

Appendix B

Comment Letter 12 Attachment

25. Attachments

-  1 SierraSun Aff Hsng
-  2 May-27-2015-GB pckt 4 pages
-  3 StateLake Clarity chapter
-  4 December-16-2015-GB packet re HRA
-  5 HMR VMT 11_Traffic_FEIR_EIS-5
-  6 FOWS-comments-on-CFA-TAU-for-RPIC-5.27.2015
-  7 September-23-2015-GB Yeates vehicles
-  8 Community Meeting Online – Linking Tahoe
-  9 Sweeping plan for transportation improvements would benefit entire county
-  10 Federal funds boost to help improve North Lake Tahoe area public transit
-  11 3.1 RTC MasterResponses
-  12 comment_CHP-3
-  13 Office of Planning and Research - Alternative Transportation Metrics (SB 743)
-  14 Planning commissioners vote 5-2 for denial of Martis Valley West _ SierraSun
-  15 SR267_TCCR_Signed
-  16 Attorney-General-Letter-regarding-Squaw-Valley-Village-Proposal
-  17 Slow moving exodus from South Lake Tahoe _ South Lake Tahoe - SouthTahoeNow
-  18 - The Washington Post waze
-  19 PlacerCountyNTMPManual-1
-  20 FOWS-TASC-comments-to-APC-requesting-Ridgeline-Code-DRAFT-2
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Gloria Sinibaldi
Special to the Bonanza

July 27, 2016

Affordable housing woes: Are Tahoe-Truckee locals being priced out?

SOUTH LAKE TAHOE, Calif. — There is a good-news, bad-news scenario unfolding in the Lake Tahoe real estate market.

For current homeowners the news is undoubtedly good. Single-family home sales have been steadily increasing in value since February 2013, according to the South Tahoe Association of Realtors.

In February 2013, statistics showed the median value of a single-family home in South Lake Tahoe at \$254,500. Figures released for June 2016 reflect it at \$384,000, an increase of \$129,500.

The Tahoe Sierra Board of Realtors lists the June 2016 median for a single-family home in Truckee at \$547,500, as opposed to \$492,000 in February 2013, up \$55,500.

Numbers can fluctuate around the lake from month to month due to sales volume and sold pricing. But overall, the news is rosy and values continue to rise.

The bad news, however, is for first-time home-buyers.

Many are locals who have lived in Tahoe for their entire lives. Others have moved here, secured a job, and are now ready to purchase a house.

But elevated prices have placed the proverbial carrot beyond their reach in far too many cases.

Jennifer Fortune, Realtor with Chase International South Tahoe Realty said, "Many of my clients feel they've missed the boat. I often hear them say they will need to wait for another downturn. The market turned around at the end of 2012. Some wanted to buy then, but waited.

"Now they're sorry."

THE RISE OF SECOND HOMES

Second-home ownership plays a role in the current circumstances. As of the 2010 census, and reported by the Tahoe Metropolitan Planning Board, seasonal usage or second-home ownership is at 44 percent in the Lake Tahoe Basin.

North Shore has the largest number at 52 percent, while 39 percent of South Lake Tahoe's homes are second homes.

These vacation home sales drive prices up, as buyers from elsewhere, many from the San Francisco Bay Area, overbid for the houses they want.

This was never truer than in the mid-2000s when many Tahoe homeowners sold at inflated prices, creating a bubble.

"Ninety-five percent of my business is vacation and second home-buyers," Fortune said. "In fact almost all of it is. Once in a while, you will find a Tahoe local who makes an effort to sell to another Tahoe local, but not often.

"Buyers come to Tahoe to purchase a vacation home and often pay cash. There are so few Tahoe buyers that can afford to do that."

In the area of new builds, there is also a shortage of construction workers. Many left after the bubble burst to seek work and homes elsewhere. This contributes to higher costs for homeowners.

Androo Allen, president of the Builder's Association of Northern Nevada, said, "Wages aren't growing at the speed that the cost of living is growing in terms of housing. This is a concern for a healthy real estate market."

PRICING LOCALS OUT OF THE MARKET?

Renting is an option for many, but has its own set of issues.

Julie Lucksinger, property manager at Lake Valley Properties, said, "Rents have been increasing steadily at the rate of about 10 percent per year in the last few years. An average rent for a single-family home is around \$1,600."

When asked if she thinks rents will continue to rise, Lucksinger replied, "I think so, and eventually locals will be priced out of the market, but I hope not."

She added, "Limited inventory is an issue, too. It's very low and tight, and that makes it hard on families."

She said some families are being displaced due to the real estate market's improvement.

"One family I'm working with is being forced to relocate after 18 years," she said. "The owners are selling. We're trying to find them something, but it's been difficult.

"Other families are doubling up in order to make things more affordable."

As for leases, in order to lock in a price, Lucksinger said, "A one-year lease is pretty standard."

BARELY A LIVING WAGE

There are many other contributing factors that make housing difficult for locals.

Minimum-wage workers make up a large segment of Lake Tahoe's workforce. They are compensated at \$10 an hour in California and \$8.25 an hour in Nevada.

California Gov. Jerry Brown signed in April a "living wage" bill to increase the minimum wage to \$15 an hour, but it is a gradual increase that won't be fully implemented until 2022.

Low-wage earners, another large sector of Tahoe's workforce, make more than minimum wage, but not enough for home ownership.

The U.S. Census Bureau reports that the median household income in South Lake Tahoe is \$41,380. To break that down even further, the median wage for men is \$24,503, and for women it is \$20,484.

Considering the fact that a down payment of \$76,800 is needed, 20 percent of the sales price for a median home in South Lake Tahoe, it is difficult — if not impossible — for these workers.

EMPLOYMENT ALSO AN ISSUE

Let's do the math using South Shore's median single-family home price of \$384,000 and its median household income of \$41,380.

A mortgage payment on a home at this price point would be approximately \$1,830 at a 3.5 percent interest rate — including taxes and insurance, as well as factoring in a 20 percent down payment of \$76,800.

An income of \$41,380 would net a worker approximately \$3,000 in his/her paycheck; more than 60 percent of the household net income would be consumed by mortgage payment alone.

Lake Tahoe's employment picture has been problematic, with South Lake Tahoe being the hardest hit.

"Measuring for Prosperity," a report compiled for the Tahoe Prosperity Center, reveals there has been modest recovery in job growth since 2013 — but it has not been groundbreaking.

Between the years of 2003-13, the report cites 5,500 jobs were lost throughout the Tahoe Basin, 5,000 of them in the tourism industry.

Although the unemployment rate has improved from the double-digit numbers seen during the recession, many workers remain underemployed with seasonal and/or part-time jobs and no benefits.

So, what will locals do? It's a conundrum for sure. The median home price in Carson City, Nev., is listed at a more affordable \$240,200. But according to Zillow, a 7.7 percent increase is predicted there over the next year.

"Rents have been increasing steadily at the rate of about 10 percent per year in the last few years. An average rent for a single-family home is around \$1,600 ... Eventually locals will be priced out of the market, but I hope not." Julie Lucksinger Lake Valley Properties

BACKGROUND ON CONVERSION RATIO DATA

Table B-1. Commercial Trip Generation - Infogroup Business Data

Category for Trip Generation	Average Daily Trip Generation Rate (per 1,000 GFA)	Douglas	El Dorado	Placer	Washoe	Total Count in Tahoe Region	Weighting by Count of Establishment Type in Tahoe Region (trip generation X count)
Auto Repair and Service	15.86	1	53	16	11	81	1284.66
Bank	156.48	8	12	7	5	32	5007.36
Building Materials/Lumber	45.16	2	19	4	4	29	1309.64
Clinic	31.45	38	172	52	72	334	1284.66
Convenience Market	737.99	2	6	3	2	13	9593.87
Discount Store	56.02		2	2	4	8	448.16
Drinking Places	205.36	4	14	6	5	29	5955.44
Fast Food Restaurant	716	3	18	4	5	30	21480.00
Furniture Store	5.06	3	24	18	12	57	288.42
General Light Industrial	6.97	13	44	15	21	93	648.21
General Office Building	11.01	178	472	356	476	1482	16316.82
Hardware/Paint Stores	51.29	1	10	2	3	16	820.64
High Turnover Sit-Down	127.15	20	178	64	46	308	39162.20

Category for Trip Generation	Average Daily Trip Generation Rate (per 1,000 GFA)	Douglas	El Dorado	Placer	Washoe	Total Count in Tahoe Region	Weighting by Count of Establishment Type in Tahoe Region (trip generation X count)
Restaurant							
Hospital	17.57		7	1	6	14	245.98
Industrial Services	6.97	1	2			3	20.91
Laundry and Dry Cleaning	44.32	3	12	5	4	24	1063.68
Manufacturing	3.85	5	19	5	9	38	146.30
Mini-Warehouse (Storage Units)	2.5	1	12	3	1	17	42.50
Movie Theater W/O Matinee	78.06		1	1	1	3	234.18
New Car Sales	33.34	2	19	12		33	1100.22
Car Rentals	33.34		6		3	9	300.06
Nursery (Garden Center)	36.08	1	7	2	1	11	396.88
Quality Restaurant	89.95	2		5	1	8	719.60
Research Center	8.11	2	6	2	5	15	121.65
Savings and Loan	61	24	33	20	48	125	7625.00
Self-Serve Car Wash 108 per stall (assumes 2)	216		4			4	864.00
Service Station, 168.56 per fueling station (assumes 2)	337.12	2	15	5	1	23	7753.76

Category for Trip Generation	Average Daily Trip Generation Rate (per 1,000 GFA)	Douglas	El Dorado	Placer	Washoe	Total Count in Tahoe Region	Weighting by Count of Establishment Type in Tahoe Region (trip generation X count)
fueling stations)							
Specialty Retail Center	44.32	94	475	196	134	899	39843.68
Supermarket	102.24	2	12	7	1	22	2249.28
Warehousing	4.88		4			4	19.52
Wholesale Market	6.73	10	39	19	18	86	578.78
Grand Total		422	1697	831	899	3849	43.22

Method notes: Establishments were filtered out to include businesses that are applicable for CFA (need CFA commodities). For example, government/publicly operated establishments were excluded; recreation type facilities such as golf course facilities, yoga studios, fishing charters, ski resorts, and gyms were removed; residential type facilities including nursing homes, mobile homes, and accessory to residential type establishments were removed; religious facilities were removed; educational related facilities were removed; businesses considered an accessory to ski resort, and hotels and casinos were removed. In addition businesses were included that are located in Mixed Use, Tourist, Recreation, and Resort Recreation TRPA regional land use areas to exclude home-based businesses. Staff removed known data errors; however it was impossible to fully capture all business closures for thousands of different businesses. Data obtained from Infogroup, June 2014. Assumed that car rental establishments and boat/other vehicle sales fit in with the New Car Sales category and that laundry facilities are included in the Specialty Retail category. The conversion ratio incorporated Average Daily Trip Generation Rates published by the Institute of Transportation Engineers (ITE). A combination of sources were used including the TRPA Trip Table: http://www.trpa.org/wp-content/uploads/Attachment_A_Trip_Table.pdf, which includes rates published in the ITE Trip Generation Manual, 7th Edition, 2003 and trip rates provided in the 2008 Trip Generation, an ITE Informational Report, 8th Edition.

Table B-2. Tourist Accommodation Unit Trip Generation – Info group Business Data

Category for Trip Generation	Average Daily Rate (per unit)	Douglas	El Dorado	Placer	Washoe	Total Count in Tahoe Region	Weighting by Count of Establishment Type in Tahoe Region (trip generation X count)
Bed and Breakfast	9.81	1	10	6		17	166.77
Hotel	8.92	5	39	9	7	60	535.20
Resort Hotel	13.43	5	11	7	1	24	322.32
Timeshare (Hotel/Motel Design)	10.1	2	3	1		6	60.60
Grand Total		15	157	43	11	226	8.63

Method notes: Same as above; though establishments were removed (filtered) to include facilities that are only applicable for TAUs. For example, condos were removed. Assumed casino gaming establishments had the hotel trip rate and that cottages and hostels are included in the bed and breakfast category.

Table B-3. Conversion Ratio Approach

Description	Recommended Conversion Ratio Approach (Weighted by the Estimated Number and Mix of Businesses and Tourist Accommodation Facilities with the Tahoe Region)
Trips per 1000 GFA of CFA	43.22
Trips per 1 TAU (1 room)	8.63
Trips per 1 TAU (incorporates Occupancy of 44%*)	19.61
Formula	$43.21/1000 = 19.61/X$
Results	1 TAU = 454 sq. ft. of CFA

**Sources used are Smith Travel data for South Lake Tahoe which reported an occupancy rate of 43%, Runyan study data for North Lake Tahoe which estimated a 45% occupancy rate, and TRPA traffic zone data which showed an average of 45% occupancy. Consequently, the average tourist lodging occupancy rate of 44% was derived for the Lake Tahoe Region.*

TAHOE: OF THE STATE LAKE REPORT 2016

CLARITY

CLARITY

Annual average Secchi depth

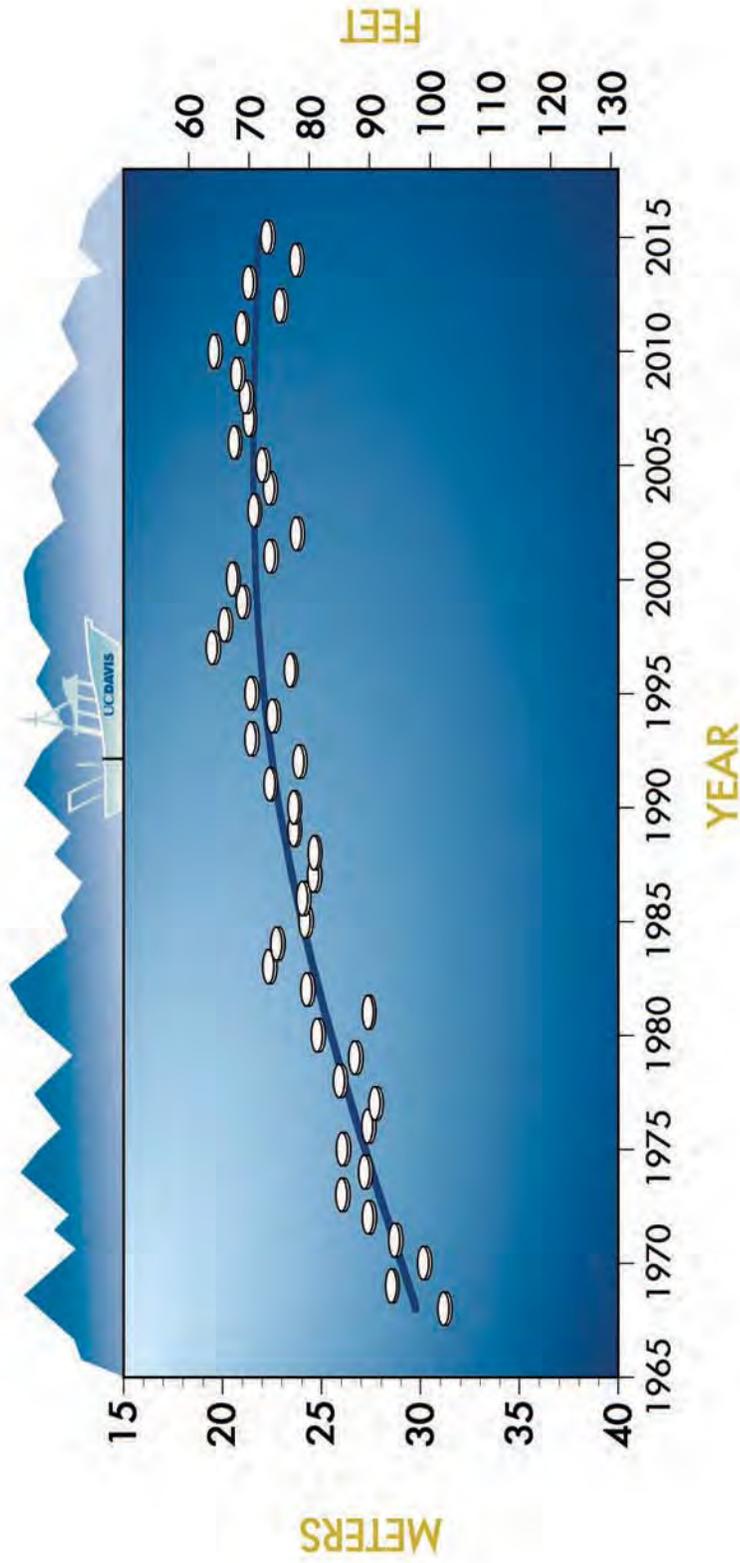
Yearly since 1968

The Secchi depth is the depth at which a 10-inch white disk, called a Secchi disk, remains visible when lowered into the water. In 2015, the annual average Secchi depth was 73.1 feet (22.3 m), a 4.8 foot decrease from the previous year but still over 9 feet greater than the lowest average of 64.1 feet (19.5 m) recorded

in 1997. The annual average clarity in the past decade has been better than the prior decade. The highest individual value recorded in 2015 was 86.6 feet on April 22, and the lowest was 59.9 feet on February 3. The decline this year is part of the year-to-year variability that has always characterized conditions at the

lake. While the average annual clarity is now better than in preceding decades, it is still short of the clarity restoration target of 97.4 feet set by federal and state regulators, a goal agencies and the Tahoe Basin community continue to work toward.

ANNUAL AVERAGE SECCHI DEPTH



CLARITY

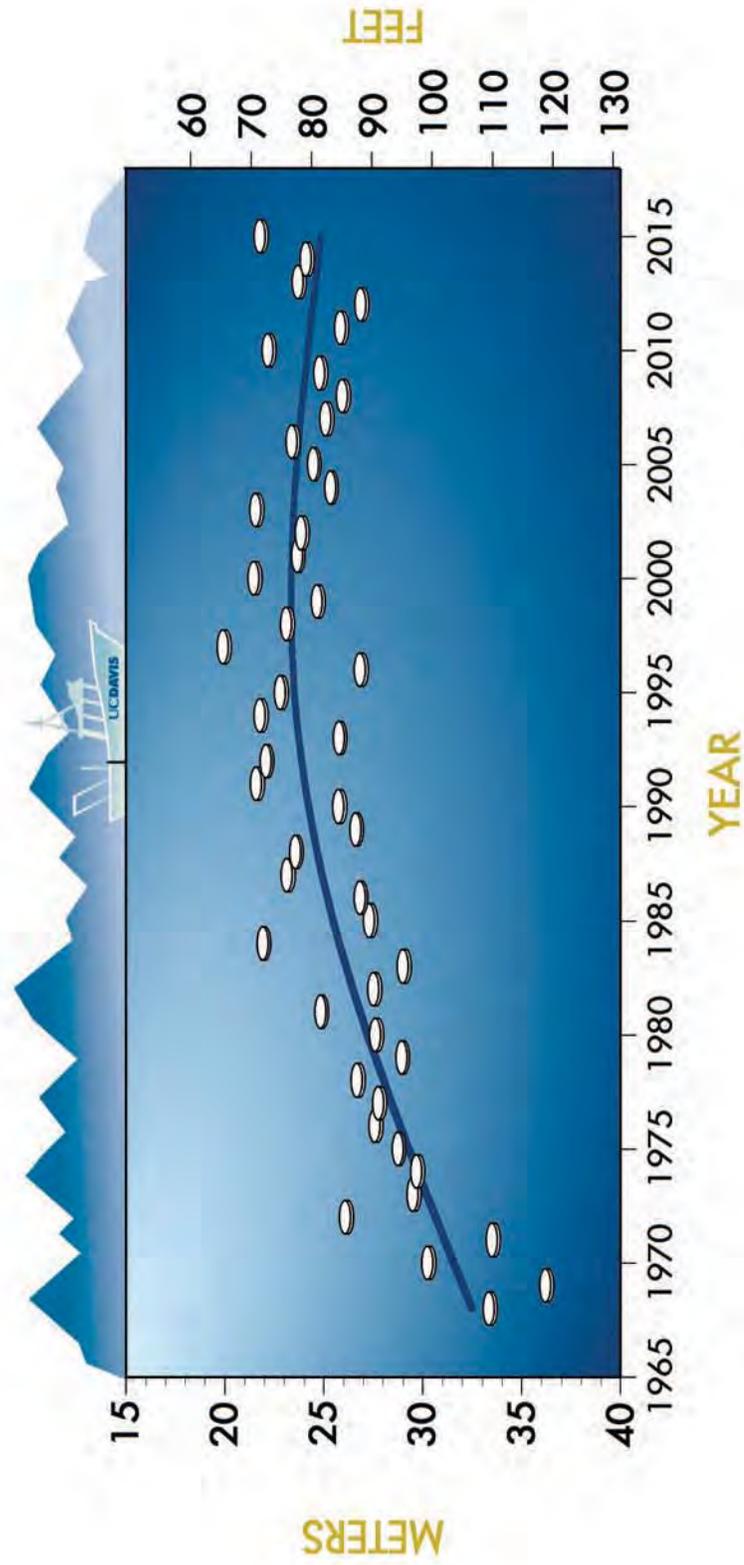
Winter Secchi depth

Yearly since 1968

Annual winter (December-March) Secchi depth measurements from 1968 to the present indicate that winter clarity at Lake Tahoe is showing definite improvement. In 2015, winter clarity

declined by 7.6 feet. The winter average of 71.5 feet (21.8 m) was still well above the worst winter average, 65.6 feet (20.0 m), seen in 1997. The low level of snowfall compared to rain this year caused the water entering the lake to be warmer in 2015, and this introduced fine particles closer to the surface.

WINTER SECCHI DEPTH



CLARITY

Summer Secchi depth

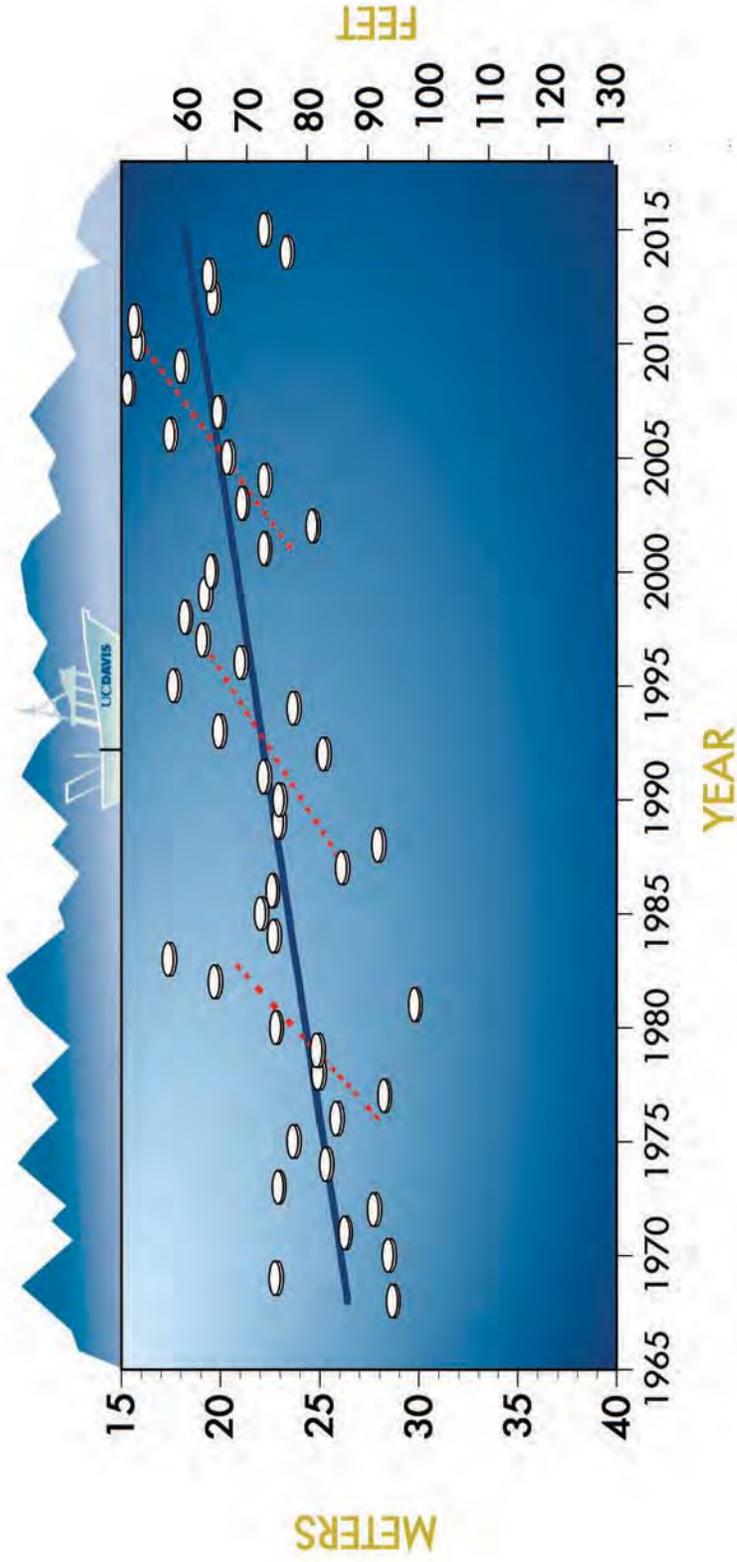
Yearly since 1968

Summer (June-September) clarity in Lake Tahoe in 2015 was 73.0 feet (22.3 m), a 3.7 foot decline from 2014. A contributing factor may have been the very low water levels in the lake, which exposed muddy shelves around the periphery of the

lake. The summer trend is dominated by a consistent long-term degradation but with a noticeable 10-15 year cyclic pattern. The red dashed lines are linear regressions for the periods: a) 1976 to 1983, b) 1987-1998, and c) 2001 to 2011.

The most recent improvement may be a continuation of this cyclical trend. The reasons behind this periodicity are being investigated.

SUMMER SECCHI DEPTH



CLARITY

Individual Secchi depths

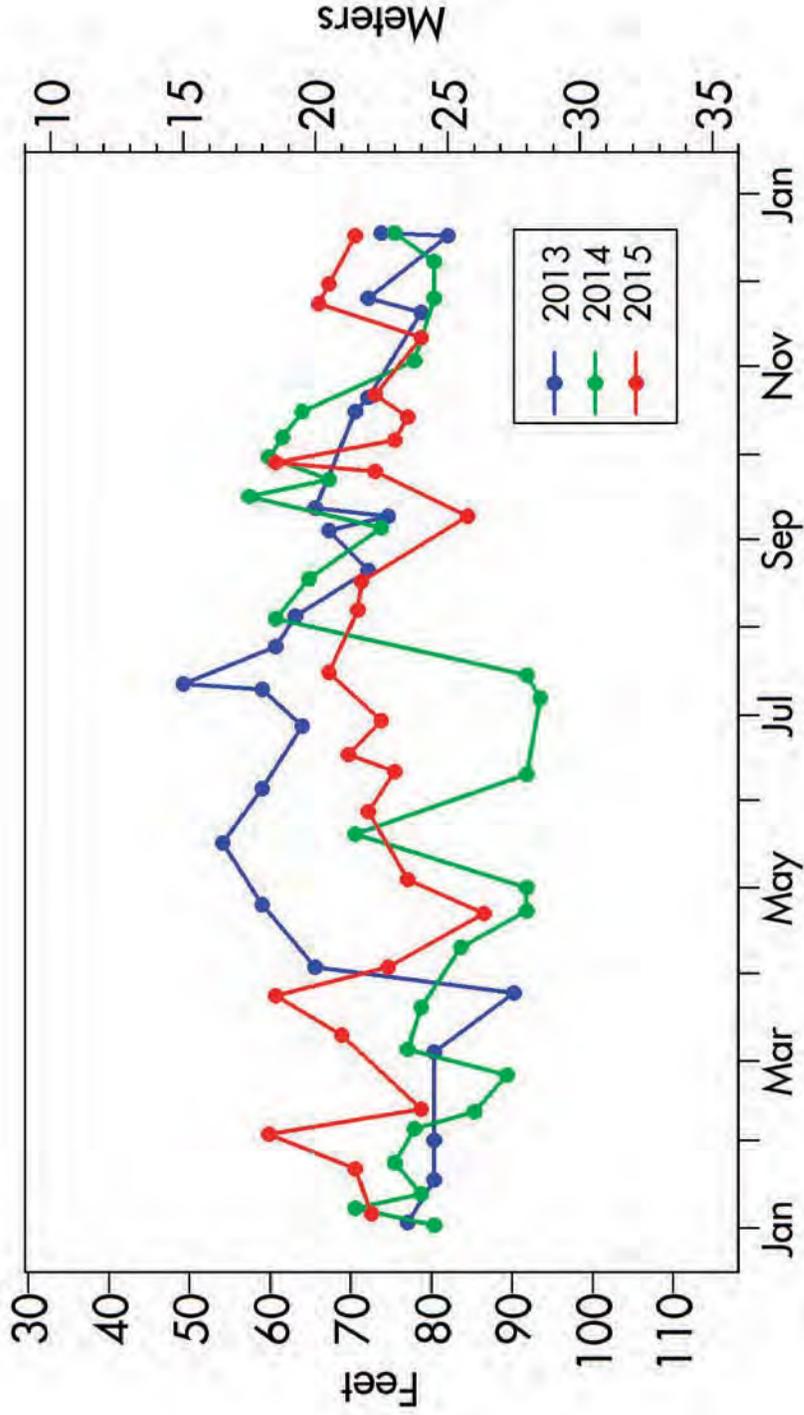
2013, 2014, 2015

Here, the individual Secchi depth reading from the index station on the west side of the lake for 2013, 2014 and 2015 are plotted. For 2013, there is a distinct seasonality – Secchi depth is generally higher in the fall and winter months, and lowest in the spring and summer. The maximum Secchi depth often occurs

around the time of deepest mixing (March). 2014 and 2015 represented a departure from this long established pattern. In 2015 some of the lowest Secchi depths occurred in winter.

Secchi values can be seen to sometimes vary considerably over short time intervals. This is evident in February

and October, 2015, where Secchi depth changed 19.5 feet and 15 feet respectively between consecutive readings. Such short-term variability is common in lakes. In these cases the sudden change is due to episodes of strong wind.



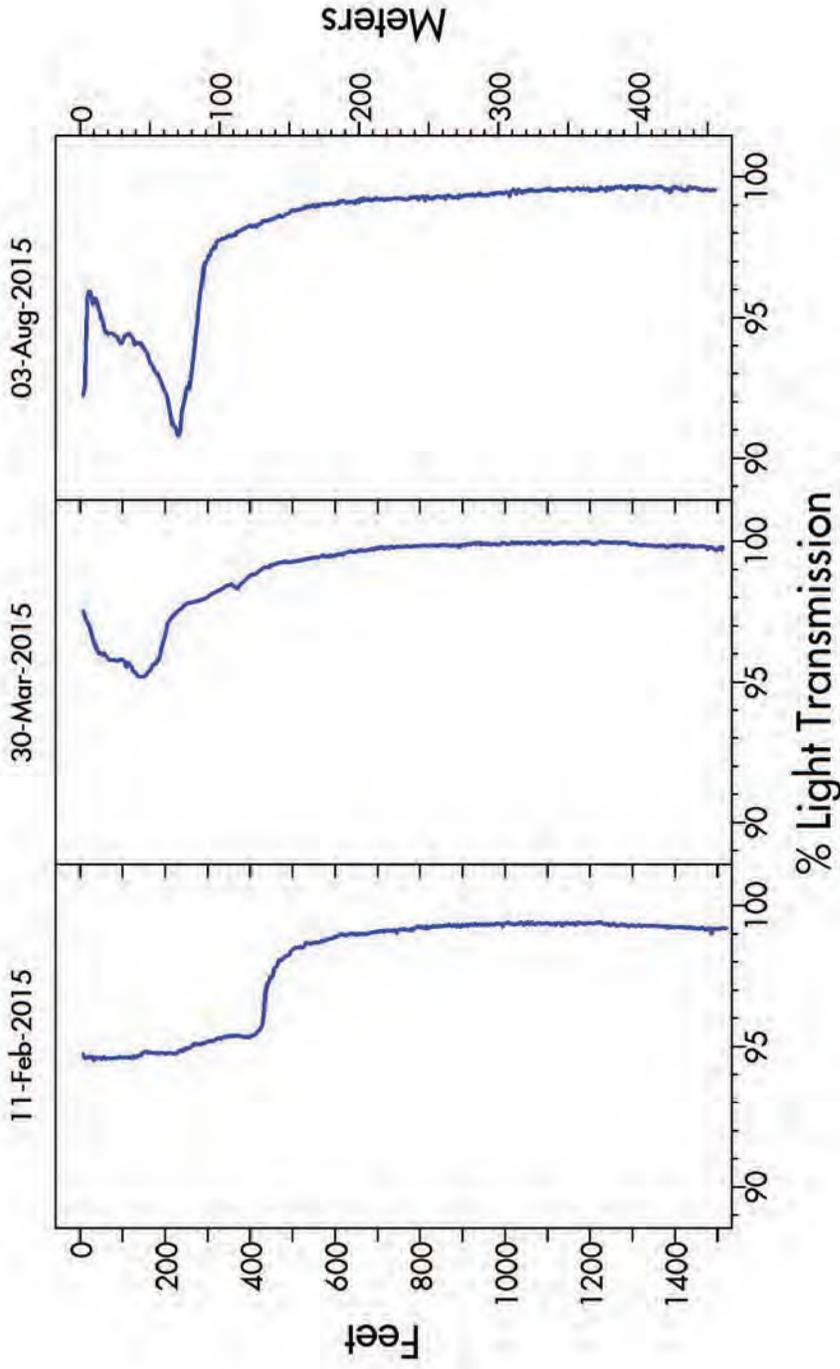
CLARITY

Light transmission
 In 2015

A light transmissometer emits a specific wavelength of light and measures the percentage of that light transmitted over a 10 inch path. Clearer water results in a higher percentage of light transmission. Here, the light transmission measured at every depth in the lake is shown at

three times in 2015. The first two panels, taken either side of the time of maximum vertical mixing, indicate that the lake has not fully mixed. In all three panels the less clear water (lower percent transmission) is toward the surface, whereas the deeper water is much clearer

(higher percent transmission). The reason for the high light transmission in deep water is that fine particles aggregate into larger particles that rapidly settle out in the deep water. Large particles do not scatter light as much as fine particles.



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Mr. Marshall said there is a difference between water quality mitigation fees, excess coverage mitigation fees, and air quality mitigation fees. Water and air quality go to offset the impact of development that is approved by TRPA. The excess coverage mitigation fee is to offset the fact that there is too much coverage on a specific parcel. It is an affirmative program to bring down the impacts of that coverage on that parcel. It was an important gain for mitigation programs and move towards threshold compliance. The point of compromise was that it not be used to replace that existing obligation but to add to it to maintain the increased increment of benefit from the program rather than have those funds go to the general jurisdictions programs to achieve TMDL requirements. This may be a way to accelerate those environmental gains by getting more improvement up front because the obligations under the TMDL are in five year increments.

Mr. Shute asked if it was correct that they did not want people to get double credit.

Mr. Marshall said essentially that is correct.

Mr. Lawrence said philosophically he does not disagree but wants to understand how it plays out at a project level. Is it going to be up to the local jurisdictions or the land bank to tease out the parking lot removal for example, does it add to TMDL load reductions.

Mr. Marshall said there is a load reduction accomplished by the participation of the excess coverage fee money. That quantum cannot be used as credit by the local jurisdiction. When they go through an EIP or a water quality project, there is a methodology for determining how much credit one would get. That element of the project cannot be used to satisfy whatever the local jurisdictions credit obligation is. It will result in a net benefit to the Lake, it will be more loading but the local jurisdiction cannot claim that ECM funded part of it.

Mr. Yeates said at a point in time, TRPA established these hydrologic units. He asked how the issue was addresses in the environmental checklist. The Friends of the West Shore letter made claims that we did not look at the nearshore impacts. The land use decisions we make could exasperate rather than improve that. The fact that there is admitted impacts in certain hydrologic units but we say the tradeoff overall is good for the Lake. There is case law although incremental, in an area that already is not at a specific attainment, you are likely to be in violation of not fully addressing those environmental effects. Page three of the Friends of the West Shore letter states that the modeling program treated coverage as if location does not matter, again taking the approach that Lake Tahoe is one big bowl or bath tub.

Mr. Marshall said what we disclosed was an incremental additional loading in certain HRAs. Fundamentally the policy choice made is we are disconnecting the sending site from the receiving site for HRA transfers. You can cross boundaries instead of having to be within the same location. We look at whether there was an impact associated with dislocating or having the sending in a different HRA than the receiving site. From a water quality perspective, generally, the receiving body is the Lake, you determine whether or not there

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is a net benefit to the Lake; the analysis disclosed all the standards reviewed for water quality purposes; clarity, etc. there is a net benefit. This is removing coverage from sensitive lands to non-sensitive lands. The benefit associated with that greatly overwhelms the additional loading that might happen from those individual parcels within the scattered HRAs. But there is concern, are you going to have any localized impacts from the fact that the sending site is no longer within the same HRA as the receiving site. The analysis looked at the nearshore concern as whether or not there is going to be as a result of implementation of this program an impact to nearshore conditions.

Rob Brueck, Hauge Brueck said the analysis started with calculating load increases by HRA. The key was to get a total to compare the entire Lake Tahoe Watershed. The first conclusion was there would be a benefit to the water quality threshold. Looking at the specifics of nearshore in the geographic locations, they reported load increases by HRA. The Initial Environmental Checklist (IEC) and the IEC, Exhibit B has more detail on how the acreage for new coverage was determined, what the results are of fine sediment and what the nitrogen and phosphorus increases are in pounds per year. After comments from Friends of the West Shore at the Advisory Planning Commission meeting, changes were made to the IEC and Exhibit B to better support that the increases were small and difficult to quantify using the modeling tools. The assumptions used to calculate those were the worst case; they assumed that the receiving sites were directly connected to drainages that would drain into Lake Tahoe. Those sites are very constrained because the policy is they have to be high capability and 300 feet from the high water line of Lake Tahoe. Page 264 of the staff packet, Exhibit B explains why these load increases predicted for HRAs are not going to affect nearshore water quality.

Mr. Marshall said the modeling took into account some geographic specificity regarding the HRAs.

Rob Brueck said they used the model developed for other items such as the TMDL and Regional Plan. It was applied by HRA and for each HRA the proper soil and base layers were selected and used precipitation data for those different locations. They didn't apply one set of data for the entire Basin. The HRA modeling uses land coverage, therefore, it is also takes into account slope. They documented for total nitrogen and phosphorous load increases for the jurisdictions where they are located. They did two samples of load increases in Washoe and Placer County and the total nitrogen and phosphorous are approximately one tenth of one percent compared to those jurisdictional baselines. The distribution of these sites are not concentrated in those HRAs. In some cases, these HRAs and sites are miles apart. They also did not assume redevelopment of parcels; it was assumed all projects would be new.

Mr. Yeates said based on the modeling there is evidence in this record that support the conclusion that it is negligible and will not have a significant effect.

Mr. Shute is concerned that in certain HRAs there is a minor increase in the sediment loading levels to the Lake that affects clarity. Since thresholds and water quality standards are not being met, under the case law any increase is significant. There is not enough clarity

October 28, 2015

in the environmental checklist as to what the standard is. If the standard were to state that we are measuring this against the TMDL or water quality standards for Lake clarity then even though there is an increase in an HRA, it is not significant because over all you could treat the Lake as a bowl in this instance and there would be a net reduction. He suggested that on pages 35, 235 and elsewhere in the document as necessary, it is rewritten to be clear that the standard was clarity and the net effect of this is a benefit. He would support the recommendation if the suggested edits were completed in the document that would be provided to the Governing Board for their approval.

Mr. Yeates agreed with Mr. Shute.

Mr. Marshall said staff would make suggested edits to the document that will go before the Governing Board.

Mr. Cole said something is classified as sensitive, is it because of the possibility that sediment is getting into the Lake because of proximity. If we are taking away coverage that is sensitive and close to this, causing more intense deposit of sediment and taking it to a place that is high capability, on the surface it is good thing. He supported anything that helps revitalization and redevelopment and didn't have any issues with the hydrological boundaries. This is a balancing act but he still has some concerns that legacy development is still being penalized to rebuild the existing property. In order to keep the existing coverage when someone redevelops they have to pay to implement BMPs as well as pay a fee for their already existing coverage. There is still a disincentive for projects to improve what someone may have even if they are over covered. But it is a step in the right direction.

Mr. Sevison asked Mr. Cole if he meant existing excess coverage.

Mr. Cole said anything in excess of 30 percent. An individual would be incentivized to leave it alone than to do a major remodel because they have to pay this penalty.

Mr. Sevison agreed but thought it was just the excess coverage.

Mr. Shute asked if it were correct that the fee is based on the particular HRA and based on transactions that have occurred.

Mr. Marshall said that is correct, based on an appraisal of activity within that HRA.

Mr. Shute said when we switch to a new system of the APGR, will that be applied by HRA or will that become uniform.

Mr. Marshall said it will be uniform in California and its by HRA within Nevada. The base fee starts with the current fee and will be adjusted using the APGR formula. There will be different fees in Nevada based on which HRA someone is in but will all be adjusted annually by the same percentage.

Mr. Shute asked if there will only be one number in California.

Table 11-18

VMT Analysis Comparison – Summer/Winter

Project Alternative	Net New Daily Trip Generation	Existing Homewood VMT	Net New Project VMT
Summer			
1 and 3	1,466	0	8,431
<u>1A</u>	<u>1,456</u>	<u>0</u>	<u>8,396</u>
2 (No Project)	0	0	0
4	490	0	2,362
5	1,391	0	7,045
6	1,328	0	6,796
Winter			
1 and 3	(-327)	13,328	(-1,232)
<u>1A</u>	<u>(-337)</u>	<u>13,328</u>	<u>(-1,266)</u>
2 (No Project)	0	13,328	0
4	(-2,045)	13,328	(-10,966)
5	(-286)	13,328	(-1,869)
6	(-360)	13,328	(-2,172)

Source: Fehr & Peers 2009

IMPACT: TRANS-1. Will the Project result in generation of 200 or more new Daily Vehicle Trip Ends?

Analysis: *No Impact; No Project (Alternative 2)*

The No Project (Alternative 2) will not include changes to the existing land uses, densities, and roadway network; therefore, there are no impacts associated with this alternative.

Mitigation: No mitigation is required.

Analysis: *Significant Impact; Project (Alternative 1) and Alternatives 1A, 3, 4, 5, and 6*

As shown in Table 11-17, the Project (Alternative 1) and Alternatives 1A, 3, 4, 5, and 6 will not generate more than 200 net new daily vehicle trip ends during the winter months:

- Alternatives 1 and 3: -327 net new daily trips;
- Alternative 1A: -337 net new daily trips;
- Alternative 4: -2,045 net new daily trips;



Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

May 25, 2015

Subject: Update on the Commercial Floor Area/Tourist Bonus Unit Conversion Pilot Program

Dear Members of the Regional Plan Implementation Committee:

The Friends of the West Shore (FOWS) appreciates the opportunity to provide comments regarding the proposed Commercial Floor Area (CFA)/Tourist Accommodation Unit (TAU) Bonus Unit pilot program. We first thank the RPIC and staff for not recommending the Pilot Project 2, as discussed at the April GB hearing. However, we remain concerned the proposed Pilot Program 1 (Pilot Program) will lead to substantially more growth in the Basin which was not analyzed by the RPU EIS.

Increases in people, number of vehicles, coverage/floor area, and parking spaces (which increases pavement and vehicle use) may range from 400-2400% (see detailed review below).

Further, during the March 2015 RPIC discussion, TRPA staff indicated an environmental analysis would be performed.¹ This should be provided to RPIC and the public along with the staff report, but we did not locate this in the packet.

I. Environmental Impacts of Proposed Project:

Trip generation is only one of the environmental impacts that will occur from the proposed Pilot Program. The use of Bonus Units increases the total number of people in the Basin. In addition, there are numerous environmental impacts associated with the conversions of Bonus Units that were not considered by the staff report (including impacts from TAU morphing; see evaluation below).

Impacts include, but are not limited to:

- Increased coverage;
- Increased vehicle trips/VMT;
- Increased demand for water (total demand by all overnight guests may be greater than the demand by commercial uses);
- Increased demand on utilities, including water companies, power providers, sewer systems and infrastructure, natural gas providers, and other utilities;
- Increased demand for public services, including emergency care, fire departments, law-enforcement officers, and other public services;
- Increased water, air, and noise pollution from the increased vehicle trips and VMT; and
- Increased demand on nearby recreational lands from more overnight guests.

TRPA must consider the full capacity of the Lake Tahoe Basin, for residents, day, and overnight visitors. This point was reiterated by Board member Bill Yeates during the March 25th discussion (RPIC minutes, p. 18):

“[Mr. Yeates] does not want to reduce access to Lake Tahoe, but at the same time these are evolving things and as a regulatory agency dealing with the number of people we want to have around the Lake and their impact on the Lake, how we are going to accommodate all of that in trying to address the commodities.”

The full impacts of the proposed Pilot Program must be comprehensively addressed, including the potential impacts to TRPA’s environmental thresholds, before such amendments are approved.

¹ <http://www.trpa.org/wp-content/uploads/May-27-2015-Governing-Board-Packet.pdf>; RPIC Minutes, p. 16.

Available information is not adequate to support the threshold findings (Code Chapter 4) TRPA will be required to make because there has been no adequate environmental analysis.

II. Impacts from TAU “morphing:”

A conversion formula based on a simple comparison of estimated vehicle trips from an average trip number derived by averaging all commercial uses in the Basin does not adequately analyze the variety of other impacts that will result from the proposed Pilot Program. As noted in our previous comments and reiterated by Board Member Hal Cole, the proposed transfer ratio incentivizes conversion of CFA to TAU, but not the other way.² We are most concerned about the impacts of conversion of CFA to TAUs. The morphing of TAUs allowed by the RPU allows significant increases in development – even before Bonus Units are awarded. The following information evaluates the impacts of TAU morphing, first without Bonus Units, then with Bonus Units. *The difficulty of reading through the numbers in this assessment exemplifies why a simple trip generation analysis will not suffice, and why the TAU morphing issue must be considered by TRPA.*

A. New development as a result of TAU morphing:

As noted in our previous detailed comments, even before bonus units and other incentives are applied to a situation involving the transfer of existing TAU units, the maximum potential increased growth due to the morphing allowed by the RPU is as follows:

	Existing TAUs		New TAUs			
	Existing TAU	Total: 30 existing TAUs	New TAU – people/unit	# with 30 new TAUs	# with 60 new TAUs	# with 90 new TAUs
People/unit	1-2	30-60	6-8	180-240	360-480	540-720
Total size (sq. ft.)	300	9,000	1,200 (80%) ^a 1,800 (20%)	39,600 ^b	79,200 ^c	118,800 ^d
No. Vehicles	1	30	3-4	90-120	180-240	270-360

a. Code 51.5.2.K.2. Note: Table has been updated from previous versions in order to account for the 80/20% split in this Code section.

b. 80% (24) of the units can be 1200 sq. ft. = 28,800 sq. ft. and 20% (6) can be 1800 sq. ft. = 10,800 sq. ft. for a total of 39,600 sq. ft. *Compared to 9,000 sq. ft., this is a 440% increase in floor area.*

c. 80% (48) new units at 1200 sq. ft. = 57,600 sq. ft. and 20% (12) at 1800 sq. ft. = 21,600 sq. ft. for a total of 79,200. *Compared to 9,000 sq. ft., this is an 880% increase in floor area.*

d. 80% (72) new units at 1200 sq. ft. = 86,400 sq. ft. and 20% (18) new units at 1800 sq. ft. = 32,400 sq. ft. for a total of 118,800 sq. ft. *Compared to 9,000 sq. ft., this is a 1320% increase in floor area.*

This table illustrates that if 30 units are torn down in one location and merely used to build 30 new TAU units elsewhere, the following increases may occur under existing rules:³

- i. **800%** increase in total number of people in the accommodation;
- ii. **440%** increase in floor area for the accommodation;

² RPIC minutes, p. 16.

³ 800% in people: from 30-60 people to 180-240 people; 600% in floor area: from 9,000 sq. ft. to 54,000 sq. ft.; and 400% increase in number of vehicles: from 30 to 120 vehicles.

- iii. **400%** increase in total number of vehicles associated with guests of the accommodation.

Although the new units may be built ‘up,’ thereby the increase in coverage may be less than the increase in floor area, some portion of the increased floor area may require more coverage on the land. The need for additional parking spaces to accommodate larger numbers of people and their vehicles, however, will also require additional coverage.

B. New development as a result of TAU morphing *plus* TAU Bonus Units:

When the Bonus Units are applied to this 30-unit transfer, the developer may build up to 90 new units in the new location. With the TAU morphing noted above, impacts are now increased yet again. The net increase from tearing down an old 30-unit motel room to building 90 new tourist units to the sizes allowed by the TRPA RPU may result in the following:⁴

- i. **2400%** increase in total number of people in the accommodation;
- ii. **1320%** increase in floor area for the accommodation;
- iii. **1200%** in total number of vehicles associated with guests of the accommodation.

Meanwhile, the RPU’s existing conversions associated with CFA are based on converting one square foot to one square foot. There is no morphing potential. At most, with incentives that may award three times the CFA for transfers, there could be a net increase in CFA of 300%. This is a far cry from the 1320% increase in floor area that may result from TAU morphing combined with the Bonus Unit programs.

In addition, the proposed conversion ratio of 454 sq. ft. CFA to one TAU does not change. In other words, the conversion of 80,000 sq. ft. of CFA into TAUs from the Bonus Unit pool, as proposed in staff’s recommendation, would equate to roughly 176 TAUs (p. 441 in packet). The total floor area of the new TAUs could be as high as 232,000 sq. ft.⁵ - **three times the floor area** that would have been converted (80,000 sq. ft.). There is clearly a net increase in development potential from these transfers.

III. Use of Commercial Trip Generation to develop Ratio:

We appreciate the efforts taken by staff to accumulate information regarding the numbers and types of commercial establishments throughout the Basin (p. 447-449), however, there is clearly a wide range of trip generation associated with different uses. For example, while commercial uses such as drinking places, high-turnover sit down restaurants, or supermarkets may generate over 100 trips per 1,000 GFA, other uses such as furniture stores, light industrial uses, or wholesale market generate only 5-7 trips per 1,000 GFA. It is impossible to ‘compare’ the change in trips from conversion of CFA into TAUs, or vice versa, without looking at the type of commercial use that is being transferred or constructed. There is simply too much variation to account for. It is inappropriate to derive one transfer ratio from adding up these uses and developing one averaged value. These impacts would need to be examined on a project-by-project basis.

⁴ 2400% in people: from 30-60 people to 540-720 people; 1320% in floor area: from 9,000 sq. ft. to 118,800 sq. ft.; and 1200% increase in number of vehicles: from 30 to 360 vehicles.

⁵ At 1200 sq. ft. for 80% (141) of the new units converting to 169,200 sq. ft. in TAUs, and 1800 sq. ft. for 20% (35) converting to 63,000 sq. ft. in TAUs, this would result in a total new floor area of 232,200 sq. ft. associated with the TAUs.

In addition, Table B-3 on page 450, titled: “Conversion Ratio Approach,” notes that the conversion formula is based on generation of a one-room TAU. As noted in our comments on TAU morphing, new TAU accommodations can be much larger and are apt to have more than one room (which means more guests and more trips). Any comparisons must be based on the type of TAU units that will be constructed, not those that will be torn down.

IV. Moving Target for “Build-out:”

We are very concerned with the ongoing proposals to amend the RPU. First, the RPU has been in effect for barely over two years. Second, changes are being considered without the benefit of the full, comprehensive review promised during RPU deliberations (more information in attached comments) and required by the Goals and Policies (Policy DP-2.1⁶). Third, with so many efforts to amend the RPU underway, it is becoming impossible for the public, let alone TRPA, to figure out what the maximum development potential actually will be.

A. Insufficient implementation period:

The RPU has been in effect since February 2013 – just over two years. The first Area Plan was not adopted until the summer of 2013 (the South Shore Area Plan in Douglas County), and the second, the fall of 2013 (the Tourist Core Area Plan in the City of South Lake Tahoe). Other Area Plans are still under development. As a result, the RPU’s presumed benefits of the transfer program – which heavily rely on the adoption of Area Plans in order for the new ‘incentives’ in Town Centers to apply – have not been adopted in most “Centers” identified in the RPU. Those that have been approved have been in effect for less than two years. There has simply not been adequate time to assess whether the transfer program will work as intended.

B. Lack of full assessment of all information as intended upon RPU adoption:

Prior to the RPU’s adoption in December 2012, numerous discussions with the Board and public occurred regarding TRPA’s target to evaluate the thresholds and consider needed policy amendments every four years. This process would allow information regarding threshold status and trends to guide policy changes that may be necessary in order to achieve and maintain the environmental thresholds. However, changes to the commodity limits, bonus unit program, coverage transfers across hydrologically-related areas, excess coverage mitigation program, BMP compliance, and other RPU amendments have been made and/or proposed in the two years since the RPU took effect. We believe changes should not be made without the benefit of the next environmental threshold report, which will also include the tracking information necessary to compare policies to outcomes.

C. Rushed and ongoing list of amendments and maximum build-out potential:

As noted above, ongoing amendments to the RPU have been underway since the RPU’s adoption. These changes, acted on separately and without the benefit of any comprehensive environmental analysis, have created a situation where due to conversions, transfers, morphing, relaxed coverage standards, relaxed compliance standards, and other changes, it is virtually impossible to know what the maximum development of the Basin will be. TRPA should be examining the Basin’s maximum capacity and assessing how these changes fit within that

⁶ DP-2.1 EVERY FOUR YEARS, TRPA SHALL CONDUCT AN IN DEPTH EVALUATION OF THE REGIONAL PLAN IN COMPARISON WITH PROGRESS TOWARD MEETING THE ENVIRONMENTAL THRESHOLD CARRYING CAPACITIES.

capacity. Prior to the RPU, staff indicated a desire to consider changes at the four-year intervals;⁷ yet in the period since, there appears to be an open door policy to amend the RPU. This begs two questions: *What is the rush? Why can TRPA not wait until 2016 to consider RPU amendments, as was originally intended?*

We have attached our previous comments on the Pilot Program, which we note include many of the details and references associated with our comments herein.

V. Changes regarding current vs. historical SEZs

Although we strongly support increased restoration of all SEZs, and have previously raised concerns regarding actions which have reclassified historical SEZs to non-SEZ land capabilities,⁸ we are concerned about the proposed ‘re-interpretation’ of how the Bonus Unit/Transfer of Existing Development Programs will apply to SEZs. On its face, the proposed change in how TRPA considers which parcels are eligible for transfer incentives would appear to result in more restoration of historical SEZs; we certainly support the restoration of more SEZs. However, the language in the staff summary is unclear. It is also unclear whether staff has made this decision, or is seeking RPIC’s advice. We believe more information is needed to assess this change, and have the following questions:

- What SEZ lands existing today that were historically SEZs have been reclassified as non-SEZs? Why were they reclassified?
- What are the amounts and locations of such lands both within and outside of Centers?
- What is meant by “currently verified SEZ” versus “restored SEZ?” Will this new interpretation only apply to areas historically classified as SEZ, but currently ‘verified’ as non-SEZ, that have already been restored? If so, as of what date?
- What is meant by “verified prior to or after restoration?”
- If historical SEZ lands (now verified as non-SEZ lands) have already been restored (we presume this would be “after restoration”), how would providing incentives after the fact encourage more restoration? It would already have been completed.
- As TRPA’s RPU also relies on the *rate* of growth,⁹ and the implementation of other improvements (e.g. EIP projects) in order to approve more development (for example, through the IPES program and residential allocation system¹⁰), would the timing of restoration no longer matter, as suggested

⁷ “The performance benchmark reporting system is something that we have started a conversation with the California Legislative staff. There are more requirements and needs for regular annual reporting than only the Threshold indicators, here are all the different types of regional plan performance benchmarks; four of the five categories are new requirements under the regional plan update. In addition to our Threshold monitoring all five of these annual reports will roll up into the Agency’s four-year Threshold Evaluation and will be the basis of consideration when reprioritizing our annual budgets, as well as making changes to the policies and strategies of the Regional Plan.” (Nov. 2012 GB minutes, p. 26) [Emphasis added].

⁸ May 2009, TRPA Hearings Officer Hearing. See: Objections of Friends of the West Shore and Homewood Residents James & Susan Gearhart to Request for Land Capability Challenge of Homewood Village Resorts, LLC, APN 097-130-05, 5145 West Lake Blvd., Placer County, California.

⁹ “[Alternative 3] combines a reduced rate of development with strong incentives for redevelopment, along with other regulatory changes.” (RPU DEIS, p. S-8)

¹⁰ “The IPES system is similar to the Bailey system, except that it permits additional development in some sensitive areas in conjunction with retirement of sensitive parcels and other water quality improvements in the vicinity... TRPA awards residential allocations to local jurisdictions annually. The number awarded is based on the performance of each jurisdiction in implementing EIP projects, achieving compliance with Best Management Practice (BMP) retrofit requirements, monitoring project permit conditions, and increasing transit levels of service. The current program for distributing and allocating residential development is an interim system that began on

in the staff summary?

- If incentives will be awarded for the restoration of lands no longer verified as SEZ, but which were SEZs historically, will new development on lands historically classified on SEZs now be limited to 1% coverage as defined by the Bailey limits - a possible outcome if the same logic is applied?
- The dilemma of picking which science is desirable in terms of development interests is a new element in TRPA planning, and should be clearly described and analyzed for beneficial impacts on the contributions of SEZ processes to water quality.

In conclusion, we request the RPIC recommend the Pilot Program be set aside for now until the bigger questions are answered. We appreciate staff's efforts with the comparison of trip generation, but the project as a whole needs serious work. It can be reconsidered in 2016 or later, after complete information (including the threshold evaluation report) is available. We also believe staff's new interpretation regarding the application of the alternate incentives to historical SEZs be thoroughly discussed and carefully thought out in a public process.

Thank you for your consideration. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net if you have any questions.



Susan Gearhart,
President



Jennifer Quashnick,
Conservation Consultant

GOVERNING BOARD

August 26, 2015

fire safety. As staff reviews these plans, we check to see if there is anything in TRPA's rules or practices that could be of assistance.

Ms. Berkgigler said it was made clear at the Lake Tahoe Summit that catastrophic fire is a serious threat for the Basin. Congressman McClintock statement was accurate in the fact that if there were a catastrophic fire it could destroy this Basin for years.

Mr. Yeates said we need to be more proactive in our engagement with the local jurisdictions, Sacramento Area Council of Governments (SACOG) and possibly the Metropolitan Transportation Commission in the Bay Area. We are a transportation agency and under the California Environmental Quality Act (CEQA), lead agencies that have an impact within our jurisdiction must consult with us, it should have been something more than an email. There should have been a discussion in the context of the Regional Transportation issues we are dealing with outside the Basin and how we can work together. He suggested that there should be a committee that addresses transportation issues. We are implementing a sustainable community's strategy that came out of California which was driven by Regional Transportation planning, we need to be more proactive and innovative and there needs to be a mechanism to provide information on a regular basis. What we are doing today is not going to help us if we are talking about the numbers of people that are coming to this Basin, we cannot just respond to projects, we need to get ahead of the curve and work with these agencies to develop a good relationship with our partners on transportation to address these issues and find solutions. It is a shame we missed the comment period on Squaw Valley, but the comment period would not have necessarily solved the problem. We need to raise the transportation issue to an informative process.

Ms. Marchetta said staff agrees and we will find the venues to bring more of these transportation issues forward; the EIP committee may be the appropriate committee to help address this. Staff will continue to coordinate with Placer County. There are many partnerships in the Basin that are dealing in transportation

Mr. Sevison said Placer County has led on the transportation front for the Basin. They had one of the early best bus services and through the last 20 years it has grown and there has been has been a strong support for that. The County does their best to get the all available information and mitigate the issues.

Mr. Beyer said part of the Agency's name has "Regional" in it and we should think of ourselves without boundaries. What does "near" mean with respect to these other projects; it has a distance but it also relative to what impacts this body.

Public Comments & Questions

LINKING TAHOE

Solving Transportation Challenges

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Community Meeting Online

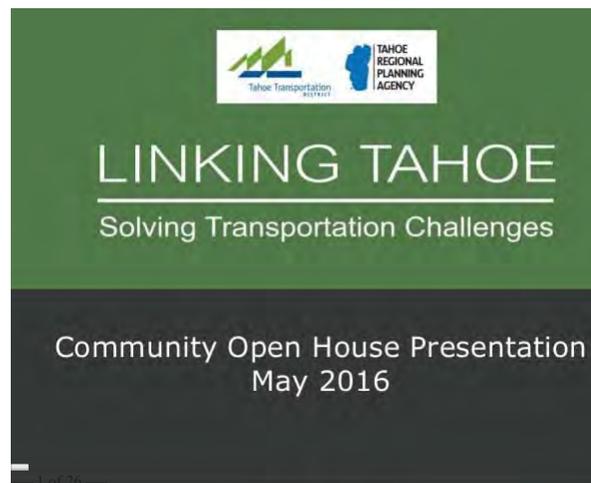


TAHOE TRAFFIC JAMMING YOU UP?

Protecting Tahoe's beauty while accommodating all who enjoy it is a true balancing act. Projections show the number of annual visits increasing by up to 20% in the next 20 years. With demand already high, what will the impacts be on air/water quality and transportation? The Tahoe Regional Planning Agency (TRPA) and the Tahoe Transportation District (TTD), the two regional bi-state agencies for transportation, have teamed up to address long-term planning for transportation over the next 20 years.

- Learn about new transportation system data.

Review the presentation slides below to learn about new transportation data and proposed transportation system improvements.



Click links to view enlarged images and maps from the slideshow:

Slide 7: Activity Density by Device February 2014 map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/slide-7-activity-density.jpg?afb56f>)

Slide 7: Home Locations of Visitors Devices February 2014 map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/slide-7-home-locations.jpg?afb56f>)

Slide 8: Activity Density by Device July 2014 map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/slide-8-activity-density.jpg?afb56f>)

Slide 8: Home Locations of Visitors Devices July 2014 map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/slide-8-home-locations.jpg?afb56f>)

Slide 11: Six Lake Tahoe Corridors (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/slide-11-corridors.jpg?afb56f>)

Slide 19: CA SR 89/28 map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/CA-SR89-28-map.jpg?afb56f>)

Slide 20: NV SR 28 – National Scenic Byway map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/NV-SR28-map.jpg?afb56f>)

Slide 21: US 50 East Shore/US 50 South Shore map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/US50-east-south-map.jpg?afb56f>)

Slide 22: SR 89 Recreation & Meyers Y map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/SR89-meyers-map.jpg?afb56f>)

Slide 23: Existing and Proposed Bicycle Facilities 2016 map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/bicycle-map.jpg?afb56f>)

Slide 24: Existing Regional Transit Services map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/transit-map.jpg?afb56f>)

Slide 25: Possible Future Transit to Tahoe map (<http://www.linkingtahoe.com/wp-content/uploads/2016/07/future-transit-map.jpg?afb56f>)

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(<http://www.trpa.org/>)

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Placer County
— CALIFORNIA —

Sweeping plan for transportation improvements would benefit entire county

June 24, 2016

A plan to improve area roadways to relieve both existing and future traffic and congestion and to improve public transportation is two steps closer to reality.

An effort to place a transportation sales tax on the November ballot to fund the plan got two key approvals this week, with the Placer County Board of Supervisors and the Placer County Transportation Planning Agency board both voting unanimously to support the plan. The supervisors OK'd a spending plan for the proposed transportation sales tax June 21; the planning agency board voted June 22 to support the proposal and to place it on the ballot.

The proposed half-cent transportation sales tax increase is expected to be before voters in the November election. If approved by voters, funds generated through the tax would fund highway projects, public transit expansion, local street maintenance and improvements and other projects in both suburban and rural areas.

With continued population growth throughout western Placer County, area roadways are crowded and traffic is expected to get worse. According to the Placer County Transportation Planning Agency, transportation infrastructure improvements are needed in the region to accommodate current and growing population and economic needs.

Currently, the agency uses gasoline tax and federal and state funding for transportation infrastructure. Developer-paid traffic impact fees also contribute to future infrastructure needs. PCTPA estimates that over the next three decades, \$3.5 billion will be needed to fund priority transportation projects. Existing funding mechanisms will only provide about \$1.4 billion. The proposed tax increase would generate another \$1.6 billion over 30 years.

"The effective buying power of the gas tax is about one-third of what it was in the early 90s," said Celia McAdam, PCTPA executive director, at the board of supervisors meeting June 21. "At the same time, you have vehicles that are far more efficient and you have alternative fuels vehicles that pay no gas tax whatsoever. So it becomes a declining revenue source."

The board of supervisors action is one needed step of several before the proposed sales tax increase can be put before voters. The cities of Auburn, Colfax, Lincoln, Rocklin and Roseville and the Town of Loomis have all approved the spending plan for the sales tax increase proposal that would fund transportation improvements throughout the county. With the PCTPA board's approval this week, the plan will come back to the county board of supervisors to be placed on the November ballot for voter approval.

"We have to address our transportation problems locally," said Susan Rohan, Roseville vice-mayor and current chair of PCTPA board. "I don't think we can wait for the state and federal governments to fix them for us. We can sit and complain, or we can solve the problem locally."

Over the next 30 years, PCTPA projects 70,000 new homes, 180,000 additional residents and 32 million additional square feet of commercial and office space in Placer County. The proposal would include highway and interstate improvements, with a significant amount of revenue going to local road improvements in unincorporated areas of the county. A full 3 percent of the tax revenues would be earmarked for improvements in the Tahoe area. Funding for improvements to bicycle and pedestrian trails would also be included.

"I believe this plan is well thought out and maximizes the use of potential funding," said District 3 Supervisor Jim Holmes. "It truly includes something for everyone in Placer County, from the western suburbs to North Tahoe, and even the most rural communities that are desperately in need of help with everything from potholes to Dial-a-Ride."

An independent citizen oversight committee would also conduct annual audits and report to the public on expenditures, ensuring compliance with the voter-approved expenditure plan.

Some of the high priority projects include:

- Interstate 80/Highway 65 interchange improvements;
- State Route 65 widening;
- Construction of the new Placer Parkway expressway between SR 65 and SR 70 through Placer Parkway;
- Improvements to SR 49 through Auburn, including sidewalks;
- Widening Baseline Road, a common alternative to Interstate 80;
- Additional lanes on both eastbound and westbound Interstate 80;
- Interchange upgrades along Interstate 80; and
- Roadway repair maintenance, with funding dedicated specifically to rural county roads.

Additional projects identified for funding with the tax revenues include improvements to Capitol Corridor rail and bus transit, expanding pedestrian and bicycle trails and public transit service in the North Lake Tahoe area, as well as expanding Dial-a-Ride service for Placer's growing senior citizen population. For more on the plan and its proposed projects visit keepplacermoving.com.



Federal funds boost to help improve North Lake Tahoe area public transit

July 28, 2016

Between \$750,000 and \$1 million will be allocated annually for North Lake Tahoe area public transit improvements after the Placer County Board of Supervisors July 26 approved a memorandum of understanding with the Tahoe Regional Planning Agency for the coordination of ongoing transit planning and programming of Federal Transit Administration funds in the Tahoe area.

Placer County and the Tahoe Transportation District are now eligible for additional FTA funds following passage of the Fixing America's Surface Transportation Act. Previously, Placer County received around \$420,000 in FTA funds annually for the Tahoe area.

The FAST Act, passed in December 2015, is a federal law that provides long-term funding certainty for surface transportation infrastructure planning and investment. The FAST Act for the first time designates the Tahoe basin as an urbanized area, making it eligible for a larger portion of FTA funds allocated nationwide.

Placer County and TTD are now eligible for two separate FTA grants: one for bus and bus facility programs and another for an urbanized area formula funding program, which makes federal resources available to urbanized areas for operating costs and preventive maintenance.

Placer County will use these additional funds to help implement the Tahoe Truckee Area Regional Transit Systems Plan Update adopted by the board of supervisors in April. That plan lays out a five-year plan to increase service frequency and provide later evening service year-round.

In order to qualify for FTA funds, a metropolitan planning organization for the area - TRPA - was required to enter in an agreement with Placer County to specify the procedures for carrying out transportation planning and programming funds.

TRPA uses service area population and the number of hours and miles of transit service provided to determine how it allocates FTA funds in Placer County.

TRANSIT SERVICE EXPANSION

Mitigation Measure 9-7 in the DEIR requires the applicant to contribute fair share funding or create a Community Service Area or Community Facilities District to help fund an increase in transit service. This mitigation measure describes the agencies involved (Placer County and Tahoe Area Regional Transit [TART]), obligations of the applicant (including specific operational improvements), and duration of responsibility. The project's Specific Plan also includes three policies (CP-2 through CP-4 on page 9-33 of DEIR) that are intended to enhance and supplement public transit, both within Olympic Valley and outside Olympic Valley. Policy CP-4 requires applicant participation in any plans to help expand regional transit services through financial support, such as subsidies and/or funding programs.

As indicated in the discussion of Impact 9-7 beginning on page 9-65 of the DEIR, ridership data were provided by Placer County for the TART SR 89 route for several winter days during the 2010-2011 ski season. This information is summarized in Table 9-17 in the DEIR and indicates that the majority of northbound morning ridership and southbound evening ridership is associated with drop-offs and pick-ups between Tahoe City and Squaw Valley. The information in Table 9-17 is based on available data from on-bus ridership surveys. Although this table does not show peak-hour, peak-direction ridership trends between Truckee and Squaw Valley; it is likely that similar travel patterns exist. In summary, peak-period, peak-direction TART buses appear to be close to capacity during peak winter ski days (e.g., the Saturday morning bus to Squaw Valley on February 26, 2011 required about one-third of riders to stand, and had a reserve capacity for only nine more riders). However, as stated on page 9-24, under existing conditions, "an additional bus is typically provided on the peak AM commute run on busy winter days to expand capacity." Therefore, a response to peak day demand is already in place. Continued addition of buses during peak periods may be an action funded through Mitigation Measure 9-7 to accommodate any increases in ridership generated by the VSVSP.

The specific type and levels of transit service enhancement that would occur will be developed and refined through implementation of Mitigation Measure 9-7. One evaluation of the VSVSP's anticipated fair share funding contribution indicates that it would be sufficient to provide one additional inbound bus arriving from Tahoe City and one additional bus arriving from Truckee during the Saturday Winter AM peak hour (with a comparable reverse afternoon trip). It is estimated, based on a review by the EIR traffic engineer, that this would result in the removal of 37 peak hour, peak-direction project-related vehicle trips that would otherwise drive to the Village (based on the bus capacity, and average vehicle occupancies of employees and skiers).

Several comments pertained to the concept of introducing shuttles that would transport both day-use skiers and overnight guests to/from the project and regional destinations. To understand the effectiveness, challenges, and benefits of such a program, a review of a similar effort is presented here.

In the winter of 2012-2013, the Truckee North Tahoe Transportation Management Association operated a free-fare skier shuttle program extending around the North Tahoe/Truckee region from Homewood to Squaw Valley to Truckee to Donner Summit to Northstar and to Incline Village. A total of 5 buses were used to operate at least two AM and two PM runs on all routes, over 44 peak weekend days and holidays. The ridership generated at the park-and-ride facilities was low. As an example, an agreement was made with the Tahoe Truckee Unified School District to allow free parking at the old Sierra Mountain Middle School site (just north of I-80 and west of SR 89 South). Direct service was provided to Squaw Valley, Alpine Meadows, Northstar, and the Donner Summit resorts. Despite a strong marketing effort, average daily ridership (boardings) at this location was only 1.3. A memo dated April 25, 2013 from LSC Transportation Consultants, Inc. to the North Lake Tahoe Resort Association includes the following conclusion (LSC 2013: 10):

Setting these specific factors aside, it is realistic to conclude that the potential ridership under current conditions is limited. The low ridership is in part a reflection that the use of the private automobile for access to the ski resorts remains relatively convenient. Unlike some other mountain resorts, parking at North Tahoe ski areas is free to the skier. Except on the very busiest of days, parking is available at the North Tahoe resorts. Finally, while there is episodic traffic congestion on busy days, shifting from a private car to a bus service does not provide any travel time savings, as the region does not have any

HOV/bus lanes or “jump queue” lanes at intersections. As a result, skiers with ready access to a private vehicle have little incentive (in terms of monetary or time savings) to use a transit service, given the time needed to wait for the bus or use a park-and-ride.

In subsequent ski seasons, a more limited (two bus) skier shuttle program has been operated, focusing on connecting lodging properties with the ski base areas. Overall, however, the results of this experimental service indicate that simply providing enhance transit service to park-and-ride locations in the North Tahoe/Truckee region is not an effective means of reducing auto use.

EFFECTIVENESS OF MITIGATION MEASURE 9-1A (TRAFFIC MANAGEMENT ON SQUAW VALLEY ROAD)

Multiple commenters raised questions regarding the effectiveness of Mitigation Measure 9-1a (Traffic management on Squaw Valley Road). A key component of Mitigation Measure 9-1a is the creation of a predictive model, which can be used to forecast when the traffic management plan will need to be implemented. This will allow for adequate advance planning/staffing, thereby proper staffing levels that enable early-morning snow clearance along Squaw Valley Road, and placement of traffic control personnel. As such, the proposed traffic management plan would operate in a much more efficient manner than the current condition, in which three-lane coning is implemented in response “same-day” congestion subject to available staffing.

USE OF 2011-2012 SKI SEASON DATA TO REPRESENT EXISTING WINTER CONDITIONS

Multiple commenters raised questions regarding whether traffic counts from the 2011-2012 ski season used to support the DEIR traffic analysis are appropriate representations of existing conditions. This is important because the traffic counts set a baseline that contributes to the project impact evaluation. The following specific comments were made in various comment letters:

1. The 2011-2012 season was one of the driest in recent times and hardly representative of an average winter ski season.
2. Poor snow conditions in December 2011 and January 2012 contributed to a below average 2011-2012 season.
3. During an average ski year (which has not occurred in four years), the Christmas Holiday and Martin Luther King (MLK) weekend would be among the busiest, if not the busiest. The effect of this would be to cause what is shown as the busiest day in Table 9-1 to actually be in the top 5 or 10 days had there been decent snow during the Christmas Holiday and MLK weekend.
4. Since many skiers had already given up the 2011-2012 season as “lost,” the Presidents Weekend counts were not representative of an average Presidents Weekend.
5. There could be as many as 30 days of overflowing traffic during a ‘good season’ including: Thanksgiving, Christmas Week, MLK Weekend, Presidents Weekend, Spring Break, and Easter Weekend.
6. Data that were collected in 2011-2012 should be scaled to create an average snowfall year.
7. Use of data from 2011-2012 underestimates the 5th busiest day of travel and underestimates the number of days that impacts will be significant and unavoidable.

Each of these above comments is addressed in sequence below. However, first, Table 3-8 has been prepared to summarize snowfall at the Squaw Valley Ski Resort from the 2008-2009 through 2014-2015 ski seasons using the same online reference as identified in comment I268-2.

M e m o r a n d u m

Date: July 3, 2015

To: State Clearinghouse
1400 Tenth Street, Room 121
Sacramento, CA 95814

From: **DEPARTMENT OF CALIFORNIA HIGHWAY PATROL**
Truckee Area

File No.: 222.15648.15648

Subject: VILLAGE AT SQUAW VALLEY SPECIFIC PLAN, SCH #2012102023

*late
7/1/15
E*

RECEIVED
JUL 06 2015
STATE CLEARING HOUSE

The Truckee Area of the California Highway Patrol (CHP) recently received the "Notice of Completion" environmental document for the proposed Village at Squaw Valley Specific Plan, State Clearinghouse #2012102023. After review, we have concerns with this project.

The Truckee and North Tahoe communities (including Squaw Valley, an unincorporated portion of Placer County) has experienced an incredible amount of growth within the last few years, as well as fluctuating population increases. This particular project will increase tourism, congestion, and indirectly increase the frequency of special events. The North Tahoe area has limited roadway infrastructure for State Route (SR) 89 and SR 28. The Tahoe Basin is a protected environment making increases to the state highway system challenging. The CHP Truckee Area is comprised of 24 field officers and a communications center which services four distinctly different offices. These impacts and an increase to congestion increase emergency response times for first responders including CHP Truckee Area personnel.

The Truckee Area has one of the highest year-round influxes of tourism in the entire nation. In 2014, the North Tahoe area (not to include Truckee) had over four million visitors; more than ever recorded. In addition to being the recreation center of northern California, the Truckee Area provides safety and service to the main traffic artery between California and the rest of the United States. The CHP takes pride in assisting 38,000 vehicles per day (transporting 113 million dollars in assets) reach their destination along Interstate (I) 80.

The North Tahoe/Truckee area is the host to more large scale events than any other area in the region. Much of these large scale events are directly involved with the Squaw Valley community. Many of these events begin or culminate in Squaw Valley. In the winter, there are numerous snow-related events conducted at one of the eight world class ski resorts. Truckee and the Tahoe Basin have more ski resorts than anywhere else in the country. In the summer months, there is an average of three large events affecting traffic each and every week. Truckee recently



State Clearinghouse

Page 2

July 3, 2015

hosted the USA Cycling Championships, Amgen Tour of California, Ironman Lake Tahoe, two Tough Mudder events, and the Spartan Race, as well as many other bicycle races, triathlons and running events. The Ironman alone requires a yearlong planning process. These special events absorb a tremendous amount of state resources, as well as simultaneously affecting the Squaw Valley area.

In 2014, Truckee experienced a multitude of special events, year round road construction, and snow conditions which required both internal and external staffing from other CHP Areas. The geography, location, and elevation of the Truckee area provide some of the most treacherous roadway conditions in the entire country. Due to these treacherous conditions on I-80, the Department of Transportation has stationed more equipment and personnel assigned to the Truckee region than in any other portion of the state.

Due to these unique nuances of the Truckee area, it is important to provide context to the North Tahoe and Truckee communities, as well as this development within the Squaw Valley community. Please do not hesitate to contact me with any question or concerns directly at (530) 582-7570.

Sincerely,



R. STONEBRAKER, Captain
Commander

cc: Valley Division
Special Projects Section



the Governor's Office of
Planning & Research

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HOME SCH LAND USE CLIMATE CHANGE CEQA LOCAL GOVT. WATER

Updating the Analysis of Transportation Impacts Under CEQA

UPCOMING PUBLIC MEETINGS

The Governor's Office of Planning and Research will conduct two public meetings to discuss and to receive input on the revised proposal updating methodology for transportation analysis in the CEQA Guidelines. The format will include both a panel discussion and time for audience questions and comments. Both meetings will be webcast for those that cannot attend in person.

The first meeting will be held on February 18, from 2:00pm to 4:00pm, at the Southern California Association of Governments, 818 West 7th Street, 12th Floor, Angeles, CA 90017. For those participating in the webcast the web link is <http://scag.adobeconnect.com/sb743/>, the conference number is 1-800-832-0736, a conference ID is 8891988.

The second meeting will be held on February 22 from 10:00 to noon, in the Cal/EPA Headquarters Building, Byron Sher Room, 2nd Floor, 1001 I Street, Sacramento, CA 95814. Webcast information is available at: <http://calepa.ca.gov/Broadcast/>.

Additional information regarding the revised proposal is available on OPR's website: https://www.opr.ca.gov/s_sb743.php.

DRAFT CEQA GUIDELINES AND TECHNICAL ADVISORY NOW AVAILABLE

On January 20, 2016, the Governor's Office of Planning and Research (OPR) released for public review a [revised proposal](#) for changes to the CEQA Guidelines that will change the way that transportation impacts are analyzed under CEQA. A media release describing the revised proposal is available [here](#). OPR invites input on this revised draft. Please submit all written comments to CEQA.Guidelines@resources.ca.gov by 5:00pm on February 29, 2016.

Recommendations that remain similar to the August 2014 preliminary discussion draft:

- Vehicle miles traveled is the primary metric of transportation impact across the state
- Land use development near transit or in VMT-efficient areas should be presumed to cause a less than significant transportation impact
- Transit, active transportation, and rehabilitation projects that do not add motor vehicle capacity should also be presumed to cause a less than significant impact
- Implementation should be phased in over time

Recommendations that are new or different from the August 2014 preliminary discussion draft:

- Detailed recommendations on thresholds, safety and mitigation now appear in a draft Technical Advisory, rather than in the regulatory text
- New threshold recommendations are now more closely aligned with California's long-term greenhouse gas emissions reduction goals
- Updated methodological recommendations for estimating vehicle miles traveled for commercial projects
- Clarification of which transportation projects may induce additional vehicle miles traveled, and those that would not likely do so
- Updated recommendations regarding rural development and small projects
- Recommended phase-in period of two years during which the new procedures would be optional, allowing those agencies that are ready for the change to do so immediately

Data availability and demonstration of methods:

- Data regarding vehicle miles traveled from the California Statewide Travel Demand Model is now available
- Case studies (residential-retail mixed use, office, and roadway expansion) have been included in the proposal to illustrate the analysis

WHAT DOES SB 743 CHANGE?

Governor Brown signed Senate Bill (SB) 743 (Steinberg, 2013), which creates a process to change the way that transportation impacts are analyzed under CEQA. Specifically, SB 743 requires the Governor's Office of Planning and Research (OPR) to amend the CEQA Guidelines to provide an alternative to LOS for evaluating transportation impacts. Particularly within areas served by transit, those alternative criteria must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." (New Public Resources Code Section 21099(b)(1).) Measurements of transportation impacts may include "vehicle miles traveled, vehicle miles traveled per capita, automobile trip generation rates, or automobile trips generated." Once the CEQA Guidelines are amended to include those alternative criteria, auto delay will no longer be considered a significant impact under CEQA. (Id. at (b)(2).) Transportation impacts related to air quality, noise and safety must still be analyzed under CEQA where appropriate. (Id. at subd. (b)(3).) SB 743 also amended congestion management law to allow cities and counties to opt out of LOS standards within certain infill areas. (See Amended Government Code Sections 65088.1 and 65088.4.)

Aside from changes to transportation analysis, SB 743 also included several important changes to CEQA that apply to [transit oriented developments](#), including aesthetics and parking.

HISTORY

OPR published a [preliminary evaluation](#) of possible metrics to replace "level of service" in transportation analyses in December 2013, and invited public comment on that evaluation. OPR reviewed all of the [comments](#) that it received on the preliminary evaluation to develop the preliminary discussion draft. In August 2014, OPR released a [Preliminary Discussion Draft of Updates to the CEQA Guidelines Implementing SB 743](#), and a [Frequently Asked Questions](#) document, accepted [comments](#), and provided a [summary of those comments](#). Those that would like to receive notice of the availability of the draft proposal, as well as other future Guidelines activities, are encouraged to sign up on the [CEQA Guidelines listserv](#).

WORKSHOP MATERIALS AND RECORDINGS

[February 2, 2016 Webinar Recording](#)

[February 9, 2016 Webinar Recording](#)

[Webinar PowerPoint Presentation](#)

[February 22, 2016 Webinar Recording](#)

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Staff Report
editor@sierrasun.com

July 7, 2016

Planning commissioners vote 5-2 for denial of Martis Valley West



A schematic of the proposed Martis Valley West Parcel project.

MORE ONLINE

Visit mvwpfacts.com and savetahoe.org to learn more about the Martis Valley West Parcel project, including arguments for and against. Visit bit.ly/1JJcOVC to view the final EIR.

KINGS BEACH, Calif. — The Placer County Planning Commission on Thursday voted to recommend denial of the Martis Valley West Parcel Specific Plan and the certification of the project's environmental impact report.

The project now goes to the board of supervisors; a date has yet to be set for that meeting. The ultimate decision lies with the county supervisors.

Thursday's 5-2 vote came during a continuation of the commission's June 9 meeting to consider the project.

According to Placer County, after extensive public testimony at the June 9 meeting, the commission agreed to continue consideration at a follow-up meeting and requested more information from county staff about potential negative impacts on the Tahoe region.

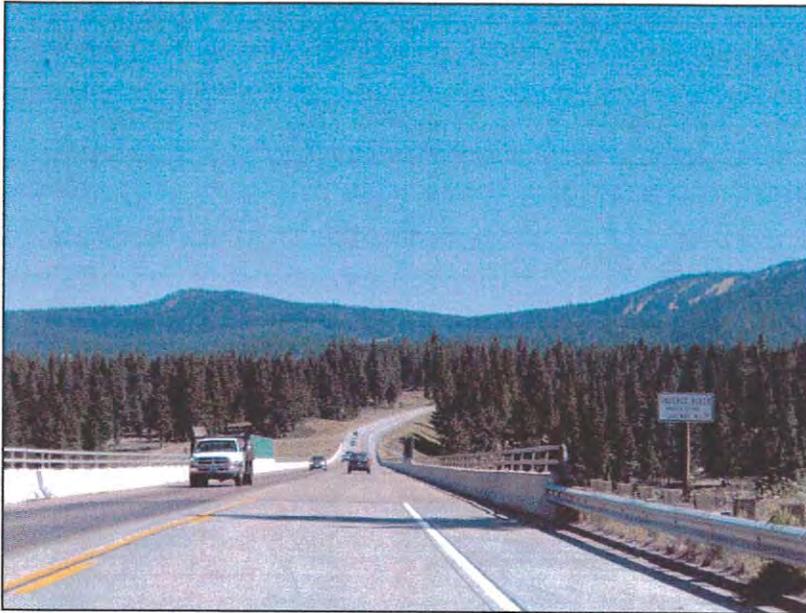
After significant comment, commissioners Thursday "expressed continuing concerns about the traffic and evacuation plans in recommending their denial of the project," according to a county press release.

Thursday's meeting at the North Tahoe Event Center — just like the June 9 meeting at Granlibakken — featured a standing-room-only crowd of passionate residents.

Sierra Sun Reporter Amanda Rhoades attended Thursday's meeting to capture commentary from all sides of the issue. The Sun will update this story in the coming days.

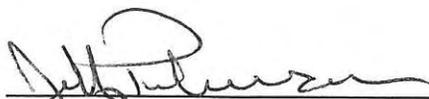


TRANSPORTATION CORRIDOR CONCEPT REPORT STATE ROUTE 267



Transportation Corridor Concept Reports (TCCR) are Caltrans' long range (20-year) planning documents for each State Highway Route. The purpose and need of each TCCR is to identify existing route conditions and future needs, including existing and forecasted travel data, a concept level of service (LOS) standard, and the facility needed to maintain the concept LOS and address mobility needs over the next 20 years.

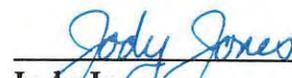
Approvals:



Jeff Pulverman
District 3 Deputy Director
Planning and Local Assistance

4/10/12

Date



Jody Jones
District 3 Director

4/11/12

Date

Segment Summary Information

The following page provides a summary of the SR 267 segments. This summary provide a segment overview, traffic analysis data, and a list of future projects. Reference maps are also provided. Needed improvement projects appear in one of three categories – Planned, Programmed, or Conceptual:

A **Planned** Improvement or Action is a project in a long-term plan such as an approved Regional Transportation Plan (RTP or MTP) or Capital Improvement Plan. If an RTP/MTP contains the project but does not find that it can be funded within constrained funding limits, the Project may remain Conceptual (see below), requiring advocacy to bring it within financial constraints, regardless of the completion year.

A **Programmed** Improvement or Action is a project in a near-term Programming Document identifying funding amounts by year, such as the State Transportation Improvement Program or the 4-year State Highway Operations and Protection Plan Program.

A **Conceptual** Improvement or Action is a project that is needed to maintain mobility or serve multi-modal users, but is not currently included in a financially constrained list within a long-term plan and is not currently programmed.

Project Data Glossary

Highway Improvement Project Acronyms and Definitions

Information in the following Segment Summaries may contain the following acronyms, defined here for your reference:

COMPLETE STREETS Complete streets are designed and operated to enable safe and efficient access for all legal users. Pedestrians, bicyclists, motorists and transit riders of all ages and abilities should be able to move safely along and across corridors. This applies in rural, suburban, and urban areas. The Department's policy in regard to Complete Streets is expressed in its document, Deputy Directive 64 R1 "The Department views all transportation improvements as opportunities to improve safety, access, and mobility for all travelers in California and recognizes bicycle, pedestrian, and transit modes as integral elements of the transportation system."

STIP Refers to the State Transportation Improvement Program, which is a biennial document adopted no later than April 1st of each even numbered year. Each STIP includes a five year period and adds two new years of programming capacity. Each new STIP includes projects carried forward from the previous STIP plus new projects and reserves from among those proposed by regional agencies in their regional transportation improvement programs (RTIPs) and by Caltrans in its Interregional Transportation Improvement Program (ITIP).

SHOPP Refers to either the 4-year "State Highway Operations and Protection Program" of Highway Maintenance or Improvement projects or to the associated 10-Year SHOPP Plan.

RTP Regional Transportation Plan is the title given by the Regional Transportation Planning Agency (RTPA) and the Metropolitan Planning Organization (MPO) to their Long-Range Transportation Plans, produced according to the guidelines adopted by the California Transportation Commission based on Federal and State requirements.

RTIP Regional Transportation Improvement Program is the title given by the RTPA and the MPO to their programming documents, which are produced according to the guidelines adopted by the California Transportation Commission.

State - Local Responsibility

Improvements to the State Highway System are the responsibility of both Caltrans and local agencies. Developments affecting this route and the regional State Highway System may necessitate that local jurisdictions provide nexus based, proportional fair-share funding for future highway improvements.

State Route 267 Summary

State Route (SR) 267 is a west to east undivided 2-lane mountain highway 11.7 miles in length that connects Interstate 80 (I-80) at Truckee in Nevada County (PM 0.0) to SR 28 at the North Shore of Lake Tahoe at Kings Beach in Placer County (PM 9.9). The route is part of the Federal Aid Primary System and is classified as a Minor Rural Arterial.

Truckee is the major population center for eastern Nevada County. Truckee is a hub for rail freight and passenger service, and is located at the crossroads of I-80, SR 89 and SR 267. I-80 is a major transcontinental route, and SR 89 and SR 267 are the main northern entrances into the Tahoe Basin.

SR 267 traverses southwesterly from I-80, bypasses the Town of Truckee, continues through rolling terrain, and progresses into the mountainous terrain of the Sierra Nevada to an elevation of 7,179 feet at Brockway summit. From Brockway Summit, the route descends 945 feet into the Tahoe Basin ending at SR 28 in Kings Beach. The route is of local and regional significance providing access to residential, industrial, commercial and recreational land uses, and serves inter-regional, local commuter, and recreational traffic traveling between the Tahoe Basin, Martis Valley, Truckee, and I-80. Furthermore, SR 267 serves as a connecting link between I-80 and the Tahoe Basin, and provides access to several major destinations, including the Truckee-Tahoe Airport, Northstar-at-Tahoe ski area, the community of Incline Village, and the East Shore of Lake Tahoe.

Traffic volumes on SR 267 are not as high as the volumes on SR 89, which parallel from I-80 to the North Shore of Lake Tahoe. However, traffic volumes are projected to increase on SR 267 due to new commercial and residential developments near the Truckee-Tahoe airport, Northstar-at-Tahoe ski area, and various unincorporated locations within Placer county along the corridor. As the development and travel demands increase, the following issues regarding SR 267 need to be addressed: traffic congestion, highway geometrics, maintenance, and bicycle access.

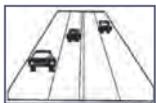
District 3 has established concept level of service (LOS) standards for the 20-year period—LOS D for route segments in rural areas and LOS E for route segments in urban areas. Presently, LOS conditions for SR 267 are at LOS D. This LOS rating is directly attributed to the hilly, mountainous terrain of this rural route, limited sight distance, few passing opportunities, many curves, and steep grades. SR 267 LOS conditions include some delays, occasional unstable traffic flows, difficult or few passing opportunities. LOS conditions are expected to decline over the 20-year period to LOS E for the portion of SR 267 between I-80 and Brockway Summit unless improvements are made.

The Caltrans District 3 State Highways Bicycle Plan is currently in development. It will identify the vision for bicycle use of State Highways, as well as a detailed inventory of existing facilities and needed improvements to appropriately accommodate bicycling on State Highways, including SR 267. This Plan will provide guidance for Caltrans and input to the local and regional bicycle planning activities of our external partner agencies. The information in the Bike Plan will be incorporated into future updates of the SR 267 TCCR.

Location					Forecasted LOS and Facility Type					
Segment	Description	County	From Post Mile	To Post Mile	Current LOS ¹	20-Year No Build LOS ^{1,2}	20-Year Concept LOS ^{1,3}	Existing Facility ^{4, 5}	Concept Facility ^{4,5,6}	Ultimate Facility ^{4,5,7}
1	I-80 to Nevada/Placer County line	NEV	0.00	1.80	D	E	D	2E	2E	4E
2	Nevada/Placer County line to Brockway Summit	PLA	0.00	6.67	D	E	D	2C	2C	4C
3	Brockway Summit to SR 28 in Kings Beach	PLA	6.67	9.89	D	D	D	2C	2C	2C

Notes/Definitions

- Level of Service (LOS)-A measure of traffic density conditions, with "A" representing the least amount of density and "F" the most congested conditions.



LOS A



LOS B



LOS C



LOS D



LOS E



LOS F

- 20-Year LOS (No Build)-The LOS that would be expected at 20 years with no improvements.
- 20-Year Concept LOS-The minimum acceptable LOS over the next 20 years.
- Facility Type Codes-C = Conventional Highway; E = Expressway; F = Freeway; HOV = High Occupancy Vehicle lanes; Aux = Auxiliary lanes.
- Operational Improvements are included in future facilities for all segments. Examples of operational improvements include Traffic Operations Systems improvements and Auxiliary Lanes.
- Concept Facility-The future roadway with improvements needed in the next 20 years. If LOS "F", no further degradation of service from existing "F" is acceptable, as indicated by delay performance measurement.
- Ultimate Facility-The future roadway with improvements needed beyond a 20 year timeframe.
- Peak Directional Split-The percentage of total traffic in the heaviest traveled direction during the peak hour.
- Average Annual Daily Traffic (AADT)-The average number of vehicles per day in both directions.
- Volume over Capacity (V/C)-The volume of traffic compared to the capacity of the roadway.
- Volume over Capacity does not determine LOS for two- or three- lane facilities, or segments with intersection delay.
- Reported Collision Rate Index (% Compared to State Average)- The percentage by which each segment's reported collisions rate (fatal, injury, and property-damage-only) is above or below the statewide average reported collisions rate on comparable facilities. Source: 3-Year Caltrans Traffic Accident Surveillance and Analysis System data.

Current Traffic Data – 2009					Prior 3 Years	Future Traffic Data – 2029 No Build		
% of Trucks	Directional Split ⁸	Peak Hour Traffic	Average Annual Daily Traffic ⁹	Volume Over Capacity ^{10,11}	Reported Collision Rate Comparison (% Compared to State Average) ¹²	Peak Hour Traffic	Average Annual Daily Traffic ⁹	Volume Over Capacity ^{10, 11}
2%	54%	1,500	12,200	0.54	-25%	1,875	15,250	0.68
2%	60%	1,450	11,600	0.53	-8%	1,958	15,660	0.71
2%	55%	1,200	10,100	0.44	-7.5%	1,440	12,120	0.52



State Route 267 Segments 1 & 2 Summary



 **Segment 1 - I-80 to Placer County line (NEV PM M0.000-PM 1.80)**

 **Segment 2 - Nevada/Placer County line to Brockway Summit (PLA PM 0.00-6.67)**

Segment 1 begins at the Interstate 80 and SR 267 interchange and ends at the Nevada/Placer County line. The Truckee Bypass is a 2-lane expressway that was constructed to remove traffic from downtown Truckee. However, the bypass was built with sufficient right of way to expand to 4 lanes when needed.

This segment currently operates at LOS D, but is expected to decline over the 20-year planning period to LOS E. In order to meet Concept LOS, the facility will need to be upgraded to its ultimate concept as a 4-lane expressway.

Segment 2 is an undivided 2-lane conventional highway that extends southeasterly from the Nevada/Placer county line, provides a connection to the Truckee-Tahoe Airport and Northstar-At-Tahoe Ski Area, it then ascends mountainous terrain at a 9% grade, and ends at Brockway Summit. Over the next 20 years, this segment will be impacted by the development of adjacent land for commercial, recreational, and residential uses.

This segment of SR 267 currently operates at LOS D, although LOS is expected to decline over the 20-year planning period to LOS E. In order to meet the Concept LOS, the facility will ultimately need to be widened to 4-lanes.

Highway Improvement Projects

(Construction Cost in Thousands (1,000); Construction Completion Year)

Segment 1

Planned Projects:

- Construct two-lane roundabout at I-80 westbound ramps (\$3,500; 2030) 2011 Nevada County RTP
- Construct two-lane roundabout at I-80 eastbound ramps (\$3,100; 2030) 2011 Nevada County RTP
- Construct roundabout or equivalent improvement at Brockway Road (\$4,200; 2020) 2011 Nevada County RTP
- Widen to four-lanes from Brockway Road to Placer County line (\$3,500; 2030) 2011 Nevada County RTP

Programmed Projects:

- None

Conceptual Projects:

- None

Segment 2

Planned Projects:

- Widen to four-lanes from Nevada/Placer County line to Northstar Drive (\$10,000; 2025) PCTPA 2035 RTP
- Rehabilitate pavement and widen shoulders from Nevada/Placer County line to Brockway Summit (\$11,400; 2018) EA-2F290k
- CMS southbound at Truckee Airport Road (PM 0.25)

Programmed Projects:

- Martis Creek left turn pocket (\$1,800; 2015) EA-0F010
- Replace asphalt concrete surfacing from Nevada/Placer County line to Northstar Drive (\$600; 2014) EA-3M940
- Replace asphalt concrete surfacing from Northstar Drive to Brockway Summit (\$495; 2013) EA-3M600
- Plant establishment and protection from Northstar Drive to SR 28 (\$705; 2014) EA-0E830
- Northstar slope stabilization (\$7,510; 2014) EA-0E990

Conceptual Projects:

- None

State Route 267 Segment 3 Summary



 **Segment 3 - Brockway Summit to SR 28 (PLA PM 6.67-9.89)**

Segment 3 is an undivided 2-lane conventional highway beginning at Brockway summit and ending at SR 28. From Brockway summit, SR 267 traverses southeasterly descending into the Tahoe Basin ending at a 4-way signalized intersection at SR 28 near Kings Beach. This segment is located in mountainous terrain characterized by numerous horizontal curves, and a 6% grade that severely impacts the existing Level of Service (LOS).

This 3.22 mile section of roadway currently operates at LOS D and over the 20-year planning period is expected to remain at LOS D.

Potential improvements to this segment could include extension of the southbound truck-climbing lane from Northstar Drive to Brockway Summit, and widening shoulders where feasible.

Highway Improvement Projects
(Construction Cost in Thousands (K); Construction Complete)

Segment 3

Planned Projects:

- EIP water quality and erosion control from Brockway Summit to Steward Way (\$4,600; 2018) TRPA Mobility 2030 RTP
- Class II bike lane from Brockway Summit to SR 28 (\$1,600; 2015) TRPA Mobility 2030 RTP

Programmed Projects:

- EIP water quality drainage improvement from Stewart Way to SR 28 (\$13,500; 2012) EA-1C971

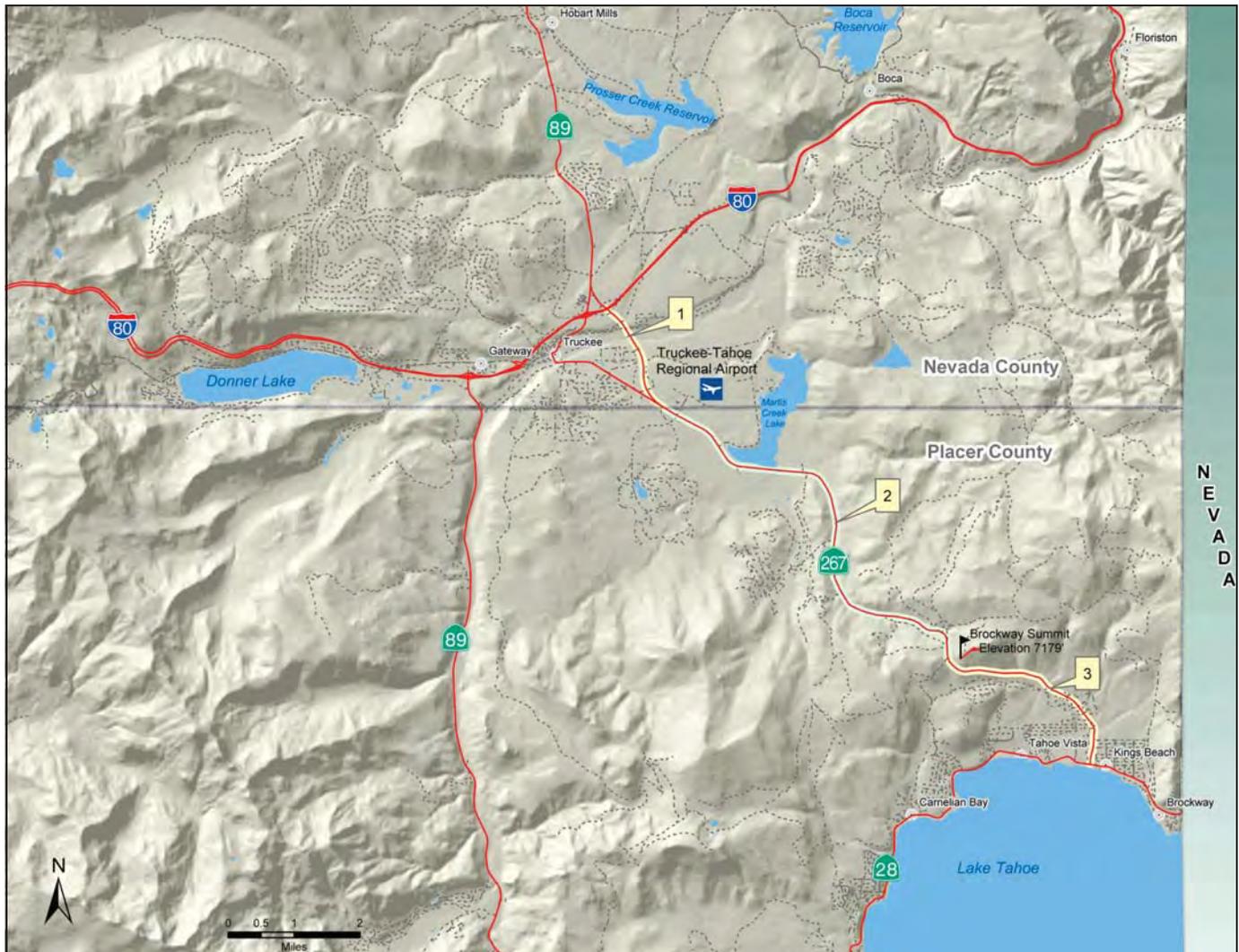
Conceptual Projects:

- Extend the existing SB truck-climbing lane from Northstar Drive to Brockway Summit
- Widen shoulders where feasible





STATE ROUTE 267 SEGMENT MAP



Please contact us for questions and concerns about this TCCR:

Caltrans District 3
Office of Transportation Planning
Marysville, CA 95901
Telephone: (530) 741-5151

Or visit the TCCR website at:

<http://www.dot.ca.gov/dist3/departments/planning/systemplanning.html>

KAMALA D. HARRIS
Attorney General

State of California
DEPARTMENT OF JUSTICE



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August 09, 2016

VIA OVERNIGHT COURIER

Paul Thompson, Interim Agency Director
Placer County Board of Supervisors and Placer County Planning Commissioners
c/o Planning Services Division
3091 County Center Drive
Auburn, CA 95603

RE: Squaw Valley Specific Plan Environmental Impact Report

Dear Mr. Thompson, Supervisors, and Commissioners,

Our office has reviewed the environmental impact report (EIR) for the Squaw Valley Specific Plan (the Project) and respectfully submits the following comments. We request that you consider our comments and address them prior to certifying the EIR. The California Attorney General has a longstanding interest in the protection of Lake Tahoe as a state and national treasure. The Attorney General's interest dates back over four decades (see, e.g., *California ex rel. Younger v. Tahoe Regional Planning Agency* (9th Cir. 1975) 516 F.2d 215) and is as recent as our involvement in the 2012 Tahoe Regional Planning Agency (TRPA) Regional Plan Update.

The Specific Plan sets forth a 25-year plan for expansion, development, and upgrades to the existing Squaw Valley Ski Resort. The Squaw Valley Ski Resort is located outside of the Lake Tahoe Basin but its entrance lies on State Highway 89, not far from the Tahoe Basin and Tahoe City on the north shore of Lake Tahoe. Because of the proximity of the proposed development to Lake Tahoe, we are concerned about the impacts the development will have within the Tahoe Basin. We are particularly concerned with the Project's resulting increases in vehicular use and traffic within the basin. The traffic issues have two components – (1) level of service impacts to specific roadway sections within the basin; and (2) increases in vehicle miles travelled and daily vehicle trips within the basin, which in turn have impacts on air and water quality and may limit the ability of environmentally beneficial redevelopment projects in the basin to go forward. The EIR has not adequately analyzed or mitigated these impacts. In addition, we are concerned with the EIR's inadequate analysis of greenhouse gas emissions – another issue of statewide importance.

A. THE EIR INCLUDES AN ANALYSIS OF THE INCREASED VEHICLE USE IN THE BASIN THAT WILL RESULT FROM THE PROJECT, BUT FAILS TO DETERMINE WHETHER THE INCREASE IS A SIGNIFICANT IMPACT.

In its response to comments, the Final EIR (FEIR) includes a discussion of the Project's impact on traffic within the basin. The FEIR anticipates that the Project's summer peak daily traffic will be 3,300 daily vehicle trips with 41 percent, or 1,353 trips, traveling into the basin. (FEIR 3-25.) The TRPA, the agency charged with regulating and protecting Lake Tahoe, considers the addition of more than 200 daily trips to be a significant impact. (TRPA Code, § 65.2.3.G.) The FEIR also projects that the Project will create an estimated 23,842 additional vehicle miles travelled (VMT) on a summer Friday, an estimated 1.2 percent increase in VMT within the basin. The addition of the Project's VMT would bring the total VMT in the basin to 2,008,442, which is below TRPA's threshold for basin-wide VMT, but only by a small margin (the VMT threshold is 2,067,600). (FEIR 3-25.) The EIR acknowledges TRPA's standards but asserts that it need not use them as the standards of significance for evaluating the Project's traffic impacts within the basin. (FEIR 3-25 to 3-26.) Rather than identify an alternative standard of significance against which to measure the increase in traffic within the basin, the document's discussion of whether the increase is significant ends there.

Lead agencies have the discretion to set standards of significance and are not required to accept significance standards adopted by agencies that will not have regulatory authority over the project. (*Save Cuyama Valley v. County of Santa Barbara* (2013) 213 Cal.App.4th 1059, 1068.) However, if evidence is submitted showing that the environmental impact might be significant despite the significance standard used in the EIR, the agency must address that evidence. (See, *Protect the Historic Amador Waterways v. Amador Water Agency* (2004) 116 Cal.App.4th 1099, 1111.) If the agency does not respond by changing the standard, it should respond by explaining the basis for the standard used. (*Id.*; see also, *Oakland Heritage Alliance v. City of Oakland* (2011) 195 Cal.App.4th 884, 898 [the substantial evidence standard applies to challenges to the scope of an EIR's analysis of a topic, the methodology used for studying an impact and the reliability or accuracy of the data upon which the EIR relied].) Because Placer County did not set a standard of significance for assessing traffic impacts to Lake Tahoe, it is impossible to know whether its rejection of TRPA's standard is appropriate and supported by substantial evidence.

In addition, while Placer County, as the lead agency, may not be required to use TRPA's standards, it must still determine whether the increase in VMT in the basin that will result from the Project is a significant impact. (See, *Protect the Historic Amador Waterways v. Amador Water Agency*, *supra*, 116 Cal.App.4th at p. 1109 [holding that even where a pertinent standard of significance exists, compliance with that standard does not relieve an agency of considering other evidence that suggests an impact may exist]; *Lotus v. Department of Transportation* (2014) 223 Cal.App.4th 645, 654 [finding environmental document inadequate where discussion of impacts was included but without any information to enable the reader to evaluate the significance of the impacts discussed].) Because the EIR fails to identify whether the increased vehicular use within the basin is a significant impact, the EIR is inadequate.

B. THE EIR FAILS TO ANALYZE THE IMPACTS ASSOCIATED WITH INCREASED VEHICULAR USE WITHIN THE TAHOE BASIN.

Although, as discussed above, Placer County did not determine the significance of the increased vehicular use in the Tahoe Basin, it does appear that this impact will be significant. The EIR anticipates that the Project will result in more than six times the number of daily trips to the basin that TRPA would determine to be significant. (FEIR 3-25.) The EIR also projects that the Project will create an estimated 1.2 percent increase in VMT, bringing the total VMT in the basin close to TRPA's threshold. (FEIR 3-25.) The FEIR did not consider the impacts associated with this increase in vehicular use in the Tahoe Basin. Placer County should analyze these impacts prior to certifying the EIR.

An EIR must identify all of the environmental impacts, direct and indirect, associated with a proposed project. (Cal. Code Regs., tit. 14, §§ 15123, 15126.2.) Indirect effects include secondary effects. (Cal. Code Regs., tit. 14, §§ 15358(a)(2); 15064(d)(2).) In addition, the impacts analysis must take into account the regional setting with "special emphasis" on environmental resources that are rare or unique to the region and would be impacted by the project. (Cal. Code Regs., tit. 14, § 15125(c).) The CEQA Guidelines are clear that "[t]he EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context." (Cal. Code Regs., tit. 14, § 15125(c).) Here, the EIR does not include an analysis of the impacts that will be associated with the Project's increase in vehicular use within the Tahoe Basin and is, therefore, inadequate.

1. The EIR does not include an analysis of the air and water quality impacts associated with the Project's increased traffic within the basin.

The significant increase in traffic within the basin will have a direct impact on the air and water quality of Lake Tahoe. Increased vehicular use generates significant amounts of dust and leads to nitrogen deposition in the lake, which in turn causes algae growth that threatens the clarity of the lake. See Final Lake Tahoe Total Maximum Daily Load Report, November 2010, 3-7, 7-8, and 11-11.¹ Vehicle trips also contribute to air pollution and global warming. The EIR does not include an analysis of these environmental impacts to Lake Tahoe that will result from the Project's increase in vehicular use.

The traffic analysis contained in the Draft EIR (DEIR) is limited to impacts to level of service on specific road sections. (See FEIR 3.2.4-128. ["To clarify, Chapter 9, 'Transportation and Circulation,' does not contain any discussion of VMT because an understanding of VMT is not critical to evaluating the transportation impacts analyzed in that chapter, which are based on

¹ The report is available at:
http://www.waterboards.ca.gov/lahtontan/water_issues/programs/tmdl/lake_tahoe/docs/tmdl_rpt_nov2010.pdf.

[level of service] LOS and other systems criteria.”].) It was not until the FEIR, in response to comments, that the County considered VMT and daily vehicle trips to Lake Tahoe. (FEIR 3-25 to 26.) While Placer County was correct to include this analysis, the information it yielded also needed to be folded into the document’s analysis of air and water quality, with a particularized discussion of impacts to Lake Tahoe.

In its response to comments on this issue, Placer County insists that it did adequately consider impacts to Lake Tahoe, pointing to its analysis of roadway service impacts in Lake Tahoe and its analysis of air quality impacts in the Lake Tahoe Air Basin. (FEIR 3.2.4-99 and -116.) However, these analyses are inadequate. First, roadway service is just one piece of the equation and does not itself account for the broader environmental impacts associated with increased traffic in the basin. Second, the air quality analysis was done as part of the DEIR, prior to and without the benefit of the basin VMT and daily trip calculations. The air quality analysis was not revisited in the FEIR to include consideration of the VMT and in-basin daily trip information. Neither the air quality or traffic analyses contained in the DEIR can therefore be relied upon as accounting for the impacts associated with the increased vehicle use in the basin.

Placer County also asserts in its response to comments that the EIR did not need to analyze the air quality impacts associated with the increased VMT in the basin because the VMT will not exceed TRPA’s threshold. (See, e.g., FEIR 3.2.4-117 – 118.) The document reasons that because the VMT threshold is a proxy for air and water quality impacts, so long as the VMT threshold is not exceeded, air quality and other impacts are not a concern. (*Id.*) This reasoning is flawed. First, in discussing the traffic impacts, the document specifically indicates that it need not apply and is not applying TRPA standards in order to determine whether the in-basin impacts are significant. It is inconsistent, on the one hand, to decline to apply TRPA’s standards for purposes of the traffic analysis, but then, on the other hand, to rely on TRPA’s standard in order to conclude that there are no impacts and no analysis is necessary for purposes of the air quality analysis.

Second, compliance with the VMT threshold alone does not ensure there are no significant air quality impacts. TRPA’s threshold for VMT is an environmental carrying capacity for the basin. Because it is a basin-wide carrying capacity, no one project *should* exceed the threshold. In order to achieve the thresholds, TRPA is required to adopt a Regional Plan that sets forth standards for projects and activities within the basin. (See TRPA Compact, Art. V(c).) These standards apply in addition to the thresholds and are the primary mechanism by which TRPA ensures that new development contributes to, and does not thwart, threshold attainment. Thus, these standards provide additional criteria that apply to individual in-basin projects to ensure environmental impacts are adequately mitigated.

Of particular relevance here, TRPA’s standards characterize any proposed development that creates more than 200 daily vehicle trips as having a significant traffic impact and require an analysis of air quality impacts associated with the project prior to project approval. In addition, all new development projects are required to provide an air quality mitigation fee to offset regional and cumulative impacts. (TRPA Code of Ordinances § 65.2.) These standards apply

regardless of whether or not the project will exceed the TRPA VMT threshold. As a result, it is inaccurate to suggest that the VMT threshold is a proxy for air quality and other environmental impacts associated with increases in VMT. Attempting to rely on the VMT threshold as a proxy for air quality impacts stretches the VMT threshold beyond its intended use and should not be condoned as a rationale for declining to analyze the air quality impacts associated with increased vehicular use in the basin. Rather than point solely to the VMT threshold, Placer County should analyze the air and water quality impacts to the Tahoe Basin that will be associated with the Project's increased VMT and daily vehicle trips within the basin.

2. The EIR must analyze the impacts of the Project's increased vehicle use within the basin on TRPA's Regional Plan and attainment of environmental goals.

In addition to considering the air and water quality impacts to Lake Tahoe that would result from the Project's increase in vehicular use in the basin, the EIR also needs to consider the impact this increased vehicle use will have on TRPA's ability to implement its Regional Plan and attain its environmental goals. CEQA expressly requires that the EIR discuss any inconsistencies between the proposed project and any applicable regional plans, including the regional land use plan for the protection of the Lake Tahoe Basin. (Cal. Code Regs., tit. 14, § 15125(d).)

After the Project is constructed there will only be 59,158 VMT remaining before TRPA's VMT threshold is met. With so little VMT remaining, in-basin projects may not be able to move forward. Further, if new out-of-basin projects are allowed to ignore the TRPA thresholds, they could easily exceed the basin's environmental carrying capacity without identifying this as a significant impact or providing adequate mitigation. This could preclude new development and redevelopment within the basin, which is a particular concern because the 2012 Regional Plan Update relied upon redevelopment as the means for environmental improvements that would allow TRPA to attain other thresholds (e.g., lake clarity). In the 2012 Regional Plan Update, TRPA recognized the critical need to redevelop aging infrastructure with new, environmentally beneficial development. Environmental redevelopment within the region results in substantial reduction of fine sediment and nutrient deposition, the pollutants degrading Lake Tahoe's famed clarity and blueness. As TRPA pointed out in its comment letter on the draft EIR, "[t]he environmentally beneficial redevelopment relied upon by TRPA may be threatened by unmitigated out-of-basin increases in trips and VMT. As a result of VMT capacity used elsewhere, efforts to protect Lake Tahoe may suffer without the ability to approve in-basin development." (FEIR 3.2.X-6.)

The EIR must disclose and consider the impact the Project will have on implementation of TRPA's Regional Plan and the attainment of environmental thresholds in Lake Tahoe. It is entirely inconsistent with the purposes of CEQA to allow a development project to move forward without consideration of the totality of the environmental impacts it will cause, especially where a unique resource, such as Lake Tahoe, will be affected. As the CEQA Guidelines make clear:

Knowledge of the regional setting is critical to the assessment of environmental impacts. Special emphasis should be placed on environmental resources that are rare or unique to the region and would be affected by the project. The EIR must demonstrate that the significant environmental impacts of the proposed project were adequately investigated and discussed and it must permit the significant effects of the project to be considered in the full environmental context.

(See Cal. Code Regs., tit. 14, § 15125(c).) Because the EIR has not fully considered the regional impacts of the Project, it is inadequate and should not be certified.

3. The EIR needs to analyze the cumulative impacts associated with the increase in vehicle use within the basin.

The information regarding daily vehicle trips to the Tahoe Basin and VMT also must be considered in the EIR's cumulative impacts analysis. In its response to comments on this issue, Placer County indicates that it did include a comprehensive traffic analysis and air quality analysis and that both analyses include consideration of impacts in the basin. (FEIR 3.2.X-8.) However, as discussed above, these analyses were done at the DEIR stage without the benefit of the VMT and daily trip information for the Tahoe Basin, which was only provided at the FEIR stage. Therefore, these sections do not provide an analysis of the cumulative air and water quality impacts associated with the increase in traffic in the Lake Tahoe Basin. The cumulative impacts analysis is also devoid of any discussion of these impacts. (See DEIR chapter 18.)

An EIR must discuss cumulative impacts when they are significant and the project's incremental contribution is "cumulatively considerable." (Cal. Code Regs., tit. 14, § 15130(a).) A project's incremental contribution is cumulatively considerable if "the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects." (Cal. Code Regs., tit. 14, § 15065(a)(3).) If the lead agency concludes that a cumulative impact is not significant, the EIR must include a brief explanation of the basis of the finding and identify the facts and analysis supporting it. (Cal. Code Regs., tit. 14, § 15130(a)(2).) Here, the EIR plainly does not discuss the cumulative impacts of the increase in vehicle use and the associated impacts on air and water quality or the impacts TRPA's ability to implement its regional plan and attain environmental goals within the Lake Tahoe Basin. The EIR must be revised to address these impacts.

C. THE EIR'S DISCUSSION OF ROADWAY SERVICE IMPACTS WITHIN THE BASIN IS INADEQUATE.

As discussed above, the EIR does not adequately discuss the Project's impact on increased vehicular use or its associated environmental and regional effects within the Tahoe Basin. In addition, the EIR's analysis of roadway service impacts within the Basin as a result of the increased traffic is also inadequate because it does not fully disclose and mitigate the roadway service impacts of the project.

1. The roadway service analysis underestimates the Project's trip generation.

The EIR underestimates the Project's trip generation. The EIR uses parking spaces as a starting point for computation of trip generation. Parking is a poor indicator of trip generation because it is unrelated to the intensity of proposed uses and having too few parking spaces is a common feature of developments. In this case, it appears that the EIR has in fact underestimated the number of parking spaces needed for the Project. (See FEIR 3.3.4-323[MRO Engineer's report indicating that the Plan provides .75 parking spaces per unit even though survey data shows that 100% of all overnight winter visitors arrive by car]; FEIR 3.24-336 [Placer County's response referring only to its master response related to parking]; FEIR 3-23 [Placer County's master response related to parking does not explain why it is appropriate to provide less than one space per unit for overnight guests].) The EIR should be revised to adequately account for overnight guests in its trip generation calculations.

2. The EIR fails to provide an adequate discussion of potential mitigation measures for the significant service impacts in the Tahoe Basin.

The EIR indicates that proposed project would add 160 vehicles during the summer peak hours to the segment of State Route (SR) 28 east of SR 89 in Tahoe City, which currently operates at an unacceptable level of service (LOS) E. (DEIR 9-16, 9-63.) LOS rankings range from A-F, with F being the worse. Placer County uses TRPA's standard of significance for LOS, which considers anything worse than LOS D to be unacceptable. The traffic impacts are considered significant. The EIR concludes that because there are no capacity-increasing improvements planned for this segment of SR 28, the impacts to LOS on this segment of SR 28 are significant and unavoidable. (DEIR 9-63.) The EIR fails to consider any other potential mitigation measures that could reduce the severity of this traffic impact.

CEQA requires that an EIR discuss mitigation measures that can minimize the project's significant environmental effects. (Pub. Resources Code, § 21002; Cal. Code Regs., tit. 14, § 15126.4.) Here, there are a number of measures that could be implemented to reduce the number of trips from the Project to the Lake Tahoe Basin, ranging from incentives for employees to take public transit, guest shuttles to Tahoe attractions, increasing transit services, or a reduced project density. Although several commenters on the DEIR requested consideration of additional measures, the FEIR declined to consider or adopt these additional measures. (See, e.g., FEIR 3.2.4-115; 3.2.4-389-3913.2.4-499-430, 3.3.X-5.)

TRPA's comments on the Draft EIR suggest at least two specific opportunities for mitigation of in-basin traffic impacts. First, the Project could contribute traffic mitigation fees to implement transportation and transit capital improvement programs (CIP). TRPA indicates that "there are opportunities to identify those CIP elements that would result in improvements in transit services needed to reduce the trips to the Tahoe Basin by individual automobiles." Second, TRPA suggests that opportunities exist to set up "ongoing operations funding streams in

amounts necessary for added transit service to offset the increase in in-basin trips generated by the project.” Specifically, TPRA suggests funding increased transit runs on the resort triangle loop. TPRA also suggests measures to encourage guests to use public transit. (FEIR 3.2.X-5.)

In response to these comments, the FEIR does not discuss the feasibility or efficacy of the suggested measures, but instead points to mitigation measures 9-7a and 9-7b, which were included in the FEIR as mitigation for impacts to transit service. (FEIR 3.2.4-115; 3.2.X-8.) This response is inadequate. First, an FEIR must respond to comments making specific suggestions for mitigation of a significant impact unless the suggested measure is facially infeasible. (See, e.g., *Los Angeles Unified School District v. City of Los Angeles* (1997) 58 Cal.App.4th 1019, 1029; *Flanders Found. v. City of Carmel by the Sea* (2012) 202 Cal.App.4th 603, 616; *Masonite Corp v. County of Mendocino* (2013) 218 Cal.App.4th 230, 241.) The measures TRPA and others have suggested are not facially infeasible and should have been considered.

Second, the mitigation measures the FEIR points to are, as a factual matter, insufficient to address the traffic impacts in Tahoe City, let alone the transit impacts they purport to address. Mitigation measure 9-7a consists of a commitment to make funding contributions to the Tahoe Area Regional Transit service, or to form a community service area or a community facilities district to fund the costs of increased transit service. (FEIR 2-20.) The amount of the funding obligation is not specified, nor are target projects identified. In addition, the funding obligation will only be triggered when “ridership approaches capacity”; not when traffic impacts are seen in Tahoe City. While funding contributions to improve transit could be a valid mitigation measure, the funding obligation is too vague and too disconnected from traffic impacts in Tahoe City to serve as a valid mitigation measure for these impacts. (See *California Clean Energy Commission v. City of Woodland* (2014) 225 Cal.App.4th 173, 197 [fair share fee to fund studies to identify strategies to address urban decay too speculative where EIR did not estimate costs, define how strategies might be implemented, or commit city to undertake actual measures to address urban decay]; *Kings County Farm Bureau v. City of Hanford* (1990) 221 Cal.App.3d 692, 727 [requirement that project applicant pay funds to purchase replacement groundwater not adequate mitigation because it was not known whether groundwater was available].)

Mitigation measure 9-7b is likewise inadequate. Mitigation measure 9-7b consists of a requirement that the Project maintain membership in the Truckee North Lake Tahoe Transportation Management Association. (FEIR 2-21.) Membership in an association does not ensure that any on the ground improvements will be implemented to relieve traffic issues in the Lake Tahoe Basin, let alone the transit issues the mitigation measure is designed to address. (See Cal. Code Regs., tit. 14, § 15370 [defining mitigation as including activities that will avoid, minimize, rectify, reduce, or compensate for an impact].)

Rather than obliquely rely on inadequate mitigation measures adopted for transit impacts, Placer County should consider the reasonable mitigation measures that TRPA and other commenters have suggested for addressing the significant traffic impacts in Tahoe City and in the basin. While roadway improvements may not be feasible, several alternative mitigation measures have been suggested that appear to be feasible and merit consideration.

3. The EIR's cumulative impacts analysis for roadway service impacts is inadequate.

The EIR's analysis of cumulative impacts is also inadequate with respect to the roadway service impacts within Tahoe City. The EIR finds that the cumulative roadway service impacts in Tahoe City will be significant and unavoidable. While we do not disagree with that conclusion, the EIR fails to include significant pending projects that will also impact roadway service in Tahoe City in its analysis.

The EIR purports to include an analysis of "probable future projects," which it defines as:

Probable future projects are those in the project vicinity that have the possibility of interacting with the proposed project to generate a cumulative impact and either: 1. Are partially occupied or under construction; 2. Have received final discretionary approvals; 3. Have applications accepted as complete by local agencies and are currently undergoing environmental review; or 4. Are otherwise considered likely to be developed, based on historic development patterns, including the rate of development, in the Olympic Valley. The other criterion used is timing. The cumulative list considers related projects likely to be constructed over the 25-year buildout of the proposed project.

(DEIR 18-1.)

The EIR, however, fails to consider at least two projects in the area that meet its own definition of "probable future projects" – (1) Brockway Campground, the application for which is pending with TRPA (see <http://brockwaycampground.com/>; <http://www.trpa.org/wp-content/uploads/APPLICATION.pdf>); and the Homewood Mountain Resort Ski Area Master Plan, which TRPA approved for redevelopment in 2011 (see <http://www.trpa.org/document/projects-plans/>). (See FEIR 18-4; and DEIR Table 18-1 and 18-2 [listing the projects considered in the cumulative impacts analysis].) Both of these projects constitute probable future projects that will have an impact on traffic in Tahoe City (e.g., Homewood's EIR estimated that it would have up to 1,466 external daily trips) and should have been considered when evaluating the Project's traffic impacts within the basin.

D. THE EIR'S GREENHOUSE GAS ANALYSIS IS FLAWED AND INADEQUATE.

The EIR properly determined that the Project's greenhouse gas (GHG) emissions would be a significant and unavoidable impact. (FEIR 3-104, 109.) Under CEQA, this determination gives rise to a legal obligation to impose all feasible measures to mitigate the impact. (Cal. Code Regs., tit. 14, § 15126.4.) The FEIR, however, fails to provide an adequate discussion of potential mitigation measures.

1. Summary of the EIR's GHG Analysis.

The FEIR relies on the County's adopted numerical significance threshold of 1,100 MT CO₂e/year² – a threshold that applies regardless of the size of the project – to find that the Project's projected GHG emissions of 42,094 MT CO₂e/year would be “potentially significant.” (FEIR 3-102, 103.) Partly because the project “could not feasibly” reduce emissions to below this target, the FEIR concluded that the impact was “unavoidable.” (*Id.* at 3-109.)

To put a finer point on the actual “significance” of the Project's emissions, the EIR relied on the California Air Resources Board's (CARB) standard statewide reduction from a “no action taken” (NAT) scenario,³ to claim that the Project would be “relatively efficient.” (*Id.* at 3-105.) Specifically, Placer County determined that the Project would emit 28.6 percent fewer emissions than it would emit under a NAT scenario, and compared this to the statewide emissions reduction goal of 21.7 percent below NAT. (*Id.*) The FEIR declined to analyze the Project against the more stringent 2050 target (80 percent below 1990 levels), claiming that any post-2020 target was too “speculative.” (*Id.* at 3-107, 108.)

To mitigate the Project's GHG emissions, the FEIR proposed Mitigation Measure 16-2, an “ongoing operation greenhouse gas review and reduction program” (hereinafter, “mitigation program”). (*Id.* at 3-107.) The mitigation program does not propose measures to mitigate the GHG emissions of the Project as a whole; rather, it promises that “subsequent project subdivisions” (or sub-projects⁴) will be required to reduce emissions “to the extent needed and feasible” to operate within whatever targets are in place “at the time the project is submitted for approval.” (*Id.* at 3-107, 108.) The FEIR requires no mitigation if the sub-project applicant demonstrates, based on sub-project-specific adjustments to the statewide goal backed by

² The FEIR quantifies emissions in metric tons (MT) of carbon-dioxide equivalent (CO₂e).

³ In 2005, Governor Schwarzenegger issued Executive Order No. S-3-05, which established a goal of reducing the State's GHG emissions to 1990 levels by 2020, and to 80 percent below 1990 levels by 2050. The 2020 goal was codified into law by the Global Warming Solutions Act of 2006 (Assem. Bill No. 32 (2005-06 Reg. Sess.) Sep. 27, 2006) (AB 32.) As required by AB 32, the CARB prepared a scoping plan that outlined how the agency would achieve the 2020 target. In that plan, CARB concludes that California must reduce its GHG emissions by approximately 21.7 percent below projected 2020 “business-as-usual” (or “no action taken”) emissions.

⁴ It is not initially clear whether the mitigation program even applies to the Project. Rather, it expressly applies to future “projects processed by the County ... at the time the project is submitted for approval.” (FEIR at 3-103.) Only later does the FEIR clarify that the referenced “projects” are “subsequent project subdivisions” (*id.* at 3-109) suggesting that each individual *component* of the Project will individually be subject to subsequent environmental review and approval.

substantial evidence, that the sub-project is in line with statewide reduction goals. (*Id.* at 3-107.) If the sub-project does not meet the applicable target, then the County will impose mitigation measures. (*Id.*)

The EIR lists a “menu” of mitigation measures that a sub-project could adopt. (*Id.* at 3-108.) The FEIR found that, if it were to adopt all of them here, the Project’s “mitigated GHG efficiency” would be 38 percent. (*Id.*) Although acknowledging that “it is not possible to link this project-specific reduction to the statewide goal of 21.7 percent,” the County nonetheless concluded that, assuming all mitigation measures are adopted, it is “difficult to argue that this project conflicts with the Scoping Plan targets.” (*Id.* at 3-108.)

In the alternative, the FEIR suggests there is no need to mitigate the vast majority of GHG emissions associated with the Project, because 99 percent of emissions attributable to it – vehicle emissions, propane use, and electricity consumption – are subject to the State’s Cap-and-Trade program and other GHG-reducing regulations. (*Id.* at 3-97.) As such, those emissions are accounted for in the statewide emissions cap, which the State will continue to lower in line with AB 32 goals. (*Id.*) The FEIR rationalized that emissions regulated under the program do not need to be mitigated under CEQA. (*Id.*)

2. The EIR’s GHG analysis is flawed and inadequate.

a. The County relied on a flawed NAT analysis to infer that the Project is satisfactorily “efficient.”

There is no doubt the Project’s GHG emissions will be significant as measured against the County’s adopted numerical threshold, given that projected emissions are almost *forty* times that value. This significance determination triggered the legal obligation for the County to impose all feasible mitigation measures. (Pub. Resources Code, §§ 21002, 21081; Cal. Code Regs., tit. 14, § 15126.4.) Rather than accepting this obligation to adopt all feasible mitigation measures, the FEIR instead conducted the NAT analysis, “to help characterize the nature of the [GHG] impact.” (FEIR 3-104.) The FEIR then relied on the results of the NAT analysis to infer that mitigation is not really necessary, because, for a project of its size and scope, the Project will actually be “relatively efficient.”

To the extent the FEIR relies on a NAT analysis for anything at all, the analysis must be done correctly, and here, it was not. The lead agency has the discretion to rely on CARB’s statewide goal in its GHG impact analysis (including to determine whether the Project’s GHG impact will be significant in the first place, which the County does not do here). In relying on the statewide goal, however, the agency must provide substantial evidence that connects the statewide goal to the reduction needed from the individual project to attain that goal based on local conditions. (*Center for Biological Diversity v. Dept. of Fish & Wildlife* (2015) 62 Cal.4th 204, 226 [noting that greater reductions may be required from new projects, because designing new projects to increase energy efficiency and renewable energy use would be more cost-effective than retrofitting existing facilities].) Any analysis that compares a project’s GHG efficiency to the statewide goal without making such adjustments is impermissible under CEQA.

(*Id.* at 221.) Here, the FEIR made no such adjustments, dismissively stating, “it is not possible to link this project-specific reduction to the statewide goal of 21.7 percent.” The County cannot have it both ways. If it really believes that it is not possible to derive an appropriate project-specific target from the statewide goal, then it cannot purport to use the statewide goal to show that the Project will be “efficient.”

Given the prolonged timeline of the Project, the FEIR further erred in relying on the 2020 target, rather than considering a more stringent 2050 GHG-reduction target. The FEIR claims it is self-evident that a 38 percent hypothetical reduction is in line with AB 32’s 21.7 percent reduction target. (See *id.* at 3-108 [stating, it is “difficult to argue that this project conflicts with the Scoping Plan targets”].) But by 2037, the year the Project is expected to be completed, the 2020 targets will long be obsolete. The EIR recognizes this, at one point describing the 2020 standard as “moot.” (FEIR 3.2.4-504.) Based on the more aggressive future reductions the State intends to implement, comparing the efficiency of a project in 2037 to the efficiency targets for 2020 is comparing apples to oranges. The EIR provides no analysis to show that a 38 percent reduction at full build-out in 2037 would be in line with targets that will likely be in place at that time. Whether a long-term project is legally required to be consistent with the 2050 GHG reduction target is currently before the California Supreme Court. (*Cleveland Nat. Forest Found’n v. San Diego Assn. of Gov’ts (SANDAG)*, Case No. S223603.) Regardless of the outcome of that case, it is plainly inconsistent for the EIR to conclude that the Project is “efficient” on the basis of a “moot” standard and then to essentially rely on that conclusion to ignore the legal requirement to adopt all feasible mitigation measures.

b. The EIR improperly defers mitigation.

It is generally inappropriate to defer formulation of mitigation measures to the future. (Cal. Code. Regs., tit. 14, § 15126.4(a)(1)(B).) A lead agency can defer mitigation only where, among other things, the EIR sets forth criteria governing future actions to implement mitigation, and the agency has assurances that future mitigation will be both “feasible and efficacious.” (*Californians for Alternatives to Toxics v. Dept. of Food & Agric.* (2005) 136 Cal.App.4th 1, 17.) Impermissible deferral occurs when an EIR calls for mitigation measures to be created based on future studies but the agency fails to commit itself to specific performance standards. (*Cal. Clean Energy Comm. v. City of Woodland* (2014) 225 Cal.App.4th 173, 195.)

Mitigation Measure 16-2 – the ongoing “mitigation program” – amounts to improper deferral of mitigation for several reasons. First, the mitigation program uses an undefined, currently nonexistent analytical framework to evaluate mitigation measures. (FEIR 3-107.) Specifically, the mitigation program requires the applicant to demonstrate the Project’s consistency with GHG statewide targets “based on a substantiated linkage” between the project and statewide goals. (*Id.*) But, as noted above, the County itself declined to conduct this analysis because it claims it is “not possible to link this project-specific reduction to the statewide goal” and “there are no current mechanisms available.” (*Id.* at 3-103, 108.) The FEIR thus imposes on the project proponent the burden to perform an analysis that the County itself finds is currently impossible to conduct. This is impermissible under CEQA. (See *Cal. Clean*

Energy Comm., *supra*, 225 Cal.App.4th at p. 195 [mitigation measure violated CEQA for shifting the responsibility to the developer to produce the studies].)

Second, the FEIR also leaves open what criteria the County will use when evaluating whether the Project has adequately mitigated its GHG impacts. The FEIR provides no binding reduction targets or other performance criteria that the mitigation program must meet. The County's numerical significance threshold is not an option; even if the entire "menu" of mitigation measures listed in Appendix G were adopted, the yearly greenhouse gas emissions would still be thirty times higher than the threshold. (FEIR at 3-108.) And the FEIR offers no alternative performance criteria, and there is no process in place – binding or recommended – for how the County should proceed when proposed mitigation measures fail to achieve their unspecified targets. The FEIR only commits the County to calculating emissions reductions from mitigation measures "to determine *if* targets can be achieved." (*Id.*; emphasis added.) After making this determination, the County is not required to take any action, because again, the Project is not held to any performance standard.

Lastly, the FEIR only requires the County to adopt measures "to the extent feasible" without providing any conditions or criteria under which a measure would be considered "feasible." (*Id.*) It is unclear whether a mitigation measure would be rejected on the basis of lack of technical or economic feasibility, or both. (See *Sierra Club v. County of Fresno* (2014) 226 Cal.App.4th 704 [holding that an EIR violated the requirement in CEQA to provide measures that are "fully enforceable" in requiring that heating and venting units be fitted with a catalyst system if feasible, but then failing to determine whether a catalyst system was feasible].)

c. The EIR improperly rejects certain mitigation measures.

As previously discussed, a lead agency may not reject a mitigation measure recommended in an EIR unless it provides comparable mitigation through another measure or finds, on the basis of substantial evidence, that it would be infeasible to implement on the basis of specific economic, social, or other considerations. (Pub. Resources Code, §§ 21002; Cal. Code Regs., tit. 14, § 15126.4.)

The FEIR claims there are no regulations in place that obligate it to achieve post-2020 targets. But it also acknowledges that the County is subject to the Sacramento Area Council of Governments (SACOG) Metropolitan Transportation Plan/Sustainable Communities Strategy (SCS), which obligates the County to meet 16 percent per capita vehicle emissions reductions by 2035. (FEIR 3-106.)

Whether SCS targets are binding in the CEQA context is pending before the Court in *SANDAG*, but, having referenced the SCS targets, the FEIR fails to meet its obligation to analyze the feasibility of meeting them or of imposing the mitigation measures contained in the SCS. Rather, the FEIR rejects the SCS out of hand, not because it is infeasible, but because it "only concerns GHG emissions from transportation." (FEIR 3-106.) Transportation comprises over one-third of the projected GHG emissions from the Project; the County offers no reason why the SCS does not apply to these emissions. The County also argues that, because the Project site is

shown in the SCS as “Lands Not Identified for Development,” the SCS does not apply. (*Id.*) This is illogical. The SCS set growth predictions and reduction targets for all of the SACOG Planning Area, not just for areas projected for development. Thus, the reduction targets apply to any lands within that Planning Area and subject to the jurisdiction of the SCS.

d. The EIR improperly conflates regulatory compliance with adequate mitigation.

Underscoring that its mitigation plan is insufficient, the County argues there is really no need to mitigate the vast majority of GHG emissions associated with the Project at all, because 99 percent of the Project’s emissions are subject to the State’s Cap-and-Trade program and other GHG-reducing regulations. (*Id.*) There are several problems with this assertion.

As a fundamental matter, by attempting to rely on Cap-and-Trade to mitigate the Project’s emissions, the County misses the point of CEQA: the task is not to compare Project emissions to the maximum possible emissions scenario, but to the *current physical conditions*. (Cal. Code. Regs., tit. 14, § 15125(a).) Once it is clear that an impact is significant and that mitigation is necessary – and here, it is – the County must impose all feasible mitigation measures. It is not enough that, because California is committed to reducing GHG emissions generally, emissions attributable to the Project will be less than what they otherwise might be or that the County can ignore mitigating the impacts.

Second, as noted above, where the EIR relies on a statewide goal, it must provide substantial evidence connecting that goal to project-specific reductions, based on local conditions and the characteristics of the project. (*Center for Biological Diversity, supra*, 62 Cal.4th at p. 226.) Applied in the mitigation context, this means that the EIR must show how the Advanced Clean Cars regulations or the Low Carbon Fuel Standard results in meaningful mitigation of the specific impacts caused by the Project. The FEIR cannot presume – and it provides no evidence to show – that no adverse impacts would occur from the Project’s GHG emissions when regulated under these programs. Even if the additional emissions are less than they would be if they were not regulated by fuel efficiency standards (i.e., relative to a “maximum possible” emissions scenario), they are still absolute, *additional* GHG emissions. For example, while fuel efficiency is regulated under the Low Carbon Fuel Standard, vehicle miles traveled (VMT) is not. Even if all the vehicles associated with the Project were energy efficient, the additional trips created by the Project would generate substantial GHG emissions. VMTs alone account for 15,382 MT CO₂e/year in the full build-out scenario. The EIR cannot assume that those emissions are simply being displaced from elsewhere; it is more likely that those emissions – regulated or otherwise – would not exist *but for* the Project, the stated intent of which is to draw visitors from around the world for short-term visits. This is a significant impact that must be mitigated.

Finally, the assertion that the California Cap-and-Trade or other GHG-reducing regulations cover all projected vehicle emissions ignores the location of the Project. Squaw Valley is on the California-Nevada border, and 43 minutes from the Reno airport. By assuming

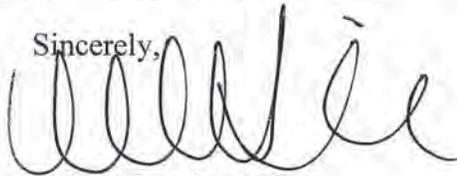
August 09, 2016

Page 15

that Cap-and-Trade will cover all transportation emissions, the FEIR ignores the substantial emissions that will be generated from sources beyond California's regulatory reach.

In conclusion, the FEIR should be revised and recirculated to adequately address the Project's GHG impacts and potential impacts to Lake Tahoe. Climate change is a critical issue for California and Lake Tahoe is a national, state, and local treasure and the County should not disregard impacts in these areas in reviewing the Project. More information is needed to fully understand what the Project's impacts will be on greenhouse gas emissions and on Lake Tahoe. We appreciate your consideration of our comments and hope that the County will undertake a full consideration of the Project's impacts to Lake Tahoe and GHG emissions prior to certifying the environmental document and reviewing the Project for approval.

Sincerely,



NICOLE U. RINKE
ELIZABETH B. RUMSEY
Deputy Attorneys General

For KAMALA D. HARRIS
Attorney General

NUR:pc

SA2001IN1046

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Slow moving exodus from South Lake Tahoe

Submitted by paula on Sun, 03/13/2016 - 7:35pm



All day Sunday the traffic heading west out of South Lake Tahoe has been slow moving due to snow, stuck cars, avalanche controls and chain restrictions.

Even with a educational push by the City for travelers to not use the side roads as they travel home, roads such as Upper Truckee, Sawmill and Mandan were heavily traveled by drivers trying to find a quicker way home.

Chains or 4WD vehicles with snow tires are required on higher elevation roads tonight, with chains or snows over SR-267.

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Traffic-weary homeowners and Waze are at war, again. Guess who's winning?



By [Steve Hendrix](#) June 5

When the traffic on Timothy Connor's quiet Maryland street suddenly jumped by several hundred cars an hour, he knew who was partly to blame: the disembodied female voice he could hear through the occasional open window saying, "Continue on Elm Avenue"

The marked detour around a months-long road repair was several blocks away. But plenty of drivers were finding a shortcut past Connor's Takoma Park house, slaloming around dog walkers and curbside basketball hoops, thanks to Waze and other navigation apps.

"I could see them looking down at their phones," said Connor, a water engineer at a federal agency. "We had traffic jams, people were honking. It was pretty harrowing."

Local Headlines newsletter

Daily headlines about the Washington region.



And so Connor borrowed a tactic he read about from the car wars of Southern California and other traffic-weary regions: He became a Waze impostor. Every rush hour, he went on the Google-owned social-media app and posted false reports of a wreck, speed trap or other blockage on his street, hoping to deflect some of the flow.

He continued his guerrilla counterattack for two weeks before the app booted him off, apparently detecting a saboteur in its ranks. That made Connor a casualty in the social-media skirmishes erupting across the country as neighborhoods try to contend with suddenly savvy drivers finding their way on routes that were once all but secret.

"It used to be that only locals knew all the cut-through routes, but Google Maps and Waze are letting everyone know," said Bates Mattison, a city councilman in the Atlanta suburb of Brookhaven, Ga. "In some extreme cases, we have to address it to preserve the sanctity of a residential neighborhood."

When population growth began to overwhelm a set of major intersections in his district, there was an increase of 45,000 cars a day on some residential streets, as app-armed commuters fought their way to nearby Interstate 85. In response, the city is posting signs to restrict left or right turns at key intersections.

The apps didn't create the traffic, Mattison said, but they gave drivers options they wouldn't have known about otherwise.

Waze, with 50 million users worldwide, provides navigation guidance by combining its map database with data it collects in real time from every logged-on driver. Average speed, backups and fleeting hazards such as a car pulled over to change a flat appear almost instantly on the app's cartoonish interface. When the first Waze-enabled car finds its way to a promising shortcut, thousands can follow.

In Portland, Ore., for example, when drivers trying to avoid local construction began flooding a street that had been redesigned as a "greenway" bike route,

city officials had to put up barrels on some stretches to filter out the vehicular through-traffic. It worked.

"The apps reacted pretty quickly to that," said Jonathan Maus, publisher of Bikeportland.org.

In California, where navigation apps are as common to drivers as sunglasses, several communities are contending with overwhelmed local streets that residents blame at least in part on the programs. In the Los Angeles region, Waze's biggest U.S. market, a City Council person representing Sherman Oaks is considering a motion asking the programs to exclude some small residential streets from their algorithms.

It was here that Connor learned that some Waze warriors had launched concerted campaigns to fool the app. Neighbors filed false reports of blockages, sometimes with multiple users reporting the same issue to boost their credibility. But Waze was way ahead of them.

It's not possible to fool the system for long, according to Waze officials. For one thing, the system knows if you're not actually in motion. More important, it constantly self-corrects, based on data from other drivers.

"The nature of crowdsourcing is that if you put in a fake accident, the next 10 people are going to report that it's not there," said Julie Mossler, Waze's head of communications. The company will suspend users they suspect of "tampering with the map," she said.

Waze's mission is to distribute traffic more efficiently across the grid of public streets, Mossler said, not to create traffic jams.

"That said, the traffic has to go somewhere," she said. Although the app will continue to route drivers down any legal street, Waze programmers are working to build in alerts about school zones and other slow-speed zones, Mossler said.

Traffic engineers say the side street flare-ups are a downside to the otherwise positive effect that navigation apps can have on vehicle flow.

They have proved to be a powerful force in moving cars past bottlenecks, and in many jurisdictions, including Maryland and the District, officials have begun working directly with Waze to glean information about potholes, backups and other real-time data.

The cut-through disputes "are an unintended consequence of this great technology that is supposed to help people avoid sitting in traffic," said Paul Silberman, a traffic engineer with Sabra, Wang & Associates in Columbia, Md.

Those who live on side streets have been complaining for years about becoming through routes, but now it's happening at Internet speed.

"These great shortcuts used to spread by word of mouth, but now they just spread like wildfire," Silberman said.

In Takoma Park, Connor complained to the city's public works and police departments, but nothing stemmed the flow. He put out two plastic watch-for-children figures, but one was hit by a car and the other was stolen.

Connor and his neighbors put up "No Through Traffic" signs. And their city councilman, Tim Male, tried to get Google Maps to take note of the official detour, by calling the company and flagging it through the apps' feedback feature.

But still they came. One afternoon, Connor counted a vehicle every two seconds on a street with a single lane available between parked cars. One morning, neighbors awoke to a cacophony of honks and went out to find a backup dozens of cars deep, two drivers in the middle about to come to blows.

Soon after, Connor went rogue. He experimented with Waze, confirmed it was sending drivers down his street and began filing his false reports.

"It didn't do much and within two weeks they stopped showing up on the map all together," Connor said. "They were on to me."

The traffic flow began to wane when the road construction ended, Connor said, but remains three or four times higher than before it began. For some drivers, their app-inspired shortcut became a permanent route.

Read more:

[A warning left on a nanny's car. License plates stolen. And a top Pentagon official in big trouble.](#)

[A Marine fights to prove he's innocent of sexual misconduct. Then a lost cellphone is found.](#)

[A WWII vet's body lay unclaimed at the morgue. But his neighbors didn't forget him.](#)

Steve Hendrix came to The Post more than ten years ago from the world of magazine freelancing and has written for just about every page of the paper: Travel, Style, the Magazine, Book World, Foreign, National and, most recently, the Metro section's Enterprise Team. [!\[\]\(2a6a2a8c52fe433b8a86f86a09f1f793_img.jpg\) Follow @SBHendrix](#)

DEVELOPMENT REVIEW PRACTICES

During the development review process, staff should review the street network and intersection traffic controls to determine areas of potential speeding, excessive volume on residential streets, or pedestrian conflict areas. Where appropriate, developers should be required to incorporate traffic calming measures into their development plan. The process for reviewing street and lot plans for new developments and prescribing refinements may include the following, at staff discretion:

- **Traffic Volumes** – Estimate the average daily traffic (ADT) on residential roadways within and surrounding the proposed project.
 - If traffic volumes on residential streets are projected to be less than 1,500 vehicles per day (vpd), then no action is needed.
 - If the projected traffic volume on a residential street is 1,500 - 2,500 vpd, then consider traffic calming treatments depending upon the context (such as area history, resident expectations, or magnitude of change).
 - For projected volumes of above 2,500 vpd on a residential street, incorporate traffic calming measures to lessen the impact. In addition, consider driveway treatments that do not require vehicles to back out of driveways, such as loop or hammer head driveways.
- **Traffic Speeds** – Identify potential speeding concerns on new streets and adjacent existing streets. Potential problem areas may include:
 - Streets with unimpeded block lengths (i.e. slow points) greater than 600 feet between traffic control or traffic calming devices, or as determined by staff.
 - Areas where roadway grades may increase the potential for speeding, as determined by staff.
 - Areas with potential pedestrian/vehicle conflicts, such as schools, parks, or community centers.
 - Areas with design attributes that encourage speeding, such as wide travel lane width, absence of on-street parking lane, absence of a bike lane, and long block lengths.
- **Street Layout** – Staff may request street design and layout modifications if an area is likely to experience cut-through traffic.
- **Adjacent Neighborhoods** – Consider traffic calming measures in new developments where adjacent neighborhoods include traffic calming, as determined by staff.
- **Traffic Calming Plan** – Based on the size and nature of the proposed development, staff will determine if a traffic calming plan is necessary. As described above, a traffic calming plan should be developed when the proposed street layout cannot be modified in such a way that will eliminate foreseeable traffic problems. The applicant's representative should develop the traffic calming plan with DPW oversight.

DESIGNING STREET NETWORKS

Neighborhood traffic management measures have traditionally been installed as retrofit measures in existing neighborhoods, in response to a particular traffic concern. The guidelines below describe some common street design features and their propensity to lead to neighborhood traffic management concerns such as speeding and cut-through traffic. The guidelines should assist developers in laying out streets in new



Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

November 12, 2014

Subject: Requesting Amendments to the Code of Ordinances to protect scenic ridgelines

Dear Chair Teshara and Members of the TRPA Advisory Planning Commission:

The Friends of the West Shore (FOWS) and Tahoe Area Sierra Club (TASC) request the swift inclusion of revisions to the Code to protect Tahoe's scenic ridgelines. The TRPA Compact¹ (Article I) specifies that the TRPA's role includes:

“(6) Maintenance of the social and economic health of the region depends on maintaining the significant scenic, recreational, educational, scientific, natural public health values provided by the Lake Tahoe Basin...“(10) In order to preserve the scenic beauty and outdoor recreational opportunities of the region, there is a need to insure an equilibrium between the region's natural endowment and its manmade environment.” [Emphasis added].

The TRPA Goals & Policies² also call for the protection of Lake Tahoe's scenic values. Examples include, but are not limited to, the following:

“LU-1.1 THE PRIMARY FUNCTION OF THE REGION SHALL BE AS A MOUNTAIN RECREATION AREA WITH OUTSTANDING SCENIC AND NATURAL VALUES.

The economic health of the Region depends on a viable tourist and recreation-oriented environment. It is the intent of this Regional Plan, among other things, to encourage development that enhances these values.

...

GOAL SR-1

MAINTAIN AND RESTORE THE SCENIC QUALITIES OF THE NATURAL APPEARING LANDSCAPE.

SR-1.1 ALL PROPOSED DEVELOPMENT SHALL EXAMINE IMPACTS TO THE IDENTIFIED LANDSCAPE VIEWS FROM ROADWAYS, BIKE PATHS, PUBLIC RECREATION AREAS, AND LAKE TAHOE.” [Emphasis added]

In TRPA's 1982 EIS for the development of the environmental threshold carrying capacities, it was recognized that:³

“...Scenic quality is perhaps the most often identified natural resource of the Lake Tahoe Basin. Visitors to the area enjoy views of a magnificent lake sitting within a forested mountainous environment under clear blue skies. The Tahoe Basin is unique in that it combines visual elements normally found in several different landscape settings into one clearly defined region exhibiting exceptionally high aesthetic values...”

“...The distinctive mountain landforms surround the flat plane of the Lake, creating an enclosed landscape type. The edges between sky and ridgetops, between water and shore, and between vegetation and rock all add interest to the scenic landscape.”

“...views of natural landscape features uninterrupted by manmade development rank higher than views competing with or blocked by buildings. Also, large scale panoramic views rate higher than focused or intermittent, obscured views...” [Emphasis added]

¹ <http://www.trpa.org/bi-state-compact/>

² http://www.trpa.org/wp-content/uploads/Regional_Plan_Goals_Policies_Final-2012-12-12.pdf

³ *Environmental Impact Statement for the Establishment of Environmental Threshold Carrying Capacities*, Tahoe Regional Planning Agency. May 1982. (p. 44-45).

However, the Code fails to specifically protect the scenic values of natural ridgelines. Chapter 13 includes a statement that Area Plans “consider” ridgeline and viewshed protection.⁴ We request the Code be revised to specifically state “ridgelines and viewsheds shall be protected”. In addition, such language is needed in Code Section 66 to protect these natural values in *all circumstances*, not just when new Area Plans are adopted. Example language can easily be found in other areas, including many in Colorado resort communities. We are happy to provide those examples for you.

Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net or Laurel Ames at laurel@watershednetwork.org if you have any questions.

Sincerely,



Laurel Ames,
Conservation Chair,
Tahoe Area Sierra Club



Susan Gearhart,
President,
Friends of the West Shore



Jennifer Quashnick
Conservation Consultant
Friends of the West Shore

⁴ http://www.trpa.org/wp-content/uploads/TRPA-Final-Code-Adopted-by-Governing-Board-7_23_2014-amended_notracking.pdf (p. 13-11)



Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

October 26, 2015

Subject: Proposed Amendments to Goals and Policies regarding Coverage Transfers across Hydrologically Related Areas, Excess Coverage Mitigation Fees, and MOUs with NDSL and CTC

Dear Members of the Regional Plan Implementation Committee:

The Friends of the West Shore (FOWS) appreciates the opportunity to provide comments on the proposals noted above. We also thank staff for including information regarding the reason the TRPA 1987 Regional Plan originally delineated nine hydrologically-related areas (HRAs).¹ However, we have several concerns with the proposed amendments, as summarized below and detailed in the attached comments:

- Potential impacts of cross-HRA transfers to the nearshore threshold standards;
- The lack of an analysis of the upland land uses, stormwater runoff, and other individual conditions of smaller watersheds in the Basin and associated impacts to localized nearshore conditions ‘downstream’ of upland areas;
- Reliance on modeling that fails to address the impacts of coverage on nearshore areas;
- Impacts to nutrient loading (including both nitrogen and phosphorous); and
- Proposed changes to the excess coverage mitigation fee (ECMF) program that lack a rationale nexus to how up to 50% of the fees may be spent.

FOWS recommends TRPA undertake a comprehensive analysis of Tahoe’s nearshore areas and the associated upland land uses prior to approving any amendments that will have an impact on localized soil and water quality. In addition, FOWS recommends revised amendments ensure the ECMF fees are used to mitigate all impacts from soil coverage.

Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net if you have any questions.

Sincerely,

Susan Gearhart,
President

Jennifer Quashnick,
Conservation Consultant

Attachments: 10/12/2015 FOWS Comments to APC and Attachments

¹ “The HRA concept description is provided in the 1984 EIS for the 1987 Regional Plan (p. II-17), which states that “[t]he term “related hydrologic unit” has not yet been specifically defined. However, the Agency will limit transfers of coverage to a reasonable distance from the receiving site, so that the effect on water quality of coverage within the area is no worse than if the development were confined to the respective parcels.” (p. 153).



Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

October 12, 2015

Subject: Proposed Amendments to Goals and Policies regarding Coverage Transfers across Hydrologically Related Areas, Excess Coverage Mitigation Fees, and MOUs with NDSL and CTC

Dear Chair Teshara and Members of the Advisory Planning Commission:

The Friends of the West Shore (FOWS) appreciates the opportunity to provide comments on the proposals noted above. We also thank staff for providing additional modeling information regarding the increases and decreases in coverage that are likely to occur from these amendments. However, we have several concerns with the proposed amendments, and recommend additional review (as noted below and in attached comments).

Transfers of coverage across Hydrologically Related Areas:

Purpose of Hydrologically Related Areas (HRA) is missing:

Oddly, the purpose of delineating HRAs and limiting coverage transfers to within the same HRAs is not even discussed in the staff report. This information should be specifically included in the “Coverage Transfers Across HRAs Policy Background and Issues Summary” on p. 3. The RPU EIS identifies the intent of HRAs as follows:

“The 1987 Regional Plan partitions the Tahoe Region into a series of nine Hydrologically Related Areas (HRAs) based on the boundaries of multiple adjacent sub-watersheds (see Exhibit 2-3). Existing regulations require that transfers of coverage occur within the same HRA. The intent of the HRA concept is described in the EIS for the 1987 Regional Plan (TRPA 1986, p. II-17), which states: “[TRPA] will limit transfers of coverage to a reasonable distance from the receiving site, so that the effect of coverage on water quality within the area is no worse than if the development were confined to the respective parcels.” (RPU DEIS, p. 3.8-36).

Both the 2012 RPU, and the 1987 Regional Plan recognized that the location of soil coverage mattered. Further evidence, as noted below, reaffirms the importance of looking at localized impacts in the Basin (i.e. nearshore impacts). By not identifying or addressing the primary environmental reason behind the original restriction on coverage transfers among different HRAs, the staff report and environmental checklist completely ignore a key environmental impact that must be examined as part of this proposed amendment. Impacts to both soils and water quality will vary by location, soil type, meteorological processes, slope, etc. There is no evidence to support the apparent assumption that the impacts of coverage on water quality and soil are the same regardless of where coverage is located in the entire Basin, while there is ample information showing that location does matter.¹

¹ See attached comments to Lahontan Water Board and the HRA Working Group for detailed information regarding nearshore conditions and why it is necessary to examine impacts locally rather than region-wide.

Lacking this assessment, TRPA does not have substantial evidence to support the environmental findings on pages 8-11 of the staff report. FOWS recommends, at a minimum, the environmental checklist be revised to address this information, and appropriate analysis of location-based impacts be undertaken. However, as we have previously recommended, a comprehensive examination of land use location with regards to nearshore impacts (see attached comments for examples) is needed. This larger examination should be completed prior to amendments to the RPU that will change where coverage will be added or removed.

Nearshore Impacts:

1. Nearshore threshold standards:

There are five TRPA thresholds related to protection of Tahoe's nearshore areas, and one TRPA threshold focused on aquatic invasive species (a threat that is well-understood to affect nearshore areas).²

Reduce dissolved inorganic nitrogen (N) loading from all sources by 25% of 1973-81 annual average

Reduce the loading of dissolved inorganic nitrogen, dissolved phosphorus, iron, and other algal nutrients from all sources to meet the 1967-71 mean values for phytoplankton primary productivity and periphyton biomass in the littoral zone.

Decrease sediment load as required to attain turbidity values not to exceed three NTU. In addition, turbidity shall not exceed one NTU in shallow waters of the Lake not directly influenced by stream discharges

Reduced dissolved inorganic nitrogen loads from surface runoff by approximately 50 percent, from groundwater approximately 30 percent, and from atmospheric sources approximately 20 percent of the 1973-81 annual average. This threshold relies on predicted reductions in pollutant loadings from out-of-basin sources as part of the total pollutant loading reduction necessary to attain environmental standards, even though the Agency has no direct control over out-of-basin sources. The cooperation of the states of California and Nevada will be required to control sources of air pollution which contribute nitrogen loadings to the Lake Tahoe Region.

Support actions to reduce the extent and distribution of excessive periphyton (attached) algae in the nearshore (littoral zone) of Lake Tahoe.

Aquatic Invasive Species standard:

Aquatic Invasive Species MANAGEMENT STANDARD

Prevent the introduction of new aquatic invasive species into the region's waters and reduce the abundance and distribution of known aquatic invasive species. Abate harmful ecological, economic, social and public health impacts resulting from aquatic invasive species.

As noted by the scientific community, "*Nearshore conditions are inherently localized issues, where different locations around the lake will have different expected levels of nearshore clarity, trophic status, community structure and human health variables.*"

² http://www.trpa.org/wp-content/uploads/TEVAL2011_Ch4_WaterQuality_Oct2012_Final.pdf

(“Nearshore Report”).³ However, the RPU’s policies (and associated environmental review) were based on implementation of the TMDL requirements,⁴ which focus on mid-lake clarity, not the nearshore (or the localized impacts of pollution and how they impact individual nearshore environments).⁵

Clearly, conditions around Lake Tahoe’s nearshore areas are not uniform. Nearshore clarity is affected by algal growth – which is stimulated by the nutrients nitrogen and phosphorous, whereas mid-lake clarity is affected primarily by fine sediments. Therefore, addressing the conditions in the nearshore will require different actions and controls from than those aimed at addressing mid-lake clarity. However, there has not yet been an analysis of the upland land uses, stormwater runoff, and other individual conditions of smaller watersheds in the Basin and associated impacts to localized nearshore conditions ‘downstream’ of upland areas.

2. Failure to analyze impacts to nearshore:

The staff report mentions “nearshore” twice, in each case stating: “The load increases are considered less than significant, including for nearshore conditions, for the following reasons:...” (p. 83 and 113). However, the report provides no analysis of nearshore impacts; additionally, no information is provided to support the statement that loads will be less than significant for nearshore conditions, because the impacts to nearshore areas and how this relates to existing conditions have not been analyzed. The staff report presents the results of model runs, which only estimate pollutant load increases or decreases based on the amount of added or removed coverage. The model does not account for variations in soil type, slope, volume of flow to Lake Tahoe, conditions of affected nearshore areas, water movements, and other factors which play a role in the impacts of coverage.

Instead, the modeling program treats coverage as if location does not matter, again taking the approach that Lake Tahoe is one big “bowl.” In fact, model runs estimate that pollutant loads will likely increase in some areas, and decrease in others. Although just one component of a true analysis, the environmental review could start with an examination of the nearshore conditions in those areas where coverage is anticipated to increase as a result of the proposed amendments.⁶

³ Lake Tahoe Nearshore Evaluation and Monitoring Framework. Final, October 15, 2013; http://www.dri.edu/images/stories/centers/cwes/Nearshore_Evaluation_and_Monitoring_Plan_02.10.14.pdf

⁴ “The Draft Regional Plan included targeted amendments that support the findings and water quality improvement strategies of the TMDL.” (Final RPU EIS, Volume 1, p. 3-26).

⁵ In the Lahontan Regional Water Quality Controls Board’s 11/02/2010 response to TMDL comments by the League to Save Lake Tahoe (LTSLT-56), Lahontan stated: “The draft Lake Tahoe TMDL was developed to meet federal requirements under section 303(d) of the federal Clean Water Act, by addressing Lake Tahoe’s deep water transparency. Because the Lake is not meeting the deep water transparency standard, it was listed as impaired on the federal 303(d) list. The TMDL was developed to specifically address that impairment. Because Lake Tahoe’s nearshore environment is not yet listed as impaired on the State Water Board’s 303(d) list, the draft Lake Tahoe TMDL does not specifically address issues in the nearshore.” [Emphasis added].

⁶ “The pollutant load increases and reductions each ultimately affect the Lake Tahoe watershed, so a reduction in one location would offset an increase in another as documented in Tables 3 and 4. As such, the impact to land coverage and its associated water quality effects is considered to be less than significant. The reduction in

For example, the model predicts minor load increases in the following HRAs: “Agate Bay, Emerald Bay, Incline, McKinney Bay, and Tahoe City.” (p. 85). A cursory review of TERC’s attached algae maps (note these do not include floating algae) indicate that some of these areas already have the high concentrations in the nearshore. Meanwhile, load reductions are estimated in areas that have tended to have lower concentrations of attached algae (e.g. South Stateline). Therefore, the proposed amendments could result in worsening nearshore conditions in areas already significantly impacted by algal growth.

3. Localized planning needed to achieve nearshore threshold standards:

As noted previously, nearshore impacts must be examined at a localized scale. In addition, as presented in the Tahoe Environmental Research Center’s (TERC) State of the Lake Report 2015, the blueness of Lake Tahoe is primarily associated with algae growth, while clarity is more impacted by fine sediments. Therefore, if we are to “Keep Tahoe Blue,” we need to further reduce the nutrients that stimulate algal growth. The most effective way to reduce nitrogen is through vegetative uptake. This requires naturally-functioning wet areas between the source of water pollution (i.e. coverage) and Lake Tahoe. Stormwater facilities relying upon filters to remove fine sediments (as encouraged by TMDL policies) do not provide a substitute and do not effectively remove nitrogen. Careful planning is necessary to ensure a natural buffer between covered areas and Lake Tahoe in order to reduce nitrogen, as well as phosphorous and fine sediments. The location of coverage should be considered even more, not less.

In summary, additional analysis of localized conditions and impacts to the soil conservation and water quality nearshore threshold standards is necessary in order for TRPA to have the information necessary to determine if the environmental findings can be made.

FOWS recommends TRPA undertake a comprehensive analysis of Tahoe’s nearshore areas and the associated upland land uses prior to approving any amendments that will have an impact on localized soil and water quality. The analysis needs to consider the depth of the water in the nearshore, potential for mixing/dilution, water flow patterns, and other factors, on water clarity/turbidity in the nearshore (including nutrient and particulate concentrations), mid-lake blueness, aquatic habitat, and conditions that may support aquatic invasive species.

Excess Coverage Mitigation Fee

1. Nexus between Mitigation Fees and Impact:

The excess coverage mitigation fee (ECMF) is collected to mitigate excess coverage; however, the proposed changes will allow the fees to be spent for projects that do not actually mitigate soil coverage. According to TRPA, *“The goal of soil conservation is to prevent soil erosion from the Region’s watersheds or soil from becoming chemically altered by overuse, acidification, salinization, or other chemical soil contamination. Soil conservation is a critical element of the Regional Plan because of the role soils play in providing a medium for vegetation and their influence on water quality. Key soil functions in the Region include sustaining forest vegetation, water filtration and storage, providing for habitats for wide variety of organisms, and providing a platform for urban development.”* (2011 Threshold Evaluation Report,⁷ p. 5-1). Previous GB hearings also dealt with the ECMF program as a means to achieve the Soil Conservation Threshold, specifically.⁸ The Soil Conservation thresholds include a standard for impervious coverage.⁹ In other words, the impacts of coverage on soil go beyond water quality; therefore, mitigating coverage must also do more than presumably mitigate water quality impacts.

A rational nexus is required between the mitigation fee and the impact it is being used to mitigate. However, the proposed amendments would allow for the fee to be used for projects which may not benefit soil conservation. For example, the proposed amendments will only require that 50% of the mitigation fees be used for existing coverage restoration (p. 2). The remaining funds could be used for other projects approved by the Executive Director (ED) that result in “soil conservation and/or water quality benefits” (p. 2). This suggests a substantial portion of the mitigation fees could be spent for projects that do not benefit the soil conservation threshold.¹⁰

⁷ http://www.trpa.org/wp-content/uploads/TEVAL2011_Ch5_Soil_Conservation_Oct2012_Final.pdf

⁸ Staff Report for May 2001 TRPA GB hearing, p. 87 (dated 5/15/2001). “The purpose of the amendment [to Chapter 20.5 Regarding Excess Coverage Mitigation Fees] is to adjust the excess coverage fees in California and Nevada so that they more accurately reflect current market values while still meeting the Soil Conservation excess coverage reduction targets.” [Emphasis added].

⁹ “Soil coverage: is defined by TRPA as: “a human-built structure or other impervious surface that prevents more than 25 percent of normal precipitation from directly reaching the surface of the land underlying the structure and prevents the growth of vegetation from TRPA’s approved species list, therefore precluding or slowing the natural infiltration of water and other functions of the soil. TRPA further distinguishes between impervious surface (hard coverage) and compacted soil (soft coverage). Research has established the connection between impervious and compacted surfaces and water quality (Schueler 1994; Center for Watershed Protection 2003). Coverage affects water quality because it reduces the natural infiltration capacity of the land (that is, its ability to absorb water). As infiltration capacity decreases, a greater proportion of precipitation flows over the surface of the landscape, scouring sediment as it travels and carrying pollutants into receiving waters. As such, coverage is a feature of development for which TRPA maintains stringent regulations.” (RPU DEIS, p. 2-8) [Emphasis added]

¹⁰ On page 61-62, the staff report states: “All of these projects must result in Soil Conservation and water Quality Threshold gains.” This conflicts with the “and/or” on page 2. This needs to be clarified.

2. “Other” Projects and Benefits not defined:

The staff summary states that the “other” projects are “[EIP projects] or non-EIP projects proposed by the California Tahoe Conservancy (CTC) or Nevada Division of State Lands (NDSL) and approved by the Executive Director.” (p. 62). As a result, the public will not be able to participate in determining how at least half of the mitigation funds will be spent. Further, not all EIP projects provide soil conservation benefits. No criteria or other information has been included in the staff summary to indicate how EIP, or “other non-EIP” projects, will be selected to ensure coverage impacts are being mitigated. Without such criteria or parameters there is no evidence available to support the nexus between 50% of the mitigation funds that are collected and their use to mitigate soil coverage.

FOWS recommends revised amendments ensure the ECMF fees are used to mitigate all impacts from soil coverage.

We request any amendments affecting how soil coverage is addressed within each HRA be delayed until proper scientific study has been completed. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net if you have any questions.

Sincerely,



Susan Gearhart,
President



Jennifer Quashnick,
Conservation Consultant

Attachments: 2/12/2014 FOWS & TASC Comments to LRWQCB on Nearshore Plan
3/9/2014 FOWS & TASC Comments to HRA WG (Meeting #1)
7/8/2014 FOWS & TASC Comments to HRA WG (Meeting #2)
7/31/2015 FOWS & TASC Comments on Placer County TBAP (excerpt)



Lahontan Regional Water Quality Control Board
Attn: Mr. Daniel Sussman
971 Silver Dollar Avenue
South Lake Tahoe, CA 96150

February 12, 2014

Subject: Comments on Lake Tahoe Nearshore Update – Draft Nearshore Water Quality Protection Plan

Dear Members of the Lahontan Regional Water Quality Control Board and Mr. Sussman:

Thank you for the opportunity to comment on the draft Lake Tahoe Nearshore Water Quality Protection Plan (“Nearshore Plan”).

As expressed during the 1/30/2014 public workshop, we are concerned that the Nearshore Plan fails to include sufficient and direct monitoring to evaluate the relationship between development and activities on the lands near the shore and conditions in the Lake’s nearshore. If the suggested causes are not adequately monitored in connection with the impacts, determining the most appropriate control measures, and assessing how effective they are, will be exceedingly difficult.

We note that the mid-lake clarity study, reports, and decisions took ten years and ten million dollars. Since the DRI report¹ notes that the nearshore is more complicated, variable, and without the great amount of data available to the TMDL managers, it is important that this beginning monitoring program be as robust as possible, and treated as an extremely important study as the nearshore is the area that is most visible to the visitor and resident to the “Jewel of the Sierra”.

While the table on page 12 of the draft Nearshore Plan is helpful, the details in the DRI report provide a much better understanding of these factors. However, not enough information is provided with the bulleted list on page 6 to assess whether and how the recommended metrics take into account the specific recommendations throughout Appendix B of the DRI report Questions include, but are not limited to:

- The proposed study does not appear to sufficiently address the impacts of boats on the nearshore. At the 1/30/2014 public meeting, we submitted a recent publication regarding boat impacts on nearshore conditions in Lake Tahoe,² and believe the monitoring program must assess the impacts of boat props stirring up the fish spawning substrate, and the fish feed and cover substrate. In addition, the boat props stir up the fine sediments and re-distribute them into the lake. Man’s impacts on the nearshore are many and complicated, and a thorough understanding of those impacts is necessary to understand the nearshore reactions.
- Although the recommended metrics on p. 6 of the Draft plan include phytoplankton, it is unclear whether this metric will be based on existing measurements, or if the revisions suggested by the NeST on page B-21 will be used (e.g. “We suggest instead that the nearshore metric for phytoplankton be expressed as cell counts that identify both the species

¹ Lake Tahoe Nearshore Evaluation and Monitoring Framework, Final. October 15, 2013.

² Michael T. Alexander and Russell C. Wigart (2013). Effect of motorized watercraft on summer nearshore turbidity at Lake Tahoe, California-Nevada, *Lake and Reservoir Management*, 29:4, 247-256.

composition and their abundance.”). The state standards noted on p. B-20 are based only on counts.

- Page B-25 includes a recommendation that numerical standards for periphyton (not just management or narrative standards) be developed. Will action be taken to add this recommendation, and if so, how will the monitoring program account for this (and when)?
- With regards to macrophytes, macroinvertebrates, fish, and crayfish, the NeST recommends a new indicator called “Community Structure.” (p. B-52). The monitoring program needs to incorporate this recommendation.
- The draft Nearshore Plan notes: “Controllable factors, such as proximity of impervious surface to the lake, sewer line exfiltration and uncontrollable factors such as climate change and geology may be responsible for observed conditions. The nearshore agencies have identified increased periphyton growth on the northwest shore (from Tahoe City south through the outlets of Blackwood and Ward Creeks) as an initial hotspot to begin causal assessment analysis.” (p. 8) [Emphasis added].
 - It is unclear how extensive the studies of causal factors in the northwest nearshore areas will be, and there appears no guarantee this will occur.
 - In addition, we are concerned that focusing solely on periphyton growth on the northwest shore fails to account for the floating algae affecting the nearshore in other areas of the Lake. For example, the nearshore bottom along South Shore will not have as much periphyton because there is far less substrate for it to attach to. However, as observations alone will attest, the floating algae in this area creates a significant negative visual impact. Further, as the Lahontan report also notes, impervious surfaces affect nearshore conditions; the existing and proposed development in several areas close to the Lake (by TRPA’s Regional Plan Update) are significant, and changes must be clearly monitored and at a scale sufficient to identify local sources, impacts, and other factors.

We appreciate that this process is now moving forward and look forward to participating in same. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net or Laurel Ames at laurel@watershednetwork.org if you have any questions.

Sincerely,



Laurel Ames,
Conservation Chair,
Tahoe Area Sierra Club



Susan Gearhart,
President,
Friends of the West Shore



Jennifer Quashnick
Conservation Consultant
Friends of the West Shore



Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

March 9, 2014

Subject: Coverage Transfers Across Hydrologic Related Areas (HRAs) Working Group, Meeting #1 – Conceptual Approach

Dear Members of the Coverage Transfers across HRAs Working Group:

The Friends of the West Shore (FOWS) and Tahoe Area Sierra Club (TASC) appreciate the opportunity to provide comments and participate in the March 10, 2014 meeting of the Coverage Transfers across HRAs Working Group (HRA WG). We have several questions and concerns related to the staff report dated March 4th.

1. Findings in 2013 Nearshore Report must be considered:¹

First and foremost, although the report states that “Lake Tahoe is ultimately the receiving water affected by coverage transfers within HRAs,” (p. 2) this conclusion completely ignores the impacts of activities on the land to the nearshore. As noted in the October 2013 Nearshore Report by prominent researchers from DRI, UNR, UC Davis, and other institutions:

Results from review of available literature and data indicated that nearshore condition can differ widely around the lake based on factors such as adjacent land-use and urban development, non-point pollutant inputs, vicinity to stream inputs, water movement, water depth, substrate type, and other features of the lake bottom (Figure 1-2). Variations in these factors create more localized environmental conditions compared to the open-waters of Lake Tahoe that are more uniform. The nearshore environment is inherently more complex and active than the pelagic zone and it requires a different scale of evaluation and management. Some of these requirements for evaluation are addressed in this report. (page 16). [Emphasis added]

As noted in our 2/12/14 comments to the Lahontan Water Board (attached), we are concerned that the Nearshore Plan fails to include sufficient and direct monitoring to evaluate the relationship between development and activities on the lands near the shore and conditions in the Lake’s nearshore. If the suggested causes are not adequately monitored in connection with the impacts, determining the most appropriate control measures, and assessing how effective they are, will be exceedingly difficult. That said, the proposed plan to even consider changes in the HRA regulations to support more coverage transfers at this time, is putting the cart before the horse.

2. Localized Impacts of Coverage to Nearshore Conditions must be assessed:

Although we don’t yet have enough information to fully understand the impacts of on land development to the nearshore, we know enough to conclude that there are impacts. The more coverage you have, the more stormwater runoff there will be. The closer this coverage is to the Lake, the less opportunity for natural systems (the most effective) to remove the pollutants, and more pollution will enter Lake Tahoe. As noted in the October 2013 Nearshore Report, as well as the TERC’s State of the Lake Reports,² nearshore conditions are variable throughout the lake. It is true that in the Lake Tahoe Basin watershed, everything drains to the Lake, as noted in the staff

¹ Heyvaert, A.C., Reuter, J.E., Chandra, S., Susfalk, R.B., Schaldow, S.G. Hackley, S.H. 2013. Lake Tahoe Nearshore Evaluation and Monitoring Framework. Final Report prepared for the USDA Forest Service Pacific Southwest Research Station.

² <http://terc.ucdavis.edu/stateofthelake/>

report, but how pollutants impact the nearshore varies throughout the Basin. Before we start moving more coverage around, we need to first have a clear understanding of what the impacts of coverage are in the Lake's individual nearshore areas. We also need to consider soil type, porosity, saturation characteristics, localized meteorology, distance from lake and existing opportunities for infiltration), conditions in the nearshore (e.g. sand versus rocks where periphyton can attach), etc. The 2013 Nearshore Report states:³

5.1 Summary of Influences on Nearshore Condition

- Urban stormwater runoff generally contains much higher concentrations of nutrients and fine sediment particles than found in the lake and in runoff from undisturbed areas. These nutrients cause increased localized concentrations of phytoplankton that decrease water clarity. Likewise, higher concentrations of the sediment particles contribute to decrease nearshore clarity.
- Stream inputs that pass through disturbed watersheds contribute higher concentrations of nutrients and fine particles that decrease nearshore clarity.
- Upwelling events deliver deep-lake waters to the nearshore. These waters can be enriched in some nutrients relative to local nearshore concentrations.
- Nutrient inputs from stormwater runoff, stream inputs and ground water may generate increased biomass of phytoplankton and benthic algae (periphyton and metaphyton).
- Excess fertilizer applications may contribute to groundwater and surface runoff loading of nutrients, which increase the nearshore concentrations of dissolved nutrients that enhance algae concentrations and decrease clarity.
- Nutrients also affect algae growth rates and species distributions, which can impact community structure.
- Establishment of invasive aquatic macrophytes can increase nutrient concentrations in surrounding nearshore water by transporting nutrients from below the sediment surface. In turn, algae growth may be enhanced.
- Invasive species may change nutrient cycling and increase the amount of benthic algae growth and macrophytes, and the spatial distributions of these groups. For example, it has been shown that Asian clams released ammonium-nitrogen and soluble reactive phosphorus in their excretion products, which stimulated bloom-like growths of green metaphyton (benthic filamentous algae that grow on the nearshore lake bottom surface). Since they are not attached these are easily transported by currents and wave action. [Emphasis added].

Conclusions also include, but are not limited to:⁴

It is believed that the differences in algal biomass between sites were due to differences in nutrient availability. Application of nitrogen and phosphorus (in fertilizers) to basin soils and golf courses at the time of the study were estimated to contribute 34-37% of total N and 83-94% of total P loading to the watershed (when considering only the combined contributions from precipitation and fertilizers as new inputs). The increased nutrient inputs to the soil translate into increased nutrient loading of the stream and ground waters, and consequently Lake Tahoe. Other detrimental urban activities include: impervious surfaces, road cuts, exfiltration from sewer lines, maintaining high lake levels, old septic leach fields, abandoned sewage disposal sites, soil compaction, and irrigation of soils. [Emphasis added].

The evidence that we must first examine the impacts of coverage, especially increased and concentrated coverage closer to the lake, is clear. The findings that local variations in pollutant inputs have localized impacts on our nearshore are clear. Therefore, the staff report's treatment of the Lake as merely one large receiving water ignores the most recent and best available science we have regarding our nearshore conditions. It is too soon to be considering allowing changes in where

³ P. 35-37

⁴ Page 68, in annotated bibliography from: **Algal Biofouling of Oligotrophic Lake Tahoe: Causal Factors Affecting Production.** 1986. S.L. Loeb. In L.V. Evans and K.D. Hoagland, (eds.), Algal Biofouling. Elsevier Science (Pub.). B.V. Amsterdam. pp 159-173

coverage is located when we don't yet understand the impacts of where the coverage currently exists, nor have the ability to examine the impacts that could occur in the receiving area.

3. Localized Impacts of Coverage must be assessed:

The RPU EIS failed to support TRPA's conclusion that more coverage can be added closer to the Lake without harming water quality. TRPA should not allow the proposed transfers before scientists have a full understanding of the impacts that coverage and land activities create in the nearshore.

4. Science and Research must be completed first:

That there exists political pressure to allow this change in rules does not provide a substitute for the environmental research and findings that are necessary to support such a proposal. Also, there is no evidence that the impacts of increased, concentrated coverage closer to the Lake can be mitigated, let alone provide improvements.

The proposed working group approach refers to 'environmental assessment,' however based on the information provided by our best researchers in the Nearshore Report, it will take several years and extensive monitoring programs to obtain the information we need to truly understand the nearshore. Even with the best efforts by the HRA WG, the necessary research cannot somehow be completed in a matter of months. Instead, we are concerned that the HRA WG will be asked to support the selected approach without the proper information. Such an action would deliberately occur prior to obtaining and digesting the scientific study results being collected through the upcoming critical nearshore study, which likely will result in more damage to the Lake's nearshore. Tahoe's national public deserves better.

Last, it is important to note that the upcoming TMDL projects target the fine sediments that travel to the mid-lake. In fact, Lahontan has clearly stated that the TMDL does not target nearshore issues,⁵ which are impacted by nutrients.

We request this decision be delayed until proper scientific study has been completed. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net or Laurel Ames at laurel@watershednetwork.org if you have any questions.

Sincerely,



Laurel Ames,
Conservation Chair,
Tahoe Area Sierra Club



Susan Gearhart,
President,
Friends of the West Shore



Jennifer Quashnick
Conservation Consultant
Friends of the West Shore

Attachment: 2/12/2014 FOWS & TASC Comments to LRWQCB on Nearshore Plan

⁵ In Lahontan's 11/02/2010 response to TMDL comments by the League to Save Lake Tahoe (LTSLT-56), Lahontan stated: "The draft Lake Tahoe TMDL was developed to meet federal requirements under section 303(d) of the federal Clean Water Act, by addressing Lake Tahoe's deep water transparency. Because the Lake is not meeting the deep water transparency standard, it was listed as impaired on the federal 303(d) list. The TMDL was developed to specifically address that impairment. Because Lake Tahoe's nearshore environment is not yet listed as impaired on the State Water Board's 303(d) list, the draft Lake Tahoe TMDL does not specifically address issues in the nearshore." [Emphasis added]



Tahoe Regional Planning Agency
128 Market Street
Stateline, NV 89449

July 8, 2014

Subject: Coverage Transfers Across Hydrologic Related Areas (HRAs) Working Group, Meeting #2 – Evaluation and Prioritization of initial coverage transfer options

Dear Members of the Coverage Transfers across HRAs Working Group:

The Friends of the West Shore (FOWS) and Tahoe Area Sierra Club (TASC) appreciate the opportunity to provide comments and participate in the July 8, 2014 meeting of the Coverage Transfers across HRAs Working Group (HRA WG). We have several questions and concerns related to the 6/27/14 staff report. In addition, the concerns expressed in our 3/9/14 comments regarding nearshore impacts were not addressed, therefore we reiterate those questions and add the following comments.

In our March comments, we presented information related to the need to further address nearshore issues before allowing transfers across HRAs, and recommended that any decisions be postponed until adequate science has been collected to understand the impacts of coverage within and among different HRAs. Researchers have noted the decline in summer clarity in the nearshore for years,¹ as well as the clear understanding that the extent of development upland of local nearshore areas,² the nearshore water depth, and other factors all greatly influence what happens in individual nearshore areas.³ We are disappointed the June staff report fails to address the issues we raised, let alone the information available from Lake Tahoe's esteemed researchers.

In addition, through the new Tahoe Nearshore Dippers program,⁴ FOWS recently organized a large community volunteer event on July 4th, where volunteers engaged the public to take horizontal nearshore clarity measurements around the Lake.⁵ Although these results are not official, we've included some general observations in this letter. It came as no surprise that in the afternoon, nearshore clarity varied around the Lake, and conditions were worse (less clear) in areas with more coverage upstream versus other less developed areas. Also, while the appendices include data on attached algae (periphyton), floating algae (phytoplankton) was heavily observed along beaches in South Shore, reiterating the need for more research before making changes that could exacerbate conditions.

We request this decision be delayed until proper scientific study has been completed. Please feel free to contact Jennifer Quashnick at jqtahoe@sbcglobal.net or Laurel Ames at laurel@watershednetwork.org if you have any questions.

Sincerely,

Laurel Ames,
Conservation Chair,
Tahoe Area Sierra Club

Susan Gearhart,
President,
Friends of the West Shore

Jennifer Quashnick
Conservation Consultant
Friends of the West Shore

¹ <http://terc.ucdavis.edu/stateofthelake/index.html>

² Taylor, K. 2002. Investigation of Nearshore Turbidity at Lake Tahoe. Prepared for the Lahontan Regional Water Quality Control Board and Nevada Department of State Lands.

³ Heyvaert, A.C., Reuter, J.E., Chandra, S., Susfalk, R.B., Schaldow, S.G. Hackley, S.H. 2013. Lake Tahoe Nearshore Evaluation and Monitoring Framework. Final Report prepared for the USDA Forest Service Pacific Southwest Research Station.

⁴ <http://friendswestshore.org/tahoe-nearshore-dippers/>

⁵ Horizontal secchi measurements have been found to correlate well with turbidity ($r^2=.9701$). www.secchidipin.org.

Attachments: 2/12/2014 FOWS & TASC Comments to LRWQCB on Nearshore Plan
3/9/2014 FOWS & TASC Comments to HRA WG (Meeting #1)
Taylor, K. 2002. Investigation of Nearshore Turbidity at Lake Tahoe.
Lake Tahoe Depth map from NOAA

Images of floating algae (phytoplankton) on shoreline of Regan Beach, July 4, 2014:



Generalized observations of nearshore conditions on July 4th:

Through the new Tahoe Nearshore Dippers program,⁶ FOWS recently organized a large community volunteer event on July 4th, where volunteers engaged the public to take horizontal nearshore clarity measurements around the Lake.⁷ Although the following observations are not official results, and the aim was more focused on engaging the public (unlike the measurements ongoing volunteers will take all summer long), we'd like to note some general observations:⁸

- Lake Tahoe's mid-lake clarity was measured at just over 80 feet;
- Nearshore clarity at Regan Beach and Timber Cove measured generally around 10-12 inches;
- Nearshore measurements in Kings Beach and Tahoe City ranged between 18 inches to 6 feet;
- Nearshore measurements on beaches like Baldwin beach, William Kent, and Carnelian Bay were roughly 7 feet, 8-10 feet, and up to 16 feet, respectively.

Although the nearshore conditions are affected by more than upstream coverage, it should come as no surprise that the most turbid areas were below some of the most covered areas. Also, the staff report includes TERC's map of attached algae in the appendices, however, this does not include impacts from floating algae. Volunteers observed floating algae throughout the water column at South Shore's Regan Beach⁹; if the HRA WG were to base recommendations solely on documented *attached* algae conditions, one of the murkiest nearshore areas would be overlooked.

Nearshore depth and upland development:

Researchers long ago established a correlation between the development on the shore and elevated turbidity in the nearshore. In addition, the depth of the water in the nearshore affects how stormwater is diluted when it enters the Lake. For example, Taylor (2002) noted:

“The spatial and temporal variability of turbidity in the near shore zone of Lake Tahoe was investigated using an instrumented boat to map the spatial distribution of turbidity. The highest turbidity values were in the lake adjacent to Tahoe Keys and exceeded the TRPA littoral zone turbidity threshold. Areas with persistently high turbidity occurred off South Lake Tahoe and Tahoe City. Areas with occasional high turbidity occurred off Incline Village and Kings Beach. Undeveloped areas such as Rubicon and Deadman Point consistently had low turbidity. There is a strong correlation between elevated turbidity near the shore and development on the shore. It is likely that most of the clarity loss near the shore is caused by processes that occur along a small percentage of the lakeshore.”

The two areas with persistently high turbidity – Tahoe City and South Lake Tahoe – are also the regions with the shallowest waters (see attached NOAA depth chart). Therefore, if coverage is transferred from regions which drain directly to deep water to regions like Tahoe City or South Lake Tahoe, the associated stormwater would no longer be allowed to dilute rapidly into the deep water; rather, it would be held more static in the Tahoe City and South Lake Tahoe shallow nearshore areas – which we already know are less clear. In other words, both the extent of development upland, and the depth of water in the nearshore, have been scientifically documented to heavily influence turbidity in the nearshore. It is clear that where coverage is counts. This was

⁶ <http://friendswestshore.org/tahoe-nearshore-dippers/>

⁷ Horizontal secchi measurements have been found to correlate well with turbidity($r^2=0.9701$). see www.secchidipin.org.

⁸ Note: the lowest clarity observations tended to occur later in the day.

⁹ Jennifer Quashnick and a local resident volunteer can attest to observing the algae on the beach, in the water, and feeling it wrap around our legs while taking measurements with the public in the afternoon (as we could no longer see through the murky water column).

also documented in the California Attorney General's June 27, 2012 comments on the draft RPU EIS. For example, the cover letter states:

"...TRPA proposes to alter its current coverage protections in various ways to allow significant increases in coverage permitted on parcels. The first five comments in our letter point out concerns with the DEIS's analysis of these changes. For example, the DEIS assumes that coverage can be calculated on a Basin-wide basis. That is, while current rules limit the amount of coverage on a parcel-by-parcel basis for each of Lake Tahoe's 50,000 or so parcels, the DEIS assumes that as long as the total coverage for the entire Tahoe Basin does not exceed the sum of the coverage allowed all parcels, the Lake will not be harmed. The DEIS thus assumes that the location and concentration of coverage does not matter. TRPA had previously assumed, however, that **where** coverage exists is important, and extensive evidence supports that position. [Our] letter also points out how the DEIS's coverage calculations ignore the impacts of concentrated coverage on a disturbing increase in algae growing along portions of the Lake's shore." (TRPA RPU FEIS, Volume 2, p. 2-61 to 2-88)

In fact, the staff report notes: "...the Coverage Study noted that certain transfers could have site-specific impacts by allowing coverage to be transferred to individual areas where coverage impacts could be higher due to site characteristics such as precipitation amounts or connectivity to the Lake." (p. 3). **It is simply far too premature to consider allowing coverage transfers on a broader scale without understanding the impacts of coverage on the nearshore.**

Options and Analysis:

It is unclear what level of analysis would be performed on these recommendations. We ask staff to clarify this; given the science related to the nearshore conditions and impacts of coverage, extensive environmental analysis is necessary to understand the implications of regulatory changes.

Option 1:

Under Option 1, the summary states: "*This option would allow coverage transfers across HRA boundaries if the sending site was classified as sensitive land (land capability districts 1 – 3). Per TRPA Code, the receiving site would have to be in a less sensitive land capability district than the sending site and the receiving site would be required to install water quality BMPs.*" This comparison omits the fact that all development – existing and new – is already required to have BMPs, thus no regulatory changes are needed to make this a requirement (as might be suggested here). As noted in the nearshore information available, far more factors affect nearshore conditions than just the land capability upstream.

Clearly the environmental impacts of transferring existing coverage must be thoroughly examined before any changes are made. That said, the concept of allowing *potential* coverage to be transferred across HRA's should not even be 'on the radar.' Without the potential coverage being developed, our nearshore conditions are already declining. Given what we already know, it shouldn't take an EIR or EIS to figure out that adding even more coverage is going to create negative water quality impacts, unless exceptional treatments and controls are required. The TRPA code only requires *equal* treatment, which is no better than exists today.¹⁰

Option 2:

We agree this option should not be pursued.

¹⁰ E.g. Code section: 13.5.3.B.3.a: "...Area-wide BMPs shall be shown to achieve equal or greater effectiveness and efficiency at achieving water quality benefits than certain site-specific BMPs..." [emphasis added].

However, the staff report raises an interesting question with regards to the reasons behind considering any kind of coverage transfer (given TRPA's RPU strategy to concentrate new development in Centers):

“Centers typically already include significant amounts of coverage and likely represent significantly less demand for transferred coverage than single family residential areas, so this approach would only minimally accelerate coverage reductions and BMP installation through accelerated coverage transfers.” (p. 4)

If coverage transfers are not focused on transfers *into* Centers, then how would allowing even more coverage transfers throughout the Basin conform with TRPA's RPU “strategy,” which TRPA claims will provide water quality improvements because it will transfer coverage out of more sensitive areas into concentrated Centers? What is the purpose of these policies, especially given that BMPs are already required?

Option 3:

We agree this option should not be pursued.

However, the statement below raises more questions about why TRPA is considering allowing expanded transfers of coverage, if they are not needed for Centers (noted under Option 2), they are not needed for EIP project implementation (excerpt noted below), and they are not needed to make BMPs a requirement (as they already are)?

“Many EIP projects do not require significant amounts of coverage, or in some cases significant coverage reserves are available for EIP projects, so the approach would likely only minimally accelerate EIP projects and coverage reductions and BMP improvements from coverage transfers.”

Option 4:

This option appears to touch on the need for increased research before making decisions about coverage transfers. With regards to that part, we encourage the HRA WG to support more research first – before considering regulatory changes. However, we do not support the idea of tying this to IPES system ratings because the IPES system is not based on any thorough examination of nearshore conditions. We reiterate the need to study the variable conditions throughout Tahoe's nearshore, in connection with studying the development and activities upstream of local areas.

The following statement applies to all options: “*This approach would be based on static estimates of watershed condition, but watershed condition could change over time as restoration and other projects are implemented.*” (p. 5). Why is it only listed under number 4? Further, the ‘approach’ to coverage in the future should be directly tied to current watershed conditions. This statement appears to imply that this option would set the transfer regulations ‘in stone’ such that TRPA would not consider updated nearshore information in the future.

Option 5:

As this option would not be based on environmental conditions or impacts because jurisdictional lines are not based on environmental conditions, we agree it should not be pursued.

Option 6:

We do not support this option for several reasons:

1. The TMDL is only based on mid-lake clarity; as noted in excerpts included in our previous comment letters (attached), the TMDL did not focus on the nearshore conditions. Thus, tying coverage transfers to the TMDL will not reduce all activities and sources negatively impacting the nearshore in the foreseeable future.
2. More importantly, this option does not consider all existing nearshore conditions in the locations where the coverage would be transferred to.
3. The option proposes to use modeling to assess whether a project will increase loading to the Lake. As noted in previous comments, as well as documents by LRWQCB and TRPA, the model estimates come with many caveats and assumptions which do not apply to every project.¹¹ Further, model estimates are not substitutes for measured data, and modeled forecasts are highly uncertain.
4. The TMDL forecasting tools have made assumptions about filters and other engineered solutions which, so far as we are aware, have not been proven true (e.g. filters now being used to remove pollutants from stormwater generally don't remove sediments below 20 microns, and certainly not below 5 microns – although clarity is most impacted by particles 5 microns and below). We also know of no filters which remove nitrogen, one of the key contributors to algae growth.
5. The option states the models would be used to indicate that “*the transfer will not increase pollutant loading...This approach would...allow coverage transfers across HRA boundaries if the analysis showed no increase in loading to Lake Tahoe...*” (p. 6). However, this option does nothing to decrease pollutant loading.

Other comments:

The Attachments should clarify that Attachment D only shows one factor impacting nearshore: *attached algae (periphyton)*. This does not adequately reflect “nearshore conditions” because it excludes floating algae, milfoil, and suspended sediment.

¹¹ From RPU FEIS, Volume 1, p. 3-29: “**Note:** *The PLRM simulation described in Appendix C of the Final EIS is a simple aggregate representation of all Centers. The results presented in Table 3-4 are valid as a relative comparison of estimated changes in pollutant loading that could result from policies included in the Final Draft Plan. In practice, the Lake Tahoe TMDL requires local jurisdictions to complete load reduction plans that identify catchments (i.e., sub-watersheds) and their respective pollutant loading to Lake Tahoe. Estimates of existing condition pollutant loading in specific community centers, developed by local jurisdictions using site-specific analysis and detailed stormwater modeling, will differ from the existing condition estimate presented in Table 3-4.*” Also, we cite to the entire Appendix C in the FEIS.

Investigation of Near Shore Turbidity at Lake Tahoe



Prepared in March 2002 for the Lahontan Regional Water Quality Control Board as part of Contract 00-117-160-0, and for The Nevada Department of State Lands as part of LTLTD 01-008. Desert Research Institute, Division of Hydrologic Sciences Publication No. 41179.

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SUMMARY

The spatial and temporal variability of turbidity in the near shore zone of Lake Tahoe was investigated using an instrumented boat to map the spatial distribution of turbidity. The highest turbidity values were in the lake adjacent to Tahoe Keys and exceeded the TRPA littoral zone turbidity threshold. Areas with persistently high turbidity occurred off South Lake Tahoe and Tahoe City. Areas with occasional high turbidity occurred off Incline Village and Kings Beach. Undeveloped areas such as Rubicon and Deadman Point consistently had low turbidity. There is a strong correlation between elevated turbidity near the shore and development on the shore. It is likely that most of the clarity loss near the shore is caused by processes that occur along a small percentage of the lakeshore.

INTRODUCTION

Lake Tahoe is well known for its exceptional clarity. Maintaining this clarity is important for aesthetic, economic, public health and ecological reasons. The clarity of Lake Tahoe is most apparent near the shore, which we call the near shore zone and define as the portion of the lake that has a depth less than 7.5 m, or is within 100 m of shore, which ever extends further from shore. The near shore zone is similar to the littoral zone, which is the portion of the lake where enough light reaches the bottom for macrophytes (rooted plants) to grow. At Lake Tahoe the littoral zone is the portion of the lake where the depth is less than about 30 m; this can be a zone a few tens of meters to several kilometers wide. Except for atmospheric deposition all the clarity degrading material such as nutrients and particles that enter the lake pass through the near shore zone, making the near shore zone a good place to search for undesirable inflows to the lake. The near shore zone is the portion of the lake first impacted by disturbances on shore because the material causing the adverse impact will have the greatest concentration near the source on shore. The near shore zone is also be the portion of the lake that responds first to local restoration activities, because it is more influenced by local changes than the center of the lake.

The Tahoe Research Group at the University of California, Davis, has been monitoring the clarity of Lake Tahoe using a secchi disk for 34 years. This measures the greatest depth at which a black and white 20 cm diameter disk is visible. These measurements cannot be made in most of the near shore zone because the water depths are not greater than the 20 to 25 m depth at which the secchi disk commonly fades from view. There has been a progressive decline in clarity as measured by the secchi depth during the last 34 years.

Another measure of clarity is turbidity, which is a quantitative measure of how much light is scattered by the particles in a water sample. High turbidity water is murky, low turbidity water is clear. Turbidity is expressed in Nephelometric Turbidity units (NTU), which are based on standard concentrations of formazin in water. At Lake Tahoe clarity is traditionally thought of in terms of secchi depth, which is easier to understand than turbidity. For example it is easier to understand the significance of being able to see a dinner plate 30 meters below the surface, than the turbidity is 0.1 NTU. However, secchi measurements cannot be done in shallow water and are time consuming. Turbidity can be measured in water of any depth and can be measured continuously from a moving boat; this makes turbidity well suited for investigating the spatial variability of

water clarity in the near shore zone. Turbidity values at Lake Tahoe range from 0.06 NTU in the middle of the lake to greater than 4 NTU at Tahoe Keys. For reference filtered distilled water typically has a turbidity of 0.02 NTU and the EPA standard for drinking water is 0.5 NTU.

METHODS

For this project we primarily used two measurement systems, one for investigating spatial changes and the other for investigating temporal changes. The first system was on a moving boat and measured spatial changes in turbidity. The second system was fixed on a pier and measured the temporal variability of light attenuation. Light attenuation is a proxy measurement for turbidity.

Method 1: Spatial Measurements

The turbidity measurement system had a probe that extended in front of the boat. A submersible pump on the probe pumped water from a depth of ~1 m up to instruments on the boat. The water entered a glass tube (5 cm x 2 cm) in a Hach-2000 turbidity meter. The turbidity was determined by measuring the amount of light scattered at a 90-degree angle from an incoming light beam by water in the glass tube. The turbidity instrument was calibrated with formazin standards every three weeks, and with solid turbidity standards before and after each day of surveying. A computer read the voltage output of the turbidity meter. The computer also read the location of the boat from a global positioning system that has an accuracy of about 20 meters. The computer recorded the turbidity, time and boat location in a data file. This information was recorded every second, which corresponded to about one measurement for every 10 m of distance traveled. The computer also displayed a real time moving map that showed the track of the boat. The color of the boat track on the display was determined by the value of the turbidity at that location. The real time map display of turbidity and position allowed the operators to adjust the survey parameters in the field in response to areas of high turbidity.

On one survey a Turner 10-AU fluorometer was also used. After the water passed through the turbidity meter it entered the glass tube in the fluorometer. A monochromatic light shined on the water in the glass tube. Chlorophyll in the water fluoresced with a different wavelength of light. The amount of light fluoresced was proportional to the chlorophyll concentration in the water.

Surveys were repeated with a positioning accuracy of about 30 m. Typically the surveys were conducted 20-300 m offshore and the operator selected a distance that was free of obstacles such as buoys and boats. Under these conditions we operated at speeds of 15 to 20 kilometers an hour. Some surveys occurred within the obstacles at a slower speed. About 10% of each survey was immediately repeated. This was done by turning the boat around and repeating a portion of the survey. This was done occasionally when rapid changes in turbidity were observed. The survey data was processed to convert the recorded voltage and position values to meaningful units and files that are suitable for use by the geographic information system Arcview.

Method 2: Temporal Measurements

The second system measured the amount of light attenuation in the lake water over a 30 cm path. The instrument, a Hobilabs C-Beta, was lowered into the lake. A light source on the instrument shined a light beam to a light sensor located 30 cm away from the light source. The attenuation of

the light over the 30 cm path was expressed in units of % absorption/meter, or more commonly as 1/m. The optical design of the instrument reduced interference caused by sunlight.

The C-Beta had an internal data logger that allowed it to be moored at a fixed location and measure light attenuation at regular intervals. In this survey the light attenuation was measured every 20 minutes. This allowed a proxy for turbidity to be measured continuously at a fixed location without an operator. A rough empirical estimate of the relationship between turbidity and light attenuation was developed, but it should only be used to estimate changes in turbidity, not the absolute value of turbidity. With more effort a better relationship could be obtained.

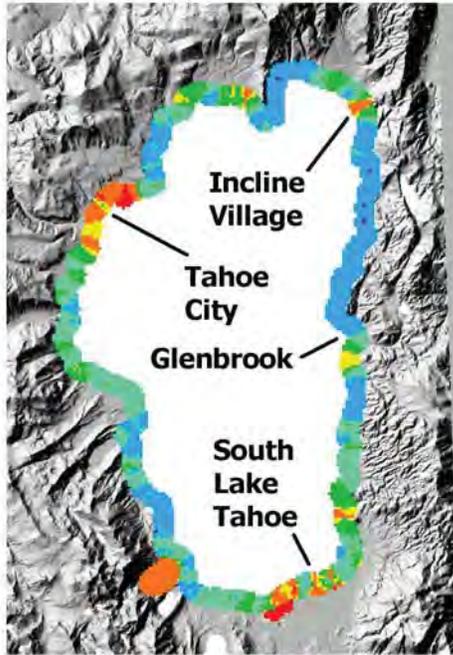
SPATIAL SURVEY RESULTS

General Comments

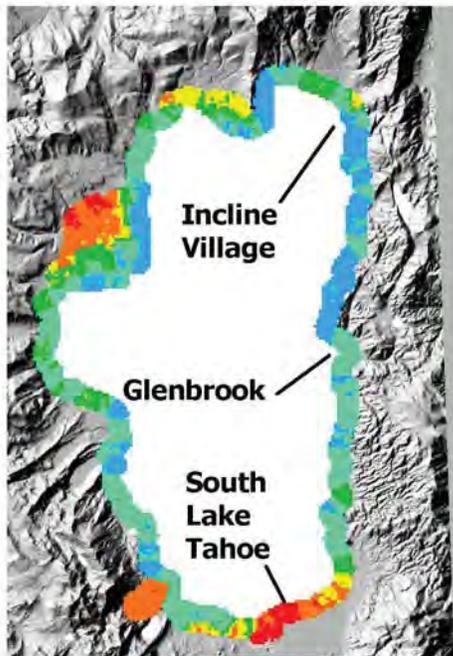
The results of spatial surveys are displayed on maps that show the track of the boat in different colors. The color of the boat track is selected to represent a property of the water. For example, red indicates high turbidity, green indicates intermediate turbidity, and blue indicates low turbidity. The turbidity value assigned to the colors is different on different figures so small differences in turbidity relevant to the discussion can be displayed. With a few exceptions the surveys do not show how the turbidity changes perpendicular to the shore. When surveys were conducted away from the shore, the turbidity decreased with increasing distance from shore.

Short-term Variations

To investigate the short-term variability of turbidity several sets of surveys were carried out a few days to weeks apart. Figure 1 shows two surveys made of the lakeshore 11 days apart in September 2001. The high turbidity areas with large extent (more than 3 km in extent and greater than 0.2 NTU, shown as orange and red) in Emerald Bay and off Tahoe City and South Shore occur in both surveys. The moderate turbidity areas with smaller extent (less than 1 km in extent and between 0.16 and 0.25 NTU, shown as yellow and orange) such as Incline Village and Glenbrook change over the 11 days between the surveys. There was no precipitation during this time. During the period between the two surveys the Star Fire, a large fire about 30 km west of Lake Tahoe, filled the Tahoe Basin with thick smoke for about a week that at times reduced visibility to a few miles. There was not a lake wide change in turbidity associated with the influx of thick smoke that occurred between the two surveys.

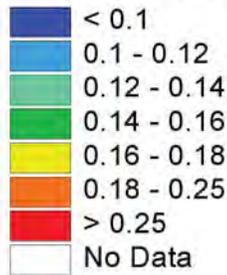


September 6 & 7, 2001



September 17 & 18, 2001

Turbidity (NTU)



Kilometers



Figure 1. Results from two near shore turbidity surveys of the entire lake taken 11 days apart in September 2001.

A closer inspection of the area off Glenbrook (Figure 2) shows that on September 6, 2001, there was a zone of elevated turbidity (greater than 0.17 NTU, shown as yellow, orange and red) bounded to the south by low turbidity (less than 0.13 NTU, shown in blue). Eleven days later the elevated turbidity zone was gone. The cause of this minor and short duration increase in turbidity is not known. It is unlikely there was a change in surface inflows between these surveys because there was no precipitation and there is no stream outlet in the area. Upwelling of high turbidity water is a possible cause for this transient phenomenon.

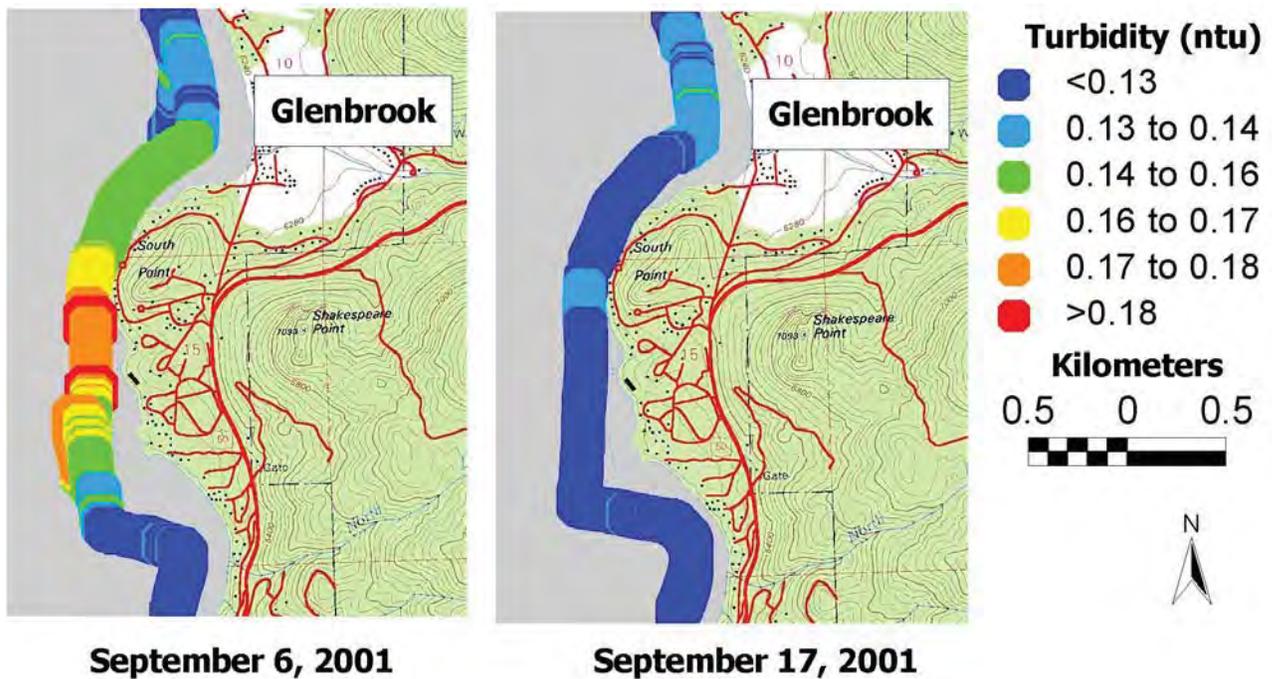


Figure 2. Detailed view of two near shore turbidity surveys off Glenbrook taken 11 days apart in September 2001.

A second example of short-term changes in turbidity is two surveys off Homewood on March 8 and 14, 2001 (Figure 3). From a lake wide perspective this is a low turbidity area. The lowest turbidities in this area are less than 0.07 NTU and the highest turbidity levels are around 0.11 to 0.13 NTU. There was only a small change (~0.03 NTU) close to shore between the two surveys. The area at the mouth of Homewood Creek, which runs through Homewood ski area, had the highest turbidities (0.10 to 0.13) during this period, however these values were still low relative to other locations along the lakeshore.

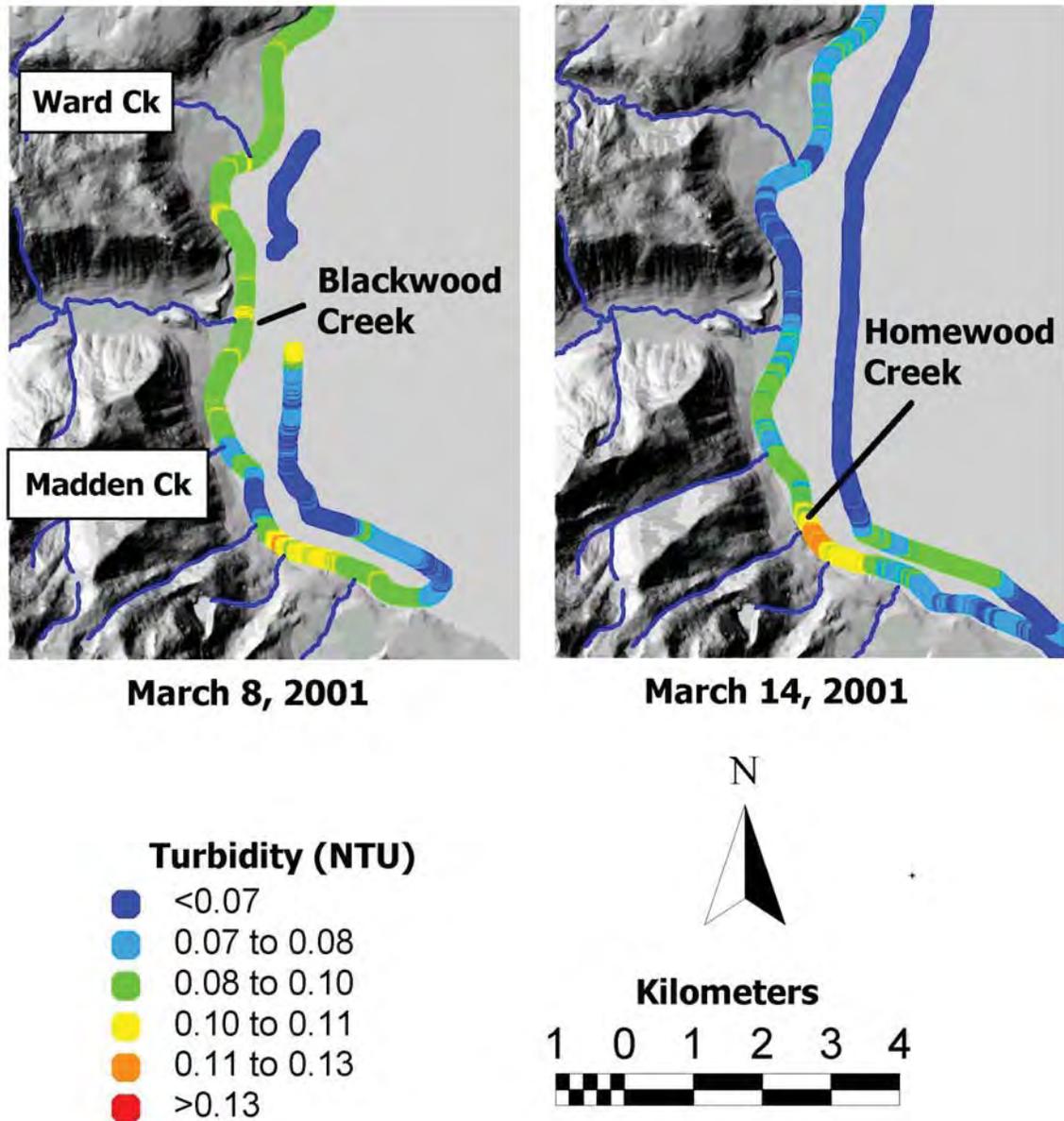


Figure 3. Turbidity surveys in McKinney Bay.

A third example of short-term changes in turbidity is four surveys off of Tahoe City conducted during March 2001 (Figure 4). Three of the four surveys showed elevated turbidities between the Tahoe City Marina and the outlet to the Truckee River (elevated to levels of 0.12 to 0.16 NTU above a background of less than 0.08 NTU). Two of three surveys also showed elevated turbidity in the vicinity of Star Harbor (elevated to levels of 0.1 to 0.16 NTU above a background of less than 0.08 NTU shown as dark blue). These features were also observed in August 2001 and are discussed later in this report.

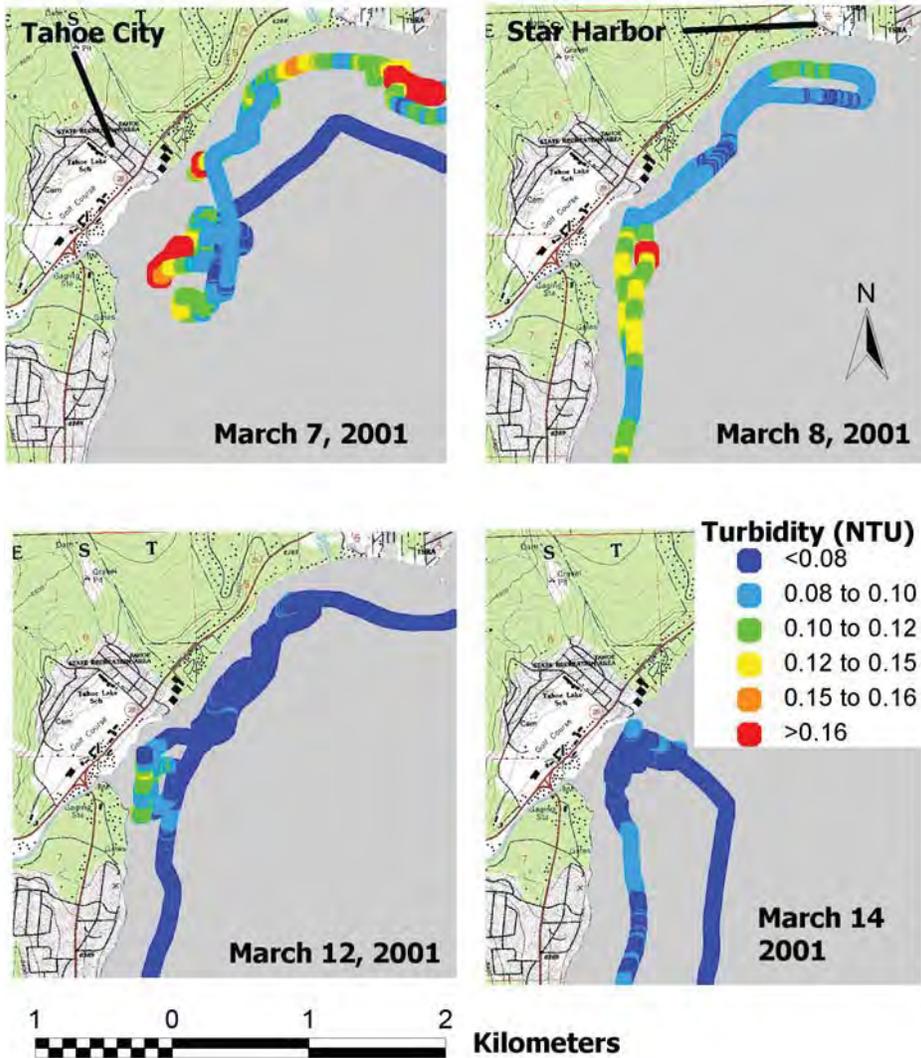


Figure 4: Turbidity surveys off Tahoe City in March

These examples show that areas of elevated turbidity with an extent of many kilometers can be persistent on time scales of weeks, but areas with elevated turbidity with an extent of less than a kilometer can change significantly in a few weeks. These examples highlight how repeated spatial turbidity surveys can identify areas with persistent elevated turbidities.

Seasonal Surveys

Surveys were made during different seasons to identify seasonal patterns in turbidity. Generally the seasonal surveys (Figure 5) were made during periods when the weather had been calm for several days preceding the survey. Precipitation occurred during the September 2001 and March 2002 surveys, and repeat measurements of parts of survey show the storms did not influence the turbidity.

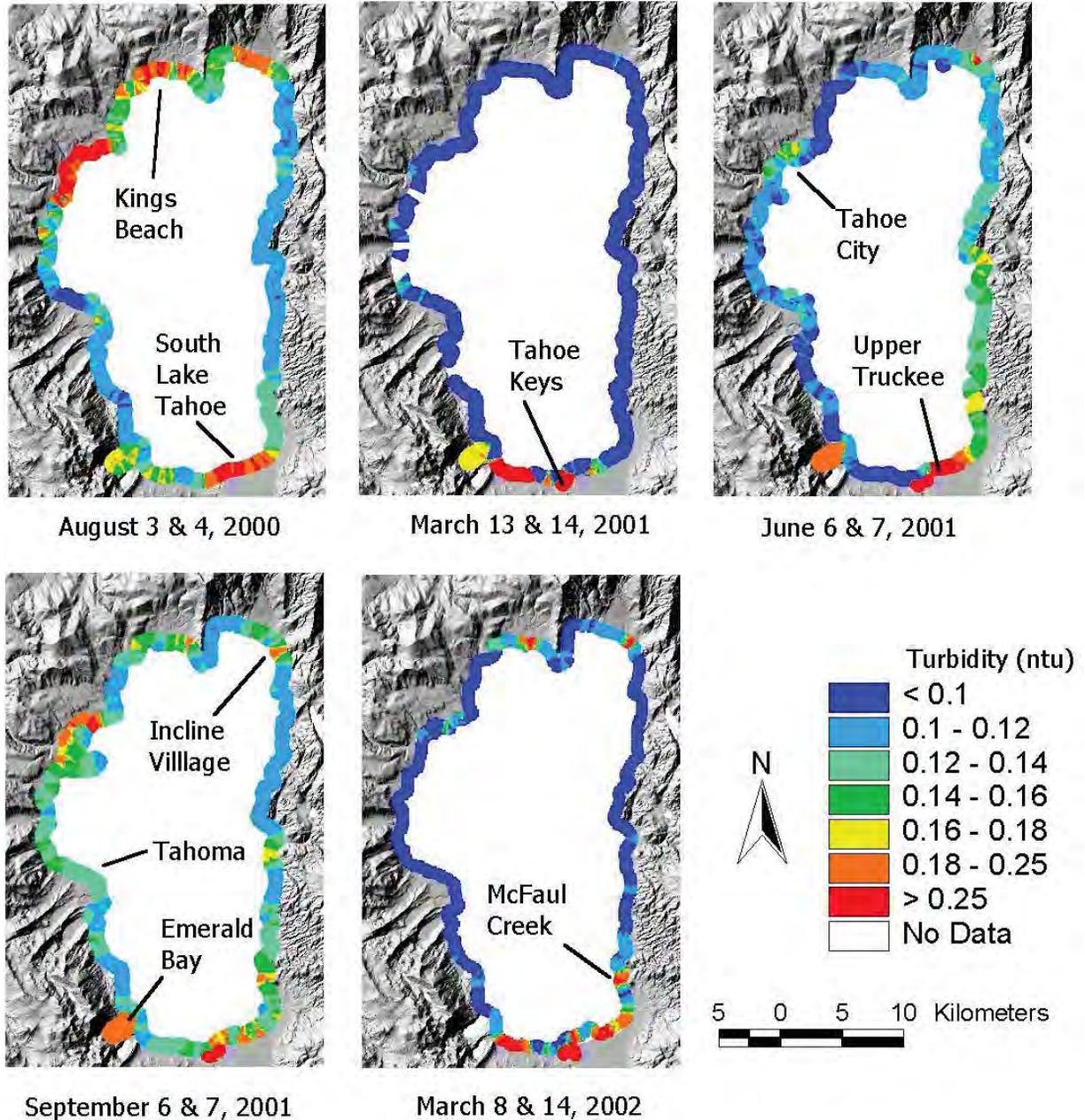


Figure 5. Results from near shore turbidity surveys around the entire lake in different seasons.

On August 3 and 4, 2000 there was high turbidity in both a relative and absolute sense (0.20 – 0.25 NTU) off the developed areas of Tahoe City, Kings Beach, Incline Village, and South Lake Tahoe. All of these areas have shallow water close to shore. However, the shallow areas off the southwest corner of the lake and off Tahoma, which are not heavily developed, do not have high turbidity. Hence, the high turbidity appears to be associated with developed areas and not with shallow water. Stream inflow of particles is negligible in August. In August the lake is warm, favoring algae growth. Algae growth early in the summer consumes the nutrients that accumulated in the lake during the winter and spring, so that in August there is not a supply of nutrients stored in the lake for algae to consume. Any algae growth in August is likely associated with an inflow of nutrients to the lake that is occurring in August, as opposed to consumption of nutrients that are stored in the lake from winter and spring. The high turbidity levels could be caused by boat traffic resuspending lake sediment, by the release of nutrients by lake sediment, or by nutrient rich groundwater inflows.

On March 13 and 14, 2001 a survey showed high turbidity centered at Tahoe Keys (greater than 1.0 NTU) and the Upper Truckee River outlet. This survey was taken during a warm spell when there was melting snow at lake level but the higher elevations were still frozen. The cold lake temperatures reduced algae growth and the main part of spring runoff had not yet occurred. The majority of the lake had a turbidity of less than 0.1 NTU, which is low relative to other seasons.

On June 6 and 7, 2001, a survey showed high turbidity (0.25 to 0.3 NTU) centered at South Lake Tahoe with a connected area of elevated turbidity (0.12 to 0.18 NTU) extending up the southeast shore. This survey was taken after spring runoff on the east side of the lake and during the last stages of spring runoff on the west side of the lake. The area of elevated turbidity along the southeast shore may be material that has driven along the shore from the South Lake Tahoe area by the prevailing winds. Moderate turbidity areas (0.12 to 0.18 NTU) with small spatial extent occurred off Glenbrook, Tahoe City and Incline Village.

On September 6 and 7, 2001, a survey showed high turbidity areas with a large extent (more than 2 km in extent and greater than 0.2 NTU) off Tahoe City and South Lake Tahoe. High turbidity areas were located off Kings Beach, Incline Village, Glenbrook and Round Hill but they had a smaller spatial extent.

On March 8 and 14, 2002 a survey showed several high turbidity areas with a large spatial extent along the south shore. Typically these areas were about 1 km in extent and had a turbidity of 0.25 to 0.3 NTU. There may be a strong correlation between turbidity and depth in this region during this season but we do not have enough data to determine if this is the case. Off Tahoe Keys there were locations in the lake with turbidity greater than 2 NTU. There were slightly elevated high turbidity areas with a small spatial extent (~500m in extent and 0.25- 0.3 NTU) off Kings Beach and Incline Village. There was an elevated turbidity area with a small extent (~500 m in extent and 0.25 to 0.3 NTU) off McFaul Creek, which also shows up in the September 2001 and August 2001. This creek was flowing when the survey was conducted. This survey was taken on two days. On March 8, the area from Tahoe City along the east shore to Tahoe Keys was surveyed. On March 14 the area from Tahoe City along the west shore to Tahoe Keys was surveyed. The day

before each survey was made several inches of snow had fallen at lake level, which had not melted when the surveys were made.

These surveys indicate a close association between developed areas and elevated turbidity during the summer. Several interpretations of these data are possible. For example, summer surface inflows are probably not a factor in this association because summer surface inflows are small. Increased boat traffic around developed areas in the summer may resuspend lake sediments and increase the turbidity. Nutrients from developed areas may be entering the lake during the summer by groundwater inflow and enhancing algae populations. Nutrients from developed areas may also be entering the lake during the winter by surface and groundwater inflows and be stored in lake sediments. These stored nutrients may be released during the summer when the increased algae concentrations deplete the nutrients in the lake, creating a gradient in nutrient concentrations that draws nutrients out from storage in the sediments. With the available data it is not possible to definitely determine a cause for the spatial correlation of development and high summer turbidities.

Emerald Bay has consistently elevated turbidity values. This is likely caused by the limited exchange of water between the relatively shallow Emerald Bay and the deep water of the lake, the steep slopes with large road impacts around the bay, and the large inflow of surface water relative to the small and restricted area of the bay. These conditions make the water quality issues in Emerald Bay considerably different than other parts of Lake Tahoe.

Tahoe Keys/Upper Truckee River Outlet

The area around the outlet of the Upper Truckee River and the two entrances to the Tahoe Keys is discussed separately because the turbidity levels were an order of magnitude greater than any place else on the lake. Figure 6 shows the results from seasonal surveys at Tahoe Keys. At the scale of these figures, the track of the boat can be seen. The values of turbidity assigned to the colors are significantly greater than in the previous figures. In all cases when the boat entered the Tahoe Keys there was very high turbidity (greater than 0.5 NTU), in some cases the turbidity exceeded the 2-NTU maximum range of the measurement system. The two surveys in March 2001 and 2002 showed plumes of particularly high turbidity (values in excess of 2 NTU) in the lake. It is possible that during the late winter low elevation snow melt around the Tahoe Keys creates a flux of material from the Keys into the lake. The two summer surveys (August 8, 2000 and June 7, 2001) show that the highest turbidity areas are closer to the outlet of the Upper Truckee River than the entrances to Tahoe Keys. This suggests that during summer the Upper Truckee River or the Truckee Marsh is more of a problem than Tahoe Keys. More surveys, conducted in a grid pattern and during all seasons will be needed to characterize the spatial and temporal variability in this area so that the sources of turbidity degrading material can be identified.

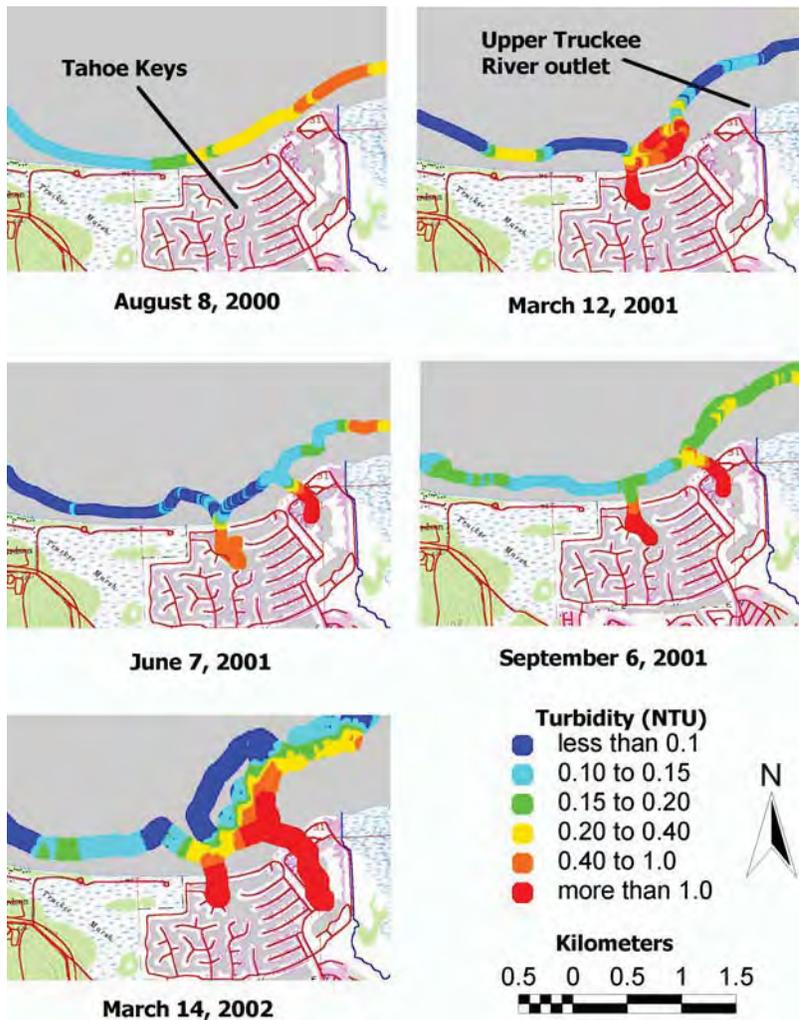


Figure 6. Results from near shore turbidity surveys around Tahoe Keys in different seasons.

Surveys Associated with Short Term Hydrologic Disturbances

We had two opportunities to measure turbidity before and after hydrologic disturbances, allowing us to determine the influence of the disturbances on turbidity. These results are presented in maps that show the difference between the turbidity values observed on different dates. Areas where the turbidity increased after the disturbances are shown in red. Areas where the turbidity did not change are shown in green. Areas where the turbidity decreased are shown in blue. For an area to be included in these surveys the survey tracks from before and after the storm had to be within 50 m of each other.

The first opportunity to measure the influence of a hydrologic disturbance on turbidity was associated with a summer thunderstorm. A survey had been conducted on August 3, 2001. In the afternoon of August 4, 2001, there was an intense thunderstorm producing 1.3 cm of rain in 12 minutes at the Thunderbird Lodge. This storm was accompanied by large amounts of overland flow, displacement of forest litter, and erosion and mobilization of the Highway 28 shoulder along the east side of the lake. On the morning of August 5, 2001, a second survey was conducted. Figure 7 shows the turbidity difference between the two surveys. The magnitude of the turbidity changes was very small and changes only occurred within a 100 meters of the discharge from Third and Incline creeks, and at the outlet of an unnamed drainage 200 m east of the Thunderbird Lodge. An even smaller increase was observed at Marlette creek. This result is only from one event, but it suggests that summer thunderstorms only contribute minor amounts of inorganic particles that immediately increase the turbidity. These surveys do not shed any light on the issue of if storm related inorganic material is transporting nutrients to the lake that promote algal growth and increase the turbidity at a later time.

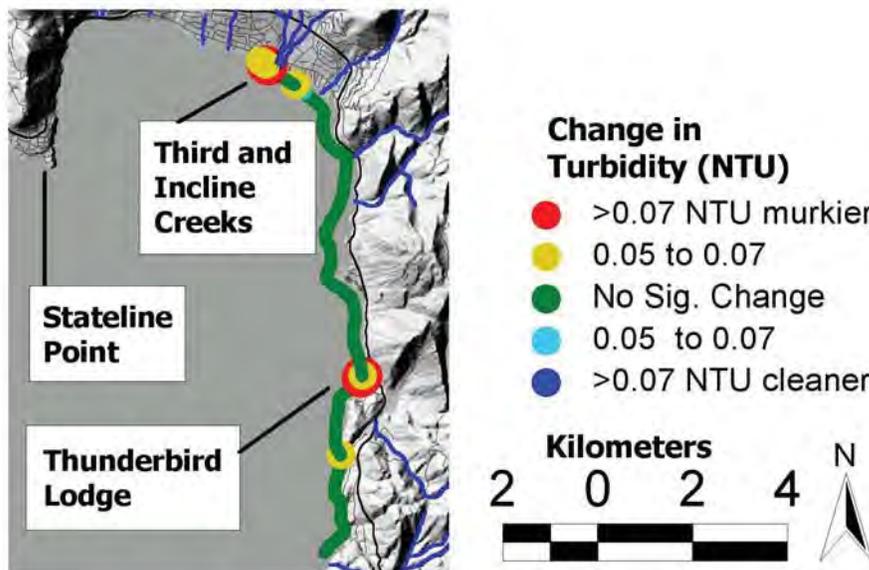


Figure 7. Change in near shore turbidity after an intense August thundershower.

The second opportunity to measure the influence of a hydrologic disturbance on turbidity was in September 2001. A turbidity survey was conducted on September 3, 2001. For the next three days there were high winds from the southwest and wave heights in the Incline Village area reached 0.7 meters. There was no precipitation during this time. A turbidity survey was conducted on September 7 and the difference between the two surveys is shown in Figure 8. The turbidity difference is very small, and only occurs within less than 100 m of the discharge from Third and Incline creeks. It is suspected that the increase in turbidity is caused by the resuspension of fine sediments associated with previous discharges from the creeks. This result suggests that moderate wave action along the northeast shore does not suspend enough particles to directly increase the turbidity 100 m off shore. These surveys do shed any light on the issue of if storm related inorganic material is transporting nutrients to the lake that promote algal growth and increase the turbidity at a later time.

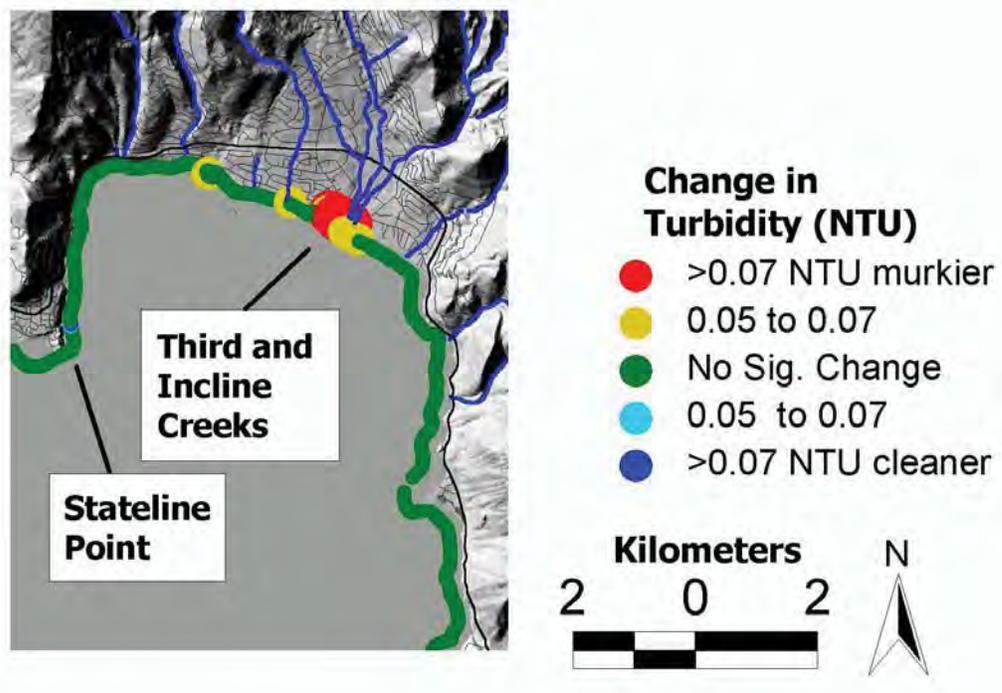


Figure 8. Change in near shore turbidity after three days of high winds and no precipitation in September 2001.

Tahoe City Surveys

On September 16, 2001, a survey was conducted in a grid pattern off of Tahoe City. For this survey we used the turbidity instrument and a fluorometer. The voltage output of the fluorometer is proportional to the chlorophyll concentration. To convert the voltage output of the fluorometer to chlorophyll concentration, water samples have to be collected and filtered, and the filters analyzed for chlorophyll. In this project we only report relative concentrations of chlorophyll. The chlorophyll concentration is of interest because it is an indication of the abundance of algae. The survey (Figure 9) identified two areas that both had high turbidity and chlorophyll concentrations, one off Tahoe City and one near Burton Creek. Each area extended for about a 1 km along the shore. These are the same areas that had elevated turbidities in March 2001 (see Figure 4).

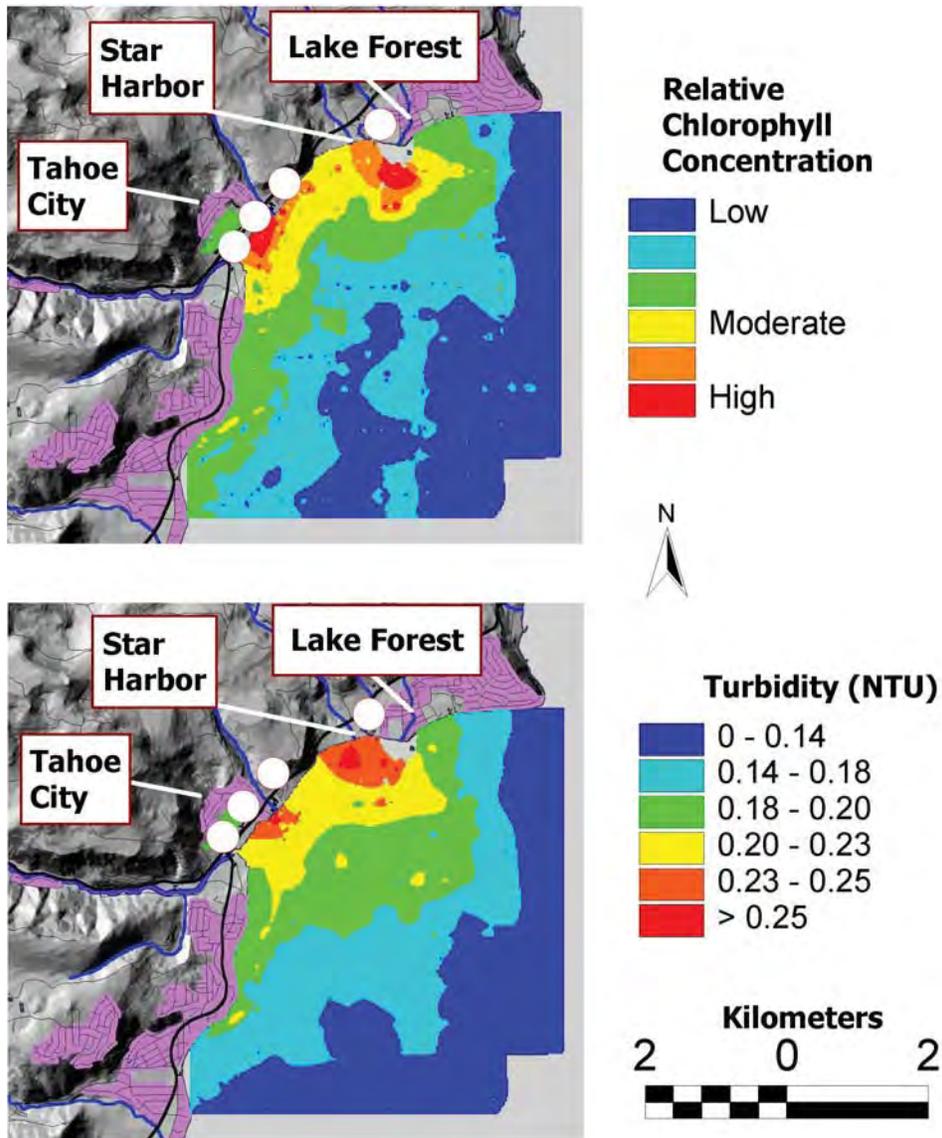


Figure 9. Maps of turbidity and relative chlorophyll concentration off Tahoe City and Lake Forest in September 2001. The purple areas onshore are developed areas and roads are shown as black lines. The green area onshore is a golf course. The white circles are sewage pumping stations.

On June 2, 2001, three months before these surveys were made, teams of volunteers organized by the Citizen Monitoring Working Group of the Lake Tahoe Environmental Education Coalition collected water samples at 44 locations around the basin. The samples were analyzed for many parameters including fecal coliform that is commonly found in the feces of warm-blooded animals. The highest concentration of fecal coliform (706 CFU/100 ml) was observed in Hatchery Creek at Star Harbor (Segale, personal communication, 2001). This fecal coliform value is almost two times greater than at any other site and about ten times greater than the average for all the sites. Repeat fecal coliform measurements in July 2001, and August 2001, did not have elevated values. It is tempting to speculate that groundwater transport of sewer exfiltration may have increased the flux of nutrients to the lake in these areas, however the data are too limited to draw this conclusion.

With the available information it is not possible to determine what caused the high turbidity areas off Tahoe City. The turbidity and chlorophyll surveys show a high degree of spatial correlation, however it is not possible to determine if high levels of algae are the leading cause of the high turbidity, or if inorganic material is the main cause of the increased turbidity and the algae is also elevated because of an increase in nutrients associated with the inorganic material. It is unlikely the increases in turbidity and chlorophyll were caused by atmospheric deposition because their spatial extent is much smaller than would be associated with atmospheric deposition patterns. It is also unlikely they were associated with an inflow of nutrients by surface water because the creeks were dry this late in the summer and many creeks with greater flows did not have high turbidity areas associated with them.

It is possible the high turbidity areas were caused by the resuspension of lake sediments by heavy boating traffic in these areas. It is also possible the high turbidity areas were caused by the release of nutrients stored in lake sediments that enhanced late summer algae growth in these areas. These stored nutrients may have been deposited during periods of greater stream flow with nutrient rich water from urban runoff. Limnology factors such as the characteristics of the bottom, and wind and water currents may also make these locations more favorable for algal growth. It is also possible that the high turbidity areas were caused by the inflow of nutrient rich groundwater that enhances algae populations in these areas. The close spatial correspondence of the areas with elevated turbidity and algae, sewer pumping stations, and the one high fecal coliform value, suggest sewer exfiltration leading to discharges of nutrient rich groundwater as a possible cause. Other possible sources of nutrient rich groundwater include soil disturbance and fertilizer use. We stress that sewer exfiltration is only one possibility. Additional work to determine the relative concentrations of inorganic and organic particles in the lake, and possible groundwater sampling, will be required to resolve this.

CONTINUOUS LIGHT ATTENUATION STUDIES

An instrument that measures the attenuation of light passing through the lake water was deployed at Homewood. The instrument (described in the methods section) was mounted on a private pier ~1 m below the surface, 1.0 meters above the bottom, and 15 m from shore. It had to be cleaned once a week to keep the optics free from biological material that would otherwise adversely influence the measurement. The intention of this deployment was to obtain a continuous proxy turbidity record at a fixed location as a check on the occasional spatial surveys made with the boat mounted turbidity measurement system. The need for two different types of instruments, each measuring different properties, arises because the turbidity instrumentation required for the low turbidity levels in Lake Tahoe requires too much maintenance for unattended operation, and the light attenuation instrument available to us was not suitable for deployment from a moving boat. We are trying to obtain a light attenuation instrument that can be used on a moving boat simultaneously with the turbidity instrument.

To use light attenuation as a proxy for turbidity it is necessary to develop an empirical relationship between the two measurements. This relationship will depend on the optical characteristics of the particles and water. For example, different mixtures of inorganic particles and algae, or different types of algae, will alter the relationship between light attenuation and turbidity. We developed a rough empirical relationship between light attenuation and turbidity by making simultaneous measurements of light attenuation and turbidity in different parts of the lake that had different levels of turbidity. We do not show this relationship because we are concerned that the light attenuation instrument may not have been properly calibrated. This would make the relationship unsuitable for use with another instrument that was correctly calibrated. Originally we had hoped to use measurements of light attenuation from the moored instrument to verify temporal changes observed with the boat mounted turbidity system. However after considering the calibration methods of the light attenuation and turbidity instruments, and the empirical and rough nature of the relationship between turbidity and light attenuation, we concluded the spatial turbidity measurements were more dependable than the estimation of the turbidity from the light attenuation measurements.

The record of estimated turbidity (Figure 10) is dominated by a daily cycle with amplitude of 0.05 NTU. It is not known if this cycle is an instrument artifact caused by increased ambient light levels during the day, or if it is a change in the optical properties of the water associated with daily changes in biological activity or wind stirring of sediments. There are several instances where storms briefly elevated the light attenuation. This is expected because of the shallow water depth where the instrument was moored. The multi day trends of the data collected at night, shown in red in figure 10, are considered to be real changes in turbidity. No attempt was made to record weather or other lake conditions to determine the causes of these variations because this project intended to use the light attenuation instrument only as a check on the boat mounted turbidity system.

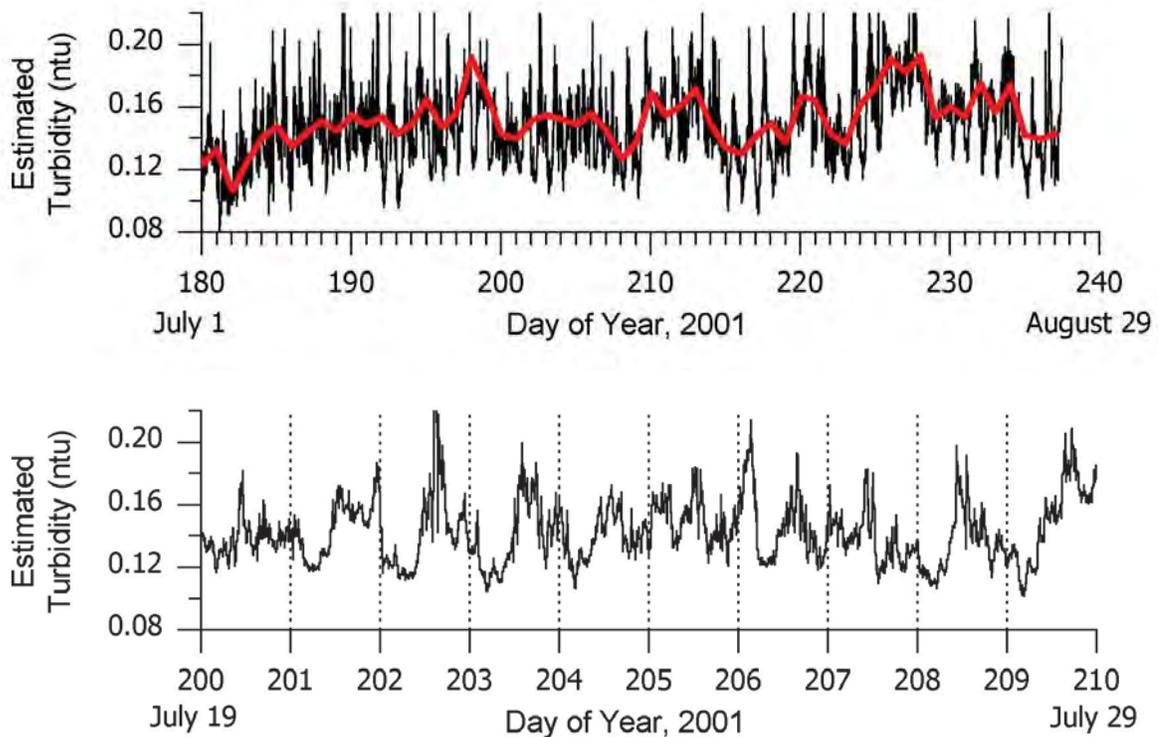


Figure 10. Estimated turbidity derived from light attenuation measurements with the C-Beta. The red line is the average value during the night. The lower graph is a detailed view of a portion of the upper graph so that the daily variation can be observed. The daily variation may be an instrument artifact caused by sunlight.

The continuously recording light attenuation instrument was not useful as a check on the boat turbidity system because the temporal changes were small relative to the uncertainty of the relationship between light attenuation and turbidity, and because of concerns about the ability of the instrument to resolve small changes in light attenuation in the presence of sunlight. In lake light attenuation instruments may be suitable for long term monitoring at a fixed location if the issue of the possible influence by sun light and the need for frequent cleaning can be resolved. The use of light attenuation instruments to continuously monitor clarity at Lake Tahoe is promising but it will require more development of the field methods.

RELEVANCE TO LONG TERM MONITORING OF LAKE CLARITY

To determine if the Environmental Improvement Projects being conducted around the basin are restoring lake clarity, it is desirable to determine how the near shore clarity is changing over time. This project has shown that near shore clarity, as measured by turbidity and light attenuation, has significant spatial and temporally variability.

An effective monitoring program should be able to determine how the clarity is changing over time at a specific location. (i.e. In the last 5 years has the clarity in summer at a monitoring buoy offshore of Tahoe City increased or decreased?) The best way to do this is with a clarity measurement made several times a day. This will allow seasonal averages to be obtained that are not based on conditions that occurred on a single day. An effective monitoring program should also determine how the spatial patterns of clarity are changing over time. (i.e. In the last 5 years has the size of the low clarity area off Tahoe City gotten bigger or smaller?) The best way to do this is with periodic spatial surveys of clarity.

Light attenuation measurements may be a useful long-term monitoring tool at Lake Tahoe. Light attenuation instruments can be deployed in the water for continuous unattended measurements or deployed on a moving boat. Instruments from different manufactures have a similar design and it is likely that instruments with similar optical responses will still be available several decades from now.

Turbidity measurements are also suitable for long term monitoring programs because instruments with similar characteristics are likely to be available many decades from now and because the measurements can be made from a moving boat in shallow water. However, it is difficult to continuously measure turbidity in the clean water of Lake Tahoe with an unattended instrument because a pump is required to move water into the sample cell. Turbidity instruments that have an open water design which do not require a pump will not respond to the small changes in turbidity in the low turbidity waters of Lake Tahoe. Light attenuation instruments have the advantage over turbidity instruments that they do not require a pump to move water into a sample cell and hence are simpler to deploy for unattended measurements in the low turbidity water of Lake Tahoe.

A less desirable approach is light scattering instruments. Light scattering instruments cannot be deployed in shallow water because they are influenced by light scattering off the bottom. Light scattering instruments are designed with different scattering angles and it may not be possible to obtain light scattering instruments with similar optical characteristics over the many decades of a long term monitoring program.

Secchi disk measurements are not well suited for monitoring the near shore zone because the water is frequently too shallow to make a measurement. Another method to monitor the optical properties of water is the light extinction coefficient. This is a measure of the attenuation of natural light with depth. This measurement is influenced by environmental conditions such as waves, clouds and sun angle because natural light is used instead of a controlled light source. This method is not suitable for long term monitoring of clarity because it is dependent on environmental conditions that are not related to clarity.

At this time we do not have enough experience to suggest an optimal program for monitoring near shore water clarity. However a long term monitoring program should have a combination of spatial and temporal measurements utilizing methods that are efficient and that will be consistent over many decades. We hope to address the issue of an optimal monitoring program for near shore clarity in a future project.