



January 16, 2009

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Tahoe Regional Planning Agency
128 Market Street
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Re: Public Transit Comments

The League to Save Lake Tahoe appreciates the opportunity to make comments on the region-wide public transit system of the Tahoe Basin.

The beneficial effects of public transit on threshold attainment will need to be achieved by reducing *emissions per person per mile* as compared with the private passenger automobile. When any public transit vehicle (such as bus or trolley) is being retired, it needs to be replaced by a vehicle powered with alternative energy and/or substantially improved emission-reduction technology (hybrid, electric, hydrogen fuel cell, solar). Additionally, the more polluting transit vehicles used today need to be phased out on a specific schedule consistent with achievement of the environmental threshold goals. Careful research must be employed to assure that the new transit vehicles utilizing the best available technology (BAT) are reliable mechanically and technically, designed for Tahoe's climate and geography, sized properly to accommodate the appropriate number of riders as demonstrated by ridership studies, and capable of demonstrating quantifiable progress towards the attainment and maintenance of the environmental thresholds.

It must be demonstrated that ridership levels for public transit throughout the Basin are proven successful at reducing reliance on the private automobile and result in reductions in Basin-wide transportation-related emissions and both atmospheric and hydrologic contributions of particulate matter. Ridership for routes served need to be compared to the existing year-round and seasonal populations in the Basin, in order to accurately determine environmental benefits on an *emissions per person per mile* basis. Increasing ridership by expanding the population and density in urban areas within the Basin is an unacceptable strategy and conflicts directly with the achievement and maintenance of a multiple of environmental threshold standards and is unjustified on account of nearly 75% of the threshold standards in non-attainment status. Detailed data and graphs need to be presented regarding existing public transit ridership as it

relates to emissions. The types of emissions that need to be accounted for include CO, NO_x, PM_{2.5}, PM₁₀, any ozone precursors, and greenhouse gases.

Mass Transit and Alternative Vehicles

In order to reach the Compact mandated goal of reducing air pollution caused by motor vehicles the TRPA should promote not only the use of alternative fuel transit vehicles, but also transit vehicles that utilize the best available technology, such as energy efficient hybrid technology. Alternative fuel transit vehicles would complement the Mass Transit Goal of promoting the use and strategic of environmentally-conscious mass transit. The following alternative technologies would provide environmental improvements over other alternative fuel vehicles such as compressed natural gas (CNG), and diesel vehicles: hydrogen, hybrid powered buses, solar assisted, and electric.

Hybrid mass transit vehicles have been found to emit 95 percent less particulate matter (PM), 40 percent less nitrogen oxides (NO_x), and 30 percent less greenhouse gases than traditional diesel mass transit vehicles (SFMTA, 2007¹). Hybrid mass transit vehicles are being successfully used in major city transit departments such as New York City, Seattle, and San Francisco. Hybrid vehicles not only reduce air pollution attributed to mass transit systems, but also create less engine noise, increase fuel economy, extend brake life, produce less greenhouse gases, and have the benefit of less engine wear and tear. The greater cost difference of hybrid mass transit vehicles over traditional CNG and diesel mass transit vehicles is compensated over the fuel and maintenance cost savings over the life of the hybrid vehicle.

The California Air Resources Board² (CARB) considers the following to be alternative fuels: gasoline (only when used in hybrid-electric technology), hydrogen, electricity, fuel cells, or other advanced technologies (such as solar). TRPA needs to promote the use of alternative fuel vehicles that support ULEV technologies in order to reach and maintain Compact and environmental threshold goals. Each of the above alternative fuels have benefits over traditional CNG and diesel powered mass transit vehicles, such as reducing reliance on foreign oil supplies, reduced fuel costs, emission reductions, greenhouse gas reductions, and reduced operating and maintenance costs over the life of a vehicle. It should be noted that some alternative fuel technologies are better than others. For example, the New York City transit district has found their fleet of CNG buses to have a fuel cost per mile 53 percent higher than their diesel hybrid fleet of buses. They also found the maintenance costs of their hybrid fleet to be lower than the CNG fleet. Cost considerations as well as environmental benefits need to be considered when addressing the use of alternative fuel mass transit vehicles over diesel-hybrid mass transit vehicles. The League would recommend pursuing the mass transit technology that will reap the greatest environmental benefits for air and water quality, vegetation and soils, and human health benefits. The use of hybrid mass transit vehicles in the Tahoe Basin would be a step in the right direction for reducing air pollution related to motor vehicles, and a means to help reach the

Compact goals and thresholds related to transportation and air quality. A TRPA goal and policy that needs to be developed to replace aging technology in the Basin's public transit system with new technology that can successfully reduce Pollutants. In addition to the above alternative fuel suggestions, the League also recommends that the TRPA consider a study to be followed by an application for a waiver if the study is successful to allow the use of diesel hybrids in the California side of the Basin, provided that ozone standards are achieved within the Basin and that the use of diesel hybrids does not conflict with the maintenance of ozone standards. Under current CARB policies, diesel powered transit vehicles are to be phased out due to their higher level of emissions then compared to gasoline or CNG vehicles, and furthermore diesel hybrids are not considered alternative fuel hybrid technology. Due to the alpine operating conditions of the Tahoe Basin, hybrid diesels that utilize ultra-low sulfur fuel, particulate traps, and cleaner burning diesel engines might provide environmental benefit in terms of reducing overall emissions, including particulates. A study that analyzes and compares diesel hybrid technology to other traditional and alternative forms of transit technology (especially with regards to facilitating ozone production) is needed to assess the true environmental and economic benefits of using diesel hybrid technology in mass transit fleets.

Waterborne Transit

Currently, the technology utilized in waterborne transit is at least an order magnitude more polluting than the private automobile in terms of *emissions per person per mile*. According to a 2003 study³ on ferry transportation in the San Francisco Bay, ferries meeting the Tier 2+SCR+CF CARB requirement can be 72 – 670 percent more polluting (for NO_x, a ozone precursor) as compared with land transportation (based on a 75 percent occupancy rate for the ferries). The solar-assisted vessels that are currently on the market, such as the Solar Sailor, rely upon large 1000 horsepower diesel burning engines for propulsion and have not proven to be an effective *emissions per person per mile*-reduction alternative to the private automobile. As waterborne transit vessels are generally not equipped the technologically advanced equipment of automobiles (such as catalytic converters), this form of transit contributes significantly to air pollution.

Waterborne transit may offer promise in the future, assuming better technology becomes available. The idea can still be pursued, but the “green” technology must become available and prove itself to be viable emissions-reduction transit strategy before waterborne transit can be implemented in such an environmentally sensitive area like Lake Tahoe. At that time, the League supports the use of waterborne transit only under all of the following conditions:

- 1) Due to the substantial level of pollutants emitted by waterborne transit per passenger mile, it is imperative that TRPA only utilizes the best available “green” technology (including the use of catalytic converters) and successfully demonstrate an improvement in *emissions per person per mile* as compared with the private automobile. Furthermore, use of waterborne transit must promote the achievement and maintenance of the

environmental threshold goals. Traditional motorized watercraft produce emissions that are magnitudes higher than emissions from automobiles. For example, conventional powered ferries are 400 – 900 percent more polluting per passenger mile than automobiles (Friends of the Earth/Blue Water Network, 2009⁴).

- 2) Waterborne transit will only be utilized after a full environmental impact statement is performed demonstrating that there will be positive environmental gain towards the achievement and maintenance of the environmental threshold goals with rigorous scientific focus on water and air quality.
- 3) An environmental impact statement needs to demonstrate that waterborne transit infrastructure/facilities, including but not limited to parking facilities, docking and fueling facilities, marina expansions, and associated traffic does not conflict with attainment and maintenance of environmental threshold goals.

Extending Public Transit Services

In order to increase ridership, a number of suggestions have been presented at the public transit forums, including extending services into community neighborhoods, commuter shuttles, extending night services, increasing service during peak hours, and improving facilities (i.e. bus shelters). Ridership can be increased throughout the Basin with a balance of disincentives (parking fees) and incentives (frequent rider discounts). By working with the business community of the Basin, both large and small, commuters can be encouraged to leave their vehicles at home and use public transit.

The reality in the Basin is that we have two distinct populations to serve; the year-round resident population, and the seasonal tourist population. A successful transit system must acknowledge and balance the transit needs of both populations. It would be extremely useful to identify the current baseline for year-round residents and seasonal tourists utilizing Tahoe's transit system in order to better assess how the current system is actually serving the needs of both groups, and where improvements to transit service can be most efficient in increasing ridership. As stated in the TRPA Compact and the 2008 Regional Transportation Plan for the Tahoe Basin: the overall goal for transportation in the Basin is to reduce dependency on the private automobile. In addition, the TRPA has a mandated goal to achieving and maintaining the environmental threshold carrying capacities (such as air and water quality, vegetation, noise, and scenic resources) while providing for orderly growth and development consistent with the threshold goals.

Others have suggested that improvements to infrastructure will increase ridership throughout the Basin. Although, the creation of transit centers, 'park and rides', and bus structures might improve ridership, but they can also have significant impacts to the environment as well. Any changes to the transit infrastructure needs to be consistent with the TRPA's goal of attaining and maintaining the environmental threshold carrying capacities as well as the TRPA Compact goal of reducing dependency on the private automobile. For example, bus shelters should have BMPs to protect and enhance soils and water quality, as well as provide scenic improvements (i.e. landscaping the area around the shelter).

Other Transportation Suggestions

Transportation planning and management in the Tahoe Basin needs to actively promote, facilitate, and incentivize zero emission alternative modes of transportation besides bus and shuttle transit. The TRPA should promote carpooling and ride-sharing services. A creative method to promote ride-share services is to use the “Smart Trips” service in the Tahoe Basin. “Smart Trips” is an online service provided for free by Washoe RTC⁵ where potential riders can coordinate with others to form carpools. An example of how this service could be beneficial for reducing single driver trips is by using “Smart Trips” for the many meetings that occur around the Lake, such as the TRPA Governing Board meetings.

Transportation planning in the Basin needs to incorporate and encourage pedestrian and bicycling as alternative modes of transit to the private automobile. Walking and cycling are the best ‘environmentally friendly’ modes of transportation, especially in terms of daily commuters. Efficient pedestrian and bicycle facilities and access can increase public transit ridership by providing a safe and convenient way to travel to bus stops and transit centers. Providing safe and secure bicycle lockers can also increase bicycle use and public transit ridership. Ultimately though, the Basin needs a transportation infrastructure that can effectively and safely accommodate bicyclists and pedestrians, recreational users and commuters alike. We support such improvements to the existing bicycle trail infrastructure provided that the TRPA considers all possible impacts to the sensitive environment of the Lake Tahoe Basin, and that no projects will further inhibit the attainment of the environmental thresholds required by the Tahoe Regional Planning Compact. Overall, the increased use of bicycles and pedestrian traffic throughout the Basin will help to reduce air and noise pollution, as well as automobile traffic congestion.

Summary

Thank you for this opportunity to provide comments and suggestions for the Tahoe public transit system. Overall, public transit in the Basin needs to provide environmental benefits. Any expansion of the existing public transit infrastructure and/or routes needs to demonstrate a successful reduction in vehicle miles traveled by private automobiles, as well as show positive benefits towards attaining and maintaining the TRPA environmental threshold goals.

If you have any additional questions, please contact me at 530-541-5388.

Thank you,

Flavia Sordelet
Environmental Program Advocate
League to Save Lake Tahoe

References

¹San Francisco Municipal Transportation Agency. “Muni Hybrid Buses.” 2007.

<<http://www.sfmta.com/cms/mfleet/hybrids.htm>> (29 Jul. 2008).

²California Air Resources Board. “Fact Sheet – Fleet Rule for Transit Agencies Transit Fleet Vehicle Requirements.” <<http://www.arb.ca.gov/msprog/bus/tfv/tfvfactsheet.pdf>> (12 Jan. 2009).

³Farrell, A. E., D. H. Redman, J. J. Corbett, and J. J. Winebrake. 2003. Comparing Air Pollution from Ferry and Landside Commuting. Transportation Research Part D: Transport and Environment. Vol. 8(5) pp. 343-360.

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⁴Friends of the Earth. “Fast Ferries: Clean Water Transit or More Dirty Diesel?”

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⁵RTC Smart Trips. “RTC Rideshare Program.” <<http://www.rtcwashoe.greenride.com/en-US/default.aspx>> (12 Jan. 2009).