

18.0
CUMULATIVE, GROWTH- INDUCING,
AND IRREVERSIBLE IMPACTS

18.0 CUMULATIVE, GROWTH-INDUCING, AND IRREVERSIBLE IMPACTS

18.1 CUMULATIVE IMPACTS

Section 15130(a) of the California Environmental Quality Act (CEQA) Guidelines requires a discussion of the cumulative impacts of a project “when the project’s incremental effect is cumulatively considerable.” Cumulatively considerable, as defined in Section 15065(c), “means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.”

CEQA Guidelines Section 15355 defines cumulative impact as “an impact which is created as a result of the combination of the project evaluated in the EIR together with other projects causing related impacts.” The CEQA Guidelines further state that “an EIR should not discuss impacts which do not result in part from the evaluated project.”

18.2 CUMULATIVE IMPACT APPROACH

The cumulative setting for the proposed project includes all past, present, and probable future development as identified in the Placer County General Plan Update EIR, the Martis Valley Community Plan EIR, the Town of Truckee General Plan Update EIR, the Nevada County General Plan Update EIR, and the Tahoe Regional Planning Agency (TRPA) Regional Plan Update EIS. In addition, **Table 18-1** below provides the status of large-scale development projects in eastern Placer County, including Truckee. This list of projects was utilized in the development and analysis of the cumulative settings for the project. Please note that this list is not intended to be an inclusive list of all projects in the region.

**TABLE 18-1
PROPOSED AND APPROVED PROJECTS IN THE VICINITY OF THE PROPOSED PROJECT**

Project Title	Type	Dwelling Units	Total Nonresidential Square Footage	Location	Status
Martis Valley Regional Trail	Recreation	n/a	n/a	Martis Valley	Approved
Northstar Mountain Coaster	Commercial	n/a	n/a	Northstar	Approved, under appeal
California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project	Infrastructure	n/a	n/a	North Lake Tahoe and Truckee	Proposed
Martis Creek Lake and Dam Master Plan Update	Recreation	n/a	n/a	Martis Valley	Proposed
Tahoe Regional Planning Agency Regional Plan Update	Planning Document	n/a	n/a	Regional	Approved
Tahoe Basin Community Plan Update	Planning Document	n/a	n/a	Tahoe Basin	Proposed
Village at Squaw Valley Specific Plan	Commercial, Residential, Recreation	1,259	454,000	Squaw Valley	Proposed
Coldstream Specific Plan	Residential, Commercial, Open Space	345	70,000	Truckee	Proposed
Joerger Ranch Specific Plan	Residential, Commercial, Industrial, Office, Open Space	41	460,777	Truckee	Proposed
Canyon Springs	Residential	177, plus four parcels for affordable housing	n/a	Truckee	Proposed
Gregory Creek Subdivision	Residential	31	n/a	Truckee	Proposed
Truckee-Donner Recreation and Parks District Cultural Arts Center	Public	n/a	3,763	Truckee	Proposed
Pollard Station – A Senior Neighborhood	Residential	118	n/a	Truckee	Proposed
Truckee Springs	Residential, Commercial	5 single-family lots, and either 80 multi-family units or 120 hotel units	n/a	Truckee	Preplanning

Source: Town of Truckee 2013

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Significance thresholds, unless otherwise specified, are the same for cumulative impacts as project impacts for each environmental topic area described in Sections 4.0 through 16.0.

When considered in relation to other reasonably foreseeable projects, cumulative impacts to some resources would be significant and more severe than those caused by the proposed project alone. The proposed project could contribute to cumulative impacts to land use, population and housing, biological resources, cultural resources, visual resources, traffic and circulation, air quality, noise, geology and soils, hydrology and water quality, public services, and hazardous materials and hazards, which are discussed below.

18.2.1 CUMULATIVE LAND USE IMPACT

The project site is located within the Martis Valley Community Plan area in an unincorporated area of eastern Placer County, near Truckee. Eastern Placer County and Truckee are the setting for cumulative land use and forestry impacts for the proposed project. The cumulative development scenario for this area includes the proposed project as described in Section 3.0, Project Description, as well as consideration of the various regional and local land use plans and other development projects that have already been approved or are pending approval by the County, the Tahoe Regional Planning Agency, or the Town of Truckee, as identified in **Table 18-1**.

The project proposes the development of ski facilities in areas that are designated Timberland Production Zone (TPZ). In order to achieve consistency with this designation, the project proposes a Zoning Text Amendment to allow these facilities in areas currently designated TPZ and located within the boundaries of land owned and/or operated by existing ski resorts as of March 15, 2012, exclusive of land within the Lake Tahoe Basin boundary. With approval of the Zoning Text Amendment, the project would be consistent with all applicable land use plans. Also, as no other existing ski resort in Placer County contains TPZ lands within its boundaries, the proposed text amendment would in effect be limited to the project site, and no other TPZ land in the county would be affected.

Implementation of the proposed project would require the removal of trees in areas zoned TPZ and includes a Zoning Text Amendment to allow ski facilities within some TPZ-zoned areas, as discussed above. However, tree removal would occur in accordance with an approved Timber Harvesting Plan, and the area subject to the proposed Zoning Text Amendment would be managed in accordance with the Northstar Habitat Management Plan (HMP) to retain, improve, and enlarge these forested areas and would improve the area from existing conditions. The project would also not prohibit future utilization of the forest resources through conversion.

The County has not adopted a habitat conservation plan or a natural community conservation plan. The Northstar Habitat Management Plan (HMP) applies only to the project site. Therefore, there would be no cumulative impact related to conflicts with an adopted habitat conservation plan or natural community conservation plan.

The proposed project would expand existing recreational uses and would not result in any permanent land use conflicts. In addition, land use conflicts are site-specific and generally do not result in cumulative, regional impacts.

Therefore, the project impacts to land use would be **less than cumulative considerable**.

18.2.2 CUMULATIVE POPULATION, HOUSING, AND EMPLOYMENT IMPACT

The cumulative setting for population, housing, and employment includes existing land use conditions, future growth described in the various land use plans that apply to the project area, and the proposed and approved projects listed in **Table 18-1**.

The proposed project does not include any new residential uses but would increase resort employment. However, full project buildout is not expected for 20 years. Because this increase in employment would occur slowly over a long period, the project would not be considered a significant new employment center in the region. Also, given the unemployment rate in the region, it is anticipated that these positions would likely be filled by existing area workers. Therefore, it is not anticipated that the project would result in significant population growth.

The anticipated increase in resort employees would, however, contribute to a cumulative need for additional employee housing in the region. The proposed project, as well as all other development projects in the Sierra Nevada and Lake Tahoe areas of the county, would be required to provide housing for 50 percent of the employee housing demand (e.g., full-time equivalent employees) generated by the project. Compliance (through implementation of mitigation measure 5-3) with this policy would ensure that adequate housing is provided for employees in the region. Therefore, this impact would be **less than cumulatively considerable**.

18.2.3 CUMULATIVE BIOLOGICAL RESOURCES IMPACT

Cumulative Setting

Northstar and the surrounding area of Placer County as a whole must be considered for the purpose of evaluating land use conversion issues associated with biological resources on a cumulative level. In particular, this cumulative setting condition includes planned development under the current general plans and area plans of Nevada County, Placer County, the Town of Truckee, and the Tahoe Regional Planning Agency. These land uses and developments have the potential to adversely affect the biological resources in the region and could contribute to the loss of potential habitat in the region.

The implementation of project-related activities would contribute incrementally to the cumulative loss of native plant communities, wildlife habitat values, special-status species and their potential habitat, and wetland/aquatic resources in the region. On a cumulative level, the change in land uses will contribute to a loss of potential habitat for special-status species, including, but not limited to, rare plants, special-status mammals and birds, migratory birds, and raptors, that currently inhabit the area or could inhabit the area in the future. In addition to potential direct impacts on biological resources from project-related activities, the increased human presence would be anticipated to cause potential indirect impacts. These could disturb breeding and foraging behavior of wildlife. Another indirect impact would be stormwater runoff. Each project is required to participate in the National Pollutant Discharge Elimination System (NPDES) permit program for stormwater runoff, which effectively reduces water quality impacts to below a level of significance. Planned development in the region would also create new sources of light and glare. While project-specific measures would be undertaken to orient or shield lights to minimize illumination of adjacent lands, the combined effect of all new developments approved or planned in the area would create impacts associated with increased human presence.

Northstar has several biologically sensitive resources that could be impacted during future implementation of project-related activities. The mosaic of upland forest types provides suitable

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breeding habitat for a variety of species, including the northern goshawk and California spotted owl, as well as a variety of forest carnivore and herbivore species. Riparian and other aquatic habitats provide suitable breeding habitat for yellow warbler, willow flycatcher, and Sierra mountain beaver. In addition, wet meadows and riparian corridors throughout Northstar are utilized by mule deer during fawning season. Lastly, the on-site communities also provide breeding habitat for special-status plants, migratory birds, raptors, and a variety of other common flora and fauna.

Cumulative Impacts and Mitigation Measures

The vegetation communities/habitats within Northstar represent only a small portion of the communities/habitats available for special-status species in the region. However, implementation of the proposed project may result in degradation of habitat through a variety of actions which, when combined with other habitat impacts occurring from development within surrounding areas, would result in significant cumulative impacts. Future development in the vicinity of the project study area would have an unknown and unquantifiable impact on special-status species, biologically sensitive habitats, and potentially jurisdictional wetlands. Furthermore, increased development and disturbance created by human activities could result in direct mortality, habitat loss, and deterioration of habitat suitability. As project-related activities may contribute incrementally to these effects, the impact is considered **cumulatively considerable**.

Implementation of mitigation measures 6-1 through 6-10 described in Section 6.0, Biological Resources, in combination with the Northstar Habitat Management Plan, would offset the proposed project's contribution to cumulative biological resource impacts through avoidance and habitat preservation and enhancement and would reduce this impact to **less than cumulatively considerable**. Mitigation measure 6-9 would be especially effective by mitigating the loss of habitat at a 1:1 ratio and through the preservation and enhancement of Northstar Habitat Management Plan Management Zone E that would provide a large continuous habitat area.

18.2.4 CUMULATIVE CULTURAL RESOURCES IMPACT

Placer County is known to be rich in cultural and paleontological resources. While many prehistoric and historic sites and resources have been identified, the probability is high that these resources remain undiscovered and should be taken into consideration prior to any grading, excavation, or construction at a project site. The Placer County General Plan provides policies that are essential to protecting these and other resources from future development. The Placer County General Plan EIR concluded that the cumulative impact of development on these resources is potentially significant. It concludes that no feasible mitigation measures beyond the policies and programs included in the General Plan Policy Document are available that would reduce the possibility of occasional inadvertent exposure of historic, unique archaeological, or paleontological sites to a less than significant level.

Implementation of the proposed project, along with foreseeable development in the surrounding area, could result in the disturbance of cultural and paleontological resources (i.e., prehistoric sites, historic sites, and isolated artifacts and features) and human remains. This contribution is considered cumulatively considerable when combined with other past, present, and foreseeable development in the area. Implementation of mitigation measures 7-1 and 7-3 in Section 7.0, Cultural Resources, would offset the project's contribution to the loss of prehistoric, historical, and paleontological resources in the region through avoidance and mitigation of discovered resources. Therefore, cumulative impacts related to cultural and paleontologic resources would be reduced to a level that is **less than cumulatively considerable**.

18.2.5 CUMULATIVE VISUAL RESOURCES IMPACT

The cumulative setting for visual resources is the forested mountain area of the Martis Valley and surrounding areas that have views of this area including the Interstate 80 (I-80), State Route (SR) 267, SR 89, Donner Pass, and Pacific Crest Trail corridors.

As shown in the visual simulations provided in Section 8.0, Visual Resources, some of the proposed improvements would be visible from surrounding areas and roadways, including some of the proposed ski lifts and associated ski terrain. However, the project proposes several measures to blend the proposed improvements with the surrounding visual character, including the use of tree islands, varying trail widths, utilizing existing open areas, ski trail edge feathering, and the use of non-reflective building materials. In addition, the existing topography and vegetation of the area provide screening from surrounding vantage points. Implementation of mitigation measures 8-2 and 8-3 would require further measures to ensure those improvements anticipated to be visible from surrounding vantage points are adequately blended with the existing visual character. However, visual impacts from SR 89 in the northern portion of Truckee would remain significant. Additional activities in the Martis Valley (e.g., the proposed California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project) would further alter the visual character of this area.

Development in the cumulative setting area would be subject to the Northstar-at-Tahoe Design Guidelines provided in Section IV (Community Design) of the Martis Valley Community Plan as well as TRPA Code of Ordinances Chapters 36 (Design Standards) and 37 (Height). Compliance with these existing standards would reduce potential visual impacts.

Some of the proposed improvements would include lighting fixtures that could result in new sources of nighttime lighting. Therefore, in combination with other past, present, and probable future projects, the proposed project could contribute to a cumulative increase in nighttime lighting in the area. Implementation of mitigation measures 8-5a and 8-5b would address light and glare and would ensure that lighting fixtures are shielded, directed downward, mounted low, and provide the minimum amount of light needed for safety in order to minimize impacts to the night sky.

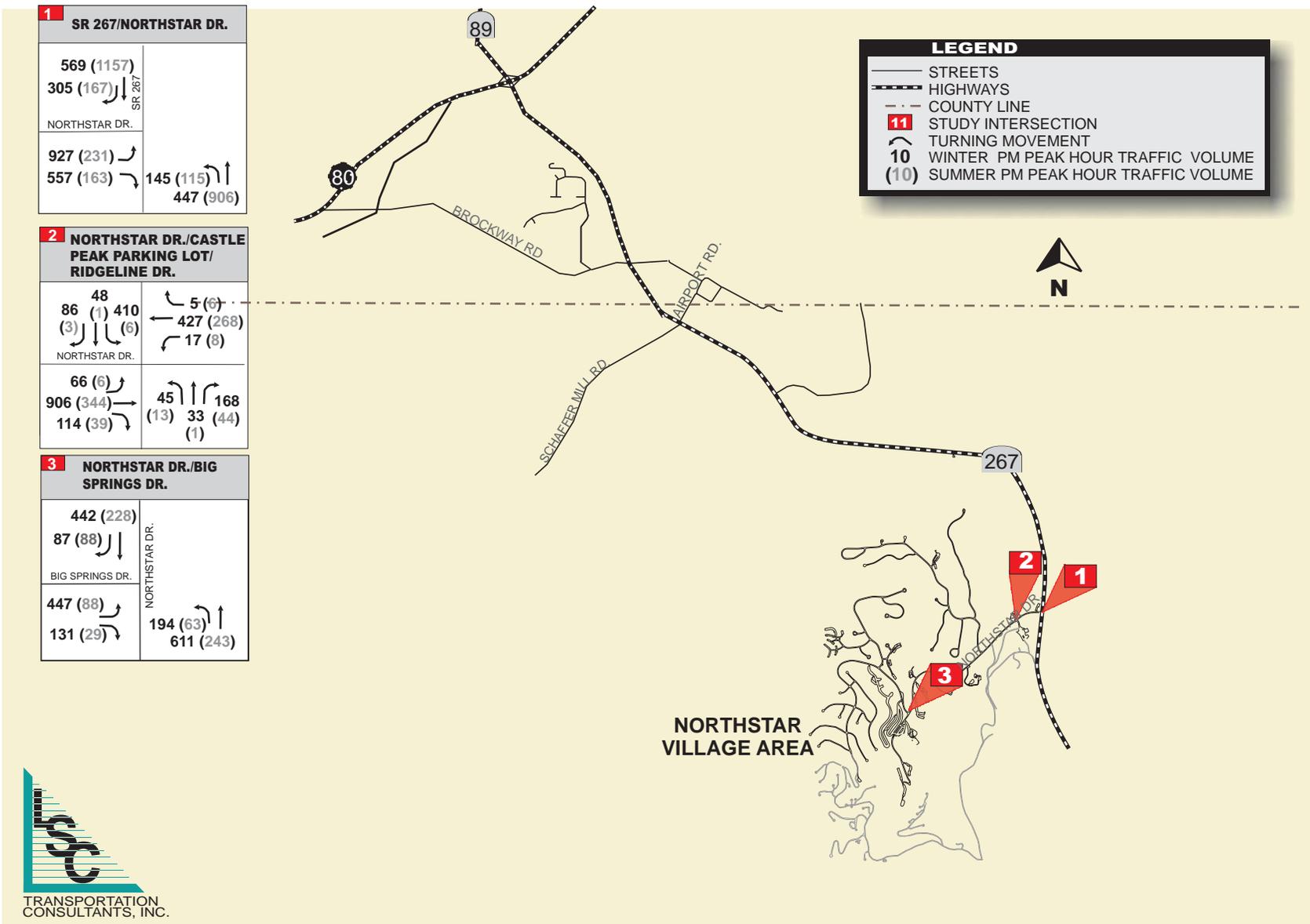
However, cumulative impacts to views of Martis Valley would remain **cumulatively considerable and significant and unavoidable**.

18.2.6 CUMULATIVE TRAFFIC AND CIRCULATION IMPACT

Future Winter Traffic Volumes

The future cumulative winter traffic volumes provided in the Northside Draft EIR (“future plus project” scenario) were used as the basis for developing the long-term future cumulative winter volumes for the Transportation Impact Analysis (TIA). However, those volumes were estimated based on the 2003 Martis Valley Community Plan. Subsequent to completion of the Northside EIR, changes were made to the approved land uses in the Martis Valley. Specifically, several individual projects were approved with generally reduced levels of use. It is therefore necessary to adjust the winter traffic volume forecasts based on those changes. The procedure for adjusting the volumes is provided on pages 21 and 23 the TIA (**Appendix 9**).

The resulting 2032 winter PM peak-hour intersection turning movement volumes without the proposed project are shown in **Figure 18-1**.



Source: LSC Transportation Consultants, Inc.

Figure 18-1
Long-Term (2032) Cumulative Winter and Summer
Intersection Volumes Without Project

Future Summer Traffic Volumes

Long-term future cumulative summer traffic volume forecasts are based on growth from the Town of Truckee's TransCAD traffic model. The Truckee TransCAD model provides forecasts of traffic conditions throughout the town as well as in the Martis Valley portion of Placer County. The model was most recently updated in 2009, and it reflects buildout of the Town's General Plan, buildout of the allowed land uses in the Martis Valley area, and growth in traffic passing through the area. In the Truckee TransCAD traffic model, buildout of the Truckee General Plan is conservatively assumed to occur by 2030. For this analysis, no further growth in traffic is assumed between 2030 and 2032. This growth was added to the existing traffic volumes. The resulting 2032 summer weekday PM peak-hour intersection turning movement volumes without the proposed project are shown in **Figure 18-1**.

Future Traffic Volumes with Project

Adding the project-level improvements turning movement volumes to the "2032 without project" intersection volumes yields the "2032 with Project-Level Project" volumes shown in **Figure 18-2**.

Future Cumulative Intersection Level of Service

Study intersections were evaluated to determine operational conditions under 2032 traffic volumes without the project. **Table 18-5** summarizes the results for future 2032 conditions.

Future Cumulative Roadway Segment Level of Service

Table 18-2 presents a comparison of future cumulative 2032 "no project" roadway volumes to the pertinent standards. The Average Daily Traffic (ADT) volumes for 2032 conditions were estimated using the same methodology as the 2012 volumes. As shown for 2032 conditions, the following study roadway segments are expected to exceed Caltrans' concept level of service (LOS D):

- SR 267 between Brockway Summit and Northstar Drive (summer and winter)
- SR 267 between Northstar Drive and Airport Road (summer and winter)
- SR 267 between Airport Road and Placer/Nevada County Line (summer and winter)

The following study segment would exceed the County's LOS thresholds:

- Northstar Drive between roundabout and Big Springs Drive (winter only)

**TABLE 18-2
CUMULATIVE (2032) ROADWAY SEGMENT LEVEL OF SERVICE WITHOUT PROJECT**

Roadway Study Segment		Jurisdiction	LOS Standard	Unit	Threshold Volume	Design Volume	Deficient?	Volume/ Capacity Ratio
Summer								
SR 267	Between Brockway Summit and Northstar Drive	Placer County/ Caltrans	D	ADT	11,400	26,220	Yes	2.30
SR 267	Between Northstar Drive and Airport Road/Schaffer Mill Road	Placer County/ Caltrans	D	ADT	15,500	27,560	Yes	1.78
SR 267	Between Airport Road/Schaffer Mill Road and Nevada County Line	Placer County/ Caltrans	D	ADT	15,500	31,720	Yes	2.05
SR 267	Between Nevada County Line and Brockway Road/Soaring Way	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,567	No	0.83
SR 267	Between Brockway Road/Soaring Way and I-80	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,330	No	0.70
Northstar Drive	Between SR 267 and Ridgeline Drive/Castle Peak Parking Lot	Placer County	D	ADT	24,300	7,500	No	0.31
Northstar Drive	Between Ridgeline Drive/Castle Peak Parking Lot and Big Springs Drive	Placer County	C	ADT	14,400	7,470	No	0.52

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Roadway Study Segment		Jurisdiction	LOS Standard	Unit	Threshold Volume	Design Volume	Deficient?	Volume/ Capacity Ratio
Winter								
SR 267	Between Brockway Summit and Northstar Drive	Placer County/ Caltrans	D	ADT	11,400	17,520	Yes	1.54
SR 267	Between Northstar Drive and Airport Road/Schaffer Mill Road	Placer County/ Caltrans	D	ADT	15,500	23,390	Yes	1.51
SR 267	Between Airport Road/Schaffer Mill Road and Nevada County Line	Placer County/ Caltrans	D	ADT	15,500	27,610	Yes	1.78
SR 267	Between Nevada County Line and Brockway Road/Soaring Way	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,653	No	0.87
SR 267	Between Brockway Road/Soaring Way and I-80	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,394	No	0.74
Northstar Drive	Between SR 267 and Ridgeline Drive/Castle Peak Parking Lot	Placer County	D	ADT	24,300	18,180	No	0.75
Northstar Drive	Between Ridgeline Drive/Castle Peak Parking Lot and Big Springs Drive	Placer County	C	ADT	14,400	15,470	Yes	1.07

Source: LSC Transportation Consultants 2013

Notes:

1. During peak periods, a three-lane cross section is assumed on Northstar Drive between SR 267 and the roundabout.

Methodology of Cumulative Traffic Impacts

Proposed Project Characteristics (Project- and Program-Level Improvements)

Under the cumulative scenario (2032), it is assumed that the proposed project- and program-level improvements would be implemented. Under the program-level improvements, a total of 107 additional full-time equivalent (FTE) employees are expected in the winter (69 project level plus 37 additional winter seasonal plus 1 additional year-round), and 8 additional FTE employees in the summer (4 project level plus 3 summer seasonal plus 1 additional year-round). A remote campground area would be located on the Backside, with access by snowcat in the winter and by van during the summer. No private vehicles would be used to access the site. The campground is anticipated to include group tents accommodating up to 50 guests. For the purposes of this analysis, the persons camping are assumed to arrive in the Northstar area by private auto. The vehicle occupancy for campground guests is assumed to be 3.47, based on the data from the TRPA regional travel model for visitor recreation trips. Over the course of a busy day, the entire group of 50 guests is assumed to depart and another group of 50 arrive. In addition, one additional service vehicle round trip to the Northstar area (such as a fuel or supply vehicle) is assumed to be associated with the remote campground.

The existing cross-country ski center would be relocated to the west of Sawmill Reservoir, and a proposed summer campground in the same area would include group tents to accommodate up to 50 guests. A new 20-space parking lot is programmed for this location. The traffic that currently accesses the existing cross-country ski center via Northstar Drive is expected to instead access the new cross-country ski center via Highland View Road. The relocated cross-country ski center is not expected to impact overall trip generation during the winter, as the relocation would not impact the number of skiers, and as the 20 spaces that would become available in the day skier parking lots are assumed to be occupied by the additional Northstar employees. As such, no notable increase in day skier capacity is expected. During the summer, the trip generation of the proposed campground would be similar to that of the remote campground, except one additional utility vehicle round-trip is assumed (such as a trash truck or utility truck).

Finally, the program-level improvements include the Castle Peak Parking Lot Transport Gondola, which would transport people from the Castle Peak parking area to the Village. Currently, persons who park at the Castle Peak parking area travel to/from the Village via shuttle bus. The shuttle bus service would remain, with additional transport being provided by the proposed gondola. With implementation of the transport gondola, the number of buses making runs along Northstar Drive over the course of a typical busy day may potentially be reduced. However, to remain conservative in this analysis, no reduction in traffic by the reduced number of shuttle bus trips is assumed.

The land use assumptions and resulting trip generation calculations are summarized in **Table 18-3**.

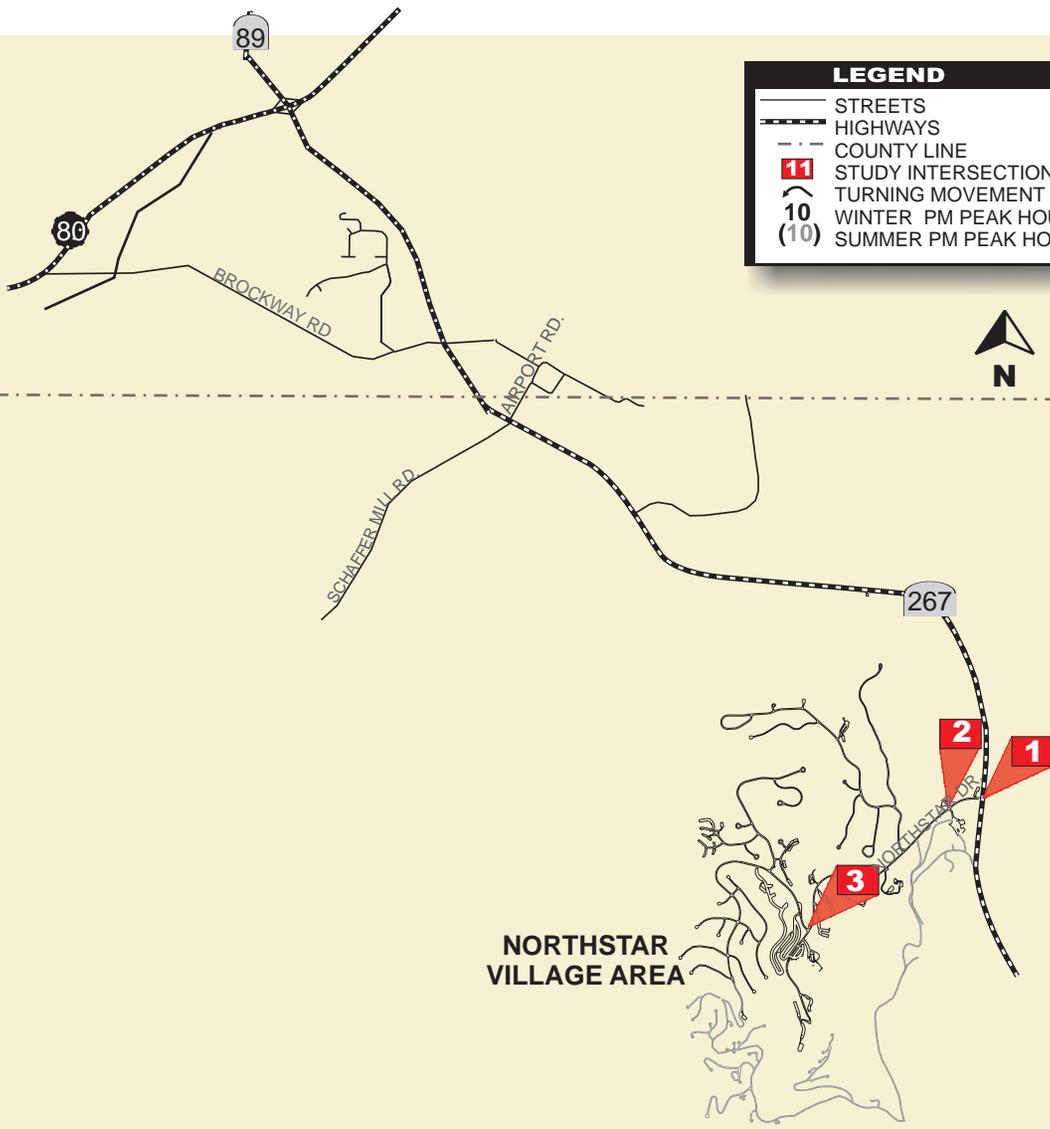
1 SR 267/NORTHSTAR DR.	
569 (1157)	SR 267
308 (168)	
NORTHSTAR DR.	
944 (232)	147 (116) ↑
566 (163)	

2 NORTHSTAR DR./CASTLE PEAK PARKING LOT/ RIDGELINE DR.	
48	← 5 (6)
86 (1) 410 (3)	
NORTHSTAR DR.	
66 (6)	45 ↑ 168 (13) 33 (44) (1)
932 (345) 114 (39)	

3 NORTHSTAR DR./BIG SPRINGS DR.	
447 (230)	NORTHSTAR DR.
87 (88)	
BIG SPRINGS DR.	
460 (88)	194 (63) ↑
131 (29)	

LEGEND

- STREETS
- HIGHWAYS
- - - COUNTY LINE
- 11 STUDY INTERSECTION
- (11) TURNING MOVEMENT
- 10 WINTER PM PEAK HOUR TRAFFIC VOLUME
- (10) SUMMER PM PEAK HOUR TRAFFIC VOLUME



Source: LSC Transportation Consultants, Inc.

Figure 18-2
 Long-Term (2032) Cumulative Winter and Summer
 Intersection Volumes with Project Level Improvements



**TABLE 18-3
LAND USE ASSUMPTIONS AND TRIP GENERATION ANALYSIS –
NMMP PROJECT- AND PROGRAM-LEVEL COMPONENTS**

Proposed Land Uses	Quantity	Unit	Trip Generation Rates ¹				Percentage Reduction for Non-Auto Modes	One-Way Vehicle Trips				
			Daily	PM Peak Hour				Daily	PM Peak Hour			
				In	Out	Total			In	Out	Total	
Winter												
Remote Campground at Mountain Top	50	Guests	N/A				0%	31	2	8	10	
Additional Employees	112	Employees ¹	1.82	0.05	0.45	0.50	25%	153	4	38	42	
Additional Public Services	4	Vehicles	2.00	0.67	0.67	1.34	0%	8	3	2	5	
Subtotal – Winter Program-Level Added Trips								192	9	48	57	
Summer												
Campground at Relocated Cross-Country Center	50	Guests	N/A				0%	33	6	2	8	
Remote Campground at Mountain Top	50	Guests	N/A				0%	31	2	8	10	
Additional Employees	8	Employees ³	3.32	0.08	0.38	0.46	3%	26	1	3	4	
Additional Public Services	2	Vehicles	2.00	0.67	0.67	1.34	0%	4	1	2	3	
Total Summer Program-Level								94	10	15	25	

Source: LSC Transportation Consultants 2013

Notes:

1. Winter employees are estimated to generate one daily round trip with a vehicle occupancy of 1.1 employees per vehicle, and half of employees will generate one trip during the PM peak hour.
2. The reduction in bus trips to/from the Castle Peak lot is due to the potential gondola.
3. The trip generation rate for summer employees is based on the Institute of Transportation Engineers (ITE) Trip Generation, 8th Edition (2008) manual, "General Office" land use.

Trip Generation

The program-level improvements are expected to generate a higher level of trips than the project level, given that there would be additional employees and group camping areas. Conversely, implementation of the Castle Peak transport gondola could potentially result in a reduction in private automobile travel along Northstar Drive between the Castle Peak parking area and Northstar Village. The walk distance from the existing bus drop zone to the base lift area is roughly 750 feet. In comparison, the walk distance from the proposed gondola to the base lift area is about 340 feet, or less than half the distance than from the bus drop zone. The gondola could therefore be a more attractive option to some drivers who currently park in the Village parking lots, as it would eliminate their additional drive time along Northstar Drive to the Village lots and their time spent waiting for a shuttle in the Village lot or walking to the base lift area. As it would increase the attractiveness of the Castle Peak parking area, this would increase the volume of traffic entering the Castle Peak lots prior to the time when the Village lots are full, resulting in lower-peak-hour volumes along Northstar Drive on busy days. This would be a beneficial impact associated with the gondola.

The program-level improvements are expected to result in an increase of up to approximately 192 daily one-way vehicle trips on a busy winter day, of which 57 (9 inbound and 48 outbound) would occur during the PM peak hour of skier-related traffic activity. On a busy summer day, the program-level development would result in an increase of approximately 94 daily one-way vehicle trips, of which 25 (10 inbound and 15 outbound) would occur during the PM peak hour. Note that these figures do not reflect the potential reduction in private automobile and shuttle bus travel along Northstar Drive between the Castle Peak parking area and the Village, as detailed information regarding the transport gondola operations is not available.

Trip Distribution and Assignment

The distribution of traffic arriving and departing the Northstar area is estimated based on existing turning movement patterns at the SR 267/Northstar Drive intersection and the location of the site relative to residential neighborhoods. The estimated distribution pattern for project-generated external trips during the winter and summer PM peak hours is approximately 65 percent north on SR 267, with the remaining 35 percent south on SR 267.

The assignment of project-generated traffic was conducted based on the distribution patterns and the estimated parking locations. Note that the program-level volumes include the project-level volumes.

Cumulative Traffic Impacts and Mitigation Measures

Exceed Level of Service or Storage Capacity Standards at Study Intersections (2032)

Future (2032) traffic volumes with implementation of the proposed project (project- and program-level improvements) are shown in **Figure 18-3**.

Level of Service Analysis

All study intersections were evaluated to determine operational conditions under 2032 traffic volumes, without and with the proposed project. Appendix F of the TIA (**Appendix 9**) presents

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the actual output from each of the LOS calculations for the study intersections. **Table 18-5** summarizes the results for future 2032 conditions without and with the proposed project.

SR 267/Northstar Drive Intersection

In comparison with existing 2012 conditions, the level of service at the SR 267/Northstar Drive intersection is expected to degrade by one level in the future, due to growth in background traffic. However, this intersection would continue to operate at an acceptable LOS. Implementation of the proposed project (project-level or program-level) would not affect the LOS, although the total intersection delay would increase slightly during the summer (less than 1 second per vehicle) and by a few seconds (up to 4.4 seconds per vehicle) during the winter peak periods. No intersection LOS deficiencies are identified with the proposed project.

Future (ultimate) improvements to the SR 267/Northstar Drive intersection are not included in the County's current Capital Improvement Program; any development project that would impact this roadway segment is required to pay its fair-share contribution toward future improvements on this segment of Northstar Drive. The project's fair-share percentage contribution is calculated to be approximately 4.8 percent based upon the portion of the total future growth in the winter peak-hour total intersection traffic volume that is represented by the project-level improvements traffic, or 8.9 percent for the program-level improvements (including project-level improvements).

Northstar Drive/Castle Peak Parking Access/Ridgeline Drive Roundabout

The future cumulative 2032 analysis assumes implementation of the ultimate roundabout improvements described in the *Northstar Drive/Ridgeline Drive Roundabout Review*. With these improvements, the roundabout is assumed to operate as a dual-lane roundabout. Two entering lanes are assumed on each approach. The east and west legs are assumed to have two exiting lanes, and the north and south legs are assumed to have one exiting lane. In comparison with existing 2012 conditions, the LOS is not expected to degrade at this intersection in the future, so long as traffic control continues to be provided during peak winter periods. Implementation of the proposed project (project-level or program-level) would not affect the LOS at the roundabout, although it would generally result in a slight increase in average delays (an increase of less than 1 second per vehicle). No intersection LOS deficiencies are identified with the proposed project.

Northstar Drive/Big Springs Drive Intersection

In comparison with existing 2012 conditions, the LOS is expected to degrade by one level (LOS A to LOS B) during summer peak periods in the future, due to growth in background traffic. The LOS during winter peak periods is not expected to degrade, so long as traffic control continues to be provided. Implementation of the proposed project (project-level or program-level) would not affect the LOS at this intersection, although it would generally result in a slight increase in average delays (an increase of less than 1 second per vehicle). No intersection LOS deficiencies are identified with the proposed project.

SR 28/SR 267

In 2032, this intersection is forecast to operate at an acceptable level without the proposed project (LOS E for less than 4 hours on a winter day, and LOS D on a summer day). The program-level improvements could result in an increase of up to 20 cars through this intersection during the winter PM peak hour and 9 cars during the summer PM peak hour. The Placer County Capital Improvement Program includes improvements to this intersection. The project's payment of

traffic impact fees would mitigate any potential impacts during the winter scenarios. Finally, implementation of the project (at any development level) would not cause the LOS threshold to be exceeded during the summer season.

Intersection Queuing Analysis

The long-term future forecast 95th-percentile traffic queue lengths along Northstar Drive at the eastbound approach to SR 267 are approximately 238, 286, and 292 feet in the winter PM peak hours without the project, and with project and program-level development (**Table 18-4**). Intersection traffic queuing is not expected to cause any traffic concerns at any of the study intersections under Year 2032 conditions, with or without the project.

MITIGATION MEASURE 18-1a Fair-Share Contribution to the Northstar Drive/SR 267 Intersection Ultimate Improvements

Prior to Improvement Plan approval of each phase, the applicant shall pay its fair-share contribution toward the Northstar Drive/SR 267 intersection ultimate improvements. The project's fair-share percentage contribution is calculated to be approximately 4.8 percent based upon the portion of the total future growth in the winter peak-hour total intersection traffic volume that is represented by the project-level improvements, or 8.9 percent for the program-level improvements (including project-level improvements). If the Placer County Board of Supervisors adopts an update to the current traffic mitigation fee ordinance, and the updated program includes this intersection improvement, then that action and program will supersede the fair-share contribution requirements.

MITIGATION MEASURE 18-1b Payment of Countywide Traffic Impact Fees

Prior to Improvement Plan approval and/or issuance of any building permits, this project shall be subject to the payment of traffic impact fees that are in effect in this area (Tahoe), pursuant to applicable ordinances and resolutions for each project phase. The applicant is notified that the following traffic mitigation fee(s) shall be required and shall be paid to Placer County DPW:

- a) County Wide Traffic Limitation Zone: Article 15.28.010, Placer County Code. The current fee is \$4,587 per DUE. The fees were calculated using the information supplied. If the use or the square footage changes, then the fees will change. The actual fees paid shall be those in effect at the time the payment occurs.

The adopted Traffic Impact Fee Program measures traffic impact in units of Dwelling Unit Equivalent (DUEs). One DUE is equivalent to the net impact of one single-family dwelling unit on regional traffic impacts (in the PM peak hour), considering the trip generation of the land use, the average trip length, and the proportion of trips that are new to the roadway system (not pass-by trips). The current traffic impact fee is \$4,587 per Dwelling Unit Equivalent (DUE).

A detailed analysis of the DUEs associated with the Northstar Mountain Master Plan project is presented in **Appendix 9**. The results indicate approximately 42.87 DUE for the project-level improvements and a total of 77.47 DUE for the program-level improvements. Multiplying the respective DUEs by \$4,587 yields traffic impact fee totals of \$196,644.69 for the project-level improvements and \$355,354.89 for the program-level improvements. (Note that the program-level fee is comprised of the \$196,644.69 associated with the project-level plus an additional \$158,710.20 for a total of \$355,354.89.) If the Placer County Board of Supervisors adopts an

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update to the current traffic mitigation fee ordinance, that action and program will supersede this measure.

SIGNIFICANCE AFTER MITIGATION

Based on the analysis contained in the TIA, implementation of the proposed project would not result in the exceedance of any applicable LOS standards or the exceedance of storage capacities at any study intersections. Implementation of mitigation measures 18-1a and 18-1b would ensure that the project contributes its fair-share to the ultimate improvements for the Northstar Drive/SR 267 intersection as well as other roadway improvements included in the Placer County and the Town of Truckee traffic impact fee programs, would improve roadway and intersection capacities to within acceptable LOS standards. The environmental impacts of these improvements would generally consist of loss of topsoil, increased erosion rates, and potential for siltation in the Martis Creek watershed; changes in absorption rates, drainage patterns, and rate/amount of surface runoff; potential exposure to hazardous materials and contaminated soils or groundwater; increased emissions of criteria air pollutants from construction; construction noise; changes in traffic patterns and volumes; biological resource impacts; cultural resource impacts; and alteration to public views. Traffic impacts would be **less than cumulatively considerable**.

**TABLE 18-4
INTERSECTION QUEUE IMPACTS WITH PROPOSED PROJECT (2032)**

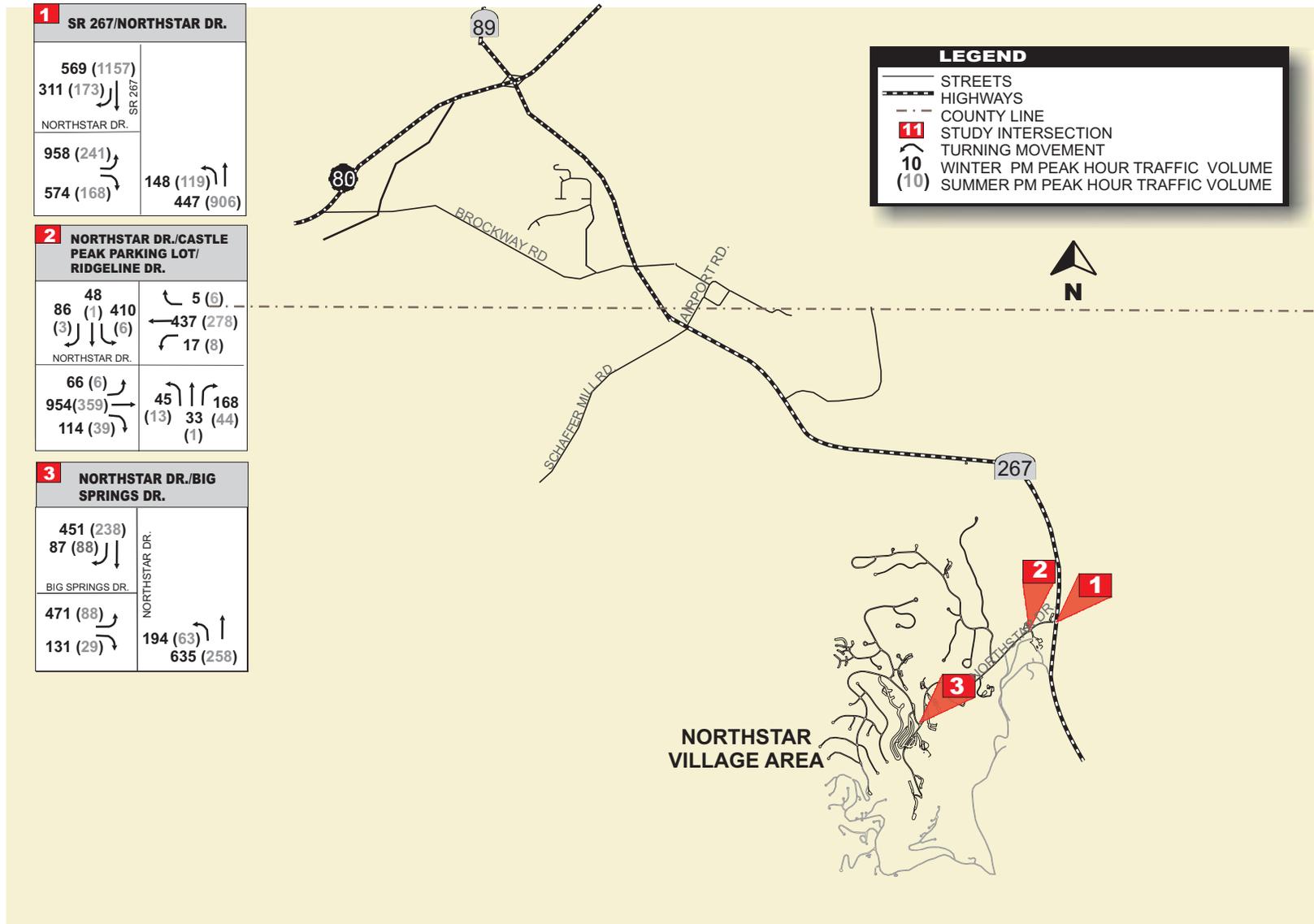
Intersection	Approach	Storage Length (feet)	95 th Percentcile Queue Length vs. Storage Length			
			No Project		With Project- and Program-Level Components	
			Queue Length (feet)	Queue Exceeds Storage?	Queue Length (feet)	Queue Exceeds Storage?
Summer PM Peak Hour						
Northstar Dr/Castle Peak Parking Lot	Westbound	780	0	No	0	No
Northstar Dr/SR 267	Eastbound	780	99	No	102	No
	Northbound Left-Turn	435	179	No	186	No
	Southbound Right-Turn	285	22	No	22	No
	Eastbound Right-Turn ¹	300	54	No	55	No
Winter PM Peak Hour						
Northstar Dr/Castle Peak Parking Lot	Westbound	780	25	No	25	No
Northstar Dr/SR 267	Eastbound	780	238	No	292	No
	Northbound Left-Turn	435	131	No	152	No
	Southbound Right-Turn	285	41	No	42	No

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Intersection	Approach	Storage Length (feet)	95 th Percentcile Queue Length vs. Storage Length			
			No Project		With Project- and Program-Level Components	
			Queue Length (feet)	Queue Exceeds Storage?	Queue Length (feet)	Queue Exceeds Storage?
	Eastbound Right-Turn ¹	300	223	No	265	No

Source: LSC Transportation Consultants 2013

Note 1: Synchro's interpretation of HCM 2010 methodology does not allow for the analysis of right-turn overlap phasing. This intersection was analyzed assuming no overlap phasing; therefore, actual queue lengths would be less than reported.



Source: LSC Transportation Consultants, Inc.

Figure 18-3
 Long-Term (2032) Cumulative Winter and Summer Intersection Volumes
 With Program-Level Improvements

**TABLE 18-5
CUMULATIVE (2032) INTERSECTION LEVEL OF SERVICE WITH PROJECT- AND PROGRAM-LEVEL IMPROVEMENTS**

Intersection	Control Type	No Project				Plus Project Level				Plus Program Level			
		Total Intersection		Worst Movement		Total Intersection		Worst Movement		Total Intersection		Worst Movement	
		Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS	Delay	LOS
Summer PM Peak-Hour													
Northstar Dr/SR 267	Signalized	30.4	C	N/A		30.5	C	N/A		31.3	C	N/A	
Northstar Dr/Castle Peak Parking Lot ¹	Roundabout	4.1	A	4.4	A	4.1	A	4.4	A	4.1	A	4.4	A
Northstar Dr/Big Springs	All-Way Stop	10.5	B	10.9	B	10.5	B	10.9	B	10.7	B	11.1	B
Winter PM Peak-Hour													
Northstar Dr/SR 267	Signalized	42.1	D	N/A		45.1	D	N/A		47.0	D	N/A	
Northstar Dr/Castle Peak Parking Lot ¹	Roundabout	11.2	B	16.0	C	11.5	B	16.7	C	11.9	B	17.3	C
Northstar Dr/Big Springs ²	TCO ³	30.1	C	N/A		30.9	C	N/A		31.4	C	N/A	

Source: LSC Transportation Consultants 2013

Notes:

1. Analysis assumes dual-lane roundabout with dual-lane approaches on all legs and single-lane departures for north and south legs.
2. Winter analysis of Northstar Drive/Big Springs Drive intersection assumes operations with a Traffic Control Office (TCO).
3. TCO operation is estimated using a signalized intersection analysis with a protected northbound left-turn and a 90-second cycle length.

Exceed Level of Service Standards on Study Roadway Segments and Associated Facilities (2032)

Study roadway segments were evaluated to determine operational conditions under 2032 traffic volumes, without and with the proposed project (project- and program-level improvements). As shown in **Table 18-6**, implementation of the proposed project is not expected to cause any additional roadway segments to exceed the applicable thresholds. Furthermore, for the study roadway segments that are operating below the applicable LOS thresholds, the project would result in an increase in V/C ratio of up to 0.02 and no study segments would experience an increase in ADT of 100 or more trips per lane. Consequently, the project (at any development level) would not exceed the County's minimum LOS policies at any study roadway location in 2032.

Widening of SR 267 to four lanes from Brockway Road/Soaring Way to south of Northstar Drive is included in the Placer County and Town of Truckee traffic impact fee programs. However, widening of SR 267 between Brockway Summit and Northstar Drive is not included in the Countywide CIP. However, based upon the County's Methodology of Assessment, the project impact to SR 267 is considered less than significant under existing and cumulative conditions. Therefore, no mitigation measures are required at this location.

Widening of Northstar Drive to four lanes from SR 267 to Sawmill Flat Road (now referred to as Ridgeline Drive) has been completed. The County is no longer collecting funds toward this improvement. In addition, the County has determined that it is not appropriate to widen Northstar Drive west of Basque Road. However, consistent with the Northside EIR, widening between the Castle Peak Access/Ridgeline Drive roundabout and Basque Road has been identified as a necessary improvement.

Widening of Northstar Drive between Castle Peak/Ridgeline Drive and Basque Road is not included in the County's current Capital Improvement Program; any development project that would impact this roadway segment is required to pay its fair-share contribution toward future improvements on this segment of Northstar Drive. The project's fair-share percent contribution is calculated to be approximately 4.4 percent based upon the portion of the total future growth in the winter daily total two-way traffic volume that is represented by the project-level improvements traffic, or 7.8 percent for the program-level improvements. It should be noted that detailed analysis of the traffic reductions occurring with a transport gondola (not within the scope of this study) could potentially reduce or eliminate this mitigation measure. Finally, if the Placer County Board of Supervisors adopts an update to the current traffic mitigation fee ordinance, and the updated program includes this location, that action and program will supersede the fair-share contribution requirements.

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**TABLE 18-6
CUMULATIVE (2032) ROADWAY SEGMENT LEVEL OF SERVICE WITH PROJECT- AND PROGRAM-LEVEL IMPROVEMENTS**

Roadway Study Segment		Jurisdiction	LOS Standard	Unit	Threshold Volume	Design Volume	Deficient?	Volume/ Capacity Ratio
Summer								
SR 267	Between Brockway Summit and Northstar Drive	Placer County/ Caltrans	D	ADT	11,400	26,253	Yes	2.30
SR 267	Between Northstar Drive and Airport Road/Schaffer Mill Road	Placer County/ Caltrans	D	ADT	15,500	27,621	Yes	1.78
SR 267	Between Airport Road/Schaffer Mill Road and Nevada County Line	Placer County/ Caltrans	D	ADT	15,500	31,781	Yes	2.05
SR 267	Between Nevada County Line and Brockway Road/Soaring Way	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,583	No	0.84
SR 267	Between Brockway Road/Soaring Way and I-80	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,346	No	0.71
Northstar Drive	Between SR 267 and Ridgeline Drive/Castle Peak Parking Lot	Placer County	D	ADT	24,300	7,594	No	0.31
Northstar Drive	Between Ridgeline Drive/Castle Peak Parking Lot and Big Springs Drive	Placer County	C	ADT	14,400	7,564	No	0.53
Winter								
SR 267	Between Brockway Summit and Northstar Drive	Placer County/ Caltrans	D	ADT	11,400	17,587	Yes	1.54

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Roadway Study Segment		Jurisdiction	LOS Standard	Unit	Threshold Volume	Design Volume	Deficient?	Volume/ Capacity Ratio
SR 267	Between Northstar Drive and Airport Road/Schaffer Mill Road	Placer County/ Caltrans	D	ADT	15,500	23,515	Yes	1.52
SR 267	Between Airport Road/Schaffer Mill Road and Nevada County Line	Placer County/ Caltrans	D	ADT	15,500	27,735	Yes	1.79
SR 267	Between Nevada County Line and Brockway Road/Soaring Way	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,690	No	0.89
SR 267	Between Brockway Road/Soaring Way and I-80	Town of Truckee	D	Peak Hour, Peak Direction/ Lane	1,891	1,431	No	0.76
Northstar Drive	Between SR 267 and Ridgeline Drive/Castle Peak Parking Lot	Placer County	D	ADT	24,300	18,372	No	0.76
Northstar Drive	Between Ridgeline Drive/Castle Peak Parking Lot and Big Springs Drive	Placer County	C	ADT	14,400	15,662	Yes	1.09

Source: LSC Transportation Consultants 2013

Notes:

1. During peak periods, a three-lane cross section is assumed on Northstar Drive between SR 267 and the roundabout.

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MITIGATION MEASURE 18-1c Fair-Share Contribution to Planned Local Roadway Widenings

Prior to Improvement Plan approval of each phase, the applicant shall pay its fair-share contribution toward future improvements to the widening of Northstar Drive between Castle Peak/Ridgeline Drive and Basque Road. The project's fair-share percentage contribution is calculated to be approximately 4.4 percent based upon the portion of the total future growth in the winter daily total two-way traffic volume that is represented by the project-level improvements traffic, or 7.8 percent for the program-level improvements (including project-level improvements). It should be noted that detailed analysis of the traffic reductions occurring with a transport gondola could potentially reduce or eliminate this mitigation measure. If the Placer County Board of Supervisors adopts an update to the current traffic mitigation fee ordinance, and the updated program includes this improvement, then that action and program will supersede the fair-share contribution requirements.

SIGNIFICANCE AFTER MITIGATION

As discussed previously, widening of Northstar Drive between Castle Peak/Ridgeline Drive and Basque Road would improve roadway and intersection capacities to within acceptable LOS standards. The environmental impacts of these improvements would generally consist of loss of topsoil, increased erosion rates, and potential for siltation in the Martis Creek watershed; changes in absorption rates, drainage patterns, and rate/amount of surface runoff; potential exposure to hazardous materials and contaminated soils or groundwater; increased emissions of criteria air pollutants from construction; construction noise; changes in traffic patterns and volumes; biological resource impacts; cultural resource impacts; and alteration to public views. Traffic impacts would be **less than cumulatively considerable**.

Increase Vehicle Miles Traveled in the Tahoe Basin

The effect of the proposed program-level improvements on winter and summer daily vehicle miles traveled (VMT) in the Tahoe Basin is dependent on the number of trips made to/from the basin and the length of these vehicle trips. **Table 18-6** presents the VMT analysis. The increase in daily trips made to/from the basin (points beyond Brockway Summit) as a result of NMMP improvements is approximately 67 or 33 one-way daily trips on a winter or summer day, respectively. The VMT generated by these trips is estimated by multiplying the daily trips by the average trip length. The estimated origins/destinations within the basin for trips made by the additional Northstar employees are shown in **Table 18-7**. The highest portion of employee trips (about 40 percent) is expected to be made to/from the Kings Beach/Crystal Bay area. Applying the trip distribution pattern to the total daily trips yields the number of trips made to each area within the basin. The average trip length between Brockway Summit and each origin/destination point in the basin is shown in the lower middle column of the table. The average trip length for trips made to/from the program-level campgrounds is estimated to be about 13 miles within the basin. The weighted average trip length for all project trips on basin roadways is calculated to be approximately 8.1 miles. Multiplying the trip lengths by the number of trips yields the daily VMT shown in the lower right portion of the table.

**TABLE 18-7
DAILY VEHICLE MILES TRAVELED GENERATED IN LAKE TAHOE BASIN (2032)**

Origin/Destination within Lake Tahoe Basin		Employee Trip Distribution	Number of One-Way Daily Trips Entering and Existing Tahoe Basin (Project- and Program-Level Improvements)	
<i>Employees</i>			Winter	Summer
Kings Beach/Crystal Bay		40%	22.5	4.2
Incline Village		18%	10.1	1.9
South Shore		2%	1.1	0.2
Tahoe City		22%	12.4	2.3
Tahoe Vista		12%	6.8	1.3
West Shore		6%	3.4	0.6
<i>Program-Level Campgrounds</i>		N/A	10.9	22.4
Total Trips		100%	67	33
VMT in Tahoe Basin to:	Reference Point ¹	Distance (miles)	Daily Vehicle Miles Traveled in Lake Tahoe Basin	
<i>Employees</i>				
Kings Beach/Crystal Bay	SR 28/Chipmunk Ave	4.1	92	17
Incline Village	SR 28/County Club Dr	9.8	99	19
South Shore	US 50/Ski Run Blvd	34.6	39	7
Tahoe City	Lake Forest Rd (east)	10.1	125	23
Tahoe Vista	SR 28/Granite Rd	5.4	37	7
West Shore	Tahoe Ski Bowl Way	19.2	65	12
<i>Program-Level Campgrounds</i>	N/A ²	13.0	141	291
Total VMT			598	376

Source: LSC Transportation Consultants 2013

Notes:

- Distances are measured from Brockway Summit on SR 267 to the points listed in this column.
- Persons generating a trip from the proposed campgrounds into the Tahoe Basin are estimated to have an average travel distance of 13 miles within the basin.

As indicated, the program-level improvements are estimated to increase region-wide VMT by about 0.02 percent on a summer day and would not exceed the TRPA VMT threshold. Therefore, this impact would be **less than cumulatively considerable**. Note that TRPA’s VMT estimate pertains to an “annual peak day,” which typically occurs during August.

Traffic Safety Hazards

The proposed program-level improvements include a paved roadway to provide access to the relocated cross-country ski center parking area. The roadway improvements would be designed to

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meet Placer County standards. No driver sight distance deficiencies or other traffic safety-related concerns have been identified. There would be **no impact**.

Public Transit

The increase in employment associated with the proposed program-level improvements could increase demand for public transit services. While this additional transit demand would not likely warrant additional public transit services (and costs), it could add to the cumulative need for additional winter peak-hour transit capacity serving Northstar. Consistent with requirements placed on other development proposals in Northstar over the last several years, it is appropriate for the project applicant to participate in the capital and ongoing operational requirements of additional transit service. Placer County has established County Service Area 28 (Zone of Benefit 204) to provide this funding mechanism for all development within the Martis Valley (including Northstar). By paying into this County Service Area, the project applicant would be addressing this impact (see **Appendix 9** pages 50 and 51 for a further discussion of funding and funding calculations). Therefore, this impact would be **cumulatively considerable** should adequate funding not be provided.

MITIGATION MEASURE 18-1d Payment of Annual Transit Fees

Prior to Improvement Plan approval for the initial phase, the applicant shall establish a new Zone of Benefit (ZOB) within an existing County Service Area (CSA) or annex into a pre-existing ZOB (County Service Area 28 - Zone of Benefit 204) to provide adequate funding of capital and on-going operational transit services/requirements. The applicant shall submit to the County for review and approval a complete and adequate engineer's report supporting the level of assessments necessary for the establishment of the ZOB. The report shall be prepared by a registered engineer in consultation with a qualified financial consultant and shall establish the basis for the special benefit appurtenant to the project.

A detailed analysis of the funding calculation is provided on page 50 and 51 in **Appendix 9**. The annual transit funding totals are \$1,705.80 for the project-level improvements and \$3,082.53 for the program-level improvements (which includes project-level improvements).

SIGNIFICANCE AFTER MITIGATION

Implementation of the above mitigation measure would ensure that funding is provided to mitigate the project's increase in transit demand. Thus, this impact would be **less than cumulatively considerable**.

Parking

At the program level, the additional employees, service vehicles, and the vehicles associated with the remote campsite would park in the same lots as the day skiers. However, a new 20-space parking lot would be provided at the relocated cross-country ski center. Some or all cross-country skiers currently parking in the Village Lots and Castle Peak Lots can be expected to relocate to this new lot, thereby opening up some parking spaces in the day skier lots. Based on the trip generation shown in **Table 9-7** (see Section 9.0), and assuming that 10 percent of employees work night/evening shifts and therefore do not generate demand during periods of peak demand, the program-level uses are estimated to require approximately 69 employee parking spaces plus about 15 spaces associated with the mountaintop campground, for a total of about 84 spaces.

The number of parking spaces in the day skier parking lots utilized by the additional employees, service vehicles, and vehicles associated with the remote campsite would to some extent be offset by the spaces made available due to the relocation of the cross-country skier vehicles. In addition, according to Northstar staff, the Golf Course Lot (99 spaces) is rarely used. As the additional employees would park in the same lots as the day skiers, there is the potential for the project to expand the days/durations when the Golf Course Lot is utilized. There is also the potential for the proposed program-level improvements to expand the days/durations when the Northstar parking lots reach capacity, although no parking deficiencies are expected.

During the summer, the majority of the day skier parking spaces in the Village Lots would be empty, thereby providing ample parking for the additional summer employees and services and for the remote group campground. Vehicles associated with the new group campsite at the new cross-country ski center parking lot would be accommodated in the new lot. Overall, adequate parking conditions would be expected to be provided with implementation of the program-level improvements. This impact would be **less than cumulatively considerable**.

18.1.7 CUMULATIVE AIR QUALITY IMPACT

The setting for this cumulative analysis consists of both the Mountain Counties Air Basin (MCAB) and the Lake Tahoe Air Basin (LTAB) and associated growth and development anticipated in these basins. This includes consideration of attainment efforts for each of these basins under development that could potentially result from all existing, proposed, planned, and reasonably foreseeable projects and growth in the region.

These two air basins are designated nonattainment status for ozone and PM₁₀ under state and federal standards. Construction of the project could result in construction emissions in excess of Placer County Air Pollution Control District (PCAPCD) significance threshold levels, established by the district to determine the significance for short-term, construction-related emissions from a project. Therefore, construction of the proposed project, along with potential development of the surrounding region, would exacerbate existing regional problems with ozone and particulate matter. Even with feasible mitigation measures, the proposed project's contribution to these conditions is considered a significant impact. Though mitigation measures included in this Draft EIR (10-2a through 10-2d) would reduce construction-related emissions, these mitigation measures would not reduce emissions below the significance thresholds. Therefore, even with feasible mitigation measures, the proposed project's construction emissions incremental contribution to regional criteria pollutant emissions is considered **cumulatively considerable** and a **significant and unavoidable** impact. No feasible mitigation is available to completely offset this impact.

Operational emissions of the project would be below the PCAPCD's cumulative threshold of significance for ROG and/or NO_x per day (10 pounds per day) and would be **less than cumulatively considerable** (Table 10-8).

18.1.8 CUMULATIVE NOISE IMPACT

Setting

The geographic extent of the cumulative setting for noise consists of the project area and the surrounding areas in the county. Cumulative development conditions would result in increased cumulative roadway noise levels and would also result in increased noise associated with future improvements. Ambient noise levels in the project area are influenced primarily by traffic noise emanating from area roadways, particularly SR 267. No major stationary sources of noise have

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been identified in the project area. The primary factor for cumulative noise impact analysis is therefore the consideration of future traffic noise levels.

Cumulative Noise Impacts and Mitigation Measures

Contribution to Cumulative Traffic Noise

Project-Level Component Impacts

Predicted traffic noise levels with and without project-level components for future year 2032 conditions are summarized in **Table 18-8**. In comparison to future year 2032 conditions, implementation of the proposed project-level components would result in predicted increases in traffic noise levels along primary affected roadways ranging from approximately 0.01 to 0.03 dBA. This is considered a **less than cumulatively considerable** contribution to cumulative noise levels.

Project- and Program-Level Component Impacts

Predicted traffic noise levels with and without project-level components for future year 2032 conditions are summarized in **Table 18-9**. In comparison to future year 2032 conditions, implementation of the proposed project- and program-level components would result in predicted increases in traffic noise levels along primary affected roadways ranging from approximately 0.01 to 0.11 dBA. This is considered a **less than cumulatively considerable** contribution to cumulative noise levels.

**TABLE 18-8
PREDICTED INCREASES IN FUTURE CUMULATIVE TRAFFIC NOISE LEVELS
WITH PROJECT-LEVEL TRAFFIC VOLUMES**

Roadway Segment	CNEL at 50 Feet from Near Travel Lane		Project-Generated Increase in Noise Levels	Substantial Increase in Noise Levels?	Distance to 60 dBA CNEL/L _{dn} Noise Contour	
	Year 2032 Without Project	Year 2032 With Project-Level Traffic			Year 2032 Without Project	Year 2032 With Project-Level Traffic
Summer						
SR 267 – Northstar Drive to Airport Road/Schaffer Mill Road	71.98	71.99	0.01	No	441	441
SR 267 – Airport Road/Schaffer Mill Road to Nevada County Line	72.60	72.60	0	No	484	484
SR 267 – Nevada County Line to Brockway Road/Soaring Way	69.53	69.54	0.01	No	303	303
SR 267 – Brockway Road/Soaring Way to Interstate 80	68.82	68.83	0.01	No	272	272
Northstar Drive – SR 267 to Ridgeline Drive/Castle Peak Parking Lot	58.52	58.53	0.01	No	WR	WR
Northstar Drive – Ridgeline Drive/Castle Peak Parking Lot to Big Springs Drive	58.50	58.51	0.01	No	WR	WR
Winter						
SR 267 – Northstar Drive to Airport Road/Schaffer Mill Road	71.27	71.28	0.01	No	395	396
SR 267 – Airport Road/Schaffer Mill Road to Nevada County Line	71.99	72.00	0.01	No	442	442
SR 267 – Nevada County Line to Brockway Road/Soaring Way	69.76	69.82	0.06	No	314	317
SR 267 – Brockway Road/Soaring Way to Interstate 80	69.02	69.09	0.07	No	281	283
Northstar Drive – SR 267 to Ridgeline Drive/Castle Peak Parking Lot	62.36	62.39	0.03	No	88	89
Northstar Drive – Ridgeline Drive/Castle Peak Parking Lot to Big Springs Drive	61.66	61.69	0.03	No	79	80

Source: Ambient 2013

Notes: For purposes of this analysis, a substantial increase in noise levels is defined as an increase of 5.0, or greater, where the noise levels, without project implementation, are less than 60 dBA CNEL/L_{dn}; 3 dBA, or greater, where the noise level, without project implementation, ranges from 60 to 65 dBA CNEL/L_{dn}; and 1.5 dB, or greater, where the noise level, without project implementation, exceeds 65 dBA CNEL/L_{dn}. FHWA Model inputs and results are provided in Appendix 11.0.

WR = Within roadway right-of-way

**TABLE 18-9
PREDICTED INCREASES IN FUTURE CUMULATIVE TRAFFIC NOISE LEVELS
WITH PROJECT-LEVEL AND PROGRAM-LEVEL TRAFFIC VOLUMES**

Roadway Segment	CNEL at 50 Feet from Near Travel Lane		Project-Generated Increase in Noise Levels	Substantial Increase in Noise Levels?	Distance to 60 dBA CNEL/L _{dn} Noise Contour	
	Year 2032 Without Project	Year 2032 With Full Project Traffic			Year 2032 Without Project	Year 2032 With Full Project Traffic
Summer						
SR 267 – Northstar Drive to Airport Road/Schaffer Mill Road	71.98	71.99	0.01	No	441	441
SR 267 – Airport Road/Schaffer Mill Road to Nevada County Line	72.60	72.60	0	No	484	485
SR 267 – Nevada County Line to Brockway Road/Soaring Way	69.53	69.56	0.03	No	303	304
SR 267 – Brockway Road/Soaring Way to Interstate 80	68.82	68.85	0.03	No	272	273
Northstar Drive – SR 267 to Ridgeline Drive/Castle Peak Parking Lot	58.52	58.55	0.03	No	WR	WR
Northstar Drive – Ridgeline Drive/Castle Peak Parking Lot to Big Springs Drive	58.50	58.53	0.03	No	WR	WR
Winter						
SR 267 – Northstar Drive to Airport Road/Schaffer Mill Road	71.27	71.29	0.02	No	395	397
SR 267 – Airport Road/Schaffer Mill Road to Nevada County Line	71.99	72.01	0.02	No	442	443
SR 267 – Nevada County Line to Brockway Road/Soaring Way	69.76	69.85	0.09	No	314	318
SR 267 – Brockway Road/Soaring Way to Interstate 80	69.02	69.13	0.11	No	281	285
Northstar Drive – SR 267 to Ridgeline Drive/Castle Peak Parking Lot	62.36	62.41	0.05	No	88	89
Northstar Drive – Ridgeline Drive/Castle Peak Parking Lot to Big Springs Drive	61.66	61.68	0.02	No	79	80

Source: Ambient 2013

Notes: For purposes of this analysis, a substantial increase in noise levels is defined as an increase of 5.0, or greater, where the noise levels, without project implementation, are less than 60 dBA CNEL/L_{dn}; 3 dBA, or greater, where the noise level, without project implementation, ranges from 60 to 65 dBA CNEL/L_{dn}; and 1.5 dB, or greater, where the noise level, without project implementation, exceeds 65 dBA CNEL/L_{dn}. FHWA Model inputs and results are provided in Appendix 11.0.

WR = Within roadway right-of-way

18.1.9 CUMULATIVE GEOLOGY AND SOILS IMPACT

Impacts associated with seismic activity, slope stability, soil erosion, and avalanche are based on existing site-specific conditions situated within the subsurface materials that underlay Northstar. These inherent conditions are an end result of natural historical events that occur through vast periods of geologic time and are not based on cumulative development. With proper evaluation of these conditions, compliance with existing codes and standards, and implementation of mitigation measures included in Section 12.0 (mitigation measures 12-1, 12-3a through f), Geology and Soils, the proposed project would not contribute to cumulatively considerable impacts related to the area's geology, soils, or avalanche hazard. Therefore, cumulative impacts would be **less than cumulatively considerable**.

18.1.10 CUMULATIVE HYDROLOGY AND WATER QUALITY IMPACT

The cumulative hydrology and water quality analysis involves two separate settings—one for surface water and groundwater quality, and one for drainage and flooding. As previously described in Section 13.0, Hydrology and Water Quality, Northstar is located in the Martis Valley watershed (which is part of the Truckee River Hydrologic Unit) and is partially in the Martis Valley groundwater basin.

Implementation of the proposed project, in combination with other development activities in the Truckee River Hydrologic Unit and Martis Valley watershed, would contribute to a cumulative degradation of water quality from construction activities and changes in land use conditions that generate pollutants. This would add to other approved and planned development activities and the ongoing runoff processes in the cumulative setting area, as described above. This could result in cumulative water quality impacts to both surface water and groundwater supplies.

As described under Impacts 13.1 and 13.2, the proposed project, as well as all projects in the area that would disturb 1 acre or more, would be subject to the state's NPDES program, which requires the implementation of best management practices (BMPs) to protect water quality during construction and dewatering. Projects in Placer County would also be subject to the grading and erosion control measures contained in the County's Municipal Code (Section 15.48.630).

Furthermore, operation of the proposed Northstar Mountain Master Plan (NMMP), as well as all other development in Placer County, would be subject to the County's Stormwater Management Plan (SWMP). The SWMP helps to reduce pollutants in local waterways by reducing pollutants in stormwater runoff through public education and involvement, illicit discharge detection and elimination, construction and post-construction stormwater management in new development and redevelopment, and pollution prevention for municipal operations. The proposed drainage improvements for the proposed project would include the use of both temporary and permanent BMPs on the site. These BMPs would remove sediment and pollutants from site runoff and minimize impacts to downstream waterways and the Martis Valley groundwater basin.

Continued enforcement of state and local regulations related to stormwater management and water quality protection would minimize impacts on surface water and groundwater resources from new development. Additionally, the project's proposed drainage system would include the use of temporary and permanent BMPs to minimize the project's individual impacts to water quality. Therefore, this impact is considered to be **less than cumulatively considerable** with the implementation of mitigation measures identified under Impact 13.1 and 13.2 (mitigation measures 13-1a through c and 13-2).

18.0 Cumulative, Growth-Inducing, and Irreversible Impacts

Implementation of the proposed project, in combination with other approved and planned development in Northstar, would increase impervious surfaces and alter drainage conditions and rates, which could contribute to cumulative flood conditions. Implementation of mitigation measures under Impact 13.3 and 13.4 (mitigation measures 13-2a through d and 13-4) would ensure that the proposed project would not contribute to any increases in flows or alteration in flood flows. This impact would be **less than cumulatively considerable**.

As discussed under Impact 13.5, there is adequate groundwater to serve the proposed project as well as anticipated buildout of Martis Valley. Groundwater impact would be **less than cumulatively considerable**.

18.1.11 CUMULATIVE PUBLIC SERVICES IMPACT

Fire Protection and Emergency Medical Services

The cumulative setting for fire services is the service area of the Northstar Community Services District (NCS D). Northstar California implements a fuel management program to reduce the risk of wildfire and protect public safety. In addition, the proposed improvements would be designed and constructed in accordance with all applicable fire safety standards, and project plans would be reviewed by Placer County and the NCS D to ensure compliance. Continued development in the NCS D service area would create a cumulative impact on fire protection and emergency medical services; however, the proposed project would not increase fire hazards or the demand for fire protection services. The Northstar Habitat Management Plan includes fuel reduction measures that would improve the fire safety of Northstar. Therefore, the proposed project contribution to this cumulative impact would be **less than cumulatively considerable**.

Law Enforcement

The cumulative setting area for law enforcement services includes the entire county. The proposed project includes seasonal recreational facilities to complement existing Northstar resort facilities and would not create the need for additional or expanded law enforcement facilities or decrease current service levels. Continued development in the county would create a cumulative impact on law enforcement services; however, the proposed project's contribution to this impact would be **less than cumulatively considerable**, as the proposed NMMP would not include any new residential development that would require new law enforcement services.

Water Services

The cumulative setting area for water services is the area overlying the Martis Valley Groundwater Basin and the service area of the NCS D. The proposed project is estimated to generate a maximum water demand of 213.62 acre-feet annually for snowmaking and domestic uses and would utilize groundwater and spring water resources from a combination of public water supply from the NCS D and on-site wells. Existing and proposed snowmaking water demands would total 463 acre-feet and would be within the total water demand assumed for Northstar snowmaking in the NCS D Master Water Plan (2002). In addition, as identified in Impact 14.3.1, buildout of the Martis Valley in addition to the proposed project would result in a total groundwater demand well below the recharge level for the aquifer. Therefore, this impact would be **less than cumulatively considerable**.

Wastewater

The cumulative setting area for wastewater services is the NCSO service area. The proposed project would generate new wastewater demand, which would be served by a combination of the public NCSO wastewater system and on-site septic systems. As identified in Impact 14.4.1, the existing NCSO wastewater conveyance system was designed with capacity to serve the development proposed in the 1971 Northstar-at-Tahoe Master Plan and would have adequate capacity to serve the proposed improvements that would connect to the system. The Tahoe-Truckee Sanitation Agency has adequate wastewater treatment capacity to accommodate the anticipated NMMP wastewater flows. In addition, the proposed septic systems that would accommodate remote components of the proposed NMMP would be designed and constructed in accordance with existing County standards to ensure adequate capacity. Continued development within the NCSO service area would result in a cumulative increase in demand for wastewater services; however, the proposed project's contribution to this impact would be **less than cumulatively considerable**.

Solid Waste Services

The cumulative setting area for solid waste services is the service areas of the Tahoe-Truckee Sierra Disposal Company, Eastern Regional Material Recovery Facility, and Lockwood Regional Landfill. As discussed in Impact 14.5.1, each of these service providers has sufficient capacity to serve the proposed project. Continued development within the NCSO service area would result in a cumulative increase in demand for solid waste services. This additional service demand may require additional collection personnel and equipment at these facilities and may result in additional truck trips. Additional funding from service charges would be used to fund any necessary expansion of facilities or operations. The Lockwood Regional Landfill currently has remaining capacity available, and more than 2,000 additional acres at the facility have been zoned and permitted for future landfill expansion. Therefore, this impact would be **less than cumulatively considerable**.

Electricity, Natural Gas, and Telecommunications Services

As described in Section 14.0, Public Services, there are infrastructure facilities that can accommodate the proposed NMMP as well as regional development. As noted in **Table 18-1**, there are currently proposed plans to improve electrical distribution that would be designed to accommodate future growth of the region (proposed California Pacific Electric Company 625 and 650 Electrical Line Upgrade Project). Therefore, this impact would be **less than cumulatively considerable**.

Parks and Recreation

As described under Impact 14.7.1, the proposed project does not include any residential uses and would not increase demand or contribute to the demand for public parks or recreational facilities or services. The project itself is a series of improvements and expansion of mountain recreation opportunities. The improvements are proposed to accommodate the recreational demands internal to Northstar, but would also provide a campground at Sawmill Lake that would complement existing hiking trails in Northstar, including the future Martis Valley Regional Trail. These recreational facilities would allow for increased use of a variety of winter and summer recreational opportunities. Therefore, this impact would be **less than cumulatively considerable**.

18.1.12 CUMULATIVE HAZARDOUS MATERIALS AND HAZARDS IMPACT

The proposed NMMP and other existing, approved, and planned projects in the vicinity would not result in the addition of hazardous materials or otherwise expose the public to such materials over established thresholds. The proposed project would not involve the use, storage, or disposal of hazardous materials, has not been identified as a hazardous materials release site, and has not been used for any purposes involving hazardous materials in the past. Furthermore, there are no planned or reasonably foreseeable projects in the cumulative setting area that would involve significant amounts of hazardous materials. Therefore, this impact is considered **less than cumulatively considerable**.

18.1.13 CUMULATIVE GREENHOUSE GASES AND CLIMATE CHANGE IMPACT

The reader is referred to Section 16.0, Greenhouse Gases and Climate Change, for a discussion of cumulative greenhouse gases and climate change impacts.

Other Cumulative Impacts

No other cumulative impacts were identified through the comprehensive cumulative impact assessment.

18.2 GROWTH-INDUCING IMPACTS

18.2.1 INTRODUCTION

CEQA Guidelines Section 15126.2(d) requires that an environmental impact report (EIR) evaluate the growth-inducing impacts of a proposed action. A growth-inducing impact is defined by the CEQA Guidelines as:

The way in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are projects which could remove obstacles to population growth...It is not assumed that growth in an area is necessarily beneficial, detrimental, or of little significance to the environment.

A project can have direct and/or indirect growth inducement potential. Direct growth inducement could result if a project, for example, involved construction of new housing. A project could have indirect growth inducement potential if it established substantial new permanent employment opportunities (e.g., commercial, industrial, or governmental enterprises) or if it could involve a construction effort with substantial short-term employment opportunities that could indirectly stimulate the need for additional housing and services to support the new employment demand. Similarly, a project could indirectly induce growth if it could remove an obstacle to additional growth and development, such as removing a constraint on a required public service. A project providing an increased water supply in an area where water service historically limited growth could be considered growth inducing.

The CEQA Guidelines further explain that the environmental effects of induced growth are considered indirect impacts of the proposed action. These indirect impacts or secondary effects of growth may result in significant, adverse environmental impacts. Potential secondary effects of growth include increased demand on other community and public services and infrastructure, increased traffic and noise, and adverse environmental impacts such as degradation of air and

water quality, degradation or loss of plant and animal habitat, and conversion of agricultural and open space land to developed uses.

Growth inducement may constitute an adverse impact if the growth is not consistent with or accommodated by the land use plans and growth management plans and policies for the area affected. Local land use plans provide for land use development patterns and growth policies that allow for the orderly expansion of urban development supported by adequate urban public services, such as water supply, roadway infrastructure, sewer service, and solid waste service.

18.2.2 COMPONENTS OF GROWTH

The timing, magnitude, and location of land development and population growth in a community or region are based on various interrelated land use and economic variables. Key variables include regional economic trends, market demand for residential and nonresidential uses, land availability and cost, the availability and quality of transportation facilities and public services, proximity to employment centers, the supply and cost of housing, and regulatory policies or conditions. Since a general plan of a community defines the location, type, and intensity of growth, it is the primary means of regulating development and growth in California.

18.2.3 GROWTH EFFECTS OF THE PROJECT

As described in Section 3.0, Project Description, the proposed project would consist of ski recreational improvements to the existing Northstar ski resort to improve the recreational opportunities at Northstar. Infrastructure improvements associated with the proposed NMMP are limited to supporting new ski lifts, snowmaking, skier service facilities, seasonal spur road improvements, and campgrounds on the mountain. The project would generate up to 102 full-time equivalent jobs during the winter season, 3 full-time equivalent jobs during the summer season, and 5 full-time equivalent jobs year-round.

The project's cumulative impacts could be in addition to the environmental effects of growth in the region. The specific environmental effects resulting from the proposed expansion of recreational opportunities and employment at Northstar are discussed in the environmental issue areas in Sections 4.0 through 16.0 of this DEIR.

18.2.4 SIGNIFICANT IRREVERSIBLE ENVIRONMENTAL CHANGES

CEQA Sections 21100(b) (2) and 21100.1(a) require that EIRs prepared for the adoption of plan, policy, or ordinance of a public agency must include a discussion of significant irreversible environmental changes of project implementation. In addition, CEQA Guidelines Section 15126.2(c) describes irreversible environmental changes as:

Uses of nonrenewable resources during the initial and continued phases of the project may be irreversible since a large commitment of such resources makes removal or nonuse thereafter unlikely. Primary impacts and, particularly, secondary impacts (such as highway improvement which provides access to a previously inaccessible area) generally commit future generations to similar uses. Also irreversible damage can result from environmental accidents associated with the project. Irrecoverable commitments of resources should be evaluated to assure that such current consumption is justified.

18.0 Cumulative, Growth-Inducing, and Irreversible Impacts

The irreversible and irretrievable commitment of resources is the permanent loss of resources for future or alternative purposes. Irreversible and irretrievable resources are those that cannot be recovered or recycled or those that are consumed or reduced to unrecoverable forms.

Implementation of the proposed project components could result in the conversion of undeveloped open space land. It is unlikely that circumstances would arise that would justify the return of the land to its original condition. Development of the proposed NMMP project- and program-level components would irretrievably commit building materials and energy to the construction and maintenance of buildings and infrastructure proposed. Renewable, nonrenewable, and limited resources that could be consumed as part of the development of the proposed project would include, but are not limited to, oil, gasoline, lumber, sand and gravel, asphalt, water, steel, and similar materials. In addition, development of the project could result in an increased demand on public services and utilities (see Section 14.0, Public Services). However, the continued implementation of the Northstar Habitat Management Plan would preserve and enhance the habitat conditions of the remaining open space areas of Northstar.

18.2.5 UNAVOIDABLE SIGNIFICANT ENVIRONMENTAL IMPACTS

The potential environmental impacts that would result from implementation of the proposed project are summarized in **Table 2-2** in Chapter 2.0 of this Draft EIR. In some cases, impacts that have been identified would be less than significant. In other instances, incorporation of mitigation measures identified in this Draft EIR would reduce the impacts to levels that are less than significant. Those impacts that cannot be feasibly mitigated to a less than significant level would remain as unavoidable significant environmental impacts. They are listed below.

Impact 8.2 Adversely Affect a Scenic Vista

Impact 10.2 Increases in Short-Term Construction Emissions

Cumulative Visual Impacts

Cumulative Construction Air Quality Impacts