

Appendix A:

Transportation Needs, Revenues, and Shortfalls

Transportation Needs, Revenues, and Shortfalls

Prepared for the Tahoe Transportation District

Under contract with Morse Associates Consulting, LLC

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1. Purpose

The purpose of the TTD Revenue Action Plan project is to determine the most appropriate and effective transportation funding strategy (or strategies) necessary to implement the community's Transportation Vision for the Lake Tahoe Basin as articulated in the Linking Tahoe Regional Transportation Plan 2017-2040 (Tahoe RTP) and related documents. The first step in the process is to determine the amount of funding that is needed to implement the Transportation Vision. This first step is addressed in this memo, which evaluates the adopted transportation planning documents developed for the Lake Tahoe Basin to affirm needs and existing revenues, and quantify funding shortfalls. If documents and existing data allow, the funding shortfall will be analyzed by mode of travel.

The challenge of the planning process is to provide a clear vision of a distant future and describe a blueprint on how to get to this distant future. The transportation planning process has to make a number of assumptions about how much growth will occur, where it will occur, and how and where people will choose to travel for the next 20+ years. If this were not enough of a challenge, it is important to realize we live in a dynamic world with constant change, and sometimes change can be rapid and disruptive. Given these challenges, our review of adopted planning documents includes recommendations for adjustments to projected needs and expected revenues if available data suggests that an adjustment will provide a better estimate of the funding shortfall facing the Lake Tahoe Basin.

2. Review of Adopted Transportation Planning Documents

The multi-modal transportation needs for the Lake Tahoe Basin have been identified in the *Linking Tahoe Regional Transportation Plan 2017-2040* (Tahoe RTP). The Tahoe RTP was approved by the Tahoe Regional Planning Agency Board on April 26, 2017. The Tahoe RTP plans for a complex region in terms of environment needs, political jurisdictions, geographical constraints, and transportation demands. The political jurisdictions include the State of California, with the Counties of El Dorado and Placer and the City of South Lake Tahoe, and the State of Nevada, with the Counties of Douglas, Carson City and Washoe. Nevada County and the Town of Truckee, while not in the Lake Tahoe Basin, are important partners in the planning process because of the importance of the linkage to I-80, passenger rail service, and the Resort Triangle linkage with the Lake Tahoe Basin via SR 89, SR 28 and SR 267. In addition to the political jurisdictions, there are large public land holdings managed by the United States Forest Service in the Lake Tahoe Basin.

The public transportation needs for the Lake Tahoe Basin have been identified in additional detail in the *Linking Tahoe: Corridor Connection Plan* (LTCCP) and the companion document, *Linking Tahoe: Lake Tahoe Basin Transit Master Plan* (LTTMP). The LTCCP was approved by the Tahoe Transportation District in August 2017, and provided important research, analysis and recommendations for the Tahoe RTP. The LTCCP focused on public transportation and multi-modal detailed implementation approaches which, combined with the Tahoe RTP, is intended to transform Tahoe from an auto-centric environment to a destination rich with multi-modal options for visitors, residents and commuters. In addition, other appropriate transportation plans and studies will be reviewed to ensure the evaluation of needs and revenues has considered all of the relevant information. One other key needs

analysis that was reviewed was the TTD 10 year priority project list, a list of multi-modal transportation priorities developed by TTD staff for internal use in medium term planning and project prioritization. This project listing is not directly comparable to the Tahoe RTP, and also contains more projects and services than the California/Nevada Bi-State Transportation Plan. The TTD 10 year priority project list was also reviewed to ensure it could be accommodated within the RTP costs.

3. Transportation Needs

The Tahoe RTP is the primary source for identification of multimodal transportation needs and estimated costs for the period 2017 -2040. The Tahoe RTP represents an extensive planning effort, with input from all of the affected local, state and federal entities, to ensure a complete and accurate picture of what is needed to implement the transportation vision for the Lake Tahoe Basin. The following analysis reviews both the estimated costs and revenues at high level; the intent is not to critique or even refine the numbers, although that may occur where recent improvements to estimates have been developed and are acceptable to the TTD and other affected entities. Instead, this review is being conducted to ensure that there are no major exclusions, inconsistencies between the Tahoe RTP and the LTCCP/LTTMP, or questionable assumptions that could cause the estimated funding shortfall in the Tahoe RTP to be substantially under or over estimated. The analysis also reviews the 10 year timeframe of the Tahoe RTP revenues to determine whether the TTD 10 year priority project list can be accommodated with expected revenues.

Constant Versus Nominal Dollars

One of the important questions that must be addressed with any long range planning process is whether to show costs and revenues in constant dollars or nominal dollars that are inflated over time. A constant dollar is a value of currency identified for a certain year, in this analysis 2017, and no inflation is applied to either costs or revenues in order to simplify the analysis. The alternative approach is to convert both costs and revenues to nominal dollars that are adjusted to assumed inflation rates on an annual basis. The conversion of constant dollars to inflation-adjusted nominal dollars is critical to financial investment and other types of economic analysis which evaluate income and price data over longer time periods. The availability of consumer price index and other inflation indicators make the conversion of constant to nominal dollars fairly straightforward in simple economic analysis.

Long range transportation planning processes often use inflation-adjusted nominal dollars. The Tahoe RTP was developed with costs described in inflation-adjusted dollars and revenues were assigned growth factors. The cost inflation assumptions were:

- Capital projects inflated at 3.5% year
- Transit Operations costs inflated at 2.7% year
- Other Operations/Maintenance/Rehabilitation costs inflated at 3.5% year

The growth factor assumption for revenues was an annual 2 percent growth rate to continuing revenue streams. If a specific amount of funding was secured for the future, some revenues were not adjusted by the growth factor. The determination of the inflation rates for costs and growth rates for revenues was made through consultation and agreement with the Nevada and California DOTs and MPOs. These inflation and growth

assumptions seem reasonable, although it is difficult to predict anything for 20+ years into the future.

An alternative approach to making inflation and growth assumptions necessary to develop nominal dollars in the future is to simply use constant, or unadjusted dollars.

The problem of trying to guess inflation and growth rates 10-20 years into the future can be avoided, and more importantly, constant 2017 dollars (2017\$) can show the magnitude of financial need very accurately, even 20 years in the future, with one major proviso.

The proviso is that all funding mechanisms that are planned to generate revenues to meet future needs, including both existing and new funding mechanisms, must be periodically adjusted as necessary to account for the loss of purchasing power through inflation as it occurs. It is highly desirable to have these adjustments made automatically so that they do not become political issues. This critical concept is addressed, to varying degrees, by many public funding mechanisms: sales tax revenues which increase as inflation increases the cost of goods, property tax revenues increase as valuations increase, and fuel taxes that are indexed for construction inflation. Flat fees or taxes that do not automatically adjust for inflation (for example the Federal fuel tax, which has not been increased in several decades) are problematic and constantly lose purchasing power to inflation over time. Ideally, a transportation funding mechanism will adjust annually based upon actual transportation cost inflation; a good example of this kind of mechanism is a fuel tax to fund roads indexed to highway construction costs. While no transportation funding mechanism is perfect in its response to inflation, it is critical that periodic, and ideally, annual automatic adjustments occur in response to inflation.

In order to test the impact of using constant (2017\$) and inflation-adjusted nominal dollars for the Tahoe RTP analysis, the projected costs and revenues are shown below for each scenario:

	Constant 2017\$ (\$billion)	Nominal \$ (\$billion)
Constrained Revenues	\$1.684	\$2.055
Constrained Costs	<u>\$1.602</u>	<u>\$2.050</u>
Constrained Surplus	\$.082	\$.005
Unconstrained Costs	<u>\$2.521</u>	<u>\$3.805</u>
Unconstrained Shortfall	\$2.439	\$3.8

As shown above, the constant 2017\$ and nominal dollar analysis is very similar for the Constrained scenario, with both showing a minimal surplus. The Constrained scenario completes many of the projects in the next 10 years, and has fewer projects in future due to financial constraints. However, when the larger costs contained in the Unconstrained scenario are inflated for 20+ years, the shortfall becomes much larger for the nominal dollar analysis, **\$3.8 billion**, compared to the constant (2017\$) shortfall of **\$2.439 billion**.

It is possible that all of the cost inflation factors and revenue growth factors are accurate assumptions, but as shown above, they do create a very different answer to the question of what is the size of the funding shortfall for the next 20+ years. The consultant recommended that the funding analysis proceed with the constant (2017\$) dollar analysis to remove the uncertainty regarding the cost inflation and revenue growth assumptions. The Project Delivery Team (PDT), made up of federal, state and local government staff working on transportation issues in the

Tahoe Basin, reviewed the use of constant (2017\$) for this analysis. In addition, the TTD Board approved the use of constant (2017\$) for this analysis.

The following discussion of costs and revenues are all shown as constant 2017 dollars (2017\$).

As previously mentioned, this approach requires that any funding mechanisms, both existing and new, be adjusted for inflation, ideally on an annual basis.

The following evaluates the costs for each major project category in the Tahoe RTP in 2017 constant dollars (2017\$), as described in both the “Constrained” and “Unconstrained” scenarios.

The transit capital and operating costs and farebox revenues of the Tahoe RTP are compared to the LTTCP costs. In addition, the TTD 10 year priority list of projects is compared to both the “Constrained” and “Unconstrained” scenarios in 2017\$ constant dollars. All “Recommended Adjustments” listed below have been reviewed by the PDT and approved by the TTD Board.

Corridor Revitalization

The Corridor Revitalization projects cover a variety of improvements to the major highways in the basin, including intersection improvements, complete street improvements and recreation/tourist facility improvements. The majority of these projects are planned for implementation in the next five years, and all are planned for completion within 10 years. All projects are included in the “Constrained” scenario and the majority of these projects have had at least some design or preliminary engineering work completed with the estimated total cost of \$227 million.

Comparison of Tahoe RTP Corridor Revitalization and TTD 10 Year Priority Projects

The TTD 10 Year Priority Project List includes \$125 million in Complete Street expenditures although no specific projects are identified. This total is well within the Tahoe RTP estimate so it is assumed all projects can be funded as planned by TTD.

Recommended Corridor Revitalization Adjustment: None

Transit Improvements

Transit Operations

The transit component of the Tahoe RTP contains extensive service improvements both within and extending outside of the Tahoe Basin. The general description of the transit vision in the Tahoe RTP is consistent with the LTTMP. The LTTMP document provides a detailed service implementation plan for three possible future alternative scenarios to increase transit mode share from the existing 1.4% to some higher mode share over a span of 12 years (2016-2028). The “Easily Achievable” scenario would increase mode share to 5%; the “Progressive” scenario would increase the mode share to 10%; and the “Aggressive” scenario would increase mode share to 20%. The TTD Board has officially adopted the “Aggressive” scenario as its goal. In addition to building upon the quality of the existing service (expanding frequency of service and adding more days and hours of service), major new services are described in the LTTMP in three implementation phases:

Implementation phases

The LTTMP describes the immediate phase (0-1 years) as focused on changes to routes and frequencies already planned for by TTD and TART. Short term improvements (1-5 years) are seen as the transformation of the individual systems to a regional transit network that includes additional infrastructure and the linking of the north and south shores. Route changes and new services along with a significant investment in infrastructure will be the main features of this phase. The goal is to create the basic structure from which the network can grow and expand in the future with little further disruption to the routes. The medium-term improvements (5-10 years) will strengthen the system by adding more frequent service to additional routes and the

improvement of regional connections as well as establishing trans-Sierra connections to Reno-Tahoe International Airport from Incline Village and from Truckee to Sacramento.

A new Frequent Ferry will link Tahoe City and South Lake Tahoe. Additional Mobility Hubs and fleet maintenance facility capital projects will be needed. TTD staff has updated the RTP Ferry costs to add \$45 million in capital and \$30.6 million in operating to reflect the addition costs of purchasing and operating hydrogen fuel cell ferry vessels as well as other cost adjustments. The LTTMP describes the long-term implementation phase (10+ years) as focusing on the trans-Sierra movements and a new route to Meyers. New service will be implemented from South Lake Tahoe to Stockton and from Sacramento to South Lake Tahoe. There would also be funding to increase regional rail service between Sacramento and Reno.

The “Aggressive” scenario is expected to achieve a 20% mode share by year 12 at which time operations will require 174 peak buses with an annual operating cost of \$57 million/year by the twelfth year of the ramp up..

The “Aggressive” scenario of the LTTMP is generally consistent with the Tahoe RTP “Unconstrained” and “Constrained” cumulative transit service scenario, which has an annual estimated operating cost of \$66 million by 2040. There is not sufficient detail in the RTP operating costs to identify the differences from the LTTMP estimates, but it would seem prudent to utilize the Tahoe RTP “Constrained and Unconstrained” estimate of \$66 million per year (in 2040) to ensure all transit services can be implemented

Comparison of Tahoe RTP Transit Operations and TTD 10 Year Priority Projects

The TTD 10 Year Priority Project List includes an annual transit operation cost (bus and ferry) of \$29,442,000 in year 10. The list of services and capital projects is not detailed, but the transit

projects and services generally conform with the LTCCP/LTTMP “Easily Achievable” scenario would increase mode share to 5%. This annual operating cost total is well within the Tahoe RTP Constrained and Unconstrained estimate of \$66 million in 2040 so it is assumed all projects can be funded as planned by TTD.

Transit Capital

The transit capital costs included in the Tahoe RTP are \$193 million in the “Constrained” scenario and an additional \$132 million in the “Unconstrained” scenario for a total of \$325 million. This total appears consistent with implementation of the short, medium and long-term service levels in the “Aggressive” scenario of the LTTMP, which notes that 174 peak hour buses are required to provide the services, although there is no detailed capital plan associated with the service level.

Comparison of Tahoe RTP Transit Capital and TTD 10 Year Priority Projects

The TTD 10 Year Priority Project List includes transit capital costs of \$201 million (bus and ferry). The Tahoe RTP total of \$325 million in transit capital is sufficient to fund all projects listed in the TTD 10 Priority Projects. The TTD project list did identify specific expenditures for individual projects, and it appears that there are some variations with the Tahoe RTP project costs which should be reviewed and reconciled in future updates to planning documents.

Transit Administration Costs

There is currently no Transit Administrative support included in the Tahoe RTP associated with the massive expansion in operations and capital described above. It will be impossible to complete the capital procurements, conduct the operational planning and service monitoring, and conduct the needed support services (human resources, marketing, finance, information

technology, facilities maintenance) without a major expansion of Transit Administrative support. The TTD has estimated that \$5 million annually would be necessary to fund the needed Transit Administration.

Transit Fare Revenue

One major difference between the Tahoe RTP assumptions and the LTTMP is the treatment of transit fare revenue. The Tahoe RTP assumes that as of 2020, TTD services will implement a “Free to the User” policy that will result in fare revenue loss which was shown as an expense totaling \$14 million from 2020 to 2040. Similarly, the Tahoe RTP assumes that TART services will implement a “Free to the User” policy that will result in fare revenue loss which was shown as an expense totaling \$16 million from 2022 to 2040. The “Free to User” expense of \$14 million for TTD and \$16 million for TART were intended to represent lost revenue, not an additional expense associated with moving to a free fare. In fact, transit expenses would be reduced in a free fare environment, due to the elimination of fareboxes on local service vehicles and associated road call and maintenance costs. Operational efficiency would also improve with faster passenger boarding times in a no fare environment, but no financial impact has been estimated for this improvement in operational efficiency.

In contrast, the LTTMP assumes that fare revenue and the farebox recovery ratio will increase substantially even as the amount of service hours are increased eightfold (20% mode share scenario). It is extremely difficult to maintain the current farebox recovery ratio as service levels are expanded by such a large order of magnitude; it is extremely unlikely that the farebox recovery could be increased with such a large service level increase.

In discussions with TTD staff, it was determined that local service within the Tahoe Basin would be fare free in the future and the planned inter-regional service expansions and the north to south

shore ferry service would be charged a fare. Consistent with recent TTD actions regarding fare policy, the consultant has made the assumption for new inter-regional services that fares would capture a 15% farebox recovery ratio. The revenue generated by these services (rail, bus and ferry) would total \$65 million for the 2020-2040 timeframe, assuming the service implementation schedule in the RTP.

Recommended Transit Adjustments:

Expenses:

1. Reduce Expense \$30 million (eliminate assumed “cost” of Free Fare on local service)
2. Increase Expense \$100 million (add 20 years of Transit Administration at \$5 million/yr)
3. Increase Expense \$76 million (for Ferry add \$45 million for capital and \$31 million for operations)

Revenues:

1. Increase Revenues \$66 million (add inter-regional fare revenues, rail \$11 million, bus \$43 million and ferry \$12 million)

Active Transportation

The active transportation network is a complex system of shared-use paths, sidewalks, bicycle lanes, bicycle boulevards, crosswalks, ADA facilities and much more. Bicycling and walking facilities attract people for both transportation and recreation travel. Both residents and visitors will use the active transportation network itself, and as a means to access transit services. The Tahoe RTP identified \$111 million in active transportation projects in the “Constrained” scenario, with the vast majority planned for completion in the next three years. The “Unconstrained” scenario included \$173 million in projects, for a total of \$284 million.

Comparison of Tahoe RTP Active Transportation and TTD 10 Year Priority Projects

The TTD 10 Year Priority Project List includes Class I Trail project capital costs of \$75 million. The Tahoe RTP total of \$284 million for Active Transportation projects is sufficient to fund all projects planned by the TTD.

Recommended Active Transportation Adjustment: None

Technology and Transportation System Management

The technology and transportation system management projects in the Tahoe RTP include informational kiosks at activity centers, various intelligent transportation systems, wayfinding and parking management technology and adaptive traffic management on major highway corridors. The Tahoe RTP identified \$6 million in the technology and transportation system management projects in the “Constrained” scenario and the “Unconstrained” scenario included \$19 million in projects, for a total of \$25 million. Transportation demand programs operations were only programmed for four years at \$180,000. Transportation demand programs are typically low cost but can be very effective, particularly in an area like the Tahoe Basin where converting personal vehicle travel to transit is a high priority. It is suggested that this program (\$200,000) be continued from 2021 to 2040, totaling \$4 million.

Comparison of Tahoe RTP Technology and Transportation System Management and TTD 10

Year Priority Projects

The TTD 10 Year Priority Project List includes capital costs of \$80 million for a Backbone Telecom Network. The Tahoe RTP total of \$26 million for Technology and TSM projects does not include any funding for the Telecomm Network planned by the TTD. The current lack of telecommunications service is a serious problem in the Tahoe Basin. Parts of the Basin lack wireless communication access and larger areas lack sufficient digital bandwidth. TTD and

emergency service organizations have identified lack of telecom access and bandwidth as a serious impediment to communications during an emergency, in addition to the everyday problem of poor or no access in parts of the Basin. This project can be added to the Tahoe RTP costs but it should be recognized that many transportation funding sources would not allow for a Telecom Network as an eligible cost.

Recommended Technology/TSM Adjustment:

Expenses:

1. Increase expense by \$4 million (for 20 years of TSM program)
2. Increase expense by \$80 million (for Backbone Digital Telecom Network)

Water Quality/Total Maximum Daily Load Projects

In the Lake Tahoe Basin, protecting water quality and minimizing the amount of sediment and pollutants that reach the lake is extremely important. Total Maximum Daily Load (TMDL) is a regulatory term in the U.S. Clean Water Act, describing a plan for restoring impaired waters that identifies the maximum amount of a pollutant that a body of water can receive while still meeting water quality standards. The importance of protecting Lake Tahoe water quality demands implementation of TMDL projects as a high priority. The water quality/total maximum daily load projects include roadway stormwater runoff and non-roadway water quality capital projects. The Tahoe RTP identified \$112 million in the “Constrained” scenario and the “Unconstrained” scenario included \$15 million in projects, for a total of \$127 million in capital projects. The majority of projects are designed and under construction and will be completed in the next two years. In addition, the Tahoe RTP includes \$1.3 million annual expense for local

government storm water treatment operations and maintenance in the “Constrained” Operations and Maintenance funding category. The Tahoe Resource Conservation District completed the “Tahoe Stormwater Funding Partnership Financial Outlook” in December 2015 which identified an annual operations shortfall of \$848,000 for Placer and El Dorado Counties and the City of South Lake Tahoe. In addition, the KrauseConsult estimated the annual local street stormwater operations shortfall for Carson, Douglas, and Washoe County at \$296,000.

Recommended Adjustment for Water Quality/Total Maximum Daily Load:

Expenses:

1. Increase expense by \$29 million for TMDL operations shortfall

Operations and Maintenance (Roads/Bike&Ped/Stormwater Treatment)

The Tahoe RTP identified \$369 million in the “Constrained” scenario, including \$56 million in capital projects and \$313 million in operations/maintenance costs. The projects include snow plowing, sanding, preventive maintenance and pavement repairs for roads and paved multi-use paths, and maintenance and operation of stormwater facilities which are part of the transportation system. These projects are done by the City of South Lake Tahoe, the five counties, General Improvement Districts, and Caltrans and NDOT for facilities that they own and operate within the Tahoe Basin.

The “Unconstrained” scenario included \$1.64 billion in projects, all of which were labeled as Deferred Maintenance projects. This represents the single largest cost item by far, and it was reported by local governments as follows for the 2017-2040 period:

Washoe County: \$47 million

Placer County: \$24 million

City of South Lake Tahoe: \$1.176 billion

Douglas County: \$48 million

El Dorado County: \$345 million

The City of South Lake Tahoe has 137 centerline road miles. In order to better understand the cost for the City of South Lake Tahoe roadway maintenance needs, the consultant utilized the 2018 California Statewide Local Streets and Roads Needs Assessment supplemented by additional data sources to estimate a cost for all El Dorado County roadway pavement preservation, operations and maintenance, essential elements and bridge needs for the period of 2017-2040 of \$1.255 billion (2017\$). This cost estimate included complete replacement of worn pavements in the first 10 years, creating an average Pavement Condition Index (PCI) of 87 in the 10th year, and then maintaining this level of PCI until 2040. Prorating this cost to the portion of roadways within the City of South Lake Tahoe resulted in an estimate of \$123 million to repair, operate and maintain these roadways and appurtenant items for the period 2017-2040. In order to recognize the higher operations cost (additional snow removal and sanding/wear and tear due to freeze thaw cycles) in the Tahoe Basin compared to lower elevations in El Dorado County, the City of South Lake Tahoe estimate of \$123 million was increased by 10% to \$135 million.

A similar estimation of needs was done for the portion of El Dorado County roads that are located within the Tahoe Basin but not in the City of South Lake Tahoe. This resulted in an estimate of \$143 million to repair, operate and maintain these roadways and appurtenant items for the period 2017-2040. In order to recognize the higher operations cost (additional snow

removal and sanding/wear and tear due to freeze thaw cycles) in the Tahoe Basin compared to lower elevations in El Dorado County, the estimate of \$143 million was increased by 10% to \$157 million. The recommended adjustment to the City of South Lake Tahoe and El Dorado County “Unconstrained Deferred Maintenance” costs were reviewed by Public Works staff (Ray Jarvis at City of South Lake Tahoe, and Rafael Martinez at El Dorado County) and approved prior to the review by the PDT and approval by the TTD Board.

Recommended Adjustment:

1. Reduce City of South Lake Tahoe Deferred Maintenance from \$1.176 billion to \$135 million.
2. Reduce El Dorado County Deferred Maintenance from \$345 million to \$157 million.

Transit Oriented Development

The Tahoe RTP has an extensive policy discussion regarding the need to provide a transportation system that prioritizes bicycling, walking, and transit that serves residents while contributing to the environmental and socioeconomic health of the region. Transit oriented development (TOD) is one of the most effective tools to achieve all of these policy objectives, particularly if the TOD helps address the need for affordable housing for service employees in the basin. There is no funding for TOD included in the Tahoe RTP, but after discussion with TTD staff, an increment of TOD funding is recommended. The TOD funding assumes 200 units at \$59 million, with 70% privately funded and 30% publicly funded.

Recommended Adjustment:

1. Add TOD funding of \$18 million (30% public share of \$59 million)

Discretionary/Competitive Revenue

In discussions with the Project Delivery Team, (PDT) it was explained that the amount of discretionary/competitive State and Federal revenues in the Tahoe RTP was probably optimistic. The practical reason for this optimism was that the inclusion of these discretionary funds in the RTP avoided the need to amend the RTP each time a discretionary grant was obtained, saving time and money on the amendment process. This was a reasonable approach, and the past success of the Tahoe Basin in winning competitive grants also justified inclusion of these funds. However, the Project Delivery Team agreed, in terms of trying to best estimate the amount of funding that will be available in the future, that the optimistic scenario should be reduced for the discretionary and competitive fund sources. The Tahoe MPO staff was consulted regarding the most appropriate State and Federal discretionary/competitive funding categories to reduce, and the specific amount of reduction. It was recommended that a 25% reduction in the following discretionary/competitive RTP fund sources be used in estimating the funding shortfall, as shown below.

Table 1: 2017-2040 Tahoe RTP Discretionary/Competitive Revenue Adjustments in 2017\$

	2017-2040 (2017\$ in millions)	25% Reduction
State Discretionary Funds		
Affordable Housing Sustainable Comm.	\$25	\$19
CA Active Transportation Program (50% discretionary per Nick Haven)	\$20	\$15
California SHOPP	\$116	\$87
Nevada State Funds	\$38	\$29
Subtotal State Discretionary Funds	\$199	\$149
Federal Discretionary Funds		
Federal Lands Transportation Program	\$29	\$22
Federal Lands Access Program	\$139	\$104
Highway Safety Improvement Program	\$33	\$25
FHWA Ferry Program	\$26	\$20
Subtotal Federal Discretionary Funds	\$227	\$170
Total State and Federal Discretionary Funds Available	\$426	\$319
Reduction in Discretionary \$	\$0	\$106

Summary of Tahoe RTP Adjustments

The summary impact of the recommended adjustments for the 2017-2040 Tahoe RTP are summarized in the Table 1:

Table 2: 2017-2040 Tahoe RTP Expense and Revenue Adjustments in 2017\$

Adjustments to RTP Costs and Revenues	2017-2040 RTP Costs (2017\$)
Change in Costs	
1. Add TTD Admin and Inter-regional fares	\$5,000,000
2. Reduce Roadway Operations/Maintenance cost	-\$1,229,000,000
3. Add Telecom Network cost	\$80,000,000
4. Add Transportation System Management cost	\$4,000,000
5. Add TMDL cost	\$29,000,000
6. Add Ferry Capital and Operating cost	\$75,600,000
7. Add Transit Oriented Development (30% of \$59.1 mil)	\$18,000,000
Change in Revenues	
1. Reduce Discretionary/Competitive Revenue 25%	\$106,000,000
Total Adjustments to RTP Cost and Revenue	-\$911,400,000

2. Transportation Revenue by Modal Use

The Tahoe RTP lists the projected revenues expected to be available to fund all of the projects and services identified in the plan. It is a complex mix of federal, state and local sources. The analysis of the Tahoe RTP revenues by modal use is complicated because some fund sources are flexible between modes. However, there are a number of fund sources that are dedicated to specific modes or uses (State STA, Federal FTA for transit; Nevada State Funds, California SHOPP, Federal Lands for Highway/Bike/Ped; and Stormwater, Ferry and Airport funds for each type of use) that have simplified this analysis. In addition, the Local Operation and Maintenance revenue category has been specifically assigned to Street/Bike&Ped/Stormwater operations and maintenance costs so there is a clear indication of what fund sources are allocated to each

mode/use for the majority of revenue categories. For the Local On-Going revenues, \$3 million per year was assumed to be available for Transit, based upon the current \$3 million provided to TART. The remainder was allocated to the Street/Bike/Ped project cost. For Private Funding, \$50,000 per year was assumed to be available for Transit, based upon the current \$50,000 provided to TART, with remainder allocated to Street/Bike/Ped project cost.

Revenue Assumptions

Local Revenues

The local sources total just over \$797 million and include a large number of different fees, taxes and funds, but the largest contributions come from the Local Funds (on-going) at \$165 million and Local Operations and Maintenance (roadway, stormwater, bike/ped facilities) at \$313 million. Local Funds (on-going) are comprised of a large number of existing sources, including Placer County traffic impact fees, North Lake Tahoe, City of South Lake Tahoe, Tahoe Douglas Transportation District Transient Occupancy Taxes, PUDs, GIDs and other Transit local funds. These funds were all assumed to continue into the future at current levels. Local Operations and Maintenance revenues were matched to the reported costs (\$313 million for stormwater, bike/ped and road operations and maintenance) in the “Constrained” scenario.

The other notable local source is the Ferry Partnership (\$129 million); this is the only revenue source **that is not currently implemented** and will obviously not be realized until the Ferry program has been implemented.

As previously mentioned, all transit farebox revenue has been deleted as of 2022 due to the free fare policy planned for TART and TTD local services. However, the addition of future inter-regional services as well as the north/south shore ferry will have fares. With fares assumed to

achieve the current 15% farebox recovery rate, these services (bus, rail and ferry) are expected to generate \$66 million during the 2022-2040 timeframe.

State Revenues

The State revenues totaled \$393 million, and were assumed to continue at current levels with the exception of several programs that were competitive grants/or were being phased out, including the California Proposition 1B, and Nevada Question 1 revenues.

Federal Revenues

The Federal revenues totaled \$494 million, and were assumed to continue at current levels with the exception of several programs that were based on competitive grants. The discretionary revenues include the Federal Lands Transportation Program and Federal Lands Access Program, Highway Safety Improvement Program, FHWA Ferry Program, FAA Airport Improvement Program and the High Priority Projects Program revenues.

Analysis of Tahoe RTP Revenues by Modal Use

The estimate of Tahoe RTP 2017-2040 revenues in 2017\$ by mode/use is shown in Table 3. While this may not end up being the exact allocation of funding by mode/use, it provides an order of magnitude comparison of funds likely to be available for each mode/use. Note that Technology/TSM and the TOD Housing unit projects have not been identified as receiving specific revenues, but will need to be funded from the categories shown or the new revenue sources that are approved.

Table 3: Tahoe RTP Revenues Estimated By Mode/Use for 2017-2040 in 2017\$

Source \$2017 by GK	Bus	Street/Ped/Bike	Water Quality	Ferry	Total
LOCAL SOURCES					
Farebox Revenues	\$4,459,085				\$4,459,085
TRPA Rental Car Mitigation Fund	\$2,925,507				\$2,925,507
TRPA Air Quality Mitigation Fund		\$9,769,944			\$9,769,944
TRPA Water Quality Mitigation Fund			\$11,641,513		\$11,641,513
Local Funds (on-going)	\$69,000,000	\$96,044,160			\$165,044,160
Local Funds (project specific)		\$13,253,350			\$13,253,350
Private Funds	\$1,150,000	\$35,450,000			\$36,600,000
Ferry Partnership				\$128,800,000	\$128,800,000
O&M (bike trail, ped facilities, roadway, stormwater)		\$280,757,176	\$32,000,000		\$312,757,176
Environmental Stormwater Capital			\$112,241,793		\$112,241,793
Total Local	\$77,534,592	\$435,274,630	\$155,883,306	\$128,800,000	\$797,492,527
STATE SOURCES					
State Transit Assistance and Local Transportation Fund	\$97,848,060				\$97,848,060
Regional Improvement Program (STIP)		\$57,572,847			\$57,572,847
Low Carbon Transit Operations	\$4,284,000				\$4,284,000
Affordable Housing Sustainable Communities		\$25,140,000			\$25,140,000
California Proposition 1B		\$75,431			\$75,431
California Tahoe Conservancy		\$14,155,400			\$14,155,400
Active Transportation Program (CA)		\$34,714,800			\$34,714,800
Emergency Road Repair		\$2,448,000			\$2,448,000
California SHOPP		\$116,226,000			\$116,226,000
Nevada Question 1		\$2,700,000			\$2,700,000
Nevada State Funds		\$37,623,000			\$37,623,000
Total State	\$102,132,060	\$290,655,478	\$0	\$0	\$392,787,538
FEDERAL SOURCES					
Surface Transportation Block Grant		\$72,557,544			\$72,557,544
Surface Transportation Block Grant Set-Aside (TAP)		\$3,922,332			\$3,922,332
Federal Lands Transportation Program		\$4,896,000			\$4,896,000
Federal Lands Access Program		\$138,568,000			\$138,568,000
Congestion Mitigation & Air Quality Program	\$20,000,000	\$25,266,256			\$45,266,256
National Highway Performance Program		\$18,000,000			\$18,000,000
Highway Safety Improvement Program		\$32,870,859			\$32,870,859
FHWA Ferry Program				\$25,500,000	\$25,500,000
FTA 5307 Urbanized Area Formula Program	\$105,264,000				\$105,264,000
FTA 5310 Mobility of Seniors and Disabled	\$2,007,360				\$2,007,360
FTA 5311 Rural Area Formula Grants (NV)	\$30,082,000				\$30,082,000
FTA 5339 Bus and Bus Facilities	\$6,120,000				\$6,120,000
FAA Airport Improvement Program	\$7,293,150				\$7,293,150
High Priority Projects Program		\$1,655,000			\$1,655,000
Total Federal	\$170,766,510	\$297,735,992	\$0	\$25,500,000	\$494,002,502
Total Local/State/Federal	\$350,433,162	\$1,023,666,100	\$155,883,306	\$154,300,000	\$1,684,282,567

3. Summary of RTP Cost/Revenue Adjustments By Mode/Use

The Tahoe RTP cost and revenue adjustments recommended earlier in this memo are shown in Table 4 according to the mode/use category. This analysis shows that Bus/Ferry Transit (\$1.34 billion) and Street/Bike/Ped (\$1.26 billion) make up the vast majority of total needs (\$3.1 billion) after costs and revenues have been adjusted.

Table 4: Tahoe RTP Cost/Revenue Adjustments By Mode/Use for 2017-2040 in 2017\$

Mode/Use Category	RTP Costs + Adjustments
Transit Capital + Operations + Admin	\$ 1,344,000,000
Street/Bike/Ped Capital + Operations	\$ 1,257,000,000
Stormwater TMDL W Q Cap + Ops	\$ 189,000,000
Technology TSM Capital + Operations	\$ 110,000,000
Ferry and Water Taxi Capital +Ops	\$ 189,000,000
Transit Oriented Development (30% of \$59.1 million)*	\$ 18,000,000
Totals	\$ 3,107,000,000

4. Tahoe RTP Shortfalls By Mode/Use

The Tahoe RTP adjusted costs, projected revenues available and estimated shortfall are shown in Table 5 according to each mode/use category. The modal revenues are taken from Table 3 and the modal costs are taken from Table 4. While this may not end up being the exact allocation of funding by mode/use, it provides an order of magnitude comparison of the shortfalls likely for each mode/use. Note that Technology/TSM projects have not been identified as receiving specific revenues, but will need to be funded from the other categories shown. The Bus/Ferry

Transit category has by far the largest shortfall, and the search for revenue sources will need to recognize the importance of funding transit necessary to address this shortfall. Similarly, the importance of Water Quality/TMDL and Technology investments in the Tahoe Basin will require more flexibility than traditional transportation funding sources, which are typically limited to transit and/or street/bike/ped costs. In addition, the Transit Oriented Development (TOD) project costs are included in the shortfall, and will also require a flexible fund source if it is to be paid out of transportation revenue sources.

The Street/Bike/Ped shortfall is large, and will need to be addressed, but it is worth noting that this mode appears to have the largest proportion of total costs met by projected revenues.

Table 5: Tahoe RTP Shortfalls by Mode/Use

Mode/Use Category	RTP Costs + Adjustments	RTP Revenues + Adjustments	Shortfall by Mode/Use
Transit Capital + Operations + Admin	\$ 1,344,000,000	\$ 350,000,000	\$ (994,000,000)
Street/Bike/Ped Capital + Operations	\$ 1,257,000,000	\$ 924,000,000	\$ (333,000,000)
Stormwater TMDL W Q Cap + Ops	\$ 189,000,000	\$ 156,000,000	\$ (33,000,000)
Technology TSM Capital + Operations	\$ 110,000,000	\$ -	\$ (110,000,000)
Ferry and Water Taxi Capital +Ops	\$ 189,000,000	\$ 148,000,000	\$ (41,000,000)
Transit Oriented Development (30% of \$59.1 million)*	\$ 18,000,000	\$ -	\$ (18,000,000)
Totals	\$ 3,107,000,000	\$ 1,578,000,000	\$ (1,529,000,000)
*Note: Private sector funding will cover remaining \$41 million needed to complete TOD project; assumed 200 units total			\$ (1,529,000,000)

5. Tahoe RTP Shortfalls By Capital versus Operating

Using the Tahoe RTP adjusted costs, shown in Table 5, we also determined the allocation of capital versus operating costs shown in Table 6. As shown, operating costs are the majority of all costs, and the vast majority of the operating cost shortfall is projected in Transit services.

Table 6: Tahoe RTP Shortfalls by Mode/Use and Capital versus Operating

Mode/Use Category	RTP Capital +Adjustments	RTP Operations +Adjustments	RTP Revenues + Adjustments	Shortfall by Mode/Use
Transit	\$ 285,000,000	\$ 1,059,000,000	\$ 350,000,000	\$ (994,000,000)
Street/Bike/Ped	\$ 566,000,000	\$ 691,000,000	\$ 924,000,000	\$ (333,000,000)
Stormwater TMDL W Q	\$ 128,000,000	\$ 61,000,000	\$ 156,000,000	\$ (33,000,000)
Technology TSM	\$ 105,000,000	\$ 5,000,000	\$ -	\$ (110,000,000)
Ferry and Water Taxi	\$ 85,000,000	\$ 104,000,000	\$ 148,000,000	\$ (41,000,000)
Transit Oriented Development (30% of \$59.1 million)*	\$ 18,000,000		\$ -	\$ (18,000,000)
Totals	\$ 1,187,000,000	\$ 1,920,000,000	\$ 1,578,000,000	\$ (1,529,000,000)
*Note: Private sector funding will cover remaining \$41 million needed to complete TOD project; assumed 200 units total				

Upon further review of the RTP shortfalls by mode, in particular the Transit/Ferry/Water Taxi shortfall of over \$1 billion, it became apparent that the Transit/Ferry Water Taxi shortfall exceeded the value of all of the projects and services in Unconstrained RTP for this use, herein after referred to as “Transit”. Initially, it was believed that all of the projects and services in the Constrained RTP could be funded. But utilizing the modal allocation of funds presented in Table 3 above, it became clear that there were some Transit projects and services in the Constrained scenario that would not be funded, given the current assumptions about the modal allocation of funds. In addition, we wanted to understand the impact of the adjustments to costs and revenues described earlier in this memo on projected shortfalls in the Constrained Scenario. Table 7 shows the projected shortfalls by mode/use assuming all adjustments are applied to the Constrained scenario. The total shortfall for all mode/uses is \$236 million, and given the assumed revenue use constraints, the Transit shortfall is \$359 million. The fact that the total shortfall is lower than the projected Transit shortfall is the result of an expected excess of funding for Street/Bike/Ped pavement projects, which generally have revenue streams that are not

eligible for use on Transit projects/services. Even if some funding can be flexed to Transit use, there will be many Transit projects in the Constrained scenario that will not be funded with the current revenue stream. It is therefore critical that any new funding source be fungible across all modes, and ideally, political jurisdictions, to prevent the optimal allocation of resources to each mode and jurisdiction.

Table 7: Tahoe RTP Shortfalls by Mode/Use for Constrained Scenario, including all Adjustments

2017-2040 RTP Constrained Costs and Revenues by Mode/Use, with Adjustments (2017\$)				
Broken out by Capital and Operations				
Mode/Use Category	RTP Capital +Adjustments	RTP Operations +Adjustments	RTP Revenues + Adjustments	Shortfall by Mode/Use
Transit	\$ 152,843,100	\$ 516,915,929	\$ 350,000,000	\$ (319,759,029)
Street/Bike/Ped	\$ 393,572,056	\$ 280,421,976	\$ 924,000,000	\$ 250,005,968
Stormwater TMDL W Q	\$ 112,241,793	\$ 61,335,200	\$ 156,000,000	\$ (17,576,993)
Technology TSM	\$ 85,575,000	\$ 4,720,000	\$ -	\$ (90,295,000)
Ferry and Water Taxi	\$ 85,000,000	\$ 103,200,000	\$ 148,000,000	\$ (40,200,000)
Transit Oriented Development (30% of \$59.1 million)*	\$ 18,000,000		\$ -	\$ (18,000,000)
Totals	\$ 847,231,949	\$ 966,593,105	\$ 1,578,000,000	\$ (235,825,054)

*Note: Private sector funding will cover remaining \$41 million needed to complete TOD project; assumed 200 units total

6. Tahoe RTP Expenditures by Entity

Using the Tahoe RTP adjusted expenditure data shown in Tables 6 and 7, we estimated which projects and services would be possible if new funding were found to address the \$1.529 billion dollar shortfall. Further, we analyzed the location of these projects and services and allocated them to the entities that would benefit.

The allocation of projects and services to political entities made possible by a new fund source also required assumptions about where to assign the expenditures. The allocation of capital projects was relatively simple; built projects were located in that entity. Capital rolling stock was allocated between the entities that were served by the rolling stock. Operating costs were allocated across all of the entities that were served, generally on the ratio of total miles of service

located within each entity. The allocation of inter-regional rail and the Tahoe Ferry was based on the location of terminals/stations. In some cases, e.g., local government expenditures on road and stormwater maintenance, the allocation of funding to the entity was also obvious. The results are shown in Table 8.

Table 8: Tahoe RTP Expenditures by Entity

2017-2040 RTP Expenditures by Entity, with Adjustments to Constrained and Unconstrained Scenarios (2017\$)							
Scenarios	El Dorado exclude CSLT	CLST	Placer includes RT and TT	Washoe	Carson	Douglas	Total All Years
Constrained	\$332,155,000	\$ 460,830,000	\$ 465,520,000	\$ 125,010,000	\$ 56,542,000	\$ 138,577,000	\$ 1,578,634,000
UnConstrained	\$395,509,000	\$ 449,728,000	\$ 218,850,000	\$ 239,992,000	\$ 65,100,000	\$ 157,960,000	\$ 1,527,139,000
Total	\$727,664,000	\$ 910,558,000	\$ 684,370,000	\$ 365,002,000	\$ 121,642,000	\$ 296,537,000	\$ 3,105,773,000

7. RTP Revenues from Resident versus Non-Resident Sources

In addition to the analysis of RTP shortfalls, the payment of RTP revenues from residents versus non-residents was reviewed. This analysis was based upon projected revenues contained in the RTP as shown in Table 3. In some cases, the RTP made explicit assumptions regarding non-resident contributions to transportation funding, e.g., the North Lake Tahoe and South Lake Tahoe Transient Occupancy Tax (TOT) revenues included in the RTP “Local Funds On-Going” category. In other cases, reasonable assumptions were made for estimating the proportion of revenue coming from residents versus non-residents based upon available data.

In order to develop reasonable assumptions for non-resident contributions to local funding shown in the RTP, we reviewed studies of local taxes paid by non-residents. The only data regarding non-resident payment of local sales taxes was contained in the North Lake Tahoe Resort

Association (NLTRA) publication “The Economic Significance of Travel to the North Lake Tahoe Area” by Dean Runyan Associates dated October 2017.

The more difficult category of non-resident contribution to assess are local sales and property taxes since there is not a break out of these revenues in the RTP. Local sales and property taxes are typically allocated to local government general funds, which are included in the “Local Funds” category in the RTP. The challenge in estimating non-resident contributions to Local Funds in the Tahoe RTP are three-fold:

1. The five counties that comprise the Tahoe Basin all have major population centers outside of the Tahoe Basin, thus both revenues collected and expenditures within the Tahoe Basin cannot be isolated from revenues and expenditures for the entire county, at least within the constraints of this study. As a result, this analysis attempts to identify reasonable percentages of public works funds that can attributed to non-residents and apply it to all local government spending identified in the RTP.

The one local government exception is the City of South Lake Tahoe (CSLT), which lies within the Tahoe Basin. The local sales and property tax contributions of non-residents were estimated to determine the percentage of public works funding that can be attributed to non-residents based upon the CLST 2016 Budget document and visitor expenditure data developed by the South Lake Tahoe Visitors Authority.

2. Local sales and property taxes are only a portion of local government general funds; in the case of Placer County and the CSLT, they make up 56 percent of the total general fund averaging the two entity budgets together.
3. General funds are only a portion of the local government Public Works budgets; other revenues and fees fund significant portions of the public works projects and services. For

Placer County and the CSLT, general funds make up 10 percent of the Public Works funding, averaging the two entity budgets together.

Table 9 shown below documents the resident and non-resident RTP revenue assumptions by funding category. In summary, utilizing the assumptions described below, the total RTP revenue stream for 2017-2040 (in 2017\$) of \$1.578 billion can be attributed 94.5 percent to residents, and 5.5 percent to non-residents. There is very limited data currently available to assess the local government tax contributions from non-residents/visitors to the Tahoe Basin. This is an area that would benefit greatly from further research and data collection to further refine these estimates.

Table 9: Tahoe RTP 2017-2040 Revenue Payments: Residents versus Non-Residents

Source	Bus	Street/Bike/Ped	Water Quality	Ferry	Total	Non-Resident	Resident
LOCAL SOURCES							
Farebox Revenues	\$4,459,085				\$4,459,085	\$1,337,726	\$3,121,359
TRPA Rental Car Mitigation Fund	\$2,925,507				\$2,925,507	\$2,925,507	
TRPA Air Quality Mitigation Fund		\$9,769,944			\$9,769,944		\$9,769,944
TRPA Water Quality Mitigation Fund			\$11,641,513		\$11,641,513		\$11,641,513
Local Funds (on-going)	\$69,000,000	\$96,044,160			\$165,044,160	\$42,324,247	\$122,719,913
Local Funds (project specific)		\$13,253,350			\$13,253,350	\$74,219	\$13,179,131
Private Funds	\$1,150,000	\$35,450,000			\$36,600,000		\$36,600,000
Ferry Partnership				\$128,800,000	\$128,800,000	\$38,640,000	\$90,160,000
O&M (bike trail, ped facilities, roadway, stormwater)		\$280,757,176	\$32,000,000		\$312,757,176	\$1,751,440	\$311,005,736
Environmental Stormwater Capital			\$112,241,793		\$112,241,793		\$112,241,793
Total Local	\$77,534,592	\$435,274,630	\$155,883,306	\$128,800,000	\$797,492,527	\$87,053,139	\$710,439,388
STATE SOURCES							
State Transit Assistance and Local Transportation Fund	\$97,848,060				\$97,848,060		\$97,848,060
Regional Improvement Program (STIP)		\$57,572,847			\$57,572,847		\$57,572,847
Low Carbon Transit Operations	\$4,284,000				\$4,284,000		\$4,284,000
Affordable Housing Sustainable Communities Note: reduced \$6 million per adjust		\$19,140,000			\$19,140,000		\$19,140,000
California Proposition 1B		\$75,431			\$75,431		\$75,431
California Tahoe Conservancy		\$14,155,400			\$14,155,400		\$14,155,400
Active Transportation Program (CA) Note: reduced \$6 million per adjust		\$28,714,800			\$28,714,800		\$28,714,800
Emergency Road Repair		\$2,448,000			\$2,448,000		\$2,448,000
California SHOPP Note: reduced \$29 million per adjust		\$87,226,000			\$87,226,000		\$87,226,000
Nevada Question 1		\$2,700,000			\$2,700,000		\$2,700,000
Nevada State Funds Note: reduced \$9 million per adjust		\$28,623,000			\$28,623,000		\$28,623,000
Total State	\$102,132,060	\$240,655,478	\$0	\$0	\$342,787,538		\$342,787,538
FEDERAL SOURCES							
Surface Transportation Block Grant		\$72,557,544			\$72,557,544		\$72,557,544
Surface Transportation Block Grant Set-Aside (TAP)		\$3,922,332			\$3,922,332		\$3,922,332
Federal Lands Transportation Program Note: reduced \$1million per adjusts		\$3,896,000			\$3,896,000		\$3,896,000
Federal Lands Access Program Note: reduced \$41million per adjusts		\$97,568,000			\$97,568,000		\$97,568,000
Congestion Mitigation & Air Quality Program	\$20,000,000	\$25,266,256			\$45,266,256		\$45,266,256
National Highway Performance Program		\$18,000,000			\$18,000,000		\$18,000,000
Highway Safety Improvement Program Note reduced \$8 million per adjusts		\$24,870,859			\$24,870,859		\$24,870,859
FHWA Ferry Program Note reduced by \$6 million per adjusts				\$19,500,000	\$19,500,000		\$19,500,000
FTA 5307 Urbanized Area Formula Program	\$105,264,000				\$105,264,000		\$105,264,000
FTA 5310 Enhancement Mobility of Seniors and individuals with Disabilities	\$2,007,360				\$2,007,360		\$2,007,360
FTA 5311 Rural Area Formula Grants (NV)	\$30,082,000				\$30,082,000		\$30,082,000
FTA 5339 Bus and Bus Facilities	\$6,120,000				\$6,120,000		\$6,120,000
Federal Aviation Administration Airport Improvement Program	\$7,293,150				\$7,293,150		\$7,293,150
High Priority Projects Program		\$1,655,000			\$1,655,000		\$1,655,000
Total Federal	\$170,766,510	\$247,735,992	\$0	\$19,500,000	\$438,002,502		\$438,002,502
Total Local/State/Federal	\$350,433,161	\$923,666,099	\$155,883,306	\$148,300,000	\$1,578,282,567	\$87,053,139	\$1,491,229,428
					% of Total	5.5%	94.5%

The key assumptions utilized in this analysis include the following:

1. Local Sources: \$797 million total: \$87 million Non-Resident, \$710 million Resident

Residents were assumed to pay all of the local government funded during 2017-2040, with the exception of the following:

- Farebox Revenue (30% Non-Resident, 70% Resident)

-TRPA Rental Car Mitigation Fund (100% Non-Resident)

- Local Funds On-Going: Non Residents pay:

\$41.4 million (North Lake Tahoe & Douglas TOT \$1.8 million annual)

\$924,000 of Public Works (.56% of total PW expenditures *\$165 million)

-Local Funds Project Specific: Non-Residents pay:

\$74,000 of Public Works (.56% of total PW expenditures *\$13.25 million)

-Ferry Partnership Revenue (30% Non-Resident, 70% Resident)

-Local O & M

\$1.75 million of Public Works (.56% of total PW expenditures *\$312.8 million)

The determination of non-resident payment of .56% of the local government public works expenditures is based upon an analysis of the following:

- Payment of local sales tax by visitors/non-residents in North Lake Tahoe (NLT) portion of Placer County and the CLST
- Payment of local property tax by visitors/non-residents in NLT portion of Placer County and the CLST

The payment of local sales and property tax by visitors/non-residents to NLT portion of Placer County and CSLT was then converted into:

- The portion of the Placer County and the CLST general fund resultant from local sales and property tax
- The portion of the Placer County and the CLST public works budget resultant from the general fund
- The portion of the Placer County and the CLST public works budget resultant from local sales (.2%) and property tax (.36%) attributed to visitor/non-residents, totaling .56% of all public works expenditures.

The computations of these estimates are shown in the following Table 10 and 11, along with the sources for the data utilized. Note that Placer County and CLST budgets reference the 2015-2016 budget documents.

Table 10: Non Resident Payment of Local Sales Tax to Public Works in NLT of Placer County and the CSLT

1. Non Resident Payment of Sales Taxes to Public Works Budget	
In Runyan 2016 Report, Visitors pay \$2.2 million in local sales taxes in NLT portion of Placer p. 22	\$2,200,000
In CSLT, Visitors pay 117%(\$754 mil in SLT (Mike Fry email)/ \$647 mil in NLT (p.9 Runyan+A19) *\$2.2 mil=	\$2,570,000
Total Visitor Sales tax payments in CSLT and NLT portion of Placer	\$4,770,000
A. Percent of Total Sales Tax paid by Visitors	
Total sales tax paid to GF in CSLT in 2016 p. 52	\$4,900,000
Total sales tax paid to GF in Placer Co in 2016 p. 227	\$12,500,000
Total sales tax paid to GF in Placer and CLST	\$17,400,000
Percent of total sales tax paid by SLT/NLT Visitors to Placer Co and SLT GF (\$4.77/\$17.4)	27.4%
B. Percent of Total General Fund (GF) from Sales Tax for Placer & CSLT	
Total GF for Placer Co p.227	\$197,300,000
Total GF for CSLT p.52	\$34,300,000
Total GF	\$231,600,000
Percent of total GF from sales tax (\$17.4/\$231.6)	7.5%
C. Percent of Public Works Budget paid from GF for Placer & CSLT	
Placer Co PW Budget p.341-2	\$ 143,900,000
CSLT PW Budget: p.50	7,900,000
Placer Co and CSLT PW Total:	\$151,800,000
Placer Co GF revenues for PW p.341	\$10,600,000
CLST GF revenues for PW p. 50	\$ 4,500,000
Total GF in PW Budgets for Placer Co & CSLT	\$15,100,000
Percent of total PW budget from GF (\$15.1/\$151.8)	9.9%
D. Percent of Public Works Budget paid from Visitor Sales Tax	
% sales tax paid by visitors* % sales tax in GF* %GF in PW budget (27.4%*7.5%*9.9%)	0.20%

Table 11: Non-Resident Payment of Local Property Tax to Public Works in NLT of Placer

2. Non Resident Payment of Property Taxes to Placer Co and CSLT Public Works Budget	
All Placer Co and CLST data from 2015-16 budgets	
Tahoe Prosperity Report shows ave 69% of homes owned by non-residents in Tahoe Basin even though Placer Co estimate is 59%, use 69% for TB average	
A. Total Property Tax Revenue for Placer & CSLT	
Total Property Tax for Placer Co p.227	\$ 105,000,000
Total Property Tax for CLST p.52	\$ 6,400,000
Total Property Tax for Placer and CLST	\$ 111,400,000
B. Property Tax paid by non-residents in Placer Co and CLST	
Total Placer County Dwelling Units p. 6	161500
Placer County Dwelling Units in Tahoe Basin	12,106
Placer County Dwelling Units in Tahoe Basin owned by non-residents (69%)	8353
Percent of Total Placer Co Property Tax paid by Non-residents in TB (8353/161500)	5%
Total Placer Co Property Tax paid by Tahoe Non-Residents (5%*\$105,000,000)	\$5,430,834
B. Percent of Property Tax paid by non-residents in CSLT	
CLST Total housing units p. 21	15878
CLST Occupied housing units p. 21	8628
CLST Non-Occupied housing units p. 21	7250
% CLST housing units owned by non-residents	46%
Total CLST Property Tax paid by Non-Residents (46%*\$6,400,000)	\$2,922,282
Total Property Tax paid by non residents in Placer Co and CLST	\$8,353,116
Percent of total property tax paid by Placer Co & CLST Non Residents (\$8.35/\$111.4)	7.5%
Total General Fund for Placer Co p.227	\$ 197,300,000
total General Fund for CSLT p. 52	\$ 34,300,000
Total General Fund for Placer and CLST	\$ 231,600,000
Percent of total GF from Property Tax (\$111.4/\$231.6)	48.1%
C. Percent of Public Works Budget paid from GF for Placer & CSLT	
Placer Co PW Budget p.341-2	\$ 143,900,000
CSLT PW Budget: p.50	7,900,000
Placer Co and CSLT PW Total:	\$151,800,000
Placer Co GF revenues for PW p.341	\$10,600,000
CLST GF revenues for PW p. 50	\$ 4,500,000
Total GF in PW Budgets for Placer Co & CSLT	\$15,100,000
Percent of total PW budget from GF (\$15.1/\$151.8)	9.9%
D. Percent of Public Works Budget paid from Non Residents Property Tax in Placer & CLST	
% prop tax paid by Non-Res* % prop tax in GF* %GF in PW budget (7.5%*48.1%*9.9%)	0.36%

2. State Sources: \$343 million total, \$343 million Resident

The payment of state funds expended on transportation in the Tahoe Basin was assumed to be 100% Resident. This assumption implies that the payment of total state taxes and transportation fees by Tahoe Residents is commensurate with total state transportation funding received in the Tahoe Basin. Analyzing state transportation revenues collected solely in the Tahoe Basin would be very complex and involve many revenue sources, including fuel taxes and some general fund sources, particularly the sales tax, which are paid by Non-Residents. It would be difficult to determine the amount of fuel tax paid by Residents versus Non-Residents in the Tahoe Basin; and it is likely that high fuel costs in the mountains cause drive-up visitors to fuel outside of the Tahoe Basin when possible. In the case of California state sales taxes, it probably has a small impact, given only a small portion of state sales taxes are allocated to transportation. In addition, there would need to be an accounting of Tahoe Basin Resident transportation fees and state taxes paid outside of the Basin to accurately assess Resident versus Non-Resident contributions within the Tahoe Basin.

In order to check the reasonableness of this assumption, we reviewed California per capita state transportation expenditures for 2018/19 and found \$370 expended per person for the entire state. For comparison, the Tahoe RTP data estimates state transportation funding per capita per year averages \$329 per Tahoe Basin Resident, thus it appears this assumption is reasonable, if Tahoe Basin Residents contribute state funding at rate similar to the statewide average. . It should also be noted that the Tahoe RTP estimate of expected state discretionary funds was reduced by \$50 million as one of the adjustments made to determine the final Tahoe RTP shortfall.

3. Federal Sources: \$438 million total, \$438 million Resident

The payment of federal funding sources expended on transportation in the Tahoe Basin was assumed to be 100% Resident, and was based upon considerations similar to those described above for the state fund sources. In the case of federal funds, there are no general fund contributions by Non-Residents to consider. It should also be noted that the Tahoe RTP estimate of expected federal discretionary funds was reduced by \$56 million as one of the adjustments made to determine the final Tahoe RTP shortfall.