



NOTICE AND AGENDA
OF PUBLIC MEETING

**TRANSPORTATION RESOURCE
ADVISORY COMMITTEE AND
COMMUNITY COLLABORATION**

2:30 P.M. FEBRUARY 1, 2018

**Southern Nevada Water Authority
100 N. City Parkway, Suite 700
Las Vegas, NV 89106
(702) 676-1500**



This agenda with full backup is available at the Regional Transportation Commission Administration Building, 600 S. Grand Central Pkwy, Las Vegas, Nevada; the Regional Transportation Commission's website, <http://www.rtcnv.com>; or by contacting Marin DuBois at (702) 676-1836.

THIS MEETING HAS BEEN PROPERLY NOTICED AND POSTED IN THE FOLLOWING LOCATIONS:

Clark County Government Center
500 S. Grand Central Pkwy.
Las Vegas, NV 89155

City of Henderson
Office of the City Clerk
240 Water Street
Henderson, NV 89015

CC Regional Justice Center
200 Lewis Ave.
Las Vegas, NV 89155

RTC
600 S. Grand Central Pkwy.
Las Vegas, NV 89106

RTC website
www.rtcnv.com

Nevada Public Notice
<https://notice.nv.gov>

DocuSigned by:

Marin DuBois

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BY: _____

Item 2 is for possible action. Items 1 and 3 through 10 are discussion items and no action can be taken. Please be advised that the Transportation Resource Advisory Committee and Community Collaboration (TRAC) has the discretion to take items on the agenda out of order, combine two or more agenda items for consideration, remove an item from the agenda or delay discussion relating to an item on the agenda any time.

1. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION
2. APPROVAL OF MINUTES: Meeting of December 7, 2017 (FOR POSSIBLE ACTION)
3. RECEIVE AN OVERVIEW OF THE TRAC GOALS, FRAMEWORK, AND AGENDA
4. RECEIVE A REPORT ON THE TRAC TRANSIT FIELD TRIPS
5. RECEIVE AN UPDATE ON THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA'S "ON BOARD – YOUR FUTURE TRANSIT PLAN" INITIATIVE
6. RECEIVE A PRESENTATION ON HOW TRANSIT TRANSFORMS A COMMUNITY
7. RECEIVE AN UPDATE ON SMART MOBILITY AND INNOVATION
8. DISCUSS UPCOMING EVENTS
9. CONDUCT AN OPEN DISCUSSION ON TOPICS OF INTEREST AND REVIEW TOPICS FROM THE TRAC AGENDA
10. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

During the initial Citizens Participation, any citizen in the audience may address the Committee on an item featured on the agenda. During the final Citizens Participation, any citizens in the audience may address the Committee on matters within the Committee's jurisdiction, but not necessarily featured on the agenda. No vote can be taken on a matter not listed on the posted agenda; however, the Committee can direct that the matter be placed on a future agenda.

Each citizen must be recognized by the Chair. The citizen is then asked to approach the microphone at the podium, to state his or her name, and to spell the last name for the record. The Chair may limit remarks to three minutes' duration, if such remarks are disruptive to the meeting or not within the Committee's jurisdiction.

The Regional Transportation Commission of Southern Nevada keeps the official record of all proceedings of the meeting. In order to maintain a complete and accurate record, copies of documents used during presentations should be submitted to the Recording Secretary.

The Regional Transportation Commission of Southern Nevada appreciates the time citizens devote to be involved in this important process.

In compliance with Nevada Revised Statute 241.035(4), the Regional Transportation Commission of Southern Nevada shall create an audio and/or video recording of the meeting and retain such recording(s) for the required period of time.

The Regional Transportation Commission of Southern Nevada Meeting Room and Conference Room are accessible to the disabled. Assistive listening devices are available for the hearing impaired. A sign language interpreter for the deaf will be made available with a forty-eight hour advance request to the Regional Transportation Commission of Southern Nevada offices. Phone: (702) 676-1500 TDD (702) 676-1834

Any action taken on these items is advisory to the Regional Transportation Commission.

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: CITIZENS PARTICIPATION		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		


FISCAL IMPACT:

None

BACKGROUND:

In accordance with State of Nevada Open Meeting Law, the Regional Transportation Commission of Southern Nevada Transportation Resource Advisory Committee & Community Collaboration shall invite interested persons to make comments. For the initial Citizens Participation, the public should address items on the current agenda. For the final Citizens Participation, interested persons may make comments on matters within the Committee's jurisdiction, but not necessarily on the current agenda. No action can be taken on any matter discussed under this item, although the Committee can direct that it be placed on a future agenda.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

md

TRAC Item #1
February 1, 2018
 Non-Consent

MINUTES
TRANSPORTATION RESOURCE ADVISORY COMMITTEE
AND COMMUNITY COLLABORATION
REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA
DECEMBER 7, 2017

These minutes are prepared in compliance with NRS 241.035. Text is in summarized rather than verbatim format. For complete contents, please refer to meeting recordings on file at the Regional Transportation Commission.

**THIS MEETING WAS PROPERLY NOTICED AND POSTED
IN THE FOLLOWING LOCATIONS ON DECEMBER 1, 2017**

Clark County Government Center
500 S. Grand Central Pkwy.
Las Vegas, NV 89155

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CALL TO ORDER

Mr. Don Snyder, Chair, called the meeting to order at 2:39 p.m. in the Colorado River Room of the Southern Nevada Water Authority offices located in the Molasky Corporate Center.

MEMBERS PRESENT:

Don Snyder, Chair, Community Advocate
Mauricia Baca, Outside Las Vegas Foundation
Cindy Creighton, Nevada Taxpayers Association
Rachel Dahl, Mesquite Regional Business
James Duddleston, GCW
Ken Evans, Urban Chamber of Commerce
Betsy Fretwell, Switch
Barry Gold, AARP
Peter Guzman, Latin Chamber of Commerce
Warren Hardy, Associated Builders and Contractors
Lynn Hunsinger, Nevadans for the Common Good
Alan Jeskey, AJB General Contractor
Windom Kimsey, Henderson Development Association
Brian Knudsen, BP2 Solutions
Ram Kumar, Kumar Consulting Services
Robert List, Kolesar and Latham
Jim Long, Sun City Anthem Resident
Mike Mixer, Colliers International and NAIOP
Paul Moradkhan, Metro Chamber of Commerce
Tommy Morley, Laborers Local 872
Jean Peyton, Blindconnect
Mark Salisbury, Wynn Las Vegas
Valarie Segarra, Las Vegas Convention and Visitors Authority
Judy Stokey, NV Energy
Danny Thompson, Labor Consultant
Virginia Valentine, Nevada Resort Association
Bryan Wachter, Retail Association of Nevada
Matt Walker, Southern Nevada Homebuilders Association
Tom Warden, The Howard Hughes Corporation

MEMBERS ABSENT:

MaryKaye Cashman, Cashman Equipment

TRAC Item #2
February 1, 2018

MEMBERS ABSENT CONTINUED:

Paul Enos, Nevada Trucking Association
Mike Feldman, Team Las Vegas Cyclery
Len Jessup, University of Nevada, Las Vegas
Keith Lynam, Greater Las Vegas Association of Realtors
Andy Maggi, Nevada Conservation League
Jonas Peterson, Las Vegas Global Economic Alliance
Todd Sklamberg, Sunrise Hospital
Sean Stewart, Nevada Contractors Association
Jim Sullivan, Culinary Union 226

MEETING FACILITATOR:

Deborah Campbell, Deborah Campbell and Associates

RTC STAFF:

M.J. Maynard, Deputy General Manager
Fred Ohene, Deputy General Manager
David Swallow, Senior Director of Engineering and Technology
Angela Castro, Senior Director of Government Affairs and Media Relations
Tammara Williams, Senior Director of Human Resources and Safety and Security Operations
Raymond Hess, Director of Planning Services
Marc Traasdahl, Director of Finance
Cindy Carter, Director of Fixed Route Services
Catherine Lu, Manager of Government Affairs and Media Relations and Marketing
Nathan Goldberg, Manager of Transit Planning
Kenny Rodriguez, Manager of Customer Care
David Clyde, Government Affairs and Legal Supervisor
Adam Mayberry, Media and Marketing Supervisor
Brij Gulati, Principal Project Engineer
Glen Leavitt, Public Affairs Analyst
Marin DuBois, Management Analyst

CONSULTANT TEAM:

Guy Hobbs, Hobbs Ong & Associates
John Restrepo, RGC Economics

INTERESTED PARTIES:

Kaity Acton, Aptiv
Erin Breen, University of Nevada, Las Vegas
Brendan Bussman, CTL Group
Tom Davy, City of Henderson
Kami Dempsey, AC Nevada
Cleveland Dudley, Nevada Department of Transportation
Helen Foley, Faiss Foley Warren
Lauri Hettinger, Holland and Knight
Colin Brett McNeill, Aptiv
Manu Namboodiri, Aptiv
Shaundell Newsome, SUMNU
Adrienne Packer, Nevada Department of Transportation
Roger Patton, Louis Berger

INTERESTED PARTIES CONTINUED:

Coy Peacock, Nevada Department of Transportation
Scott Rickert, Wood Rodgers
Alyssa Rodriguez, City of Henderson
Anthony Ruiz, Las Vegas Global Economic Alliance
Jacob Snow, JA Barrett

Item:

1. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

Comments:

No comments were made.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

2. APPROVAL OF MINUTES: Meeting of October 12, 2017 (FOR POSSIBLE ACTION)

Comments:

No comments were made.

Motion:

Mr. Danny Thompson made a motion to approve meeting minutes.

Vote/Summary:

21 Ayes. 0 Nays. The motion carried.

Ayes: Mauricia Baca, Cindy Creighton, Rachel Dahl, James Duddleston, Barry Gold, Peter Guzman, Warren Hardy, Lynn Hunsinger, Alan Jeskey, Windom Kimsey, Brian Knudsen, Ram Kumar, Jim Long, Mike Mixer, Tommy Morley, Jean Peyton, Mark Salisbury, Don Snyder, Danny Thompson, Matt Walker, Tom Warden

Nays: None

Absent: MaryKaye Cashman, Paul Enos, Ken Evans, Mike Feldman, Betsy Fretwell, Len Jessup, Keith Lynam, Robert List, Andy Maggi, Paul Moradkhan, Jonas Peterson, Valarie Segarra, Todd Sklamberg, Sean Stewart, Judy Stokey, Jim Sullivan, Virginia Valentine, Bryan Wachter

Item:

3. RECEIVE AN OVERVIEW OF THE TRAC GOALS, FRAMEWORK, AND AGENDA

Comments:

Ms. Deborah Campbell, Meeting Facilitator, provided an overview of the Transportation Resource Advisory Committee and Community Collaboration (TRAC or Committee) goals, framework, and agenda. She began by reviewing the goals and purposes of the Committee, which included the following: learn about Southern Nevada's mobility challenges, new developments, and opportunities; learn about smart communities, emerging technologies, and how these efforts can impact and improve mobility; and assess ability and safety in Southern Nevada and obtain feedback and recommendations on how to best address and prioritize mobility solutions.

Next, Ms. Campbell outlined the framework for future meetings, including the topics that will be covered. This included the following:

- Meeting 3 – February 1, 2018: Pedestrian Safety and Future Developments
- Meeting 4 – April 5, 2018: Funding and On Board Community Recommendations
- Meeting 5 – June 7, 2018: Project Priorities and Recommendations

- Meeting 6 – August 2, 2018: Additional Discussions on Project Priorities, Recommendations, and Next Steps

Chair Don Snyder added that one of the valuable aspects of this Committee is that agenda items are not set in stone. It is important to maintain flexibility and update schedules to address emerging issues as they are found, particularly as they move toward the next legislative session.

The present meeting's agenda, Ms. Campbell continued, included the following topics:

- An overview of traditional transit
- A presentation from Ms. Lauri Hettinger, Holland and Knight
- Updates on Maryland Parkway and the Resort Corridor
- Smart mobility and innovation from the Regional Transportation Commission of Southern Nevada
- Special guest speaker from Aptiv
- Two scheduled activities coming up in January 2018
- Reviewing upcoming events relevant to TRAC members

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

4. RECEIVE AN OVERVIEW OF TRADITIONAL TRANSIT IN SOUTHERN NEVADA

Comments:

Mr. Nathan Goldberg, Manager of Transit Planning for the Regional Transportation Commission of Southern Nevada (RTC), gave an overview of traditional transit in Southern Nevada. He began by saying that the RTC, formerly known as CAT, started operating in 1992. By 1994, 21 million boardings were achieved, and 6 routes were operating at a frequency of every 30 minutes or less. Currently, the RTC has achieved 64 million boardings and 34 routes operating at the same frequency. This demonstrates how as the community has grown, and so has the RTC. He then shared that currently there are 2.1 million residents in Southern Nevada, and the population is expected to grow to 2.7 million by 2025. Many of these new residents will live in areas that are unserved or underserved by mass transit, which is a concern for RTC moving forward. In addition to current and future residents, Mr. Goldberg said that more than 43 million visitors come to the area every year, noting that this visitation rate is expected to grow to 53 million per year by 2025. He recounted how the RTC now has 39 routes with 3,400 bus stops. The RTC transit system has had 64 million boardings and ridership has tripled since 1992, making Southern Nevada 15th in the nation for busiest bus-only transit system.

Mr. Goldberg gave an overview of transit rider demographics, saying 50 percent of riders are between the age of 18 and 34. Meanwhile, 67 percent of riders do not own a personal vehicle and 55 percent do not possess a valid driver's license. Furthermore, he stated that 60 percent of RTC transit riders travel locally to and from work and home, while 40 percent of trips are recreational/shopping/medical/class.

Next, Mr. Goldberg related that transit riders are asked twice each year what is important to them through a robust survey process. The three most important factors to riders include: frequency of service, affordability, and reliability/on-time performance. He then played a short video highlighting rider testimonials gathered during a recent transit listening tour. Following the video, he remarked that 85 percent of riders use transit to get to and from work in service industry jobs, retail centers, major resorts, and call centers.

Mr. Goldberg segued into transit needs, saying the RTC is already struggling to keep up with community

growth and citizen mobility needs. Estimates suggest that only 70 percent of demand is being met, and this does not include large employers who have reached out to the RTC for transit service to be added near their facilities. Mr. Goldberg added that with the addition of a 65,000-seat football stadium, efficiently moving large numbers of people around an already congested area is not a luxury, but a necessity.

Mr. Danny Thompson supposed that with 85 percent of transit ridership being to and from work, this ridership is focused mostly on the Resort Corridor. He asked if there is any outreach aimed at those employers specifically. Mr. Goldberg responded that the RTC has programs such as Club Ride that works with new and existing employers on a regular basis to promote various alternative commuting options.

Mr. Ram Kumar commended Mr. Goldberg for his presentation before saying that he was surprised that accessibility to transit is not one of the three factors highlighted by transit riders. He went on to say that there is a lot of latent demand for transit accessibility within the community. Mr. Kumar noted that if these important factors are going to be utilized to shape strategic planning, his recommendation is to add accessibility to transit as well. It would be good to look at demand responsibility mobility solutions—moving riders to and from a transit head before they use the transit system. Chair Don Snyder added that survey results are dependent on the people already in contact. The transit demand market is much bigger than transit ridership, and Chair Snyder said Mr. Kumar brought up a good point. He asked if any survey work was done to reach this demographic. Mr. Goldberg confirmed that survey conversations are held regarding first- and last-mile options. Mr. Kumar followed up by saying outreach to employers may also be a factor worth exploring, wondering how many more people would be willing to use transit if it were easier to get to the transit line.

Following along with comments regarding accessibility, Ms. Lynn Hunsinger said that transportation continues to be an issue for her organization and member institutions. As it pertains to how far riders are willing to walk/travel to a transit line, she mentioned that there is a great unmet need for seniors and disabled persons. She said she has been waiting for this topic to come forward more, citing that there are aging pockets within the community where there is not even fixed route transit. She continued to explain that many of these people do not have access to basic services let alone transit or paratransit services. Ms. Hunsinger said this is an issue that needs to be examined, saying some people are unable to keep doctor's appointments or reach pharmacies to get their medication because of a lack of accessibility. This presents a serious challenge to the well-being of these individuals. In response, Mr. David Swallow, Senior Director of Engineering and Technology for the RTC, said her points were well-taken. Currently, he continued, the RTC is on the cusp of seeing new smart mobility options become available that were not available in the past. Mr. Swallow said these opportunities would be highlighted later in the meeting.

Mr. Barry Gold, echoed Ms. Hunsinger's sentiments, adding that transportation is the biggest barrier for older adults to remain in their communities, not only in Southern Nevada, but across the country. Mr. Gold said he was interested in getting more information about how this can improve in Southern Nevada.

Next, Mr. Goldberg introduced Mr. Marc Traasdahl, Director of Finance for the RTC, to provide an overview of RTC funding needs. Mr. Traasdahl began by sharing a slide shared previously highlighting that the RTC was ranked best in the nation by the National Transit Database for operating cost, subsidy, and fare recovery (of the top 50 transit agencies in the U.S. in 2015-2016). He stated that in 2015, the average cost per trip was \$2.12, a subsidy of \$1.02 per trip, and a fare box recovery ratio of 51.9 percent. In 2016, the average cost per trip was \$2.26, a subsidy of \$1.18 per trip, and a fare box recovery ratio of 47.8 percent. Mr. Traasdahl underscored the RTC standings as they compared to the second highest ranked geographic areas in each of the three categories mentioned, respectively, Honolulu, Hawaii; San

Diego, California; and New Jersey). He went on to say that currently, the RTC receives only 3/8ths of one percent sales tax for public transit in Clark County. He attributed RTC's "lean and mean" fiscal responsibility in part to the Las Vegas Strip, as well as strong public-private partnerships and 24-hour demand. That said, the introduction of ridesharing has started to cut into bus fare revenues.

Next, Mr. Traasdahl discussed the revenue history as well as a 20-year projection for transit revenue. He noted that one of the challenges the RTC faces now and in the future is paratransit ridership, which is provided under an unfunded federal mandate. He stated that each paratransit trip costs \$32.00, compared to \$2.56 for the average fixed route trip. To this, Chair Snyder asked if Mr. Traasdahl had data showing paratransit riders and the trend for ridership to increase. Mr. Traasdahl did not have the data on-hand, but could say that paratransit ridership increases 6 percent per year on average. In addition to paratransit, another financial challenge Mr. Traasdahl underscored the loss of the federal alternative fuel credits that were not renewed under the national tax reform. This equates to a \$3 million loss in revenue.

Mr. Traasdahl stated that the big takeaway from this information is that current revenue is sufficient to support only the current public transit system of buses. He said that in order to remain competitive with other convention cities a couple things would need to take place. First, a new and faster high-capacity transit (HCT) or next generation transit is needed, such as a light rail that reduces travel time, is reliable, and moves a larger number of people at a higher frequency from McCarran, to the Resort Corridor, Downtown, and to other highly-visited locations, such as hospitals and university campuses. Second, he said that in applying for grants for new HCT from the Federal Transit Administration, the RTC must prove that the new system for HCT will not cause reductions in existing service.

Mr. Warren Hardy asked about the loss of the alternative fuel credits. He asked specifically if this was the only source of revenue in jeopardy under the proposed tax plan. Mr. Traasdahl replied that he was not aware of any other sources of revenue that are in jeopardy. Mr. Hardy urged the RTC staff to find out for certain. Chair Snyder agreed.

Next, Mr. Paul Moradkhan spoke to Mr. Traasdahl's revenue projection chart, asking if this incorporated inflation as a factor. Mr. Traasdahl said the chart includes projected inflation. Both revenue and expenses were inflated.

Mr. Hardy commented again, saying the chart/projections for revenue and expenses was good. He noted that keeping both in line and fairly equal is the goal of government, as opposed to private sector where higher revenues are expected and striven for. Mr. Hardy said that too often, transit systems are viewed as a business, and in RTC's case it is worth noting that revenue and expenses are fairly close. Chair Snyder agreed that this was a good point to make, and he commented that the analysis needs to include things that may create structural differences in the relationship between revenue and expenses in order to anticipate discrepancies. He spoke to the paratransit cost and increase in paratransit ridership each year, saying that the RTC needs to understand more about that and how to handle it in the future. Chair Snyder said it would be good to have an additional presentation detailing the dynamics of paratransit ridership and its impact on revenue and expenses moving forward. Mr. Swallow agreed, saying it would be possible to do just that, and he said that paratransit would be a good topic for everyone to understand.

Next, Mr. Kumar announced that he had three points. The first was in regard to revenue projections. He said that, based on conversations he had had about serving latent demand and improving ridership occupancy, these factors may have a positive impact on revenue in the future. Things like autonomous vehicles and technological advances may have impacts in the next three to four years. He suggested that the Transportation Resource Advisory Committee and Community Collaboration (TRAC or Committee)

gather information surrounding autonomous vehicles and serving latent demand, saying that many studies are being done in the U.S. and Europe about how new technologies like this help significantly to serve mainline transit. Second, Mr. Kumar spoke to the paratransit issue and other agencies' using vouchers to and other alternatives to serve the captive/paratransit ridership. Last, Mr. Kumar spoke to the issue of other funding sources possibly being in jeopardy due to the new national tax plan. While sources may not be in jeopardy, Mr. Kumar noted that he believes the formula used by the FTA for funding and evaluating future transit projects will change significantly over the next five years. He commented that looking into light rail transit for the future may be affected by this, and land use could become a major factor in how these kinds of projects are funded.

Ms. Jean Peyton said that another committee she participates in, the Transportation Access Advisory Committee, deals with paratransit. In its last meeting, a report was shared that showed 18,000 people are paratransit eligible. Of those, approximately 5,000 are regular users that average between 3,000 and 4,000 rides per day. Ms. Peyton said she just wanted to get on record that the paratransit system is extensive. Mr. Swallow followed up by saying that paratransit riders, in addition to paratransit trips, are also eligible to ride fixed route transit for free if that type of trip makes sense for them at any given time. Joining the conversation, Ms. Hunsinger noted that the state of Nevada has the second fastest growing senior population in the nation. She said that a 6 percent growth in paratransit ridership each year sounds small when compared to the number of aging individuals in the community. Ms. Hunsinger also commented on the health of these aging individuals, saying many are not able to independently travel because of health issues later in life, and rely heavily on services like paratransit. Mr. Gold agreed with Ms. Hunsinger about the growing senior population. He mentioned that he often hears that paratransit services are difficult to access and use. He added that he has spoken to many individuals who would be happy to use regular fixed route services when necessary, but the first-/last-mile issue of getting to the transit head prevents many of them from even considering it. Chair Snyder commented that this conversation could serve as the start of a dialogue surrounding paratransit services and issues.

Mr. Traasdahl briefly took the floor again to recap his presentation and the issues, challenges, and opportunities it presented. Before Mr. Traasdahl finished, Mr. Bryan Wachter referred to a chart in the presentation showing how expenses would exceed revenue in 2023. He said he would like to see a 3-, 5-, or even 10-year growth model based on projected expenses to see what needs to be done to counteract expenses exceeding revenue. Chair Snyder agreed that additional information would be helpful, commenting specifically on Mr. Kumar's observations that addressing latent demand could impact revenue growth.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

5. RECEIVE A PRESENTATION ON HOW TRANSIT TRANSFORMS A COMMUNITY

Comments:

Chair Don Snyder explained that Ms. Carolyn Flowers was slated to provide insight on transit from a national perspective, but she had a serious situation arise and could not be at the meeting. In place of this, Ms. Lauri Hettinger, Senior Policy Advisor in the Public Policy and Regulation Group for the Washington D.C. Office of Holland & Knight, would provide a national perspective on transit.

Ms. Hettinger began her report by describing that many transit agencies across the country were facing similar problems in their communities related to population growth, capacity issues, and infrastructure

funding. She stressed the importance of regional agencies, such as the Regional Transportation Commission of Southern Nevada (RTC), to address the needs of each community. She described the transit situation in Phoenix, Arizona and how its transit strategies have evolved over the past few years, citing the role of legislative representation in supporting infrastructure initiatives. Ms. Hettinger discussed in detail the importance of these communications, and described the upcoming infrastructure spending principles being coordinated by the current presidential administration. These efforts were expected to be publicized in the following month and include the following initiatives:

- \$200 billion expected to be leveraged into \$1 trillion
- These initiatives are organized into several segments:
 - Incentives – 3P arrangements, grants, and other incentive packages
 - Rural – Allowing states to selectively choose how they allocate funding to each region
 - Transformational Projects
 - Innovative Financing – Increasing the size/scope of the United States Department of Transportation (USDOT) Transportation Infrastructure Finance and Innovation Act (TIFIA) Program, in addition to other government programs

In summary, Ms. Hettinger noted that Nevada was a great example of a community focused on innovation and strategic leveraging of local funds. She believed that Nevada's strategies could set a great example for other agencies around the country. From there, the floor was opened to questions from the Transportation Resource Advisory Committee and Community Collaboration (TRAC or Committee).

Mr. Warren Hardy asked how effective, in Ms. Hettinger's estimation, the RTC was at allocating resources to gain access to grant money and other sources of federal assistance. Ms. Hettinger replied that she believed the RTC was quite effective in these efforts, but that she would be able to find out more during her upcoming in-depth meeting with the RTC. Despite this assurance, Chair Snyder believed the RTC was a long way off from getting its fair share of federal funding. He stated the need for the RTC to stay on these efforts and locate new opportunities for funding. Ms. Hettinger cited that the RTC had success with Transportation Investment Generating Economic Recovery (TIGER) grants, but Mr. Hardy agreed that these planning processes needed to be closely monitored to ensure that the RTC was maximizing its funding opportunities.

Mr. David Swallow agreed that the RTC had been successful with TIGER grants, but asked Ms. Hettinger how the future looked for expanding the funding options that the RTC had access to. Ms. Hettinger replied that TIGER funding would continue, as well as the Infrastructure for Rebuilding America (INFRA) grant program. Despite these positives, she noted that there are challenges with the Capital Investment Program (CIP), stating that the current presidential administration was not supportive of continuing that plan. However, there was some legislative confusion about which direction this decision would go. Ms. Hettinger reiterated the importance of the RTC leveraging its relationships with local businesses, as well as legislators on Capitol Hill, to support its capital improvement strategies.

Mr. Ram Kumar pointed out that in communities like the RTC, land use planning needs to be a priority along with its HCT planning projects in order to adequately identify revenue sources and ensure funding is available. The Committee briefly reviewed the importance of these types of conversations, with most members agreeing that bringing these issues to the forefront of funding conversations was important for growth in the area.

From there, Chair Snyder introduced Ms. Helen Foley, Faiss Foley Warren, to discuss the next portion of the item. Ms. Foley explained that in order to aid in the TRAC members' understanding of transit issues, the RTC had arranged to set up a series of group transit rides for the TRAC members. Each trip would

examine a different demographic and would include assessment data collected by each of the participating project teams. Ms. Foley said it would be greatly helpful to have the Committee members join these groups and share their impressions after the fact. She requested that all members sign up for one of the four trips during the meeting. She then handed over the items to Mr. Nathan Goldberg, Manager of Transit Planning for the RTC, to provide more details.

Mr. Goldberg provided a brief overview of each of the four planned routes to help the TRAC members decide which trip to choose. The dates and routes included the following:

- January 17, 2018: Route 109 on Maryland Parkway, one of the busiest and most productive routes
- January 17, 2018: Strip and Downtown Express (SDX)
- January 18, 2018: Centennial Express (CX), ending at the University of North Las Vegas Transit Center on campus
- January 18, 2018: Route 206, Charleston Boulevard, diverse in both geography and passenger demographics

Ms. Foley stated that additional information would be sent out for each event. After briefly discussing the logistics of the trips, the members were asked to select their preferred routes.

After the meeting reconvened, Mr. Matt Walker stated that in the absence of Ms. Flowers, information was not presented on Charlotte, North Carolina and Los Angeles, California. He asked if RTC staff had information on these regions that could be shared with the group. He added that the On Board advisory panel had requested that information. Mr. Swallow said he would pull some information together, and suggested that an update on important transit systems be added to the next meeting's agenda. Chair Snyder agreed and said an update would be provided at the next meeting.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

6. RECEIVE AN UPDATE ON THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA'S "ON BOARD – YOUR FUTURE TRANSIT PLAN" INITIATIVE

Comments:

Following a detailed PowerPoint presentation [attached], Mr. David Swallow, Senior Director of Engineering and Technology for the Regional Transportation Commission of Southern Nevada (RTC), provided an update on the On Board transit plan. Mr. Swallow's presentation was prefaced by Chair Don Snyder saying that an overview of On Board had been shared in a previous meeting, and Mr. Swallow's presentation would be geared more toward updates about the Resort Corridor and Maryland Parkway.

Mr. Swallow began by explaining that the On Board transit plan can be broken into three key areas: current traditional transit, new high-capacity transit (HCT) services, and emerging transit technologies. He then gave an overview of the process and timeline. From Spring 2017 through Summer 2017, the planning team examined the purpose and need, looking at existing conditions, participating in community listening tours and stakeholder engagement, forecasting transportation and land use, and determining needs, opportunities and goals. The next area, developing alternatives, occurs from Summer 2017 through Winter 2017. This would involve peer review, stakeholder input, identification of transit supportive land use, HCT corridor identification and screening, transit system enhancements and upgrades to meet immediate and existing needs, and long-term bus system improvements. The third area includes recommendations and the final plan, which is slated to be completed during Summer 2018 and Fall 2018.

This would include recommendations for preferred land use, preferred HCT network, HCT ridership forecast, and traditional transit plan broken into phases for implementation. He elaborated that part of the On Board transit plan is to take a closer look at priority corridors and developing transit along these routes. One of these corridors is the Resort Corridor, which is not only essential to transportation, but also to the economy and the Las Vegas brand. This closer look is called the Resort Corridor Feasibility Study, which, in part, focuses on underlying transit needs of two groups – visitors (conventioners and tourists) and residents.

Mr. Swallow shared a map and corresponding transit demand for 2015 as well as projected transit demand by 2040. He described statistics pertaining to visitor transit demand. These statistics included:

- 42.9 million total visitors in 2016; growth of 0.9 percent per year since 2000
- 6.3 million conventioners in 2016; growth of 3.2 percent per year since 2000
- 12.7 million trips per year by visitors (nearly 20 percent of total trips)
- Nearly 35,000 trips per day
- Over 31,000 trips on the Deuce and Strip and Downtown Express (SDX)
- Visitors who fly to Southern Nevada are much more likely to use transit during their visit
- Visitor use of transit to/from McCarran International Airport is extremely low, at approximately one percent – reflects large untapped market

Mr. Swallow displayed a map of the Resort Corridor study area, describing the various areas. He then spoke to the feasibility study overview and its components. This includes: outreach and stakeholder engagement, existing transportation system performance, emerging trends in development and transportation services, HCT technologies, transportation system scenarios and alternatives development, funding sources and financial analysis, and feasibility study. He then detailed the feasibility study timeline.

Next, Mr. Swallow addressed Maryland Parkway, which is another corridor of interest that is being explored for future transit improvements. He said that while Maryland Parkway may be a relatively small corridor, it was valuable to perform a feasibility study for many reasons, such as that it connects the top five transit routes, is a high-productivity route, links key destinations, and is home to more than 85,000 jobs and 93,000 residents. Additionally, of the households in this corridor, 25 percent do not own a vehicle and 45 percent are considered low-income.

Mr. Swallow stated that Maryland Parkway is the type of connector route that stitches the entire valley together. He displayed a map of Maryland Parkway and discussed the corridor from McCarran International Airport (McCarran) to the Las Vegas Medical District. He remarked on the corresponding jobs at various activity centers along the route, such as the University of Nevada, Las Vegas, Sunrise Hospital and Medical Center, and Downtown Las Vegas.

Mr. Swallow then explained that the purpose for the Maryland Parkway study and potential transit upgrades would be to improve mobility, maximize transportation choices, have faster, more reliable and attractive transportation, instill a sense of place, and improve economic development. He described some of the potential improvements, referring to the presentation slides which showed mock-ups of potential improvements. Mr. Swallow said that, currently, Maryland Parkway has six travel lanes. The On Board transit plan would propose repurposing the outer travel lanes into dedicated transit lanes.

Continuing with his presentation, Mr. Swallow discussed the benefit/cost comparison for Maryland Parkway/Route 109 improvements, referring to the data presented on the slide. He described the existing route ridership, transit time, and potential improvements to each if bus rapid transit (BRT) or light rail

(LRT) were introduced. He also spoke to potential costs of each type of improvement. He said that when talking about investment to improve the corridor, it is not done to necessarily generate ridership, as it already exists, but more to make transit more viable and to connect the transit system.

Mr. Jim Long asked for clarification regarding BRT and the reduction in number of lanes. He asked what accounted for the improved travel time between BRT and LRT. To answer, Mr. Swallow said the travel time difference was due, in part, to docking and all-door boarding logistics. He added that there is an increased precision to boarding on LRT that cannot be achieved with a bus.

Next, Mr. Danny Thompson felt that whichever transit method is decided upon, it is important that it go all the way to McCarran. He commented that when the Las Vegas Monorail (Monorail) was built, it did not go to McCarran, and then it went bankrupt. He also stated that the football stadium was a big factor to consider. Mr. Swallow said the new, proposed transit system would go to McCarran. He said that the Monorail is well-positioned for access to the convention centers even if it does not reach McCarran.

Mr. Ram Kumar remarked that many of these options could be incremental. He said that if lanes were dedicated to transit, these lanes could start with a type of metro rapid service before graduating to a BRT or LRT. Mr. Kumar said this had been done before with High Occupancy Vehicle (HOV) lanes in Los Angeles County. He said incremental growth, incremental changes, and flexible mobility are aspects that could be examined. This could also ease the burden of funding.

Ms. Mauricia Baca referred to Mr. Swallow's slide detailing the initial year projection for ridership. She asked whether projected ridership was also examined as it pertains to leveraging economic development of BRT versus LRT in the future. Mr. Swallow said that he had, and offered that when numbers are looked at for creating opportunity for transit-oriented development, LRT is the preferred method due to a sense of permanence in investor confidence.

Mr. Tom Warden concurred with Mr. Swallow. While he agreed with Mr. Kumar's sentiments regarding a sense of flexibility, Mr. Warden also noted that commercial sentiment is in favor of something more permanent. He also spoke to the impediment on the public caused by construction and infrastructure upgrades, saying if this is going to happen, it would be best if it happened up front rather than later on.

Mr. Windom Kimsey asked about autonomous vehicles and their use in the proposed dedicated lanes. He wondered if it would be a potential option to hypothetically have a number of autonomous vehicles trailing each other much like a train. Mr. Swallow said that autonomous vehicles could be connected, but by comparison, something like LRT can hold ten times more people in a single car. He brought up Mr. Warden's comments about sense of place and permanence.

Chair Snyder wrapped up the item discussion by saying this would be an important and ongoing conversation, and he spoke briefly to the viability of Maryland Parkway improvements, the need for transit to reach McCarran, and the potential that the new football stadium would present. Chair Snyder said the dialogue would continue during future meetings.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

~~7. RECEIVE AN UPDATE ON SMART MOBILITY AND INNOVATION FROM THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA~~

Comments:

Due to time constraints, this item was held for a later meeting.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

8. RECEIVE AN UPDATE ON SMART MOBILITY AND INNOVATION FROM PRIVATE INDUSTRY

Comments:

Chair Don Snyder discussed receiving an update on Smart Mobility and Innovation from private industry. Before introducing the representative from Aptiv, Chair Snyder noted the importance of these conversations, particularly as Smart Cities become a more widely accepted phenomenon in transit planning. He briefly detailed the history of Aptiv's role in transit development before introducing the meeting's speaker, Mr. Namu Namboodiri.

Following a detailed PowerPoint presentation [attached], Mr. Namboodiri began his presentation. He first noted that, Aptiv, had recently split from its parent company, Delphi. He provided background on these companies and Delphi's rise from a division of General Motors to its status as a tier one automotive company in its own right. He described the nature of change in the transportation industry, citing companies like Uber and Lyft as significant disruptors. Mr. Namboodiri stated that in accordance with the quickly developing transit industry, Aptiv was created. He played a brief video for the Transportation Resource Advisory Committee and Community Collaboration (TRAC or Committee) that describes Aptiv's role and future goals for public transportation innovation.

Mr. Namboodiri discussed how all aspects of the transportation industry are being reimaged due to smart technology, including product development, licensing, and software creation. The first concept reviewed was automated driving technology. Mr. Namboodiri briefly discussed the history of autonomous vehicles and how Delphi had acquired some of these original intellectual properties. These properties have allowed Delphi to perform numerous studies and public outreach efforts to push their technology forward. This made Delphi one of the market leaders in automated driving technology. Mr. Namboodiri described Delphi and Aptiv's role at CES 2017 and the company's planned presence for the upcoming CES 2018 event in January. Chair Don Snyder mentioned that he is a big supporter of connecting things together and stated the need to put these types of conversations into action rather than leaving them as theoretical ideas. Mr. Namboodiri thanked Chair Snyder for his thoughts.

After a brief description of Aptiv's global automated driving initiatives, Mr. Namboodiri informally polled the Committee to see how many members had taken trips in automated vehicles. Several members raised their hands, with Chair Snyder noting that the Regional Transportation Commission of Southern Nevada (RTC) and TRAC members had attended CES 2017 events that related to this issue and other relevant transit events. He expressed his desire to do the same during the upcoming 2018 CES event.

From there, Mr. Namboodiri further explained why Aptiv is focusing on Smart Cities. Aptiv's mission is to shift from a product-based company to a mobility company, which involves going into communities to determine actual needs and use cases that would support a fulfilling ecosystem of transportation.

However, Smart Cities bring as many challenges as benefits, so it is important to know how to stay legally compliant and include underserved populations with these solutions. Aptiv's goal is to research and understand these issues before building their offerings up. Mr. Namboodiri then provided several key statistics on mobility for the board. It was estimated that by 2050, the transit landscape would be significantly different, citing the following: 70 percent of all people will be living in cities, there will be 40 percent more freight, five times more emissions, four times more overall costs, and three times more travel time. He then state that the benefits of smart vehicle adoption for cities would be: a 28 percent decrease in number of vehicles, a 44 percent decrease in use of parking spaces, 30 percent reduced travel time, 66 percent less emissions, and 87 percent fewer accidents.

Mr. Namboodiri noted that these benefits, however, can only be achieved with technology companies that have partnerships with transportation agencies. He said Aptiv is currently running pilots across the globe, but wants to expand further.

First, Chair Snyder noted that the concept of Smart Cities encompasses far more than just transportation. He asked how important transportation was to Aptiv when compared with all these other goals. Mr. Namboodiri replied that transportation is one of the highest priorities, as everything else in these communities is impacted by mobility. Chair Snyder agreed and said that due to the fast pace these communities are developing, it is important to get in front of these issues early and create opportunities that support future efforts.

Mr. Ram Kumar noted that Smart Cities tend to be demand-responsive cities, meaning that rather than consumers adapting to the supply, the supply has to adapt to the demand through the use of technology. Smart Cities enable this type of demand responsiveness in many different areas. He briefly reviewed the benefits of these technologies and how they impact quality of life. He agreed that professional partnerships in these areas are important. He commented that with autonomous vehicles and mobility solutions, transit must be at the core.

Mr. Ken Evans mentioned that areas like Boston, Massachusetts and Singapore were included in Aptiv's pilots. He asked what kinds of benefits a pilot in Las Vegas would provide to Aptiv. Mr. Namboodiri replied that vehicle safety is one of the top priorities for these types of programs. There has to be enough data available in the research to prove the effectiveness of these solutions. More pilots would help in this regard, but moving beyond this, it is also important to examine the entire ecosystem of transit performance. Cities like Las Vegas provide new environments for examining transit issues in situations that are unique to each region.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

9. DISCUSS UPCOMING EVENTS

Comments:

Ms. Deborah Campbell, Meeting Facilitator, shared the following events with the Transportation Resource Advisory Committee and Community Collaboration (TRAC):

- Southern Nevada Strong (SNS) Summit occurring on December 13, 2017
- CES 2018 event in January 2018
- TRAC field trips in the coming weeks
- Transit-Oriented Development Symposium hosted by the Regional Transportation Commission of

Southern Nevada (RTC) on February 14, 2018

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

10. CONDUCT AN OPEN DISCUSSION ON TOPICS AND DISCUSSIONS FROM THE TRAC AGENDA

Comments:

No comments were made.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

Item:

11. CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION

Comments:

No comments were made.

Motion:

No motion was necessary.

Vote/Summary:

No vote was taken.

ADJOURNMENT

The meeting adjourned at 5:00 p.m.

Respectfully submitted,

DocuSigned by:

Marin DuBois

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Marin DuBois, Recording Secretary

DocuSigned by:

Marek Biernacinski

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Marek Biernacinski, Transcription Secretary

The logo consists of the letters 'T', 'R', 'A', and 'C' in a bold, sans-serif font. The 'R' has a horizontal bar that extends to the left, creating a stylized 'TR' monogram. The entire logo is enclosed within a white rectangular border.

TRAC

TRANSPORTATION
RESOURCE ADVISORY
COMMITTEE & COMMUNITY
COLLABORATION

December 7, 2017

The logo consists of the letters 'T', 'R', 'A', and 'C' in a bold, sans-serif font. The 'R' has a horizontal bar that extends to the left, creating a stylized 'TR' monogram. The entire logo is enclosed within a white rectangular border.

TRAC

Item #1

CITIZENS PARTICIPATION



Item #2

APPROVAL OF MINUTES



Item #3

TRAC GOALS, FRAMEWORK & AGENDA REVIEW

COMMITTEE GOALS

- Learn about Southern Nevada's mobility challenges, new developments and opportunities.
- Learn about smart communities, emerging technologies and how these efforts can impact and improve mobility, accessibility and safety in Southern Nevada.
- Obtain feedback and recommendations on how to best address and prioritize mobility solutions.

MEETING FRAMEWORK

Meeting 3 - February 1, 2018 – TOD, pedestrian safety and future developments

Meeting 4 - April 5, 2018 – Funding and On Board community recommendations

Meeting 5 - June 7, 2018 – Project priorities and recommendations

Meeting 6 - August 2, 2018 – Discuss recommendations further and next steps



AGENDA REVIEW

- Traditional transit overview
- How transit transforms a community
- TRAC field trip opportunity
- On Board Update
- Smart Mobility & Innovation
- Upcoming events

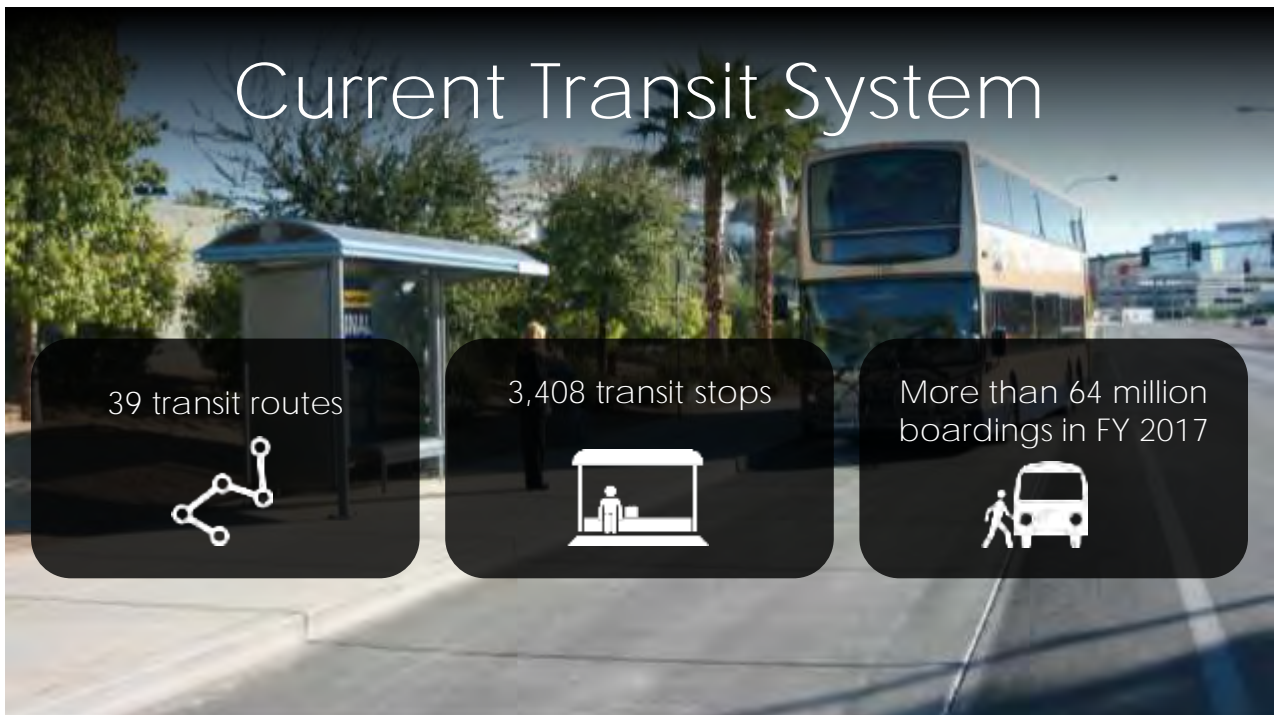


Item #4

TRADITIONAL TRANSIT OVERVIEW

History of Transit in Southern Nevada





Vehicle Ownership



67%

Do NOT Own a Personal Vehicle



55%

Do NOT Have a
Valid Driver's License

Connecting Our Community



60%

Of Trips Are Made To/From
Work/Home



40%

Of Trips Are Recreational, Medical,
Social, Shopping or Educational

What is Important to Transit Riders?

Frequency
of service

Affordability

Reliability &
On-time
Performance





Transit Listening Tour November 14-16, 2017

Value of Transit to Southern Nevada



Transit Needs



2015-2016 NATIONAL TRANSIT DATABASE RANKED RTC NUMBER 1

#1

Operating Cost

2015 - \$2.12
2016 - \$2.26

#1

Subsidy

2015 - \$1.02
2016 - \$1.18

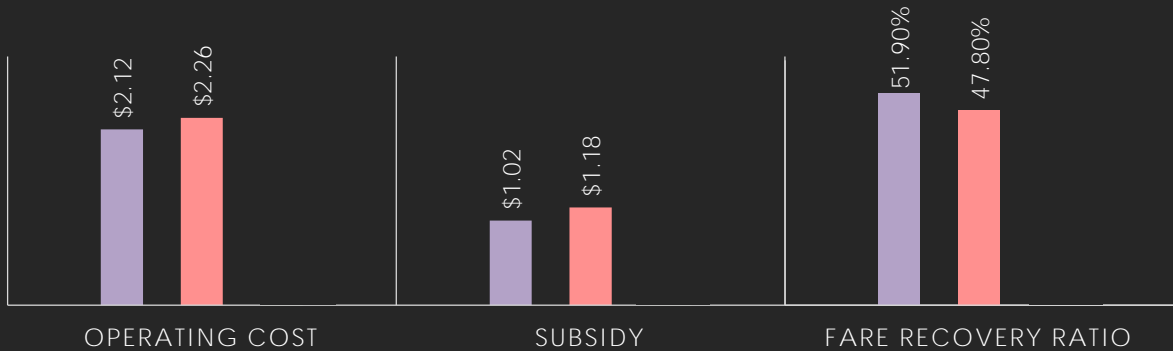
#1

Fare Recovery

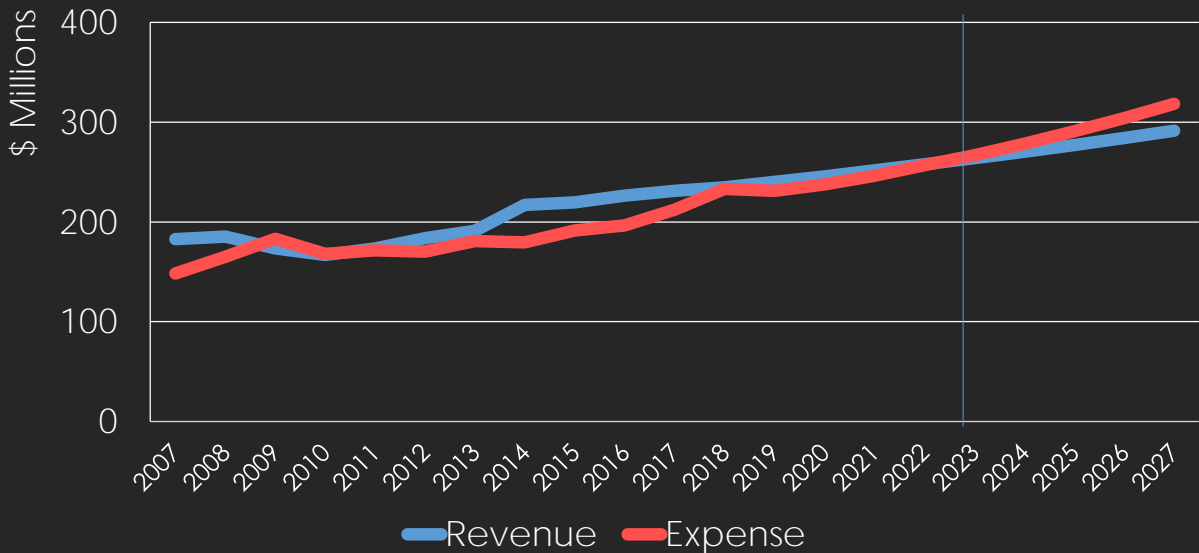
2015 - 51.9%
2016 - 47.8%

2015-2016 NATIONAL TRANSIT DATABASE RANKED RTC NUMBER 1

■ RTCSNV 2015 ■ RTCSNV 2016



Transit Operations Expenses and Revenue



Mobility Challenges & Concerns

Growth

Paratransit

Revenues

TRAC

Item #5

HOW TRANSIT
TRANSFORMS A COMMUNITY

Sign up for January 2018 transit field trips



Item #6

ON BOARD UPDATE

YOUR FUTURE TRANSIT PLAN



WHAT WILL ON BOARD DO?

Traditional Transit Improvements



PROCESS / TIMELINE



RESORT CORRIDOR FEASIBILITY STUDY



UNDERLYING TRANSIT DEMAND

Underlying demand for transit in Southern Nevada is driven by :



Resident Travel



Visitor Travel

Resident Demand driven by:



Population



Employment

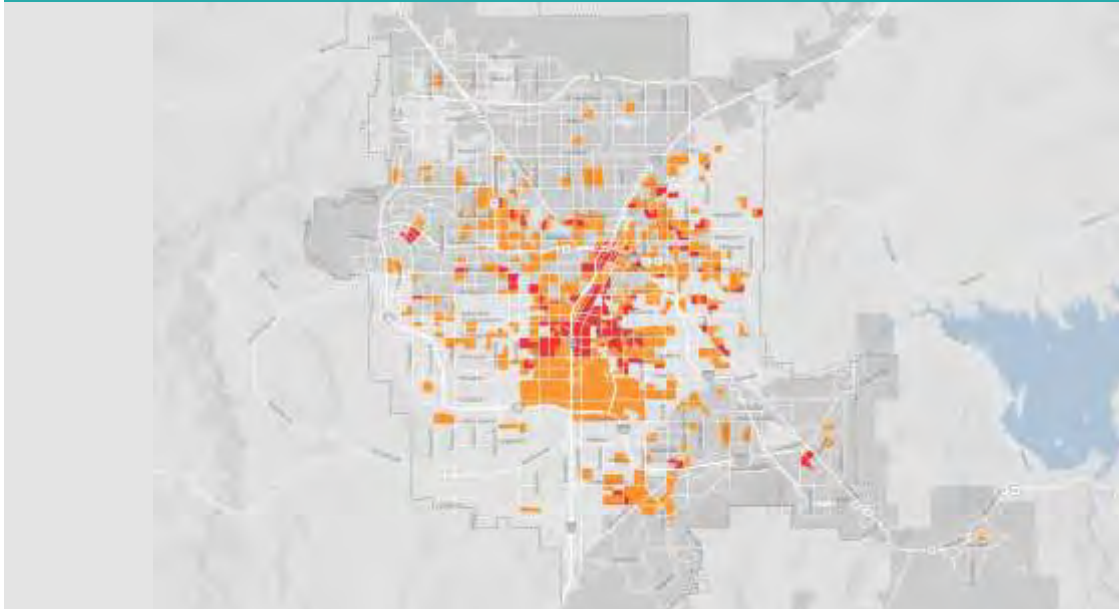


Activity Centers

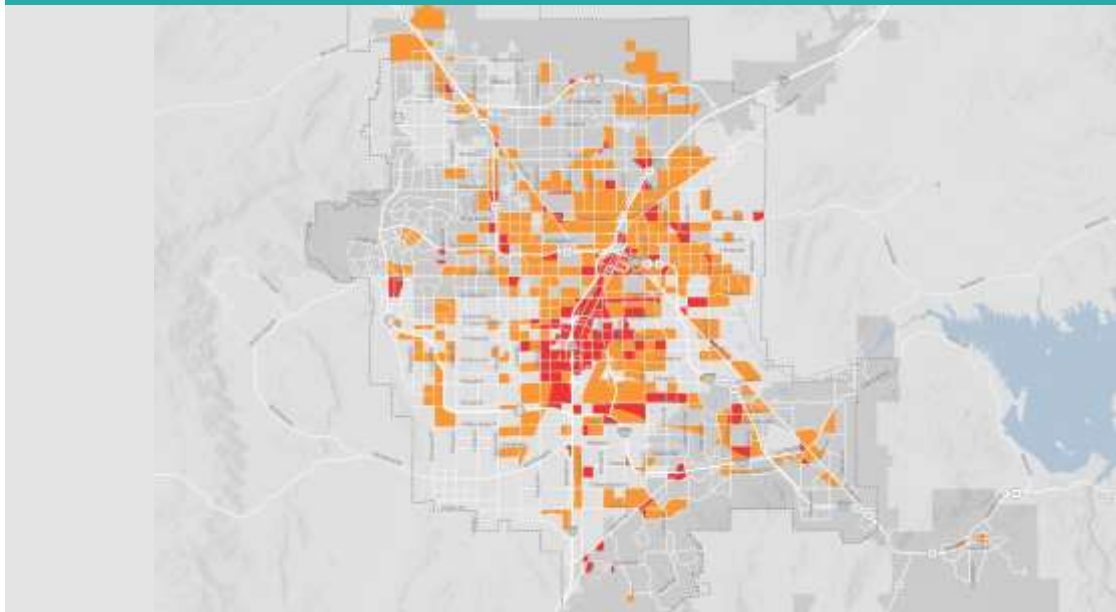


Development Patterns

TRANSIT DEMAND - 2015



TRANSIT DEMAND - 2040



VISITOR-BASED TRANSIT DEMAND

Visitor demand related is to:

Number and type of visitors



Conventioners



Tourists

Type of Transit



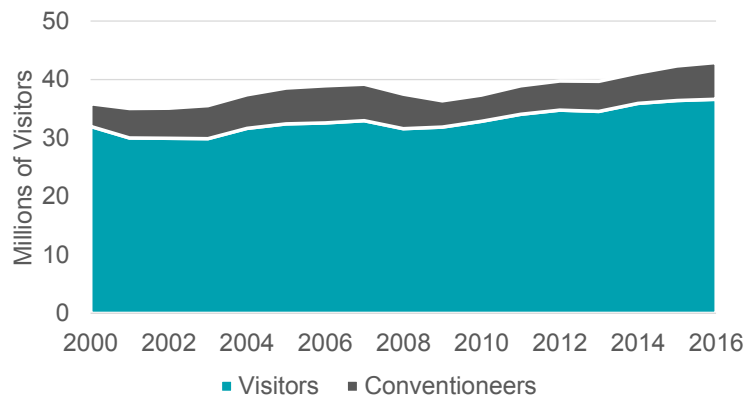
Rapid bus verses other RTC buses



Travel to and
from the
Airport

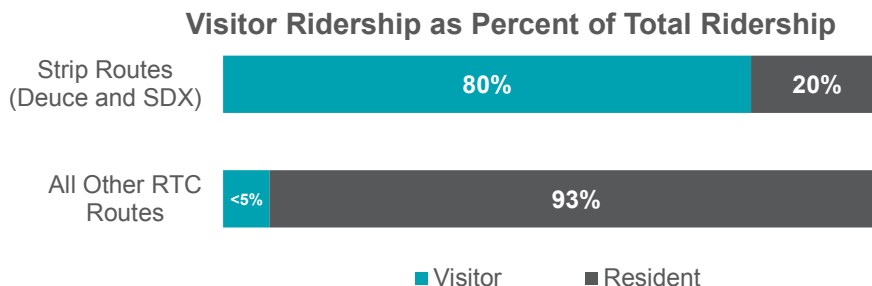
VISITOR DEMAND

- 42.9 million total visitors in 2016; growth of 0.9% per year since 2000
- 6.3 million conventioners in 2016; growth of 3.2% per year since 2000



VISITOR USE OF TRANSIT

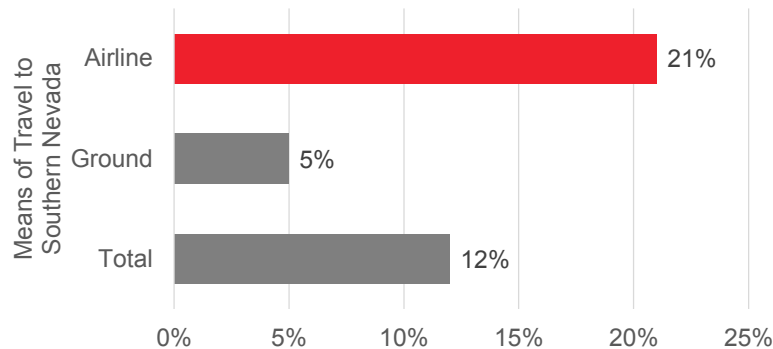
- 12.7 million trips per year by visitors (nearly 20% of total trips)
- Nearly 35,000 trips per day
- Over 31,000 on Deuce and SDX



Sources: RTC, Las Vegas Convention and Visitor Authority, 2015 Las Vegas Visitor Profile

VISITOR USE OF TRANSIT

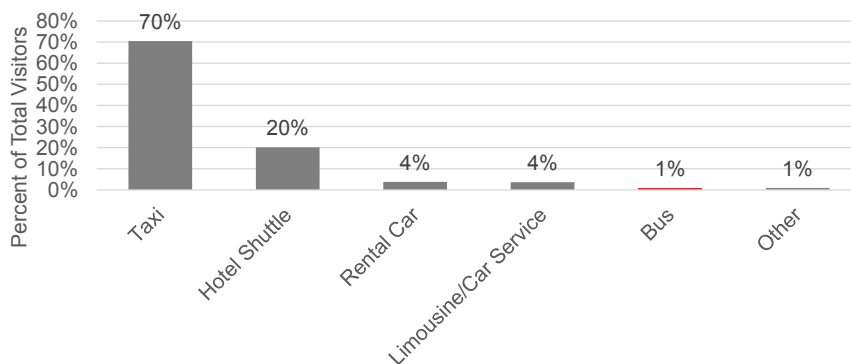
- Visitors who fly to Southern Nevada are much more likely to use transit during their visit



Source: 2015 Las Vegas Visitor Profile

VISITOR USE OF TRANSIT TO/FROM AIRPORT

- Visitor use of transit to/from McCarran International Airport is extremely low, at approximately 1% – reflects large untapped market



Source: 2014 Southern Nevada Visitor Survey

RESORT CORRIDOR FEASIBILITY STUDY AREA

- Downtown
- North Strip
- Center Strip
- Strip East
- South Strip
- Airport



FEASIBILITY STUDY OVERVIEW

Scope of Work Framework:

1. Outreach and Stakeholder Engagement
2. Existing Transportation System Performance
3. Emerging Trends in Development and Transportation Services
4. High Capacity Transit Technologies
5. Transportation System Scenarios and Alternatives Development
6. Funding Sources and Financial Analysis
7. Feasibility Study

FEASIBILITY STUDY TIMELINE (MONTHS)



MARYLAND PARKWAY



WHY MARYLAND PARKWAY?

Connects to the
top 5 transit lines



Links key
destinations



93,096
Residents



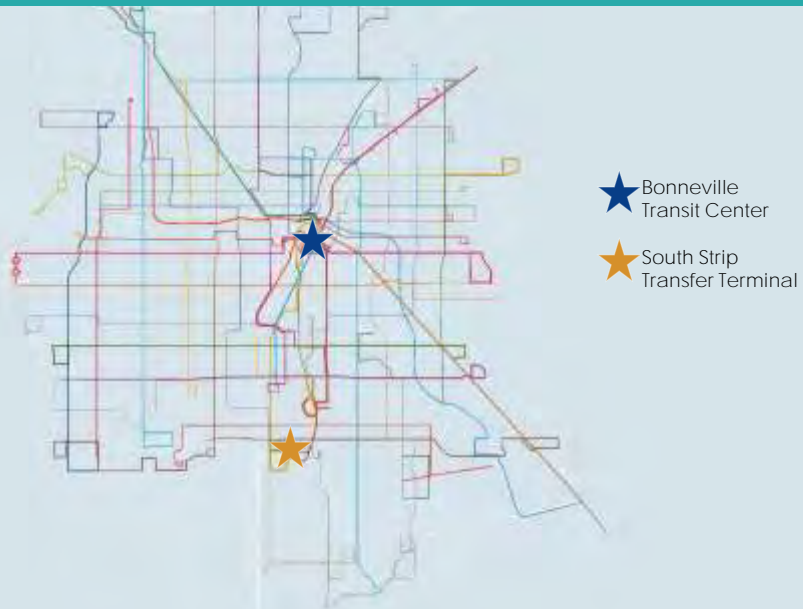
High-productivity
route



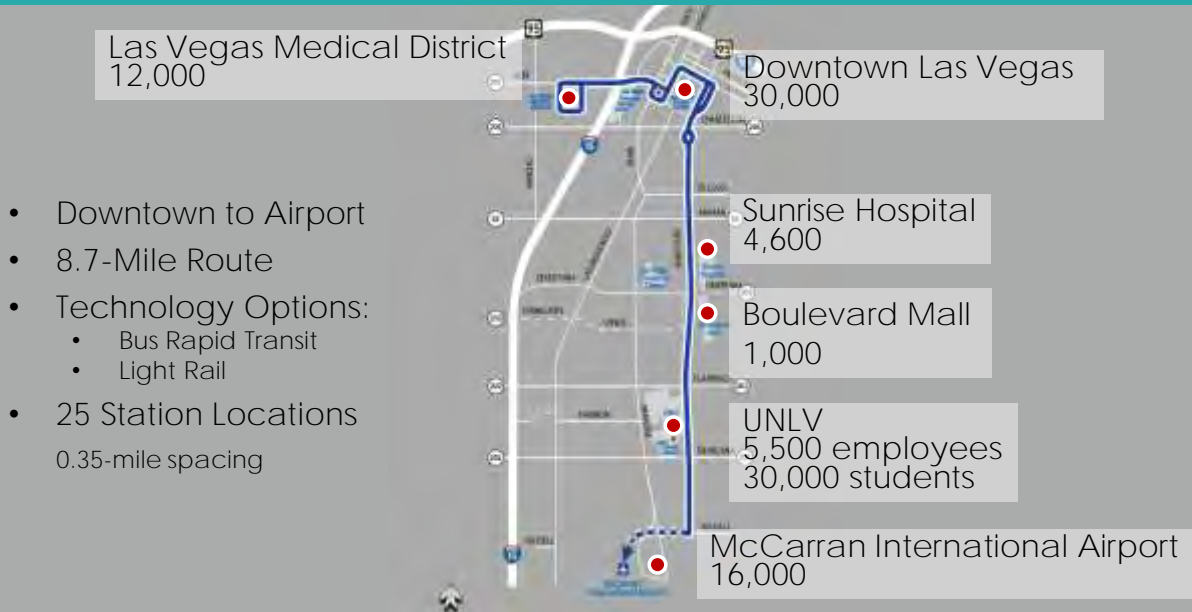
85,685
Jobs



RTC BUS ROUTES



PROPOSED ROUTE

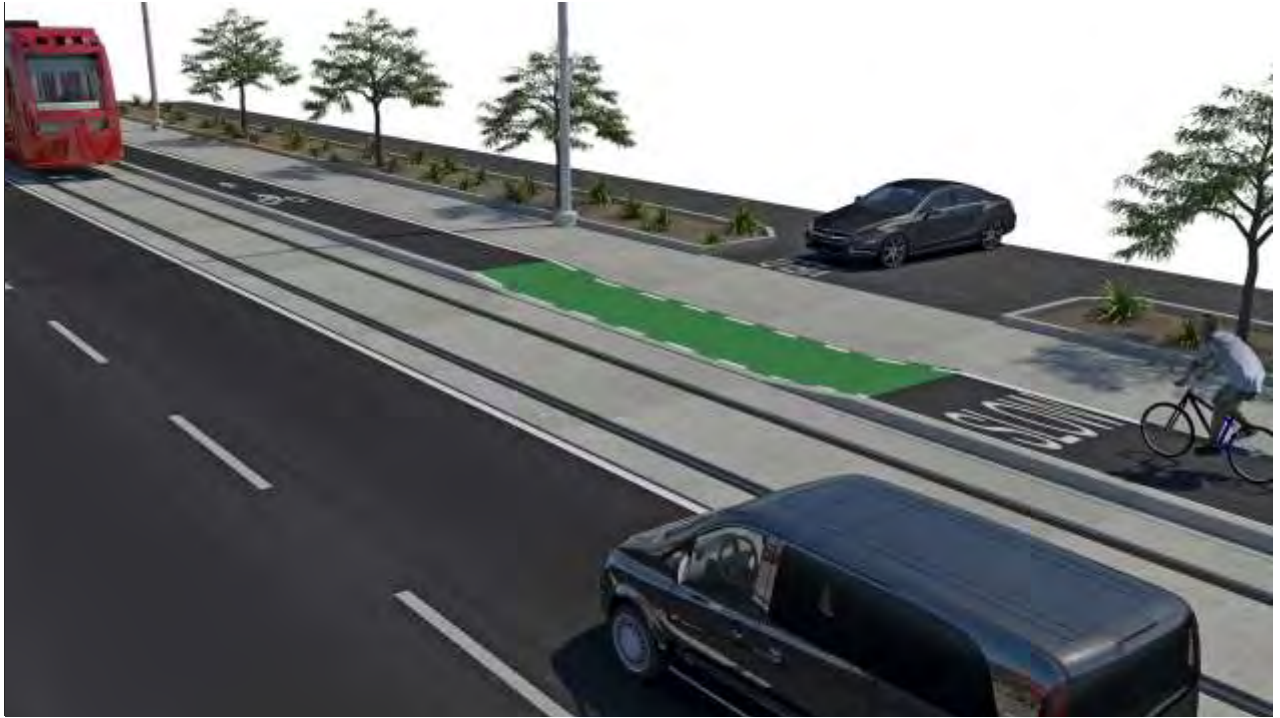


WHAT ARE WE TRYING TO ACHIEVE?



SIDE-RUNNING CONCEPT





BENEFIT / COST COMPARISON

	Existing Route 109	Enhanced Route 109	BRT Build Alternative	LRT Build Alternative
Ridership (opening year)	9,000	10,000	13,300	16,100
Average travel time (min)	49	49	41	32
Capital cost (2016 \$ / YOE \$)	\$15M	\$29M	\$298M / \$366M	\$573M / \$705M
O&M cost (2016 \$)	\$5.9M	\$6.8M	\$7.2M	\$11.5M
O&M cost per boarding	\$1.87	\$1.94	\$1.55	\$2.04

Open Discussion

In your travels nationally and internationally, how many of you have used public transportation? Why did you choose that mode of transportation?

What experiences have you, your employees or someone you know, had with RTC transit?

What transit improvements, including different mobility options, would you like to see in Southern Nevada's future?

Do you see public transit as one of our community's assets?

Item #8

SMART MOBILITY & INNOVATION
PRIVATE INDUSTRY UPDATE

December 06, 2017

Manu Namboodiri
Sr Director Smart Cities

AUTONOMOUS DRIVING OVERVIEW

• APTIV •

Aptiv Heritage : Delphi Snapshot

2016 Revenue: **\$16.7 Bil**

2016 EBIT: **\$2.2 Bil**

Countries: **46**

Major Manufacturing Facilities: **126**

Major Global Technical Centers: **15**

Engineers & Scientists: **20,000**

Employees: **173,000**

Market Capitalization: **\$26 Bil**



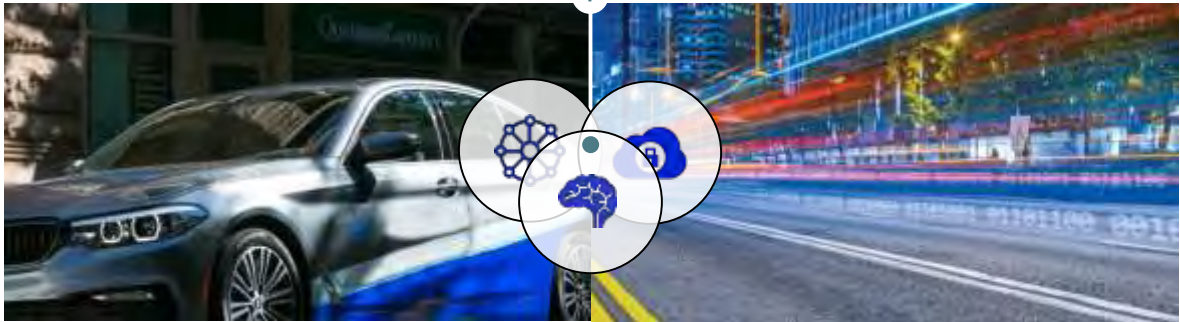
• APTIV •

For decades Delphi has been inside your car... now Aptiv will be moving beyond it

**SOFTWARE
DEFINED VEHICLE**



**OPERATING
ENVIRONMENT**



**DELPHI
APTIV**



Mobility: Pushing the boundaries of



Demonstrated Automated Driving Leadership

A RICH HISTORY OF FIRSTS AND MILESTONES ON PATH TO AUTOMATED DRIVING

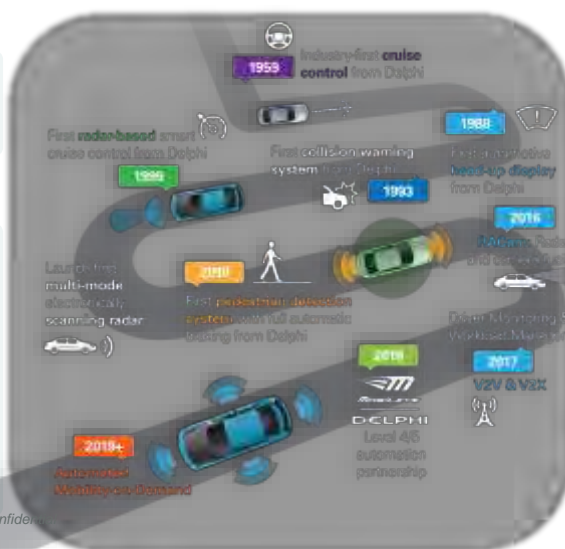
2007

DARPA Challenge with Ottomatika: Birthplace of autonomous driving; on the road even before Google

2015

1st automated drive at CES: One of two companies that passed autonomous vehicle permit testing in urban/residential area in Nevada

- **1st Coast to Coast automated drive:** 3400 miles in 99% autonomous mode
- **Acquired Ottomatika:** Spin-off of Carnegie Mellon University



2016

V2everything™ automated drive at CES: V2P, V2I unique HMI personal device connectivity

Automated Mobility on Demand Pilot: Low speed, point-to-point, autonomous, mobility-on-demand service in Singapore

2017

Most complex highway + urban drive at CES: V2P, V2I and unique HMI with personal device connectivity

Acquired NuTonomy: MIT heritage, autonomous technology leader

Most Complex Highway+Urban drive at CES 2017

2017

152

Ride & Drives
Day & Nighttime

4 x 7

4 vehicles over
7 days at CES

>1,400

miles traveled in
live Las Vegas
conditions

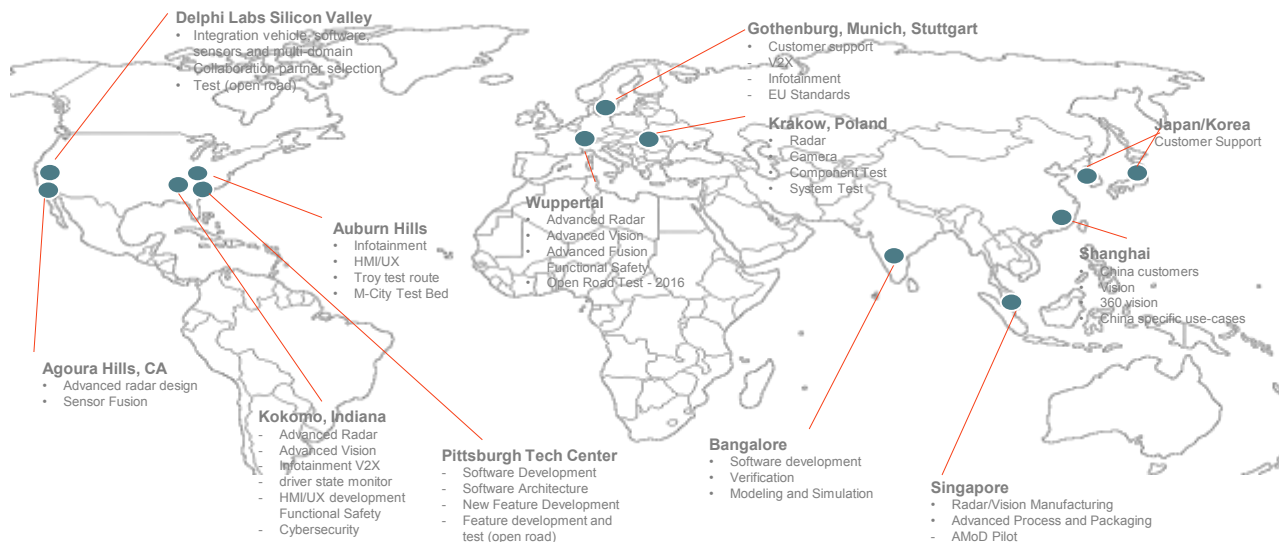
~99%

miles traveled in
Automated mode

60

• APTIV •

Global Automated Driving Capabilities



61

• APTIV •

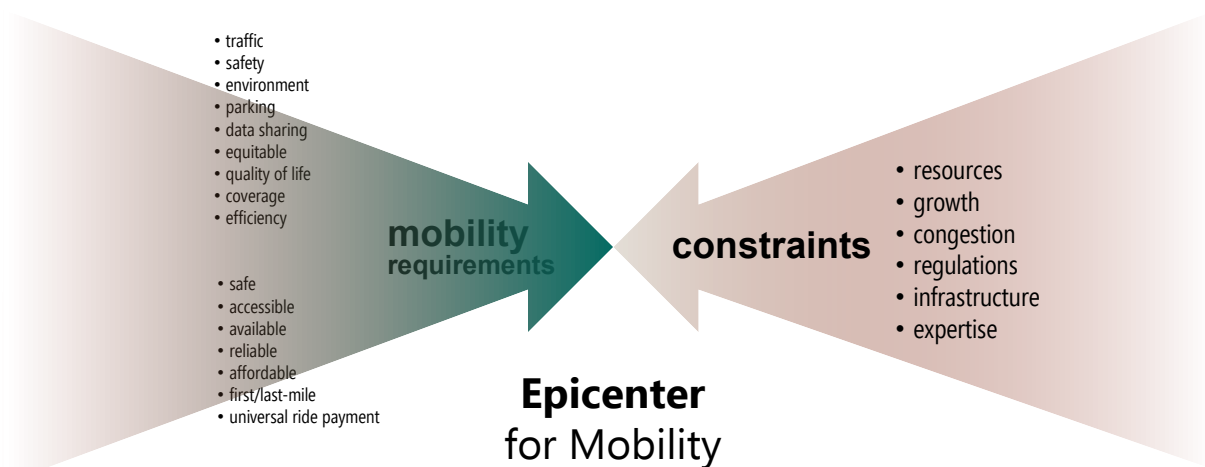
- Significant Aptiv presence and showcase in 2018
- Innovative autonomous experience demonstration – technology, use case
- Partnerships, ecosystem for success
- Importance of Las Vegas for continued technology and business model enhancements



62

• APTIV •

Why Smart Cities & Communities



63

• APTIV •

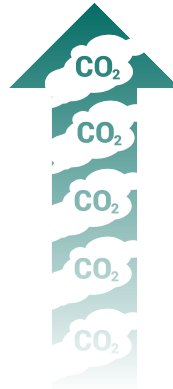
Urban mobility challenges by 2050*



50% of world population living in cities > 70%



freight +40%



5x
emissions



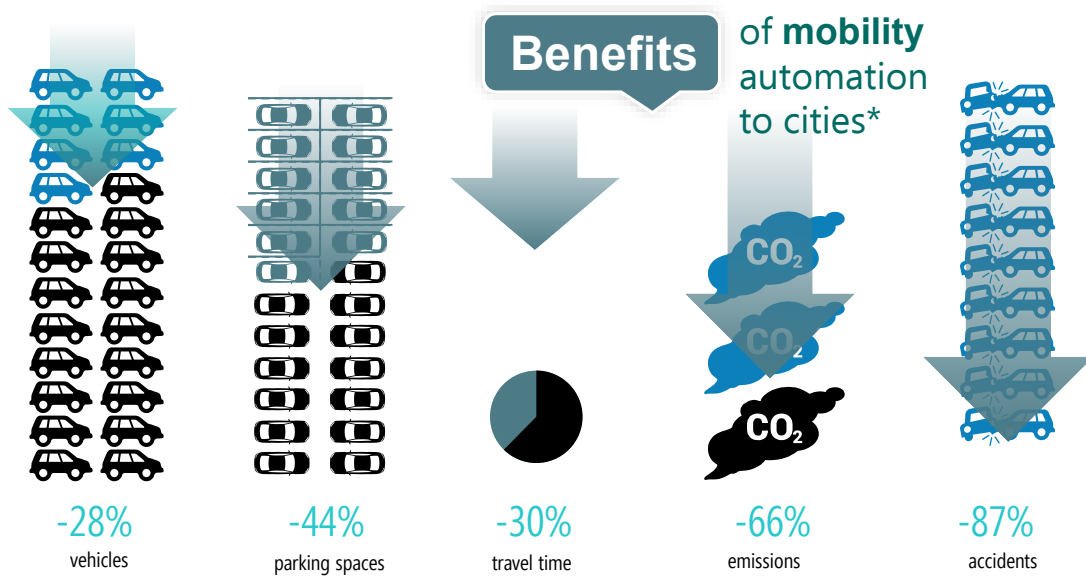
4x
cost



3x
travel time

64 *AD Little

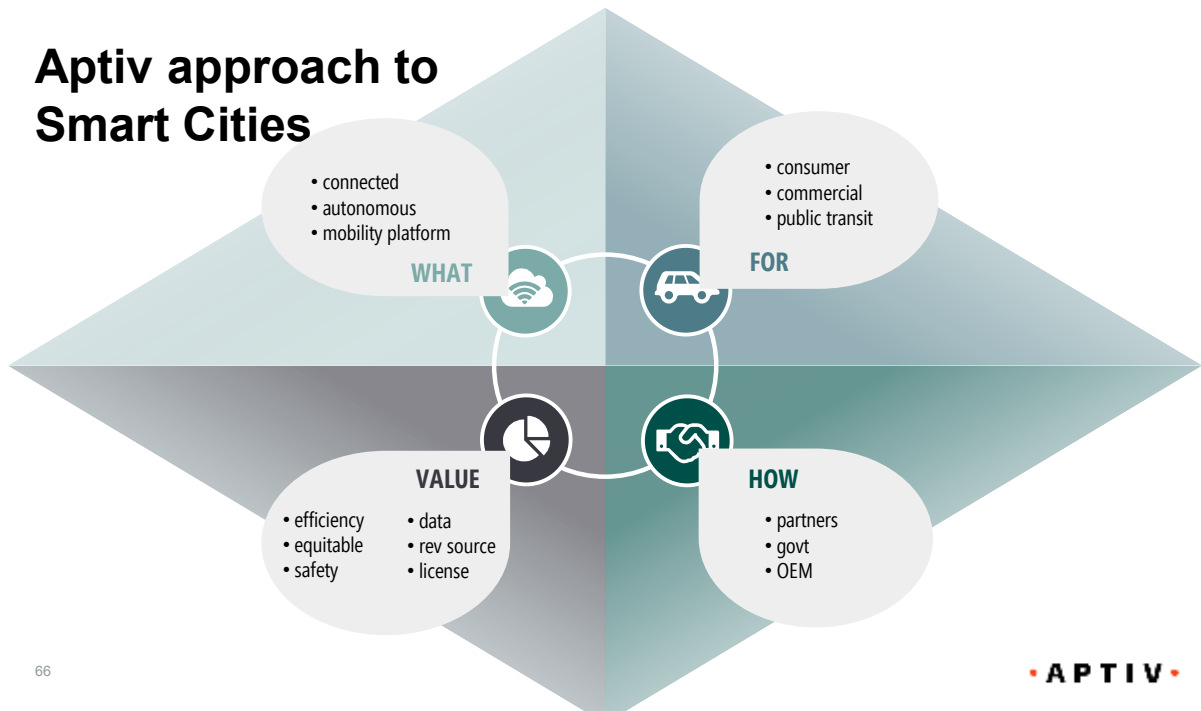
• APTIV •



65 *BCG

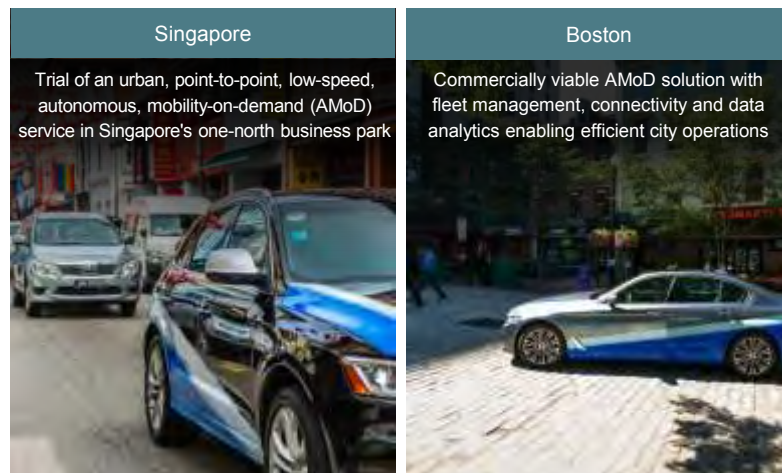
• APTIV •

Aptiv approach to Smart Cities



66

Smart City Pilots

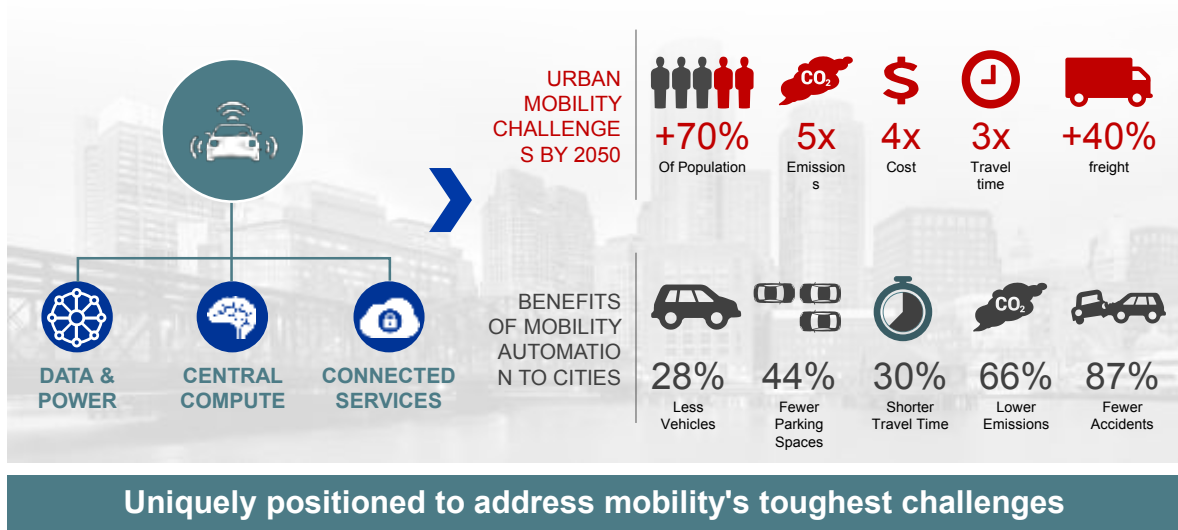


Smart City pilots in multiple regions

67

• APTIV •

Well Positioned Enable Smart Mobility Benefits



68

• APTIV •



Delphi Drive – 3400 miles Coast to Coast

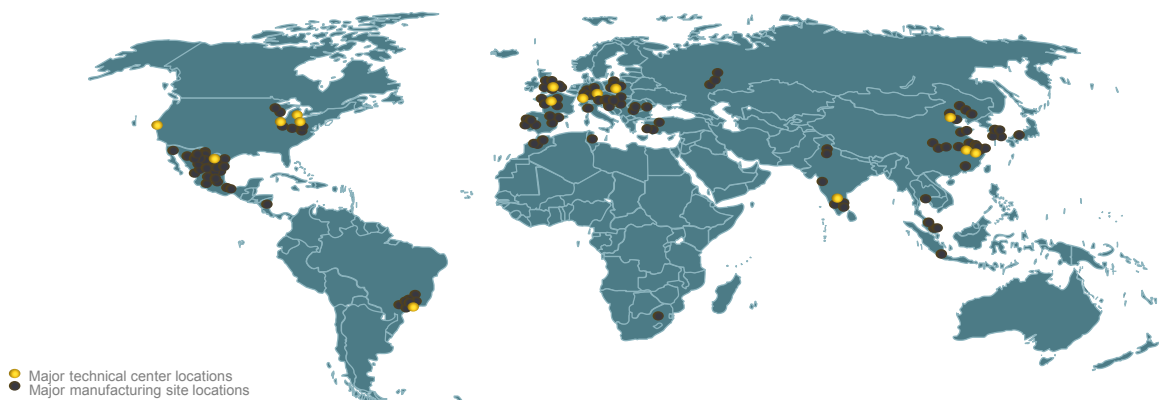


Data collection during San Francisco to New York City drive

70

• APTIV •

Global Footprint



Global scale with regional capabilities

71

• APTIV •



Item #9

UPCOMING EVENTS



Item #10

OPEN DISCUSSION



Item #11

FINAL CITIZENS PARTICIPATION



REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: TRAC GOALS, FRAMEWORK, AND AGENDA REVIEW		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION (TRAC) RECEIVE AN OVERVIEW OF THE TRAC GOALS, FRAMEWORK, AND AGENDA		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

FISCAL IMPACT:

None

BACKGROUND:

The Transportation Resource Advisory Committee and Community Collaboration (TRAC) will review and discuss the TRAC goals, framework, and meeting 3 agenda for TRAC Phase 3.

Respectfully submitted,

DocuSigned by:

 1EF079E7DF294EE...

TINA QUIGLEY
General Manager

md

TRAC Item #3
February 1, 2018
 Non-Consent

**REGIONAL TRANSPORTATION COMMISSION
OF
SOUTHERN NEVADA**



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: TRANSIT AND COMMUNITY ENGAGEMENT		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION (TRAC) RECEIVE A REPORT ON THE TRAC TRANSIT FIELD TRIPS		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

FISCAL IMPACT:

None

BACKGROUND:

The Transportation Resource Advisory Committee and Community Collaboration (TRAC) will receive a report from TRAC members of their transit field trip experiences on the transit system in Southern Nevada.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

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TRAC Item #4
February 1, 2018
Non-Consent

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: ON BOARD UPDATE		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION RECEIVE AN UPDATE ON THE REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA'S "ON BOARD – YOUR FUTURE TRANSIT PLAN" INITIATIVE		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

FISCAL IMPACT:

None

BACKGROUND:

In November 2016, the Regional Transportation Commission of Southern Nevada (RTC) awarded a contract to study high-capacity transit in Southern Nevada. Work on this plan commenced shortly thereafter, and the effort has now been rebranded "On Board – Your Future Transit Plan". On Board focuses on three areas: 1) traditional transit improvements; 2) high-capacity transit options; and 3) emerging transit technology opportunities. More information is available online at the study's website: www.onboardsnv.com.

Staff will provide the Transportation Resource Advisory Committee and Community Collaboration (TRAC) with an update of On Board, specifically an overview of the Maryland Parkway Corridor, followed by a panel discussion from entities and organizations familiar with the project.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

TRAC Item #5
February 1, 2018
 Non-Consent

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: HOW TRANSIT TRANSFORMS A COMMUNITY		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION RECEIVE A PRESENTATION ON HOW TRANSIT TRANSFORMS A COMMUNITY		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

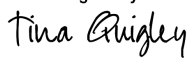
FISCAL IMPACT:

None

BACKGROUND:

The Transportation Resource Advisory Committee and Community Collaboration (TRAC) will receive a presentation from transportation expert Carolyn Flowers, the North American Transit Practice Leader for AECOM and former Acting Administrator of the Federal Transit Administration (FTA). The presentation will discuss how other communities address public transit and mobility challenges, specifically in Charlotte, North Carolina and Los Angeles, California.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

TRAC Item #6
February 1, 2018
 Non-Consent

**REGIONAL TRANSPORTATION COMMISSION
OF
SOUTHERN NEVADA**



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: SMART MOBILITY AND INNOVATION		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION RECEIVE AN UPDATE ON SMART MOBILITY AND INNOVATION		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

FISCAL IMPACT:

None

BACKGROUND:

The Transportation Resource Advisory Committee and Community Collaboration (TRAC) will receive an update from Regional Transportation Commission of Southern Nevada staff on smart mobility and innovation.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

TRAC Item #7
February 1, 2018
Non-Consent

**REGIONAL TRANSPORTATION COMMISSION
OF
SOUTHERN NEVADA**



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: UPCOMING EVENTS		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION DISCUSS UPCOMING EVENTS		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

FISCAL IMPACT:

None

BACKGROUND:

The Transportation Resource Advisory Committee and Community Collaboration (TRAC) will receive ongoing announcements of upcoming events related to transportation and TRAC Phase 3 discussions occurring in Southern Nevada.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

TRAC Item #8
February 1, 2018
Non-Consent

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REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: OPEN DISCUSSION		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION (TRAC) CONDUCT AN OPEN DISCUSSION ON TOPICS OF INTEREST AND REVIEW TOPICS FROM THE TRAC AGENDA		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

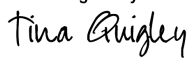
FISCAL IMPACT:

None

BACKGROUND:

The Transportation Resource Advisory Committee and Community Collaboration (TRAC or Committee) can share information about activities, meetings, news, and other topics of interest pertaining to the Committee, as well as review discussions from the TRAC February 1, 2018 agenda, in an informal manner. While no action may be taken on the subjects discussed, this item provides an opportunity for the exchange of information and may serve as a forum to suggest topics for future meetings of the Committee.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

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TRAC Item #9
February 1, 2018
 Non-Consent

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA



AGENDA ITEM

Metropolitan Planning Organization <input type="checkbox"/>	Transit <input type="checkbox"/>	Administration and Finance <input checked="" type="checkbox"/>
SUBJECT: CITIZENS PARTICIPATION		
PETITIONER: TINA QUIGLEY, GENERAL MANAGER REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA		
RECOMMENDATION BY PETITIONER: THAT THE TRANSPORTATION RESOURCE ADVISORY COMMITTEE AND COMMUNITY COLLABORATION CONDUCT A COMMENT PERIOD FOR CITIZENS PARTICIPATION		
GOAL: ENHANCE PUBLIC AWARENESS AND SUPPORT OF THE REGIONAL TRANSPORTATION SYSTEM		

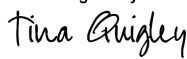
FISCAL IMPACT:

None

BACKGROUND:

In accordance with State of Nevada Open Meeting Law, the Regional Transportation Commission of Southern Nevada Transportation Resource Advisory Committee & Community Collaboration shall invite interested persons to make comments. For the initial Citizens Participation, the public should address items on the current agenda. For the final Citizens Participation, interested persons may make comments on matters within the Committee's jurisdiction, but not necessarily on the current agenda. No action can be taken on any matter discussed under this item, although the Committee can direct that it be placed on a future agenda.

Respectfully submitted,

DocuSigned by:

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TINA QUIGLEY
General Manager

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TRAC Item #10
February 1, 2018
 Non-Consent

