [*date*])"? Might a narrower exemption be crafted to prevent future activities, not part of any record of decision by this proposal, be eliminated from being "grandfathered in"or considered as being consistent with the newly altered landscape? 32.28F

UDOT established more than 20 "key observation points (KOP) from which to evaluate the effects on view shed for the analyzed alternatives (enhanced bus and gondola in Appendix 17A, and the cog-rail in Appendix 17B). These KOP's are along Wasatch Boulevard, and continue along LCC roadway, and include a few residential areas at the mouth of the canyon and trails, before they end high above the canyon floor. (Table 17.3-1, *et seq.*) The rationale offered for selection of these 25 KOP's, is stated to be that they represent

> "viewing locations from which the sensitive viewer types would typically view the project elements from either stationary locations (residential areas or recreation sites) or linear locations (highways and major roads.)" §17.3.3.

"Viewer groups" are travelers, residents, tourists and recreational. Notably residents are considered a "sensitive viewer type," and defined as

> "people who live and work in the impact analysis area and generally view the landscape from their properties and homes, and often from places of employment while engaged in daily activities." (17.3.2.6)

The KOP sites are to represent locations where the sensitive viewers, those with the highest sensitivity, typically view the project elements. Residential areas are addressed in 24% of the 25 KOP's, the balance address viewers who are merely traveling through, tourists or recreational viewers. Are there different sensitivities in both duration and location depending on the viewer group? Because the report identifies these three distinct viewer groups, it is clear not all viewers are considered the same. Some viewers have different sensitivities for aesthetics, changes to the landscape, and scenic or historic status. 32.17A and 3.17B

The residential areas analyzed include La Caille, Fort Union Boulevard, Daneborg Drive, Quarry Trailhead, and Wasatch Resort. These properties are roughly at 5000' in elevation. No residential areas were addressed higher in elevation in LCC. No residential areas are analyzed close to the Alta community, nor residences in Snowbird. The residential areas in the canyon include the Gate Buttress, KOP 6, and is about 1 mile up LCC. Wasatch 32.17F

Resort, identified as KOP 5, is West of KOP 6. Wasatch Resort was selected as a KOP because it "represents typical views from a residential area in Little Cottonwood Canyon and an adjacent popular trail." (Table 17.3-1.)

Little Cottonwood Canyon includes SR-210, a Utah State Scenic Drive. That drive is 7 miles in length. Over that distance, proceeding Eastward, the roadway climbs approximately 2500 feet above the mouth of the canyon. However, despite this climb, Utah official sites characterizes this canyon as a "glorious natural playground." This is further emphasized by the need for 19 KOP's in the canyon despite a mere 7 mile distance. The balance of the sites are in the Salt Lake Valley.

Of these 19 canyon sites, all but two are for recreational trails, trailheads and campgrounds; areas for seasonal and/or temporary travelers, tourists and recreational users. (KOP 6-17, 22, 23 and 25; see also, Figure 17.3-2.) A more than two (2) mile gap in KOP's exists between Snowbird Entry 1 to Catherine's, KOP 19, (KOP 23 is in that area, but relates ONLY to the cog rail alternative, not a preferred alternative in this DEIS). (Table 17.3-1.) Even there, the sensitive viewer is not a resident, but a traveler along SR-210 and recreation users or tourists at Snowbird. (*Id.*) 32.17E, 32.17F

Snowbird Entry 1, KOP 18, is along the highway. KOP 19, designated "Catherine's Pass," is at the top of Alta Ski Lifts Company's (ASL) Sunnyside Lift. (KOP's 18 and 19, pictured in Appendix 17A.) KOP 18 is pictured as both an Existing Condition and a future Proposed Condition. Even then, the depiction is only a portion of the proposed gondola tower. That tower extends off the top of the page. What is displayed is a 4 legged metal lattice tower, rising from the ground. It doesn't to appear any Snowbird residents visual sensitivities evaluated. 32.17F

UDOT has chosen to look to viewer sensitivity as defined by the USDA Forest Service. This metric focuses on the "viewing public who visit recreation sites in the national forest and the viewers degree of concern with changes in the landscape setting or a particular viewshed." (17.3.2.6) Using this metric, consideration is given to volume of use, viewing duration, concern for aesthetics, scenic or historic status, and type of use between travelers, tourists, recreation users and residents. The report highlights scenic or historic status increasing concerns over aesthetics by increasing the amount of use and the duration of use which in turn increases the viewers' concern for changes to the landscape. In addition, special management areas or designations can also affect viewer sensitivities.

Here, UDOT's evaluation of visual impacts is within a range of four: either, no-impact, low, medium or high. In Alta, while not a "wilderness," the visual scene is dominated by the mountains, not "Brutalist-style hotel-condominiums" as are dominant in adjacent Snowbird. (see, Tables 26.5-6, 26.5-8 , Table 26-5-11, etc. "property descriptions" in Snowbird). 32.17F, 32.4O

With all of this emphasis on viewer sensitivities, UDOT did not address the community of Alta, nor her with 228 residents in the 2020 Census.. An entire community is not even analyzed nor a KOP located near these residences. Would the duration of views be "high" from one's home? Similarly, the amount of use of the area and concerns over changes to the landscape from this population is likely inadequately explored as well. Would effects, analysis and results change if the DEIS considered this viewer group. Does not one of these residents warrant analysis from their "stationary location[,] from which residents live and work," designed their homes to enjoy views of Mt. Superior, snowy glades, Hellgate Cliffs, or other natural settings, free from infrastructure? Where are Alta residents included? Is there a reason these residents were specifically excluded from sensitive viewer analysis? How would the analysis change should they be included? 32.4O, 32.17A, 32.17B, 32.17F

The DEIS locates cables and towers that literally "tower above" the homes, nature trails, and the community, as high as a twenty-story (20) building. Could this design make a significant impact to A viewer, let alone a sensitive viewer concerned with changes to the landscape setting? Also, the proposal locates a ten-story(10 story) high tower along a relatively flat, area immediately adjacent to the Town Park. What level of concern for the sensitive park user/viewer is involved? The gondola terminus, location has an ill-defined footprint on the ground or in the "air." There is no depiction for how much of the view shed might be affect. How can the effect be evaluated when details are absent? 32.4O, 32.4DD 32.17F

Information is missing though some parts of this DEIS were prepared in July of 2020, almost a year before it was provided to the public. For example, the pages after the "current and proposed future conditions" depictions for KOP 18, Snowbird Entry 1, is a BLM's "visual contrast rating worksheet." That sheet identifies the degree of contrast of structures as "Strong" in form, in line, in color. Only texture is at the "moderate" level of visual contrast with the surrounding landscape. Mitigating measures" are not provided, but said "to be developed based on further design information." Does failing to include design criteria make the visual contrast evaluation pre-mature? 32.17L

KOP 19 does not include a representation for the "proposed condition." (Table 17.3-1). This is likely so because having chosen this location, the gondola terminus and the tall, 10 and 20-story towers within Alta, are obscured by Greeley Bowl. The proposed elements would be "around the bend" of the canyon. This leads also to "no contrast" rating for the elements of form, line, color, color or texture. Similarly, no mitigating measures are recommended; the "elements" are not evident because the viewing location avoids that, hence "no perceived change." That location "allows" conformance with the SIO's. (Defined *infra*) What if the KOP 19 were located on Albion Meadows Trail, or from Mt. Superior, or Flagstaff trails? What if from residences along Albion Basin Road, residences along the Bypass Road, residences along Powder Run Road, to name but a few residential areas? What effect would there be to the visual contrast rating and the SIO criteria? Would ratings continue to be "none" or no perceived change in landscape character? Obviously not. 32.17F 32.17H 32.17L

The SIO includes goals 59 and 60. These goals require managing forest landscapes according to landscape character, themes and that the SIO's be mapped. (G59). Similarly, no resource management activity should be permitted to reduce scenic integrity below the objective stated for the management prescription categories. (G60) Was the selection of KOP's to choose areas with only contrast ratings as merely "high" versus unacceptable? How many other sites along the route of the proposed gondola, if selected, would result in the same analysis? Would ratings continue to be predominantly involving "no perceived change"? 32.17N

I took this photograph from the same location as KOP 19. It is not Catherine's Pass, but closer to tower 14 of the Sunnyside lift in Alta Ski Lift Company's (ASL) special use permit area on USFS lands. This photo depicts the scene approximately 6 towers "below" the Sunnyside lift terminus. One can not even see Mt. Superior nor Cardiff Pass. Why isn't the classic view from Alta which appears in coffee table books, calendars and promotional literature, i.e., looking down the canyon with the profile of Mt. Superior on the right, included as a KOP? From that perspective, the gondola station and towers would be prominent. 32.17F

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Please provide further design information. It is only once details are provided that the public can comment. Until then, we are trying to pin the tail on a non-existent donkey.

Both locations KOP 18 and 19, only consider sensitive viewer groups of tourists and recreational viewers. NO resident viewers were considered in the Town of Alta. Further selecting KOP 19, AFTER the canyon turns roughly 90° to the South, views are significantly different from the homes and residential properties within the town. 32.17F

The Forest Plan scenic integrity objectives (SIO) is one metric for evaluating visual impacts; one the USFS uses on public lands within its jurisdiction. (§ 17.3.4). These criteria establish goals for *maintaining* the scenic integrity of the forest landscape. This methodology has 6 benchmarks from "unacceptably low" to "very high." (*Id.*) Instead of using a similar tool, UDOT eliminated the full breadth by reducing a 6 level criteria to 4: "high" to "none/negligible." (Table 17.4-1). Notably, the USFS does not even include "none" in its benchmark criteria. If "none" were included in the SIO, there would be 7 categories, nearly double the number of categories UDOT used to evaluate here. 32.17O

What effect is there for UDOT using a scale with fewer benchmarks? Does it result in a mischaracterization of the visual impacts as artificially low? The SIO contains four distinct objectives that can fairly be categorized as visually impactful: from a noticeable deviation, activities visually subordinate to landscape character, vegetation and landform alterations of the activity are dominant but valued viewing from background distance, and deviations are extremely dominant requiring landscapes needing rehabilitation. The "unacceptably low" criteria is only to be used for inventory, not as a management objective. There is no "objective" to have a visual impact which is unacceptably low. 32.17O

Preferred alternative Gondola B, received an evaluation of "*unacceptably low*" because it is said to lack the ability to meet the visual, scenic integrity objectives in the 2003 Forest Plan. Nonetheless, no mitigation is proposed. Rather, the "management" option selected is a suggestion to *exempt* the project, a "one-time", exception, said "not to establish a precedent for other potential amendments." (See, 28.3.2.2 and 28.4). Would future visual impacts be evaluated based on the then current landscape with a then existing gondola, cables, cabins, towers and termini infrastructure in place? Was there any analysis given to an "exemption" and a potential "forever" visual impact? 32.17P

Where is the analysis of percentage of land and water and vegetation versus man-made structures in KOP 19? If that location were moved to Patsey Marley, would the conclusion of "no perceived change" remain? Table 17.4-16, identifies the possible settings as urban, developed natural, natural appearing, natural evolving and resort natural setting. Three of these five, the middle three, demonstrate impacts which are high-to-moderate. 32.17F

Snowbird brands itself as a ski and summer resort. That label tells the public to expect a resort with amenities for winter and summer. It colors expectations for visitors to expect infrastructures, both those involved in winter sports, but also those not involving skiing or snowboarding.

On the other hand, Alta Ski Lifts, Company, brands itself as a winter ski lifts company, with winter trail maps with an address for "Alta Ski Area.". ASL's summer trail map is on the website. Snowbird on the other hand, prints and distributes seasonal trail maps; a winter trail map, and a separate resort map showing summer operations including dining, lodging, and activities like alpine slide, bungee trampolines, rope courses, fishing, shopping and Oktoberfest.

Is there an analysis showing that Alta and Snowbird should be treated the same? Is there a Snowbird community commensurate with the Town of Alta residential community? Is the character of Alta Town the same, similar or disparate from the character of Snowbird resort? Is the town of Alta synonymous with the Alta Ski Lifts Company business, or, are they separately and distinctly addressed? Does the DEIS assume that one speaks for the other? Is Snowbird more akin to an amusement park than a municipality? Is the landscape of Snowbird inline with project elements that were coordinated so as not to detract attention one from another? The DEIS characterizes Snowbird as a resort setting with a characteristic of "natural evolving." The landscape has substantial alterations so it is concluded there would be negligible impacts from the proposed alternatives under consideration.

32.17A, 32.17B, 32.17F

Is there a reason the Town of Alta was not evaluated? Is it because the natural elements in Alta dominate? Would that characterization remain constant with the addition of the proposed alternative of Gondola B, or even the widened roadway in the enhanced bus alternative? Would the landscape be substantially altered with the proposed activity? What is the current character of the landscape and what would it become with the proposed alternative? Absent UDOT doing this analysis, there is nothing for me to comment upon.

32.4O and 32.17F

The FAA requires towers and man-made features taller than 200' AGL to have obstruction lighting to prevent aviation accidents. The DEIS notes Little Cottonwood has an "enclosed nature." (17.4.5.2) It is because of this "nature" the FAA may require all towers to be illuminated for safe aircraft operations. Typically this requires flashing lights, turning on and off, 20 to 40 times per minute. This would create a string of flashing lights in Alta and potentially throughout the canyon. LCC is noted to consist of "night skies which are relatively dark," once one ascends above of the Salt Lake valley light dome. What consideration was given to Alta investigating registering as a Dark Sky community?

32.17M

Both Airmed and construction helicopters have been regularly used in the past few years to both airlift injured people form the ski slopes and hiking trails, but also install avalanche devices and lift towers. Only Airmed/rescue operations have occurred in the dark, in the night, summer or winter. How would these operations be affected by the alternatives addressed by the DEIS? The DEIS considers proximity sensor lighting an option, if feasible and approved by the FAA, possibly aircraft detection lighting system (ADLS). Was there any consideration given to beginning night operations? Was there any evaluation of the magnitude of the change from zero to x? In the "immediate and

32.2.6.4C

foreground", would impacts be high? Or, would the impacts be "everywhere" due to the enclosed nature of LCC? The DEIS is incomplete in not evaluating the immediate, foreground or middle landscapes. 32.17M

5. Considerations of a Changing Climate

As stated above, August 9, 2021, the United Nations Intergovernmental Panel on Climate Change, issued a "Code Red," report describing human driven global heating as irrefutable, irreversible, requiring immediate action to reduce greenhouse emissions. (UN IPCC 2021).

UDOT should now recognize the IPCC report sets forth new information and scientific evidence on climate change, not available when the DEIS was being drafted and finally released in June. The IPCC report must lead to a re-evaluation of the environmental assumptions and consequences from the proposed alternatives. Would the "no-action" alternative achieve a higher score, or other alternatives previously rejected? Is it still tenable to act as if previously conceived solutions and prior practices, i.e. adding more human-made infrastructure to the forest, and ignoring the human impact from an unlimited number of people, is still the direction to take? Ignoring this new report and the consequences stated therein seems imprudent at best. 32.2.2E 32.10A 32.17J 32.20A 32.20C 32.10L

We have already seen that, formerly rare, heavy rains are occurring now, bringing additional debris flows. This will likely occur more frequently, and new drainages from erosion contributed by more people creating and widening user-created trails. U-210 has been an artery for well over 80 years. This roadway *needs* to continue to be such into the future for LCC residents and businesses unable to use a gondola nor a bus. The DEIS ignores this basic fact. This silence is another demonstration that the EIS in incomplete. 32.10L

Project contrast, as the methodology from the Bureau of Land Management (BLM), is again here circumscribed to the *immediate* foreground (≤.0.25 mile), the *foreground* more than 0.25 miles, but less than 0.5 miles from the activity, whereas *middle* ground is anything beyond 1/2 mile. However, even that one location in Alta is removed to the top of the Sunnyside ski lift. From that location, any proposed large towers will likely be obscured, as would be the large terminus building. Further, that location is ninety degree (90°) from the principal direction of Little Cottonwood Canyon. The view and observation there is Not similar to the rest of the town of Alta. The DEIS analyzed no 32.17F town observation points. (See Tables 17.4-2 through 17.4-28.) Not from Cardiff Pass Trail, nor from residences in Alta which have prized the mountainous and or stream-bed views and sited windows to capitalize on the views of natural rock, trees, water. I am unaware of anyone who has sought nor emphasized views of manmade mechanical, transportation, or infrastructure "improvements." 32.17F

In addition, the change to precipitation is also not effectively considered. Droughts will persist, not as single year events, but decades long events; as has the current drought. There will also be periods of heavy rains. There will be low snow years and high snow years. However, the DEIS fails to consider the fact a "ski season" duration is not a constant; that "season" is no one, specific length. It can begin in early November, but also can be pushed back to late December- nearly a 50 day difference. In recent years, more snow in the early season has been "man-made." That snow is possible through a combination of cold air and water forced through snow guns or fans. Only when both temperatures in the mountains are sustainably low, and water is available can that occur. Increased population in the Salt Lake Valley demands more and more culinary water annually. There is a finite amount of water, almost all water in LCC is owned by Salt Lake City Corporation. Has UDOT considered the priorities of allocating water for household drinking water air in conflict with resort use of water for snow-making? Will Salt Lake City continue to allocate water for snowmaking, and at current rates, higher rates, lower rates, or variably, over the next 30 to 50 years? 32.2.2E 32.12H

6**. Traffic management**

Examining indirect effects, the DEIS notes an Alta Town resolution supporting a visitor management plan for the roadway. The analysis then concludes that neither alternative advanced would increase the capacity for personal vehicles on S.R. 210, because "both alternatives would try to reduce personal vehicle use by 30% during the winter." (20.4.2.2.1). This is to be achieved by "eliminating winter roadside parking," further reducing congestion and the "need for the town manage traffic." (*Id.*) 32.2.4A

Trying" to reduce use of personal vehicles is a laudable goal, yet the DEIS does not provide concrete plans for achieving the reduction. Even with ski area subsidies for resort employees and pass holders, there are many people who use the canyon NOT for resort skiing. They ice-climb, the participate in backcountry skiing, snowshoeing, and photography. There is no suggestion that these individuals or groups would be subsidized to use either mode proposed here. 32.2.4A 32.1.2D

Where are the 230 roadside parking spaces to be eliminated? Do any of these involve lands belonging to private property owners? Are they in the town of Alta, near trailheads in the lower canyon, or along SR-210 at Snowbird? No details are provided to be able to tell whether Alta managed traffic would be reduced, or increased by vehicles seeking already crowded and inadequate parking areas outside UDOT's jurisdiction, USFS lands, or private property. The Alta Marshal Office (AMO) provides stellar support for ALL users of SR-210 within the town limits, and when requested, in the canyon beyond Town boundaries. Where is the evidence for the conclusion that no "induced visitation in the town [of] Alta," would result from a bus service only to businesses? The service identified, stops exclusively in the resorts resulting in people taking the buses, though they may have an ultimate destination other than those businesses, but needing to arrive at the resort, at least initially. Does either the bus or gondola option provide public or private transportation to take people to other canyon locations, not directly/primarily served? Would a UTA bus be scheduled to take folks down canyon to their ultimate destination? Would there be a published schedule to pick people up from "down-canyon" recreational locations and return them to Alta or Snowbird Ski and Summer Resort? Would tourists those using other recreation opportunities be enabled to then board another vehicle, whether bus or gondola, to take them all the way down the canyon following their recreational activity outside the businesses served?

32.2.6.2.5A

32.2.6.3C, 32.2.6.5G, 32.2.6T

Absent knowing these details, it is difficult to tell whether the stated attempt to reduce personal vehicle use, and/or eliminating of *some* roadside parking would indeed reduce the need for Alta Town managed traffic. Would the result indeed be a reduction in the town's operating budget from improved traffic management outside the town limits? Or, would the impacts increase town management and result in an increase in the town's operating budget, falling not only on the businesses in town, but also the private property owners/residents?

32.2.4A, 32.1.2D

What agency could manage "no-limit" traffic? Certainly, AMO can not. Would controlling traffic AFTER vehicles reach Snowbird, then be subject to tolling, solve problems or create more congestion, pollution, noise and even possibly aggression? Absent controlling traffic at the mouth of the canyon, how can personal vehicle use be managed in a way that reduces the need for the Town to manage traffic? In the event that either alternative were pushed forward, what is the mechanism to actually reduce personal vehicle use? Assuming UDOT is successful in reducing personal vehicle use by 30%; with either enhanced buses or a gondola operating, with capacity for 5,500 people per hour, is a 30% reduction enough to avoid overwhelming the canyon with visitors?

32.2.4A, 32.7B

32.2.4A

32.2.6.5N, 32.7C

7. **Visitor management**

The USFS expresses its obligation to provide balanced access to all users of public lands within that agency's jurisdiction; whether resort users to lands within special use permits to the resorts, or to people recreating on public lands, outside the ski lift businesses. The Uinta-Wasatch-Cache National Forest (UWCNF) is tasked with managing lands in the Wasatch Mountains. "The Forest Service and its employees are public servants tasked with trying to 'provide the greatest amount of good to the greatest amount of people.'" (*Id.*) Within this rubric, and constrained by the National Ski Area Permit Act, and as amended, the Agriculture Department and agency within, provide guidance for permitee operations for skiing and ancillary facilities. However, as mentioned, the USFS also requires the permitee to support, or at a minimum not thwart, non-resort users to the national forest.

The UWCNF has chosen not to undertake visitor management studies. Other forests within the department have, and continue to do so consistent with visitor management sciences and criteria developed by experts analyzing and implementing best management practices within that field. See Coronado National Forest, not far from Tucson, Arizona. 32.20B
Sabino Canyon sees millions of visitors each year, similar to LCC.

What is the supply of recreational opportunities that can be accommodated? The UWCNF has limited the number of parking spaces to levels in the 2003 Forest Plan. Similarly, the parking on permitted lands must accommodate all uses of the forest, whether visits to the permittee's operations, or other public lands under a multi-use 32.20B
accommodation. In a boxed canyon, such as LCC, the supply of opportunities is finite, as are the number of hamburgers available to sell, the number of seats at the restaurant, the stalls in the bathroom, and virtually all measures traditionally used to set capacity for concert venues, movie theaters, buses, gondolas, etc. Visitor capacity also implies a quality standard.

Alta, Snowbird and other recreation permit holders are tasked with "managing visitors' experience and safety." (DEIS 20.4.2.2.2.) This is stated to includes the area's responsibility to protect public health, safety and the environment while ensuring delivery of high quality services. To accomplish this, the businesses are required by the USFS, to provide appropriate infrastructure to accommodate skiers, and other users to the public lands.

When the UWCNF does not do visitor management, is the permitee required to perform that analysis to include in its master development plan? When the permitee is operating in an area with multiple jurisdictions, national forest, state highway, county watershed, municipal building and zoning, does the forest require compliance with all other jurisdictions rules? Is the permitee operating on NF lands considered exempt from municipal zoning which requires provision for adequate onsite parking spaces for all new residential units? Is the permitee required to contract for public safety and health for its customers rather than rely on municipal services? What metrics must the permitee follow to ensure "high-quality services" to its patrons; when and how is this monitored? 32.28J

The New York Times quotes ASL's then General Manager, Onno Wieringa as he stopped vehicles attempting to enter Alta ski area. He turned them away saying 'If we were to permit more skiers on the mountain it would compromise the quality of the experience skiers have learned to expect from us." NYTimes, March 3, 1998, §3 p. 11 entitled, "EARNING IT: A ski area without the extremes." Alta was turning a profit with 3,500 skiers a day with more customers than it needed. In 1996-1997 gross income from lift tickets sold was estimated to be about $12.6 million annually. ASL pays 2.5 percent of net income to the Forest Service for use of the land. The NYTimes article says that ASL remains committed to staying small and independent. Wieringa's proposal to limit the number of cars and buses that could park on the mountain, was eventually supported.

Current General Manager, Mike Maughan described the ASL, in a July 14, 2021, Alta Town Council meeting. Therein he considered the ski area a "mature ski area, [and] anticipating more demand than they have capacity to accommodate going into the future. Focus will be how to manage that demand in a way to take care of the ski experience as well as the resource." (Alta Town website, meeting recording.)

Development in Alta is limited due to water limits controlled by Salt Lake City, as well as the municipal zoning and building regulations. What infrastructure growth and expansion will be necessary in the canyon under UDOT's DEIS alternatives? How much more employee housing, more guest accommodations, restaurants, retail outlets will be needed? How will all of this expanding visitation not create an economic stress on the town Alta and her private property taxpayers to fund public safety for these millions of visitors? 32.20C

How does the DEIS address the fact that demand in Alta exceeds capacity at present? What parameters besides traffic and parking have been considered by UDOT? "Authority of the resource" analysis suggest that visitor capacity, or supply of opportunity, is really the first consideration. Where is the opportunity to increase of supply; where is the effort to reduce demand? What effort has been put into studying the fact that the visitors to LCC are on par with the visitors to Yellowstone National Park? Yellowstone saw an 11% 32.20C 32.2.4A increase in May ’21 over May ‘19,with 483K visitors. 2020 was logged as the busiest year; with 3.8 Million visitors. The NPS workforce in Yellowstone is 800 people managing 2.2 million acres. The Salt Lake Ranger District manages 215,000 acres of NF lands in Davis, Salt Lake, and Tooele Counties. This district manages that with a full-time staff of about 15 people, plus 55 seasonal summer employees as well as volunteers. and Uinta-Wasatch-Cache National Forest, one of the most heavily visited in the entire National Forest System, with nearly 1.2 million acres, and a workforce of fewer than 1K. 32.20A, 32.20C

Budgets of the two areas are comparably imbalanced as well; there is $33M budgeted for the Yellowstone NPS including rangers, law enforcement, safety and security, emergency medical, search and rescue, structural and wildland fire…. On the other hand UWCNF, SL Ranger District: has noted reliance is on partners in material and personnel,

> “As population grows in the areas surrounding the Salt Lake District, … it will require committed, collaborative and sustained efforts between the Forest Service, local communities, concerned citizens, and visitors to insure these fragile plants [AB summer-long wildflower displays] and wildlife [The Bonneville Cutthroat, a sensitive species, [ ] making a comeback in many of district's lakes and streams] are protected.”

Stellar efforts are underway from the UWCNF Salt Lake Ranger’s offie, as well as Friends of the SL Ranger District. Non-profits and volunteer groups as well as ASL and Alta mount efforts to improve the forest health by removing invasive weeks, restoring areas damaged by user-created trails, tree planting in the forest, and other cooperative efforts. Nevertheless, the Friends of the District website notes nearly

> “6 million visitors per year, primarily in Little Cottonwood, Big Cottonwood, and Millcreek Canyons… year round … enjoy[ing] a ***multitude*** of ***recreational experiences***, such as downhill skiing, cross country skiing, camping, mountain biking, hiking, rock climbing, horseback riding, wildflower and wildlife viewing, and motorized off-road recreation. In addition, the Wasatch Mountains bring in artists who capture nature's beauty in their preferred medium.” (*Id*.)

However, absent a canyon-wide capacity analysis, a valuable tool is missing. This is a tool for forest and municipal management that the Central Wasatch Commission is seeking, but results of the initial phased analysis are not yet available. Absent a visitor capacity analysis, where is the analysis into the impacts on a small rural community and its residents both to quality of life and economy? What impact would the preferred alternative present should interlodge conditions develop; will there be adequate indoor, safe spaces for-visitors? How can thousands of visitors exit the canyon at the end of the day without delays? The analysis considers the ingress, NOT the egress.

32.20B
32.20A
32.20C
32.4O

32.7C

With either a bus or a gondola, and perhaps thousands of people in the canyon, they are limiting access to 3540 people at a time; assuming that all the conveyances are not filled at Snowbird, before they reach Alta. Is it responsible for transportation officials to write a prescription for capacity decisions absent prior capacity analysis and monitoring? What number of people can be accommodated for each recreational experience? How will people be distributed; time of day, area disbursal? What are the limits to culinary water; snow-making water supply? What is the limit to sanitation and the ultimate quality of the water in the watershed? What are the limits to food/beverages available? How will food arrive; via bus, gondola, truck? What are the impacts to the existing flora with million visitors? What about 2 million people (approximating a 1/3 split in the total visitation between the three canyons.) What are the impacts to fauna with not 1 million people, but 2 million, 3 million, or 4 million people annually?

32.20B

32.20C

32.21C

What are the quality standards used to measure these impacts? How and when will visitor satisfaction be viewed/evaluated? Businesses can seek patron input, but what about the visitor to the NF lands outside the ski areas; how are their opinions and sensibilities obtained? When and what opportunity will there be for written complaints; to whom and how will they be resoled? How are law enforcement encounters handled on the ground? What and when might they be needed in the transportation system, whether the gondola or the bus? Considering drugs, weapons, and mental instability; will Transportation Safety Administration (TSA) personnel be necessary? If so, how many, and where deployed? Specifically, for the gondola, where will operators be located, have the opportunity to take breaks, be housed, obtain meals, and have their sanitation needs met?

32.20B, 32.20A, 32.20C

32.2.6F

We know from experiences now, that despite traffic congestion and excessive travel times in the morning and evening, people STILL come into LCC for the beginning of the ski day. Many people have NOT altered their destination, nor alter their arrival or departure times to avoid delays. UDOT had a pilot program for LCC of pre-qualifying vehicles of residents and employees. This program allowed those individuals to present their vehicles pre-season and demonstrate they had traction control devices, either 4X4, snow tires, chains, or other devices to qualify for a windshield sticker to avoid waiting in the line at the entrance to the canyon. Did this effort work? Would adopting a traction control requirement for the entire winter improve the drive in LCC? Is it the "unexpected" snowfall that occurs when 2-wheel drive vehicles are traveling the canyon, having arrived when no snow was falling which are causing traffic accidents and congestion? Is the construction or heavy delivery vehicle traveling during peak periods slowing traffic flows; might they be restricted from traveling then?

32.2.2M

Why has tolling not been implemented? Why wait to implement the program as part of a $500+ million construction project? What is the social justice to charge when some people can not afford to ski so can not receive the ski area subsidy? How can the people who merely want to take nature photographs in the twilight or pre-dawn, take advantage of the system as envisioned? What about employees who must arrive to work before dawn or remain after dark; will the modes envisioned accommodate early morning and late night travel, or must these employees take their private vehicles because their schedules do not align with the majority of other users and the conveyance schedule? 32.2.4A, 32.2.2Y, 32.5A, 32.2.6.3N, 32.2.6.5N

When discussing tolling, the DEIS dos not include a toll amount, as it is said to be driven by travel demand. Is this an uncertainty that will lead to "smart" travel choices, or not? Is it a fair assumption that a $20/day toll "might " lead to 1200 skiers and about 550 vehicles no longer visiting the ski resorts? Could the system be tested now, prior to spending one-half a billion dollars? 32.2.4A, 32.2.2Y

UDOT does "not expect" tolling to cause "either roadway congestion or overcrowding at one resort." Might it lead to congestion and/or overcrowding at more than one resort? Are people making resort destination decisions based on travel, ticket price, snowfall, terrain, or other factors unrelated to transit? The DEIS proposal outlined in 20.4.6, applies a toll "only to areas above Snowbird Entry 1," … "in effect only during busy morning periods in the winter," visitors to trailheads in the lower canyon would not be affected. What is the plan for late afternoon traffic congestion? Vehicles leaving the Alta ski area are confronted with multiple delays. The "high-T" intersections installed at the Wildcat Lot, Snowbird Entries 4, 3, and 1, aid the flow of traffic primarily from the Snowbird resort. For every two vehicle leaving ASL's Albion parking lot, there will be 15 additional cars entering the traffic lanes between those vehicles, by the time those two vehicles are West of Snowbird Entry 1. 32.7C 32.20C 32.2.4A 32.7C

UDOT proposes working with UWCNF, should it implement a site fee for LCC such that the roadway toll and the site fee be a single winter fee for backcountry users. The envisioned system is for UDOT becoming a USFS concessionaire, by "paying a yearly fee for winter operations and maintenance of amenities at the recreation site of potentially constructing the amenities for the USDA Forest Service." There is no mention whether a bidding process would be required for others desiring to take that concession and the permit application period. As the 32.20S

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DEIS speaks to winter travel needs, no consideration is given to fall, spring or summer access issues. What is the effect on visitors in those seasons? Would there be a yearly non-winter fee to use the envisioned UDOT amenities for trailheads? How would all that interact with the Salt Lake City watershed provisions? 32.2.4A 32.20S 32.2.6.2.4H

The DEIS sites the Snowbird gondola station over the By-Pass Road, a 4-lane roadway including a bridge, east of a 13 story hotel and west of a 4-story parking garage, all operated by Snowbird Ski and Summer Resort. From that perspective and location, Tower 17 does NOT have a substantial impact. Snowbird presents as a resort setting infrastructure to support the resort's activities are not out of place,.That setting also has clear views of the tram and towers which Snowbird uses to transport people to Hidden Peak. It also has visual complexity with many high-rise hotels and lift infrastructure plus the attractions of the summer operations including a mountain coaster. Locating additional UDOT gondola towers and a station in over the Bypass Road in Snowbird might not seem to impact that resort setting.

Does the same conclusion apply for Tower 19, pictured below, along the Nature Trail in Alta? That tower is said to be 20-stories high, at 230 feet above the ground. That tower is not far from residences in Powder Ridge, residents along the By-Pass Road. Does this 32.17A, 32.4O

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location have the same or even similar "resort setting" as Tower 17, surrounded by resort infrastructure and a 4-lane roadway? Does the mere fact this locations positioned on a dirt, non-plowed "nature trail" suggest a more substantial impact compared to the Snowbird resort setting?

Similarly, although Tower 20 is proposed to be located in the ASL ski area, it is very close to the Alta Town park, which currently has picnic tables with built-in BBQ equipment, and a volleyball court. The proposed tower in that location, is *only* 10 stories tall. Was there consideration of the fact this tower site and terminus is in an area where school children in Alta, attending elementary school in the vicinity, recreate in that park location year-round? 32.4DD

In summary, I hope UDOT has a visitor capacity analysis done as an important precursor to any considerations or conclusions, including possibly major construction projects within LCC. Secondly, climate changes and future conditions need also to be evaluated and understood prior to making infrastructure suggestions, rather than relying on past conditions. Future winter Olympic events should not be considered in LCC for all of the safety reasons explored above and more, in the current DEIS. Finally, I believe a more thorough analysis is necessary for a proposed Final EIS, followed by an opportunity for the public to comment prior to a record of decision. 32.20B 32.2.2EE 32.29T

Sincerely,

Margaret Bourke
Resident, Alta Utah

Cc

Governor, Spencer Cox
Lt. Governor Deidre Henderson
Senator Kirk A. Cullimore
Senator Kathleen Riebe
Representative Gay Lynn Bennion
Salt Lake County Mayor Jenny Wilson
Salt Lake City Mayor Erin Mendenhall
USFS, Uinta Wasatch Cache National Forest: Acting Supervisor Chad Hudson
USFS, Salt Lake Ranger District, Ranger Bekee Hotze
Save our Canyons, Executive Director Carl Fischer

COMMENT #: 13320
DATE: 9/3/21 12:00 PM
SOURCE: Email
NAME: Mike Maughan

COMMENT:

August 12, 2021

Little Cottonwood Canyon EIS
c/o HDR
2825 E Cottonwood Parkway, Suite 200
Cottonwood Heights, UT 84121

RE: Alta Ski Area's comments regarding UDOT's preferred transportation alternatives presented in its Little Cottonwood Draft EIS.

Dear UDOT EIS Team,

First and foremost, thank you for your hard work on the monumental task of evaluating transportation alternatives for Little Cottonwood Canyon and selecting a preferred alternative. Alta Ski Area is supportive of any alternative that reduces traffic congestion and improves transportation in the canyon. We have reviewed the UDOT draft EIS and listened to or read many of the comments from individuals and entities regarding the draft EIS and offer the following comments for your consideration.

<u>Background</u>
Alta Ski Area is a year-round destination for more than 600,000 visitors annually and employs over 500 employees. Established in 1938, our visitors and employees have experienced a wide variety of travel conditions during the past 82 seasons. Personally, I have traveled the canyon 4-6 days a week, in a wide variety of conditions, for the past 32 years. Individually and collectively, we have seen and experienced the impact of snowfall, avalanches, mudslides, improperly equipped vehicles, and bus traffic in the canyon.

<u>Alta Ski Area Review</u>
Alta Ski Area recently completed a review of traffic flows (UDOT counts), average vehicle speeds (streetlight data), snowfall, temporary road closure data, parking counts and skier visitation levels for the 18-19 ski season to better understand traffic congestion issues and possible solutions in Little Cottonwood Canyon. The following was noted through our review process:

Weather
The primary cause of vehicle congestion and traffic delays related to Little Cottonwood Canyon is weather in the form of snowfall. Snowfall attracts more visitors to the canyon, often closes the mainline between Alta and Snowbird, reduces the traffic flow capacity of the road as it becomes slick and creates traffic backups due to closures for snow removal and avalanche mitigation work. 32.1.4D

Road Capacity
Our review indicated that days when the road surface is only wet or dry, 5,000 – 6,000 vehicles per day have moved up and down the canyon with little congestion or delay. There were 42 days during the 18-19 ski season when more than 5,000 vehicles were in the canyon (an average of 5,815 vehicles per day). Our review showed the following:

- Uphill average traffic flows were 659 vehicles (11.3 %) between 7 and 8 am, 1,012 vehicles (17.4%) between 8 and 9 am, 882 vehicles (15.2%) between 9 and 10 am and 613 vehicles (10.5%) between 10 and 11 am resulting in 54.4% of the daily uphill traffic traveling up the canyon between 7 and 11 am.

- Downhill average traffic flows were 699 vehicles (12%) between 2 and 3 pm, 963 vehicles (17%) between 3 and 4 pm, 1005 vehicles (17%) between 4 and 5 pm and 741 vehicles (13%) between 5 and 6 pm resulting in 59% of the downhill traffic traveling down the canyon between 2 and 6 pm.

Our review showed that that the current canyon road can effectively move approximately 1,000 vehicles per hour when the road is not slick and it is not snowing. Streetlight data analysis 32.1.4D
indicates average travel speeds are 35-38 mph between Entry 1 of Snowbird and the mouth of the Canyon when traffic flows are 1,000 vehicles per hour or more. At 35-38 mph it takes 12-13 minutes to travel from the Snowbird Entry 1 to the mouth of the Canyon. 32.1.4D

Streetlight data overlaid on UDOT traffic counts, skier area visitation numbers, weather and road closure data shows that only a few days of the 42 days in our analysis had significant congestion or traffic delay. The vast majority of significant congestion or delays days occurred on when vehicle traffic in the canyon was less than 4,000 vehicles and was associated with significant snowfall or road closures. Weather is clearly the primary source of traffic congestion and delays in the canyon. 32.7A 32.1.4F

Snowfall & Traction Equipment Impact
Snowfall in the canyon coupled with vehicles lacking proper traction equipment reduces the traffic flow capacity of the road resulting in congestion and delays. Our review showed that there were 28 days during the 2018-2019 ski season when 3 or more inches of snow fell during the day. During those 28 days an average of 3,775 vehicles per day were in the canyon and average peak down canyon traffic flow was reduced to 602 vehicles per hour.

Streetlight data showed it is not uncommon for snowfall to reduce the safe traveling speed of vehicles with good traction devices to 25 mph or less. At 25 mph the traffic flow capacity is reduced to approximately 725 vehicles per hour and travel time increased from 12-13 minutes to 20-25 minutes.

During storm periods traffic can only move as fast as the slowest vehicle and it is not uncommon to have vehicles lacking proper traction equipment traveling 10 mph or less down the canyon. At 10 mph traffic flow capacity is reduced to 300 vehicles per hour or less and travel time increases to 45-50 minutes.

Our review confirmed that the traffic flow capacity of the canyon road is often reduced by more than 50% during storm cycles when the road is slick and vehicles without proper traction devices are in the canyon. This is without taking into consideration the impact of vehicles with improper traction devices sliding off the road, getting stuck or in accidents, or the delay time of vehicles waiting in parking lots to access the canyon road.

It appears the current EIS draft has not identified this issue nor suggested solutions to address it. 32.2.2M
The math suggests removal of vehicles with improper traction devices from the canyon would reduce congestion and delays during storm periods more than removing 30% of the vehicles from the canyon.

For example, it takes approximately 2.85 hours to move 2,000 cars out of the canyon with proper traction devices moving at an average speed of 25 mph during a storm period. Whereas, it would take 4.67 hours to move 1,400 cars (30% less) without proper traction devices moving at an average speed of 10 mph. It appears that one of the most significant things we could do now to reduce congestion and delays in the canyon would be to limit Little Cottonwood Canyon to vehicles with proper traction devices during the winter months. Please include this issue and potential solutions in the final EIS.

Superior Peak (Mainline) Road Closure Impact

Our review also indicated that traffic flows down the canyon from the Town of Alta are also reduced when the road under Superior Peak (mainline) is closed for public safety purposes and all traffic exiting Alta is required to use the Bypass road. The Bypass road is a much steeper road that is problematic when it is snowing and also congests traffic by allowing more merge points 32.2.2TT
from Snowbird traffic delaying the Alta traffic's exit from the Canyon.

The UDOT draft EIS does not appear to identify this issue or its impact on traffic congestion and delays. Installation of Remote Avalanche Control devices (RACs) in this area may allow avalanche mitigation work to be done during the day to keep the mainline open during peak travel times. Please consider inclusion of RACs in this area in the EIS alternatives to reduce the congestion and delays created by requiring all Alta traffic to exit via the Bypass road.

Merging of Alta & Snowbird Traffic

Our review and experience indicated traffic exiting the Town of Alta is often delayed by traffic exiting Snowbird (particularly when it is snowing), when the road is slick or has been closed for avalanche mitigation. Roadside parking and multiple entry points onto the State Road at Snowbird can result in up to 10 cars from Snowbird traveling down the canyon for every one car 32.2.2UU
from Alta until the Snowbird parking areas are empty. It has not been uncommon for 85% of

the vehicles parked at Snowbird to have merged onto the State Road and be below Entry 1 before 20% of the vehicles parked at Alta can exit Alta and be below Entry 1. When the traffic is congested due to weather, the commute for Alta visitors down the canyon is often an hour or more longer than for Snowbird visitors due to the merging of the Snowbird traffic onto the State Road.

The UDOT draft EIS has not addressed the impact of the number of traffic merge points at Snowbird onto the State Road and its impact on traffic congestion. Please include this issue in the final EIS and possible solutions such as signaling, a dedicated lane for Alta downhill traffic and keeping the mainline open.

Avalanche Mitigation Work

A common consequence of weather is closure of the road to perform avalanche mitigation work or for public safety. When it snows and the road is closed, traffic congestion develops on the traffic corridors and in the neighborhoods near the mouth of the canyon or at the ski areas as skiers queue up for the chance to ski the Greatest Snow on Earth. 32.2.2VV

Our review indicated that the road was closed at the mouth of the Canyon for avalanche mitigation work 12 days during the 18-19 ski season. Only two of those days had more than 5,000 vehicles in the canyon. These 12 days were the days the most congestion and delay occurred in the neighborhoods and arteries at the mouth of the canyon. Our review also showed that on road closure days the peak travel period for uphill traffic shifted from the 8 am to 9 am time period, to the 9 am to 10 am time period confirming traffic was queued up on the arteries and in the neighborhoods near the canyon.

The UDOT draft EIS does not address the impact that earlier completion of avalanche mitigation work would have on reducing congestion in the neighborhoods and arteries at the mouth of LCC nor suggest alternatives to complete the mitigation work earlier to reduce the congestion and delays. Please include this in the final EIS.

Currently, most avalanche mitigation work in the mid canyon and some withing the ski areas is done via a 105 Howitzer program. It is our understanding the Army plans to discontinue the Howitzer program by 2026. Does this apply to avalanche mitigation work to protect the highway? It appears that this issue has not been identified or addressed in the UDOT draft EIS. Can you please address this issue in the final EIS?

Other UDOT Draft EIS Observations and Comments

Tolling

The Draft EIS suggests tolling be included in the selected alternative to incentivize the use of public transportation. While tolling may encourage the use of public transportation it fails to effectively manage the limited supply of parking in the canyon. During the 20-21 ski season, there were 15 days when all the parking spaces in the Town of Alta were filled and hundreds of cars were turned away.

Tolling would not have discouraged people from driving a vehicle up the canyon and trying to find a parking spot when they were all occupied. Tolling is not an effective tool to manage traffic and parking when the available parking is limited. 32.2.4C

Alta Ski Area will be implementing a paid parking reservation system during peak periods for the 21-22 ski season to manage parking and traffic congestion. The paid reservation system will incentivize car pooling and the use of public transit, as well as, reduce or eliminate the number of vehicles traveling to Alta when parking is full. We believe this is a much better solution than tolling. We request the final EIS recognize that parking reservations systems implemented by the ski areas would more effectively manage traffic and parking, incentivize car pooling, and encourage the use of public transit than tolling. It would also shift the cost and management responsibility of this issue to the ski areas. 32.2.4D

Roadside Parking

Both alternatives in the UDOT draft EIS include the elimination of roadside parking at the ski areas and with ¼ mile of trailheads. While it was noted that roadside parking is the result of insufficient parking at the ski areas and trailheads, UDOT only proposed expansion of parking at trailheads outside of the ski areas on Forest Service lands. It seems a reasonable alternative associated with elimination of the roadside parking at the ski areas would be expansion of existing ski area parking areas. This alternative would improve public safety, reduce congestion, and allow roadside areas, particularly those through Snowbird to be used to alleviate traffic flow and merging issues. We request UDOT include recognition that roadside parking at the ski areas could be eliminated by allowing the ski areas to expand their current parking areas in the final EIS. 32.2.2WW

Snow Sheds

While Snow Sheds with an enhanced bus service may reduce the number of road closure days or length of time required for avalanche mitigation work, buses must still queue up wait until the road is open before they can begin to transport visitors up the canyon. The Gondola alternative allows a more consistent and reliable transportation alternative when the road is closed for avalanche mitigation work, avalanches, plowing, mudslides/rockslides, or accidents. This will reduce the amount of traffic queuing up in traffic corridors or neighborhoods while the road is closed. The Gondola alternative is also less impacted by avalanche mitigation work and snow removal and does not require avalanche sheds. We believe avalanche sheds can be removed from the Gondola alternative to reduce costs, as well as, encourage gondola ridership. 32.2.6.5Y

Alta Ski Area Recommendation

Of the two alternatives proposed in the UDOT draft EIS, Alta Ski Area believes the LaCaille Gondola alternative is a better long term transportation alternative than the enhanced bus alternative and we encourage UDOT to proceed with this alternative for the following reasons: 32.2.9D

Weather - Weather and slick roads are the primary factors that create traffic congestion and delays in Little Cottonwood Canyon. The Gondola alternative provides another transportation alternative that does not involve the road during weather events when we experience the most traffic congestion and traffic delays. While the bus alternative may reduce the number of vehicles in the canyon, buses are still subject to the road conditions and often contribute to or are the cause of 32.2.6.3P congestion in the canyon during storm periods. Buses would not be able to travel the canyon any faster than the slowest vehicle resulting in travel times greater than the gondola alternative during storm periods when traffic congestion and delays occur. The gondola alternative provides visitors, residents, and employees a transportation alternative that does not involve the road surface and can provide a more consistent travel time in the canyon. The carrying capacity per hour of the gondola alternative would be more consistent during storm periods than road based alternatives such as buses. 32.2.6.3P

Emergency Ingress and Egress - During the past two years we have experienced storms that have closed the road for several days due to avalanches and mudslides. During these closures, ingress and egress for emergencies have been restricted to helicopter service or via a snowcat, if conditions permit, which is often not the case. Fortunately, we have not had an ingress or egress emergency that has resulted in the loss of life during the past two years. The bus alternative does not improve the current ingress or egress issue when the road is closed, whereas the Gondola alternative provides an ingress and egress improvement which may save lives in an emergency. 32.2.6.5H

Environmental Impact - The environmental impact of the bus alternative which includes widening the state road, building resort transit centers and installing avalanche sheds and the use of buses that rely on fossils fuels is significantly greater than gondola stations and towers and a system powered by electricity. The Gondola alternative also has less impact on our watershed, wildlife and existing trails and trailheads in the canyon than the enhanced bus alternative. 32.2.6.5Y, 32.2.6.3E, 32.10A, 32.18A, 32.4A, 32.4B, 32.12A, 32.12B, 32.13A, 32.13C, 32.17A, 32.17B

Canyon Mobility - An analysis of the visitor patterns in Little Cottonwood Canyon via Streetlight Data for 2018, 2019 and 2020 indicates that 86-88% of the vehicles that enter Little Cottonwood Canyon annually travel to Alta or Snowbird. Only 12-14% of the vehicles entering the canyon stop at other locations in the canyon. While an enhanced bus service may provide more frequency for those visiting other locations in the canyon, the additional time required to stop at other locations will negatively impact bus ridership. Current surveys from ski area visitors indicate the more stops a bus has once it enters the canyon, the less likely they are to use bus service. The Gondola option will provide a direct transportation option to Alta and Snowbird for the vast majority of the canyon visitors. Under the Gondola option, the current bus service could be re-purposed to provide enhanced service to locations lower in the canyon at no additional cost making the canyon mobility of the Gondola option better than the enhanced bus option. 32.1.4D 32.2.6.3C, 32.2.6.3N

Visitor Experience - The experience one has using public transportation can impact the likelihood of its acceptance and use. The Gondola alternative provides more seating, a more scenic ride and more reliable transportation than the enhanced bus alternative. The indoor loading and unloading in the gondola alternative also better accommodates visitors with disabilities and may reduce slip and fall injuries encountered by individuals entering and exiting buses.

Operational Issues - One of the challenges of the current bus transit system in Little Cottonwood Canyon is the seasonality of visitation in the canyon. This seasonality requires UTA to significantly ramp up its service and employee base for the winter season which can be problematic. The enhanced bus alternative will magnify this issue and require more staff to support and operate buses than the Gondola alternative. The Gondola alternative seems less impacted by the seasonality of visitation in the canyon and is less costly to operate and maintain. 32.2.7C

Interim Solutions
Both of the proposed alternatives in the UDOT draft EIS will require at least 3-5 years or longer to design, fund, and implement. Alta Ski Area recommends UDOT implement the following interim solutions to address the current traffic congestion and delay issues: 32.29R

1. Since weather and slick road surfaces are the primary factors that result in traffic congestion, we strongly encourage UDOT implement the traction law in Little Cottonwood Canyon from November 1 to April 30 each year. Eliminating two-wheel drive vehicles without snow tires during the winter months would significantly reduce congestion and improve traffic flow in the canyon. Expansion of the current traction sticker program piloted in the canyon the past two season to all vehicles entering the canyon would significantly reduce congestion, accidents and slide offs when the road is slick. 32.2.2M

2. Reduce the avalanche mitigation work time frame and end canyon road closures earlier. Take measures to complete the avalanche mitigation work and snow removal earlier in the morning. Consider the purchase and installation of Remote Avalanche Control devices for the mid-canyon area to reduce the time required to complete avalanche mitigation work in the canyon. A regular canyon opening time of 7:30 am would reduce congestion at the mouth of the canyon. 32.2.2II

3. Provide an area for vehicles to queue up early mornings when waiting for the canyon road to open that does not interfere with traffic flows on the arteries near the mouth of the canyon. Consider using the road shoulder or a third lane from gate B to the canyon mouth, on North Little Cottonwood road to Wasatch Boulevard and on Little Cottonwood Road to Wasatch Boulevard as queue areas for vehicles waiting for the canyon to open. Use the park and ride lot at the mouth of the canyon as the queue up area for UTA buses only. 32.2.2OO

4. Minimize road closures under Superior Peak. Purchase and install Remote Avalanche Control devices in the Superior area to allow mitigation work to be done during the day to enable the mainline to be open during peak travel times. This would reduce congestion and delays created by all Alta traffic exiting via the Bypass road. 32.2.2TT

5. Request and allow the ski areas to replace current roadside parking through expansion of existing parking lots. Closure of the roadside parking will improve public safety and reduce traffic congestion. 32.2.2WW

6. Improve the traffic merge of Alta and Snowbird visitors. Consider an additional downhill lane for Alta traffic (this would be facilitated by the removal of roadside parking) or traffic signals that control the traffic flow out of Snowbird's merge points. 32.2.2UU

Alta Ski Area requests these interim solutions be considered and addressed in UDOT's final EIS. We believe they can reduce congestion and delays while a longer term alternatives are implemented. We strongly encourage UDOT to refine and move forward these interim solutions. 32.29R

Thank you for considering our comments.

Sincerely,

Michael R Maughan
President and General Manager
Alta Ski Area

COMMENT #: 13321
DATE: 9/3/21 12:02 PM
SOURCE: Website
NAME: Jason Keith

COMMENT:

Little Cottonwood Canyon EIS
Utah Department of Transportation
c/o HDR
2825 E Cottonwood Parkway, Suite 200
Cottonwood Heights, UT 84|121

RE: American Mountain Guides Association Comments to Little Cottonwood Canyon Draft Environmental Impact Statement

UDOT Planners,

The American Mountain Guides Association (AMGA) welcomes this opportunity to submit comments to the Little Cottonwood Canyon (LCC) Environmental Impact Statement (EIS). In 2018 the Utah Department of Transportation (UDOT)-in partnership with Utah Transit Authority (UTA) and the U.S. Department of Agriculture Forest Service-began an EIS for LCC to provide an "integrated transportation system that improves the reliability, mobility and safety for residents, visitors, and commuters who use S.R. 210."

UDOT has identified two preferred alternatives in the Draft EIS: 1) the Enhanced Bus Service in Peak-Period Shoulder Lane, and 2) and the Gondola Alternative. AMGA opposes both preferred alternatives as they fail to address the transportation needs of all "users throughout the canyon, in particular dispersed recreational users. **(32.2.9C, 32.2.9D, 32.1.2B, 32.1.2D, 32.2.7A, 32.7B, and 32.7C)** Furthermore, the roadway widening included in the enhanced bus alternative requires the destruction of climbing resources and eliminates precious parking opportunities, while the gondola proposal would create unacceptable visual and noise impacts throughout the canyon negatively impacting the natural experience. Fundamentally, the EIS lacks any meaningful analysis regarding impacts to dispersed recreational users presented by UDOT's alternatives. **(32.4A, 32.4B, 32.4I, 32.11D, 32.17A, and 32.17B)**

American Mountain Guides Association

The American Mountain Guides Association is a 501(c)(3) educational non-profit organization that provides training and certification for climbing instructors, mountain guides, and ski guides throughout the United States. Founded in 1979, the AMGA has trained over 13,000 climbing and skiing guides who provide outdoor experiences for the general public that emphasize safety, stewardship, and education. As the American representative to the International Federation of Mountain Guide Associations (IFMGA), the AMGA institutes international standards for the mountain guiding profession in the United States and serves as an educational body for land managers, guide services, outdoor clubs, and other recreation stakeholders. The advocacy arm of the AMGA supports sustainable use of public lands, facilitates stewardship projects, and works in cooperation with guides and land managers to promote best practices and preserve access to areas utilized by the guided public.

UDOT proposes two highly destructive proposals to mitigate traffic problems in Little Cottonwood Canyon-the most popular climbing destination in the Wasatch Mountains which also has a long tradition as a training ground for Salt Lake climbers and mountain guides. Climbing guides and guide companies that are permitted in Little Cottonwood Canyon-either on private or US Forest Service lands-include:

Utah Mountain Adventures, Red River Adventures, The Mountain Guides, Prival, Backcountry Pros, Aspect Adventures, Wasatch Mountain Guides, and Inspired Summit Adventures.

COMMENTS

AMGA believes that UDOT's transportation proposals will cause unacceptable impacts to Little Cottonwood Canyon because both the gondola and lane expansion proposals would destroy highly popular climbing areas while negatively impacting the natural experience at many others. Both of UDOT's preferred alternatives threaten classic and historic climbing areas throughout Little Cottonwood Canyon including at least 64 boulders and 273 boulder problems. The high degree of physical impacts proposed by these alternatives should be considered only after lesser destructive alternatives are analyzed in detail. The climbing community and local climbing guides have invested considerable time, energy, and resources into maintaining public access to areas in the planning area, such as Gate Buttress and its parking area. These efforts have included significant public outreach and the formation of mutually-beneficial partnerships with stakeholders such as The Church of Jesus Christ of Latter-day Saints. The UDOT proposals would significantly reduce parking, damage the climbing resource, and impact access trails in precisely the locations where the climbing community and other stakeholders have invested so much effort to preserve public access. **(32.4A, 32.4B, 32.4I, 32.4G, 32.4N, and 32.4P)**

Further, UDOT's transportation proposals appear to cater solely to the ski areas at the top of the canyon while ignoring impacts to year-round dispersed recreation access throughout all of Little Cottonwood Canyon. **(32.1.2B, 32.1.2C, 32.1.2D, 32.2.7A, 32.7B, and 32.7C)** Both UDOT proposals would significantly reduce parking for dispersed recreation throughout the canyon, including areas highly frequented by climbing guides and their clients. **(32.4A, 32.4B, and 32.4P)** UDOT's proposed parking lot "improvements" would severely limit access to the most popular climbing in the canyon by dramatically reducing the already limited parking currently available at the Gate Buttress, Grit Mill, and at the lower Little Cottonwood Park and Ride. The EIS should consider the needs of dispersed recreation users, including their transportation options such as maintaining the level of year-round parking options. **(32.4N and 32.4P)**

UDOT's limited range of alternatives fails to meet the purpose of this project which seeks to "deliver transportation options that meet the needs of the community while preserving the value of the Wasatch Mountains." Indeed, the preferred alternatives ignore the needs of the dispersed recreation " "community-including mountain guides and their clients-while permanently degrading the value of Little Cottonwood Canyon by developing industrial transportation infrastructure. **(32.1.2D and 32.4I)** Instead, we urge UDOT to develop a new alternative centered on expanded bus service combined with other traffic mitigation strategies such as tolling, while also preserving the parking needs of dispersed recreational users throughout the canyon. **(32.2.9A and 32.2.4A)**

Alternatives such as UDOT's preferred alternatives cause a high degree of permanent physical impacts should be pursued only after less impactful alternatives have been developed. **(32.2.2PP and 32.29R)** UDOT must find a new alternative that considers the needs of the dispersed recreation community before it permanently scars the historic and highly valued climbing resources in Little Cottonwood Canyon.

Sincerely,

Jason Keith
Senior Policy Advisor
American Mountain Guides Association

EMAIL

September 3, 2021 12:08PM

UDOT planners:

Please find attached comments to the UDOT Little Cottonwood Canyon EIS from the American Mountain Guides Association, a 501(c)(3) educational non-profit organization that provides training and certification for climbing instructors, mountain guides, and ski guides throughout the United States.

Please feel free to contact me directly with any questions or comments that you may have about AMGA's comment letter.

Sincerely,

Jason Keith
American Mountain Guides Association
https://amga.com
September 3, 2021

American Mountain Guides Association
4720 Walnut Street, Suite 200
Boulder, CO 80301
(P) 303.271.0984 | (F) 720.336.3663
www.amga.com | info@amga.com

September 3, 2021

Little Cottonwood Canyon EIS
Utah Department of Transportation
c/o HDR
2825 E Cottonwood Parkway, Suite 200
Cottonwood Heights, UT 84121

RE: American Mountain Guides Association Comments to Little Cottonwood Canyon Draft Environmental Impact Statement

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Responses to this letter are provided in the email comment above, which is identifical to the letter.

UDOT proposes two highly destructive proposals to mitigate traffic problems in Little Cottonwood Canyon—the most popular climbing destination in the Wasatch Mountains which also has a long tradition as a training ground for Salt Lake climbers and mountain guides. Climbing guides and guide companies that are permitted in Little Cottonwood Canyon—either on private or US Forest Service lands—include: Utah Mountain Adventures, Red River Adventures, The Mountain Guides, Prival, Backcountry Pros, Aspect Adventures, Wasatch Mountain Guides, and Inspired Summit Adventures.

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Further, UDOT's transportation proposals appear to cater solely to the ski areas at the top of the canyon while ignoring impacts to year-round dispersed recreation access throughout all of Little Cottonwood Canyon. Both UDOT proposals would significantly reduce parking for dispersed recreation throughout the canyon, including areas highly frequented by climbing guides and their clients. UDOT's proposed parking lot "improvements" would severely limit access to the most popular climbing in the canyon by dramatically reducing the already limited parking currently available at the Gate Buttress, Grit Mill, and at the lower Little Cottonwood Park and Ride. The EIS should consider the needs of dispersed recreation users, including their transportation options such as maintaining the level of year-round parking options.

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*   *   *

AMGA | Boulder, CO | 80301 | 303.271.0984 | www.amga.com | info@amga.com

Alternatives such as UDOT's preferred alternatives cause a high degree of permanent physical impacts should be pursued only after less impactful alternatives have been developed. UDOT must find a new alternative that considers the needs of the dispersed recreation community before it permanently scars the historic and highly valued climbing resources in Little Cottonwood Canyon.

Sincerely,

Jason Keith
Senior Policy Advisor
American Mountain Guides Association

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