The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the Metropolitan Planning Program, Section 104(f) of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.

Approved by the Regional Transportation Commission of Southern Nevada on October 12, 2017

Approved by Federal Highway Administration and Federal Transit Administration on _____ #, 2017

Regional Transportation Commission of Southern Nevada
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December 13, 2017

Rudy Malfabon, P.E.
Director
Nevada Department of Transportation
1263 S. Stewart Street
Carson City, NV 89712

Attention: Kevin Verre

Dear Kevin,

UNIFIED PLANNING WORK PROGRAM FOR FISCAL YEAR 2018 – AMENDMENT ONE

The amended Unified Planning Work Program (UPWP) for Fiscal Year 2018 was approved by the Regional Transportation Commission of Southern Nevada on October 12, 2017. This is the first amendment to this document.

An electronic copy of the amended UPWP for Fiscal Year 2018 is included in this transmittal for your review and approval.

Once notification of State and Federal approval is received, the amended UPWP document will be distributed to all interested parties.

Please feel free to contact me at (702) 676-1729 if you have any questions or comments. Thank you for your consideration.

Sincerely,

[Signature]

RAYMOND HESS
DIRECTOR OF PLANNING SERVICES

Attachment
Insert forthcoming letter from the FHWA – Nevada office to NDOT Planning Administrator Mark Costa regarding approval of the RTC of Southern Nevada FY 2018 Unified Planning Work Program.
## 2018 Unified Planning Work Program
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PREFACE

The Fiscal Year 2018 Unified Planning Work Program (UPWP) is an annual document prepared by the Metropolitan Planning Organization (MPO) department of the Regional Transportation Commission of Southern Nevada (RTC). The UPWP identifies transportation related planning activities scheduled for the one-year period beginning July 1, 2017 and ending June 30, 2018 within the Las Vegas metropolitan area.

The UPWP plays a central role in the RTC’s federally-mandated responsibilities as the state designated MPO to ensure a comprehensive, coordinated, and continuing transportation planning process for the Las Vegas urbanized area. To this end, the UPWP has been assembled in consultation with the local, state, and federal agencies involved in supporting the area’s multi-modal transportation system. A request for proposal submission period was conducted with invitations for project proposals being sent to all member jurisdictions, area non-profit organizations and other organized communities in the Southern Nevada region.

The studies, plans and/or data collection activities that have been incorporated into the work program foster comprehensive planning and lend support in evaluating local alternatives for improving mobility and access. This document includes information related to project description; functional (agency) responsibilities; project budget; project time line; and the corresponding products expected with completion for each of the planning activities identified in the 2018 UPWP.

The UPWP for Fiscal Year 2018 was prepared in April, 2017; adopted by the Board of the Regional Transportation Commission of Southern Nevada in June, 2017; and approved by the Federal Highway Administration and Federal Transit Administration in June, 2017.
1: Introduction

The Unified Planning Work Program (UPWP) identifies transportation planning activities to be undertaken in the Southern Nevada region using funding allocated by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

The Regional Transportation Commission of Southern Nevada (RTC) is the agency designated by the state of Nevada to act as the Metropolitan Planning Organization (MPO) for Clark County. As the MPO, the RTC coordinates transportation planning activities with member agencies within the metropolitan planning area. The planning process brings together the RTC, local government agencies, transit operators, local public service organizations, and the Nevada Department of Transportation (NDOT) to discuss regional priorities and to select and program planning activities for inclusion in the UPWP.

The RTC receives annual federal allocations from the FHWA and the FTA for metropolitan planning activities identified in the UPWP. The UPWP also includes planning tasks that are state or locally funded. The planning tasks included in the Fiscal Year 2018 UPWP are organized into two main categories of activities:

1. Core Planning Activities: these activities address the core MPO requirements for meeting federal certification of the metropolitan planning process, including research and data gathering.

2. Planning Studies: these activities evaluate regional planning priorities by using the planning study approach that produces solutions and alternatives which may later become the basis for projects funded for implementation in the Regional Transportation Plan (RTP) and Transportation Improvement Plan (TIP). The 2018 UPWP covers the one-year period from July 1, 2017 through June 30, 2018.

Regional Planning Prospectus

The Federal Highway Administration (FHWA) requires that a metropolitan planning agreement be developed between the various parties involved in the regional transportation planning process.

This agreement must clearly define the roles and responsibilities of each party in cooperatively carrying out the transportation planning process and must include specific provisions for cooperatively developing and sharing information related to the development of financial plans that support the Regional Transportation Plan (RTP), the Transportation Improvement Program (TIP), and development of the annual listing of obligated projects.

In response to this federal requirement, the RTC has coordinated with the Nevada Department of Transportation (NDOT) and the local jurisdictions to develop the ‘Southern Nevada Regional Planning Prospectus’. This document, which is included as an Appendix to this FY 2018 UPWP, outlines the specific roles and responsibilities of the RTC, NDOT, and the local agencies in carrying out the federal transportation planning process in the Southern Nevada region.

The Metropolitan Planning Area

The Las Vegas Metropolitan Planning Area is often referred to as ‘Southern Nevada’ to distinguish the activities of regional
agencies from the jurisdictional functions of the Clark County government.

The 2016 population estimates cited below are from the “Governor Certified Population Estimates of Nevada’s Counties, Cities and Towns – 2000 to 2016”, which are prepared by Nevada State Demographer\(^1\). The state demographer projected a 2016 population of 2,166,181 for Clark County, Nevada, which comprises more than 73 percent of the state’s population. Most of the people of Southern Nevada reside in the Las Vegas Valley, which is the name given locally to the urbanized area that includes the following cities:

- The City of Las Vegas (pop 629,649)
- City of Henderson (pop 294,359)
- The City of North Las Vegas (pop 240,708)

The unincorporated areas of Clark County that are within the urban Land Disposal Boundary designated by the Bureau of Land Management (BLM) under the Southern Nevada Public Lands Management Act of 2002. The total population of the unincorporated areas within the Las Vegas urbanized area is approximately 850,000.

Communities outside the Las Vegas Valley urban area include the cities of Boulder City (population 16,298), which adjoins the Las Vegas Valley to the southeast; and the City of Mesquite (population 19,991), located in the northeastern corner of Clark County. The unincorporated community of Laughlin, in the southern part of the County, is home to a population of 9,380. A similar number of people live in the various communities of the Moapa Valley, which lies halfway between Las Vegas and Mesquite. The remainder of Clark County is sparsely populated desert environment, much of which is protected from development under various federal, state, and local statutes and policies.

\(^1\) The state of Nevada uses the population projections from the state demographer as their official population figures. In addition, the RTC of Southern Nevada frequently utilizes the population figures and projections published by the U.S. Census Bureau for other documents.
In late 2011, the U.S. Department of Housing and Urban Development (HUD) awarded a $3.5 million grant to the Southern Nevada Regional Planning Coalition to develop a comprehensive region-wide sustainable communities plan. Approved in early 2015, this plan provides an integrated and coherent framework to guide community development in Southern Nevada over the next 20 years. Recommendations developed through this planning effort include strategies for improving access to transit; making neighborhoods more pedestrian and bicycle friendly; re-orientation of land use and development patterns to reduce VMT and lessen dependency on single occupancy vehicles; and strategies to nurture neighborhood cohesion and public engagement.

The effort will also include application of the concepts developed by Southern Nevada Strong to four opportunity sites: Maryland Parkway; Boulder Highway; Downtown North Las Vegas; and the Las Vegas Medical District. The overall goal of the plan will be to ensure the continued prosperity of the Southern Nevada economy while respecting and preserving its unique desert environment and improving the quality of life of its residents and the long-term integrity of its communities.

Development of the Southern Nevada Strong Regional Plan was led by the City of Henderson and the implementation phase is being led by the RTC. Projects which implement one of the strategies identified in the Southern Nevada Strong Regional Plan are identified in the UPWP with the following SNS logo.
Air Quality
Air quality is monitored by the Clark County Department of Air Quality and Environmental Management (DAQEM). The RTC does conduct studies that ultimately have a positive impact on air quality in the region through providing reduced congestion, and multi-modal options for users of the transportation system. In the FY18 UPWP these projects include:

- 202-3710 Bicycle and Pedestrian Planning
- 202-9035 High Capacity Transit System Development Planning Study
- 301-9120 Complete Streets Implementation Study

Further detail on the scope of work for these studies is provided in the task sheets section later in this document.

RTC Board of Commissioners
The RTC governing Board of Commissioners is composed of elected officials appointed from each of the local jurisdictions in Clark County. The Director of the Nevada Department of Transportation serves as an ex-officio member of the RTC Board for participation in matters pertaining to the metropolitan planning organization. The current composition of the RTC Board of Commissioners is:

- Larry Brown (Chairman) - Clark County Commissioner
- Debra March (Vice Chair) – City of Henderson Mayor-Elect
- Carolyn Goodman – Mayor of Las Vegas
- Chris Giunchigliani – Clark County Commissioner
- John Lee – Mayor of North Las Vegas
- David Ballweg – City of Mesquite Councilman
- Lois Tarkanian – City of Las Vegas Councilwoman
- Rod Woodbury – Mayor of Boulder City
- Rudy Malfabon – Director of the Nevada Department of Transportation (NDOT)
2: The FAST ACT

The Fixing America’s Surface Transportation Act, or “FAST Act,” was signed into law on December 4th, 2015, making it the first long-term surface transportation funding program to be enacted in more than 10 years. The Bill will enable states and local governments to move forward with their critical transportation projects with the added confidence and reliability of a federally funded source. Although the act largely maintains previous program structures and funding shares between highways and transit, there were several significant changes made as part of the new FAST Act, including streamlining the approval processes for new transportation projects, providing new safety tools, and establishing new programs to advance critical freight projects.

SOURCE: https://www.transportation.gov/fastact

Below are several summary points regarding key provisions within the FAST Act.

Project Delivery
The FAST Act adopted a number of administration proposals to further speed the permitting processes, (i.e., reducing the bureaucratic red tape) while still protecting environmental and historic treasures, including codifying the online system to track projects and interagency coordination processes.

Freight
The FAST Act establishes both formula and discretionary grant programs to fund critical transportation projects that would benefit freight movements, providing for the first time in USDOT history a dedicated source of federal funding for federal projects, including multimodal projects.

Transit
The bus discretionary grant program is reinstated, along with the strengthening of the “Buy America” requirements that promote domestic manufacturing and purchasing.

Other provisionary sections include Transportation Infrastructure Finance and Innovation Act (TIFIA), Safety, Innovative Financing and “Ladders of Opportunity.”

Planning Emphasis Areas
The FHWA and the FTA issued Planning Emphasis Areas (PEA’s) for inclusion in the FY 2016 UPWP which have been carried forward to the FY2017 UPWP. The RTC has addressed these PEA’s throughout this document as detailed below.

MAP-21/FAST Act Implementation
The transition to performance based planning and programming is underway, beginning with the development and implementation of a performance management approach to transportation planning and programming that supports the achievement of transportation system performance outcomes. The RTC is implementing the performance based principles mentioned above through various means. One of the tasks from the previous FY16 UPWP (202-3325-16) is Performance
Based Planning. This task will be continued in the current UPWP and is dedicated to analyzing, researching, and documenting our work as well as determining the best measures to help guide the RTC’s work in a progressive and innovative manner.

**Models of Regional Planning Cooperation**

The guidance from the FHWA and FTA is to promote cooperation and coordination across MPO boundaries and across State boundaries where appropriate to ensure a regional approach to transportation planning. In February, 2015 the RTC accepted the role as lead collaborator and administrator for implementation of the Southern Nevada Strong Regional Plan. One of the main purposes of the plan is to think and act regionally. The RTC, as the MPO for the Southern Nevada Region, has the ability to provide a forum for cross-jurisdictional cooperation on many levels. The implementation process is underway and many of the examples can be found in the task list provided later in this document. As explained above, any projects in this document which implement an aspect of the Southern Nevada Strong Regional Plan are denoted with the Southern Nevada Strong logo.

The RTC also participates in the Planning Executive Group (PEG). The PEG meets on a monthly basis and is an opportunity for planners from all of the MPOs in Nevada to meet with the Nevada Department of Transportation, the Federal Highway Administration, and Federal Transit Administration. Discussions center on improving communication, building better working relationships, ensuring compliance with rules and regulations, and sharing best practices and lessons learned on projects.

A key deliverable accomplished in FY2016 was the completion of the Electronic Statewide Transportation Improvement Program (eSTIP). The Nevada Department of Transportation (NDOT) worked extensively with the MPOs to develop this web based interactive platform to display projects. Projects can be sorted by location, funding source, sponsoring entity or any number of other queries. Projects are also mapped and project details can be downloaded in various formats. This user friendly platform substantially improved the transparency and accountability of projects identified in the Transportation Improvement Program and the Statewide Transportation Improvement Program.

**Ladders of Opportunity**

The intent of emphasizing Ladders of Opportunity is to offer access to essential services as part of the transportation planning process and to identify connectivity gaps in access to these services. The Southern Nevada Strong Regional Plan focuses on providing connections between employment, education, and housing through multiple transportation options.

In 2017, Southern Nevada Strong facilitated progress towards equitable transit-oriented development (eTOD), an implementation priority noted in the Regional Transportation Plan. Using technical assistance through a U.S. Environmental Protection Agency Infill Development grant, SNS staff worked with consultants to develop and promote a long term TOD vision as well as create an implementation plan. Several reports were released which document the work that was done to promote TOD. As part of the technical assistance, staff facilitated a two day
workshop with the EPA to create a TOD redevelopment strategy in the Maryland Parkway corridor. SNS also convened a workgroup consisting of city planners from City of Las Vegas, Clark County and UNLV to develop strategies for identifying and overcoming barriers to TOD along Maryland Parkway.

More than 130 stakeholders gathered in late September for the 2016 Annual SNS Summit to discuss implementation progress and highlight local successes. More than a dozen community leaders provided updates on SNS activities, including the City of Las Vegas’ work to enhance bicycling and Three Square’s efforts to eliminate food deserts.

Several pending studies identified in this document also pertain to providing transportation choices to Southern Nevada residents. These studies address ladders of opportunity by identifying improved connections between homes, work, school, and other important destinations. In particular the following studies address transportation choice and ladders of opportunity:

- 101-3500-18 Environmental Justice/Title VI/Ladders of Opportunity;
- 201-9100-18 Regional Non-motorized and Parking infrastructure inventory;
- 202-3710-18 Bicycle and pedestrian planning;
- 202-9035-18 High capacity transit system development planning;
- 202-9235-18 Pedestrian Safety and Comfort Study;
- 202-9230-18 City of North Las Vegas Citywide Pedestrian and Bicycle Plan;
- 301-9015-18 City of Henderson ADA Transition Plan; and
- 301-9120-18 Complete Streets Implementation Study.
- 301-9225-18 Bruce Street Green and Complete Street...
3: Fiscal Year 2017 UPWP
Major Accomplishments
Most of the projects completed in FY2017 were originally funded in FY2015 as multi-year projects. The majority of these multi-year projects wrapped up in both FY2016 and FY2017:

Travel Demand Model Enhancements and Validation (Sub-Task 201-2230-17)
By the end of FY17, this project will be completed. This is a three-year project to support the development of the 2017-2040 RTP.

Major data gathering activities are essential requirements to support the model enhancements. These data gathering activities include:

1. 2017 – Regional Bicycle and Pedestrian Counts
2. 2017 – Regional Non-Motorized & Parking Infrastructure Inventory
3. 2017 – Regional Traffic Counts
4. 2017 - Travel Demand Model and Enhancements

All the above listed surveys and data gathering tasks were completed and the Model Enhancement tasks on the survey data quality checks, analysis and process will be completed. Additional travel time data has been collected by separate contractors, this travel data along with FAST and RTC data will be processed into the input for the validation of the model.

Other datasets may also be collected and basic household information is also included. The survey data can be used in the following steps of the travel demand forecast modeling process:

1. Trip production rates by trip purpose
2. Trip distribution by time of day;
3. Trip length frequency distribution;
4. Modal share of travel;
5. Auto occupancies,
6. Vehicle operating speeds;
7. Household vehicle ownership

The completed project will be very useful in the validation and improvement of the travel demand model and for the development of RTP and TIP. The data is also valuable for a more thorough understanding of regional transportation patterns to assist regional and corridor transportation planning and analysis.

Regional Traffic Counts (Sub-Task 201-2680-17)
- This project collects traffic counts for 205 locations in the Las Vegas area. The results were submitted to NDOT for AADT calculation and NDOT Annual Traffic Report. The NDOT also uses the traffic counts to track traffic condition changes on the roadways. The RTC will utilize the results to validate and calibrate the RTC travel demand model. The RTC collects the counts for these locations on an annual basis following the standard set by the FHWA Traffic Monitoring Manual. The next counting cycle is July 1, 2017 – June 30, 2018. Any count location changes would be determined by NDOT.

Bicycle and Pedestrian Planning (Sub-Task 202-3710-17)
The Regional Bicycle and Pedestrian Plan (RBPP) was an update to the 2008 plan and includes the addition of policies and programs to comprehensively support biking culture in Southern Nevada. The
RBPP’s guiding vision and goals were developed and refined through collaboration with stakeholders, the public, local jurisdiction staff, RTC staff, and the project team, with the Southern Nevada Strong plan providing the framework. The RBPP identified a vision that “Southern Nevada will develop a safe, connected, and convenient walking and bicycling system that serves as a viable transportation and recreation asset while advancing the region’s economic, educational, health, and environmental goals.” The plan’s four goals focused on comfort and safety, access, education and encouragement, and equity and health. Goal-oriented performance measures or metrics allow tracking and reporting of progress and successes.

The RBPP analyzes the existing conditions in Southern Nevada, including where equity disparities exist; how many trips in Southern Nevada are done by walking or bicycling; where crashes involving people walking and bicycling occur and what factors contribute to those crashes; and, what the existing walking and bicycling system looks like, how it functions, and who it is designed to serve. In order to best determine Southern Nevadans’ walking and bicycling needs, the project team conducted diverse public outreach efforts throughout the planning process, including working with Stakeholder Advisory Groups, attending local events and coordinating with local organizations, and managing an email contact list to provide regular updates to interested stakeholders.

The plan identifies a 133% increase in centerline miles of bike facilities, bringing the proposed network total from 868 to 2,020 miles. Level of comfort is a focus of the plan which proposes a future network comprised of 74% high-comfort facilities, up from 46% percent. After total build out, 46% of non-freeway, collector and above roadways will be comfortable enough for the typical adult or any child to ride a bicycle (compared to 14-17% currently). The RBPP includes prioritization, maintenance, and design recommendations to ensure an efficient and cost-effective implementation. In addition to providing capital and maintenance costs, the plan also identifies local, regional, state, federal, non-profit, and other funding or financing strategies and sources that can be used to implement proposed facilities, programs, and policies.
Spencer Greenway Transportation Trail and UNLV Campus Bike Plan  
(Sub-Task 301-9010-17)

Spencer Greenway Trail & UNLV Campus Bike Plan identifies concepts for a multiuse trail connecting the University of Nevada, Las Vegas (UNLV) main campus on Maryland Parkway to Downtown Las Vegas. The Plan includes conceptual plans for the 15-foot multiuse trail and associated amenities on the 2.5-miles NV Energy owned utility corridor adjacent to Spencer Street extending from Charleston Boulevard at the north to Katie Avenue at the south. The plan also includes sidewalk and on-street connections at various locations. Public art opportunities can create a diverse trail experience and engage the community in the construction of aesthetic trail enhancements. The concept plan identifies major trailhead locations and trail access points with details on potential amenities to include. Additionally, the project develops a bike plan to encourage and support biking culture on the UNLV main campus.

Comprehensive public outreach efforts during the plan development helped generate ideas for the concept plans and assess public support for the projects. A Stakeholder Advisory Committee (SAC) consisting of partner agencies including City of Las Vegas, Clark County, NV Energy, UNLV and other stakeholders guided the study development. Community outreach events and a survey provided opportunities for the public to participate in the plan and provide feedback at key milestones. During the coordination of this plan, stakeholders came together to agree on an implementation approach. The City of Las Vegas and Clark County will take the next steps to lead the design, construction and maintenance of the trail project within their respective jurisdictions and coordinating with NV Energy.

School Walk Audits  
(Sub-Task 201-9100-17)

The School Walk Audits project was completed in partnership with the Clark County School District (CCSD) Safe Routes to School (SRTS) program. The CCSD SRTS program provides resources and expertise in developing an appealing, safe environment for school age children, grades K-8, to walk or bicycle to school. The School Walk Audits project included the completion of 15 school walk audits, a review of previous walk audit recommendations, and an evaluation report on the CCSD SRTS program.

The project team established a School Walk Audits Working Group to participate in and guide the development of the walk audit and evaluation reports. The Working Group included representatives from local planning and public works departments, CCSD, crossing guards, public health staff, and law enforcement.

Walk audits were conducted to identify infrastructure improvements that can enhance SRTS participation. Audits provide an opportunity for engineers, SRTS staff, school officials, parents, and other interested parties to discuss and document existing deficiencies and potential improvements. Working collaboratively, participants monitor school arrival and/or dismissal activity and determine if infrastructure investments are needed to improve operations and safety. The focus is typically a quarter-mile radius from the school, where activity is most concentrated.
A walk audit report documents existing conditions, deficiencies, and recommendations for improvement as well as recommendations for safety education and encouragement programs customized for each school.

The evaluation report assesses the CCSD SRTS program and its reach across CCSD schools as well as recommendations for the program. The report also identifies the status of recommendations from the 50 previously completed walk audits. Combined with the recommendations from the 15 new school walk audit reports, all recommendations are prioritized for implementation with details on cost estimates and lead implementing agencies.

**Clark County Parking Study Phase 2 (Sub-Task 301-9020-17)**

The Clark County Parking Study (Phase 1 and Phase 2) examined parking supply and demand, through field surveys, for a sample of retail/shopping center, industrial, and resort hotel sites in unincorporated Clark County. The surveys revealed that the standard parking ratios in the Clark County parking code (Code) result in parking oversupply. Additionally, sometimes parking is provided in excess of the Code requirement, which results in further parking oversupply in some instances.

Parking oversupply stimulates auto travel and is a disincentive to alternative modes like walking, biking, or taking transit. It furthers urban sprawl which leads to increased travel and environmental costs. High parking code ratios reduce the economic development potential of a site, requiring more land to be used for parking instead of a more productive use. Parking oversupply has environmental impacts as well. The vast expanses of pavement impacts water quality and increase the heat island effect.

Phase 1 concluded that changes to the Code, including parking reductions, are warranted. The specifics of the changes were determined in this Phase 2 Study through further investigation and evaluation of the issues, and through stakeholder and public outreach.

Code changes are proposed for the following areas:

- Reduce parking requirements for shopping centers, industrial uses and office uses by 25 percent, and resort hotels by 30 percent.
- Introduce bicycle parking requirements (racks) for specified land uses.
- Allow parking reductions through various credits, including proximity to transit, provision of long-term bicycle spaces, on-street parking, provision of design elements to facilitate Transportation Network Companies, and sites with priced parking.
- Modify parking lot design requirements, including pedestrian connection requirements for commercial and mixed-use developments, bicycle facilities design, and improved parking lot landscaping.
- Require certain smart growth and sustainability conditions be met when the property owner chooses to construct more than 20 percent of the Code required parking.

The proposed Code changes provide more flexibility, allowing requirements to be context sensitive as opposed to applying the same standards everywhere. The
proposed changes accommodate automobile parking needs – balanced by considerations for pedestrians, bicyclists, and environmental sustainability. Additionally, reduced parking requirements can encourage infill redevelopment of parking spaces no longer needed to meet Code requirements.

**Truck Arterial Route Study**  
(Sub-Task 301-9040-17)

The RTC conducted this study to assess and identify various safety, operational, capacity, geometric and weight requirements of key first and last mile arterial truck routes, and recommend improvements to ensure they would meet minimum requirements to support freight movement needs at the north and south gateways to the Las Vegas Valley.

The Truck Arterial Route Study followed the Southern Nevada Regional Goods Corridor Master Plan (RGCMP) study which was completed in 2015. The RGCMP provided a snapshot of the region’s transportation system, forecasted future freight demand, and made recommendations to address regional freight deficiencies.

Two corridors were defined for the study:  
1. Losee Road (bordered on the north by Craig Road, on the south by Lake Mead Boulevard, on the west by Commerce Street and on the east by Lamb Boulevard)  
2. St Rose Parkway between Interstate 15 and Interstate 215 and roughly one mile on either side.

Meetings were held with the City of North Las Vegas on Losee Road and with the City of Henderson on St Rose Parkway. This yielded information on the planned land use and development within each corridor. There was also observation and measurement in the field on transportation network performance. This included counting intersection turning movements and assessing traffic signal operations. Safety data for the corridors was also collected and areas with a high frequency of crashes where commercial trucks were involved were noted. Existing as well as future projected truck traffic volumes were modeled.

Recommended near term spot fixes for specific locations were made in the draft characteristics and analysis report. Longer term projects already in the Regional Transportation Plan were considered in the analysis report as well. These findings were presented to the planners of the City of North Las Vegas and City of Henderson.

**Regional Bicycle and Pedestrian Counts Study**  
(Sub-Task 202-3710-16)

This was the second round of the bicycle and pedestrian counts data collection conducted by RTC, following the first bicycle and pedestrian data collection in 2013 through UPWP Task #3640-13, which established the preferred data collection methodology, identified together with RTC member agencies the 24 sites for data collection (6 sites each in City of Henderson and City of North Las Vegas; 7 in City of Las Vegas; 5 in Clark County), and accordingly collected the counts for the 24 identified sites.

RTC intends gather this data at the same locations in future years in order to identify...
the trends over time and quantify the usage of existing bicycle and pedestrian facilities.

The study revealed bicyclists were observed on all 24 sites on the project during the 12-hour (7 am to 7 pm) observation period. A total of 491 and 370 bicycles observed during weekdays and weekend respectively for a total of 861 bicycles. The number of bicycles at each site varied from a low of 2 to a high of 68 for weekdays and from 1 to 49 for weekend.

Recognizing that there were not adequate data available yet for statistics, the project analyzed bicycle volume variation by the type of bicycle facility present on the roadway. The sites were categorized in 6 categories as to bicycle friendliness. The analysis shows the most bicycle friendly facility (with designated bike lane adjacent to curbside parking on a one-way street) has far higher average bike user shares (37%) when compared to the other 5 categories (ranging from 9% to 17% respectively). The project also analyzed sidewalk factors, which is the percent of bicyclists riding on the sidewalk. The analysis shows about 42% of all bicyclists riding on the sidewalk.

All the project sites have pedestrian facilities present. A total of 6,253 and 3,881 pedestrians were observed during weekdays and weekends respectively. The number of pedestrians at each site varied from a low of 7 to a high of 768 for weekdays and from 12 to 853 for weekend. The difference between weekday and weekend reflects the types of the sites – near school or near commercial center such as downtown.

City of Henderson ADA Transition Planning Study (Sub-Task 301-9015-16)

The purpose of this study is to update and/or create a new plan to include the necessary assessment of public rights of way in preparation for meeting the Public Rights of Way Accessibility Guidelines (PROWAG) to be issued by the U.S. Department of Justice. The study is at the stage of compiling the information collected from the field and public surveys. The next step is to meet with the technical advisory committee and finalize the recommendations based on the data and survey analysis. This study is anticipated to be completed by the end of 2017.

Northeast Valley Transportation Network Study (Sub-Task 301-9030-16)

This study is evaluating the current conditions of the transportation network in the northeast region of the Las Vegas valley. It is expected that there will be an influx of new warehouse and industrial park projects. These along with growth expected at Nellis Air Force Base and the existing Speedway Industrial Area will contribute to an increase in traffic congestion. The data sets collected for this study and has been analyzed and presented to the technical advisory committee (TAC). The consultant met with the developers to seek their input on the land use development in the Northeast Valley. The consultant is developing the alternative concepts and recommendations to improve the transportation system. This study is anticipated to be completed by the fall of 2017.
**Boulder Highway Multimodal Transportation Investment Study (Sub-Task 301-9025-16)**

This study seeks to identify and analyze potential improvements to Boulder Highway between Wagonwheel Drive and Charleston Boulevard. The study should focus on overall right-of-way management and allocation based on the needs of all users. The study is identifying overall transportation system and safety improvements along the corridor. The study was initiated and a kick-off meeting was held on April 2017. The next steps are data collection, public participation, data analysis, and workshops to develop recommendations. The study is anticipated to be completed by the spring of 2018.
4: Fiscal Year 2018 UPWP Development Approach

The UPWP is developed in consultation with state and local entities according to federal guidelines. The UPWP budget for FY 2018 includes RTC costs associated with the development and implementation of core regional planning activities and project management of professional services contracts for planning studies.

The FAST Act encourages metropolitan areas to improve regional mobility through the provision of safe, efficient, and convenient transportation systems. The preceding federal legislation (MAP-21) also requires the development of performance measures to allow quantitative evaluation of regional transportation investments, along with criteria established by FHWA and FTA.

Specifically, these criteria preclude the use of federal planning funds for system operation plans, project development engineering, or design studies for activities required under the National Environmental Policy Act (NEPA). In general, the expectation for the projects and studies included in the UPWP is to enhance the transportation environment of the Southern Nevada region and expand multimodal options.

This program extends well beyond enhancements to the regional roadway network. Pedestrian, bicycle, transportation safety, and transit facilities are also considered. Overall, the objective of the UPWP is to facilitate development of a multimodal transportation system that serves both the Las Vegas urbanized area and the surrounding rural areas of Clark County.

There is an emphasis in the UPWP on conducting studies that will serve to improve both the mobility of the Southern Nevada residential commuting population and ensuring the efficient flow of freight and commercial goods that serve our regional economy. This program of projects will also provide mobility and accessibility benefits to tourists traveling into and around the Southern Nevada region.
5: Planning Funds and FY 2018
UPWP Budget

There are two primary sources of federal funding available to support the MPO transportation planning functions. The Federal Highway Administration (FHWA) administers funds under the Metropolitan Planning Area Program (‘PL’), while the Federal Transit Administration (FTA) administers funds under the ‘Section 5303’ Program. Funds appropriated by Congress under these programs are apportioned among the states for distribution to the MPO areas within the state.

Consolidated Planning Grant
In 2013, the RTC of Southern Nevada entered into a memorandum of understanding (MOU) to participate in the U.S. Department of Transportation Consolidated Planning Grant program (CPG). Under the CPG Agreement, FHWA PL and FTA 5303 funds are consolidated into a single source to fund the activities authorized under the UPWP. NDOT and the four MPOs in the state have also agreed to a formula under which the CPG funds are distributed between the MPO areas.

FY 2018 funding
The funding expected to be available for the 2018 UPWP is based on three elements: First, the amount expected to be expended through the end of June, 2017 and hence the balance of the funds that will be carried forward to FY 2018. Second, the CPG funding for FFY 2018 reflects the anticipated apportionment from the FAST Act as agreed to by NDOT and the State’s four MPOs. Third, RTC is required to contribute at least 5% of the costs of the UPWP program from local, nonfederal, sources. The result is set out in the following table:

Table 5-1: FY 2018 Projections

<table>
<thead>
<tr>
<th>FFY 2018 Distribution</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>UPWP Funds available for FFY 2017</td>
<td>$4,030,120</td>
</tr>
<tr>
<td>Expenditure thru Dec. 31, 2016</td>
<td>-$897,262</td>
</tr>
<tr>
<td>Anticipated Expenditure thru June 30, 2017</td>
<td>-$897,262</td>
</tr>
<tr>
<td>Balance Projected, June 30, 2017</td>
<td>$2,235,596</td>
</tr>
<tr>
<td>Expected UPWP funds available for FFY 2018</td>
<td>$2,913,028</td>
</tr>
<tr>
<td>Total UPWP Funds available</td>
<td>$5,148,624</td>
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<tr>
<td>Local Match</td>
<td>$270,980</td>
</tr>
<tr>
<td>Total</td>
<td>$5,419,604</td>
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</tbody>
</table>

Funding Availability
The period covered by the 2017 UPWP corresponds with the RTC and State Fiscal Year starting July 1, 2016 and ending June 30, 2017. Federal CPG funds are apportioned and distributed for the Federal Fiscal Year that starts October 1 each year. Therefore the only funds available to be expended during the period thru the end of September are those carried forward from the previous fiscal year. Likewise, the UPWP always needs to show sufficient balance at the end of the UPWP period to cover expenditures until the start of the next Federal fiscal year the following October.
2018 UPWP Task budgets

Initiated with the FY2015 UPWP, the RTC streamlined the budget process in groups of activities to be performed under the UPWP into five main tasks:

1. Planning Administration, Coordination and Outreach (Task 101)
2. Data Collection and Analysis (Task 201)
3. Long Range Transportation Planning (Task 202)
4. Multi-Modal Transportation Planning (Task 301)
5. Intelligent Transportation Systems Planning (Task 302)

Proposed activities under the 2018 UPWP are grouped under five tasks. Individual activities are described as Sub-Tasks with each task.

State and Federal agencies will track Consolidated Planning Grant expenditures with reference to the budgets for these five tasks. This will simplify accounting procedures and also reduce the need for frequent amendments to respond to minor changes in the budget for individual line items.

Detailed information on the objective, scope and timeline of the various UPWP activities within each task is presented by Sub-Task in Chapter 6, as in previous UPWP documents. Budgetary information by Sub-Task is presented for information and to assist RTC with monitoring progress.

Table 5-5 on the next page sets out the task and Sub-Task budgets for FY 2018.
### FY 2018 Unified Planning Work Program - Amendment 1

(Studies with budget changes highlighted in yellow)

<table>
<thead>
<tr>
<th>Task</th>
<th>Planning Administration, Coordination and Outreach</th>
<th>FY 2017 Professional Services Contracts (Carryover)</th>
<th>FY 2018 Professional Services Contracts</th>
<th>FY 2018 RTC Cost</th>
<th>FY 2018 Total Professional Services &amp; Costs</th>
<th>FY 2018 Consolidated Planning Grant (95%)</th>
<th>FY 2018 Local Match (5%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>101-1500-18</td>
<td>General Outreach</td>
<td>$5,000</td>
<td>$5,000</td>
<td>$4,750</td>
<td>$250</td>
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<tr>
<td>101-2300-18</td>
<td>Stakeholder Coordination</td>
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<td>$75,000</td>
<td>$71,250</td>
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<tr>
<td>101-2310-18</td>
<td>Planning Administration</td>
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<td>$400,000</td>
<td>$380,000</td>
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<tr>
<td>101-3100-18</td>
<td>Unified Planning Work Program</td>
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<td>$30,000</td>
<td>$28,500</td>
<td>$1,500</td>
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<tr>
<td>101-3200-18</td>
<td>Transportation Improvement Program</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$47,500</td>
<td>$2,500</td>
<td></td>
<td></td>
</tr>
<tr>
<td>101-3500-18</td>
<td>Environmental Justice/Title VI / Ladders of Opportunity</td>
<td>$2,000</td>
<td>$2,000</td>
<td>$1,900</td>
<td>$100</td>
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<tr>
<td>101-3600-18</td>
<td>Miscellaneous (INRIX, ArcGIS, Transcad, etc)</td>
<td>$90,000</td>
<td>$90,000</td>
<td>$85,500</td>
<td>$4,500</td>
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<tr>
<td>101-9200-18</td>
<td>Southern Nevada Strong – Transportation Implementation</td>
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<td>$50,000</td>
<td>$47,500</td>
<td>$2,500</td>
<td></td>
<td></td>
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<tr>
<td>101-9205-18</td>
<td>Transit Oriented Development (TOD)</td>
<td>$50,000</td>
<td>$50,000</td>
<td>$47,500</td>
<td>$2,500</td>
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**Task 101 Total** | $752,000 | $752,000 | $714,400 | $37,600 |

<table>
<thead>
<tr>
<th>Task</th>
<th>Data Collection</th>
<th>FY 2017 Professional Services Contracts (Carryover)</th>
<th>FY 2018 Professional Services Contracts</th>
<th>FY 2018 RTC Cost</th>
<th>FY 2018 Total Professional Services &amp; Costs</th>
<th>FY 2018 Consolidated Planning Grant (95%)</th>
<th>FY 2018 Local Match (5%)</th>
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<tbody>
<tr>
<td>201-2116-18</td>
<td>Travel Demand Model</td>
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<td>$350,000</td>
<td>$350,000</td>
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<td>201-2206-18</td>
<td>Annual Population Forecast</td>
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<td>$13,300</td>
<td>$700</td>
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<tr>
<td>201-2230-18</td>
<td>Travel Demand Model Enhancements and Validation</td>
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<td>$10,000</td>
<td>$110,000</td>
<td>$104,500</td>
<td>$5,500</td>
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<tr>
<td>201-2680-18</td>
<td>Regional Traffic Counts</td>
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<td>$230,000</td>
<td>$12,000</td>
<td>$333,000</td>
<td>$316,350</td>
<td>$16,650</td>
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<td>201-9100-18</td>
<td>Regional Non-Motorized &amp; Parking Infrastructure Inventory</td>
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<td>$10,000</td>
<td>$160,000</td>
<td>$152,000</td>
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<tr>
<td>201-9105-18</td>
<td>Dynamic Traffic Assignment (DTA) Model Development</td>
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<tr>
<td>201-9120-18</td>
<td>Activity Based Model (pilot project)</td>
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<td>$110,000</td>
<td>$104,500</td>
<td>$5,500</td>
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<tr>
<td>201-9215-18</td>
<td>Land Use Scenario Planning Analysis</td>
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<td>$38,000</td>
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<td>201-9220-18</td>
<td>GIS Analysis and Visualization</td>
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<td>$25,000</td>
<td>$23,750</td>
<td>$1,250</td>
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<tr>
<td>201-9110-18</td>
<td>Las Vegas Valley Millennial Study</td>
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<td>$5,000</td>
<td>$25,000</td>
<td>$23,750</td>
<td>$1,250</td>
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**Task 201 Total** | $391,000 | $662,000 | $474,000 | $1,527,000 | $1,450,650 | $76,350 |
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<tr>
<th>Task 202</th>
<th>Long Range Transportation Planning</th>
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<tbody>
<tr>
<td>202-3325-18 Performance Based Planning</td>
<td>FY 2017 Professional Services Contracts (Carryover)</td>
</tr>
<tr>
<td>202-3710-18 Bicycle and Pedestrian Planning</td>
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</tr>
<tr>
<td>202-3715-18 Transportation Safety Planning</td>
<td></td>
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<tr>
<td>202-9005-18 Regional Transportation Plan &amp; Visioning</td>
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<tr>
<td>202-9035-18 High Capacity Transit System Development and Planning</td>
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<td><strong>Task 202 Total</strong></td>
<td>150,000</td>
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<table>
<thead>
<tr>
<th>Task 301</th>
<th>Multimodal Transportation Studies</th>
</tr>
</thead>
<tbody>
<tr>
<td>301-9225-18 Bruce Street Green and Complete Street, Charleston Blvd. to North Las Vegas Blvd</td>
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</tr>
<tr>
<td>301-9230-18 North Las Vegas Citywide Pedestrian and Bicycle Plan</td>
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</tr>
<tr>
<td>301-9235-18 Pedestrian Comfort Study and Demonstration Project</td>
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<tr>
<td>301-9240-18 River Mountain Loop Trail Improvements</td>
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<td>301-9245-18 School Trip Generation and Siting Study</td>
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<tr>
<td>301-9250-18 Livable Centers Study – Pilot Program</td>
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<tr>
<td>301-9255-18 Economics of Bicycling in Clark County</td>
<td></td>
</tr>
<tr>
<td>301-9260-18 Impacts of Emerging Technology on Public Transit</td>
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<tr>
<td>301-9015-18 City of Henderson ADA Transition Plan</td>
<td></td>
</tr>
<tr>
<td>301-9025-18 Clark County Rural Streets Standards Study</td>
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<tr>
<td>301-9030-18 Northeast Valley Transportation Network Study</td>
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</tr>
<tr>
<td>301-9115-18 Planning and Infrastructure Needs for Emerging Transportation Technologies</td>
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<tr>
<td>301-9125-18 Boulder Highway Multimodal Study</td>
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<tr>
<td><strong>Task 301 Total</strong></td>
<td>$228,141</td>
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<tr>
<td>Task 302</td>
<td>Intelligent Transportation Systems (ITS) Studies</td>
</tr>
<tr>
<td>----------</td>
<td>-----------------------------------------------</td>
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<tr>
<td>302-9265-18</td>
<td>Internet of Things (IoT) &amp; Connected and Autonomous Vehicle (CAV) System Architectures</td>
</tr>
<tr>
<td>FY 2018 Total Professional Services &amp; Costs</td>
<td>$170,000</td>
</tr>
<tr>
<td>FY 2018 RTC Cost</td>
<td>$20,000</td>
</tr>
<tr>
<td>FY 2018 Professional Services Contracts (Carryover)</td>
<td>$150,000</td>
</tr>
<tr>
<td>FY 2018 Consolidated Planning Grant (95%)</td>
<td>$161,500</td>
</tr>
<tr>
<td>FY 2018 Local Match (5%)</td>
<td>$8,500</td>
</tr>
</tbody>
</table>

**Task 302 Total**

| Task | $150,000 | $20,000 | $170,000 | $161,500 | $8,500 |

**Total**

| | $769,141 | $2,362,000 | $1,696,000 | $4,827,141 | $4,581,034 | $241,107 |
**Task 101: Planning Administration, Coordination and Outreach.**

This task covers the core planning activities of the Metropolitan Planning Organization. These include: The annual development and maintenance of the Unified Planning Work Program (UPWP); The maintenance of the Transportation Improvement Program (TIP) The maintenance of the Regional Transportation Plan (RTP) Also included are the MPO’s responsibilities for Environmental Justice and for compliance with Title VI of the Civil Rights Act.

Task 101 includes the RTC costs associated with these core programs, coordination with local, state and federal partners, coordination with other stakeholders and general outreach. Any consultant support related to these core activities is covered under other tasks, so the only costs identified are those associated with RTC staff time and related in-house expenditures.

**Specific Sub-Tasks are:**

101-1500, General Outreach  
101-2300, Stakeholder Coordination  
101-2310, Planning Administration  
101-3100, Unified Planning Work Program  
101-3200, Transportation Improvement Program  
101-3500, Environmental Justice and Title VI  
101-3600, Miscellaneous Supporting Activities  
101-9200, Southern Nevada Strong – Transportation Implementation  
101-9205, Transit Oriented Development

**Task 101, 2018 Budget**

The following costs are included under Task 101:

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
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</thead>
<tbody>
<tr>
<td>FY 2018 RTC Costs</td>
<td>$752,000</td>
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<tr>
<td>Professional Services Costs</td>
<td>$0</td>
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<tr>
<td>Combined Costs</td>
<td>$752,000</td>
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</table>

**The source of funds for Task 101 is**

<table>
<thead>
<tr>
<th>Description</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consolidated Planning Grant</td>
<td>$714,400</td>
</tr>
<tr>
<td>Local Funds (5% Match)</td>
<td>$37,600</td>
</tr>
</tbody>
</table>
Sub-Task 101-1500-18 - General Outreach

Purpose:
Throughout the transportation planning process, RTC staff performs various functions concerning the time and materials used for advertising, preparation, and conducting public involvement activities associated with the development and implementation of plans and programs.

Previous Work:
- Public outreach, meetings and promotion in support of the Regional Transportation Plan (RTP), the Transportation Improvement Program (TIP), the Unified Planning Work Program (UPWP) projects and studies, and the Public Participation Plan (PPP).

Methodology:
- Through both mainstream and innovative means the RTC will develop, coordinate, and conduct public outreach related to all activities listed in the UPWP. Examples include: conducting public meetings, participating in “pop-up meetings”, having a presence at community events, publishing documents, developing press releases, and addressing and tracking public comments.
- General outreach is led by the RTC’s Department of Government Affairs, Media, and Marketing.

Participating Agencies:
- Clark County, City of Las Vegas, City of North Las Vegas, City of Henderson, City of Boulder City, City of Mesquite, Nevada Department of Transportation, and the Regional Transportation Commission of Southern Nevada (Lead Agency)

Budget:

<table>
<thead>
<tr>
<th>Sub-Task 101-1500-18</th>
<th>FY 2018 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Project Cost</td>
<td>$ 5,000</td>
</tr>
<tr>
<td>Professional Services Contract</td>
<td>$ 0</td>
</tr>
<tr>
<td>RTC Cost</td>
<td>$ 5,000</td>
</tr>
</tbody>
</table>

Funding Sources

| Consolidated Planning Grant | $ 4,750 |
| Local Match (5%)           | $ 250   |

Total FY 18 Project Budget $ 5,000

Schedule and Deliverables:
- Report on public outreach activities.
- Inventory of display materials in support of RTC public outreach activities.
- General Outreach is an on-going activity
Sub-Task 101-2300-18 - Stakeholder Coordination

Purpose:
Stakeholder Coordination covers all activities related to the continued coordination of the Southern Nevada regional transportation planning process with local agencies, Nevada Department of Transportation, U.S. Department of Transportation, and also the coordination of activities with other regional planning agencies on inter-regional issues.

Methodology:
- General liaison with the Nevada Department of Transportation (NDOT), coordination in development of the State Highway Safety Plan (SHSP), participation in meetings, workshops, and coordination with NDOT in development of the Southern Nevada Regional ITS Architecture, participation in activities of the Southern Nevada Regional Planning Coalition (SNRPC), and inter-regional meetings and workshops.
- Stakeholder Coordination is performed by the Metropolitan Planning Organization, Government Affairs, Media and Marketing, and Executive Management. Participating Agencies:
  - Nevada Department of Transportation, Southern Nevada Regional Planning Coalition (SNRPC), and the Regional Transportation Commission of Southern Nevada (Lead Agency)

Budget:

<table>
<thead>
<tr>
<th>Sub-Task 101-2300-18</th>
<th>FY 2018 Budget</th>
</tr>
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<tbody>
<tr>
<td>Total Project Cost</td>
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<tr>
<td>Professional Services Contract</td>
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<td>RTC Cost</td>
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</table>

Funding Sources

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Consolidated Planning Grant</td>
<td>$ 71,250</td>
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<tr>
<td>Local Match (5%)</td>
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</tr>
<tr>
<td><strong>Total FY 18 Project Budget</strong></td>
<td><strong>$ 75,000</strong></td>
</tr>
</tbody>
</table>

Schedule and Deliverables:

- Coordination with local, state, and federal agencies on Southern Nevada regional transportation planning issues.
- Stakeholder Coordination is an on-going activity.
Sub-Task 101-2310-18 - Planning Administration

Purpose:
Activities included under this Sub-Task include the overall administration of the Metropolitan Planning Organization (MPO) transportation planning process. These tasks are on-going activities required to meet federal and state regulations.

Methodology:
- Planning Administration occurs through the conduct of various meetings of regional stakeholders, including the Transportation Access Advisory Committee, Executive Advisory Committee, Nevada Department of Transportation liaison meetings, Metropolitan Planning Subcommittee, RTC Board of Commissioners, and multiple other regional transportation coordination committees and groups. Also included in this task item is professional development of RTC staff through the maintenance of RTC staff membership in professional planning organizations.
- The Metropolitan Planning Organization (MPO) is responsible for this task.

Expected Products:
Continuous coordination with local agencies and stakeholders, inclusion of feedback and concepts discussed during committee meetings and other special meetings into the development and administration of the Southern Nevada Regional Transportation Plan (RTP), Transportation Improvement Program (TIP), and Unified Planning Work Program (UPWP), including coordination of modifications and amendments to these documents. Administration of professional services contracts as outlined in the Fiscal Year 2017 UPWP.

Participating Agencies:
- Clark County, City of Las Vegas, City of North Las Vegas, City of Henderson, City of Boulder City, City of Mesquite, Clark County Department of Air Quality, Nevada Department of Transportation, Regional Transportation Commission of Southern Nevada (Lead Agency), Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA).

Budget:

<table>
<thead>
<tr>
<th>Sub-Task 101-2310-18</th>
<th>FY 2018 Budget</th>
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</thead>
<tbody>
<tr>
<td>Total Project Cost</td>
<td>$ 400,000</td>
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<tr>
<td>Professional Services Contract</td>
<td>$ 0</td>
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<tr>
<td>RTC Cost</td>
<td>$ 400,000</td>
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</tbody>
</table>

Funding Sources
- Consolidated Planning Grant $ 380,000
- Local Match (5%) $ 20,000

Total FY 17 Project Budget $ 400,000

Schedule and Deliverables: Planning Administration is an ongoing activity.
Sub-Task 101-3100-18 - Unified Planning Work Program

Purpose: The Unified Planning Work Program (UPWP) includes coordination of transportation planning activities in the Southern Nevada region during the fiscal year.

Previous Work:
- The UPWP is updated annually and previous work includes the development, administration, and amending of the document.

Methodology:
- RTC staff will, through stakeholder communication and the oversight of RTC committees, develop, administer, amend, and implement the UPWP as required. The Metropolitan Planning Organization (MPO) is responsible for this task.

Participating Agencies:
- Clark County,
- City of Las Vegas,
- City of North Las Vegas,
- City of Henderson,
- City of Boulder City,
- City of Mesquite,
- Nevada Department of Transportation,
- Regional Transportation Commission of Southern Nevada (Lead Agency),
- Federal Highway Administration (FHWA),
- Federal Transit Administration (FTA).

Budget:

<table>
<thead>
<tr>
<th>Sub-Task 101-3100-18</th>
<th>FY 2018 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Project Cost</strong></td>
<td>$ 30,000</td>
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<tr>
<td>Professional Services Contract</td>
<td>$ 0</td>
</tr>
<tr>
<td>RTC Cost</td>
<td>$ 30,000</td>
</tr>
</tbody>
</table>

**Funding Sources**
- Consolidated Planning Grant  $ 28,500
- Local Match (5%) $ 1,500

**Total FY 18 Project Budget $ 30,000**

Schedule and Deliverables:
- The development of the Fiscal Year 2018 UPWP and amendments/modifications to the FY 2017 UPWP.
- The FY 2018 UPWP will be completed by May, 2017 while amendments and work related to the UPWP are on-going.
Sub-Task 101-3200-18 - Transportation Improvement Program

**Purpose:** Activities included under this Sub-Task include administration and maintenance of the current FY 2017-2020 Transportation Improvement Program (TIP), including processing of modifications and amendments.

**Previous Work:**
- Development and maintenance of the TIP is an on-going activity. Most recently The FY 2017-20 TIP was approved by the RTC of Southern Nevada Board of Commissioners on February 9, 2017.

**Methodology:**
- Determine that sufficient federal, state, and local revenue sources are available to fund projects programmed in the TIP.
- Ensure that all non-exempt projects included in the TIP and subsequent amendments come from a conforming Long Range Transportation Plan, as required under the Clean Air Act Amendments of 1990.
- Ensure that the TIP gives priority to eligible Transportation Control Measure (TCM) projects as identified in the air quality State Implementation Plans.
- Utilize the RTC Project Evaluation and Prioritization Process to select projects for inclusion in the TIP.
- Coordinate administration and maintenance of the TIP program with the Statewide TIP (STIP) by NDOT to ensure subsequent integration of the Clark County TIP into the STIP.
- Provide reasonable opportunity for public comment in accordance with the RTC Public Participation Plan and federal regulations.
- Incorporate Environmental Justice and ADA considerations, as appropriate.
- Prepare modifications and amendments to the TIP.
- Coordinate modifications and amendments of the TIP program with the Statewide TIP (STIP) by NDOT, to ensure subsequent integration of changes to the Clark County TIP into the STIP.
- Participate in the development of eSTIP.

**Participating Agencies:**
- Clark County,
- City of Las Vegas,
- City of North Las Vegas,
- City of Henderson,
- City of Boulder City,
- City of Mesquite,
- Nevada Department of Transportation,
- Regional Transportation Commission of Southern Nevada (Lead Agency)
Budget:

<table>
<thead>
<tr>
<th>Sub-Task 101-3200-18</th>
<th>FY 2018 Budget</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Project Cost</td>
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<tr>
<td>Professional Services Contract</td>
<td>$ 0</td>
</tr>
<tr>
<td>RTC Cost</td>
<td>$ 50,000</td>
</tr>
</tbody>
</table>

Funding Sources:

| Consolidated Planning Grant | $ 47,500       |
| Local Match (5%)            | $ 2,500        |
| Total FY 18 Project Budget  | $ 50,000       |

Schedule and Deliverables:

- Process amendments & administrative modifications to the FY 2017-20 TIP
- FY 2017-20 TIP update.
- The TIP is an on-going activity.
Sub-Task 101-3500-18 - Environmental Justice/ Title VI/Ladders of Opportunity Purpose:

Activities included under this Sub-Task include development of products and procedures to implement Executive Order 12898: ‘Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations’, the Civil Rights Act of 1964- Title VI, and provide Ladders of Opportunity to traditionally underserved populations in accordance with subsequent USDOT Guidance and Regulations.

Previous Work:
- Title VI Program Update Report (2010), Civil Rights Act of 1964-Title VI Program Report (1998), Title VI Program Update Report (2009), and Title VI Reports for the MPO and Transit (2013).

Methodology:
- Completion of Environmental Justice updates to monitor the effectiveness of the transportation system in providing Ladders of Opportunity for low-income, minority, elderly, and traditionally underserved populations as required.
- The Metropolitan Planning Organization (MPO) is responsible for this task.

Participating Agencies: Clark County, City of Las Vegas, City of North Las Vegas, City of Henderson, City of Boulder City, City of Mesquite, Clark County Department of Air Quality, Nevada Department of Transportation, Regional Transportation Commission of Southern Nevada (Lead Agency), Federal Highway Administration (FHWA), and the Federal Transit Administration (FTA).

Budget:

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Schedule and Deliverables:
- Environmental Justice, Title VI, and Ladders of Opportunity are on-going activities.
Sub-Task 101-3600-18 - Miscellaneous

**Purpose:** This task item covers all activities related to efficient planning administrative work as well as to provide for costs associated with planning and administration including but not limited to travel, membership dues, software licenses, office supplies, copying and printing, traffic probe data acquisition, professional licenses, registration, lodging, and meals in support of other UPWP eligible activities. This task item also includes participation costs for pooled fund research studies and similar joint research efforts with other planning or transportation agencies.

**Participating Agencies:**
- Regional Transportation Commission of Southern Nevada

### Sub-Task 101-3600-18 FY 2018 Budget

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**Funding Sources**
- Consolidated Planning Grant (95%) $ 85,500
- Local Match (5%) $ 4,500

**Total FY 18 Project Budget** $ 90,000

**Schedule and Deliverables:**
- Miscellaneous supports on-going activities.
Sub-Task 101-9200-18 - Southern Nevada Strong – Transportation Implementation

**Purpose:** The RTC is the administrating agency to the Southern Nevada Strong (SNS) Regional Plan. A major component of the Plan is the Implementation Matrix which includes a vision to increase transportation choice. There are over 50 strategies to implement through increasing transportation choice in Southern Nevada. The project will help facilitate best practices in investing in a multi-modal transportation system that is safe, efficient, accessible, and equitable and supports reinvestment in Southern Nevada’s existing communities.

**Methodology:**

- SNS Transportation Implementation occurs through the Increase Transportation Choice theme within the SNS Implementation matrix which could include applying specific strategies like but not limited to:
  - Pursue a regional policy change to require roadways to be designed for target speeds as recommended in the Complete Streets Design Guidelines for Livable Communities, based on the context of the corridor and overall safety and comfort of all users, including pedestrians and bicyclists, and require justification for all target design speeds and speed limits.
  - Encourage the development of design standards and land use policies that require investments in low-income or at-risk communities to include the basic attributes such as sidewalks, adequate lighting, street trees, and other strategies to create walkable communities, with special attention to designing for shade and heat absorbent materials to provide respite to transit riders.
  - Promote “Complete Streets” cross section revisions whenever corridor reconstruction or reconfiguration occurs. Activities could include removing block walls, limiting cul-de-sacs, increasing sidewalk and bike lane widths, reducing curb cuts, and limiting driveways.
  - Working with local stakeholders, support more stringent criteria to justify roadway capacity expansion and ensure that any capacity expansions accommodate viable multi-modal transportation options.
  - Work with local bike groups and transportation advocates to update the RTC’s multi-modal transportation plan and identify strategies to increase safety and make walking and bicycling more viable as primary transportation modes.
- Also included in this task item is professional development of RTC staff through the maintenance of RTC staff membership in professional planning organizations.
- The Metropolitan Planning Organization (MPO) / SNS staff is responsible for this task.
Participating Agencies:

- Regional Transportation Commission of Southern Nevada

Budget:

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**Funding Sources**

- Consolidated Planning Grant (95%) $ 47,500
- Local Match (5%) $ 2,500

**Total FY 18 Project Budget** $ 50,000

Schedule and Deliverables:

Southern Nevada Strong Transportation Implementation is an on-going activity.
Sub-Task 101-9205-18 - Southern Nevada Strong - Transit Oriented Development

Purpose:
The Southern Nevada Strong Regional Plan goal is to encourage investment in development in which jobs, housing, transportation and community amenities combine to create places that support economic opportunity and healthy options for all people, regardless of income level. This project will support implementation of TOD goals and strategies identified in Southern Nevada Strong.

Previous Work:
The projects and studies that have been previously completed and that identify TOD as a strategies that improve economic competitiveness, invest in complete communities and increase transportation choice for Southern Nevada are Southern Nevada Strong, Access 2040 Regional Transportation Plan

Methodology:
The project will facilitate partners to implement SNS goals and strategies in TOD which includes:

- Helping partners match land use and transportation plans with regional economic development plans,
- Assisting partners in fostering development of the healthcare and education sectors, locally serving sectors that would enhance quality of life for residents to better integrate with existing land uses and create a better environment to attract new workers; Helping partners ensure that Southern Nevada offers a range of place types to attract and retain future workers, visitors, businesses and entrepreneurs;
- Enhancing the role of small businesses and entrepreneurs as leaders in economic diversification and revitalization;
- Helping partners stabilize and strengthen existing neighborhoods through place making improvements; Encouraging an adequate supply of housing with a range of price, density, ownership, size and building types;
- Helping partners promote resource-efficient land use and development practices; Developing a modern transit system that is integrated with vibrant neighborhood and employment centers, better connecting people to their destinations

Participating Agencies:

- RTC of Southern Nevada
Budget:

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**Funding Sources**

- Consolidated Planning Grant (95%) $ 47,500
- Local Match (5%) $ 2,500

**Total FY 18 Project Budget** $ 50,000

Schedule and Deliverables:

Southern Nevada Strong Transit Oriented Development is an on-going activity.
Task 201: Data Collection and Analysis
This task covers the gathering of data needed to support the MPO’s planning activities and the analysis of that data as part of the development of the Regional Transportation Plan and other planning studies.

Activities include:

- The maintenance of the regional travel demand forecast model and upgrades to keep up with the state-of-the-practice;
- Execution of model runs and analysis to support traffic and transit studies and the demonstration of air quality conformity;
- Undertaking travel surveys to support the calibration of the model;
- Improving the technical capability of the RTC to perform more detailed transportation analyses needed by RTC, NDOT or our partner local agencies;
- Development of population and land use forecasts;
- RTC’s participation in a region program of traffic counts; and,
- Developing techniques and methods to inventory bicycle and pedestrian activity.

Several of these activities will require extensive professional support from outside consultancies. The costs of professional services contracts are included under Task 201. Task 201 includes the RTC costs associated with these data collection and analytical activities as well as the procurement of professional services contracts and their administrative and financial oversight.

Specific Sub-Tasks are:
201-2116, Travel Demand Model
201-2206, Annual Population Forecast
201-2230, Travel Demand Model Enhancements and Validation Work Program
201-2680, Regional Traffic Counts
201-9100, Regional Non-Motorized & Parking Infrastructure Inventory
201-9105, Dynamic Traffic Assignment (DTA) Model Development
201-9210, Activity Based Model
201-9215, Land Use Scenario Planning Analysis
201-9220, GIS Analysis and Visualization
201-9110, Las Vegas Valley Millennial Study

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The source of funds for Task 201 is:
Consolidated Planning Grant | $ 1,450,650 |
Local Funds (5% match) | $ 76,350 |
Sub-Task 201-2116-18 - Travel Demand Model

Purpose: Travel Demand Forecasting (TDF) is an essential tool that the RTC employs to estimate future travel conditions and regional mobility needs. The information generated from the process provides decision makers with the background to determine future transportation system improvement needs, which are programmed into the Regional Transportation Plan (RTP) and Transportation Improvement Plan (TIP).

Previous Work:
- RTC 2009 model update;
- FY 2013-2035 Regional Transportation Plan (RTP) modeling results, including modifications and amendments;
- FY 2013-2016 Transportation Improvement Program (TIP) modeling results and amendments;
- Travel Demand Modeling run results for various corridor studies by either consultants or RTC; Travel Demand Modeling run results by consultants in coordination with RTC modeling technical support.

Methodology:
- Improve the network structure and coding procedures and qualities (ongoing).
- Update the travel demand model network with all highway, roadway, and transit networks, park and ride facilities, and intersection signal projects with regard to any amendments to the 2017-2040 RTP.
- Test and apply the update versions of the RTC Travel Demand Model as they are developed under UPWP Task 201-2230.
- Coordinate with the consultant to resolve any technical issues that may arise during routine modeling activities.
- Research and implement the incorporation of bicycle and pedestrian trips and ‘Complete Streets’ design elements into RTC modeling procedures.
- Develop tools to transform data and networks from the Trans CAD model to VISSIM.
- The work is performed by RTC modeling staff and the project consultant.

Budget:

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Funding Sources:
- Consolidated Planning Grant (95%) $ 332,500
- Local Funds (5% match) $ 17,500

Total FY18 Project Budget $ 350,000

Schedule and Deliverables:
• Updated model inputs, highway and transit networks.
• Model results as needed to support RTP amendments or model data needs of UPWP studies.
• VISSIM modeling results for corridors and/or intersections.
• Tests of air quality emissions projections using ‘MOVES’.
• Report detailing modeling results.
• Modeling work is an on-going activity.
Sub-Task 201-2206-18 - Annual Population Forecast

**Purpose:** To provide long-term population forecasts for the Southern Nevada region. Results of this task will be used as control totals for development of the RTC Planning Variables, which are inputs to the RTC Travel Demand Model.

**Previous Work:**
- Annual Population Forecasts are an on-going activity.

**Methodology:**
- Coordinate with local jurisdictions, SNWA, and CBER to develop regional population projections, report progress, and discuss issues raised during the planning process.
- The work is performed by RTC modeling staff and the project consultant.

**Participating Agencies:**
- Clark County,
- City of Las Vegas,
- City of North Las Vegas,
- City of Henderson,
- City of Boulder City,
- City of Mesquite,
- Nevada Department of Transportation,
- Southern Nevada Water Authority,
- Clark County School District,
- Las Vegas Convention and Visitors Authority,
- University of Nevada, Las Vegas,
- Regional Transportation Commission of Southern Nevada (Lead Agency)

**Budget:**

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**Funding Sources**
- Consolidated Planning Grant: $ 13,300
- Local Funds (5% match): $ 700

**Total FY18 Project Budget:** $ 14,000

**Schedule and Deliverables:**
- Population Forecasts: Long-Term Projections for Clark County, Nevada.
- Completion Date: June, 2018
Sub-Task 201-2680-18 - Regional Traffic Counts

Purpose:
To collect traffic counts for approximately 205 locations in Clark County area to validate the RTC Travel Demand Model, augment existing Nevada Department of Transportation (NDOT) traffic counts program and provide supporting information for traffic operational improvements in Southern Nevada.

Previous Work:
- Regional Traffic Counts are an on-going task.

Methodology:
- Specify count locations in Clark County with the assistance of NDOT.
- Determine optimal counter tie points and document locations.
- Prioritize count locations according to greatest need for supporting data.
- Collect volume counts at the specified locations under the standards prescribed in the Federal Highway Administration Traffic Monitoring Manual.
- Prepare a report documenting the process and the results.
- Transmit the collected data to NDOT for inclusion in their Annual Count Report.
- The Regional Transportation Commission of Southern Nevada (Project Manager) and a project consultant complete the regional traffic counts.

Participating Agencies:
- Regional Transportation Commission of Southern Nevada (Lead Agency)
- Nevada Department of Transportation

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Schedule and Deliverables:
- Monthly reports that document the process and traffic count information for counted locations in that month.
- Completion Date: June, 2018
Sub-Task: 201-9100-18 - Regional Non-Motorized & Parking Infrastructure Inventory

Purpose:
Planning activities and modelling efforts led by the RTC and local jurisdictions would be greatly enhanced from access to validated data for existing on-street parking, bicycle facilities, and pedestrian sidewalk conditions within the Las Vegas Valley region. Data on existing infrastructure is typically updated as new planning projects are completed. However, often times, datum is not provided in GIS, detailed dimensions are limited, and details are estimated from aerial imagery and not field verified or validated. This information would provide important data for future activities, including:

1. Tracking FAST Act performance measures,
2. Factoring in a Pedestrian Environment Factor (PEF) for the RTC model,
3. Measuring progress of Complete Street efforts,
4. Establishing baseline data and structure for future updates, and
5. Providing critical data for planning activities and project evaluations.

The RTC provides informational services for the region, and maintaining an inventory of non-motorized and parking infrastructure will greatly improve future planning and forecasting activities.

Previous Work:
- Southern Nevada Strong (SNS) Regional Plan (2015),
- RTC Regional Bicycle and Pedestrian Plan (2017),
- SRTS School Walk Audits (2017),
- RTC Bicycle Gap Analysis (2015),
- Regional Pedestrian Infrastructure Inventory and Analysis (2014)

Methodology:
- Convene an RTC working group to identify data needs and features for GIS database, including but not limited to width, material, length, condition, maintenance entity, and owner.
- Interview local jurisdictions to identify additional data needs and access existing data available.
- Review existing data available for infrastructure inventory, including previously completed plans and studies.
- Convene RTC working group to verify draft GIS database and approve methodology for data collection and verification.
- Conduct data collection, which may include aerial investigations and field verifications.
- Prepare a written report summarizing the methodology for data collection and data validation.
- Coordinate with local jurisdictions to prepare a detailed and comprehensive list of proposed projects to identify potential near term updates to the database.
• Review final database and methodology report with RTC working group and incorporate any revisions or updates as needed.

Participating Agencies:
• Regional Transportation Commission of Southern Nevada (Lead Agency),
• Clark County,
• City of Henderson,
• City of Las Vegas,
• City of North Las Vegas,
• City of Boulder City,
• City of Mesquite,
• Nevada Department of Transportation

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**Funding Sources**
- Consolidated Planning Grant (95%) $152,000
- Local Match (5%) $8,000

**Total FY18 Project Budget** $160,000

Schedule and Deliverables:
• Completed GIS database including detailed existing conditions features for on-street parking, bicycle facilities and sidewalks for all public rights-of-way in the RTC Planning Area.
• Completed Methodology Report
• Completion Date: June 2018
Sub-Task 201-9105-18 - Dynamic Traffic Assignment (DTA) Model Development

**Purpose:**
The DTA model will be capable of using both mesoscopic and microscopic simulations to determine network demand and capacity. It will be designed to take into account the geographic and geometric attributes of the planning network, including the geometrics of roadways, intersections and traffic signal timings. All of these play crucial roles in determining interactions between time-varying travel demand and roadway capacities. The RTC DTA model will have greater capabilities and flexibility in selecting the most effective DTA solution for each task to be performed. This will be a multi-resolution system providing varying levels of detail from the current TransCAD road network down to the level of individual vehicles moving in the traffic stream.

**Previous Work:**
- RTC 2005 Household Travel Survey;
- RTC 2006 Hotel/Visitor Travel Survey;
- RTC 2009 model update;
- FY 2013-2035 Regional Transportation Plan (RTP) modeling results, including modifications and amendments;
- FY 2013-2016 Transportation Improvement Program (TIP) modeling results and amendments;
- Travel Demand Modeling run results for various corridor studies by either consultants or RTC;
- Travel Demand Modeling run results by consultants in coordination with RTC modeling and technical support.

**Methodology:**
The proposed approach will provide the tightest integration of the DTA with the TransCAD regional Planning model and a range of model variants suitable for every possible application need. The DTA using the TransModeler will be readily switchable between fully microscopic and hybrid modes depending on the application at hand, and the TransDNA DTA will continue to serve RTC primarily as a planning or preliminary engineering instrument for high-level analysis or for trimming larger numbers of project alternatives to a shorter list of candidates for further analysis with the TransModeler DTA. The tasks include but not limited to:
- Refine and finalize the scope and detailed tasks, the project plan, schedules, milestones and deliverables.
- Review the existing RTC TransCAD model, data needs and make recommendations about the type of DTA model. An in-depth review of the existing TransCAD model and suggested enhancements will benefit the demand model itself or its use to support the DTA model. A priority in this effort will also be a careful assessment of data needs and data availability for the project. Travel time data from FAST and INRIX, O_D data from AirSage, NDOT travel counts in 15 minutes bin and traffic signal timing data for a great many road segments are critical to support the model calibration and validation. Based
upon the data reviewed and the RTC priorities, the details of the DTA to be developed will be recommended. Among other things, the recommendation will include the type of DTA model appropriate for the planning and operations challenges faced by the Las Vegas region; the type and amount of data needed to support an effective model; and estimates of the staff and resources needed to support and maintain an effective program.

- Development, Calibration and Validation of the Regional DTA Model. Under this task, the regional DTA will be implemented, calibrated, tested and validated. The detailed steps will include network refinement, assemble calibration and validation data, develop trip tables by 15 minute interval, traffic signal optimization, trial simulation with DTA runs, and finally the calibration of the DTA model
- Additional DTA Model Enhancements and Applications, and RTC on-site Staff Training.
- Additional Support As-Needed.

Participating Agencies:
- Regional Transportation Commission of Southern Nevada (lead agency)
- City of Henderson,
- City of Las Vegas,
- City of North Las Vegas,
- Clark County
- Nevada Department of Transportation

Budget:

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Funding Sources

- Consolidated Planning Grant (95%) | $ 342,000
- Local Match (5%) | $ 18,000

Total FY18 Project Budget | $ 360,000

Schedule and Deliverables:

- Evaluation of data sets and compatibility with DTA Model Development
- Integration analysis of DTA model and the travel demand model
- Calibration and testing
- Completion Date: June 2019
Sub-Task 201-9210-18 - Activity Based Model

Purpose:
Activity based modeling (ABM) is a type of travel demand model that produces the simulation result at the discrete level, as oppose to the aggregated zonal solutions from the traditional 4-step models. The discrete level solutions are more sensitive to transportation policy, pricing, and demographic changes in the study area. The pilot project is to assess the model applications by some leading MPOs and assist the staff to better understand how RTC can benefit from the ABM, and to help RTC to build the framework for the future ABM development projects.

Previous Work:
- RTC 2014 travel demand model update and enhancement with the data from:
  a. RTC 2014 Household Travel Survey
  b. RTC 2014 On-Broad Transit O-D Survey
  c. RTC 2014 Hotel/Visitor Travel Survey
  d. NDOT 2014 count data
  e. 2014 AirSage data by designed TAZ for the model calibration
  f. FAST travel time data and
  g. INRIX travel time data.

Methodology:
This project is ABM phase 1 and is a pilot study to assess the data availability, data preparation efforts and a feasible type of Activity Based Model for our region. Before the ABM phase-2 development is started, some preparation work can be done, including population synthesizer and the vehicle ownership model. Both components are essential to develop the ABM. The tasks include the following but not limited to

1. Activity based Model Assessment
   a. Potential model components, non-motorized modes, freight, visitors, university.
   b. How does ABM integrate with a Dynamic Traffic Assignment model
2. Identifying the transportation planning needs
   a. What are the planning priorities for the SNV area, how can ABM address them?
   b. Identify the planning challenges in the SNV, how can ABM address them?
   c. Discussing the model design and the components
   d. What are the data requirements for different model options
3. Action Plan and documentation
   a. Develop a Data Matrix
   b. In-house model preparation list, including the data collection, processing, and model estimations
   c. Recommendations
   d. Project schedule and costs estimation with different model options
4. Data collection, input development, population synthesizer and development of a vehicle ownership model.
Participating Agencies:
   • Regional Transportation Commission of Southern Nevada

Budget:

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Total FY18 Project Budget $ 110,000

Schedule and Deliverables:
   • This is a two –year project, completion date is June 2019
Sub-Task 201-9215-18- Land Use Scenario Planning Analysis

Purpose:
This will be an in-house effort to do land use scenario planning for transportation planning by using UrbanSim Cloud. UrbanSim Cloud Platform provides a web browser user interface, making it possible to begin using UrbanSim quickly without extensive hardware and software requirements and extensive staff time to prepare complex data sets and model calibrations. It provides pre-built and calibrated UrbanSim models that require a few local input files only. It is a cost-effective way to run the models. An interactive modeling Urban Development for land Use, Transportation, and environmental planning will play an important role and will be useful for planning process for our next RTP and regional transit planning as well.

Previous Work:
• Rapid Policy Analysis Tool –An in-house development and will be used in the 2017 RTC Amendment process
• Envision Tomorrow –software practice and some basic trainings

Methodology:
• Started with UrbanSim Cloud subscription and a self-learning approach with the model.
• Develop base local data files required by the model and test the model runs
• Conduct Regional Land Use Working Group meetings and meet with other representatives from local entities to get input for scenario assumptions
• Develop land use scenarios and scenario input files.
• UrbanSim Cloud model simulation runs with all scenarios.
• Convert the UrbanSim model output into the input to regional travel demand model to assess the scenario land use impacts on transportations and interactional relationships.
• Present the model results to local entities to demonstrate the relationships between land use and transportation, promote and support local entities’ land use scenario planning efforts that will also benefit RTC’s next RTP

Participating Agencies:
• Regional Transportation Commission of Southern Nevada
Budget:

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Schedule and Deliverables:

- The completion date is June 2019
Sub-Task 201-9220-18- GIS Analysis and Visualization-

**Purpose:**
The latest Federal Planning Rule for Metropolitan Planning calls for increased use of visualization to communicate planning-related information and concepts. This task will be an ongoing in-house process to improve and maintain the Regional Transportation Commission’s GIS mapping and visualization capacity, and deploy that capacity to better meet FHWA and FTA requirements.

**Previous Work:**
The Regional Transportation Commission has an established GIS program, and GIS has been an integral part of the agency’s required planning processes.

**Methodology:**
Increased use of GIS for analysis and visualization will require the following basic steps:
- Maintain transportation-related data layers;
- Maintain and operate an online Project Assessment Tool (PAT) that allows analysis of planned or potential transportation projects;
- Develop GIS-based analysis or visualization materials as needed or requested by RTC agency stakeholders.

**Participating Agencies:**
- Regional Transportation Commission of Southern Nevada

**Budget:**

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**Funding Sources**
- Consolidated Planning Grant (95%) | $ 23,750
- Local Match (5%) | $ 1,250

**Total FY18 Project Budget** | $ 25,000

**Schedule and Deliverables:**
- GIS Analysis and Visualization is an on-going task.
Sub-Task 201-9110-18 – Las Vegas Millennial Study

Purpose:
The purpose of this study is to conduct a millennial-targeted stated preference survey on housing preferences in the Las Vegas Valley, including geographic location, housing type and amenities, urban versus suburban characteristics, and priorities and constraints, with a focus on transportation (but multidisciplinary in nature). Several promising news articles and research journals have shown that a significant portion of millennials are currently locating themselves in the urban core (nationally) in order to avoid an auto-centric life-style, and instead resort to other non-motorized and even shared-ride transport services (e.g., walking, biking, taking transit, telecommuting, and ride-hailing).

The results of the study will provide city planners, transportation engineers, and policy makers with a map of specific directions on how their planning, design, funding, and policies could be shaped in the coming years in order to achieve the desired life style of their constituents. A sustainable future that provides a high quality of life relies heavily on the housing preferences of the millennial generation, and whether or not they will continue the sprawling pattern of suburban neighborhood lifestyles or instead be drawn to denser, mixed-use communities.

Previous Work:
- Household Travel Survey;
- Community Mobility Study (Phases 1 and 2);
- RTC Complete Streets Study;
- RTC Transit Mode Options Study;
- Transit Node Analysis Study;
- Regional Transportation Plan;
- Southern Nevada Strong

Methodology:
- The first step will be to research and identify the specific Millennial population that is to be targeted and sampled (i.e., a stratified sample);
- Next, a survey design will have to be established that includes appropriately phrased questions that objectively meet the stated goals and objectives of the study (without bias);
- The main survey will initially be deployed on college campuses throughout the Las Vegas valley region, including UNLV and the College of Southern Nevada, and an appropriate sample size would need to be calculated a priori;
- In addition to launching a paper-based survey, a web-based survey platform can simultaneously be created that could potentially reach other parts of the valley;
Participating Agencies:
- City of Henderson,
- City of Las Vegas,
- City of North Las Vegas,
- Regional Transportation Commission of Southern Nevada,
- University of Nevada, Las Vegas (UNLV),
- College of Southern Nevada

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**Funding Sources**
- Consolidated Planning Grant (95%) $ 23,750
- Local Match (5%) $ 1,250

**Total FY18 Project Budget** $ 25,000
**Task 202: Long Range Transportation Planning**

The next update of the Regional Transportation Plan will need to address a number of issues in more depth than is supported by current knowledge, data and policies.

This task covers a number of key MPO practices related to the provisions of MAP-21 & the FAST Act and related topics of regional concern that RTC anticipates addressing more extensively in future long-range planning activities, including the next RTP.

Activities include:

- Development and application of visioning techniques as part of efforts to engage the community in RTP development;
- Creation of a framework for performance-based planning in accordance with MAP-21 and the FAST Act;
- On-going coordination of transit with human services;
- Development of policies and proposals related to bicycle and pedestrian planning;
- Development of policies and proposals related to the various aspects of transportation safety planning.
- Some of these activities will require professional support from outside consultancies but the greater part of the work will be performed with RTC resources. The Task 202 budget reflects this.

Specific Sub-Tasks are:

- 202-3325, Performance-Based Planning
- 202-3710, Bicycle and Pedestrian Planning
- 202-3715, Transportation Safety Planning
- 202-9005, Regional Transportation Plan & Visioning
- 202-9035, High Capacity Transit System Development Planning Study

**Task 202, 2018 Budget**

The following costs are included under Task 202:

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Sub-Task 202-3325-17: Performance-Based Planning

Purpose:
Advance the current practices in data management, documentation, monitoring and analysis to meet the performance management goals and objectives of FAST Act.

Previous Work:
• Access2040, Regional Transportation Plan for Southern Nevada 2017-2040 (2017)
• Transportation Improvement Impacts (Appendix 4) to the FY 2013-2035 Regional Transportation Plan (RTP);
• Las Vegas Valley Arterial Development Study (2009);
• RTC FAST Dashboard;
• NDOT Crash GIS database

Methodology:
• Research federal statutes, regulations, and guidance related to performance measures.
• Research examples of performance measure objectives and targets implemented by other regional transportation planning agencies.
• Coordinate with NDOT, RTC Transit, and RTC FAST on goals, objectives, and targets to meet required U.S. DOT performance measure regulations.
• Document existing RTC performance measures and objectives by category; such as highway, arterial, transit, multimodal, safety, freight, and sustainability.
• Analyze baseline conditions, trends, and expected system performance.
• Identify and analyze potential alternative transportation scenarios to meet performance measure objectives and targets.
• Analyze performance outcomes based on anticipated funding levels.
• Identify additional data in Southern Nevada that is readily available to support supplementary performance measures and objectives.
• Develop, update, and maintain a database of the selected performance measure objectives and targets as part of an on-going, long-term effort.
• Develop and document best practices for monitoring and evaluation procedures and standards.
• Monitor system performance relative to identified targets.
• Evaluate observed impacts of investments and strategies.
• Develop statistics and graphics using the performance measure objectives and targets.
• Present the selected performance measure objectives to selected RTC committees.
• Develop recommendations regarding linkages between the selected performance measures, the Congestion Management Process (CMP), and project prioritization processes.
Participating Agencies:
- Regional Transportation Commission of Southern Nevada (Lead Agency)
- Clark County
- City of Las Vegas
- City of North Las Vegas,
- City of Henderson,
- City of Boulder City,
- Nevada Department of Transportation,
- Private sector freight industry partners

Budget:

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Funding Sources
- Consolidated Planning Grant (95%) $ 76,000
- Local Match (5%) $ 4,000

Total FY18 Project Budget $ 80,000

Schedule and Deliverables:
- Analysis of performance-based planning and programming approaches implemented by other regional transportation planning agencies nationwide.
- A report documenting the establishment and integration into the RTC metropolitan planning process of a performance-based approach to transportation decision making in support of national goals.
- Database of the selected performance measure objectives and targets.
- Recommendations for performance measure linkage to the CMP and RTC project prioritization processes.
- Performance Based Planning is an on-going task.
Sub-Task 202-3710-18 - Bicycle & Pedestrian Planning

Purpose:
This task includes planning activities related to the continued efforts in the development and expansion of an interconnected regional bicycle and pedestrian transportation network, and the evaluation of the key role these networks play in the development and implementation of the Southern Nevada ‘Complete Streets’ strategy. Pedestrian safety has become an increasingly critical concern in the region, and training for improved pedestrian safety and awareness is included in this task item.

Previous Work:
- Complete Streets Design Guidelines for Livable Communities (2012),
- Regional Bicycle Network Gap Analysis (2014),
- Southern Nevada Transportation Safety Plan,
- Southern Nevada Strong Regional Plan (2015),
- Bicycle and Pedestrian Plan (2008), RTC Regional Transportation Plan for FY 2013–2035

Methodology:
- Maintain and implement the Regional Bicycle and Pedestrian Plan (2017)
  - Develop implementation strategies and work with local partner agencies to advance recommendations from the Regional Bicycle and Pedestrian Plan;
  - Update the RTC website to include new bicycle and pedestrian information and coordinate with RTC Communications staff on improving the RTC Regional Bicycle Network web page.
- Continue development of the Southern Nevada ‘Complete Streets’ initiative, which includes:
  - Coordination with the jurisdictional planning/community development departments in supporting their Complete Streets planning efforts and incorporation of Complete Streets policies into their plan documents.
  - Coordination with multiple stakeholders in development of an RTC Complete Streets Funding Program, which targets set-asides for certain fund sources and determines project eligibility.
  - Development of a regional pedestrian safety and awareness training program.
Budget:

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Schedule and Deliverables:

- Additional bicycle and pedestrian planning, safety and awareness campaigns, and inter-jurisdictional coordination are an on-going task.
Sub-Task 202-3715-18 -
Transportation Safety Planning

Purpose:
To participate in the Strategic Highway Safety Plan (SHSP) & the Zero Fatalities Goal

Previous Work:
• RTC Pedestrian Safety Action Plan (2009),
• RTC Regional Transportation Plan for FY 2013–2035 (2012),
• RTC Bicycle and Pedestrian Plan (2008 & 2016 Update),
• Southern Nevada Transportation Safety Plan (2015).

Methodology:
• RTC will continue to participate in the implementation of the Nevada State Strategic Highway Safety Plan (SHSP) to attain its Zero fatalities goal and further move towards implementation of the Southern Nevada Transportation Safety Plan. RTC staff participates in the Nevada Executive Committee on Transportation Safety (NECTS) overseeing the SHSP. RTC staff participates in Technical Working Group advising the NECTS on transportation safety in the development, update, and implementation of the SHSP. Other transportation safety committees in which the RTC staff involved are the Traffic Records Coordinating committee (TRCC) and Pedestrian Task Force.

Participating Agencies:
• Regional Transportation Commission of Southern Nevada (Lead Agency),
• Nevada Department of Transportation,
• City of Las Vegas,
• Clark County,
• City of North Las Vegas,
• City of Henderson

Budget:

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Schedule and Deliverables:

- Interim report on task elements
- Final Transportation Safety Plan
- Final Bicycle and Pedestrian Safety Action Plan, completion date: June 2018
Sub-Task 202-9005-18
Regional Transportation Plan & Visioning

Purpose:
The RTC implemented an extensive outreach effort to engage the public on development of a transportation vision for Southern Nevada in 2016. The Visioning Process helped gauge public sentiments on the transportation priorities for the region. These results of the Visioning Process influenced development of the Access2040 Regional Transportation Plan (RTP) and Transportation Improvement Program (TIP).

Additionally, the results are anticipated to influence the processes by which the RTC will prioritize projects in the future for funding as well as measure their performance. The results of this public outreach activity will be incorporated into the Regional Transportation Plan. Work with project sponsors will also be required in order for the document to reflect regional priorities. The development of the RTP and TIP will follow the Public Participation Plan to ensure the public is given the opportunity to stay engaged prior to approval.

Previous Work:
- RTC Transportation Improvement Program for FY 2017–2021 (2017);
- RTC Public Participation Plan (amended in 2012);
- Southern Nevada Transportation Safety Plan (2015);

Task Elements:
- Develop a revision to the Access2040 RTP that incorporates the following changes and updates:
  - New federally-funded projects that fully subscribe new funds available under the FAST Act;
  - New regionally-significant local projects that will be funded with fuel revenue indexing passed by voters in November 2016; and
  - Other changes and updates as needed to implement best planning practices related to long-range transportation planning.
- Develop a complete set of transportation-related indicators that will show how the Southern Nevada region is implementing the Access2040 RTP;
- Facilitate community outreach meetings, workshops, charrettes, or other public participation opportunities;
- Prepare materials for public outreach in both English and Spanish including text and graphics on the website, online and/or printed surveys, agenda materials, media releases, topic papers, fact sheets, and mailings.
- Refine project prioritization process by synthesizing the results of the visioning process as well as information from key stakeholders to develop a project prioritization process.
• Develop different performance measures and metrics by which to assess the state of affairs as it relates to transportation for the region.

Participating Agencies:
• Regional Transportation Commission of Southern Nevada,
• Nevada Department of Transportation,
• City of Las Vegas,
• Clark County,
• City of North Las Vegas,
• City of Henderson,
• City of Mesquite,
• City of Boulder City

Budget:

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Sub-Task 202-9035-18 -
High Capacity Transit System Development Planning

Purpose:
With growing regional interest in high capacity transit (HCT) to serve residents and visitors, the RTC seeks to conduct a study that will provide a coordinated and comprehensive approach for promoting sustainable transportation and transit supportive land use patterns.

HCT is transit service that can improve reliability and carry more people at higher speeds than a standard fixed route bus. Capacity can be expanded through increasing the number of vehicles, vehicle size, frequency, travel speed or a combination of these elements. There is a range of HCT services in use nationally and internationally including bus rapid transit (BRT), light rail transit (LRT), commuter rail, modern streetcar, and heavy rail (subway).

This task will provide RTC staff-level planning support for a larger study effort that will develop a HCT plan for Southern Nevada. Development of the HCT plan will be based on projected economic market analysis, future land use changes, corridor analysis, transportation modeling, stakeholder and public involvement, and an analysis of transit capital and operating costs. It is anticipated that this study will produce a recommended set of corridors, corridor miles, preferred HCT technology, and the optimal number of stations for a potential HCT system. This planned HCT network information will then enable the RTC and local agency partners to proceed with long-range land use planning to develop specific station area typologies and a potential future transit oriented development incentive program to ensure development patterns and densities can support HCT.

Previous Work:
- Maryland Parkway Environmental Assessment (2016);
- Transportation Investment Business Plan (2016);
- Southern Nevada Strong (SNS) Regional Plan (2015);
- Las Vegas Valley Long Range Transit Survey (2005);

Methodology:
RTC staff will manage the study to identify characteristics of the built environment and transportation corridors in Southern Nevada that may be compatible for HCT. Study findings will enable the RTC and regional partners to understand the scope of potential HCT investments, evaluate tradeoffs, and better conceptualize additional planning needs.
Task 1: Project Management
The RTC Project Manager will communicate regularly with the selected consultant and conduct monthly project management functions to ensure the project progresses according to schedule, within budget, and that deliverables meet the quality standards expected by the RTC and its partners. These functions include coordination with internal consultant staff, RTC and participating agency staff, as well as monthly progress reports, accounting and invoicing.

Task 2: Stakeholder Coordination
Assist in the coordination with other ongoing studies at the RTC, NDOT, and RTC local member agencies. RTC staff will coordinate with local agencies having experience in population and employment projections, redevelopment planning, comprehensive planning, and zoning issues will be important to ensure local factors are represented in the study methodology.

Task 3: Community and Public Involvement
This study necessitates coordinated outreach to the general public. RTC staff and the selected consultant will create and implement a public outreach strategy and assist the RTC in all matters related to public involvement (distributing public information, newsletters, presentation materials, briefings, meeting summaries, and information for posting on the RTC web site).

Task 4: Study Methodology and Data Collection
RTC staff will help document the existing regional transportation policy framework, and conduct research on national and international efforts to implement sustainable transportation strategies. The methodology will cover sustainability indicators and their means of measurement. The evaluation will include methods to forecast the impact of transit projects on these measures.

Task 5: Transit Supportive Land Use in Southern Nevada
By focusing compact development around transit stations, transit-supportive developments capitalize on public infrastructure investments and promote sustainability. Extensive research has been completed that identifies built environment characteristics necessary to support varying levels of HCT investment. The RTC seeks to consolidate this research, and verify (or develop) targets that are specific to the built environment attributes of Southern Nevada. This effort will help inform the stakeholder group and the public about the relationship between transportation and land use, and help establish the rationale for ranking potential HCT corridors.

Task 6: HCT Corridor Screening and Data Collection
One of the first study tasks that RTC staff will assist the consult with will be to identify priority HCT investments for transit corridors identified in the Regional Transportation Plan 2013-2035, Las Vegas Valley Long Range Transit Survey (2005), and by stakeholders.

Task 7: Prepare and Evaluate Land Use Scenarios
Up to two (2) alternative land use scenarios will be prepared. The two scenarios will be compared to each other and to a base case scenario.
The overall purpose of this task is twofold: 1) to determine the potential travel demand impacts associated with alternative land use scenarios along specified transit corridors; and 2) to determine the economic viability of each alternative land use scenario.

**Task 8: HCT Corridor Modeling**
Of the top ranked HCT corridors and those with appropriate land use characteristics from the scenario planning, RTC staff will help identify and describe conceptual HCT mode(s) and their respective project limits from the land use scenario analysis. Conceptual HCT modes identified should have a basis in local knowledge of the corridor, constraints, existing plans, transit supportive land use, HCT corridor screening, and stakeholder and public input.

**Task 9: HCT System Plan Scenarios**
Using information from the corridor modeling and the land use scenario analysis, RTC staff will assist the consultant in packaging the most promising conceptual HCT corridors together into a complete system of transit investments. Corridors that do not perform relatively well with the HCT corridor modeling will be excluded from further analysis and not included in HCT system plan scenarios.

**Task 10: HCT System Plan Scenario Cost Analysis**
RTC staff will review the consultant prepared capital and operating cost estimates for each HCT system plan scenario. Costs for each scenario should be presented to additionally understand the approximate cost for each individual HCT component proposed.

**Participating Agencies:**
- Regional Transportation Commission of Southern Nevada (Project Manager),
- Nevada Department of Transportation,
- RTC Local Member Agencies,
- UNLV Center for Business and Economic Research (CBER)

**Budget:**

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**Funding Sources**
- Consolidated Planning Grant (95%) $ 71,250
- Local Match (5%) $ 3,750

**Total FY18 Project Budget $ 75,000**
Schedule and Deliverables:

RTC staff will review an administrative draft of each deliverable prior to distribution for external review.

The RTC anticipates findings focused on transit supportive land use to be the following:
- HCT Supportive Land Use Transects in Southern Nevada
- Market Study and Employment Analysis Memorandum
- Land Use Scenario Modeling and Results
- Findings, Recommendations and Local Agency Tools/Guidebooks

End Date: June 2019
Task 301: Multi-Modal Transportation Studies

While the primary focus of the planning program in the coming year will be on tasks supporting the development of the next Regional Transportation Plan update, RTC maintains a robust program of planning studies to assist RTC and its partner agencies in framing solutions to emerging transportation challenges across the region.

Activities include:

- Studies that support the implementation of “complete street” concepts in various local jurisdictions and circumstances – often these studies also have a significant safety component;
- Working with the Clark County School District to improve the planning of access to schools in the interests of improving the mobility and safety of students;
- Further developing our undertaking of freight traffic and the need for targeted investments to support freight movement;
- Assisting Clark County with a review of the planning process as it relates to parking provision;
- RTC has supported a local initiative to develop a more sustainable regional planning framework using a Grant issued under the Sustainable Communities Program of the US Department of Housing and Urban Development. The UPWP includes a task to study the potential to implement this framework in a corridor where possible transportation capital improvements were studied under the 2014 UPWP;
- Assisting the City of Mesquite in a review and update of the way it reviews the transportation impacts of proposed developments.

Many of these activities are being undertaken by outside consultancies under professional services contracts with RTC. The costs of these professional services contracts are included under Task 301. This Task also includes the RTC costs associated with the procurement of professional services contracts and their administrative and financial oversight.

Specific Sub-Tasks are:
301-9225, City of Las Vegas - Bruce Street Green and Complete Street Study
301-9230, City of North Las Vegas – North Las Vegas Citywide Pedestrian and Bicycle Plan
301-9235, RTCSNV - Pedestrian Comfort Study and Demonstration Project
301-9240, Boulder City – River Mountain Loop Trail Access Improvements
301-9245, City of Henderson - School Trip Generation and Siting Study
301-9250, RTCSNV - Livable Centers Study
301-9255, RTCSNV – Economics of Bicycling in Clark County
301-9260, RTCSNV – Impacts of Emerging Transportation Technologies on Transit
301-9015, City of Henderson Americans with Disabilities Act Transition Plan
301-9025, Clark County Rural Streets Standards Study
301-9030, Northeast Valley Transportation Network Study
301-9115, Planning and Infrastructure Needs for Emerging Transportation Technologies
301-9125, RTCSNV – Boulder Highway Multimodal Transportation Investment Study
Task 301, 2018 Budget
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Sub-Task 301-9225-18 -
Bruce Street Green and Complete Street, Charleston Blvd. to North Las Vegas Blvd-

Purpose:
The objective of the study is to determine the feasibility of a Complete Street on Bruce Street between North Las Vegas Blvd and Charleston Blvd. The addition of bike lanes and pedestrian improvements will connect Downtown North Las Vegas with the Cashman Center, Downtown Las Vegas, the Spencer Greenway Transportation Trail, and south to UNLV. The study should build on the conceptual designs developed with the EPA Making a Visible Difference in Communities Bruce Street study, develop feasible connections to key areas within the corridor (including transit hubs and redevelopment areas), explore public space opportunities under the US 95 freeway, and examine circulation and pedestrian safety improvements at the intersections of the three CCSD schools along the corridor.

Previous Work:
- 2017 - Spencer Greenway and UNLV Bike Plan (RTC);
- 2016 - Bruce Street - Making a Visible Difference in Communities (Environmental Protection Agency and RTC)
- 2015 - Spencer Greenway Feasibility Study (National Parks Service/RTC)
- 2015 - City of Las Vegas Downtown Master Plan
- 2014 - Rafael Rivera Walkable Community Plan (City of Las Vegas)
- City of North Las Vegas – Complete Streets Policy (underway)
- City of North Las Vegas – Complete Streets Corridor Ranking Study (UPWP)
- City of North Las Vegas – Master Plan of Streets and Highways
- City of North Las Vegas – North 5th Street Transit Supportive Concept Plan
- Southern Nevada Regional Planning Coalition – Southern Nevada Strong Regional Policy Plan
- Clark County School District / RTC – Safe Routes to School Walk Audits
- RTC – Northeast Valley Transportation Network Study (underway)
- RTC – Truck Arterial Route Study (underway)
- RTC – Southern Nevada Regional Goods Movement Master Plan
- RTC – Regional Schools Multimodal Transportation Access Study
- RTC – Decatur Boulevard Transit Study
- RTC – Regional Bicycle Gap Analysis
- RTC – Regional Bicycle and Pedestrian Plan for Southern Nevada (underway)

Methodology:
- Based on prior studies and existing conditions, develop alignment alternatives for a multi-modal complete street along the Bruce Street Corridor. It is expected that the areas already analyzed by the EPA Bruce Street study will further refined.
- Develop alternatives showing connections to the Spencer Greenway Trail, US 95 Trail, Cashman Center and Downtown North Las Vegas.
• Develop strategies for interagency coordination, developing and funding public/green spaces under the US 95 Freeway
• Where applicable, develop recommendations for pedestrian and auto circulation enhancements at locations adjacent to CCSD facilities.
• Develop a draft and final report with short and long term recommendations for the corridor. The report should also describe the definition and evaluation of alternatives, preliminary cost estimates, description of right-of-way needs, recommendations, description of recommended project concept and financing mechanisms, and cost estimates for implementation and operating support.
• Explore connections to transit stops at Charleston, Fremont, Lake Mead and other high traffic areas.

Participating Agencies:
• City of Las Vegas
• City of North Las Vegas,
• Clark County School District,
• Nevada Department of Transportation

Budget:

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Funding Sources

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Total FY18 Project Budget $ 155,000

Schedule and Deliverables:

Develop a draft and final report with short and long term recommendations, including any applicable presentations. Ideally, the report would serve as a template design for other Complete and Green streets. Report topics and recommendations should address the elements identified as "Task Elements."

Start Date: August, 2017.
End Date: June, 2018.
Sub-Task 301-9230-18 – North Las Vegas Citywide Pedestrian and Bicycle Plan

Purpose:
The objective of the North Las Vegas Citywide Pedestrian & Bicycle Plan (CPB) is to design a comprehensive network of active transportation routes and establish corresponding design criteria, guidelines, goals, objectives, and policies. This study will be focused on the City of North Las Vegas.

Previous Work:
- City of North Las Vegas – Complete Streets Policy (underway)
- City of North Las Vegas – Comprehensive Trails and Bikeways Master Plan
- City of North Las Vegas – Complete Streets Corridor Ranking Study
- City of North Las Vegas – Northern Beltway Trail Alignment and Connectivity Study
- City of North Las Vegas – Major Downtown Corridor Study
- Southern Nevada Regional Planning Coalition – Regional Open Space Plan
- Southern Nevada Regional Planning Coalition – Southern Nevada Strong Regional Policy Plan
- Southern Nevada Health District – Trail Usage Data from Neon to Nature Way-finding Program
- CCSD – Safe Routes to School Walk Audits
- RTCSNV – Regional Schools Multimodal Transportation Access Study
- RTCSNV – Decatur Boulevard Transit Study
- RTCSNV – Regional Bicycle Gap Analysis
- RTCSNV – Regional Bicycle and Pedestrian Counts

Methodology:
- Review existing information, planned projects, maps and relevant studies
- Review and update design criteria, goals and policies included in the City’s Comprehensive Trails and Bikeways Master Plan (2011)
- Identify employment, commercial, recreational and civic destinations within the City and within southern Nevada
- Develop methodology for facility selection and route prioritization
- Develop a new Active Transportation Map with existing facilities and planned facilities
- Develop information and materials for the City of North Las Vegas website regarding the existing and planned bicycle, trail and sidewalk system including a map and graphics.
- Develop a Citywide Pedestrian and Bicycle safety and awareness outreach program.
- Create a stakeholder outreach program.
- Final report and presentation(s)
Participating Agencies:
- City of North Las Vegas
- City of Las Vegas,
- Clark County,
- Regional Transportation Commission of Southern Nevada,
- Clark County School District, Southern Nevada Health District,
- Outside Las Vegas Foundation

Budget:

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**Funding Sources**

| Consolidated Planning Grant (95%) | $ 149,625 |
| Local Match (5%)                 | $ 7,875   |

**Total FY18 Project Budget** $ 157,500

Schedule and Deliverables:

Develop and release a citywide Pedestrian & Bicycle Plan for the City of North Las Vegas by June, 2018.
**Sub-Task 301-9235-18 - Pedestrian Comfort Study and Demonstration Project**

**Purpose:**
There are many challenges faced by pedestrians attempting to navigate major roadways or access the transit system. This study will analyze conditions at a variety of locations and contexts to better understand how pedestrians interact with roadways, and from that identify treatments to increase comfort and safety. For instance, pedestrians will be less likely to cross wide rights-of-ways against the signal if there is safe refuge from traffic and protection from the weather. Similarly, individuals will be more comfortable waiting for the bus with adequate shade and seating.

**Previous Work:**
- Regional Bicycle and Pedestrian Plan;
- City of Henderson ADA Transition Plan;
- School Walk Audits;
- Regional Pedestrian Infrastructure Inventory and Analysis (2014) and others

**Methodology:**
- Identification of issues,
- Development of countermeasures

**Participating Agencies:**
- Clark County,
- Regional Transportation Commission of Southern Nevada,
- City of Henderson,
- City of Las Vegas,
- City of North Las Vegas,
- Nevada Department of Transportation

**Budget:**

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**Total FY18 Project Budget** $ 207,500
Schedule and Deliverables:

A comprehensive list of treatments used to enhance the pedestrian environment.

Start Date:  August, 2017
End Date:  June, 2018
Sub-Task 301-9240-18 -
River Mountain Loop Trail Access Improvements

Purpose:
The Southern Nevada Strong Regional Plan emphasized multiple modes of transportation and the redevelopment of underutilized land along key corridors. This project will develop connections to existing regional bike trails, walkways and roads that support ongoing construction of a new railroad museum.

Previous Work:
- The State Public Works Board contracted with LGA to prepare architectural plans for the new museum building structure.
- Boulder City, with the support of RTC, contracted with the CA Group, Inc. to prepare complete street plans for Boulder City Pkwy from Gingerwood St. to Buchanan Blvd.

Methodology:
- Create working group of stakeholders,
- Conduct outreach events,
- Develop alternatives,
- Prepare recommendations,
- Identify possible construction funding sources.

Participating Agencies:
- Regional Transportation Commission of Southern Nevada
- Boulder City,
- State Public Works

Budget:

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Schedule and Deliverables:
Draft and Final Reports will be prepared regarding access improvements to and from the River Mountain Loop trail into Boulder City. Presentations will be made to the RTC Board.
and the City Council of Boulder City on how the study integrates with existing and planned transportation facilities.

Start Date: August, 2017

End Date: June, 2018.
Sub-Task 301-9245-18 -
School Trip Generation and Siting Study

Purpose:

Commonly used trip generation rates do not appear to accurately reflect the traffic impacts of local public, private and charter schools. For instance, charter schools do not draw from surrounding neighborhoods in the manner that public schools do, as a result there is a much higher rate of students arriving and departing by car. Research is needed to better understand the amount of traffic actually generated by local schools and the impact on the surrounding infrastructure. This research will be utilized to create effective development standards to more adequately handle the siting, queuing, parking, and street traffic.

Previous Work:

• Regional Schools Multimodal Transportation Access Study (2015);
• Various studies conducted nationally regarding current school trip generation rates

Methodology:

• Data collection,
• Analysis,
• Final Report

Participating Agencies:

• City of Henderson,
• Clark County,
• City of Las Vegas,
• City of North Las Vegas

Budget:

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Funding Sources

| Consolidated Planning Grant (95%) | $149,625 |
| Local Match (5%)                  | $7,875   |
| **Total FY18 Project Budget**     | **$157,500** |
**Schedule and Deliverables:**
The main deliverable will be a report of locally-developed school-focused trip generation, queuing and parking rates (similar to the Resort/Hotel and Casino rates generated and used locally).

Start date: August, 2017  
End date: June, 2018
Sub-Task 301-9250-18 - Livable Centers Study – Pilot Program

Purpose:
This is a pilot project to test out the potential success of a Livable Centers program in the Las Vegas Valley. The Livable Centers program is actively led by the Houston-Galveston Area Council and the Atlanta Regional Commission. The program partners with local jurisdictions to create plans for walkable, mixed use communities that are connected and accessible. These activity centers often provide diverse housing, employment, commercial and recreational land uses that maximize the efficiency of the transit system and transportation network and improve air quality. Livable Centers offer a range of transportation options including transit, walking and biking, and are accessible to people of all ages and abilities.

Previous Work:
• Southern Nevada Strong, Regional Transportation Plan - Access 2040
• Regional Bicycle and Pedestrian Plan,
• RTC Complete Streets Study,
• RTC Complete Streets Design Guidelines for Livable Communities.

Methodology:
• Issue a call for projects to local jurisdictions,
• Select FY18 pilot Livable Centers partner,
• Develop scope and issue RFP for consultant team,
• Select consultant team,
• Anticipated project tasks:
  o Task 1 - develop public participation plan and identify stakeholder committee,
  o Task 2 - Public outreach for initial feedback,
  o Task 3 - compile existing conditions,
  o Task 4 - recommendations for key issues,
  o Task 5 - public feedback on draft recommendations,
  o Task 6 - finalize plan and implementation strategy

Participating Agencies:
• Regional Transportation Commission of Southern Nevada,
• Local stakeholders to be determined
Budget:

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**Funding Sources**

| Consolidated Planning Grant (95%) | $ 251,750 |
| Local Match (5%)                  | $ 13,250  |
| **Total FY18 Project Budget**     | $ 265,000 |

**Schedule and Deliverables:**

The final deliverable is a Livable Centers Study plan document with proposed infrastructure improvements and redevelopment opportunities, as well as documented public support developed through outreach during the planning process. This will be a two year study, with one community being studied each year.

Start Date: August, 2017

End Date: June, 2019
Sub-Task 301-9255-18- Economic Impacts of Bicycling in Clark County-

Purpose:
This task includes the commission of a study to determine the economic impacts of bicycling on the southern Nevada area. The study would determine economic impact from the following cycling related activities:

- Cycling events,
- Cycling tourism,
- Bike and bike parts manufacturing,
- Bicycle sales
- Bicycle related-related clothing sales
- Bicycle related accessories sales
- Bicycle related convention and visitor activities
- Bicycle Outfitting and Tour Operations

Previous Work:
There has never been an economic impact study of this kind completed in the area. There are numerous studies that have been completed in the US which we will draw from for reference.

Methodology:

- Determine cycling’s economic base model for the region
- Identify and calculate cycling based export industries
- Identify and calculate cycling based tourism
- Identify and calculate cycling based federal and state spending on promoting cycling tourism
- Establish a Stakeholder Advisory Group (SAG) to help guide the development and information gathering for the study
- Online survey of non- bicycling residents
- Online survey of active bicyclists residents
- Determine the value residents place on using bicycle infrastructure
- Determine presence of active bicycle groups and organizations
- Determine benefits from avoided health care costs and reduced absenteeism

Participating Agencies:
- Regional Transportation Commission of Southern Nevada
- All local agencies
- Nevada Department of Transportation (Potential)
Budget:

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Funding Sources

| Consolidated Planning Grant (95%) | $ 147,250 |
| Local Match (5%)                 | $ 7,750   |
| Total FY18 Project Budget        | $ 155,000 |

Schedule and Deliverables:

- Determine the total value of cycling related expenditures for southern Nevada over the past calendar year
- This study will take 12 months to complete

Start Date: Fall 2017
End Date: June, 2017
Sub-Task 301-9260-18- Impacts of Emerging Technology on Public Transit Study-

Purpose:
Trends in emerging transportation technology, specifically autonomous vehicles, Transportation Network Companies (TNC), and the electrification of the automobile vehicle fleet, have the potential to significantly reduce the cost of transportation. These trends create both opportunities and challenges for public transit; this study will identify and attempt to quantify both. Much has been written about the potential of emerging technologies replacing traditional fixed route public transit, but no research is currently available to indicate when such a replacement may make financial sense. This study attempts to advance the understanding of the impacts emerging technology on public transit, and the specific implications it will have on the ability of transit to remain cost-effective.

Previous Work:
This study is expected to utilize existing RTC transit data (ridership and financial) and be completed concurrently to a separate RTC sponsored study examining regional planning implications of emerging technologies.

Methodology:
The study will identify both macro-level transportation technology trends, and their micro-level implications on the cost of transportation in Southern Nevada.

Participating Agencies:
- Regional Transportation Commission of Southern Nevada (Lead Agency),
- Clark County,
- City of Henderson,
- City of Las Vegas,
- City of North Las Vegas,
- City of Boulder City,
- City of Mesquite,
- Nevada Department of Transportation,
- Nevada Center for Advanced Mobility, and
- University of Nevada Las Vegas.
Budget:

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Funding Sources

| Consolidated Planning Grant (95%) | $ 147,250 |
| Local Match (5%)                  | $ 7,750   |

Total FY18 Project Budget $ 155,000

Schedule and Deliverables:

A final report with findings and spreadsheets for forecasting the cost-effectiveness of transportation modes.

Start Date: July, 2017
End Date: June, 2018
Sub-Task 301-9015-18 -
City of Henderson ADA Transition Plan

Purpose:
The objective of the City of Henderson ADA Transition Plan is to update and/or create a new plan to include the necessary assessment of public rights-of-way. Once the Public Rights-of-Way Accessibility Guidelines (PROWAG) are adopted by the Department of Justice, they will become enforceable standards under Title II of the ADA. The City of Henderson wants to take a proactive approach in understanding creating a sensible ADA Transition Plan that incorporates PROWAG.

Previous Work:
- ADA Working Group.

Methodology:
- Phase I, identify the disabilities of the general population of Clark County Nevada that affect mobility and public right of way use. Based on impact to the user and percentage of the population affected create a matrix of type of facility and priority for modifications. For example, are ambulatory ability or visual acuity disabilities more prevalent thus prioritizing projects like audible crossing equipment at signals versus rebuilding curb ramps?
- Phase II, prepare a sample transition plan for 3 or 4 representative areas on arterials and collectors. Examples of this would be the Downtown Water Street corridor, the Nevada State College area and Stephanie Street near the Galleria Mall.

Participating Agencies:
- City of Henderson,
- Regional Transportation Commission of Southern Nevada

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<td>Local Funds (5%)</td>
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| Total FY18 Project Budget     | $ 4,000 |
Schedule and Deliverables:
The study should help the City of Henderson in understanding the disabilities of the general population in Clark County, the items within Public Right of Way that impact them, and prioritization of the types of improvements.

End Date: June, 2018.
Sub-Task 301-9025-18 -
Clark County Rural Streets Standards Study

Purpose:
The purpose of the study is to determine the various types and locations of multimodal facilities in the public right-of-way that will provide alternative modes of transportation within the rural residential neighborhood bounded by the CC-215 Beltway to the north and west, Lone Mountain Road to the south and Durango Drive on the east. The County is also concerned with identifying safety improvements as a component to the design options and in general with respect to the overall needs of the RNP area.

Previous Work:
Clark County Minimum Design Standards for Non-Urban Roadways (2000); Clark County Transportation Element (2008); Clark County Trails Program/SNRPC Trail Program; RTC Regional Transportation Plan 2013-2035 (2012); RTC Complete Streets Design Guidelines for Livable Communities (2013)

Methodology:
- Research existing studies, land use plans, design standards for non-urban roadways, existing and proposed development-related documentation, and future transportation plans/projects for the area. Identify and evaluate roadways by width (60’, 80’, 100’).
- Identify existing and future roadway traffic volumes and project growth trends along east-west corridors of Lone Mountain Road, Ann Road, Centennial Parkway; and north-south corridors of Hualapai Way, Fort Apache Rd and Durango Drive. Include in the projections the completion of bridge projects along CC-215.
- Monitor and evaluate current pedestrian, bicycle and equestrian volumes. Conduct counts where data does not exist. Identify opportunities for safety improvements for all roadway users.
- Identify all impacts to users as a result of non-urban design standards, including roadway and shoulder maintenance, drainage, intersection safety and mobility including lighting.
- Conduct interviews with key staff from Clark County Departments impacted including Comprehensive Planning, Public Works, Commission District Liaison and Town Board members.
- Solicit public participation and input on study utilizing methods including but not limited to a Town Board presentation, community and business outreach meetings, social media, and online surveys featuring visual preference selection of any proposed design standard alternatives.
Participating Agencies:
Clark County and the Regional Transportation Commission of Southern Nevada

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Schedule and Deliverables:
- Prepare Draft study and evaluation plan presented to Clark County before proceeding with study.
- Prepare Final Draft Plan for feedback and comments.
- Technical memorandum summarizing each task.
- Public memorandum summarizing public outreach.
- Draft and Final document.
- Completion date: December, 2017
Sub-Task 301-9030-18 -
Northeast Valley Transportation Network Study

Purpose:
The Northeast region of the Las Vegas valley is poised to develop large amounts of warehouse and industrial park projects. The Apex Industrial Park, the Speedway industrial area, the auto auction properties, and Nellis AFB growth will contribute to the increase in road congestion. These changes will have a cumulative impact on the existing transportation network. In anticipation of further growth, a study to evaluate and program future transportation projects in the Northeast region is warranted.

This study will evaluate current conditions of the transportation network and model what the network looks like when the industrial develops are completed. The baseline would utilize data collected from relevant RTC transportation data, and local agency comprehensive plans. The results of the analysis will provide recommended regional policies to better identify future road projects.

Previous Work:
• Southern Nevada Strong Regional Plan;
• City of North Las Vegas Comprehensive Master Plan;
• City of Las Vegas Comprehensive Plan;
• Clark County Comprehensive Plan

Methodology:
• Review and evaluate existing policies included in municipal, county and regional comprehensive plans
• Review and analyze relevant transportation data from RTC • Evaluate current conditions along current high traffic areas
• Share findings and data with the SNRPC Regional Transportation Working Group

• Recommend policy changes to identify improved circulation
• Develop regional policies and project to meets the needs of future growth • Final report and presentation to SNRPC Board

Participating Agencies:
• Regional Transportation Commission of Southern Nevada,
• City of North Las Vegas,
• City of Las Vegas,
• Clark County,
• Southern Nevada Regional Planning Coalition
Budget:

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**Funding Sources**

| Consolidated Planning Grant (95%) | $ 78,788 |
| Local Funds (5%) | $ 4,147 |

**Total FY18 Project Budget** | $ 82,935 |

Schedule and Deliverables:
- Evaluation report of existing conditions and recommended changes/modifications to existing transportation network.
- Final report including regional policies on transportation options.
- Final report including recommended improvements for increased capacity.

End Date: June, 2018.
Sub-Task 301-9115-18 - Planning and Infrastructure Needs for Emerging Transportation Technologies

Purpose:
Substantial and rapid technology advances are happening in the transportation field, including autonomous vehicles, connected vehicle technologies, commercial drones (unmanned aerial vehicles), transportation network companies, and increasing market adoption of electric vehicles. These developments have the potential to trigger significant changes in transportation safety, costs, resource consumption, mobility, and other important areas. But any benefits can only be achieved if the transportation system can effectively accommodate and leverage these emerging technologies. This study will examine current, anticipated, and potential trends relating to various new and developing transportation technologies to identify challenges and opportunities related to the RTC’s transportation infrastructure planning over near-, mid-, and long-term horizons.

Previous Work:
• Traffic Signal Timing Strategies in Las Vegas;
• Regional Transportation Plan

Methodology:
Review current and recent research and literature on development and projections for adoption of relevant emerging transportation technologies, including autonomous vehicles, drones, connected vehicles, shared vehicle ownership models, and transportation network companies.

• Identify and summarize recent examples of MPO or city planning activities that have addressed emerging transportation technologies. Identify policies adopted by other agencies related to emerging transportation technologies.
• Summarize current state of knowledge or practice related to transportation infrastructure needs or characteristics necessary to accommodate emerging transportation technologies.
• Develop potential timelines showing likely or potential levels of adoption of different emerging vehicle technologies and potential impacts on relevant planning-related outcomes and measures of transportation system performance.
• Develop policy and planning alternatives appropriate for current and future levels of adoption of different emerging vehicle technologies.
• Identify any relevant fiscal impacts from emerging vehicle technologies and different levels of policy and planning-related responses at the regional or local level.
• Convene a stakeholder advisory committee comprised of representatives from local jurisdictions and other stakeholders. Solicit feedback from the stakeholder committee at key milestones.
• Present to RTC and local jurisdictions at key milestones, as needed.
• Prepare a draft final report and present to the stakeholder committee for feedback and direction. Revise report as needed.

Participating Agencies:
• Regional Transportation Commission of Southern Nevada (Lead Agency),
• Clark County,
• City of Henderson,
• City of Las Vegas,
• City of North Las Vegas,
• City of Boulder City,
• City of Mesquite,
• Nevada Department of Transportation,
• University of Nevada Las Vegas

Budget:

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Funding Source

| Consolidated Planning Grant (95%) | $ 142,500 |
| Local Funds (5%)                  | $ 7,500   |

Total FY18 Project Budget $ 150,000

Schedule and Deliverables:
End Date: June, 2018
Sub-Task: 301-9120-18 - Complete Streets Implementation Study

Purpose:
The Las Vegas region has dedicated considerable effort over recent years to develop Complete Streets standards and various corridor studies. The Complete Streets Implementation Study will advance these efforts by examining the impacts of complete streets programs in other regions and estimating potential impacts of broad implementation in the Las Vegas region. The study will develop approximately ten (10) case studies to show successful implementation of complete streets features and resulting benefits for all modes of transportation. A framework will be developed for estimating complete streets impacts. Additionally, the study will compare investment alternatives to show the resulting benefits of various approaches. Criteria will be established to assist with evaluating potential locations for future complete street transitions and provide guidance on alternatives and resulting benefits. Direction from this study will assist local jurisdictions with identifying complete streets opportunities and providing support for implementation.

Previous Work:
• Southern Nevada Strong (SNS) Regional Plan (2015),
• Complete Streets Design Guidelines for Livable Communities (2012),
• RTC Policy for Complete Streets (2012),
• RTC Regional Bicycle and Pedestrian Plan (underway),
• SRTS School Walk Audits (underway),
• City of North Las Vegas Complete Streets Corridor Ranking Study (2015),
• Washington Avenue and Owens Avenue/Vegas Drive Complete Streets Study (underway), Complete Streets Evaluation Process for the City of Henderson (2014)

Methodology:
• Collect and review existing information, maps, and relevant studies.
• Research best practices in complete streets implementation.
• Identify approximately ten (10) case studies showing best practices in complete streets implementation including details on impacts to transportation modes and return on investment. Identify impacts to all transportation modes as a result of complete streets implementation.
• Convene a stakeholder committee comprised of representatives from local jurisdictions and other stakeholders. Solicit feedback from the stakeholder committee at key milestones.
• Present to RTC and local jurisdictions at key milestones, as needed.
• Develop criteria for selecting potential corridors for complete streets, including a context sensitive approach, which may consist of a decision tree or matrix.
• Establish a method for identifying alternative designs for complete streets corridors.
• Identify a process for estimating impacts of various design alternatives and evaluating returns on investments.
• Prepare a draft final report and present to the stakeholder committee for feedback and direction. Revise report as needed.

**Participating Agencies:**
- Regional Transportation Commission of Southern Nevada (Lead Agency),
- Clark County,
- City of Henderson,
- City of Las Vegas,
- City of North Las Vegas,
- City of Boulder City,
- City of Mesquite,
- Nevada Department of Transportation,
- Southern Nevada Health District,
- University of Nevada Las Vegas

**Budget:**

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<thead>
<tr>
<th>Sub-Task 301-9120-18</th>
<th>FY 2018 Budget</th>
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<tr>
<td>Total Project Cost</td>
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<tr>
<td>Professional Services Costs</td>
<td>$ 150,000</td>
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**Funding Sources**
- Consolidated Planning Grant (95%) | $ 152,000
- Local Funds (5%)                   | $ 8,000

**Total FY18 Project Budget** | $ 160,000

**Schedule and Deliverables:**
- Report on ten (10) case studies
- Framework for estimating impacts of complete streets
- Criteria for identifying complete streets opportunities
- Comparison of investment alternatives
- Method for estimating returns on investment
- Final Report

Start Date: August, 2017.
End Date: June, 2018
Sub-Task 301-9125-17 – Boulder Highway Multimodal Transportation Investment Study –

Objective:

Identify and analyze potential improvements to Boulder Highway between Wagonwheel Dr. and Charleston Blvd. The study should focus on overall right-of-way management and allocation based on the needs of all users. Special consideration should be given to technology solutions specifically suited to the corridor. The study should identify overall transportation system and safety improvements including but not limited to: Intelligent Transportation Systems (ITS) applications; access management; transit improvements; pedestrian and bicycle facility improvements; the number of potential travel lanes; intersection modifications and potential for signal timing coordination; along with cost estimates. The study should also evaluate the impact on traffic operations along Boulder Highway resulting from possible major developments on adjoining land.

Task 1: Project Management

1.1 Invoicing and Progress Reports - Prepare the monthly progress reports, invoices, and billing.

1.2 Coordination - An initial meeting with RTC and participating area agencies will be organized to establish study goals and objectives. Coordination with the RTC project manager and staff will be ongoing throughout the project.

Task 2: Existing Conditions Analysis

2.1 Review existing studies that are relevant to the Boulder Highway Corridor Study and incorporate into the corridor study. Examples include the Southern Nevada Strong Plan, the RTC Regional Transportation Plan and any other plans and studies.

2.2 Collect peak hour AM and PM turning movement data and bicycle and pedestrian counts on major intersections along the study corridor. Collect 24 hour traffic counts on weekdays. Collect signal timing/phasing data, travel time and delay data. Collect pedestrian counts on the selected time and locations in the study area.

2.3 Collect information about zoning, current land use, important origins and destinations, and planned land use. Coordinate with any major land use developments that have the potential to impact travel demand or traffic operations in the study corridor.

2.4 The consultant will analyze, adjust, and run the provided RTC TransCad travel demand model to perform the following tasks. RTC has developed projections for the horizon years 2020, 2030, and 2035 based on the projects identified in the 2013-2035 Regional Transportation Plan.
2.5 Develop a no-build travel demand scenario to identify bottlenecks, highway/roadway capacity constraints, and limitations of existing transit system.

2.6 Analyze and adjust the RTC travel demand model horizon years to reflect the development identified in the collected studies and plans. Make any adjustments to the travel demand model network and code the growth according to the schedule identified in the plans and studies.

2.7 Analyze RTC travel model projections to review any deficiencies in the roadway network for the 2020, 2030 and 2035 horizon years already developed by the RTC.

2.8 Collect and analyze origin and destination patterns by spot survey in the corridor.

2.9 Analyze corridor performance based on the data collected. Prepare Multi-Modal Level of Service (MMLOS) analysis for different modes of transportation. Develop existing and 2035 traffic volumes along the corridor and at major intersections.

2.10 Develop and perform micro-simulation utilizing dynamic traffic assignment for the corridor in developing alternatives.

2.11 Conduct travel time and delay study and analyze freight movement and document vehicle classification.

2.12 Analyze Boulder highway as an emergency alternative route to I-515.

2.13 Identify existing right of way and roadway geometrics and analyze driveway access, driveway turning radius, number of driveways, driveway corner clearance, raised driveways, flood control facilities and underground utilities.

2.14 Safety Analysis – Collect most recent 5-year crash statistics to identify potential safety issues. Identify crash locations and the nature of the crash.

2.15 Inventory of transit, pedestrian/bicycle facilities:
   - Document location and condition of bus stops, sidewalks, crosswalks and bicycle facilities.
   - Document sidewalk and intersection lighting

Identify levels of pedestrian, transit and parking use:
   - Analysis of transit boarding data
   - Use of any prior research
   - Supplement by spot surveys of selected locations
   - Identify and document ADA accessibility improvements

2.16 Conduct an intersection lighting analysis to determine the optimal lighting conditions, especially at intersections with pedestrian activity.

Task 3: Public, Stakeholder and Agency Involvement

3.1 Facilitate monthly Technical Advisory Committee (TAC) meetings that will be held during the 18 month planning study to review study issues and results. The membership of the TAC is to be defined in cooperation with RTC.
3.2 Develop a public participation plan to facilitate and maximize public information gathering across multiple formats. This may include open-house meetings, go-to-them meetings, and online surveys.

3.3 Hold up to five stakeholder meetings with local business or elected officials/community groups.

3.4 Facilitate up to two day-long planning workshops to collaborate with local residents, businesses, and property owners as well as local government staff regarding planning and design issues in the corridor.

**Task 4: Develop and Evaluate Alternatives**

4.1 Transit Improvements – Develop and evaluate short and long term transit improvements.

4.2 Pedestrian and Bicycle Improvements – Develop and evaluate improvements to pedestrian and bicycle facilities, including sidewalks, bicycle lanes, and streetscape improvements.

4.3 Freight movement, parking and Access Management Improvements – Develop and evaluate alternatives to reduce vehicle conflicts, improve traffic flow, and adequately meet the needs for access and parking of local businesses.

4.4 Roadway and Traffic Improvements - Develop and evaluate short and long term roadway and intersection improvements in the context of complete streets and other state of the art traffic safety and calming improvements, including flood control facilities and utility improvements.

4.5 Technology Improvements – Develop and evaluate intelligent transportation system improvements to improve the communication, detection, and response of the transportation network to the users along the corridor (e.g. v-to-x communication, smart city infrastructure).

**Task 5: Development of recommended Improvement strategies:**

5.1 Develop early action items and short term design and technology improvement recommendations to meet the multimodal demand of the corridor.

5.2 Develop long term improvement recommendations to meet the multimodal demand of the corridor.

5.3 Recommendations should be developed in the context of community and by accommodating all users.

5.4 Recommendations should be developed in the context of complete streets concepts in accordance to the NDOT Complete Streets Policy and RTC’s guideline.

5.5 Identify any other best practice design concepts and strategies to the TAC which can be utilized in developing policies and recommendations.

5.6 Develop footprints and conceptual cross sections showing recommendations. At least two alternatives should be developed for the corridor.

5.7 Develop detailed concepts of alternatives with cross sections.
5.8 Develop rendering of the concepts showing entire corridor. The proposed conceptual/sections should be consistent throughout the corridor.

Task 6: **Prepare policies and implementation plan to meet the demand and identify the schedule of recommended improvements**

6.1 Develop policies to implement the recommendations.
6.2 Identify the steps and agencies to implement recommendations and policies.
6.3 Identify funding sources and develop cost estimates.
6.4 Develop a time-phased implementation plan based on the pace of anticipated development and travel demand growth.

Task 7: **Report Preparation**

7.1 Existing Conditions/Definition of Alternatives Report – Prepare a report to document existing conditions, needs, and the preliminary alternatives to be considered in the evaluation.
7.2 Draft Report - Prepare draft report including graphics and illustrations of alternatives. The report will include conceptual design level plan for roadway improvements, concept layouts, cost estimates, right of way needs, plan view, and cross sections.

Task 8: **Deliverables**

8.1 Meeting materials and displays for public, stakeholder, and TAC meetings.
8.2 Prepare a draft final report which documents study findings, activities, and present study results. Distribute the draft report in PDF format to TAC members and provide one electronic and one hard copy to the RTC and NDOT for distribution.
8.3 Develop an executive summary both in English and Spanish as part of the final draft report
8.4 Revise the draft report based on the input from the study Technical Advisory Committee and RTC.
8.5 Prepare final report and distribute it to TAC members in PDF format and provide a bound copy and one original unbound paper copy. Provide an electronic copy in the PDF format and a copy in a commonly used editable format as agreed with RTC.
8.6 Make maximum of three (4) study presentations to the Regional Transportation Commission, Executive Advisory Committee, NDOT Transportation Board and any other committees.
## Budget:

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<td>PL Funds in FY 2018</td>
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<td>Professional Services Contract</td>
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<td>RTC Cost</td>
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**Funding Sources for PL Funds**

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<tr>
<td>Consolidated Planning Grant (95%)</td>
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<tr>
<td>Local Match (5%)</td>
<td>$ 13,560</td>
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| State Planning & Research (SPR) Funds in FY 2018 | $ 246,206 |
| Total FY 2018 Funding                               | $ 517,412 |
Task 302, Intelligent Transportation Systems Planning

The Regional Transportation Commission, though the Freeway and Arterial System of Transportation (FAST) unit has played a major role in the development of ITS systems in the Southern Nevada region. The MPO has provided support to these activities by funding capital investments in the RTP and TIPs.

Further development of the FAST system is also supported by the inclusion of ITS-related planning activities in the UPWP.

Activities comprise an investigation of how best to update signal timing strategies to respond to changing patterns of traffic.

This activity requires extensive professional support from outside consultancies. The costs of professional services contracts are included under Task 302.

Task 302 includes the RTC costs associated with the procurement of professional services contracts and their administrative and financial oversight.

Specific Sub-Tasks are:

302-9265-18 - Internet of Things (IoT) & Connected and Autonomous Vehicle (CAV) System Architectures

Task 302, 2018 Budget

The following costs are included under Task 302:

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<thead>
<tr>
<th>FY 2018 RTC Costs</th>
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<tbody>
<tr>
<td>Professional Services Costs</td>
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<td>New work planned for FY 2018</td>
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<tr>
<td>Combined costs</td>
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The source of funds for Task 301 is:

| Consolidated Planning Grant             | $ 161,500      |
| Local Funds (5% match)                  | $ 8,500        |
Sub-Task 302-9265-18 -
Internet of Things (IoT) & Connected and Autonomous Vehicle (CAV) System Architectures

Purpose:
Document existing systems and develop recommendations for system architecture for Internet of Things (IoT) and Connected and Autonomous Vehicles (CAV's) with local and regional deployment. Ultimately, it would allow for seamless data collection and sharing for informed decision making, and allow for the deployment of CAV's.

Previous Work:
- City of Las Vegas IoT system deployment within Innovation District;
- RTC FAST AMS and FMS systems with Bugatti Dashboard

Methodology:
- Document current IoT and CAV efforts;
- Develop requirements and framework for local agency versus regional systems;
- Develop system architecture requirements;
- Develop specifications on how to collect and store data;
- Evaluate need for data collaboration between multiple agencies;
- Determine maintenance and operational needs/responsibilities

Participating Agencies:
- City of Las Vegas
- RTC – Freeways & Arterial System of Transportation (FAST)

Budget:

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<tr>
<th>Sub-Task 302-9265-18</th>
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Funding Sources
- Consolidated Planning Grant (95%) $ 161,500
- Local Match (5%) $ 8,500

Total FY18 Project Budget $ 170,000
Schedule and Deliverables:

- Current State of the Practice Review;
- Evaluation Summary of the existing systems with recommendations on long-term system architectures;
- Recommendations for Maintenance and Operations;
- Development of standards for collection of data;
- Draft and Final Report; and Executive Summary

Start Date: August, 2017
End Date: June, 2018
Appendix 1

Southern Nevada Regional Planning Prospectus

The purpose of this Prospectus is to outline the roles and responsibilities of the Nevada Department of Transportation (NDOT) and the Regional Transportation Commission of Southern Nevada (RTCSNV), as required by 23 CFR Section 450.314. The Prospectus was first incorporated into the Unified Planning Work Program (UPWP) in Fiscal Year 2014.

I. General Roles & Responsibilities

RTCSNV will perform the transportation planning process for the Southern Nevada Metropolitan Planning Area (the region) and develop procedures to coordinate transportation planning activities in accordance with applicable federal regulations and guidance. The region is defined as the County of Clark in the State of Nevada and includes the incorporated cities of Boulder City, Henderson, Las Vegas, Mesquite, and North Las Vegas as well as unincorporated areas of the County.

The transportation process will, at a minimum, consist of:

A. Development of an annual Unified Planning Work Program (UPWP) that lists and describes all transportation planning studies and tasks to be completed during the year.
B. Development and update of a long-range, multimodal metropolitan transportation plan, known as the Regional Transportation Plan (RTP).
C. Development and maintenance of a short-range regional transportation improvement program (TIP).
D. Financial planning to ensure plans and programs are fiscally constrained within anticipated funding levels.
E. Development of planning studies and system performance monitoring, including highway corridor and intersection studies, transit system studies, application of advanced computer techniques, and transportation data collection and archiving.
F. Public outreach to the community throughout the transportation planning process, including the electronic dissemination of reports and supporting information on the RTCSNV website, and consideration of public comments. Public outreach activities should take into account the needs of persons with limited proficiency in English.
G. Ensuring low income or minority populations, including the elderly and persons with disabilities, are not significantly or disproportionately impacted.
H. Development and implementation of a Congestion Management Process (CMP) as appropriate.
I. Ensuring plans, projects, and programs are consistent with, and conform to, air quality goals for reducing transportation-related emissions and attaining National Ambient Air Quality Standards.
II. The Regional Transportation Plan (RTP)

The RTP will be prepared and compiled through a cooperative process between federal agencies, the Nevada Department of Transportation, RTCSNV (including RTCSNV in its capacity as the provider of public transportation), the Clark County Department of Air Quality (acting under delegated authority as the Air Agency for Southern Nevada), and the local city and county governments in the region.

Responsibilities of the Regional Transportation Commission

A. The RTCSNV will be responsible for preparing and developing the Regional Transportation Plan (20-25 year time frame). The RTP will be converted into a format that will allow it to be downloaded from the internet.
B. The RTCSNV may develop an executive summary report for the region that includes the key issues facing the area and identifies high priority programs and projects.
C. The RTCSNV will provide opportunities for the public and other interested parties to provide input during the development of the Regional Transportation Plan, in accordance with the Public Participation Plan. The draft of each update to the RTP will be made available for public and agency review and comment. Prior to taking formal action on the Plan or Plan update, the RTCSNV Board will be informed of the extent and nature of comments received and the response to such comments.
D. The RTCSNV will develop and keep up-to-date a list of those roadways and transit facilities deemed to be ‘regionally significant’ in accordance 23 CFR 450.322.
E. The RTCSNV will, in cooperation with NDOT, develop estimates of future inflation to be used to convert project costs and revenues to a ‘year of expenditure’ basis.
F. The RTCSNV will coordinate with the Clark County Department of Air Quality to assess air quality impacts and conduct the regional emissions assessment of the RTP.
G. The RTCSNV, acting as the transit agency for the region, will ensure the RTP includes information on local bus capital projects that are consistent with the transit capital program. The RTP will also identify future bus needs and services, including new routes, service expansion, vehicle needs, and operating financial needs.

Responsibilities of the Nevada Department of Transportation

H. The Nevada Department of Transportation (NDOT) will provide the following information and data in support of developing the RTP:

1. An estimate of federal funds expected to be available over the 20-25 year time frame of the plan for highway and transit programs. This estimate of funds will be provided at a time mutually agreed upon by the RTCSNV and NDOT so that the fiscal limits of the RTP can be determined before project prioritization begins.
2. A list of projects in Southern Nevada, developed in cooperation with the RTCSNV, to be undertaken by NDOT over the 20-25 year time frame of the Plan using federal program funds reserved in the State of Nevada for use anywhere in the state. The state’s regionally significant project list will be provided at a time mutually agreed upon by the RTCSNV and NDOT so that air quality conformity analysis can be performed at the appropriate time in the course of RTP development.

3. A list of projects in Southern Nevada for which funds have been earmarked or otherwise designated in federal transportation legislation.

4. An estimate of state funds expected to be expended on transportation projects in the region over the 20-25 year time frame of the Plan. In the interests of public information and to assist the RTCSNV in demonstrating the fiscal feasibility of the Plan, NDOT will also provide information as to how these expenditures relate to the state transportation revenues available after allowing for the cost of maintenance, operations, debt service, administration, and other draws on these fund sources.


I. For those federal program funds intended to be distributed between various entities or regions within the state, NDOT will either provide the basis for the allocation between areas as defined by law, or will work cooperatively with the RTCSNV and other jurisdictions to establish mutually agreed formulae for the allocation between areas of such funds for forecasting and financial planning purposes.

NDOT will provide information on projects to be undertaken in Southern Nevada using transit or other federal program funds allocated to non-urbanized areas of the state, and will consult with the RTCSNV for selecting such projects.

III. Transportation Improvement Program (TIP)

The TIP will be prepared and compiled through a cooperative process between federal agencies, NDOT, the RTCSNV (including the RTCSNV in its capacity as the provider of public transportation), and the local city and county governments in the region.

Responsibilities of the Regional Transportation Commission

A. The RTCSNV will be responsible for preparing and developing the Transportation Improvement Program (4-year time frame with a fifth illustrative year) for the region. The TIP will be converted into a format that will allow it to be downloaded from the internet. The RTCSNV will maintain the TIP by tracking changes to projects (schedule, scope, and cost) made through the amendment and administrative action processes.
B. The RTCSNV, in consultation with NDOT and local city and county governments, shall develop the list of locally-sponsored transportation projects to be included in the TIP.

1. In the case of the Congestion Mitigation and Air Quality Program (CMAQ) (or any successor funding program of similar intent), the RTCSNV shall also consult with the Clark County Department of Air Quality in the development of the list of projects to be included in the TIP.
2. In the case of the Transportation Alternatives Program (or any successor funding program of similar intent), the RTCSNV shall also consult with all eligible project sponsors in the development of the list of projects to be included in the TIP.

C. The RTCSNV, as the provider of public transportation services, shall develop the list of transit projects to be included in the TIP.

1. In the Southern Nevada urbanized area, the RTCSNV shall consult with not-for-profit agencies and other providers of specialized transportation and human services, in accordance with the Coordinated Public Transit-Human Services Plan.
2. For Southern Nevada non-urbanized area transit programs, the RTCSNV shall consult with NDOT and other providers of transportation services to the non-urbanized parts of the region.

D. The RTCSNV shall develop a comprehensive list of projects for all projects in the TIP. In order to illustrate the entire scope of the project to the policy board and the general public, the project list will contain detailed project descriptions, estimated total project costs at completion, and complete project schedule by phases.

E. The RTCSNV will develop an estimate of anticipated local funds to be expended on transit projects identified in the TIP. In the interests of public information and to assist in demonstrating the fiscal feasibility of the TIP, the RTCSNV will also document how these expenditures relate to the local revenues available for transit after allowing for the cost of maintenance, operations, debt service, administration and other draws on these fund sources.

F. The RTCSNV will provide information on proposed TIP amendments and administrative modifications relating to projects sponsored by the RTCSNV or local entities. Amendments and administrative modifications will include a project description that provides sufficient detail to explain the proposed changes to the RTCSNV Board, as well as a justification for the change.

Responsibilities of the Nevada Department of Transportation

G. NDOT will prepare an initial list of NDOT-sponsored projects to be included in each new TIP. This list will be based on the current TIP and an assessment of which projects will be obligated for funding before the end of the current federal fiscal year.
H. NDOT will provide information on proposed TIP amendments and modifications relating to projects sponsored by NDOT. Amendments will include a project description that provides sufficient detail to allow the proposed changes to be explained to the RTCSNV Board, as well as a justification for the change.

I. NDOT will provide a list of projects to be undertaken on Native American tribal lands under the Indian Reservation Roads (IRR) program within the Southern Nevada region.

J. NDOT will provide a list of projects to be undertaken under the Federal Lands Highways program within the Southern Nevada region.

K. NDOT will provide a list of projects obligated during the federal fiscal year at the end of each program year. The annual list of obligated projects should include both highway and transit projects and should identify the fund source and the amount obligated in accordance with 23 CFR 450.332.

L. NDOT will provide annually, for each federal fund source, the revenues available (including both unobligated funds carried forward from prior years and the amount appropriated during the fiscal year), the total amount obligated, any other deductions and the balance of funds remaining at the end of the fiscal year.

IV. Statewide Transportation Improvement Program (STIP)

A. NDOT will develop a four-year STIP including projects in each MPO and the rural regions of the state, and will be responsible for securing the approval of the STIP by the United States Department of Transportation.

B. The TIP, as developed by the RTCSNV, will be incorporated into the STIP without change, directly or by reference.

C. NDOT, in consultation with the RTCSNV and the other MPOs in the state, shall develop procedures for the modification and amendment of the STIP. NDOT shall be responsible for notifying the RTCSNV of the effective date of modifications and the approval date of amendments.

V. Public Transportation Planning

A. The RTCSNV, acting as the transit agency for the region, will ensure the RTP and TIP include all transit projects (both capital and operating) that are funded by federal program funds.

B. The RTCSNV will consult with NDOT to ensure that both the RTP and TIP include information on transit projects in the non-urbanized parts of the region that are funded by federal program funds.

C. The RTCSNV will include in the RTP information on the transit system and will outline the objectives of the RTCSNV in respect to the various types and modes of public transportation in the region.
D. As part of its outreach activities, the RTCSNV will provide opportunities for other providers of public transportation, not-for-profits, and providers of specialized transportation services to be involved in the development of the RTP and TIP. The RTCSNV will also provide these firms and agencies with advice, information, and consultation on transportation programs within the region.

VI. Air Quality Planning

A. The preparation of a new or revised RTP will be coordinated with the State Air Quality Implementation Plan (SIP) and transportation demand management and transportation system management (TDM/TSM) measures.
B. In accordance with the Clean Air Act and U.S. EPA conformity regulations (40 CFR, Part 51), the RTCSNV, acting as the regional MPO, makes air quality conformity determination on any new or revised RTP prior to Plan approval. Any such new or revised RTP is also provided to the FHWA and the FTA with a request that these federal agencies approve the conformity finding.

VII. Public Participation Program

A. The RTCSNV will develop and maintain a Public Participation Plan that sets out the procedures to include the public and interested parties in the development of the Regional Transportation Plan, Transportation Improvement Program, and other elements of the regional planning process, to seek public input and comment, and to inform decision-makers of the extent and nature of comments received and response to such comments.
B. The RTCSNV will annually review and evaluate its public participation program.
C. The RTCSNV will maintain a list of interested organizations and individuals who will receive notices of MPO plans, programs, and projects.
D. The RTCSNV will work to ensure that low-income, minority, and transit dependent areas are afforded an adequate opportunity to participate in the transportation planning process, receive a fair share of the transportation improvement benefits, and do not endure a disproportionate transportation burden.
E. The RTCSNV will maintain its website to provide clear and concise information on the regional transportation planning process and provide an opportunity for downloading reports and documents. This will include developing project and study summaries, converting reports into PDF or text format, and maintaining a list of available documents. The website will provide links to other associated organizations and agencies.
VIII. Fiscal/Financial Planning

A. NDOT will provide the RTCSNV with up-to-date fiscal and financial information and projections on the statewide and regional transportation improvement programs to the extent practicable.

B. This will include anticipated federal funding resources by federal aid category by year for the four years covered by the TIP, and by five-year intervals for the 20-25 year time frame of the RTP for inclusion in the TIP and RTP financial charts.

C. For each federal program for which funds are sub-allocated to Southern Nevada, NDOT will provide an annual statement identifying:

1. Unobligated funds brought forward from the previous year;
2. Funds appropriated during the year;
3. Fund obligated during the year and any adjustments thereto;

D. For each federal transit program for which funds are allocated to the Las Vegas Urbanized Area, the RTCSNV will provide an annual statement identifying:

1. Unobligated funds brought forward from the previous year;
2. Funds appropriated during the year;
3. Funds obligated during the year and any adjustments thereto;

E. NDOT will notify the RTCSNV when the anticipated cost of a project, regardless of funding category, has changed in accordance with the agreed upon TIP/STIP amendment and administrative action process.

IX. Performance Measurement and the Management of Congestion

A. In developing the RTP and TIP, RTCSNV will incorporate the national goals, measures, and standards of system performance established under the provisions of MAP-21 and the FAST Act.

B. RTCSNV will coordinate with NDOT in the establishment of multimodal transportation system performance targets for the region. These will reflect national goals and standards as applied to the circumstances and priorities of the region.

C. RTCSNV will cooperate with NDOT to collect data and conduct system performance monitoring. RTCSNV will report on progress toward meeting system performance targets as part of the biennial development of major TIP updates, and will assist NDOT as needed in meeting state reporting requirements under MAP-21 and the FAST Act.
D. To address the national goal of reducing congestion, RTCSNV will gather and analyze data to define the extent and duration of congestion in the region, to identify the causes of congestion, and to identify congestion management strategies.

E. As part of the Congestion Management Process (CMP), the RTCSNV will develop implementation activities in coordination with NDOT to address congestion and other performance issues, and will include priority projects in the RTP and TIP.

X. Intelligent Transportation Systems (ITS) Program

A. The Freeway and Arterial System of Transportation (FAST), a department of the RTCSNV, coordinates the planning, development, and operation of the Southern Nevada ITS program in cooperation with NDOT and local agencies.

B. NDOT will maintain the statewide ITS architecture and will work with FAST to ensure consistency with the Regional ITS Architecture for the Southern Nevada Metropolitan Planning Area.

C. NDOT, in cooperation with FAST, is responsible for identifying freeway ITS capital projects and operating strategies for inclusion in the RTP and TIP.

D. Local agencies, in cooperation with FAST, are responsible for identifying arterial roadway ITS capital projects and operating strategies for inclusion in the RTP and TIP.

Amendments to this Prospectus

This Statement defining the Southern Nevada Regional Transportation Planning Process may be amended from time to time to coincide with development of the annual UPWP approval as jointly deemed necessary or in the best interests of all parties, including federal transportation agencies.

Effective Date

This Statement will be effective after it has been endorsed by the RTCSNV as part of the Fiscal Year 2014 UPWP, and as soon as that UPWP has been approved by NDOT and the relevant federal transportation agencies.

No Limitation on Statutory Authority

Nothing contained in this Statement is intended to or shall limit the authority or responsibilities assigned to signatory organizations under Nevada law, federal law, local ordinance, or inter-local agreement.