

Traffic Memorandum

To: City of Steamboat Springs
Engineering Department
Attn: Ben Beall
136 10th Street
Steamboat Springs, CO 80477

From: Kari J. McDowell Schroeder, PE, PTOE

Date: December 3, 2021

Re: **Steamboat Resort**
Wild Blue Gondola
Traffic Study Waiver Request

Purpose:

The Alterra Mountain Company is undergoing a plan to construct a new gondola, the Wild Blue Gondola, in two phases. Stage 1 of the Wild Blue Gondola is planned for construction in Year 2022. Stage 1 will run from the Base area to mid-mountain. Stage 2 will extend the Wild Blue Gondola from mid-mountain to the top. Stage 2 is planned for construction in Year 2023.

Comfortable Carrying Capacity and Trip Generation:

The additional resort capacity for the proposed expansion is most accurately calculated in the *Steamboat Resort 2019 Master Development Plan Amendment (MDPA²)*. The Comfortable Carrying Capacity (CCC) represents the guest population at the resort, to which all ski resort functions are balanced. This is not the maximum level of visitation, but the number of visitors that can be comfortably accommodated on a daily basis. Design capacity is typically equated to a resort's fifth or tenth busiest day, and a peak-day visitation at most resorts is at least 10 percent higher than the design capacity.¹

The *MDPA*'s² CCC calculation is based upon a variety of factors.

- Supply of Vertical Transport
- Demand for Vertical Transport
- Time Spent in Lift Line

Per the *MDPA*², "The accurate estimation of the CCC of a mountain is a complex issue and is the single-most important planning criterion for the resort. Related skier service facilities, including base lodge seating, mountain restaurant requirements, restrooms, parking, and other guest services are planned around the proper identification of the mountain's true capacity."

Therefore, a comparison of the current 2019 CCC (and traffic volumes at the resort) and the anticipated CCC with the proposed expansion gives the best forecast of future traffic to be generated by the resort. The *MDPA*² identified a CCC of 13,050 visitors per day in Year 2019.



Phased Improvements Associated with the Wild Blue Gondola

2021/2022 Season: With the removal of the Priest Creek lift for the 2021/2022 season, the resort's current Year 2019 CCC is anticipated to decrease by 3.30%.

2022/2023 Season: For the 2022/2023 season, the resort anticipates relocating three carpets from the base area to Green Horn Ranch, addition additional carpets at Green Horn Ranch, removing the Easy Rider and Priest Creek lifts, adding a Rough Rider lift at Green Horn Ranch, and constructing Stage 1 of the Wild Blue Gondola. This results in a 2.15% increase in the Year 2019 CCC.

2023/2024 Season: For the 2023/2024 season, the resort anticipates adding a Pioneer Ridge II lift and constructing Stage 2 of the Wild Blue Gondola. This results in an 8.89% increase in the Year 2019 CCC.

With the planned projects through Year 2023, Steamboat has identified a planned increase of the resort's CCC to 14,210 visitors per day. This equates to an 8.89% increase over the Year 2019 CCC. Steamboat's phased CCC matrix is included in the as an attachment.

The anticipated increase in CCC was directly correlated to the Year 2019 traffic volumes in the study area. Therefore, to forecast the anticipated traffic increase associated with the increased carrying capacity, Year 2019 traffic volumes were increased by 8.89% to forecast Year 2024 traffic volumes.

Per Table 1 of the *Steamboat Comprehensive Transportation Impact Analysis*¹, the Wild Blue Gondola expansion is anticipated to add 1,380 vehicle trips per day (vpd) to the roadway network. This includes 110 trips in the morning peak hour (vph) and 138vph in the evening peak hour. Table 1 is included as an attachment for reference.

In practice, the traffic increase associated with the resort expansion is not likely fully realized until the increase in lodging and other amenities to support the additional visitors is added. Steamboat believes that new visitors will primarily be destination guests that will arrive in a single vehicle or via air travel and rely on more transit and walking. Therefore, the mode split assumptions based upon current data are likely conservative for these new visitors.

Recommendations:

The construction of the phased improvements associated with the Wild Blue Gondola will impact several study area intersections.

Intersection #1 - Mt. Werner Circle and Après Ski Way: No modifications are required.

Intersection #2 - Mt. Werner Circle and Ski Time Square Drive: No modifications are required.

Intersection #3 - Mt. Werner Road and Mt. Werner Circle: This intersection currently is experiencing long southbound left delays and requires mitigation. This intersection has been identified and included in URAAC's future project list. The current

operational deficiency is not caused by the future traffic associated with the Wild Blue Gondola construction.

With the additional traffic anticipated from the Wild Blue Gondola improvements, the delay is anticipated to increase slightly.

As identified in the *Steamboat Comprehensive Transportation Impact Analysis*¹, an interim solution may be to improve the auxiliary turn lanes at this intersection. For the long-term condition, a roundabout would improve overall operations and reduce delay.

Intersection #4 - Mt. Werner Road and Steamboat Boulevard: No modifications are required.

Intersection #5 - Mt. Werner Road and Pine Grove Road: No modifications are required.

Intersection #6 – JD Hays Way and US 40: Section 2.6(3) of the *State Highway Access Code*³ requires a new access permit when there is a land use change and/or an access's volume is anticipated to increase by more than twenty percent (20%). Existing traffic data from the intersection of JD Hays Way and S. Lincoln Ave (US 40) was compared to the forecasted Year 2024 traffic volume. This project is not anticipated to meet the 20% threshold and therefore does not require a new State Highway Access Permit at JD Hays Way.

Parking Demand Management: The applicant addressed the parking demand management in the *Environmental Impact Statement*⁴, associated *Record of Decision*⁵, *Environmental Assessment*⁶, and associated *Decision Notice*⁷. These documents were approved by the USDA Forest Service. The applicant will work towards implementing a Parking Demand Management Plan.

Conclusion:

The construction of the Wild Blue Gondola is accounted for and modeled in the *Steamboat Comprehensive Transportation Impact Analysis – Steamboat Resort Master Development Plan Amendment*¹ (*Comprehensive TIA*¹). No modifications from this analysis are anticipated. Specific infrastructure recommendations associated with the construction of the phased Wild Blue Gondola improvements are outlined above.

The *Comprehensive TIA*¹ has not been finalized and specific phasing of the needed mitigation associated with the Wild Blue Gondola application will be identified as the project moves through the permitting process.

Please call if you would like any additional information or have any questions regarding this matter.

Sincerely,
McDowell Engineering, LLC



Kari J. McDowell, PE, PTOE
Traffic Engineer

Enclosure:

1. Wild Blue Gondola Site Plan
2. Steamboat's Phased Comfortable Carrying Capacity Matrix
3. *Steamboat Comprehensive Transportation Impact Analysis'* Table 1 Project Trip Generation

Reference:

1. *Steamboat Comprehensive Transportation Impact Analysis – Steamboat Resort Master Development Plan Amendment*. McDowell Engineering, September 16, 2021.
2. *Steamboat Resort 2019 Master Development Plan Amendment (MDPA)*. SE Group, July 2019.
3. *State Highway Access Code*. State of Colorado, 2002.
4. *Steamboat Resort Final Environmental Impact Statement*. USDA Forest Service, May 2018.
5. *Steamboat Resort Final Environmental Impact Statement Record of Decision*. USDA Forest Service, September 2018.
6. *Steamboat Resort Improvements Project and Project-Specific Forest Plan Amendment Environmental Assessment*. USDA Forest Service, April 2021.
7. *Steamboat Resort Improvements Project and Project-Specific Forest Plan Amendment Decision Notice*. USDA Forest Service, July 2021.

이전부터 1000년 이상을 이어온 우리 민족의 전통 문화유산인 한글은 2017년 유네스코 세계문화유산으로 등재되었습니다. 한글은 2017년 10월 27일 유네스코 총회 제40차 회의에서 '세계문화유산'으로 등재되었습니다. 한글은 2017년 10월 27일 유네스코 총회 제40차 회의에서 '세계문화유산'으로 등재되었습니다.



Steamboat Ski & Resort Corporation
9/3/2021

		Confortable Carrying Capacity						
Lift	Notes	2020/2021	+1 yr 2021/2022	+1 yr 2022/2023	+1 yr 2023/2024	+2 yrs 2025/2026	+2 yrs 2027/2028	+13 yrs 2040/2041
Bar-UE/C2	No change	420	420	420	420	420	420	420
Bashor/C2	removed when replaced by Bashor Bowl/C4	250	250	250	250	250	250	removed
Bashor Beginner/C	new carpet in GHR 2022 (1 of 5)	future	future	70	70	70	70	70
Bashor Bowl/C4	added when Bashor/C2 is removed	future	future	future	future	future	future	510
Buckaroo/C	remains in base area, not relocated as was shown in 2019 MDP	90	90	90	90	90	90	90
Burgess Creek/C3	No change	520	520	520	520	520	520	520
Christie III/C3	No change	430	430	430	430	430	430	430
Christie Peak Express/D6	No change	1,230	1,230	1,230	1,230	1,230	1,230	1,230
Desperado/C	relocated carpet from base area to GHR 2022 (2 of 5)	110	110	80	80	80	80	80
Easy Rider/C	Removed 2022	110	110	removed	removed	removed	removed	removed
Elkhead Express/D4	removed when replaced by Elkhead Express/D6	130	130	130	130	130	130	removed
Elkhead Express/D6	added when Elkhead express/D4 is removed	future	future	future	future	future	future	170
Four Points/C3	No change	520	520	520	520	520	520	520
Gondola	No change	2,100	2,100	2,100	2,100	2,100	2,100	2,100
Morning Side/C3	No change	450	450	450	450	450	450	450
Pioneer Ridge II/D4	added 2023	future	future	future	690	690	690	690
Pony Express/D4	change would be when additional chairs are added	450	450	450	450	450	450	610
Preview/C3	removed 2022	290	290	removed	removed	removed	removed	removed
Priest Creek/C2	removed 2021	430	removed	removed	removed	removed	removed	removed
Rough Rider/C4	added in GHR 2022	future	future	480	480	480	480	480
Rough Rider/S	relocated within GHR, not removing as was shown in the 2019 MDP	120	120	120	120	120	120	120
Sidewinder/C	new carpet in GHR 2022 (3 of 5)	future	future	70	70	70	70	70
South Peak/C3	removed when replaced by South Peak/D4	80	80	80	80	80	80	removed
South Peak/D4	added when South Peak/C3 is removed	future	future	future	future	future	future	110
Storm Peak Express/D4	No change	1,280	1,280	1,280	1,280	1,280	1,280	1,280
Sundance/C	relocated carpet from base area to GHR 2022 (4 of 5)	120	120	70	70	70	70	70
Sundown Express/D4	removed when replaced by Sundown Express/D6	1,250	1,250	1,250	1,250	1,250	1,250	removed
Sundown Express/D6	added when Sundown Express/D4 is removed	future	future	future	future	future	future	1,430
Sunshine Express/D4	No change	1,500	1,500	1,500	1,500	1,500	1,500	1,500
Sunshine II/D4	future lift in Sunshine area	future	future	future	future	future	future	1,230
Thunderhead Express/D4	removed when replaced by Thunderhead Express/D6	1,060	1,060	1,060	1,060	1,060	1,060	removed
Thunderhead Express/D6	added when Thunderhead Express/D4 is removed	future	future	future	future	future	future	1,410
Wild Blue Gond. Stage 1/G8	new gondola added 2022	future	future	550	550	550	550	550
Wild Blue Gond. Stage 2/G8	new gondola added 2023	future	future	future	190	190	190	190
Wrangler/C	relocated carpet from base area to GHR 2022 (5 of 5)	110	110	130	130	130	130	130
RESORT TOTAL		13,050	12,620	13,330	14,210	14,210	14,210	16,460
% increase over current			-3.30%	2.15%	8.89%	8.89%	8.89%	26.13%
Facility Additions								
Plaza Food Hall				operational	operational	operational	operational	operational
B Building (Coffee/Restaurant/Retail)					operational	operational	operational	operational
Front Door Building Retail					operational	operational	operational	operational
Greenhorn Ranch Ski School Sprung				operational	operational	operational	operational	operational

Table 1: Project Trip Generation

		ITE Trip Generation Equation ³					Average Weekday	Morning Peak Hour		Evening Peak Hour						
ITE Code		Units ²	Eq. Coef	Avg. Weekday	AM Peak Hour	PM Peak Hour	Trips (vpd)	% Trips	Trips (vph)	% Trips	Trips (vph)	% Trips	Trips (vph)			
Steamboat Base Village	Plaza Pavilion (Steamboat Base Village)															
	Proposed Land Use															
	#932 - High-Turnover (Sit Down) Restaurant 2nd Floor	12.9	kSF	Type a= b=	Rate 112.18	Rate 14.04	Rate 17.41	1,447	57%	103	43%	78	52%	117	48%	108
	On-Site Reduction	-30%					-434	-31		-23		-35		-32		
	Plaza Pavilion Proposed New Trips							1,013	72	55	82	76				
	Ticketing Building (Steamboat Base Village)															
	Proposed Land Use															
	#820 - Shopping Center	2.8	kSF	Type a= b=	Rate 37.75	A 2.76 77.28	B 0.72 3.02	106	54%	46	46%	39	50%	22	50%	22
	On-Site Reduction	-75%					-80	-35		-29		-17		-17		
	Ticketing Building Proposed New Trips							26	11	10	5	5				
	Building B (Steamboat Base Village)															
	Proposed Land Use															
	#712 - Small Office Building - Ground Floor	2.5	ksf	Type a= b=	Rate 16.19	Rate 3.26	Rate 3.73	40	60%	5	40%	4	46%	5	54%	6
	On-Site Reduction	-75%						-30	-4		-3		-4		-5	
	#932- High Turn-Over (Sit Down) Restaurant	7.5	ksf	Type a= b=	Rate 112.18	Rate 14.04	Rate 17.41	841	57%	60	43%	45	52%	68	48%	63
	On-Site Reduction	-30%						-252	-18		-14		-20		-19	
	#495 - Recreational Community Center - Ice Rink	17	kSF GFA	Type a= b=	B 0.98 3.42	B 0.51 3.03	B 0.58 2.99	491	67%	59	33%	29	40%	41	60%	62
	On-Site Reduction	-75%						-368	-44		-22		-31		-47	
#820 - Shopping Center - 3rd Floor	1.6	kSF	Type a= b=	Rate 37.75	A 2.76 77.28	B 0.72 3.02	60	54%	44	46%	38	50%	14	50%	14	
On-Site Reduction	-50%						-30	-22		-19		-7		-7		
Building B Proposed New Trips							752	80	58	66	67					
Subtotal - Steamboat Base Village							1,791	163	123	153	148					
Greenhorn Ranch	Greenhorn Ranch															
	Proposed Land Use															
	#710 - General Office Building - Maintenance/Office	6.2	kSF	Type a= b=	B 0.97 2.50	B 0.88 1.06	Rate 1.42	72	88%	13	12%	2	18%	2	82%	8
	On-Site Reduction	0%					0	0	0	0	0					
	#932 - High-Turnover (Sit Down) Restaurant - 2nd Floor	7.0	kSF	Type a= b=	Rate 112.18	Rate 14.04	Rate 17.41	785	57%	56	43%	42	52%	63	48%	58
On-Site Reduction	-90%						-707	-50		-38		-57		-52		
Subtotal - Mid Mountain							150	19	6	8	14					
2024 Gondola &	Gondola and Terrain Expansion															
	Proposed Land Use															
	Gondola and Terrain Expansion (Short Term)	8.89%		% of Existing Base Village Traffic			1,380	61	49	69	69					
	On-Site Reduction	0%					0	0	0	0	0					
Subtotal - Gondola and Terrain Expansion							1,380	61	49	69	69					
2044 Gondola &	Gondola and Terrain Expansion															
	Proposed Land Use															
	Gondola and Terrain Expansion (Long Term)	26.13%		% of Existing Base Village Traffic			4,050	181	145	203	202					
	On-Site Reduction	0%					0	0	0	0	0					
Subtotal - Gondola and Terrain Expansion							4,050	181	145	203	202					
2024 Totals - Steamboat Base Village, Greenhorn Ranch, and Gondola & Terrain Expansion							3,321	243	178	230	231					
2044 Totals - Steamboat Base Village, Greenhorn Ranch, and Gondola & Terrain Expansion							5,991	363	274	364	364					

Notes:

¹ Values obtained from *Trip Generation, 10th Edition*, Institute of Transportation Engineers, 2017.

² DU = Dwelling Units, kSF = 1,000 Square Feet

³ Fitted curve equations from ITE Land Uses - Equation Type A is $T = a * X + b$, Equation Type B is $\ln(T) = a * \ln(X) + b$, Rate is $T = a * X$