



**NOTICE OF MEETING OF THE  
CARSON AREA METROPOLITAN PLANNING  
ORGANIZATION (CAMPO)**

**Day:** Wednesday  
**Date:** July 10, 2019  
**Time:** Beginning at 4:30 pm  
**Location:** Community Center, Sierra Room, 851 East William Street, Carson City, Nevada

**AGENDA**

**AGENDA NOTES:** The Carson Area Metropolitan Planning Organization (CAMPO) is pleased to make reasonable accommodations for members of the public who are disabled and wish to attend the meeting. If special arrangements for the meeting are necessary, please notify Carson Area Metropolitan Planning Organization staff in writing at 3505 Butti Way, Carson City, Nevada, 89701, or Comments@CarsonAreaMPO.com, or call Lucia Maloney at (775) 887-2355 at least 24 hours in advance.

For more information or for copies of the supporting material regarding any of the items listed on the agenda, please contact Lucia Maloney, Transportation Manager, at (775) 887-2355. Additionally, the agenda with all supporting material is posted on the CAMPO website at [www.carson.org/agendas](http://www.carson.org/agendas), or is available upon request at 3505 Butti Way, Carson City, Nevada, 89701.

**1. ROLL CALL AND DETERMINATION OF A QUORUM**

**2. AGENDA MANAGEMENT NOTICE:** The Chair may take items on the agenda out of order; combine two or more agenda items for consideration; and/or remove an item from the agenda or delay discussion relating to an item on the agenda at any time.

**3. DISCLOSURES:** Any member of the CAMPO Board may inform the Chair of his or her intent to make a disclosure of a conflict of interest on any item appearing on the agenda or on any matter relating to the CAMPO's official business. Such disclosures must also be made at such time the specific agenda item is introduced.

**4. PUBLIC COMMENT:** Members of the public who wish to address the CAMPO Board may approach the podium and speak on any matter relevant to or within the authority of CAMPO. Comments are limited to three minutes per person per topic. If your item requires extended discussion, please request the Chair to calendar the matter for a future CAMPO meeting. No action may be taken upon a matter raised under this item of the agenda until the matter itself has been specifically included on an Agenda as an item upon which action may be taken.

**5. APPROVAL OF MINUTES:**

**5-A For Possible Action** – Discussion and possible approval of the June 12, 2019 draft minutes.

## 6. PUBLIC MEETING ITEM(S):

**6-A For Information Only** – Presentation and discussion on Task 3.2 Transit Planning of CAMPO's 2019/2020 Unified Planning Work Program (UPWP).

**Staff Summary:** Task 3.2 Transit Planning includes development of a Jump Around Carson (JAC) Transit Development and Coordinated Plan (TDCP). Staff and LSC Transportation (contracted) will provide a presentation regarding preliminary analysis of optional routes to expand services in the CAMPO region.

**6-B For Possible Action** – Discussion and possible action regarding Cooperative Agreement P301-19-804, between CAMPO and the Nevada Department of Transportation, for \$684,211.00 for development of a Transportation System Management Plan (TSMP) for Carson City, Douglas, Lyon, and Storey counties, and authorizing the Transportation Manager to execute the agreement and future amendments regarding term extensions or a change in amount up to 10%.

**Staff Summary:** Carson City currently provides technical services for operations and maintenance of traffic control systems in Carson City, Douglas, Lyon, and Storey counties. With decision-making supported by a technical advisory committee with representatives from each of the partner jurisdictions and the Nevada Department of Transportation (NDOT), CAMPO staff will manage the development of the TSMP which will result in improved system performance.

**6-C For Possible Action** – Discussion and possible action regarding submitting the CAMPO Disadvantaged Business Enterprise (DBE) 3-year Goal for Federal Fiscal Years 2020-2022 to the United States Department of Transportation.

**Staff Summary:** Title 49 Code of Federal Regulations (CFR) Part 26 provides guidelines for recipients of Federal Transit Administration (FTA) funds to establish and submit a DBE participation goal for forecasted contract opportunities that are fully or partially funded by FTA grants. The DBE participation goal is established based on the type of upcoming projects and DBE certified businesses available to perform them. Based on the criteria, CAMPO staff has determined that the updated DBE 3-year race neutral goal for CAMPO should be 0.72% for Federal Fiscal Years (FFY) 2020-2022.

**6-D For Possible Action** – Presentation and discussion regarding the submittal of a request to the Nevada Department of Transportation (NDOT) to classify Santa Barbara Drive, between Stephanie Lane and Vicky Lane, and to classify Vicky Lane, between Santa Barbara Drive and Stephanie Lane, as Minor Collector Roadways.

**Staff Summary:** The Federal Highway Administration (FHWA) has established guidelines for state, regional, and local jurisdictions to follow in classifying roadways. As it pertains to CAMPO and the member agencies, proposals for classifications are to be initiated by the metropolitan planning organization and submitted to NDOT. Once submitted, NDOT will review the proposal and submit a final proposal to FHWA for approval.

**7. INTERNAL COMMUNICATIONS AND ADMINISTRATIVE MATTERS – Non-Action Items:**

**7-A Future Agenda Items**

**8. BOARD COMMENTS: For Information Only** – Status reports and comments from the members of the CAMPO Board.

**9. The Next Meeting is Tentatively Scheduled** – 4:30 p.m., Wednesday, August 14, 2019, at the Sierra Room - Community Center, 851 East William Street.

**10. PUBLIC COMMENT:** Members of the public who wish to address the CAMPO Board may approach the podium and speak on any matter relevant to or within the authority of CAMPO. Comments are limited to three minutes per person per topic. If your item requires extended discussion, please request the Chair to calendar the matter for a future CAMPO meeting. No action may be taken upon a matter raised under this item of the agenda until the matter itself has been specifically included on an Agenda as an item upon which action may be taken.

**11. ADJOURNMENT: For Possible Action**

This agenda has been posted at the following locations by Thursday, July 4, 2019, before 5:00 p.m.:

City Hall, 201 North Carson Street  
Community Center, Sierra Room, 851 East William Street  
Carson City Library, Carson City Library, 900 North Roop Street  
Carson City Public Works, 3505 Butti Way  
Carson City Planning Division, 108 E. Proctor Street  
Douglas County Executive Offices, 1594 Esmeralda Avenue, Minden  
Lyon County Manager's Office, 27 South Main Street, Yerington  
Nevada Department of Transportation, 1263 S. Stewart Street, Carson City  
City Website: [www.carson.org/agendas](http://www.carson.org/agendas)  
State Website: <https://notice.nv.gov>

**This page intentionally left blank.**

**CARSON AREA METROPOLITAN PLANNING ORGANIZATION**

**Minutes of the June 12, 2019 Meeting**

**Page 1**

**DRAFT**

A regular meeting of the Carson Area Metropolitan Planning Organization was scheduled for 4:30 p.m. on Wednesday, June 12, 2019 in the Community Center Sierra Room, 851 East William Street, Carson City, Nevada.

**PRESENT:** Chairperson Mark Kimbrough  
Vice Chairperson Greg Stedfield  
Member Lori Bagwell  
Member Brad Bonkowski  
Member Jon Erb  
Member Vida Keller  
Member Chas Macquarie  
Ex-Officio Member Sondra Rosenberg

**STAFF:** Darren Schulz, Public Works Department Director  
Lucia Maloney, Transportation Manager  
Dirk Goering, Senior Transportation Planner  
Daniel Anderson, Transportation Planner / Analyst  
Michael Reynolds, Transit Coordinator  
Todd Reese, Deputy District Attorney  
Kathleen King, Chief Deputy Clerk

**NOTE:** A recording of these proceedings, the CAMPO's agenda materials, and any written comments or documentation provided to the Clerk, during the meeting, are part of the public record. These materials are available for review, in the Clerk's Office, during regular business hours.

- 1. CALL TO ORDER AND DETERMINATION OF A QUORUM (4:29:48)** - Chairperson Kimbrough called the meeting to order at 4:29 p.m. Ms. King called the roll; a quorum was present.
- 2. AGENDA MANAGEMENT NOTICE (4:30:16)** - Chairperson Kimbrough entertained modifications to the agenda; however, none were forthcoming.
- 3. DISCLOSURES (4:30:22)** - Chairperson Kimbrough entertained disclosures; however, none were forthcoming.
- 4. PUBLIC COMMENT (4:30:29)** - Chairperson Kimbrough entertained public comment. Ms. Maloney introduced JAC Transit System General Manager Kristie Park, and reviewed her qualifications. Ms. Park expressed appreciation for the opportunity. Chairperson Kimbrough entertained additional public comment; however, none was forthcoming.
- 5. ACTION ON APPROVAL OF MINUTES - May 8, 2019 (4:31:32)** - Chairperson Kimbrough introduced this item, and entertained a motion. **Member Bonkowski moved to approve the minutes, as presented. Member Bagwell seconded the motion. Motion carried 7-0.**

**CARSON AREA METROPOLITAN PLANNING ORGANIZATION**

**Minutes of the June 12, 2019 Meeting**

**Page 2**

**DRAFT**

**6. PUBLIC MEETING ITEMS:**

**6(A) PRESENTATION AND DISCUSSION ON TASK 5.1, ASSET PLANNING AND MANAGEMENT, OF CAMPO'S 2019/2020 UNIFIED PLANNING WORK PROGRAM (4:31:55)** - Chairperson Kimbrough introduced this item, and Mr. Goering presented the agenda materials. Member Erb and Mr. Goering responded to questions of clarification, and discussion followed. Chairperson Kimbrough entertained additional CAMPO member questions or comments and public comments and, when none were forthcoming, thanked Mr. Goering for his presentation.

**6(B) DISCUSSION AND POSSIBLE ACTION REGARDING SUBMISSION OF A GRANT APPLICATION TO THE FEDERAL TRANSIT ADMINISTRATION FOR FEDERAL FISCAL YEAR 2019 GRANTS FOR BUSES AND BUS FACILITIES PROGRAM SEEKING A TOTAL OF \$650,000, WITH LOCAL MATCH OF \$195,000 (30%), TO REPLACE TWO JUMP AROUND CARSON TRANSIT SYSTEM FIXED ROUTE VEHICLES (4:37:33)** - Chairperson Kimbrough introduced this item, and Mr. Reynolds presented the agenda materials. Ms. Maloney responded to a question of clarification. Chairperson Kimbrough entertained public comment and, when none was forthcoming, a motion. **Member Bagwell moved to approve submission of the grant application, as presented. Member Bonkowski seconded the motion.** Chairperson Kimbrough entertained discussion on the motion and, when none was forthcoming, called for a vote. **Motion carried 7-0.**

**6(C) PRESENTATION AND DISCUSSION ON TASK 3.2, TRANSIT PLANNING, OF CAMPO'S 2019 / 2020 UNIFIED PLANNING WORK PROGRAM (4:40:14)** - Chairperson Kimbrough introduced this item, and Ms. Maloney provided an overview. Mr. Reynolds presented the agenda materials, responded to questions of clarification, and discussion followed. Chairperson Kimbrough entertained public comment; however, none was forthcoming.

**7. INTERNAL COMMUNICATIONS AND ADMINISTRATIVE MATTERS; FUTURE AGENDA ITEMS (4:49:48)** - Chairperson Kimbrough introduced this item, and Ms. Maloney reviewed the tentative agenda for the July CAMPO meeting.

**8. CAMPO MEMBER COMMENTS (4:51:03)** - Chairperson Kimbrough entertained CAMPO member comments. Ex-Officio Member Rosenberg advised that NDOT representatives are currently negotiating with a consultant to help implement the One Nevada Transportation Plan. In response to a question, Ex-Officio Member Rosenberg explained that the State Transportation Technical Advisory Committee has been replaced by the Transportation Planning Advisory Committee which serves as the steering committee for the One Nevada Plan and other planning processes. Chairperson Kimbrough entertained additional CAMPO member comments; however, none were forthcoming.

**9. THE NEXT CAMPO MEETING IS TENTATIVELY SCHEDULED FOR 4:30 P.M. ON WEDNESDAY, JULY 10, 2019 IN THE COMMUNITY CENTER SIERRA ROOM, 851 EAST WILLIAM STREET (4:54:37)** - Chairperson Kimbrough read this information into the record.

**10. PUBLIC COMMENT (4:54:49)** - Chairperson Kimbrough entertained public comment; however, none was forthcoming.

**11. ACTION ON ADJOURNMENT (4:54:55)** - Upon motion by Member Erb, Chairperson Kimbrough adjourned the meeting at 4:54 p.m.

**CARSON AREA METROPOLITAN PLANNING ORGANIZATION**

**Minutes of the June 12, 2019 Meeting**

**Page 3**

**DRAFT**

The Minutes of the June 12, 2019 Carson Area Metropolitan Planning Organization meeting are so approved this \_\_\_\_\_ day of July, 2019.

---

MARK KIMBROUGH, Chair

**This page intentionally left blank.**



## STAFF REPORT

**Report To:** The Carson Area Metropolitan Planning Organization (CAMPO)

**Meeting Date:** July 10, 2019

**Staff Contact:** Michael Reynolds, Transit Coordinator

**Agenda Title: For Information Only** – Presentation and discussion on Task 3.2 Transit Planning of CAMPO’s 2019/2020 Unified Planning Work Program (UPWP).

**Staff Summary:** Task 3.2 Transit Planning includes development of a Jump Around Carson (JAC) Transit Development and Coordinated Plan (TDCP). Staff and LSC Transportation (contracted) will provide a presentation regarding preliminary analysis of optional routes to expand services in the CAMPO region.

**Agenda Action:** Other/Presentation      **Time Requested:** 45 minutes

### Proposed Motion

-N/A

### Background/Issues & Analysis

CAMPO approved the UPWP funding be used by Carson City Regional Transportation Commission (RTC) on a contract with LSC Transportation Consultants, Inc. for development of a Jump Around Carson (JAC) Transit Development and Coordinated Plan (TDCP) in February 2019. The TDCP serves three primary objectives: (1) a short-range (1-5 year) planning document; (2) a long-range (10-20 year) planning document; and (3) a coordinated public transit-human services planning document.

The plan will include an evaluation of the current system and its procedures, suggested short-term and long-term improvements, a forecast of future ridership and impacts to the administrative and operations structure, and a broad vision of capital requirements to meet recommended changes for both the short-term and long-term. It will include a comparison of JAC’s transit system to peer systems, a detailed guide for the five-year plan, and a financial plan with specific emphasis on alternative funding sources.

In addition to stakeholder meetings, an online survey, and public meetings, the contract scope of work includes the following deliverables: Technical Memorandum #1 – *Existing Conditions Report*; Technical Memorandum #2 – *Alternatives Analysis*; and a *Draft/Final Plan*. The second deliverable, Technical Memorandum #2 – *Alternatives Analysis*, was received and reviewed by CAMPO staff in late June 2019. The document presents and analyzes alternatives regarding possible service changes, capital improvements, and coordination strategies. It is provided with this staff report as Exhibit-1.

### Applicable Statute, Code, Policy, Rule or Regulation

-N/A

**Financial Information**

Is there a fiscal impact?  Yes  No

If yes, Fund Name, Account Name / Account Number: CAMPO fund, Unified Planning Work Program account, Task 3.2 Transit Planning / 245-3028-431.12-01

Is it currently budgeted?  Yes  No

Explanation of Fiscal Impact: UPWP tasks are reimbursable with Federal planning funds at a rate of 95%. The 5% local match has been budgeted. This project was approved at the February 2018 CAMPO meeting.

**Supporting Material**

-Exhibit-1: Technical Memorandum #2: Alternatives Analysis



# JAC Transit Development and Coordinated Human Services Plan

## Technical Memorandum Two: Alternatives Analysis



Prepared for the



**Carson Area Metropolitan Planning Organization  
(CAMPO)  
and  
Carson City Regional Transportation Commission  
(RTC)**





# **JAC Transit Development and Coordinated Plan Technical Memorandum Two: Alternatives Analysis**

Prepared for

Carson Area Metropolitan Planning Organization (CAMPO)  
Carson City Regional Transportation Commission (RTC)

Prepared by

LSC Transportation Consultants, Inc.  
PO Box 5875  
2690 Lake Forest Road, Suite C  
Tahoe City, California, 96145  
(530) 583-4053

June 24, 2019



**TABLE OF CONTENTS**

---

Chapter 1: Introduction ..... 1

Chapter 2: Short-Range Service Alternatives..... 3

Chapter 3: Capital Alternatives ..... 37

Chapter 4: Long Range Transit Strategy Analysis ..... 45

Chapter 5: Social Service Transportation Coordination ..... 51

Chapter 6: Community Input ..... 55

**LIST OF TABLES**

---

<i>TABLE</i>		<i>PAGE</i>
1	Existing Key Residential Areas of Carson City Not Currently Served by JAC.....	5
2	Route Alternative Analysis.....	7
3	Fixed Route System Alternatives Analysis .....	16
4	Fixed Route Span of Service Alternatives Analysis .....	23
5	JAC Fixed Route Service Alternatives Performance Analysis.....	25
6	Carson City Population Served by JAC Assist .....	33
7	JAC Assist Service Area Alternatives Analysis .....	33
8	Intercounty Service Alternatives Analysis .....	36
9	Recommended Bus Stop Improvements .....	40
10	Maximum Passenger Load by Run.....	42
11	Population Forecasts by County and Age Cohort .....	46
12	Analysis of Long-Range Transit Ridership, Service Quantities and Cost.....	50
13	Online Survey Responses Regarding Age and Use of Transit Services .....	58

**LIST OF FIGURES**

---

<i>FIGURE</i>		<i>PAGE</i>
1	Existing Unserved Areas.....	4
2	Potential Annual Ridership of Areas Currently Unserved.....	5
3	Individual Alternate Routes .....	6
4	Five Bus Alternative .....	17
5	Full Pulse Route Alternative.....	20

6	Service Alternatives Annual Ridership Impact.....	26
7	Service Alternatives Annual Operating Subsidy Impact.....	27
8	Service Alternatives Passengers per Vehicle Service-Hour.....	28
9	Service Alternatives Operating Subsidy per Passenger .....	29
10	Existing JAC Assist Service Areas.....	32
11	Carson City Population Forecasts .....	47
12	Where Do You Live.....	57
13	Ranking of JAC Transit Characteristics.....	59
14	JAC Transit Improvements.....	60
15	Locating JAC Transit Information .....	61

The Carson City Regional Transportation Commission (RTC), with funding received through the Nevada Department of Transportation (NDOT) and the Carson Area Metropolitan Planning Organization (CAMPO), has retained LSC Transportation Consultants, Inc. to prepare a Transit Development and Coordinated Plan (TDCP) for the Jump-Around-Carson (JAC) public transit program and the CAMPO service area. This planning process provides an opportunity to develop integrated short- and long-range plans for the JAC public transit program, and ensures that the program meets the needs of the region's human services organizations by promoting coordination amongst agencies.

This Technical Memorandum is the second in a series of interim documents that will ultimately result in a final plan document. This specific document presents and analyzes alternatives regarding possible service changes, capital improvements and coordination strategies.

This document is intended to provide the reader with information regarding the various "pros" and "cons" of the various alternatives and therefore should not be considered recommendations. Rather, this discussion will serve as a resource for future decision making that will result in a draft plan. With the benefit of additional review and public input, a final plan will then be defined.

This page left intentionally blank.

This chapter first presents alternatives regarding JAC fixed routes. Individual new routes or modifications to existing routes are first considered, followed by an evaluation of “system” alternatives that consider all routes together. Changes in the span of service (the hours and days of service) are then considered. This is followed by evaluation of modifications to the JAC Assist program. Finally, potential services connecting Carson City with Douglas, Lyon and Storey Counties are evaluated.

### **FIXED ROUTE REVISION ALTERNATIVES**

As a basis for evaluating new or revised routes, the following is an analysis of the residential areas not currently served (within a quarter mile walk distance) by the existing four fixed routes. At present, the existing route service area encompasses the residences of approximately 40,100 residents of Carson City, which is only 70 percent of the total population<sup>1</sup>. Figure 1 presents a map of the nine significant residential areas not currently served. As shown, eight of these areas are outside of the existing routes, while the ninth is the existing “gap” in the middle of the Route 2A/2B loop centered along Northridge Drive.

Table 1 presents the estimated population and the population characteristics within each of these unserved areas. As shown, these populations range between 650 in the southwest area and up to 5,780 along the South Saliman Road corridor area. The demographic characteristics of each unserved area were then used to estimate a per capita annual transit trip rate for both the fixed route service and JAC Assist. These rates were calibrated against the existing observed trip rate of the existing service area (4.87 annual trips per capita for fixed route and 0.70 for JAC Assist). Trip rates were factored by the proportion of residents with characteristics associated with higher ridership potential, in order to define trip rates specific to each area. The weight assigned to each factor was based on the proportion of ridership in various fare categories for the fixed route rates, while the rates for JAC Assist were based on the relative proportion of persons with disabilities. As an example, the center unserved area is expected to have a relatively high trip rate, as the proportion of low income, zero household and disabled residents are relatively high.

These trip rates are then multiplied by the unserved population figures to estimate the annual transit ridership that would be generated if all portions of each unserved area were to be served (at the current JAC transit service levels). As shown in Table 1 and Figure 2, two areas stand out as having a large potential unserved ridership: the South Saliman Road area with 25,800 potential fixed-route passenger-trips (equal to 13 percent of current fixed-route ridership) and the center area with 23,300 trips (equal to 12 percent of current ridership). No other individual areas exceed 8,500 annual passenger-trips, though if the northeast and east areas are considered together, they total 12,300 passenger-trips per year. Revisions to existing individual routes are discussed below and shown in Figure 3.

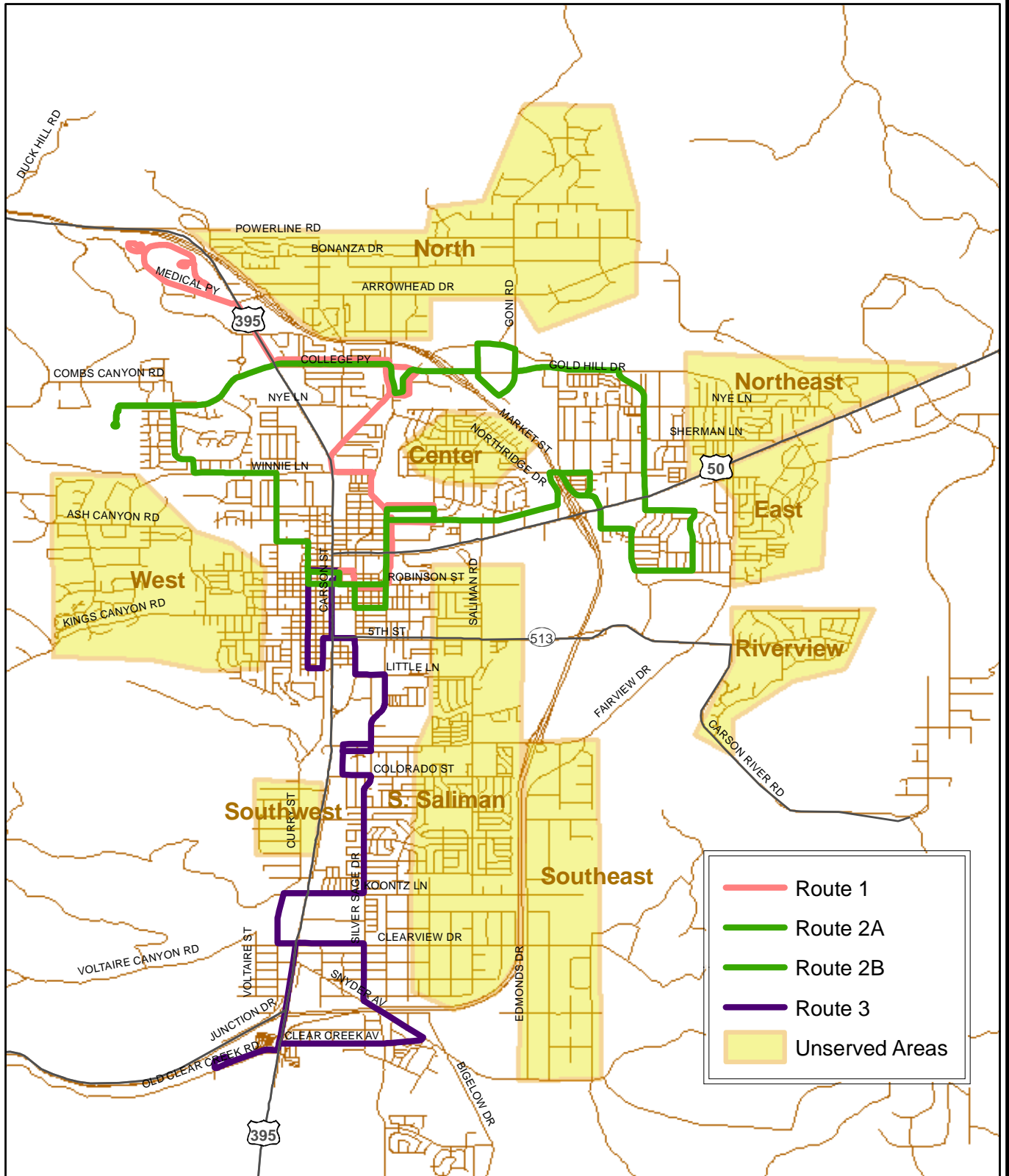
---

<sup>1</sup> Many other cities strive to provide service to at least 90 percent of the population.



0.75 0.375 0 0.75 Miles

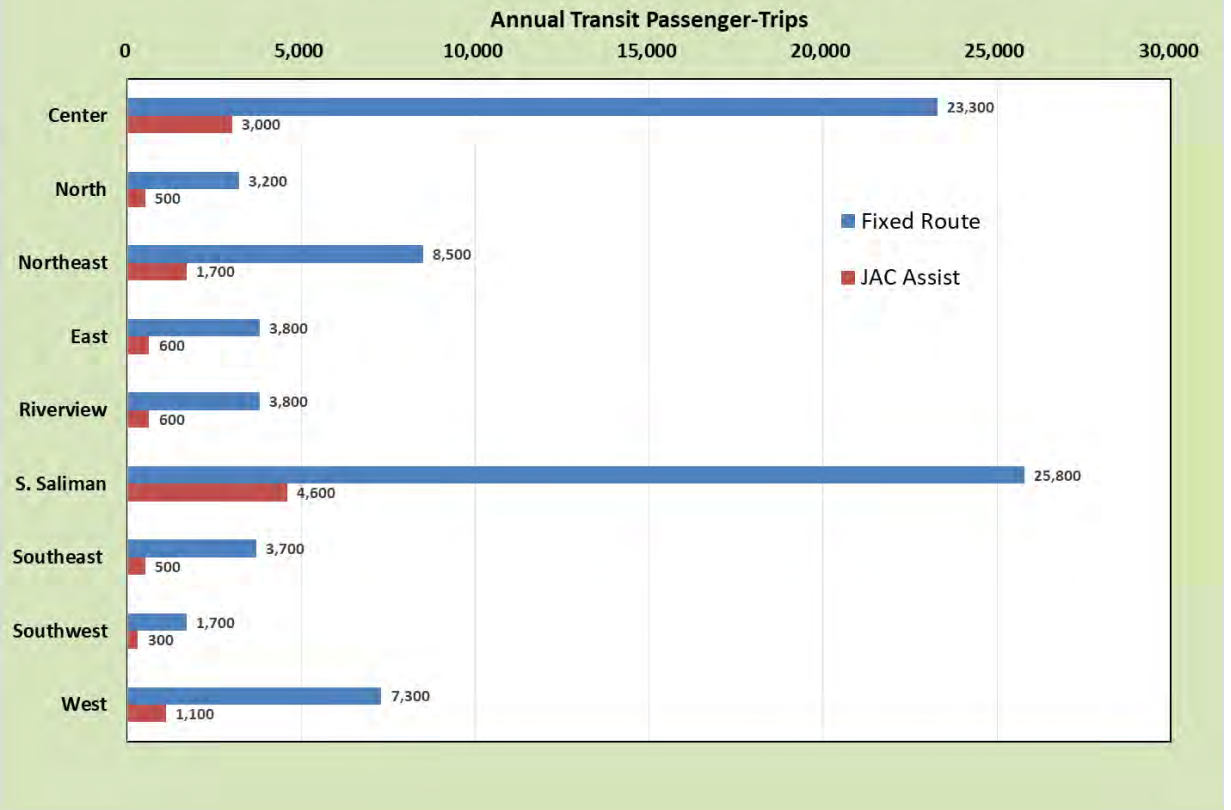
Figure 1  
Existing Unserved Areas



**TABLE 1: Existing Key Residential Areas of Carson City Not Currently Served by JAC**

Unservd Area	Population	Percent of Population				Annual Trip Rate		Est. Annual Transit Trip Generation	
		Zero Vehicle	Low Income	Seniors	Disabled	Fixed	JAC Assist	Fixed	JAC Assist
Center	3,920	10.5%	17.8%	11.5%	24.3%	5.93	0.76	23,300	3,000
North	730	5.4%	13.8%	19.3%	20.5%	4.38	0.64	3,200	500
Northeast	1,800	1.3%	19.1%	25.0%	29.8%	4.74	0.93	8,500	1,700
East	1,640	1.3%	8.2%	20.0%	10.8%	2.31	0.34	3,800	600
Riverview	1,640	1.3%	8.2%	20.0%	10.8%	2.31	0.34	3,800	600
S. Saliman	5,780	4.4%	13.8%	17.5%	25.7%	4.46	0.80	25,800	4,600
Southeast	1,100	5.0%	7.0%	20.9%	16.0%	3.39	0.50	3,700	500
Southwest	560	2.5%	6.5%	32.8%	15.5%	3.07	0.49	1,700	300
West	1,550	6.6%	12.2%	25.9%	21.7%	4.74	0.68	7,300	1,100
Existing Service Area	40,100	6.8%	14.2%	19.4%	22.5%	4.87	0.70	195,100	28,200

**FIGURE 2: Potential Annual Ridership of Areas Currently Unserved**





## Southeast Carson City/Saliman Road Corridor Route

A new route that could serve the largest currently-unserved population in southeast Carson City is shown in Figure 3. Leaving the Downtown Transfer Plaza, this route travels east on Robinson Street, south on Roop Street, east on Fifth Street and south on Saliman Road before making a one-way clockwise loop via Saliman Road, Koontz Lane, Baker Drive, and Colorado Street before returning via Saliman Road and the remainder of the outbound route. This route is 7.97 miles in length and would require approximately 40 minutes to operate. Over the course of a year, and with the same service span as the existing runs and assuming that the remainder of the hour could be put to good use on another route, this route would incur an operating cost of \$120,900 per year, as shown in Table 2.

	Run Parameters		Daily Service			Days per Year	Annual		Annual Cost	Ridership	Fare Revenues	Operating Subsidy
	Hours	Miles	Runs	Hours	Miles		Hours	Miles				
<b>SE Carson City/Saliman Road Corridor Route</b>												
Weekday	0.67	7.97	13	8.7	104	255	2,219	26,421	\$107,600			
Saturday	0.67	7.97	8	5.4	64	51	275	3,252	\$13,300			
<b>Total</b>							<b>2,494</b>	<b>29,672</b>	<b>\$120,900</b>	<b>26,900</b>	<b>\$9,800</b>	<b>\$111,100</b>
<b>North Route</b>												
Weekday	0.33	4.55	13	4.3	59	255	1,097	15,083	\$55,000			
Saturday	0.66	4.55	8	5.3	36	51	270	1,856	\$11,900			
<b>Total</b>							<b>1,367</b>	<b>16,940</b>	<b>\$66,900</b>	<b>28,200</b>	<b>\$10,200</b>	<b>\$56,700</b>
<b>West Route</b>												
Weekday	<b>0.5</b>	4.9	13	6.5	64	255	1,658	16,244	\$77,400			
Saturday	<b>0.5</b>	4.9	8	4	39	51	204	1,999	\$9,500			
<b>Total</b>							<b>1,862</b>	<b>18,243</b>	<b>\$86,900</b>	<b>9,100</b>	<b>\$3,300</b>	<b>\$83,600</b>
<b>Arrowhead Drive Route</b>												
All Day Weekday Service	<b>1</b>	11.9	13	13	155	255	3,315	39,449	\$160,800			
Additional JAC Assist Service				2	22	255	510	5,618	\$24,300			
							3,825		\$185,100	17,100	\$6,200	\$178,900
Commuter Peaks Only	<b>1</b>	11.9	4	4	48	255	1,020	12,138	\$49,500	11,800	\$4,300	\$45,200
<b>Revise Rts 2A/2B to Serve N. Carson St.</b>												
Weekday	0	0.26	26	0	7	255	0	1,724	\$1,500	0	\$0	\$1,500
Saturday	0	0.26	16	0	4	51	0	212	\$200			
<b>Total</b>							<b>0</b>	<b>1,936</b>	<b>\$1,700</b>	<b>9,000</b>	<b>\$3,300</b>	<b>-\$1,600</b>
<b>Revise Rt 2A/2B Off of Narrow Streets</b>												
Weekday	0	0.2	26	0	5	255	0	1,326	\$1,200	0	\$0	\$1,200
Saturday	0	0.2	16	0	3	51	0	163	\$100			
<b>Total</b>							<b>0</b>	<b>1,489</b>	<b>\$1,300</b>	<b>-1,200</b>	<b>-\$400</b>	<b>\$1,700</b>
<b>Revise Route 3 to Serve Topsy Lane</b>												
Weekday	0	0.02	13	0	0	255	0	66	\$100	5,900	\$0	\$100
Saturday	0	0.02	8	0	0	51	0	8	\$0			
<b>Total</b>							<b>0</b>	<b>74</b>	<b>\$100</b>	<b>2,400</b>	<b>\$800</b>	<b>-\$700</b>
<b>Revise Rt 3 to Serve Mica Drive</b>												
Weekday	1	4.2	13	13	55	255	3,315	13,923	\$138,600			
Saturday	1	4.2	8	8	34	51	408	1,714	\$17,100			
Additional JAC Assist Service				4	60	255	1,020	15,300	\$52,200			
<b>Total</b>							<b>4,743</b>	<b>15,637</b>	<b>\$207,900</b>	<b>5,900</b>	<b>\$2,100</b>	<b>\$205,800</b>
<b>Downtown/Special Event Shuttle Service</b>												
<u>Weekday 11 AM - 7 PM</u>												
All Year	0.17	1.33	48	8	64	306	2,448	19,535	\$110,400	19,600	\$4,900	\$105,500
Leg. Session Only	0.17	1.33	48	8	64	103	824	6,576	\$37,200	9,900	\$2,500	\$34,700
Special Events Only (13 Days per Year)	-	-	-	8	160	13	104	2,080	\$5,800	2,100	\$0	\$5,800

In addition to serving the residents of southeast Carson City west of I-580 and north of Clearview Drive, this new route would provide better service along the 5<sup>th</sup> Street corridor (including the Frost Yasmer Estates) and serve Fremont Elementary and Seeliger Elementary schools. Overall, the annual ridership that would be served by this new route is estimated to be 26,900 boardings per year. As an aside, this alternative was reviewed with regard to the potential increase in JAC Assist demand. The large majority of the new service area is already served by JAC Assist, as it is within 1 mile of existing Route 3. While the new route would extend the service area to include more of the residential areas east of I-580, this residential area has a relatively low potential demand for JAC Assist services, which would be roughly offset by a shift in existing JAC Assist ridership to use the new route.

### **New North Route**

Besides southeast Carson City, the other relatively large concentration of unserved Carson City residents is the northern central area within the Route 2A/2B loop route, centered on the Northridge Drive area. This area is home to almost 4,000 Carson City residents, and has a relatively high proportion of low income residents living in zero vehicle households. It could be efficiently served by a new route that connects the Downtown Transfer Center with the Carson City Senior Center in both directions, with a one-way clockwise route largely along Marian Avenue, Longridge Drive, Northridge Drive and E. Long Street. This route is 4.5 miles in length, and could be served within 20 minutes. If served hourly on the existing span of service (and assuming the remaining 40 minutes per hour could be put to good use elsewhere), this route would incur an annual operating cost of \$66,900.

While the presence of roundabouts and narrow road widths may warrant the use of a smaller bus, this route would generate new ridership by serving the existing unserved residents in the central area, as well as providing additional schedule options between the downtown area, Senior Center, Multipurpose Athletic Center (MAC) and other uses along E. Long Street<sup>2</sup>. In total, ridership is estimated to equal 28,200 boardings per year. Subtracting the additional fare revenue, operating subsidy would equal \$56,700 per year.

### **Fixed Route Service to Western Carson City (Ash Canyon/Kings Canyon Area)**

The lower Ash Canyon and Kings Canyon residential areas west of downtown and the existing JAC service area has a population of approximately 1,550 residents. While this population has a relatively high proportion of seniors, the proportion of low income or zero vehicle households is below the citywide average. A reasonable route serving this area would be as follows:

- Westbound from the downtown transit center along Washington Street
- Southbound along Mountain Street
- Westbound along W. Kings Street
- Northbound along Longview Way
- Eastbound along Ash Canyon Road
- South along Ormsby Boulevard
- Eastbound along W. King Street
- Northbound along Mountain Street
- Eastbound along Robinson Street to the Transit Center

---

<sup>2</sup> Alternatively, this new service along E. Long Street could allow Route 2A/2B to instead serve new areas further to the east, as discussed below.

This route would be 4.9 miles in length and would require 30 minutes to operate (including driver layover time). Assuming this route could be paired with another to provide hourly service, it would cost \$86,900 per year to operate. Ridership would be generated by service to this new residential area, and also by providing service to Carson Middle School. The impact on JAC Assist would be minimal. Overall, an estimated 9,100 additional passenger-trips would be served each year, requiring an estimated \$83,600 in increased operating subsidies.

### **Fixed Route Service to Arrowhead Drive / Northeast Carson City**

The Arrowhead Drive corridor is not currently served by JAC. In addition to residential areas with a population of 2,500, this area has a wide variety of employers, including Chromalloy, Eaglemark Savings Bank, and Duro Manufacturing. There are a total of 3,267 jobs in this new transit service area, per the US Census Longitudinal Employer-Household Dynamic dataset. Of these, approximately 1,470 are held by Carson City residents. In addition, the Health and Human Services Department generates the need for transit access.

Due to the limited roadway network, this consists of a large clockwise loop<sup>3</sup> of 11.6 miles, requiring an hour to operate. Due to the prevalence of employment sites, this route would be operated on weekdays only. Two options were considered regarding the span of service (both options would require one more bus in peak operation):

- All-Day Service – 13 runs per day, consistent with the other JAC routes. This would incur an annual operating cost of \$160,800 per year. This option would also substantially expand the JAC Assist  $\frac{3}{4}$  mile required service area, both to the north and to the northeast. An additional two vehicle-hours of service would be needed, increasing the total cost impact of this option to \$185,100 per year.
- Commute Periods Only – Two runs in the AM commute period and two runs in the PM commute period. These runs would probably operate at 7:30 AM and 8:30 AM, as well as 4:30 PM and 5:30 PM, in order to transfer to other routes and the Downtown Transit Plaza. However, specific times would need to be based on surveys of work shift times in the service area. Given that JAC Assist has some available capacity in these limited hours, no expansion in JAC Assist service would be necessary. This more limited service would cost \$49,500 per year to operate.

The US Census indicates that currently 0.3 percent of commuting by Carson City residents is via transit. This is in part a reflection of the limited area currently served. In comparison, the transit mode share in Reno is 2.4 percent. A reasonable proportion of the transit travel mode in the Arrowhead Drive area is 1.5 percent. Over the course of the year, these figures indicate that transit boardings for work purposes would total 5,500 per year. Ridership would also be generated by newly-served residents and social service transit trip generation, along with a modest level of ridership resulting from the additional service along North Carson Street and William Street. In total, all-day service would generate 17,100 boardings per year. Considering the proportion of employment vs. non-employment in the commute periods, if service is limited to commute periods per year, ridership would be 11,800 per year.

---

<sup>3</sup> Large one-directional loops are typically found to be inconvenient for passengers, as they require long travel times for some trips. However, in this case the potential ridership is not sufficient to consider two-directional service (which would double the operating cost).

## Revisions to Routes 1 or 2A/2B to Better Serve North Carson Street

The North Carson Street between downtown and Winnie Lane does not currently have JAC fixed-route transit service. Instead, Route 2A/2B serves stops along Mountain Street (0.3 miles to the west while Route 1 serves stops along Roop Street (0.3 miles to the east). With the completion of I-580, there are now more opportunities to accommodate bus stops and service along Carson Street.

One way of providing service on North Carson Street would be to revise Route 1 to use Long Street and North Carson Street, rather than Roop Street and Winnie Lane. After serving the Beverly Drive/Marion Avenue/Long Street loop, northbound Route 1 would travel west on Long Street and north on N. Carson Street to Winnie Lane, where the existing route would be regained. The southbound route would continue south on N. Carson Street from Winnie Lane, turning east on Long Street. This modification would not have an impact on operating costs. While it would add an estimated 2 minutes to the route running time, there is adequate time within the hourly schedule to accommodate this. Service would be eliminated to four existing stops:

- Winnie Lane/Carson Frontier Plaza. This stop generates 11.0 boardings per day eastbound. A new stop on N. Carson Street at Winnie Lane would be roughly 500 feet walking distance from areas to the east (such as the mobile home park).
- Winnie Lane/Lone Mountain Drive – This stop generates only 1.7 boardings per day westbound. Passengers would be served by the existing Carson / Hot Springs Road stop (a quarter-mile walk to the west).
- Roop Street/Stewart Street (northbound and southbound) – This stop, which generates 4.9 boardings per day, is only 850 feet away from existing stops on Beverly Drive.

In total, 17.6 boardings per day (and an equivalent level of deboardings) would be impacted by this revision. Most of these passengers would be required to walk substantial additional distances to the next available stop. A resulting loss of 6,000 existing passenger-trips would occur. Due to the forecast loss in ridership, this alternative is not considered as a warranted alternative.

The other way of serving North Carson Street would be to revise Route 2A/2B to serve North Carson between Long Street and Winnie Lane. Route 2A would depart the Downtown Transfer Plaza on the current route as far as Division Street/Fleishman Way, then head east (rather than west) on Fleishman Way, north on N. Carson Street and west on Winnie Lane. Route 2B would continue east on Winnie Lane beyond Mountain Street to N. Carson, south on N. Carson and west on Fleishman Way and then south on Division Street. This route is 0.26 miles longer than the current route, which would increase annual operating costs by \$1,700.

While these revisions would eliminate service to seven existing stops along Mountain Street and Fleishman Way, ridership at these stops is relatively low. Excepting the southbound stop on Mountain Street just south of Winnie Lane (which could be relocated around the corner onto Winnie Lane) and the westbound stop on Fleishman Way just west of Division Street (which could be relocated onto northbound Division Street), these stops serve only 5 boardings per day, or approximately 3,000 total passenger-trips per year. Between the two options, therefore, realigning Routes 2A/2B has the lesser impact on existing ridership.

Service on N. Carson Street would serve a variety of commercial centers (including the FISH thrift store, Frontier Plaza and Grocery Outlet), as well as the Frontier Motel. Based on ridership generated by similar land uses currently served by JAC, this corridor would generate an estimated 12,000 passenger-trips per year. This would then result in an overall increase of 9,000 per year, once the loss of existing ridership is considered. With an increase of \$3,300 in fare revenue, a total net reduction of \$1,600 in subsidy needs per year would occur. While this option would result in a net increase in subsidy and a reduction in funding requirements, it would also eliminate ridership to a neighborhood that is currently provided with service.

### **Revisions to Avoid Narrow Streets**

#### Route 2A/2B: Lompa Lane and Menlo Drive

Just to the east of I-580 and south of US 50, Routes 2A/2B travel along Lompa Lane and Menlo Drive. Menlo Drive is 38 feet in width with parallel parking along both sides, leaving 22 to 24 feet in width for two way travel which is currently adequate for transit operations given the low traffic volumes. However, the 300-foot-long section of Lompa Lane to the north of Menlo Drive has only 22 feet of pavement width. This is a potential safety concern when buses and trucks both need to negotiate this stretch.

Routes 2A/2B could instead use US 50 and Airport Road to travel between US 50/Lompa Lane and Lompa Lane/Menlo Drive. This would add 0.2 miles per trip which, over the course of a year, would add 1,500 vehicle-miles and an operating cost of \$1,300. The two stops that would be eliminated (and cannot be easily relocated) serve a relatively modest 4 boardings and alightings per day or 1,200 passenger-trips per year. Including the loss of \$400 in fare revenues, this change would increase subsidy requirements by \$1,700 per year. Alternatively, the City could increase the pavement width for the 300-foot-long stretch (perhaps as part of private development in this area). Adding this relatively modest construction to a larger roadway project could minimize the construction costs.

#### Route 3: California Street

Route 3 currently travels along California Street between Colorado Street on the south and Industrial Park Drive on the north. This roadway allows parking on both sides, and a portion has head-in parking. While the northern portion has curb and gutter on both sides with a width of 32 feet, the southernmost 250 feet has no curb and gutter on the east side and a pavement width of only roughly 20 feet. This roadway is difficult to negotiate with a bus. Should JAC continue to operate on California Street, the City should explore the feasibility of continuing the curb, gutter, and shoulder work south to connect with Colorado Street.

The key stops along this roadway at the Southgate Apartments generate a significant ridership (12.6 passenger boardings per day), so simply eliminating this stop is not an option. A feasible alternative, however, would be to relocate this stop to the north side of Industrial Park Drive, just to the east of California Street. This is a 400-foot walk distance from the existing stop. Route 3 buses in both directions would make a clockwise loop around the Industrial Park Drive / California Street / Fairview Drive / Roop Street, using Roop Street south of Industrial Park Drive. This modification would have a minimal impact on ridership and operating costs while providing a benefit to the safety of transit operations by avoiding the narrow section of California Street. Another option would be to improve the eastern side of the 250-foot section of California Street north of Colorado Street.

### **Revision to Route 3 to Serve Topsy Lane**

The southernmost stop on Route 3 is at Fuji Park, on the south side (eastbound side) of Clear Creek Parkway opposite Costco. To access this stop, the bus circulates through the Costco parking lot on the north side of the Parkway, and makes a left turn to enter the stop eastbound. Transit systems typically avoid operating buses through parking lots, due to the increased potential for crashes. Another option for serving this stop would be for the Route 3 bus to continue south on US 395 one more intersection south of Clear Creek Parkway, turning right on Topsy Lane, right on Vista Grande Boulevard (behind Walmart) and right on Clear Creek Parkway. This would add an estimated 3 minutes of running time to Route 3; a review of travel times would be needed to ensure that this can be accommodated within the existing 60 minute schedule. The route is 0.6 miles longer than the existing route. This additional mileage would increase annual operating costs by \$1,900.

This Route 3 extension would increase required service area for JAC Assist. Specifically the new area within  $\frac{3}{4}$  mile of the extended route would be added. (Note that this would not require JAC Assist service beyond the  $\frac{3}{4}$  mile area). This would not include any major new destinations for paratransit services (such as medical facilities). While it does include a small portion of the neighborhood lying southwest of Topsy Lane, this would not require a significant increase in the cost of JAC Assist services overall.

This extension could serve the existing TTD Route 19X stop in Douglas County on Topsy Lane, between Clear Creek Plaza (Walmart, Trader Joes, etc.) and Carson Valley Plaza (Marshall's, Best Buy). In addition to providing Carson City residents with access to these retail stores, it also provides access to jobs in these commercial centers. Considering ridership generated by other similar commercial centers along existing JAC routes, this stop would increase ridership by an estimated 2,500 passenger-trips per year. Subtracting the additional \$800 in fare revenues, this option increases annual operating subsidy by \$1,100 per year. In light of this modest increase in operating subsidy, the benefits to Carson City residents in terms of commercial and employment access and the fact that Douglas County residential areas would not be served, it is the Consultant recommendation that Carson City consider this option without the need for financial support from Douglas County.

### **Revision to Route 3 to Serve Target/Home Depot and Mica Drive**

A more extensive modification to Route 3 would be to extend southward as far as Mica Drive, serving the Sunridge and Indian Hills residential areas. As shown in Figure 3, this could also serve stops near the Target Center, as well as the Indian Hills Shopping Plaza (Tahoe Orthopedics). This would extend existing Route 3 by an additional 4.2 miles, which would require an additional 20 minutes to operate. As this additional running time is not available within the existing Route 3 hourly schedule, a full additional bus would be needed to maintain the current hourly systemwide schedules. Absent other changes to JAC routes, this would increase annual operating costs by \$155,700 per year. This option would also require a substantial increase in JAC Assist service area to accommodate ADA requests within  $\frac{3}{4}$  miles of the extended route (which includes both residential areas and medical facilities), increasing total operating costs to \$207,900.

This extension would provide service within a 5-minute walk of 2,050 residents. While this area has a relatively high proportion of seniors (20 percent) the proportion that are low income is relatively low (10 percent) as is the proportion of zero-vehicle households (2.6 percent). Based on the demographics of

the additional service area, ridership would be increased by 5,900 per year, or approximately 20 passenger-trips per day.

Given that this alternative would serve a significant residential area in Douglas County, it would only be feasible with financial contributions from Douglas County. This would need to be negotiated between the City and County, including whether the funding should encompass only marginal operating costs, a portion of overhead/managements costs and/or vehicle capital costs. At a minimum, a reasonable cost contribution would be the marginal operating costs south of Topsy Lane, along with the additional JAC Assist costs. This consists of 3.76 miles of route length that would require 17 minutes to operate. Over the course of a year, this would total 1,061 hours of service and 14,000 vehicle-miles, which would incur an operating cost of \$52,600. Including the additional JAC Assist costs and subtracting the \$2,100 in fare revenues, the annual operating subsidy would be \$102,700

### **Downtown/Special Event Shuttle Service (Brewery Arts Center, Nevada Days, Etc.)**

#### Downtown Shuttle

Downtown Carson City is revitalizing and redeveloping. Particularly since the completion of the Downtown Carson Street project, there is increasing retail, restaurant, employment and entertainment options opening in downtown. Downtown Carson City is particularly busy during the State Legislature session, which is a 120-day session every other (odd) year from early February through early June. Given this activity, one option would be to provide a downtown shuttle service, perhaps using a “trolley” replica or some other uniquely branded small transit vehicle. Examples of such services can be found in Santa Barbara and Morro Bay in California, as well as the Sierra Spirit service in Reno<sup>4</sup>.

There are some specific operating parameters that are important in a downtown shuttle

- A frequent service is crucial. Optimally, service would be provided every ten minutes, which is the frequency at which most potential passengers decide to not consult the schedule and instead go to the stop knowing that the shuttle will be coming “soon enough”. At the outside, no more than 15 minute frequency is needed.
- Routes should be simple and easy to understand. While operating back-and-forth on one street is preferable, a simple short one-way loop is also possible.
- Boarding should require either no fare, or a small fare such as \$0.25. Washoe RTC’s Sierra Spirit was originally free fare, but a \$0.25 fare was implemented in order to control persons riding multiple runs.

Overall, the service plan and public messaging should allow a non-rider unfamiliar with the area and the service to quickly understand the route, frequency, span and how to use the service.

Given the slow travel speeds and many signals in the downtown area, along with time needed for boarding/alighting, a reasonable operating speed for a downtown shuttle is 8 miles per hour. For a 10-minute headway, this is equal to 1.33 miles per trip, which is equal to 30 blocks of the downtown grid. A

---

<sup>4</sup> The Sierra Spirit shuttle will be eliminated once the current project to extend the Virginia Street RAPID bus rapid transit service north from downtown to the University of Nevada Reno is completed in 2020.

simple route for a downtown shuttle would be along Carson Street in both directions from 5<sup>th</sup> Street on the south to William Street on the north, which is 14 blocks in one direction or a total of 28 in both directions. Another option would be to use Curry Street in one or both directions, if siting stops along Carson Street that avoid blocking traffic is a problem and if a smaller vehicle were to be used. This corridor encompasses the State Legislature Building, the State Capitol Building, the State Museum, Children’s Museum, lodging/casino properties (Carson City Nugget, Cactus Jack’s Senator Club, Carson Tahoe Hotel, and Hardman House) and an extensive variety of restaurants, shops and entertainment venues.

While there are a wide range of potential service spans that could be considered, a reasonable option (focusing on the workday and travel to/from restaurants) would be 11 AM to 7 PM on weekdays and Saturdays. This would incur an operating cost of \$110,400 per year.

The ridership history of rubber-tired trolley services over recent years is not positive, particularly if there is not a very strong concentration of visitor activity. A successful nearby example is the “Emerald Bay Trolley” service operated in South Lake Tahoe, which caters almost exclusively to visitors. However, there are many examples of trolley services that have been discontinued due to lack of ridership, including services in Nevada City/Grass Valley, North Lake Tahoe and Yuba City/Marysville. As noted above, Reno’s Sierra Spirit program is also slated for elimination.

Factors that tend to limit the ridership potential of this type of service are:

- Visitors with convenient access to their private automobile tend to use it rather than a shuttle service unless there is some factor such as limited available parking that provides a disincentive for auto use.
- While there is an initial “fun” factor that generates ridership in the first year or two, few residents return to ride again.
- It is difficult for a shuttle service to conveniently serve a quick trip, such as for lunch. Even with a 10-minute frequency, using a shuttle can take roughly 15 minutes of a lunch hour.

Ridership generated by the “lunch crowd” on shuttle services has been disappointing. Based on these factors, the potential for ridership of a trolley service in Carson City would be limited, on the order of 8 passengers per vehicle-hour of service on a typical day and 12 during the Legislative session. This is equivalent to roughly 19,600 boardings per year. Assuming a \$0.25 fare, operating subsidy would be \$105,500 per year.

Alternatively, this shuttle service could be provided Monday through Saturday during the Legislative sessions only. This would cost \$37,200 per year (in the odd years when a session is held), and would serve approximately 9,900 passengers. Subsidy would total \$34,700 per year.

### Special Events Shuttle

A shuttle vehicle could also be used for special events, either those within the downtown area or to provide connecting service between an outlying special event and downtown. Specific special events that could warrant transit shuttle service are:

- V&T Season Opener – Memorial Day Weekend

- Stewart Pow Wow – 3 days in mid-June (Stewart)
- Taste of Downtown – 1 day in mid-June
- Nevada State Fair – 3 days in early June (Mills Park)
- Carson City Fair – 1 day in late July (Fuji Park)
- Nevada Day – A full Saturday in late October.
- Festival of Lights – Friday in early December

There may also be other events hosted through the Downtown Business Association or the Brewery Arts Center that could benefit from a shuttle service. Considering only these 13 days of special events listed above, and assuming an average of 8 hours of service per day, a total of 104 vehicle-hours of service would be operated annually. This would incur an operating cost of approximately \$5,800 per year.

Ridership generated by special events would vary dramatically depending on the level of visitor activity, the location of visitor lodging, the convenience of parking at the event venue as well as the marketing for the shuttle service. Overall, however, special event shuttles can be relatively effective. Assuming an average of 20 passengers per vehicle-hour, ridership is estimated to total 2,100 over the 13 days of service. As no fare is assumed for this service, operating subsidy would total \$5,800 per year.

## **FIXED ROUTE SYSTEM ALTERNATIVES**

### **Six Route Alternative**

Based on the analysis results of the individual potential new routes as discussed above, a comprehensive fixed-route alternative was developed consisting of the following elements shown in Figure 4:

- Implementation of the Southeast and North Routes. Note that these two routes would be operated hourly using a single bus, alternating between the two routes.
- Revision of Routes 2A/2B to serve additional areas in northeast Carson City (while keeping both routes as hour-long loop routes in opposite directions). Specifically, Routes 2A/2B would travel along E. William Street rather than Long Street between Roop Street and I-580 (as the new North Route would serve Long Street), providing a time savings that can be used to travel east on Stanton Drive and Sherman Lane as far as Fairview Drive. This would expand service to eastern Carson City, as well as provide faster trips to existing stops in eastern Carson City. All existing stops could be served or relocated within 600 feet walking distance, except the stops near Lompa Lane/Menlo Drive would be eliminated.
- Revise Route 1 to use N. Carson Street between Washington Street and Long Street, adding service to the commercial uses along N. Carson Street and avoiding duplication with the North Route.
- Extension of Route 3 south to Topsy Lane and realignment to South Carson Street from Colorado Street to Koontz Lane.

**TABLE 3: Fixed Route System Alternatives Analysis**

	Run Parameters		Daily Service			Days per Year	Annual		Annual Cost	Annual Ridership	Fare Revenues	Operating Subsidy
	Hours	Miles	Runs	Hours	Miles		Hours	Miles				
<b>Existing Routes</b>												
Route 1 Weekday	1	11.2	13	13	146	255	3,315	37,128	\$158,800			
Route 2A Wkdy	1	11.7	13	13	152	255	3,315	38,786	\$160,200			
Route 2B Wkdy	1	12.4	13	13	161	255	3,315	41,106	\$162,200			
Route 3 Weekday	1	12.4	13	13	161	255	3,315	41,106	\$162,200			
Route 1 Saturday	1	11.2	8	8	90	51	408	4,570	\$19,500			
Route 2A Sat	1	11.7	8	8	94	51	408	4,774	\$19,700			
Route 2B Sat	1	12.4	8	8	99	51	408	5,059	\$20,000			
Route 3 Saturday	1	12.4	8	8	99	51	408	5,059	\$20,000			
<b>Total</b>							<b>14,892</b>	<b>177,587</b>	<b>\$722,600</b>			
<b>Six-Route Plan</b>												
Route 1 Weekday	1	11.1	13	13	144	255	3,315	36,797	\$158,500			
Route 2A Wkdy	1	12.2	13	13	159	255	3,315	40,443	\$161,700			
Route 2B Wkdy	1	12.8	13	13	166	255	3,315	42,432	\$163,400			
Route 3 Weekday	1	12.5	13	13	163	255	3,315	41,438	\$162,500			
Southeast Rt Wkdy	0.67	8.0	13	8.7	104	255	2,219	26,520	\$107,700			
North Route Wkdy	0.33	4.5	13	4.3	59	255	1,097	15,050	\$54,900			
Route 1 Saturday	1	11.1	8	8	89	51	408	4,529	\$19,500			
Route 2A Saturday	1	12.2	8	8	98	51	408	4,978	\$19,900			
Route 2B Saturday	1	12.8	8	8	102	51	408	5,222	\$20,100			
Route 3 Saturday	1	12.5	8	8	100	51	408	5,100	\$20,000			
Southeast Rt Sat	0.67	8.0	8	5.4	64	51	275	3,264	\$13,300			
North Route Sat	0.33	4.5	8	2.6	36	51	133	1,852	\$6,700			
<b>Total</b>							<b>18,615</b>	<b>227,624</b>	<b>\$908,200</b>			
<b>Net Change</b>							<b>3,723</b>	<b>50,037</b>	<b>\$185,600</b>	<b>54,200</b>	<b>\$19,700</b>	<b>\$165,900</b>
<b>Full Pulse Plan</b>												
Northwest Rt Wkdy	1	11.9	13	13	155	255	3,315	39,449	\$160,800			
N-S Route Wkdy	1	11.6	13	13	151	255	3,315	38,454	\$159,900			
East Route Wkdy	1	11.8	13	13	153	255	3,315	39,117	\$160,500			
Southeast Rt Wkdy	1	13.3	13	13	173	255	3,315	44,090	\$164,800			
South Rt Wkdy	1	9.2	13	13	120	255	3,315	30,498	\$153,000			
Northwest Rt Sat	1	11.9	8	8	95	51	408	4,855	\$19,800			
N-S Route Sat	1	11.6	8	8	93	51	408	4,733	\$19,700			
East Route Sat	1	11.8	8	8	94	51	408	4,814	\$19,800			
Southeast Rt Sat	1	13.3	8	8	106	51	408	5,426	\$20,300			
South Rt Sat	1	9.2	8	8	74	51	408	3,754	\$18,800			
<b>Total</b>							<b>18,615</b>	<b>215,189</b>	<b>\$897,400</b>			
<b>Net Change</b>							<b>3,723</b>	<b>37,602</b>	<b>\$174,800</b>	<b>36,200</b>	<b>\$13,100</b>	<b>\$161,700</b>

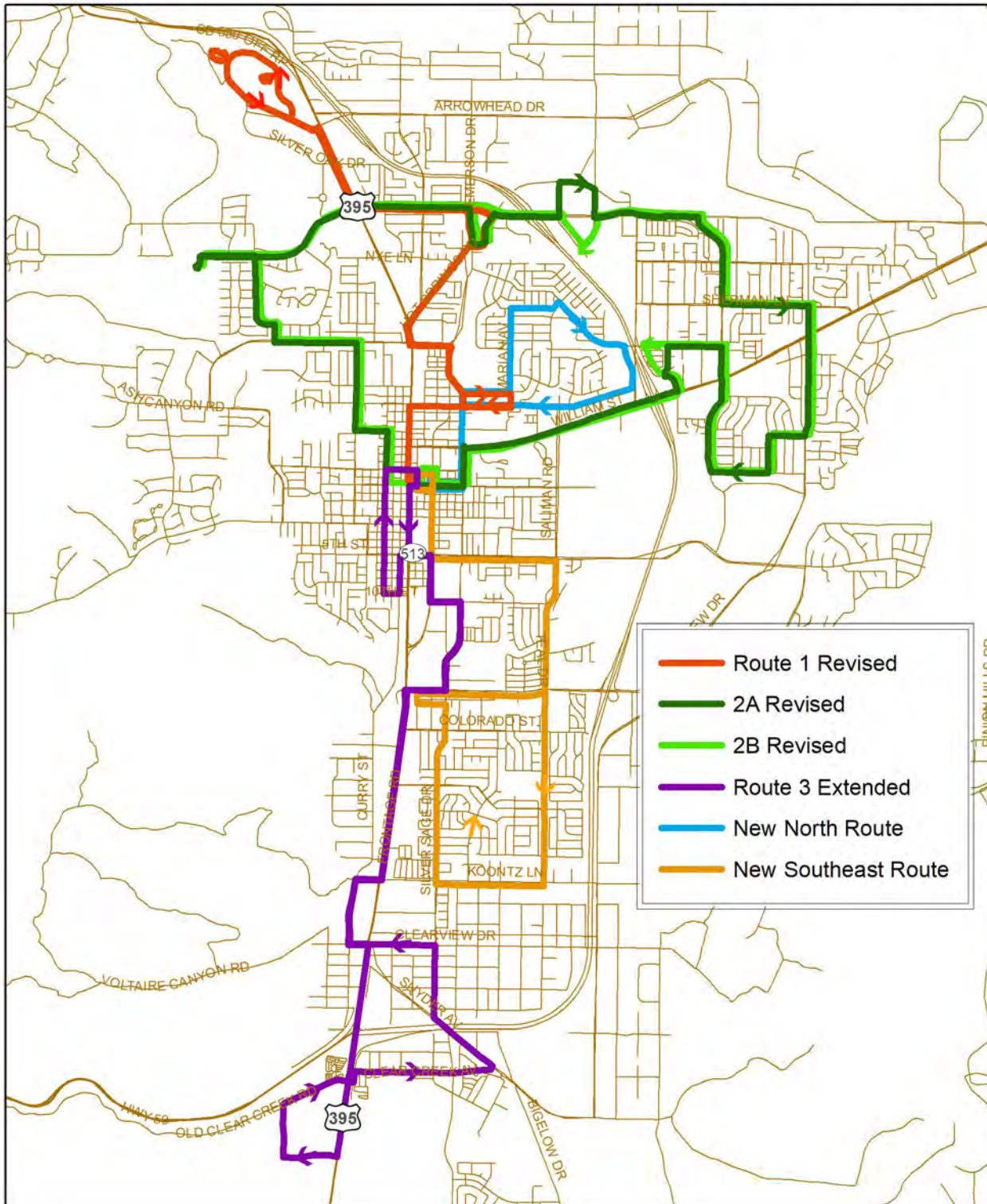
As shown in Table 3, this overall plan would increase service levels by 3,723 additional vehicle-hours per year (a 25 percent increase) and by 54,200 vehicle-miles per year (a 30 percent increase). Overall marginal operating costs would be increased by \$185,600 per year, a 24 percent increase in total operating costs. The total number of buses in fixed-route operation would increase from the current four to a new total of five.



0 0.25 0.5 1 Miles



Figure 4  
Six Route Alternative



New ridership would be generated by expansion of service as well as service to new commercial areas, as follows:

- Southeast area – 26,900 passengers per year
- North area – 12,000 passengers per year
- Eastern and northeastern area – 5,800 passengers per year
- New service on North Carson Street to Long Street (Rodeway Inn, FISH, Roundhouse Inn)– 3,000 passengers per year
- New service along E. Williams Street (Gold Dust, 99 Cent Store) – 4,000 passengers per year

In total, this alternative would increase ridership by 54,200 passenger-trips per year (a 28 percent increase in fixed-route ridership). Subtracting the \$19,700 in additional fare revenues, operating subsidy requirements would increase by \$165,900.

### **Full Pulse Route Alternative**

A “clean slate” analysis was conducted to assess the route structure that would be most effective, given current understanding of transit service needs, if a service were to be designed from scratch. As a basis for this, it is worthwhile to review the general route structures that are commonly used in cities of similar size:

- Under a “**pulse route**” structure, routes are designed like spokes on a wheel, with all routes serving a single transit hub. Buses “pulse” out of the transit hub on coordinated schedules, which allow passengers to typically transfer directly from one bus to another at the hub. As a result, all trips throughout the system can be accomplished by no more than one transfer. In addition to reducing travel time for cross-town trips, this structure provides better amenities for transferring passengers at the transit hub than would be provided out on the routes. This route structure is best suited to communities with a high concentration of activity in a central location (typically downtown). The individual routes are often designed as “balloon routes”, with two-way service near the transfer hub (the “string”) along with a one-way loop (the “balloon”) to provide expanded geographical coverage in the outlying area.
- A “**grid route**” structure operates routes along relatively straight east-west or north-south corridors. This is typically found in larger cities, particularly those with a strong roadway grid (such as Phoenix). This provides for relatively quick trips across the service area, but passengers often have to transfer between intersecting routes, typically at locations with limited amenities. The realities of scheduling also means that there are often long waits while transferring, particularly with low frequency of service. The grid routes are sometimes tied together at the ends of the routes to form a loop.

The current JAC fixed routes are configured largely as a combination of pulse routes (Routes 1 and 3) while Route 2A/ 2B create elements of an east-west grid along the College Parkway and US 50/Winnie Lane corridors. As Route 2A/ 2B are scheduled to meet at the downtown transfer center with the other two routes, all routes are scheduled to “pulse”, while the Route 2A/2B loop provides shorter travel times along the College Parkway corridor.

In considering a new overall route structure, it is important to note that downtown Carson City provides an economically active hub, reasonably close to the center of the overall service area. This argues strongly for a pulse system as the most appropriate overall structure for Carson City. The key question is whether a complete pulse network is a better option for Carson City, in which the Route 2A/2B service area is reconfigured into two individual routes with one bus in operation on each, along with a modification to Route 1.

Other factors considered in the clean slate analysis were:

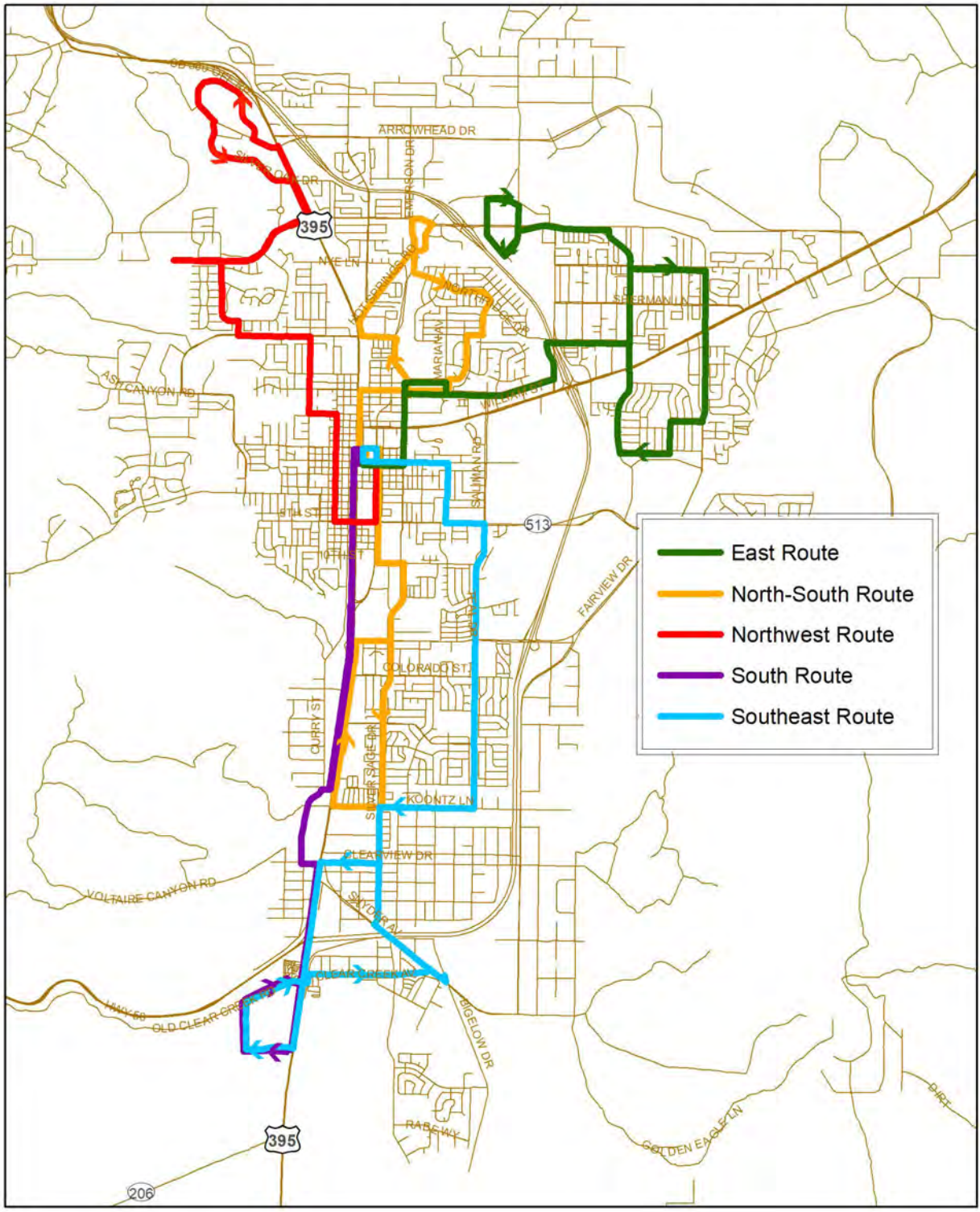
- The relatively low vehicle-hours per capita compared with the peer systems and the 30 percent of Carson City population not served, a Six Route system is warranted.
- Service more frequent than hourly is not warranted, as discussed elsewhere.
- Service to the Saliman Road corridor, further eastward from the existing Route 2A/2B service area and filling the central “gap” is warranted.
- With the completion of I-580 around Carson City, Carson Street (Old US 395) is being incrementally improved to function as a more attractive local-serving street. As part of this, it would be beneficial for service to be provided along Carson Street.

A route alternative addressing these factors is shown in Figure 5. Overall, a route network where all routes pulse out of the downtown area was developed. A key element is that the service plan for northern Carson City would be reconfigured into three pulse routes. This overall route structure consists of the following routes:

- Route 1 would be reconfigured into a Northwest Route to serve northwest Carson City west of Carson Street, including Western Nevada College and the Medical Parkway area. It would also serve stops along Division Street currently served by Route 3. Overall, it would be a hour-long route.
- A North-South Route would serve the Senior Center, Walmart and Northridge Drive areas on the northern end. After serving the Downtown Transfer Plaza, it would serve much of the existing Route 3 service along Stewart Street and Roop Street as far south as Koontz Lane (allowing Route 3 to be revised). The overall route would operate on an hourly schedule.
- An East Route would serve the eastern end of the existing Route 2A/2B service area, including a one-way loop formed by Airport Road, Nye Lane, Fairview Drive and Desatoya Drive. Another route element would extend west on College Parkway to the existing stops around Goni Road and Research Way.
- A Southeast Route would serve the Saliman Road Corridor in both directions, extending south to Walmart (Topsy Lane) and Stewart.
- Route 3 would be reconfigured into a more direct but longer route along the South Carson Street Corridor, extending as far south as Topsy Lane in Douglas County.



Figure 5  
Full Pulse Route Alternative



The impacts on operating parameters and costs would be very similar to that of the Six-Route Alternative, with an annual operating cost impact of \$174,800. This alternative would have characteristics that both increase and decrease ridership. Key generators of new ridership would be as follows:

- New service to southeastern Carson City. As direct service would be available from the Saliman Road area both to downtown as well as south to the Walmart area, ridership generation in this area would be enhanced.
- Service to new areas in north-central Carson City, as well as eastern Carson City.
- Service to new areas in northern Douglas County.
- Faster service between downtown Carson City (and connecting routes) and south Carson City, saving approximately 10 minutes over current running times.

As a whole, a total increase generated by these service improvements would increase ridership by 48,700 per year.

The key negative factor is the loss of east-west service across the College Parkway corridor in northern Carson City. As an example, a trip from Western Nevada College to Walmart on Retail Drive currently takes 9 minutes via Route 2A. Under this alternative, this trip would require 30 minutes, including a transfer from the East Route to the North Route at the Downtown Transfer Plaza. As another example, a trip from Walmart to a residence around Airport Road/Nye Lane would take 65 minutes (including a 30 minute wait at the Downtown Transfer Plaza between the North and East Routes), rather than the existing 10 minutes.

An evaluation of existing boarding and alighting counts indicates that a substantial portion of existing Route 2A/2B passengers are making trips along the College Parkway corridor, totaling 22 percent. An analysis of the impact of the increase in travel time (and need to transfer) indicates that a loss of 12,500 annual existing passenger-trips would occur. The net increase in annual boardings would be 36,200. Subtracting \$13,100 in additional fares, this alternative would increase operating subsidy needs by \$161,700 per year.

## **SPAN OF SERVICE ALTERNATIVES**

Beyond the physical configuration of the routes, the other key variable with regards to a fixed-route transit system is the span of service, the hours and days that service is provided and the frequency of service.

### **Evening Weekday Service (to 9:30 PM Last Run)**

Evening service on weekdays is a popular suggestion for improvement in JAC transit service. In particular, residents are interested in using transit service to access evening recreational activities, as well as the many jobs (such as restaurant jobs) that extend beyond the existing last 6:30 PM run on the JAC system. Under this alternative, each route would be operated for three additional hours, with the

last departures at 9:30 PM. As shown in Table 4, providing this service would increase the fixed-route hours and miles of service. In addition, JAC Assist service would need to be provided during the additional hours and a dispatcher would be needed to staff the office. The overall annual operating cost would be increased by \$214,100.

Ridership can be estimated by reviewing the pattern of ridership per hour observed in similar cities with evening service. This indicates that this service would generate a ridership increase of 9.7 percent over existing weekday ridership, or 16,900 passenger-trips per year. Subtracting the \$6,400 in additional fares yields an estimate of additional operating subsidy of \$207,700 per year.

### **Eliminate Route 2A Weekday 6:30 PM Run**

The review of existing ridership by run by hour presented in Technical Memorandum One indicates that the final 6:30 PM run serves an average of only 2.3 passenger-trips per day. While there is a benefit of providing a consistent service plan that is easy to communicate to passengers, eliminating this run would save \$12,300 in operating costs per year. Considering that some passengers could still complete their trips using Route 2B (though with a longer travel time), a total of 500 passenger-trips and \$200 in fare revenues would be eliminated annually. This results in a net reduction in subsidy requirements of \$12,100 per year.

### **Saturday 7:30 AM Runs**

The ridership that occurs during Saturdays' first runs are relatively strong, with an average of 50 boarding on the 8:30 AM runs. This is an indication of potential demand for an earlier run at 7:30 AM. A review of the relative ridership on runs in the 7:00 AM hour on similar systems indicates that this additional hour of service would boost overall Saturday ridership by 12 percent, or 2,400 passengers per year. This additional service (including additional JAC Transit and dispatcher hours) would increase annual costs by \$14,200 and annual subsidy requirements by \$13,200<sup>5</sup>.

### **Later Saturday Runs**

Ridership on the last existing run on Saturdays (at 3:30 PM) is also relatively strong, carrying 47 passengers per day on average. Many similar transit systems operate later on Saturdays, typically until around 5 PM. Two options were considered for an extension to the Saturday span of service:

- Operating a 4:30 PM run would increase costs by \$14,200 per year. Based on the relative ridership by hour in similar systems, it would serve approximately 3,050 passenger-trips per year, and require \$13,040 in subsidy.
- Operating both 4:30 PM and a 5:30 PM runs on Saturday would increase costs by \$28,600 per year and ridership by 5,000 boardings. The overall subsidy requirements would increase by \$26,800 annually.

---

<sup>5</sup> As the first run ridership on Route 3 is relatively low, another option would be to operate this 7:30 AM run only on Routes 1, 2A/ 2B, which would reduce operating subsidies by \$2,300 per year.

**TABLE 4: Fixed Route Span of Service Alternatives Analysis**

	Run Parameters		Daily Service			Days per	Annual		Annual	Ridership	Fare Revenues	Operating Subsidy
	Hours	Miles	Runs	Hours	Miles	Year	Hours	Miles	Cost			
<b>Weekday Evening Service</b>												
Route 1	1	11.2	3	3	34	255	765	8,568	\$36,600	4,600	\$1,300	
Route 2A	1	11.7	3	3	35	255	765	8,951	\$37,000	3,700	\$1,400	
Route 2B	1	12.4	3	3	37	255	765	9,486	\$37,400	4,800	\$1,800	
Route 3	1	12.4	3	3	37	255	765	9,486	\$37,400	2,700	\$900	
JAC Assist	--	--	--	3	33.05	255	765	8,428	\$36,500	1,100	\$1,000	
Additional Dispatcher Hours				3		255	765	--	\$29,200	--	--	
<b>Total</b>							3,825	44,918	\$214,100	16,900	\$6,400	\$207,700
<b>Eliminate Rt 2A Wkdy 6:30 PM Run</b>												
Route 2A	1	11.7	-1	-1	-12	255	-255	-2,984	-\$12,300	-500	-\$200	-\$12,100
<b>Saturday 7:30 AM Runs</b>												
Route 1	1	11.2	1	1	11	51	51	571	\$2,400	400	\$100	
Route 2A	1	11.7	1	1	12	51	51	597	\$2,500	1,200	\$500	
Route 2B	1	12.4	1	1	12	51	51	632	\$2,500	600	\$200	
Route 3	1	12.4	1	1	12	51	51	632	\$2,500	200	\$100	
JAC Assist	--	--	--	1	11.02	51	51	562	\$2,400	100	\$100	
Additional Dispatcher Hours				1		51	51	--	\$1,900	--	--	
<b>Total</b>							255	2,995	\$14,200	2,500	\$1,000	\$13,200
<b>Saturday 4:30 PM Runs</b>												
Route 1	1	11.2	1	1	11	51	51	571	\$2,400	900	\$300	
Route 2A	1	11.7	1	1	12	51	51	597	\$2,500	800	\$300	
Route 2B	1	12.4	1	1	12	51	51	632	\$2,500	700	\$300	
Route 3	1	12.4	1	1	12	51	51	632	\$2,500	600	\$210	
JAC Assist	--	--	--	1	11.02	51	51	562	\$2,400	50	\$50	
Additional Dispatcher Hours				1		51	51	--	\$1,900	--	--	
<b>Total</b>							255	2,995	\$14,200	3,050	\$1,160	\$13,040
<b>Saturday 4:30 &amp; 5:30 PM Runs</b>												
Route 1	1	11.2	2	2	22	51	102	1,142	\$4,900	1,500	\$400	
Route 2A	1	11.7	2	2	23	51	102	1,193	\$4,900	1,300	\$500	
Route 2B	1	12.4	2	2	25	51	102	1,265	\$5,000	1,200	\$500	
Route 3	1	12.4	2	2	25	51	102	1,265	\$5,000	900	\$310	
JAC Assist	--	--	--	2	22.03	51	102	1,124	\$4,900	\$100	\$90	
Additional Dispatcher Hours				1		51	102	--	\$3,900	--	--	
<b>Total</b>							510	5,989	\$28,600	5,000	\$1,800	\$26,800
<b>Sunday Service</b>												
Route 1	8	11.2	2	16	22	51	816	1,142	\$32,100	4,600	\$1,300	
Route 2A	8	11.7	2	16	23	51	816	1,193	\$32,200	4,000	\$1,600	
Route 2B	8	12.4	2	16	25	51	816	1,265	\$32,200	3,500	\$1,300	
Route 3	8	12.4	2	16	25	51	816	1,265	\$32,200	2,800	\$980	
JAC Assist	--	--	--	8	88	51	408	4,495	\$19,500	700	\$650	
Additional Dispatcher Hours				8		51	408	--	\$15,600	--	--	
<b>Total</b>							3,672	9,360	\$163,800	15,600	\$5,830	\$157,970
<b>Weekday Half-Hourly Service</b>												
Route 1	1	11.2	12	12	134	255	3,060	34,272	\$146,600	17,700	\$5,100	
Route 2A	1	11.7	12	12	140	255	3,060	35,802	\$147,900	15,100	\$5,900	
Route 2B	1	12.4	12	12	149	255	3,060	37,944	\$149,800	14,200	\$5,400	
Route 3	1	12.4	12	12	149	255	3,060	37,944	\$149,800	18,700	\$6,540	
<b>Total</b>							12,240	145,962	\$594,100	65,700	\$16,400	\$577,700

**Sunday Service**

Providing service on Sundays has long been a common request. In addition to providing access to worship services, many Sunday riders on other systems are traveling for social events and shopping, as well as retail jobs. Experience in other similar areas that provide fixed route transit service on Sundays indicates that the ridership generated on Sundays is approximately 30 percent lower than Saturday

ridership. Operating the Saturday service plan (four routes plus JAC Assist from 8:30 AM to 4:30 PM) would cost a total of \$163,800 per year. Ridership is estimated to be 15,600 passenger-trips per year. Subtracting fare revenues, subsidy would be increase by approximately \$157,970 annually.

### **Half-Hourly Weekday Service**

Providing transit service every half hour rather than every hour generates a substantial improvement in the overall attractiveness of a fixed-route service. In particular, employees with defined work start and stop times often find that hourly service can require leaving for work much earlier (if the hourly bus serves their worksite only a few minutes after their required start time) or a long wait after quitting time before the next bus home arrives. Similarly, passengers with defined appointment times for medical or social service visits often are required to add substantial time to their overall trip.

Providing half-hourly service on all four JAC fixed routes would require an additional four buses in operation. As shown in Table 4, this would require a sobering \$594,100 per year in increased operating costs. An elasticity analysis indicates that ridership would be increased by approximately 65,700 boardings per year, resulting in an increase in operating subsidy of \$577,700 per year.

## **COMPARISON OF FIXED ROUTE ALTERNATIVES**

The ridership impacts of the fixed route service alternatives, presented in Table 5 and Figure 6 range from an increase of 65,700 (for half-hourly weekday service) and 54,200 (for the 6-Route system plan) to a reduction of 1,200 associated with revision of Route 2A/2B service off of Menlo Place and Lompa Lane. Other alternatives with relatively high ridership potential are the full pulse system alternative (39,600), the North Route (28,200) and the Southeast Route (26,900).

The operating subsidy impacts also vary widely, as shown in Figure 7. The most costly options would be half-hourly weekday service (\$577,700) followed by weekday evening service until 9:30 PM (\$207,700 per year). Other alternatives would have a relatively modest impact on subsidy needs, while two (revising Routes 2A/2B to serve North Carson Street and eliminating the Route 2A weekday 6:30 PM run) would reduce subsidy needs.

### **Fixed Route Alternatives Performance Analysis**

An analysis of the performance of the service alternatives is presented in Table 5. This considers the following key transit service performance measures.

#### *Passenger-Trips per Vehicle-Hour*

The marginal passenger-trips per vehicle-hour is a key measure of the productivity of a transit service. Note that several of the alternatives do not result in a change in vehicle-hours, making this measure inapplicable. These values are charted in Figure 8.

Of the other alternatives, the majority yield a positive value resulting from an increase in ridership divided by an increase in vehicle-hours. In these cases, a high figure is preferred in that it reflects a relatively high ridership gain for every new vehicle-hour operated. For one alternative (the elimination

**TABLE 5: JAC Fixed Route Service Alternatives Performance Analysis**

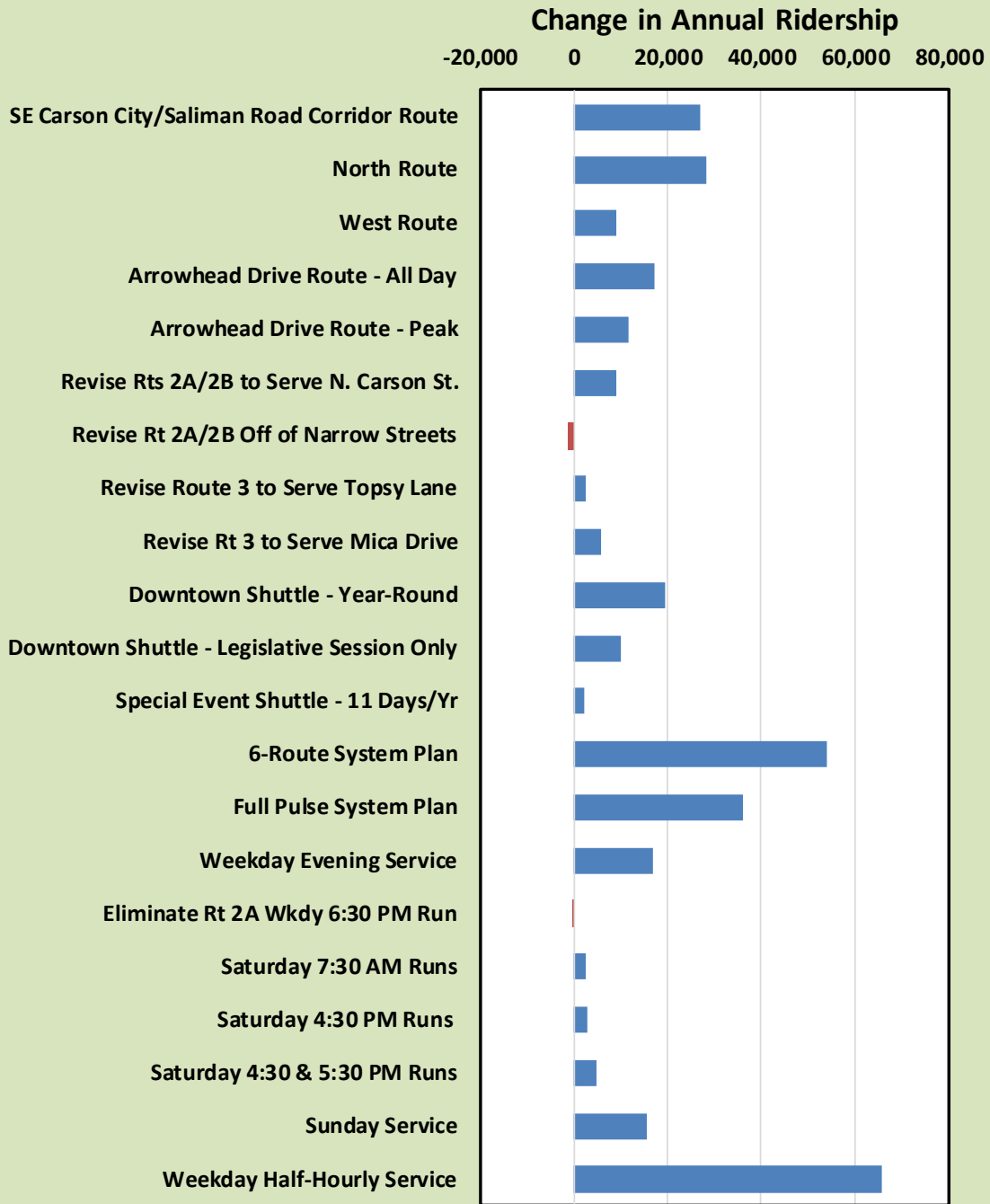
	<i>Change From Existing Service</i>				
	Net Annual Ridership	Net Annual Vehicle-Hours	Net Annual Operating Subsidy	Psgr-Trips per Service-Hour	Marginal Subsidy per Psgr-Trip
Existing Fixed Route Performance	<i>Alternative Exceeding Average Shaded</i>			13.0	\$4.35
SE Carson City/Saliman Road Corridor Route	26,900	2,494	\$111,100	10.8	\$4.13
North Route	28,200	1,367	\$56,700	20.6	\$2.01
West Route	9,100	1,862	\$83,600	4.9	\$9.19
Arrowhead Drive Route - All Day	17,100	3,825	\$178,900	4.5	\$10.46
Arrowhead Drive Route - Peak	11,800	1,020	\$45,200	11.6	\$3.83
Revise Rts 2A/2B to Serve N. Carson St.	9,000	0	-\$1,600	--	-\$0.18
Revise Rt 2A/2B Off of Narrow Streets	-1,200	0	\$1,700	--	-\$1.42
Revise Route 3 to Serve Topsy Lane	2,400	0	-\$700	--	-\$0.29
Revise Rt 3 to Serve Mica Drive	5,900	4,743	\$205,800	1.2	\$34.88
Downtown Shuttle - Year-Round	19,600	2,448	\$105,500	8.0	\$5.38
Downtown Shuttle - Legislative Session Only	9,900	824	\$34,700	12.0	\$3.51
Special Event Shuttle - 11 Days/Yr	2,100	104	\$5,800	20.2	\$2.76
6-Route System Plan	54,200	3,723	\$165,900	14.6	\$3.06
Full Pulse System Plan	36,200	3,723	\$161,700	9.7	\$4.47
Weekday Evening Service	16,900	3,825	\$207,700	4.4	\$12.29
Eliminate Rt 2A Wkdy 6:30 PM Run	-500	-255	-\$12,100	2.0	\$24.20
Saturday 7:30 AM Runs	2,500	255	\$13,200	9.8	\$5.28
Saturday 4:30 PM Runs	3,050	255	\$13,040	12.0	\$4.28
Saturday 4:30 & 5:30 PM Runs	5,000	510	\$26,800	9.8	\$5.36
Sunday Service	15,600	3,672	\$157,970	4.2	\$10.13
Weekday Half-Hourly Service	65,700	12,240	\$577,700	5.4	\$8.79

of the last Route 2A weekday run), this figure is a result of a reduction in ridership over a reduction in vehicle-hours. In this condition, a lower value is preferable as it reflects fewer passenger-trips lost for every hour of service reduction. In this case, the value of 2.0 indicates that relatively few passengers would be eliminated. Of those increasing ridership, the “best” alternatives are a new North Route (20.6) and the special event shuttle (20.5), followed by the 6-Route systems plan (14.6). Note that these values are shaded in Table 5, indicating that they exceed the existing systemwide fixed-route average of 13.0. Alternatives that generate relatively few new passenger-trips per new vehicle-hour are the West Route (4.9) extending Route 3 southward to Mica Drive (1.2) and the Sunday service (4.2).

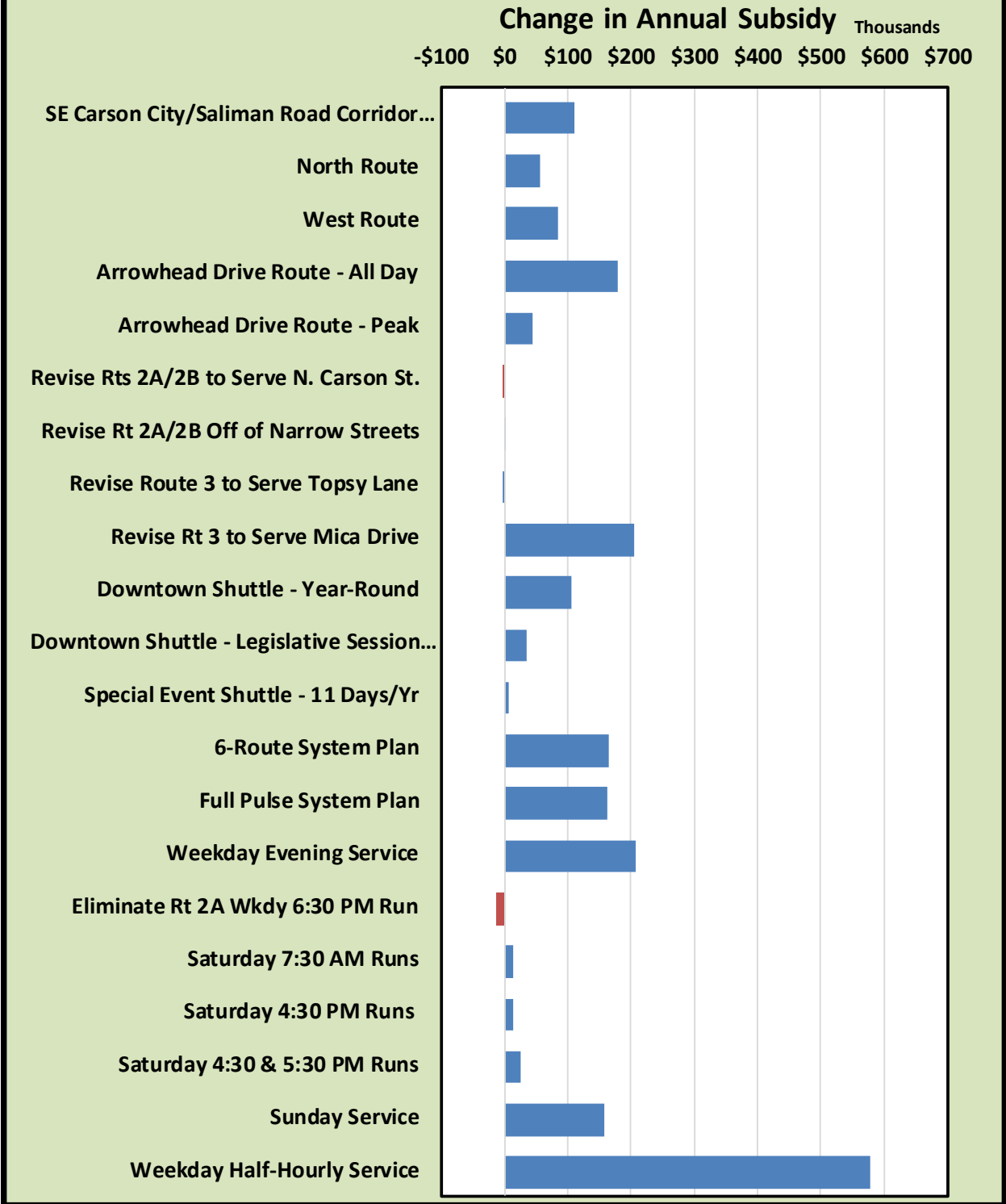
#### *Marginal Subsidy per Passenger-Trip*

This measure directly relates the key public input (tax funding) to the key desired output (ridership). As shown in Figure 9, the majority of these values reflect an increase in subsidy divided by an increase in ridership, in which case a lower value indicates a “better” alternative in that fewer dollars are needed to expand the ridership. Of these, the best performing alternatives are revising Route 3 to serve Topsy Lane (\$0.46), the North Route (\$2.01) and the Special Event Shuttle (\$2.72). Others would require relatively high levels of new funding per passenger-trip, such as the extension of Route 3 to Mica Drive (\$34.88),

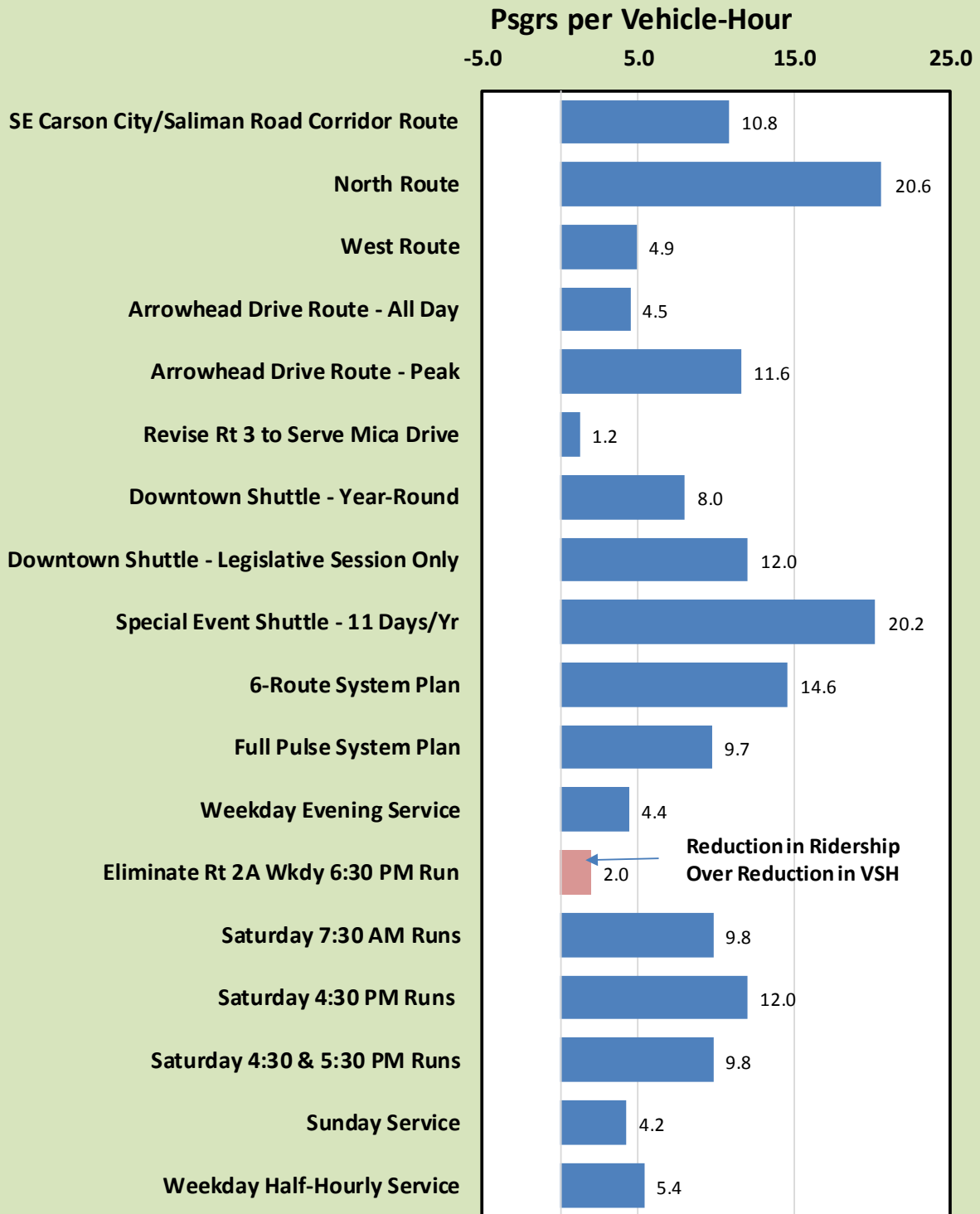
**FIGURE 6: Service Alternatives Annual Ridership Impact**



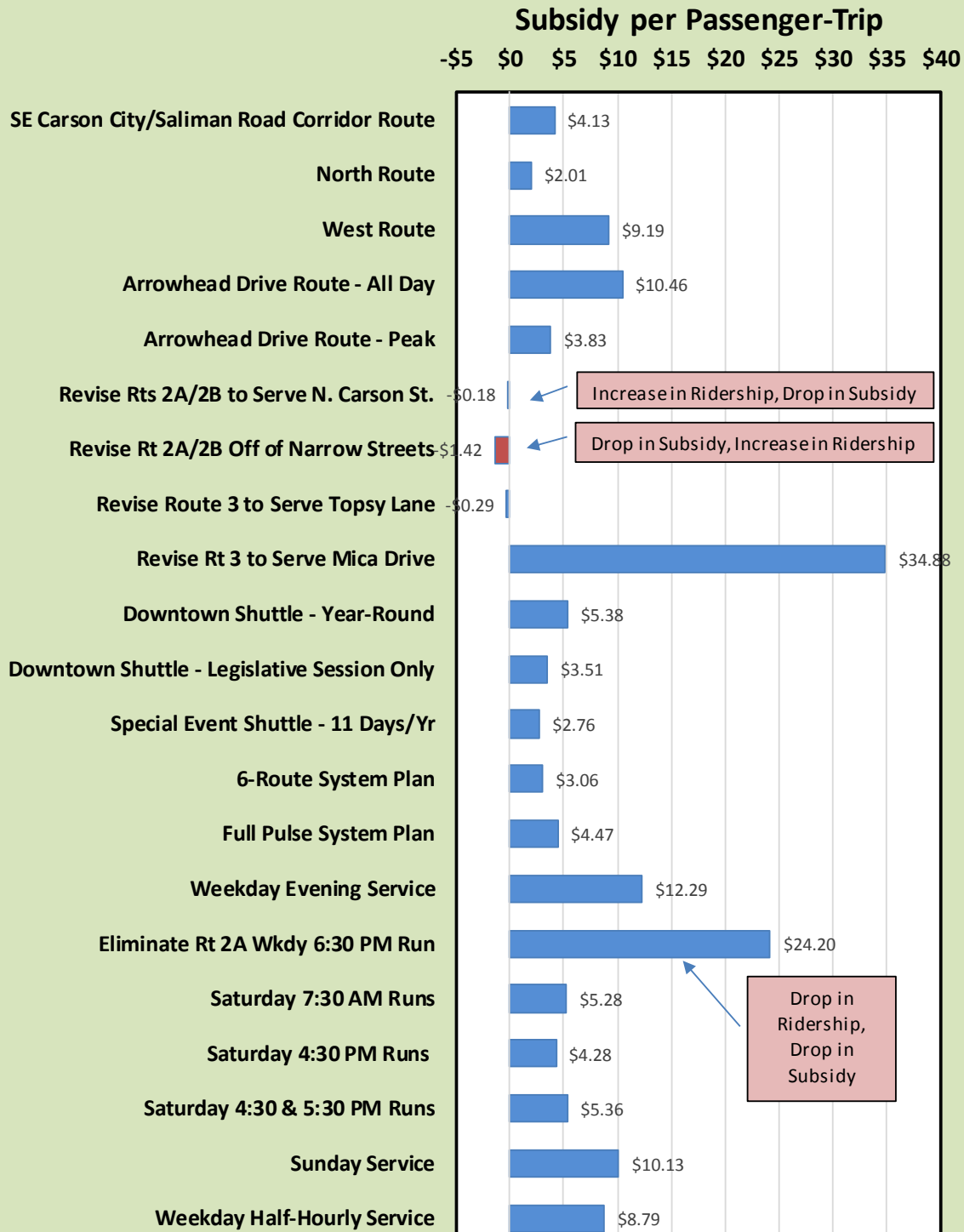
**FIGURE 7: Service Alternatives Annual Operating Subsidy Impact**



**FIGURE 8: Service Alternatives Passengers per Vehicle Service-Hour (VSH)**



**FIGURE 9: Service Alternatives Operating Subsidy per Passenger**



weekday evening service (\$12.29) and Sunday service (\$10.13). Several other results regarding this performance measure merit discussion:

- The positive figure of \$24.40 for the elimination of the last weekday Route 2A run indicates that \$24.40 would be saved for every passenger-trip lost (an indication that this is a good alternative).
- The negative figure (-\$0.18) for the revision of Route 2A/2B to serve North Carson Street is also a positive result, in that \$0.18 in subsidy would be *saved* for every new passenger-trip *added*.
- Finally, the revision of Route 2A/2B would *reduce* ridership while *increasing* costs, yielding a figure of -\$1.42 (a negative result).

### **Fixed Route Alternatives Conclusions**

The above review provides useful information for making decisions regarding the individual routes, and ultimately the JAC fixed route network as a whole. The appropriate alternatives to work into the overall plan will depend on the relative balance between the desire for ridership growth and the financial realities of available operating funding. It is also important to consider that there are many other factors (in particular, the ability to provide a dependable and safe transit service) beyond these financial and performance measures. There also is a benefit in providing a consistent service that is easy to communicate and understand. Nonetheless, the following are key overall findings that result from this evaluation:

- Assuming that funding is available for operation of a fifth fixed-route bus, the Six-Route System scenario is the preferable option, providing greater ridership at lower cost than the Full-Pulse System scenario. The strong performance of new service to southeast Carson City and to the northern area helps to increase the effectiveness of the Six-Route System scenario.
- Extension of Route 3 south to Mica Drive in Douglas County would not be an effective use of funds. However, the shorter extension to Topsy Lane provides strong benefits at little cost.
- Sunday service, evening service and half-hourly weekday service all perform relatively poorly and would be very expensive.
- A special event or downtown shuttle has a high potential for good performance, so long as the periods that service is provided is considered carefully. The ridership potential of this service should be considered cautiously.
- Expansion of the hours of Saturday service has a moderately good potential. Of the hours considered, providing one additional later hour (4:30 PM departures) is the most effective.
- The revision of Route 2A/2B to serve a portion of North Carson Street would be a net benefit, but would impact existing ridership. Note that the Six-Route System scenario provides this new service without the impact on existing passengers.

## JAC Assist Alternatives

JAC Assist currently provides service to persons eligible under Americans with Disability Act qualifications as follows:

- Within  $\frac{3}{4}$  miles of a fixed route - \$2.00 per one-way trip
- Between  $\frac{3}{4}$  miles and 1 mile of a fixed route - \$4.00 per one-way trip

These service areas are shown in Figure 10. Table 6 presents estimates of the population, and their population characteristics, currently within and outside of these service areas. As shown, 80 percent of all Carson City residents live within the  $\frac{3}{4}$ -mile area and 84 within the 1-mile area. A higher proportion of persons with disabilities live within the existing service area, with only 13 percent outside of the  $\frac{3}{4}$ -mile area and 10 percent outside of the 1-mile service area. The senior population outside of the existing service area is very much in line with the overall population proportions of Carson City.

Residential areas outside the service area are largely found to the west (Kings Canyon area), northwest (Lakeview area), north (northern end of Goni Road) and southeast (east of I-580 and south of Fairview Drive). Overall, the total population outside of any JAC Assist service area is as follows:

- Total population – 8,413
- Disabled population – 1,365
- Senior population – 2,050

In reviewing the need for service, it is also useful to review the proportion of JAC Assist trips made to and from the extended area ( $\frac{3}{4}$ -mile to 1-mile). An analysis of Ecolane data for a full year (June 2018 through May 2019) indicate only 354 such trips were made (or 1.2 per day). This is equal to only 1.3 percent of all JAC Assist trips over a year.

### Expansion of Base ADA Service Area to Encompass All Residential Areas

The ADA service area could be expanded to include all residential portions of the consolidated city and county. This would exclude the areas in the Tahoe Basin and the eastern portion of the county with no or minimal population. The best indicator of the potential ridership demand that would be generated by this expansion is the increase in the number of persons with disability in the expanded area<sup>6</sup>. This is equal to a 14.5 percent increase in demand, or 15.1 passenger-trips per day on the average weekday and 1.8 passenger-trips per day on the average Saturday.

A utilization analysis was conducted of the run manifests for a selection of service days to identify if the current services (up to 4 vehicles in operation on a weekday and 1 vehicle in operation on a Saturday) could accommodate this increase in demand. This analysis found that there is some available capacity on weekdays early in the service day, between 9:30 AM and 1:30 PM as well as on Saturdays (recognizing that the dispatchers can negotiate specific service times by up to one hour). However, available capacity is not adequate between 7:30 AM and 9:30 AM, and between from 1:30 PM to 4:30

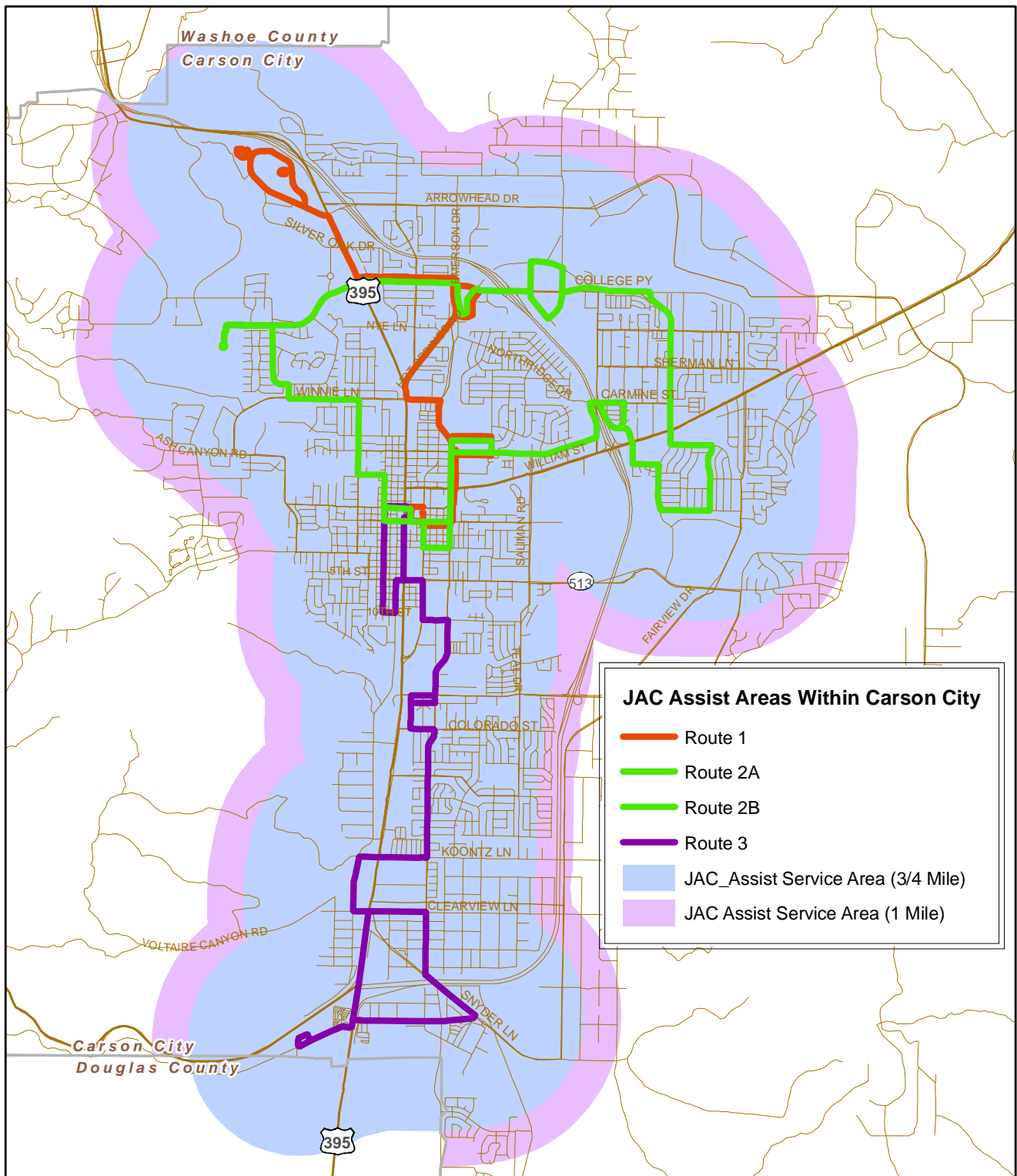
---

<sup>6</sup> It is possible that this is a conservative assumption, as a substantial proportion of JAC Assist ridership is generated by social service programs and housing options focused on the disabled community, which tend to be located within the JAC Assist service area. However, expansion of the service area could allow these types of facilities to relocate to these new areas, creating the potential for expansion of demand.



0 0.25 0.5 1 Miles

Figure 10  
Existing JAC Assist Service Area



**TABLE 6: Carson City Population Served by JAC Assist**

Census Tract	Total Population				Persons With Disabilities			Senior Population		
	Total Tract Population	Within 3/4 Mile	Outside 3/4 Mile	Outside 1 Mile	Within 3/4 Mile	Outside 3/4 Mile	Outside 1 Mile	Within 3/4 Mile	Outside 3/4 Mile	Outside 1 Mile
3	3,708	371	3,337	2,781	58	518	432	122	1093	911
4	3,653	1,206	2,447	2,009	248	502	413	233	473	388
8	4,413	1,986	2,427	1,545	318	388	247	415	507	323
9	5,142	4,731	411	257	1,409	122	77	1,181	103	64
10.02	3,643	1,457	2,186	1,822	157	236	197	291	437	364
Other Tracts	33,660	33,660	0	0	8,241	0	0	5,644	0	0
TOTAL	54,219	43,411	10,808	8,413	12,197	1,767	1,365	10,499	2,613	2,050
% of Total		80%	20%	16%	87%	13%	10%	80%	20%	16%

PM. This expansion in service area would therefore require operation of one additional AM and one additional PM paratransit vehicle, for a total of 5 hours per weekday. Over the course of a year, this would incur an operating cost of \$67,000, as shown in Table 7. It would serve up to 3,900 new passenger-trips (under this conservative cost analysis), yielding an operating subsidy of \$63,400 per year. This is equal to a marginal subsidy per passenger of \$16.26, which is similar to the existing JAC Assist average.

**TABLE 7: JAC Assist Service Area Alternatives Analysis**

	Run Parameters		Daily Service			Days per Year	Annual		Annual Cost	Ridership	Fare Revenues	Operating Subsidy
	Hours	Miles	Runs	Hours	Miles		Hours	Miles				
<b>Expand Base Area to Encompass All Residential Areas</b>												
JAC Assist	--	--	--	5	82.62	255	1,275	21,069	\$67,000	3,900	\$3,600	\$63,400
<b>Expand Extended Area to Encompass All Residential Areas</b>												
JAC Assist	--	--	--	4	66.1	255	1,020	16,855	\$53,600	1,550	\$1,400	\$52,200

**Expansion of Extended ADA Service Area to Encompass All Residential Areas**

Another option would be to expand the extended area (with the \$4.00 fare) to include all residential areas. The population in the existing extended area generates an average of 1.14 trips per disabled person per year. Applying this rate to the disabled population outside of the existing service area indicates an annual ridership increase of 1,550 per year, or 5.9 per weekday and 0.7 per Saturday. Though this is a lower figure than expanding the base area, it would still require additional JAC Assist capacity in both the AM and PM periods (particularly considering that the time required to serve each trip would be greater than the current average). A total of four vehicle-hours of service would be required (7:30 AM to 9:30 AM, and 2:00 PM to 4:00 PM), which would increase operating costs by \$53,600 and operating subsidy requirements by \$52,200. At \$33.68 in subsidy per passenger, this option would be twice as expensive as current JAC Assist service.

## **Modifications in Certification Procedures**

An important element of ensuring that the limited funds available for paratransit services are focused on those most in need of the service is defining an appropriate “certification” process – the steps by which an individual is certified to use the service. The *JAC Assist ADA Complementary Paratransit Policies and Procedures* (revised July 17, 2018) lays out a detailed and comprehensive process which already includes key steps such as a certification by a qualified medical professional, as well as an appeals process.

One modification that is recommended to improve this process is to require an in-person interview as part of the “Part A” application process. Requiring an in-person interview has been found to decrease the number of applications by 25 to 30 percent. The in-person interview provides an opportunity for staff to make a preliminary determination of eligibility. It also provides an opportunity to educate the applicant about other options, including accessible fixed-route transit and travel training. While JAC Assist could require a functional assessment, the cost to implement assessments likely exceeds the benefit for a system the size of JAC. JAC Assist will need to offer a free ride to and from the in-person interview and have sufficient staff time to conduct the interviews.

In addition, the Consultant Team has the following other recommendations:

- Change recertification to five years to reduce the workload. The difference in the number of people certified between a three-year and five-year certification will be very small and there is minimal benefit to having staff spend time on recertification every three years.
- Consider eliminating the conditional and trip-by-trip rides. The number of actual conditional or trip ineligible requests should be determined to verify if the benefit is worth the staff time spent determining conditional eligibility and approving individual trip requests. While this approach to approving trips on a case by case basis appears to be beneficial, the number of trips that fall in this category may be so small that the effort is not justified. Tracking the number and percentage of trips that are approved on a conditional basis or not approved will support evaluation of this policy.

As discussed in the Chapter 5, a travel training program should also be considered. Travel training for some applicants may allow them to use the fixed-route service and not need JAC Assist for some or possibly all of their trips. Given that the operating cost of providing a JAC Assist trip averages almost 4 times more than that of a fixed route trip, and considering that many persons with disabilities find that fixed-route services provide overall greater mobility and opportunities, this can benefit both the transit program as a whole as well as the individual rider.

## **INTERCOUNTY SERVICE ALTERNATIVES**

### **Dayton-Mound House-Carson City Service**

The western portion of Lyon County, in the Mound House and Dayton areas (within the CAMPO boundaries), has a substantial population, totaling approximately 16,000. This population has a relatively high proportion of persons with disabilities (23.2 percent) and low income residents (14.1 percent). While residents of these areas typically travel to Carson City for medical and urban services, currently the only transit access is provided by the once-per-week service (on Thursdays) from Silver Springs to Carson City, along with once-a-month (fourth Tuesday) from Yerington to Carson City via

Silver Springs. These services, moreover, don't arrive in Carson City until 9:30 AM on the weekly service and 10:30 AM on the once-a-month service, with both departing at 2:00 PM. These service times require a relatively long time away from home, with only limited options for appointments in Carson City.

Additional service could be provided by Carson City to western Lyon County, with funding provided through a combination of local Lyon County sources and Federal Transit Administration sources. This could consist of "lifeline" service, which is defined as limited service to smaller communities or rural areas, intended to provide at least a minimum of access to urban services such as medical facilities, shopping and social service programs. At a minimum, these services consist of two runs on one day a week. Reservations are required (typically at least 24-hours in advance), though if a pattern of regular reservations emerges, "standing reservations" can be established for popular stops and times. Examples of lifeline transit services are the service connecting Markleeville, California with Minden/Gardnerville and the service connecting Benton, California with Bishop, California.

This may be an appropriate service model to serve the western Lyon County area. Specifically, a route could be operated between Carson City and Dayton, as far east as Chaves Road (approximately 2 miles east of SR 79), one day per week<sup>7</sup>. This vehicle would operate on a deviated basis, providing door-to-door service to nearby residential areas in Lyon County, and direct service to key medical and commercial centers in Carson City. Three runs per day could be operated, providing arrivals into Carson City at 8:30 AM, a midday 11:00 AM eastbound departure dropping and picking up passengers around Noon, and a 4:30 PM eastbound departure.

The route would run approximately 19 miles east of downtown Carson City. Including time for service to individual homes and destinations, a 2 hour period for every round trip would be needed. Including 12 miles for services off of the highways, each round trip would require approximately 50 miles of operation. This service would cost an estimated \$18,700 if operated through the JAC program, as shown in Table 8.<sup>8</sup> Funds would also be needed for marketing, not included in Table 8.

The potential ridership for this service is substantial, if properly marketed. A review of per-capita ridership on similar lifeline services indicates an average of 0.34 passengers per year per capita, for every day of service offered each week. This indicates a potential for 5,400 passenger-trips per year, or 106 per service day. In reality, ridership would be limited to the capacity of the buses. Assuming a 21-passenger Starcraft vehicle were used, total daily ridership would be limited to approximately 80 passenger-trips per day, or approximately 4,000 per year. Assuming a fare of \$2.00 per one-way ride, \$8,000 in fare revenues would be generated. An operating subsidy of \$10,700 would be required.

**TABLE 8: Intercounty Service Alternatives Analysis**

	Run Parameters		Daily Service			Days per Year	Annual		Annual Cost	Ridership	Fare Revenues	Operating Subsidy
	Hours	Miles	Runs	Hours	Miles		Hours	Miles				
Dayton Lifeline Service	2	50	3	6	150	52	312	7,800	\$18,700	4,000	\$8,000	\$10,700
Dayton/Virginia City Lifeline Service	2.33	56	3	7	168	52	364	8,736	\$21,500	4,250	\$8,500	\$13,000

<sup>7</sup> If this day falls on a holiday, service would be operated on an alternate day for that week.

<sup>8</sup> Providing service on a second day per week would double the cost to \$36,000 per year.

### **Virginia City – Dayton – Mound House – Carson City Service**

Another option would be to also provide lifeline service to the Virginia City portion of Storey County, including Silver City and Gold Hill. This area has a population of 705 persons, of which 18 percent are low income and 36 percent are seniors. US 50, State Route 341 and State Route 79 make a convenient loop through Virginia City and Dayton. This adds only 6 miles to a round-trip, resulting in roughly 56 mile trip length and a 2 hour 20 minute running time. Annual operating costs would be on the order of \$21,500 per year (assuming ridership requests are made for all runs). This additional service area would increase ridership demand by an estimated 250 passenger-trips per year (or 5 per service day). Assuming there is adequate capacity, this would increase fare revenues by \$500 per year. The incremental impact of this expanded service area would be to increase operating subsidies by \$2,300. However, it would open the possibility for funding through Storey County sources, and possibly increase the competitiveness of a grant application for federal funding.

## INTRODUCTION

This chapter first discusses capital facilities, including transfer centers and bus stops. Fleet improvements are then discussed, including the appropriate size of transit vehicles as well as the potential for battery electric buses.

## FACILITIES

### Downtown Transit Center

The current hub of the JAC fixed route system is the Downtown Transit Plaza. This consists of the curb along the eastern side of N. Plaza Street between E. Robinson Street and E. Washington Street, as well as a portion of the curb, adjacent to the Federal Building. Excluding the driveway to a parking lot, there is a total of 200 feet of curb length available for buses. This is sufficient to accommodate up to six vehicles at one time. At present, up to four JAC buses are at the Plaza at the peak times (at the bottom of the hour). Up to approximately 30 passengers are waiting for buses at peak times.

The TTD Route 19X also serves a stop on the south side of E. Washington Street east of N. Plaza Street. This stop is served five times a day, but not at the same time as JAC. In addition, the Washoe RTC Intercity Route serves the stop on E. Washington Street six times per day in the southbound direction from Reno to NDOT Headquarters on Stewart Street, and serves a stop on the north side of E. Robinson Street east of N. Plaza Street six times per day in the northbound direction. While the Washoe RTC schedules do not define a specific time for service to these stops, the southbound runs arriving at NDOT at 7:15 AM, 4:12 PM and 5:12 PM provide a reasonably convenient transfer from the Intercity buses to JAC fixed routes, while the northbound runs departing at 7:20 AM, 4:17 PM and 5:17 PM provide the opportunity (with coordination between the systems) for convenient transfers from JAC fixed routes to the Intercity service.

Beyond the curbside bus loading locations, this facility consists of a 14-foot-wide sidewalk (sufficient for wheelchair loading and unloading), along with an 8-foot-long shelter at the south end and a 20-foot-long shelter at the north end. There are also three 6-foot benches and a bike rack.

This facility provides a reasonably convenient location with regards to downtown activity centers, and efficient bus movements into and out of the site. However, there are numerous deficiencies to the existing transit plaza:

- It lacks restroom facilities for drivers. Drivers currently have to depart their buses (requiring all passengers to deboard) and go into the Nugget to use their restrooms (on a gratis basis). This additional walk time can add roughly 5 minutes to the layover time at the transit plaza, and can add to service delays.
- It provides insufficient protection from the elements. In particular, the west facing shelters do not provide adequate seating capacity for peak waiting loads, provide very little shade in the

late afternoon on hot summer days, and provide little protection from wind-driven rain and snow.

- Because of the limited seating and shade opportunities, passengers are tempted to wander into the landscaping areas of the Federal Building, potentially causing damage.
- Lighting is limited to two streetlights, and low lighting in the shelters. As a result, passengers are often boarding and alighting in dark locations, adding to safety concerns.
- Walks of up to 400 feet are required between Intercity and JAC buses, increasing the delays as passengers transfer.

As a long-term capital investment, it is important for a transit center to be able to accommodate the needs of the transit program for at least the next twenty years. The following describes design elements and site considerations for such an investment.

### **Design Elements**

Specific design elements that should be considered in the redesign of the Transit Center should include the following:

- Bus Loading Area: The facility needs to accommodate five JAC fixed route buses, as well as a Washoe Intercity bus, a TTD bus and potentially a downtown shuttle vehicle. Lighting should be provided for all loading areas.
- Passenger Facilities: A climate controlled indoor waiting area should be provided, with a minimum floor area of 600 square feet (such as 15' X 40'). This waiting area should have clear lines of sight for security purposes, as well as a clear view of approaching buses. Public restrooms are not necessary, so long as public restrooms are available within a block walk. In addition, outdoor shaded passenger waiting areas should be provided with benches, totaling approximately 1,500 square feet in area.
- Bicycle racks or other bicycle parking should be provided.
- Driver Facilities: As the key facility for the transit drivers, restroom facilities should be provided. In addition, a separate entrance (with key card access) should also be provided to a portion of the space that includes a driver break room as well as the restrooms.
- Improved Passenger Information: “Real time” information screens should be provided in the facility that provides information on schedules, service interruptions and public notices.
- A small utility space (approximately 160 square feet) should be provided for custodial storage.

## Site Location Considerations

The following are key considerations in considering the location of a transit center.

- Adequate size to accommodate the transit program.
- Proximity to the center of the local transit service area, to minimize out-of-direction travel time and costs. Given the many times per day that transit vehicles travel to and from the site, even an additional distance of a few blocks can add thousands of dollars to the annual operating costs.
- Convenient access for regional transit routes that minimize out-of-direction travel
- Adequate access, avoiding excessive delays for transit routes.
- Convenience to major trip destinations. As the single location most accessible by public transit, it benefits the overall effectiveness of transit services if there is a concentration of transit trip generators (shopping, community facilities, public offices, etc.) within a convenient walk distance of the transit center.
- High visibility, enhancing the community's awareness of transit services.
- Personal security and safety. Locations in area's with a high crime reputation (deserved or not) should be avoided, and locations that have greater vehicle and pedestrian activity are preferable.
- Appropriate zoning, and consistency with community plans.
- Availability of adequate utilities.
- Lack of known hazardous soils.

## Potential Second Transit Hub in South Carson City

As a transit system grows, there is sometimes the need to establish a second transit hub. As discussed in the service alternatives, the geography of Carson City lends itself to a strong central hub in the downtown area. However, if a second route in South Carson is established, there is a potential for transfers between the existing Route 3 and an additional route serving the southern area.

The prevailing trip pattern, however, is such that this demand is not expected to be significant. A full second transit hub is therefore not warranted. However, if a second route serves the Fuji Park stop, this could serve as an informal transfer location. While this stop already has a good shelter and loading facilities, it could benefit from additional outside bench seating, improved lighting, and a bike rack.

## Review of Existing Stop Locations

When reviewing the distance between existing stops throughout Carson City, most appeared to be adequately spaced from one another. A major gap in service was identified between Emerson Drive and

Research Way along East College Parkway. Currently, there is 0.6 mile distance between bus stops and while much of this distance consists of the I-580 interchange, it also includes retail and multifamily residential areas west of the interstate. A stop near Retail Drive/Retail Court could alleviate this gap and improve access for the adjacent land uses.

**Bus Stop Improvements**

In addition, improvements are warranted at other bus stops not affected by the route revisions. The quality of bus stops is a very important factor in a passenger’s overall perception of a transit service. Depending on the trip, a passenger can spend a substantial proportion of their total time using the transit service waiting at their boarding location. If this is an uncomfortable experience, if it is perceived to be unsafe, or if it does not provide adequate protection from winter rain or summer sun, the bus stop can be the deciding factor regarding a potential passenger’s use of the transit system.

Transit systems serving small to mid-sized cities typically strive to provide seating (such as a bench) for stops that average 5 or more boardings per day, and shelter for stops that average 10 or more boardings per day. Using the above criteria, an analysis of existing stops and their average daily ridership was performed with recommendations for potential bench and shelter locations summarized in Table 9.

**TABLE 9: Recommended Bus Stop Improvements**

Route	Stop	Recommendation	Average Daily Boarding
2B	Airport & Nye southbound	Add paved access to road, bench, and shelter	10
3	Clear Creek & Center	Add paved access to road, bench, and shelter	10
2B	Airport & Harrison	Add bench and shelter	10
1	Hot Springs & Northgate	Add bench	9.3
1	Hot Springs & Pine Southbound	Add bench	8.5
1	Robinson & Walsh	Add paved access to road	7.5
1	Sierra Surgical Hospital	Add Bench	7.2
2B	Airport & U.S. 50 @ CVS	Add Bench	5.7
1 & 2B	College Parkway & Granite	Add Bench	5.2

*Source: JAC Ridership Portal and Average Daily Boarding by Stop*

Providing space for a traditional bus bench can be a challenge at constrained locations. A popular option developed over recent years is seating that is part of the bus stop pole, such as the paired seats manufactured by Simme, LLC (shown at right). These cost on the order of \$600 per pair, depending on the need to improve the foundation of the sign pole. Transit systems that have installed this type of seating include Samtrans (San Mateo County), Sunline Transit (Palm Springs) and Rogue Valley Transit (Medford, Oregon).



## FLEET IMPROVEMENTS

### Vehicle Fleet Requirements

Within the next five years, a total of seven JAC vehicles will warrant replacement: three 8-passenger Arboc Vans and four 31-passenger El Dorado buses. While the fleet (with these replacements) is sufficient to operate a fifth fixed-route bus, a downtown or special event shuttle could also warrant an additional vehicle purchase.

### Appropriate Size of Vehicles

The size of transit vehicles used to operate the JAC fixed route service is an important consideration in both the impact of transit operations on the community as well as the quality of service provided by the transit program. At present, the service fleet has a total of seven buses with 31 or 32-passenger seating capacity, along with 2 mid-size buses with seating for 21 passengers and six smaller vans with seating capacity from 5 to 8. The size of a vehicle used to provide transit service possess many implications:

- Buses need to be large enough to provide adequate passenger capacity. Specifically, it is desirable to provide a seat for all passengers. While standees on some runs are typically considered acceptable, providing a seat for all passengers (1) improves the rider's experience, (2) reduces the potential for trips and falls, (3) reduces the potential for conflicts between passengers and (4) improves on-time performance by reducing the time needed to board and deboard the bus.
- Large buses provide greater flexibility to accommodate infrequent peaks in passenger loads, such as school field trips.
- Smaller buses have less noise and visual presence impacts on neighborhoods than do larger vehicles.
- While smaller buses are less expensive to operate than larger buses, this cost savings is less than might be expected, as driver wage and benefit costs are the same for smaller vehicles as for larger buses. Overall, smaller buses are typically only 10 percent to 15 percent less expensive to operate. If the use of smaller buses even infrequently requires operating a second vehicle for peak loads, this can quickly eliminate any cost savings.
- Larger buses have a substantially longer useful life (12 to 16 years) compared to that of smaller buses (6 to 8 years). While smaller buses are less expensive to purchase than larger buses, much of the cost of bus purchases is be funded through state or Federal funding programs. Overall, the per-hour capital costs are roughly similar.
- Larger buses provide a smoother ride than do smaller buses, and can better accommodate passengers with disabilities. Overall, passengers prefer using larger buses.
- Smaller buses without airbrakes may be preferable in instances with driver shortages.
- Maintenance costs of smaller (gas powered) versus larger (diesel fuel) buses.

Driver run manifests showing boarding and alighting activity by run by stop were evaluated for several weekdays in May, 2019, and used to generate the maximum passenger load per run data shown in Table 10. As indicated, up to 24 passengers at one time were carried on Route 1, 23 on Route 2A, 18 on Route 2B, and 12 on Route 3. These figures exceed the seating capacity of the existing mid-sized buses on Routes 1 and 2A, and all exceed the seating capacity of the smaller vans. This clearly indicates that using smaller vans (such as 8 to 12 passenger vehicles) that could be also used for JAC Assist would not be feasible. Mid-size buses (in the 21- to 25 capacity range) could potentially be operated, but would leave no capacity for any ridership growth or for unusual events. Overall, the existing 31-seat capacity of JAC’s larger fixed-route buses is appropriate.

**TABLE 10: Maximum Passenger Load by Run**

Run Start Time	1	2A	2B	3
6:30 AM	3	11	4	8
7:30 AM	8	8	7	7
8:30 AM	7	7	11	6
9:30 AM	20	11	12	6
10:30 AM	10	9	18	12
11:30 AM	8	23	7	10
12:30 PM	24	8	9	11
1:30 PM	19	11	13	5
2:30 PM	10	14	10	10
3:30 PM	8	11	10	7
4:30 PM	8	5	8	5
5:30 PM	6	2	6	7
6:30 PM	3	5	3	4
Maximum	24	23	18	12

*Source: Analysis of driver run manifests.*

### Battery-Electric Transit Vehicles

Battery Electric Buses (BEBs) are rapidly being implemented in larger transit systems. An excellent example is the Washoe RTC, which was one of the first six systems in the nation to operate a BEB in public transit service, and currently has a fleet of 21 in operation. Recharging BEB’s can either occur at the fleet operations facility (generally overnight using a slow charging station), or along the route at stops where at least 10 minutes of time are available (using an overhead fast-charging technology). As an example of cost, Marin County recently purchased two battery-electric vehicles for \$1.6 million. The cost includes purchase of the buses, GPS and fare collection equipment purchase and vehicle inspections.

Beyond the issue of cost, a key factor regarding battery electric buses is the potential range between charges. While buses with a range of 120-150 miles have been available for several years, some manufacturers have recently announced new technology that can operate up to 350 miles between

charges. However, these claims do not reflect the requirements to also power onboard heating and cooling systems – an important consideration in Carson City’s climate.

The costs associated with battery electric buses can vary dramatically depending on the status and costing arrangement with the local utility. In particular, the capacity of the local electrical grid serving the maintenance/charging facility is crucial. As an example, a recent study of converting the 51-bus transit fleet for the Yuba-Sutter Transit Authority in Marysville, CA identified capital charging and electrical equipment (excluding bus purchase costs) totaling \$12 Million. In addition, many transit systems are finding that the high charging loads placed on the local grid trigger high “peak” prices, adding unexpectedly to the operating costs.

Defining the appropriate BEB strategy for Carson City will require a detailed study of the operational, facility, capital cost and environmental options. This study should include the following:

- Compare the cost, facility and operational impacts of BEB vs fossil fuel costs.
- Review existing and planned services and schedules to identify the potential for on-route charging.
- Evaluate the transit center and bus maintenance facility to identify the physical and electrical capacity to accommodate charging equipment and power supply.
- Work with NV Energy to identify charging rates and define strategies to minimize overall costs.
- Assess impacts on maintenance staff and facilities as well as on-the-road service reliability.

This study may also warrant consideration of conversion of other elements of the Carson City fleet. The overall results of this study should be a BEB implementation plan that minimizes costs, maintains a good quality of service to the passengers and achieves the environmental benefits of BEB technology as it matures.

#### Recommended Transit Fuel Strategy

There are several reasons why Carson City should take a “go slow” strategy with regards to the initial implementation of BEBs for the JAC system:

- At present, there are no available smaller vehicles that have met Federal testing requirements that are of an appropriate size for JAC services.
- The BEB industry is changing very rapidly, both in terms of the available technology as well as the individual manufacturers.
- As a smaller system, Carson City can less afford to expend funds on changing technologies than can larger transit systems. It is better to monitor the experience of larger transit systems with BEBs over the next few years and learn from this experience.
- Implementing the appropriate charging systems will take time for analysis and construction, as well as working with NV Energy.

## **Fare Technology**

Electronic fares or “E-Fares” are popular amongst similarly sized and larger transit systems. As indicated in the 2017 User Survey, as well as the most recent 2019 online survey, increasing access to purchasing various types of fare were expressed to be very important to Carson City’s population. The following e-fare and technological improvements that are currently being explored:

- On-board and Transit Station Wi-fi
- Online/smart phone fare purchasing
- On-board magnetic card fare, reader, and reload technology

This chapter first presents a review of various factors that can be expected to impact the demand for transit services, as a basis for evaluation of long-range transit needs. This is followed by a discussion of long-range strategies, building upon the evaluation of short range service alternatives presented in the previous chapter.

## **FACTOR IMPACTING TRANSIT DEMAND**

### **Change in Population**

The Nevada State Demographer prepares demographic forecasts on a countywide basis, by age category. The forecasts for Carson City, Douglas County and Lyon County are summarized in Table 11.<sup>9</sup> A review of these forecasts indicates the following:

- Carson City population is forecast to decrease slightly (by 1 percent) over the next five years, but then expand to a 2039 value of 62,108 a 10 percent overall increase, as shown in Figure 11.
- The characteristics of the Carson City population by age cohort will change significantly over time. Youth population (through age 18) is forecast to decrease by 13 percent over the next 10 years but then rebound between 2029 and 2039. Typical “working age” population (19 to 24) is forecast to overall decline over the next 20 years. However, substantial growth will occur in senior population, with a 48 percent overall growth in persons 65 to 74, 69 percent in ages 75 to 84, and 53 percent in ages 85 and above. This has important consequences for the need senior transportation, including JAC assist. Put another way, while persons age 65 and above constitute 21 percent of the Carson City population today, by 2039 this figure will grow to 30 percent.
- Lyon County total population is forecast to remain relatively unchanged, with a 2039 population within 500 persons of the current population. However, the number and proportion of residents that are over 75 are forecast to increase by 1,843, or by 38 percent. Those over age 84 will increase by a full 118 percent.
- Similarly, Douglas County total population is forecast to increase only modestly (4 percent) over the next twenty years. Residents age 65 to 74 will increase by 36 percent, while those age 85 and above will increase by 82 percent.

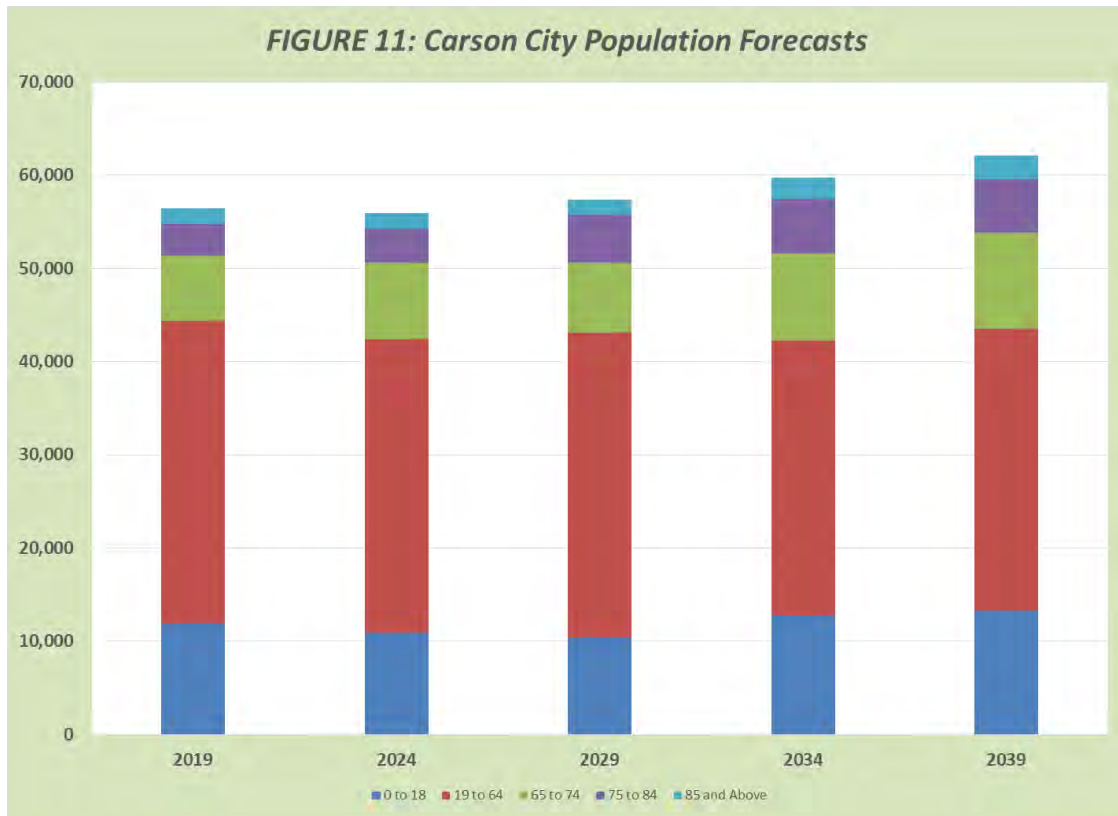
This growth in senior population in Lyon and Douglas Counties will increase the need for medical transportation to Carson City, particularly if Carson City remains a center for medical services in the region.

---

<sup>9</sup> The State’s forecasts extend to 2037. To provide a 20-year timeframe, 2035 to 2037 figures were extrapolated to 2039.

**TABLE 11: Population Forecasts by County and Age Cohort**

	2019	2024	2029	2034	2037	Est. 2039
<b>Carson City</b>						
0 to 18	11,933	10,938	10,394	12,770	13,080	13,286
19 to 64	32,445	31,480	32,688	29,484	29,926	30,221
65 to 74	6,986	8,206	7,556	9,329	9,931	10,332
75 to 84	3,394	3,629	5,078	5,897	5,800	5,735
85 and Above	1,658	1,708	1,667	2,256	2,422	2,533
Total	56,417	55,961	57,382	59,736	61,159	62,108
<u>% Change From 2019</u>						
0 to 18	-	-8%	-13%	7%	10%	11%
19 to 64	-	-3%	1%	-9%	-8%	-7%
65 to 74	-	17%	8%	34%	42%	48%
75 to 84	-	7%	50%	74%	71%	69%
85 and Above	-	3%	1%	36%	46%	53%
Total	-	-1%	2%	6%	8%	10%
<b>Lyon County</b>						
0 to 18	12,633	12,151	11,903	11,835	11,855	11,868
19 to 64	31,903	32,285	32,011	31,418	31,070	30,838
65 to 74	6,736	6,973	6,568	6,355	6,277	6,224
75 to 84	3,849	4,165	4,580	4,692	4,633	4,593
85 and Above	933	1,409	1,661	1,902	1,980	2,032
Total	56,054	56,984	56,723	56,203	55,815	55,556
<u>% Change From 2019</u>						
0 to 18	-	-4%	-6%	-6%	-6%	-6%
19 to 64	-	1%	0%	-2%	-3%	-3%
65 to 74	-	4%	-2%	-6%	-7%	-8%
75 to 84	-	8%	19%	22%	20%	19%
85 and Above	-	51%	78%	104%	112%	118%
Total	-	2%	1%	0%	0%	-1%
<b>Douglas County</b>						
0 to 18	10,848	11,194	11,371	11,585	11,522	11,481
19 to 64	26,980	26,214	25,660	25,415	25,687	25,868
65 to 74	7,742	8,725	8,677	8,128	7,663	7,353
75 to 84	4,402	4,938	5,515	6,121	6,053	6,008
85 and Above	1,503	1,815	2,158	2,400	2,598	2,729
Total	51,474	52,886	53,381	53,649	53,523	53,439
<u>% Change From 2019</u>						
0 to 18	-	3%	5%	7%	6%	6%
19 to 64	-	-3%	-5%	-6%	-5%	-4%
65 to 74	-	13%	12%	5%	-1%	-5%
75 to 84	-	12%	25%	39%	38%	36%
85 and Above	-	21%	44%	60%	73%	82%
Total	-	3%	4%	4%	4%	4%
<i>Note: With Group Quarters</i>						
<i>Source: ASRHO Estimates and Projections Summary, State of Nevada Demographer, 2018</i>						



### Changes in Employment

The *One Nevada Transportation Plan Draft Travel Demand Model Update* (Wood Rogers, November 2017) indicates that total employment in Carson City is forecast to increase as follows:

- 2015 – 29,634 jobs.
- 2030 – 36,720 jobs. (A 24 percent increase over 2015)
- 2040 – 39,108 jobs. (A 32 percent increase over 2015)

The fact that employment is forecast to grow substantially more than working-age residents in Carson City indicates growth in commuting into Carson City from other counties such as Douglas and Lyon.

### Auto Use

Much of the demand for public transit services in large urban area is a function of the overall cost and inconvenience of private auto travel. In particular, high rates of paid parking and limited parking availability in key activity or employment centers “drive” much of the demand for transit ridership in our large cities, along with congestion delays. None of these factors are expected to develop over the next twenty years in Carson City. As a result, the private auto will remain a convenient and popular travel mode choice.

## **Transportation Network Companies**

Transportation Network Companies (TNCs), such as Lyft and Uber are becoming an increasingly important element of the transportation network, particularly in larger cities. While growth has been rapid over the last few years, the long-term role of TNC service is currently uncertain. To date, TNC services have been heavily subsidized by venture capitalists. In addition, changes in regulations and/or the economics of being a driver may increase TNC operating costs. Both of these factors may significantly increase fare levels, and thus limit the attractiveness of TNC riding as compared with using the JAC services. Moreover, TNC services typically do not accommodate persons with disabilities, and particularly those using mobility devices. Many paratransit riders, moreover, prefer service using consistent public transit drivers (that allow them to form a more stable relationship) than a TNC service where drivers change from day to day. The replacement of JAC Assist with a TNC program is not assumed in this analysis.

## **Fuel Costs**

The cost of gas has in the past had a substantial impact on the demand for transit service (particularly long-distance commuting). While we are currently in a period of relatively high gas prices, advances in drilling technology (such as hydraulic fracturing) have helped to keep supplies up and costs down. Over the long term, moreover, the growth in electric vehicles and reduction in their costs can be expected to provide an alternative to gas-powered private vehicles and also reduce overall costs. No growth in transit ridership associated with an increase in effective per-mile fuel costs are currently being assumed.

## **Autonomous Private Vehicles**

The technology for autonomous vehicles is rapidly advancing. Within this plan period, it is reasonable to assume that the availability and cost of a private autonomous vehicle will be within the financial reach of many Carson City residents. For many persons unable to drive due to a disability, the availability of an autonomous vehicle that can provide a door-to-door trip can expand mobility options and reduce the need for transit ridership (particularly on JAC Assist).

## **Autonomous Transit Buses**

Autonomous Vehicle (AV) technology could ultimately eliminate the driving element of existing transit drivers. However, transit drivers perform other tasks beyond driving, including collecting fares, providing a security function, as well as the crucial role of assisting passengers into and out of the vehicles and in settling and securing the passengers. Many passengers (particularly those more sensitive to security concerns) may well refuse to use a bus without the presence of a driver. There could be the potential to have a lower paid attendant on the vehicles to assist passengers rather than a higher paid driver, yielding some cost savings. However, in an urban system with a paid fare and many passengers needing assistance, fully unstaffed AV's would not be appropriate.

## **Tahoe Reno Industrial Center**

The TRIC area development (Tesla, etc.), while large, will have a relatively modest impact on Carson City. Simply put, Carson City is further from TRIC (53 miles one-way) than other areas with development capacity, such as Sparks (20 miles) and Silver Springs (22 miles), which limits the attractiveness of Carson City as a residential area for TRIC employees. This is corroborated by recent surveys of existing TRIC

employees, which indicates that only 1.8 percent live in Carson City, with an additional 0.7 percent living in Douglas County.

## Summary

In sum, there are factors such as population changes that can be expected to change demand for transit services in reasonably foreseeable ways. Other factors – notably the impact of autonomous vehicles and fuel costs – are very uncertain over a long-range planning horizon. Absent any certainty on these factors, base ridership demand is assumed for purposes of this analysis to change as follows:

- Fixed route demand will change parallel with population growth.
- JAC Assist demand will change with population growth, factored to reflect the significant growth in senior population and that seniors currently generated 32.7 percent of the total ridership.

## LONG-RANGE TRANSIT DEMAND AND SERVICE ANALYSIS

Applying these forecast assumptions, the “base” ridership demand figures for fixed route service are shown in the top portion of Table 12. Absent any expansion of services, fixed route ridership can accommodate this base demand growth given available capacity. However, JAC Assist service cannot accommodate any significant growth in demand without an expansion of service-hours. This demand in JAC Assist ridership is shown in the following section assuming expansion parallel with the growth in demand.

The service and ridership impacts of the recommended long-range service improvements can then be analyzed, as shown in the bottom portions of Table 12. Based upon this discussion as well as the results of the service alternatives analysis, the long-range plan incorporates the following service improvement elements, by 5-year planning horizon:

- Implementation of a fifth bus providing service to north Carson City and southeast Carson City starting by 2024.
- Provision of fixed route 4:30 PM Saturday runs starting by 2024 (but no provision of Sunday service).
- Implementation of a downtown shuttle during the Legislative Session and for special events by 2024. As demand for this service grows, full year-round downtown shuttle is assumed to be implemented by 2029.
- Provision of a peak commute route on the Arrowhead corridor starting by 2035.
- Expansion of JAC Assist, consistent with the growth in base demand for the service. Five buses will be required, with vehicle-hours expanding consistent with the growth in ridership.
- Provision of an intercounty service connecting Lyon County (and potentially Storey County) with Carson City. This is assumed to consist of three round-trip per day, starting with service one day per week, expanding to two days per week by 2024 and expanding further to five days per week

by 2029. Note that specific intercounty plans will require further discussions with the other counties and funding partners.

As shown, in sum these long-range service enhancements along with the base growth in demand will increase total 2039 JAC ridership by 137,000 passenger-trips per year (61 percent). The large majority of this growth (115,000 riders per year) will be on the fixed routes.

Vehicle-hours of service will grow by 50 percent over the next 20 years under this scenario, while vehicle-miles of service will grow by 57 percent. The peak buses in operation will expand from the current 8 to a total of 13. Of this growth, one vehicle will be JAC Assist, one for shuttle services, two for the regular local fixed route expansion and one for intercounty service. In total, annual operating costs (in constant 2019 dollars) will grow by approximately \$567,200 per year or by 44 percent.

	2019	2024	2029	2034	2039
<b>Base Demand Ridership</b>					
Local Fixed Route	195,000	193,400	198,300	206,500	211,400
JAC Assist (1)	28,200	28,200	28,200	28,200	28,200
<b>Ridership With Service Enhancements</b>					
Local Fixed Route	195,000	262,400	296,900	305,100	310,000
JAC Assist	28,200	29,400	29,900	32,400	33,200
Intercounty Service	0	7,700	17,000	17,000	17,000
Total	223,200	299,500	343,800	354,500	360,200
<i>% Change From 2019</i>		34%	54%	59%	61%
<b>Vehicle-Hours of Service</b>					
Local Fixed Route	15,000	19,900	23,300	23,300	23,300
JAC Assist	8,200	8,500	8,700	9,400	9,700
Intercounty Service	0	730	1,760	1,760	1,760
Total	23,200	29,130	33,760	34,460	34,760
<i>% Change From 2019</i>		26%	46%	49%	50%
<b>Vehicle-Miles of Service</b>					
Local Fixed Route	178,600	244,100	274,000	274,000	274,000
JAC Assist	88,000	91,700	93,300	101,100	103,600
Intercounty Service	0	17,500	42,200	42,200	42,200
Total	266,600	353,300	409,500	417,300	419,800
<i>% Change From 2019</i>		33%	54%	57%	57%
<b>Peak Buses in Operation</b>					
Local Fixed Route	4	6	7	7	7
JAC Assist	4	5	5	5	5
Intercounty Service	0	1	1	1	1
Total	8	12	13	13	13
<i>% Change From 2019</i>		50%	63%	63%	63%
<b>Annual Operating Costs (2019 Dollars)</b>					
	\$1,295,800	\$1,593,400	\$1,816,300	\$1,849,400	\$1,863,000
<i>% Change From 2019</i>		23%	40%	43%	44%
Note 1: There is no available existing capacity to expand ridership.					

## Social Service Transportation Coordination

---

The coordinated planning process involves the mutual effort of human service agencies, transportation providers, workforce development agencies, citizens and others who need some form of transportation assistance. As discussed in the previous chapters, the study is based on communication among these entities by sharing the perspectives and specialized expertise that different agencies, organizations and individuals have to offer.

The following includes recommended strategies for consideration to enhance social service mobility, including more traditional approaches and those identified as national best practices. In addition to a description of each strategy, the potential benefits and the challenges to implementation are discussed.

As a prolog to this discussion, it should be noted that there already is a high level of coordination of services within Carson City. While other communities of similar size have multiple organizations serving individual social service needs, the JAC program – and particularly the JAC Assist service – provides transportation to many social service programs, including Ormsby ARC, REM Nevada, Going Places and the Senior Center. This benefits the region by avoiding the additional costs of individual services. Services connecting the other portions of the CAMPO area (in Lyon and Douglas County) with Carson City programs are less well-developed.

### **Existing Partnerships and Coordination**

Through research and stakeholder group outreach, there did not appear to be any current sanctioned transportation partnerships amongst local social services. In most cases, social service programs were using their own means of transportation to provide accessibility for their clients. For these reasons, future coordination of resources could be a viable solution. The following offers recommendations on how to begin to bring like-services together to provide viable transit options to their clientele.

#### CAMPO Coordinating Coalition

The first recommendation is to form a CAMPO Coordinating Coalition. The Coalition is group of individuals, agencies, and organizational partners that are committed to improving services available within the community. This group, similar to our identified stakeholders group, should include local decision makers, business leaders, social service providers and representatives of groups with mobility challenges. The coalition could be either an informal or formal group which is recognized by the decision-makers, and which has some standing within the community. Coalitions can be established for a specific purpose (such as to obtain specific funding) or for broad-based purposes (such as to educate local communities about transportation needs). Their main purpose would be to advocate for improvements of the existing systems and continue to meet periodically to discuss challenges and possible points of collaboration amongst social services. At a minimum, this group should meet semiannually to review and coordinate services.

## Joint Planning and Grant Applications

Local agencies should work together to determine transportation needs and priorities for meeting those needs. Transportation needs related to more rural CAMPO areas have been identified as part of this plan and may be used as the basis for grant applications. A single consolidated grant application would then be submitted for each of the funding programs that are used by agencies in that local area. As an example, rural public transit services are eligible for funding through the FTA Section 5311 program. This provides the opportunity for more local decision-making to set priorities for service and often increases the possibilities of funding by showing the cooperative efforts and local priorities.

## **Public / Private Education and Outreach**

### Transit Ambassador Program

Under a Transit Ambassador Program, volunteers are trained to work with individuals or small groups to encourage use of transit options. Many persons – particularly those in less urban areas without experience with bus or van services – find the use of a fixed route bus or paratransit service to be intimidating. Transit Ambassadors can work with individuals (such as persons who have recently given up their driver’s license) to help them make a reservation and actually ride along on their first trip, to get over the hurdle of this first experience. This can be particularly beneficial in shifting individuals (that have the capability) to shift from paratransit service to fixed route services. In turn, this both can benefit the individual (by providing more travel choices that are not dependent on a reservation) as well as the transit program (by ensuring that limited paratransit resources are targeted towards those individuals most in need of them). Transit Ambassadors can also make presentations to groups (such as a senior nutrition program) that can include a quick “demonstration” trip on a transit vehicle.

This strategy can be a great way to market transit services and adjust public perception of transit services, in addition to its primary role in assisting riders and potential riders in understanding how to travel with confidence throughout a transportation network. The training of a Transit Ambassador is primarily designed to assist seniors and individuals with disabilities, but it can also be used as a general public educational program to dispel fears and negative perceptions of traveling via transit. Transit ambassadors can consist of recruited volunteers through various social service agencies and non-profit organizations.

A good example of a Transit Ambassador can be found at the City of Roseville (California), that manages a Transit Ambassador Program for the four transit services in western Placer County. The program includes conducting a variety of outreach efforts to existing and potential passengers, such as face-to-face assistance to passengers, transit training for potential transit users and attending outreach events. The City of Roseville manages the program, recruits and trains volunteers and provides insurance for the volunteers, while the local social service coalition pays up front for insurance for volunteers and bills Roseville for the cost. Volunteers undergo anywhere from 6 to 30 hours of training. The cost to the City of Roseville for administering the Transit Ambassador program in FY 2016/17 was \$37,000. This was used to fund a total of seven Transit Ambassadors contributed 469 volunteer hours.

### Staff Training

A lack of up-to-date knowledge among social service staff members regarding mobility options is often a problem. As the “front line” that interacts with social service clients, it is important for agency staffers to

be aware of the availability of services and be able to direct clients and their caregivers to these resources. Meetings (perhaps over lunch) should be held of social service staff members at which Carson City staff (and perhaps others) present the services provided and respond to questions as to how individuals can use the service. Given staff turnover, conducting this meeting on at least an annual basis is recommended.

### Marketing Campaign

During discussions with current staff, it does not appear that there have been any active efforts in marketing and outreach within the past ten years. Aside from an annual or biannual press release announcing changes to service or an anniversary, the transit program could benefit from a coordinated effort in a public outreach, advertising, and marketing campaign. As discussed in the next chapter, many of those who took the online survey expressed that they either didn't "know a transit service existed" or were "not aware how it worked and where it went". A targeted campaign and increased presence at local events, social services, and institutions could be an effective way to increase ridership from the general public.

### **Fixed Route Service Strategies to Improve Social Service Mobility**

Chapter 2 offers a variety of service alternatives that could help address identified gaps in social service mobility services. The following is a brief summary of these alternatives and how they would meet existing service gaps that have been identified in previous chapters:

- Arrowhead Drive and northeast Carson City provides a lot of employment within Carson City. By providing an Arrowhead Drive service, more people may be able to access the office of Nevada State Human Health and Social Services and other employment opportunities within that area. These may only run during peak hours of service, but would provide service to an area not currently served by a public transit.
- Service to Topsy Lane would provide access to various employment opportunities and commercial retail locations most requested in our public workshop and online survey.
- Changes to Route 1 could better serve the FISH Thrift Store.
- Later evening service has also been offered as an alternative to meet the needs of those wanting to attend activities that last past the existing service time of 6:30 PM.
- Increased intercounty transit services to Mound House and the Dayton area (and potentially Storey County) would allow improved access to medical and social services being provided in Carson City for those living in this region of Lyon County.
- Both the "Six Route" and "Full Pulse" fixed route alternatives would provide service to Yasmer Estates and areas of Carson City currently not being served by public transit.

This page left intentionally blank.

In previous chapters, existing transit ridership, social service agencies, and providers of transit and transportation services were identified. This chapter provides an overview of the stakeholder and public outreach workshops, in addition to the online survey conducted. This information has been considered to develop strategies to address the gaps in service and transportation needs identified in the previous chapters and will also be considered in developing the final plans.

## WORKSHOPS

In an effort to capture in-person feedback from both stakeholders and the general public, two workshops were held between April and May of 2019. In addition to these, another stakeholder workshop is planned to take place in July 2019. At this final stakeholder workshop will include a presentation focusing on the draft plan.

### Stakeholder Workshop

Using the list of social services described in previous chapters, a group of key stakeholders were invited to a workshop held on April 29<sup>th</sup>, 2019 at the Carson City Community Center. The workshop was led by LSC Transportation Consultants who led a brief presentation of existing demographics, service performance, and social services. This was followed by break out groups where each stakeholder had a chance to discuss a series of questions. The following provides a summary of these questions and the stakeholders' responses.

When discussing *"the strengths and weaknesses of the existing public mobility network"*, stakeholders identified the following:

#### Strengths

- Current JAC Transit fares are affordable.
- JAC, Carson City, and CAMPO agencies work well together and have local expertise.
- JAC Transit schedule is good.
- The major medical center is well served by transit.
- Taxi voucher program is a great option.
- JAC Free senior bus passes.
- Current system serves low income housing.
- Bilingual inclusion.
- Phone app is clear and easy to use

#### Weaknesses

- Bus route service area is limited
- No late evening service
- ¼ mile service area doesn't consider proximity to bus stops
- RSVP is filling in gaps and there are challenges with that
- Restricted funding sources.
- Lack of communication of services to the public.

- No free passes for disabled persons.
- No service to 5<sup>th</sup> street corridor (Frost/Yasmer).
- Service to FISH is too far away.
- No service to Lyon County.
- No service to industrial areas.

When asked “what is the top priority transportation needs for each organization and the community as a whole” the most commonly expressed needs included the following:

- Improved service to and from the Storey County Senior Center (Including areas of Virginia City/Gold Hill/ Mark Twain).
- Evening services to and from Mound House/Dayton to Western Nevada College.
- Expanded services and better connections to and from Lyon County Senior Center and Douglas County Senior Center.
- Later evening fixed route services.
- Increased service along school route.

When asked what strategies should be pursued to address these needs, stakeholders suggested the following:

- Connecting WAVE with the Storey County Senior center.
- Looking to the existing partnership between Family Support Council and DART as an example of resource sharing and communication between providers.
- Providing more service to elementary schools to increase ridership (DART noticed increases through their partnership with the local community center and providing service to the community center from school).
- Increase local marketing to show what current services exist.
- Implement special event hours and services seasonally.

At the end of the meeting, LSC and Carson City staff distributed public workshop fliers requesting that attendees distribute them amongst their respective workplaces.

### **Public Workshop**

The Public Workshop was held on May 14<sup>th</sup>, 2019 in the Carson City Senior Center. Similar to the stakeholders workshop, the meeting began with an overview of existing conditions, followed by questions. While attendance was fairly low (six persons total) the input received did include people in the senior and disabled communities. The following list provides a summary of identified needs:

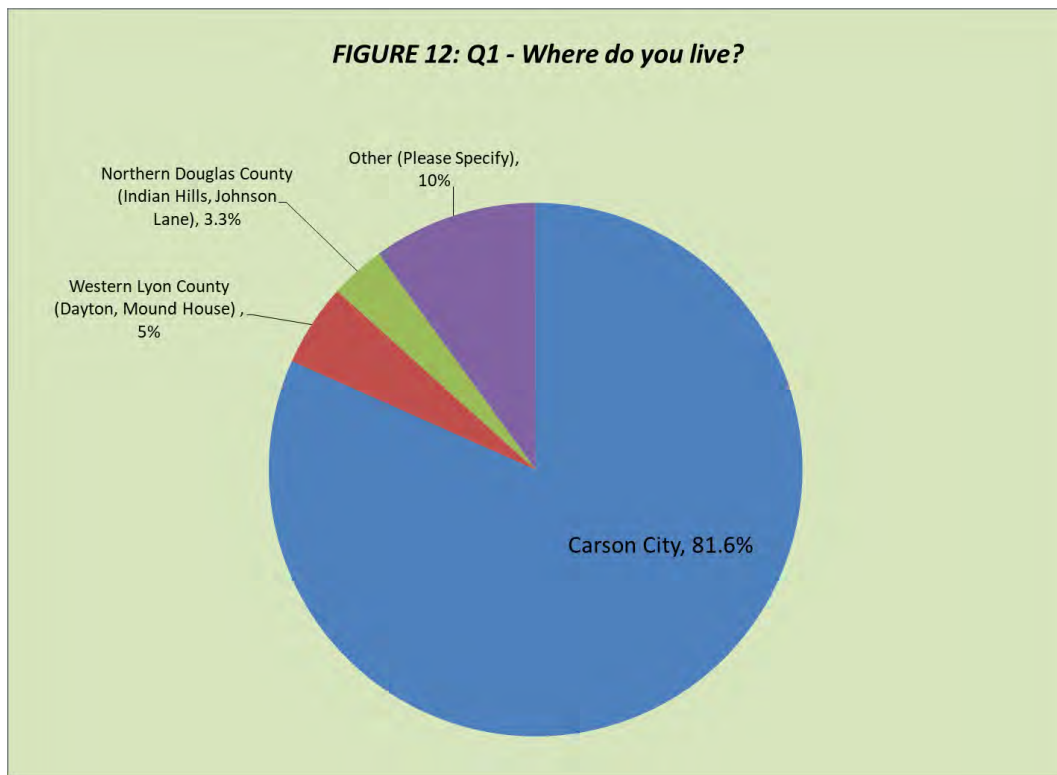
- Expanded service to the eastern (Saliman Road) and northern (Arrowhead Drive) areas of Carson City.
- Remove barriers to purchasing passes:
  - Frequently out of stock at certain locations
  - Unavailable for purchase online
  - Not enough places for purchase of tickets
- Provide more frequent service to Dayton/Mound House areas.
- Expand service to Topsy Lane.
- Add evening service on Saturdays.

## ONLINE COMMUNITY SURVEY

Online surveys were conducted during April and May of 2019 for those located in and around Carson City. The surveys were advertised through our identified stakeholders and various social media groups. The survey consisted of 12 questions and an analysis of these surveys is described below. The specific survey form is provided in Appendix A.

### Online Survey Results

**Question 1 - Where do you live?:** As shown in the corresponding Figure 12, 82 percent of those who took the survey lived in Carson City. The 10 percent who responded “Other” lived in areas such as Gardnerville, Sparks, Reno, Minden, and Stagecoach.



**Questions 3, 4, 5, and 6:** The following highlights summarize the data presented in Table 13.

- Nearly 64 percent of those taking the survey were between the ages of 25 and 64, followed by 31 percent being age 65 or older.
- When asked about familiarity with JAC Transit, 41 percent answered that they were somewhat familiar, followed by 36 percent stating that they know that a bus service exists but are unfamiliar with the schedule/route.
- Over the past year, 57 percent of those taking the survey had not used any transit services, followed by 36 percent stating that they have used JAC Transit’s fixed-route services.
- Of the 57 percent who have not used any transit services in the past year, nearly 41.7 percent indicated that the bus routes do not go where they need to go, followed by nearly 39 percent stating that they need their car during the day for work or to run errands.

**TABLE 13: Online Survey Responses Regarding Age and Use of Transit Services**

Question	Responses	
	#	%
<b>Q3 What is your age?</b>		
17 or Younger	0	0.0%
18 to 24	3	4.9%
25 to 64	39	63.9%
65 and Older	19	31.1%
<b>Q4 How familiar are you with the JAC Transit system?</b>		
Very familiar - I use the bus on a weekly basis	12	19.7%
Somewhat familiar – I’ve used it before and/or know someone who uses it	25	41.0%
Not familiar – I know that there is a bus, but I don’t know the schedule or any details	22	36.1%
I didn’t know there was public transit in Carson City	2	3.3%
<b>Q5 Which of the following services have you used within the past year?</b>		
JAC Fixed Route	22	36.1%
JAC Assist	4	6.6%
RTC Regional Connector	6	9.8%
TTD Route 18x	2	3.3%
None of the above	35	57.4%
<b>Q6 Why do you not use the JAC Transit or other Transit services?</b>		
Bus routes do not go where I need to go	15	41.7%
I need my car during the day for work or to run errands	14	38.9%
The buses do not operate when I need to travel	3	8.3%
Buses are not frequent enough	2	5.6%
The bus trip takes too long	2	5.6%

**Question 7 – Ranking of Characteristics:** The survey asked the public to rank various JAC service characteristics. The following highlights summarize the data presented in Figure 13:

- Overall, respondents had a good opinion of the quality of JAC services, with 68 percent indicating “Good” or “Excellent” and only 9 percent indicating “Poor” or “Very Poor”.
- Characteristics that generated a particularly high overall opinion were “value for the fare”, “driver courtesy and competency” and “safety onboard vehicles”
- Those characteristics with a relatively low ranking were “frequency of bus service” (with 43 percent indicating “poor” or “very poor”) and the hours of bus service (41 percent “poor” or “very poor”)
- Of all characteristics, the one with the highest proportion ranking it “very poor” was on-time reliability, at 13 percent

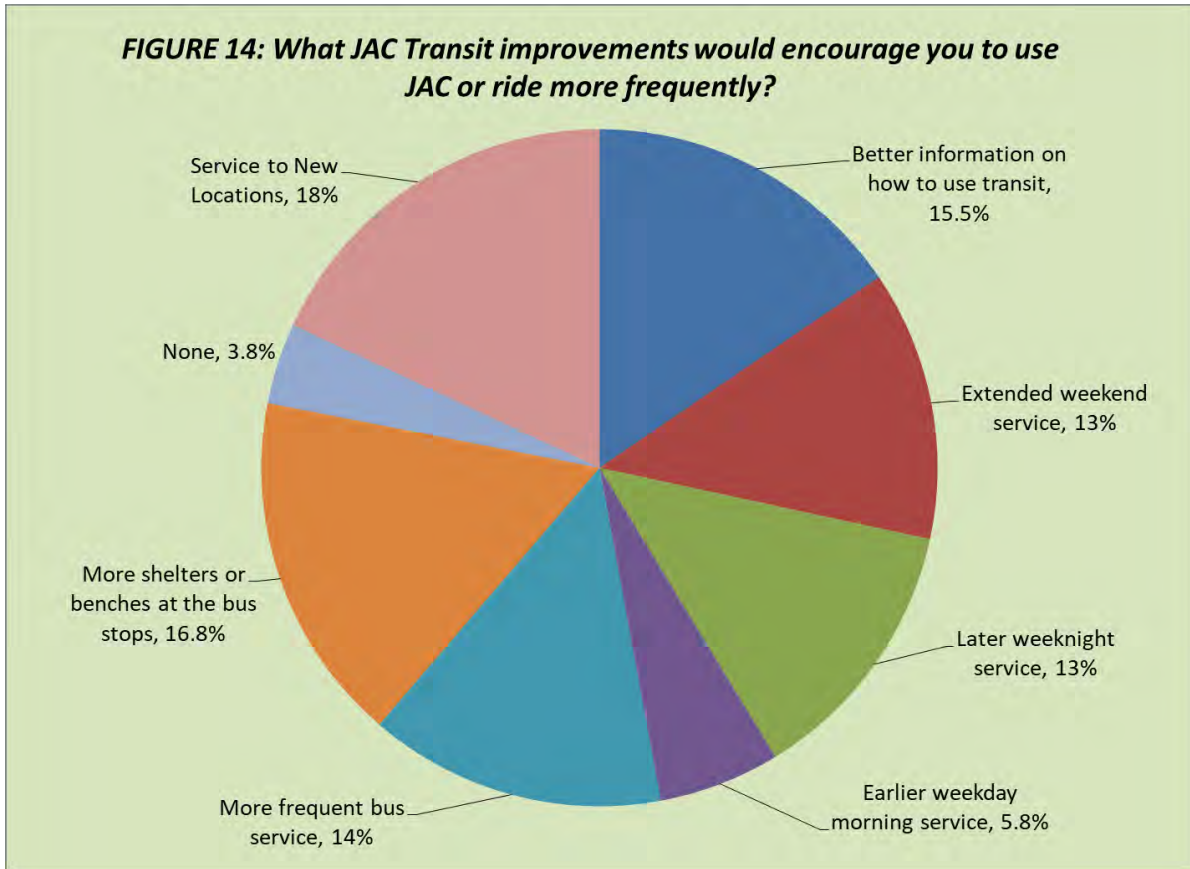
**FIGURE 13: Ranking of JAC Transit Characteristics**



**Question 8 – Do you agree or disagree with the following statements:** Fully 98 percent of responded agreed with the statement “It is good that Carson City has a bus service.” In addition, a majority of those surveyed agreed that the JAC buses are clean and comfortable (96 percent) and that they are safe and secure on the buses (98 percent). However, only 40 percent agreed that the bus service is convenient.

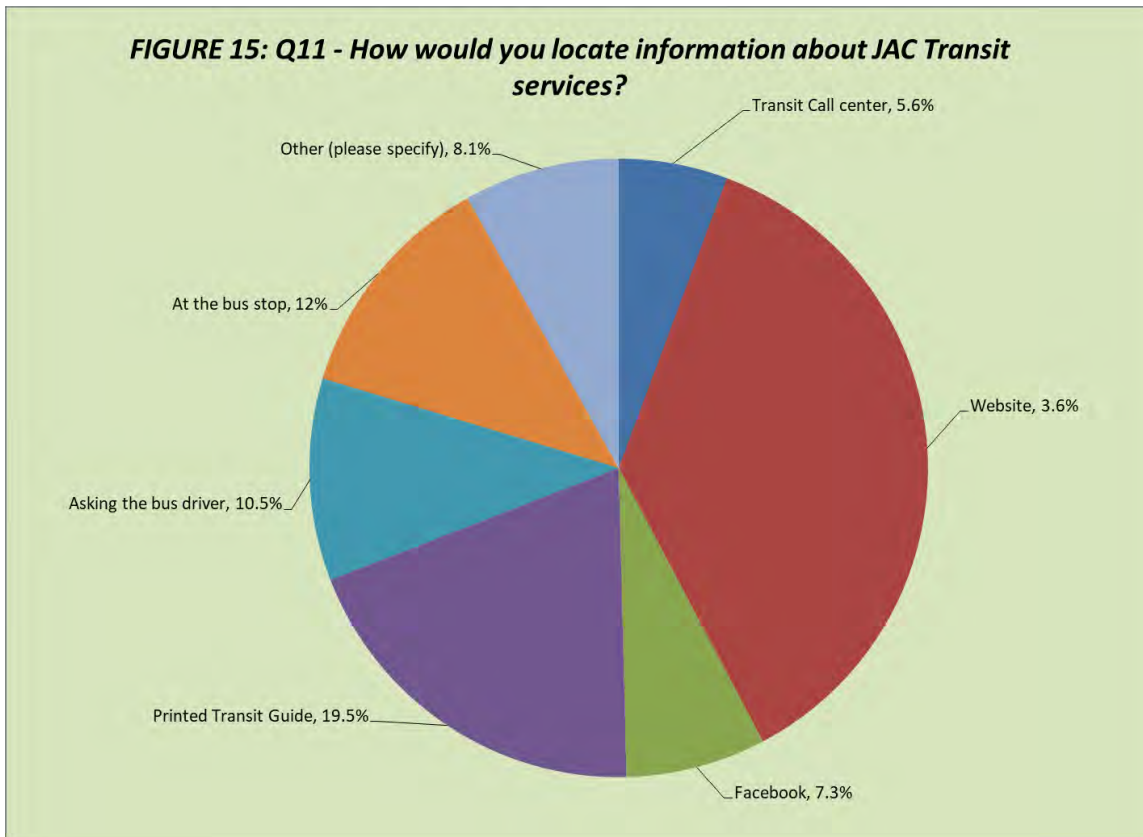
**Question 10 – JAC Transit Improvements:** The survey asked the public what improvements could be made to encourage ridership. The following highlights summarize the data presented in Figure 14.

- 18 percent would like to see service to new locations. Many of the responses included schools, Topsy Lane and Saliman Road.
- 16.8 percent would like to see more shelters and benches at bus stops.
- 15.5 percent would like better information on how to use existing transit.



**Question 11 – JAC Transit Information:** As shown in Figure 15, when asked how the public located information about the transit system, the responses were as follows:

- 36.6 percent of people locate bus info from the website.
- 19.5 percent use the printed transit guide.
- Of the ten people that responded “Other”, 4 people mentioned that they use the JAC Phone Application.



**Question 12 – How can transit services in Carson City be improved?** As an open ended question, these responses have been included under Appendix B with a brief summary of common responses below.

- Extended service to new areas (including Tospay Lane and Saliman Road).
- Half hour running time rather than one-hour.
- First time ride discounts to encourage more ridership.
- Holiday service.
- Increased marketing and outreach (including better information/signage on-bus as well as at various commonly used stops and shelters).
- No music on the bus.
- Service to mound House and Dayton areas.
- Create less barriers to purchasing the passes.

**This page intentionally left blank.**



## STAFF REPORT

**Report To:** The Carson Area Metropolitan Planning Organization (CAMPO)

**Meeting Date:** July 10, 2019

**Staff Contact:** Lucia Maloney, Transportation Manager

**Agenda Title: For Possible Action** – Discussion and possible action regarding Cooperative Agreement P301-19-804, between CAMPO and the Nevada Department of Transportation, for \$684,211.00 for development of a Transportation System Management Plan (TSMP) for Carson City, Douglas, Lyon, and Storey counties, and authorizing the Transportation Manager to execute the agreement and future amendments regarding term extensions or a change in amount up to 10%.

**Staff Summary:** Carson City currently provides technical services for operations and maintenance of traffic control systems in Carson City, Douglas, Lyon, and Storey counties. With decision-making supported by a technical advisory committee with representatives from each of the partner jurisdictions and the Nevada Department of Transportation (NDOT), CAMPO staff will manage the development of the TSMP which will result in improved system performance.

**Agenda Action:** Formal Action/Motion

**Time Requested:** 15 minutes

### **Proposed Motion**

I move to approve the Cooperative Agreement as presented.

### **Background/Issues & Analysis**

Carson City RTC has executed agreements with Douglas County (2019), Lyon County (2014), Storey County (2018), and the Nevada Commission for Reconstruction of the V&T Railway (2014) for certain services and technical support of the traffic signals in Carson City, Douglas, Lyon, and Storey Counties. With several counties operating on similar control system configurations, and with partners' desire to understand long-term asset and infrastructure needs, NDOT staff has agreed to fund this project. The project will be managed by CAMPO staff. CAMPO staff time for project initiation activities are funded through CAMPO's Unified Planning Work Program (UPWP). Additional staff time required for management of the project will be 100% reimbursable as outlined in the proposed funding agreement.

### **Applicable Statute, Code, Policy, Rule or Regulation**

-NRS Chapter 338

**Financial Information**

Is there a fiscal impact?  Yes  No

If yes, Fund Name, Account Name / Account Number: CAMPO fund, FHWA Revenue Account / 245-0000-331.64-12. CAMPO fund, Unified Planning Work Program account / 245-3028-431.12-01

Is it currently budgeted?  Yes  No

Explanation of Fiscal Impact: Execution of the proposed agreement obligates Federal Surface Transportation Block Grant Statewide Program funding for the project in a maximum amount of \$650,000.00. In addition, \$34,211.00 of state Gas Tax funding will be provided for the local match requirement, for a total funding amount of \$684,211.00. These funds are provided by NDOT and have not been budgeted. If approved, the revenue and expenses will be augmented in January, during the first round of augmentations. In addition to the funding provided by NDOT, \$14,050 from CAMPO’s UPWP budget for intelligent transportation systems planning will be used for project administration and management (see Exhibit-2, task 3.3). If additional funds are required for project administration and management, per the agreement these costs are 100% reimbursable.

**Alternatives**

-Do not authorize execution of the Cooperative Agreement with NDOT and provide direction to staff.

**Supporting Material**

-Exhibit-1: Cooperative Agreement P301-19-804

-Exhibit-2: CAMPO’s Unified Planning Work Program Cost/Funding Summary Table

**Board Action Taken:**

Motion: \_\_\_\_\_

1) \_\_\_\_\_

2) \_\_\_\_\_

Aye/Nay

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

\_\_\_\_\_  
(Vote Recorded By)

Agreement P301-19-804

## PLANNING COOPERATIVE LPA AGREEMENT

This Agreement is made and entered on \_\_\_\_\_, by and between the STATE OF NEVADA, acting by and through its Department of Transportation (hereinafter "DEPARTMENT") and Carson Area Metropolitan Planning Organization (CAMPO), 3505 Butti Way, Carson City, NV 89701 (hereinafter "LOCAL AGENCY").

## WITNESSETH:

WHEREAS, agreements between the DEPARTMENT and local public agencies are authorized under Nevada Revised Statutes (NRS) Chapters 277 and 408; and

WHEREAS, the DEPARTMENT and the Nevada Division of the Federal Highway Administration (FHWA) have entered into a Stewardship Agreement pursuant to Title 23 United States Code (U.S.C.) § 106; and

WHEREAS, NRS 408.245 authorizes the DEPARTMENT to act as agent and to accept federal funds on behalf of local public agencies; and

WHEREAS, 23 Code of Federal Regulations (CFR) § 635.105(a) provides that the DEPARTMENT shall be responsible for insuring that local public agency projects receiving federal funds receive adequate supervision and inspection to ensure that such projects are completed in conformance with FHWA Standards; and

WHEREAS, the LOCAL AGENCY is willing to agree to manage the development a Transportation System Management Plan (TSMP) that establishes commonly held operations and management objectives and serves as an asset management plan that will result in improved transportation system performance. This will be completed for Carson City, Douglas, Lyon, and Storey counties. Additionally, the TSMP will be coupled with an implementation component that prepares optimized traffic signal timing plans along coordinated signalized corridors and produces "before" and "after" measures of effectiveness (MOE's) to quantify the changes in traffic operations resulting from signal equipment upgrades and signal timing changes. Specifics including background, tasks, and deliverables are outlined in the Project Scope attached hereto and incorporated herein as Attachment A (hereinafter "PROJECT"); and

WHEREAS, the PROJECT has been approved by the LOCAL AGENCY for Federal Surface Transportation Block Grant Program funds; and

WHEREAS, the LOCAL AGENCY is a sub-recipient of federal transportation funds, Catalog of Federal Domestic Assistance (CFDA) Number 20.205 and the LOCAL AGENCY's Date Universal Numbering System (DUNS) Number 827483202 will be used for reporting purposes; and

NOW, THEREFORE, in consideration of the premises and mutual covenants hereinafter contained, it is agreed as follows:

## ARTICLE I - DEPARTMENT AGREES:

1. To ensure that the LOCAL AGENCY's actions are taken in accordance with applicable Federal and State regulations and policies.

2. To obligate Federal Surface Transportation Block Grant Statewide Program funding for the PROJECT in a maximum amount of Six Hundred Fifty Thousand and No/100 Dollars (\$650,000.00). In addition, there will be Thirty-Four Thousand Two Hundred Eleven and No/100 Dollars (\$34,211.00) of State Gas Tax Funding. The total amount of funding on this Agreement is Six Hundred Eighty-Four Thousand Two Hundred Eleven and No/100 (\$684,211.00)

3. To establish a Project Identification Number to track all PROJECT costs.

4. Once the funding is obligated, to provide the LOCAL AGENCY with a written "Notice to Proceed" authorizing the start of the PROJECT. The "Notice to Proceed" will include the Federal Award Identification Number (FAIN) and the "project end date" mutually established by both parties in conformance with the requirements of 2 CFR Part 200.

5. To review and comment on the LOCAL AGENCY's planning document at intermittent intervals during the PROJECT, including a review of the final PROJECT.

6. To review and approve the LOCAL AGENCY's procedures utilized for advertising, bid opening, and awarding of the PROJECT so that the DEPARTMENT may satisfy itself that the same are in accordance with applicable Federal requirements. Although there is not a Disadvantaged Business Enterprise (DBE) goal associated with this project, it is recommended that DBE firms are used whenever possible.

7. To ensure that all reporting and project documentation, as necessary for financial management and required by applicable Federal requirements, is submitted by the DEPARTMENT to the FHWA.

8. To authorize the LOCAL AGENCY to proceed with the advertisement and award of the PROJECT contract once the RFP documentation has been reviewed and approved by the DEPARTMENT, all certifications have been completed, and the funding authorized by FHWA.

9. The DEPARTMENT shall issue such authorization through a written "Notice to Proceed." The "Notice to Proceed" will include the Federal Award Identification Number (FAIN) and the modified "project end date" mutually established by both parties in conformance with the requirements of 2 CFR Part 200.

10. To assign a Local Public Agency Coordinator and a Project Manager to act as the DEPARTMENT's representatives to monitor the LOCAL AGENCY's compliance with applicable Federal and State requirements.

11. To review and approve, when acceptable to the DEPARTMENT, any changes to the scope of the PROJECT which does not alter the maximum reimbursement to the LOCAL AGENCY as established in ARTICLE I, Paragraph 2, minus any DEPARTMENT eligible PROJECT costs. The estimated DEPARTMENT PROJECT costs are shown in Article III, Paragraph 5.

12. To review the LOCAL AGENCY's draft PROJECT and to approve the final draft of the LOCAL AGENCY's PROJECT.

## ARTICLE II - LOCAL AGENCY AGREES:

1. To perform or have performed by consultant forces: (a) the advertisement, award, and management of the PROJECT, as outlined in Attachment A, in accordance with Federal, State, and local laws, regulations, ordinances, and policies, including, but not limited to, those listed in the FHWA "Contract Administration Core Curriculum Participant's Manual and Reference Guide" at <https://www.fhwa.dot.gov/programadmin/contracts/coretoc.cfm>, incorporated herein by reference.
2. To allow the DEPARTMENT thirty (30) days to review and accept the draft PROJECT as a final task of PROJECT completion.
3. To proceed with the PROJECT advertisement only after receiving a written "Notice to Proceed" from the DEPARTMENT.
4. To submit to the DEPARTMENT one (1) final PDF of all final PROJECT materials and findings.
5. To submit to the DEPARTMENT for review and approval any addenda, supplementals, and change orders and to obtain written DEPARTMENT approval for any addenda, supplementals, and change orders prior to incorporating them into the PROJECT.
6. To allow the DEPARTMENT and its designated representatives to monitor all work associated with the PROJECT during the PROJECT.
7. To perform PROJECT documentation and quality control during the LOCAL AGENCY's contract administration according to its established procedures, as approved by the DEPARTMENT. If the LOCAL AGENCY does not have DEPARTMENT-approved procedures, it must then follow the procedures contained in the DEPARTMENT's "Documentation Manual." The manual may be obtained from the DEPARTMENT's Administrative Services Division.
8. To provide to the DEPARTMENT all reporting and project documentation, as necessary for financial management, required by applicable Federal requirements, and any future Federal reporting requirements, and to comply with the Federal Funding Accountability and Transparency Act and implementing regulations at 2 CFR Part 170, including Appendix A available at <http://edocket.access.gpo.gov/2010/pdf/2010-22705.pdf>.
9. As work progresses on the PROJECT, the LOCAL AGENCY shall provide the DEPARTMENT with monthly invoices for payment of 100 percent of eligible PROJECT costs. The final invoice must be submitted within ninety (90) calendar days of the acceptance of the PROJECT by the DEPARTMENT. The invoice shall be based upon, and accompanied by, auditable supporting documentation. Total reimbursement shall not exceed the total obligated amount as established in Article I, Paragraph 2. Eligible PROJECT costs are those costs as defined in 2 CFR Part 200 and the SAM.
10. To complete and sign Attachment C – "Affidavit Required Under 23 U.S.C. Section 112(C) and 2 CFR Parts 180 and 1200 - SUSPENSION OR DEBARMENT" and Attachment D – "Certification Required by Section 1352 of Title 31, United States Code, Restrictions of Lobbying Using Appropriated Federal Funds," "Instructions for Completion of SF-LLL, Disclosure of Lobbying Activities," and "Disclosure of Lobbying Activities," attached hereto and incorporated herein.

ARTICLE III - IT IS MUTUALLY AGREED:

1. The term of this Agreement shall be from the date first written above through and including June 30, 2022.

2. Costs associated with this Agreement will be administered in accordance with the cost principles contained in 2 CFR Part 200. Indirect costs are eligible for reimbursement. The LOCAL AGENCY's indirect rate shall be approved by its cognizant federal agency and that approval must be provided to the DEPARTMENT. Fringe benefit rates must be approved by the DEPARTMENT on an annual basis in order to be eligible for reimbursement.

3. The description of the PROJECT may be changed in accordance with Federal requirements and by mutual written consent of the parties hereto.

4. Each party agrees to complete a joint final review of PROJECT materials prior to final acceptance of the work by the DEPARTMENT.

5. The following is a summary of the estimated PROJECT costs and available funds:

Total Estimated PROJECT Costs:

LOCAL AGENCY Planning Study Costs: \$684,211

Total Estimated PROJECT Costs: \$684,211

Available Funding Sources: \$650,000  
Surface Transportation Block Grant Statewide  
(Federal Funds):

State Gas Tax Match Funds: \$34,211

Total PROJECT Funding: \$684,211

6. The LOCAL AGENCY may not incur any reimbursable PROJECT costs until this Agreement is executed by both parties, and the DEPARTMENT has issued a written "Notice to Proceed." The "Notice to Proceed" includes the "project end date," which establishes the limit of federal participation for a project or phase of work associated with a project. The "project end date" is mutually established by both parties in conformance with the requirements of 2 CFR Part 200. The LOCAL AGENCY is responsible for any costs incurred on the PROJECT after the "project end date." The LOCAL AGENCY agrees that the DEPARTMENT and the State of Nevada are not responsible for any costs incurred after the "project end date."

7. The total eligible PROJECT costs shall be determined based upon the amount of the awarded Federal Surface Transportation Block Grant Statewide Program and State Gas Tax funds, as awarded by the LOCAL AGENCY, subject to federally budgeted appropriations. The LOCAL AGENCY is responsible for one hundred percent (100%) of all costs not eligible for Federal or State funding. The LOCAL AGENCY agrees the DEPARTMENT and the State of Nevada are not responsible for any of those costs. Eligible PROJECT costs are those costs as

defined in 2 CFR Part 200 and the SAM.

8. An alteration requested by either party which substantially changes the services provided for by the expressed intent of this Agreement shall be considered extra work and shall be specified in a written amendment which sets forth the nature and scope thereof. The method of payment for such extra work shall be specified at the time the amendment is written.

9. PROJECT materials shall be reviewed by the DEPARTMENT for conformity with the Agreement terms. The LOCAL AGENCY acknowledges that review by the DEPARTMENT does not include detailed review or checking of major components and related details or the accuracy and sufficiency of such deliverables.

10. This Agreement may be terminated by mutual consent of both parties without cause. The parties expressly agree that this Agreement shall be terminated upon written notification if for any reason Federal and/or State and/or LOCAL AGENCY funding ability to satisfy this Agreement is withdrawn, limited, or impaired.

11. Should this Agreement be terminated by the LOCAL AGENCY for any reason prior to the completion of the PROJECT, or the Agreement is terminated by the DEPARTMENT due to the LOCAL AGENCY's failure to perform, the LOCAL AGENCY shall reimburse the DEPARTMENT for any payments made to the LOCAL AGENCY and any PROJECT costs incurred by the DEPARTMENT.

12. All notices or other communications required or permitted to be given under this Agreement shall be in writing and shall be deemed to have been duly given if delivered personally in hand, by telephonic facsimile or electronic mail with simultaneous regular mail, or mailed certified mail, return receipt requested, postage prepaid on the date posted, and addressed to the other party at the address set forth below:

FOR DEPARTMENT: Kristina L. Swallow, P.E., Director  
Attn: Mark Costa  
Division Chief Multimodal Planning  
Nevada Department of Transportation  
1263 South Stewart Street  
Carson City, Nevada 89712  
Phone: (775) 888-7120  
Fax: (775) 888-7207  
E - mail address: mcosta@dot.nv.gov

FOR LOCAL AGENCY: Lucia Maloney  
Carson Area Metropolitan Planning Organization  
(CAMPO)  
3505 Butti Way  
Carson City, Nevada 89701  
Phone: 775-283-7396  
Fax: 775-887-2112  
Email: LMaloney@carson.org

13. Up to the limitation of law, including, but not limited to, NRS Chapter 41 liability limitations, each party shall be responsible for all liability, claims, actions, damages, losses, and

expenses, caused by the negligence, errors, omissions, recklessness or intentional misconduct of its own officers and employees.

14. The parties do not waive and intend to assert available NRS Chapter 41 liability limitations in all cases. Agreement liability of both parties shall not be subject to punitive damages. Actual damages for any DEPARTMENT or LOCAL AGENCY breach shall never exceed the amount of funds which have been appropriated for payment under this Agreement, but not yet paid, for the fiscal year budget in existence at the time of the breach.

15. This Agreement and the rights and obligations of the parties hereto shall be governed by, and construed according to, the laws of the State of Nevada. The parties consent to the exclusive jurisdiction of the Nevada state district courts for enforcement of this Agreement.

16. The illegality or invalidity of any provision or portion of this Agreement shall not affect the validity of the remainder of the Agreement, and this Agreement shall be construed as if such provision did not exist, and the unenforceability of such provision shall not be held to render any other provision or provisions of this Agreement unenforceable.

17. Failure to declare a breach or the actual waiver of any particular breach of the Agreement and or its material or nonmaterial terms by either party shall not operate as a waiver by such party of any of its rights or remedies as to any other breach.

18. Except as otherwise expressly provided herein, all property presently owned by either party shall remain in such ownership upon termination of this Agreement, and there shall be no transfer of property between the parties during the course of this Agreement.

19. It is specifically agreed between the parties executing this Agreement that it is not intended by any of the provisions of any part of this Agreement to create any rights in any person or entity, public or private, a third party beneficiary status hereunder, or to authorize anyone not a party to this Agreement to maintain a suit pursuant to the terms or provisions of this Agreement.

20. Each party agrees to keep and maintain under generally accepted accounting principles full, true, and complete records and documents pertaining to this Agreement and to present to the DEPARTMENT, FHWA, the U.S. Department of Transportation's Inspector General, the Comptroller General of the United States or any of their duly authorized representatives, at any reasonable time, such information for inspection, examination, review, audit, and copying at any office where such records and documentation are maintained. Such records and documentation shall be maintained for three (3) years after final payment is made.

21. The parties are associated with each other only for the purposes and to the extent set forth in this Agreement. Each party is and shall be a public agency separate and distinct from the other party and shall have the right to supervise, manage, operate, control, and direct performance of the details incident to its duties under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a partnership or joint venture, to create relationships of an employer-employee or principal-agent, or to otherwise create any liability for one agency whatsoever with respect to the indebtedness, liabilities, and obligations of the other agency or any other party.

22. In connection with the performance of work under this Agreement, the parties agree not to discriminate against any employee or applicant for employment because of race, color, religion, sex, national origin, age, disability, pregnancy, sexual orientation, genetic information (GINA) or gender identity or expression, including, without limitation, with regard to

employment, upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including without limitation apprenticeship. The parties further agree to insert this provision in all subcontracts hereunder, except subcontracts for standard commercial supplies or raw materials.

23. Pursuant to all applicable laws including but not limited to the Civil Rights Act of 1964, the Federal Highway Act of 1973, Section 504 of the Rehabilitation Act of 1973, the Age Discrimination Act of 1975, Executive Order 12898 (Environmental Justice), and Executive Order 13166 (Limited English Proficiency), the parties shall ensure that no person shall on the grounds of race, color, national origin, sex, age, and handicap/disability, be excluded from participation in, be denied the benefits of, or be otherwise subjected to discrimination under any program or activity conducted by the recipient regardless of whether those programs and activities are federally-funded or not.

24. Neither party shall assign, transfer or delegate any rights, obligations or duties under this Agreement without the prior written consent of the other party.

25. The parties hereto represent and warrant that the person executing this Agreement on behalf of each party has full power and authority to enter into this Agreement and that the parties are authorized by law to engage in the cooperative action set forth herein.

26. Pursuant to NRS 239.010, information or documents may be open to public inspection and copying. The parties will have the duty to disclose unless a particular record is confidential by law or a common law balancing of interests.

27. Each party shall keep confidential all information, in whatever form, produced, prepared, observed or received by that party to the extent that such information is confidential by law.

28. All references herein to federal and state code, law, statutes, regulations and circulars are to them, as amended.

29. This Agreement shall not become effective until and unless approved by appropriate official action of the governing body of each party.

30. This Agreement constitutes the entire agreement of the parties and as such is intended as a complete and exclusive statement of the promises, representations, negotiations, discussions, and other agreements that may have been made in connection with the subject matter hereof. Unless an integrated attachment to this Agreement specifically displays a mutual intent to amend a particular part of this Agreement, general conflicts in language between any such attachment and this Agreement shall be construed consistent with the terms of this Agreement. Unless otherwise expressly authorized by the terms of this Agreement, no modification or amendment to this Agreement shall be binding upon the parties unless the same is in writing and signed by the respective parties hereto and approved by the Attorney General.

IN WITNESS WHEREOF, the parties have executed this Agreement on the day and year first above written.

Carson Area Metropolitan Planning Organization

State of Nevada, acting by and through its DEPARTMENT OF TRANSPORTATION

---

---

Director

Approved as to Form:

Approved as to Legality & Form:

---

---

Deputy Attorney General

ATTACHMENT  
“A”

**CARSON AREA METROPOLITAN PLANNING ORGANIZATION (CAMPO)  
FY20/FY21 CARSON AREA  
TRANSPORTATION SYSTEM MANAGEMENT PLAN**

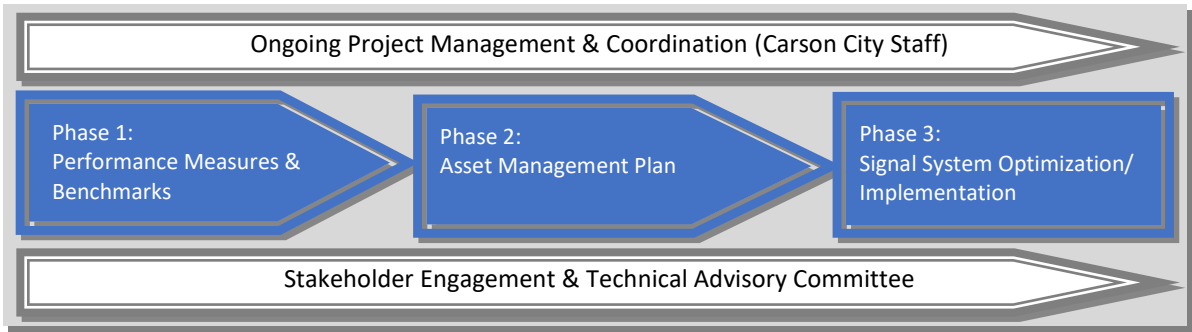
The 2020/2021 Carson Area Transportation System Management Plan will cover the CAMPO planning area and all traffic signals operated and/or maintained by the Consolidated Municipality of Carson City (City), including Carson, Douglas, Lyon, and Storey Counties.

The primary purpose of the project is to develop a Transportation System Management Plan (TSMP) for the Carson Area that establishes commonly held operations and management objectives and serves as an asset management plan that results in improved transportation system performance. The TSMP will guide local jurisdictions, staff, and the Nevada Department of Transportation (NDOT) to make transparent and performance-based investments in traffic control and in ITS infrastructure, as well as to equip staff to manage and operate the transportation system efficiently and effectively. It will guide the partner jurisdictions' asset management program(s) for transportation infrastructure with the goal of improving the efficiency and reliability of the transportation system. It will also provide guidance for making strategic investment decisions related to future infrastructure that will manage system demand and usage. The final phase of the TSMP will serve to quantify the changes in traffic operations that result from implementation of infrastructure enhancement and signal timing changes recommended by the TSMP.

The primary purpose of the project is to establish commonly held operations and management objectives (Phase 1: Performance Measures & Benchmarks) in an asset management plan (Phase 2: Asset Management Plan) that improves transportation system performance through informed, consistent, and transparent decision-making throughout the Carson area. Additionally, the project couples the TSMP with an implementation component (Phase 3: Signal System Optimization/Implementation) that prepares optimized traffic signal timings along signalized corridors and produces "before" and "after" measures of effectiveness (MOE's) to quantify the changes in traffic operations resulting from signal equipment upgrades and signal timing changes.

Project work tasks may include, but are not limited to, the data collection, planning, and professional engineering services required for the three phases described below. The project includes Carson City staff time required to plan, organize, manage, and execute the project. It is also anticipated to include consultant teams who will be encouraged to expand upon the draft scope of services to be provided in a formal Request for Qualifications (RFQ) to provide for a comprehensive, yet efficient, work product that can be implemented by each of the participating jurisdictions.

Figure 1 graphically illustrates the project phases, including ongoing project management & coordination to be led by Carson City staff, and Stakeholder Engagement & Technical Advisory Committee who will jointly advise and support the project through each of the three (3) work phases.



**Attachment C**  
**AFFIDAVIT REQUIRED UNDER SECTION 112(c)**  
**of Title 23 United States Code, Act of August 27, 1958**  
**and**  
**Part 29 of Title 49, Code of Federal Regulations,**  
**November 17, 1987.**

I, \_\_\_\_\_ (Name of party signing affidavit and Proposal Form)  
\_\_\_\_\_ (title) being duly sworn do depose and say: That  
\_\_\_\_\_ (name of person, firm, association, or corporation) has not,  
either directly or indirectly, entered into agreement, participated in any collusion, or otherwise  
taken any action in restraint of free competitive bidding in connection with this contract; and further  
that, except as noted below to the best of knowledge, the above named and its principals:

- (a) Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal department or agency;
- (b) Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal, State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
- (c) Are not presently indicted for or otherwise criminally or civilly charged by a governmental entity (Federal, State or local) with commission of any of the offenses enumerated in paragraph (b) of this certification; and
- (d) Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

(Insert Exceptions, attach additional sheets)

The above exceptions will not necessarily result in denial of award but will be considered in determining bidder responsibility and whether or not the Department will enter into contract with the party. For any exception noted, indicate on an attached sheet to whom it applies, initiating agency, and dates of action. Providing false information may result in criminal prosecution or administrative sanctions. The failure to furnish this affidavit and required exceptions if any shall disqualify the party.

\_\_\_\_\_  
*Signature*

\_\_\_\_\_  
*Title*

\_\_\_\_\_  
*Date*

**Attachment D**

**CERTIFICATION REQUIRED BY SECTION 1352 OF TITLE 31, UNITED STATES CODE  
RESTRICTIONS OF LOBBYING USING APPROPRIATED FEDERAL FUNDS**

The undersigned certifies, to the best of his or her knowledge and belief that:

(1) No Federal appropriate funds have been paid or will be paid, by or on behalf of the undersigned, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with the awarding of any Federal loan, the entering into of any cooperative agreement, and the extension, continuation, renewal, amendment, or modification of any Federal contract, grant, loan, or cooperative agreement.

(2) If any funds other than Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with this Federal contract, grant, loan, or cooperative agreement, the undersigned shall complete and submit Standard Form-LLL, "Disclosure Form to Report Lobbying," in accordance with its instructions.

(3) The undersigned shall require that the language of this certification be included in the award documents for all subawards at all tiers (including subcontracts, subgrants, and contracts under grants, loans, and cooperative agreements) and that all subrecipients shall certify and disclose accordingly.

This certification is a material representation of fact upon which reliance was placed when this transaction was made or entered into. Submission of this certification is a prerequisite for making or entering into this transaction imposed by section 1352, title 31, U.S. Code. Any person who fails to file the required certification shall be subject to a civil penalty of not less than \$10,000 and not more than \$100,000 for each such failure.

\_\_\_\_\_  
Name (please type or print)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Title



## INSTRUCTIONS FOR COMPLETION OF SF-LLL, DISCLOSURE OF LOBBYING ACTIVITIES

This disclosure form shall be completed by the reporting entity, whether subawardee or prime Federal recipient, at the initiation or receipt of a covered Federal action, or a material change to a previous filing, pursuant to title 31 U.S.C. section 1352. The filing of a form is required for each payment or agreement to make payment to any lobbying entity for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a covered Federal action. Use the SF-LLLA Continuation Sheet for additional information if the space on the form is inadequate. Complete all items that apply for both the initial filing and material change report. Refer to the implementing guidance published by the Office of Management and Budget for additional information.

1. Identify the type of covered Federal action for which lobbying activity is and/or has been secured to influence the outcome of a covered Federal action.
2. Identify the status of the covered Federal action.
3. Identify the appropriate classification of this report. If this is a follow up report caused by a material change to the information previously reported, enter the year and quarter in which the change occurred. Enter the date of the last previously submitted report by this reporting entity for this covered Federal action.
4. Enter the full name, address, city, State and zip code of the reporting entity. Include Congressional District, if known. Check the appropriate classification of the reporting entity that designates if it is, or expects to be, a prime or subaward recipient. Identify the tier of the subawardee, e.g., the first subawardee of the prime is the 1st tier. Subawards include but are not limited to subcontracts, subgrants and contract awards under grants.
5. If the organization filing the report in item 4 checks "Subawardee," then enter the full name, address, city, State and zip code of the prime Federal recipient. Include Congressional District, if known.
6. Enter the name of the Federal agency making the award or loan commitment. Include at least one organizational level below agency name, if known. For example, Department of Transportation, United States Coast Guard.
7. Enter the Federal program name or description for the covered Federal action (item 1). If known, enter the full Catalog of Federal Domestic Assistance (CFDA) number for grants, cooperative agreements, loans, and loan commitments.
8. Enter the most appropriate Federal identifying number available for the Federal action identified in item 1 (e.g., Request for Proposal (RFP) number; Invitation for Bid (IFB) number; grant announcement number; the contract, grant, or loan award number; the application/proposal control number assigned by the Federal agency). Include prefixes, e.g., "RFP-DE-90-001."
9. For a covered Federal action where there has been an award or loan commitment by the Federal agency, enter the Federal amount of the award/loan commitment for the prime entity identified in item 4 or 5.
10. (a) Enter the full name, address, city, State and zip code of the lobbying entity engaged by the reporting entity identified in item 4 to influence the covered Federal action.  
  
(b) Enter the full names of the individual(s) performing services, and include full address if different from 10 (a). Enter Last Name, First Name, and Middle Initial (MI).
11. Enter the amount of compensation paid or reasonably expected to be paid by the reporting entity (item 4) to the lobbying entity (item 10). Indicate whether the payment has been made (actual) or will be made (planned). Check all boxes that apply. If this is a material change report, enter the cumulative amount of payment made or planned to be made.
12. Check the appropriate box(es). Check all boxes that apply. If payment is made through an in-kind contribution, specify the nature and value of the in-kind payment.
13. Check the appropriate box(es). Check all boxes that apply. If other, specify nature.
14. Provide a specific and detailed description of the services that the lobbyist has performed, or will be expected to perform, and the date(s) of any services rendered. Include all preparatory and related activity, not just time spent in actual contact with Federal officials. Identify the Federal official(s) or employee(s) contacted or the officer(s), employee(s), or Member(s) of Congress that were contacted.
15. Check whether or not a SF-LLLA Continuation Sheet(s) is attached.
16. The certifying official shall sign and date the form, print his/her name, title, and telephone number.

According to the Paperwork Reduction Act, as amended, no persons are required to respond to a collection of information unless it displays a valid OMB Control Number. The valid OMB control number for this information collection is OMB No. 0348-0046. Public reporting burden for this collection of information is estimated to average 30 minutes per response, including time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding the burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the Office of Management and Budget, Paperwork Reduction Project (0348-0046), Washington, DC 20503.

**This page intentionally left blank.**

Exhibit-2: CAMPO's Unified Planning Work Program Cost/Funding Summary Table

**The attached Cost/Funding Summary Table is an excerpt from:**

**The Carson Area Metropolitan Planning Organization's**

**Unified Planning Work Program**

**Last amended May 8, 2019**

**Full document available here:**

<https://carson.org/government/departments-g-z/public-works/campo-carson-area-metropolitan-planning-organization/documents>

**Table 5.1 CAMPO FY 2019 and FY 2020 UPWP Cost/Funding Summary  
Amended 5/8/2019**

Major Work Element	Work Task		Funding Breakdown		
	Task #	Description	CPG	Local Match	Total Cost
1.0 MPO Administration	1.1	General Administration and Work Program Oversight	\$148,487	\$7,815	\$156,302
	1.2	UPWP Development and Administration	\$14,250	\$750	\$15,000
	1.3	MPO Representation	\$57,000	\$3,000	\$60,000
	1.4	Professional Development	\$52,250	\$2,750	\$55,000
2.0 Regional Coordination and Engagement	2.1	Public Participation	\$19,000	\$1,000	\$20,000
	2.2	Regional Transit Coordination and Engagement	\$12,350	\$650	\$13,000
3.0 Regional Multimodal Planning	3.1	2040 Regional Transportation Plan (RTP)*	\$27,922	\$1,470	\$29,392
	3.2	Transit Planning*	\$90,250	\$4,750	\$95,000
	3.3	ITS Planning	\$13,348	\$703	\$14,050
	3.4	Updates to Supporting Regional Planning Documents and Policies*	\$33,250	\$1,750	\$35,000
	3.5	Regional Consistency Review	\$23,750	\$1,250	\$25,000
4.0 Transportation Performance Management	4.1	MAP-21/FAST Act Implementation and Performance Measures	\$30,400	\$1,600	\$32,000
	4.2	Update and Maintain the Transportation Improvement Program	\$22,800	\$1,200	\$24,000
	4.3	Maintain Travel Demand Model*	\$39,900	\$2,100	\$42,000
	4.4	Data Management, Collection, and Performance Measurement	\$42,750	\$2,250	\$45,000
5.0 Asset Planning and Management	5.1	Maintain Pavement Management System*	\$42,703	\$2,248	\$44,950
	5.2	Roadway Asset Management	\$28,500	\$1,500	\$30,000
	5.3	Non-Motorized Asset Management*	\$25,650	\$1,350	\$27,000
	5.4	Transit Asset Management	\$11,400	\$600	\$12,000
Total Funding			\$735,959	\$38,735	\$774,694

\*Consultant involvement is expected



## STAFF REPORT

**Report To:** The Carson Area Metropolitan Planning Organization (CAMPO)

**Meeting Date:** July 10, 2019

**Staff Contact:** Michael Reynolds, Transit Coordinator

**Agenda Title: For Possible Action** – Discussion and possible action regarding submitting the CAMPO Disadvantaged Business Enterprise (DBE) 3-year Goal for Federal Fiscal Years 2020-2022 to the United States Department of Transportation.

**Staff Summary:** Title 49 Code of Federal Regulations (CFR) Part 26 provides guidelines for recipients of Federal Transit Administration (FTA) funds to establish and submit a DBE participation goal for forecasted contract opportunities that are fully or partially funded by FTA grants. The DBE participation goal is established based on the type of upcoming projects and DBE certified businesses available to perform them. Based on the criteria, CAMPO staff has determined that the updated DBE 3-year race neutral goal for CAMPO should be 0.72% for Federal Fiscal Years (FFY) 2020-2022.

**Agenda Action:** Formal Action/Motion

**Time Requested:** 10 minutes

### **Proposed Motion**

I move to authorize CAMPO staff to submit the report as presented.

### **Background/Issues & Analysis**

Title 49 CFR part 26 provides guidelines for determining a DBE participation goal, which is required to be updated every three years. In accordance with these guidelines CAMPO staff determined a goal based on the type of upcoming projects and DBE certified businesses available to perform them. The type of project refers to the North American Industry Classification System (NAICS), which is used to differentiate types of businesses according to their process of production. A 45-day public comment period meeting the requirements in CAMPO's Public Participation Plan and Federal regulations was open from May 10, 2019 to June 24, 2019. No comments were received during this period, and no additional actions to adjust the goal were taken as a result.

A stakeholders meeting was held on May 22, 2019, to present the proposed DBE goal and methodology document for public review and comment. The meeting was met with great appreciation from those who attended. No comments were received to affect the DBE goal methodology, though several comments regarding planning efforts were received and will be taken into account for other efforts. Questionnaires were distributed to take written public comment on the DBE goal methodology. One questionnaire was completed and provided to staff. The comment received is provided below.

*“The workshop was very helpful. I learned more about CAMPO’s plans and goals. Unfortunately, in the near future, my company’s skills are not going to be needed. However, I will monitor CAMPO for opportunities. My DBE status is a way for me, as a small business, to compete with larger companies on an equitable playing field for contracts. I hope more local small businesses seek this designation as well. CAMPO is creating that opportunity with workshops like this one. Thank you.”*

A final packet containing the DBE goal, methodology document, newspaper receipts, public announcements, and comments will be submitted to the FTA on or before August 1, 2019, for review and approval.

**Applicable Statute, Code, Policy, Rule or Regulation**

-Title 49 of the Code of Federal Regulations, Part 26

**Financial Information**

Is there a fiscal impact?  Yes  No

If yes, Fund Name, Account Name / Account Number: CAMPO fund, Unified Planning Work Program account, Task 3.2 Transit Planning / 245-3028-431.12-01

Is it currently budgeted?  Yes  No

Explanation of Fiscal Impact: Activities to establish this DBE goal were budgeted in CAMPO’s 2019/2020 Unified Planning Work Program (UPWP), Task 3.2, Transit Planning (see Exhibit 2).

**Alternatives**

-Do not authorize staff to submit the DBE 3-year goal and provide alternative direction to staff.

**Supporting Material**

-Exhibit-1: DBE 3-Year Goal FFY 20-22 Methodology

-Exhibit-2: CAMPO’s Unified Planning Work Program Cost/Funding Summary Table

**Board Action Taken:**

Motion: _____	1) _____	Aye/Nay
	2) _____	_____
		_____
		_____
		_____
		_____

\_\_\_\_\_  
(Vote Recorded By)



**Disadvantaged Business Enterprise (DBE)  
Program Goal for  
Federal Transit Administration Funds**

**Proposed DBE Goal: 0.72%**

**Federal Fiscal Years (FFY) 2020-2022  
(October 1, 2019 – September 30, 2022)**

**Recipient:** Carson Area Metropolitan Planning Organization (CAMPO)

**Preparer:** Michael Reynolds, Transit Coordinator, DBE Liaison Officer

**Purpose of this Document:**

**The Carson Area Metropolitan Planning Organization (CAMPO) and the Carson City Regional Transportation Commission (RTC) are committed to carrying out all of the Disadvantaged Business Enterprise (DBE) requirements of 49 CFR Part 26, which provides guidelines to assure that all contracts and procurements are administered without discrimination on the basis of race, color, sex, or national origin, and DBEs have an equal opportunity to compete for and participate in the performance of all agreements, contracts, and subcontracts awarded by CAMPO and RTC.**

**49 CFR Part 26 Section 45 defines a three year goal setting method for recipients of Federal Transit Administration (FTA) funds. The purpose of this goal is to provide a guideline for FTA funding recipients to ensure nondiscrimination in the award and administration of Department of Transportation (DOT)-assisted contracts, to create a level playing field on which DBE's can compete fairly for DOT-assisted contracts, and to provide appropriate flexibility to recipients of Federal financial assistance in establishing and providing opportunities for DBEs.**

**Furthermore, in the process of establishing this goal and methodology, CAMPO seeks to educate existing DBEs and potential DBE certification applicants on participation in the DBE program and potential contracting opportunities.**

## 1.0 CAMPO DBE 3 Year Goal for FFY 2020 through FFY 2022

1.1 Federal Transit Administration (FTA) regulations dictate that recipients of FTA funding must create a three (3) year goal in accordance with 49 CFR Part 26. This document is a draft for public review.

1.2 In alignment with 49 CFR Part 26, CAMPO has determined a DBE three (3) year race neutral goal of **0.72%**. This goal is expressed as a percentage of FTA funds (excluding FTA funds to be used for the purchase of transit vehicles) that are allocated through CAMPO. The goal reflects an anticipated level of DBE participation in FTA-assisted contracts in the three forthcoming fiscal years. The new goal has increased from the previous three year goal based on an increase of DBE's available to submit proposals for expected projects funded in whole or in part with FTA funding.

## 2.0 Data Collection and Analysis

2.1 Annual FTA funding available to CAMPO was established in the FAST Act which expires FFY 2020. As funding for FFY 2021 and FFY 2022 have not yet been stipulated by the FTA, an estimated amount based on previous annual increases of 2.01% has been calculated as a guideline for goal setting. Estimated FTA funding allocated to CAMPO is:

- \$1,042,217 in FFY 2020
- \$1,063,165 in FFY 2021
- \$1,084,534 in FFY 2022

2.2 CAMPO annually awards FTA funding to eligible Transit Operators within its planning area. Jump Around Carson (JAC) Transit currently holds an Operating Service Contract for public transit within the MPO area, and may regularly undertake projects to enhance transit services. Table 1 provides a list of anticipated DOT-assisted projects, by industry classification.

<b>Project Type</b>	<b>Dollar Amount</b>	<b>NAICS Code</b>	<b>NAICS Description</b>
Operating Service Contract	\$2,774,000	485113	Transit Operators
Transit Facility Upgrades	\$20,000	561621	Security Installation
Transit Facility Upgrades	\$20,000	423610	Electricians
Rehabilitation/Renovation of Pedestrian Access/Walkways	\$50,000	237310	Streets, Roads, Public Sidewalks, Construction
Professional Services	\$75,000	541512	Computer System Design
<b>Total</b>	<b>\$2,939,000</b>		

- 2.3** The reasonable and relevant geographical market for contractors include the five (5) jurisdictions of Carson City Consolidated Municipality, Douglas County, Lyon County, Storey County, and Washoe County.
- 2.4** U.S. Census Bureau data was collected on the five (5) industry classification (Table 1) to determine the availability of companies within the relevant geographical market. The data can be found at: <https://factfinder.census.gov/>
- 2.5** DBE availability for the projects noted in Table 1 was drawn from the Nevada Unified Certification Program (NUCP) records, which is the certifying body for DBE's in Nevada (See Table 2 in Section 3.0). The link to the NUCP database is: <http://nevadadbe.com/dbe-vendors>
- 2.6** A 2017 disparity study conducted by the Nevada Department of Transportation (NDOT) was reviewed for consideration. This study encompassed the entire state of Nevada. As a result of the disparity study, NDOT established a 0.92% DBE goal for FTA-assisted contracts. CAMPO's proposed race neutral goal of 0.72% is found to be reasonable, given CAMPO's limited market area that does not include the large metropolitan area of Las Vegas, NV. The study can be found at: <https://www.nevadadot.com/Home/ShowDocument?id=7705>

### **3.0 Methodology**

- 3.1** 49 CFR part 26.45 indicates methods for calculating a DBE goal based on a percentage of available DBE firms by industry classification and within the relevant geographical area. Further adjustments will be made after the public comment period is closed and after staff has concluded consultation with DBE stakeholders, as required by 49 CFR §26.45(d) and §26.45(g)(1).

**3.2** Table 2 indicates the percentages of DBE's available in Nevada that could be reasonably expected to submit proposals on upcoming projects funded in whole or in part with FTA funds, in compliance with 49 CFR Part 26.45. The data discussed in Section 2.0 was the basis for these numbers. Furthermore, the table shows weighting for each project based on the percentage of funds CAMPO intends to expend.

<b>Table 2 – DBE Availability by NAICS Code and Project Weight</b>					
<b>Project</b>	<b>NAICS</b>	<b>Total Business</b>	<b>Total DBEs</b>	<b>DBE %</b>	<b>Weighted</b>
Operating Service Contract	485113	16	0	0%	94%
Transit Facility Upgrades	561621	11	0	0%	0.6%
Transit Facility Upgrades	423610	37	0	0%	0.6%
Rehabilitation/Renovation of Pedestrian Access/Walkways	237310	19	8	42%	1.7%
Professional Services	541512	109	0	0%	2.55%

**3.3** The percentages of total funds for expenditure, found in Table 1, are used to weigh the percentages of DBE's for each project as shown in Table 2. The following equation was used to determine the final overall DBE goal of 0.72%:

$$[((2774000/2939000)(0/16)) + ((20000/2939000)(0/11)) + ((20000/2939000)(0/37)) + ((50000/2939000)(8/19)) + ((75000/2939000)(0/109))] \times 100 = 0.7163$$

= Total DBE Goal: 0.72%

#### **4.0 Establishing Race Neutral and Race Conscious Splits**

**4.1** In keeping with the Ninth Circuit Court of Appeals decision in *Western States Paving v. Washington State Department of Transportation*, CAMPO proposes to set the goal as race-neutral for this goal period. Race-neutral DBE participation includes any time a DBE is awarded a prime contract through customary competitive procurement procedures, is awarded a subcontract on a prime contract that does or does not carry a DBE requirement, or wins a subcontract from a prime contractor that did not consider its DBE status in making the award (e.g., a prime contractor that uses a strict low bid system to award subcontracts).

## **5.0 Public Participation**

**5.1** The period for public review and comment of CAMPO's proposed three (3) year DBE goal, along with the methodology and calculations, was opened from May 10, 2019, running through June 24, 2019. In accordance with Title VI, individuals with disability may contact the office below to obtain this document in an accessible format. Translated copies will also be made available upon request. Any questions or comments may be directed to [Comments@CarsonAreaMPO.com](mailto:Comments@CarsonAreaMPO.com) or by telephone to 775-283-7583, the office of the Transit Coordinator. All comments will be considered for adjustment of the goal.

**5.2** A public DBE Stakeholders meeting to receive comment on this document and to inform local interest groups, certified DBE companies, and uncertified DBE eligible companies was held on May 22, 2019. A presentation by the DBE Liaison Officer delivered information to the public on the 3 year goal methodology, DBE Certification requirements, and benefits of the DBE certification. Attendees had many questions regarding upcoming projects and the DBE certification process, but no comments were received regarding the methodology for determining the 3 year goal. Notices and invitations were sent out to the following locations:

- Carson City Chamber of Commerce
- Washoe Tribe of Nevada and California
- Untied Latino Community
- Carson City Chamber of Commerce
- Dayton Chamber of Commerce
- Carson Valley Chamber of Commerce
- WNC Latino Outreach and ESL
- Five(5) local DBE certified companies

Exhibit-2: CAMPO's Unified Planning Work Program Cost/Funding Summary Table

**The attached Cost/Funding Summary Table is an excerpt from:**

**The Carson Area Metropolitan Planning Organization's**

**Unified Planning Work Program**

**Last amended May 8, 2019**

**Full document available here:**

<https://carson.org/government/departments-g-z/public-works/campo-carson-area-metropolitan-planning-organization/documents>

**Table 5.1 CAMPO FY 2019 and FY 2020 UPWP Cost/Funding Summary  
Amended 5/8/2019**

Major Work Element	Work Task		Funding Breakdown		
	Task #	Description	CPG	Local Match	Total Cost
1.0 MPO Administration	1.1	General Administration and Work Program Oversight	\$148,487	\$7,815	\$156,302
	1.2	UPWP Development and Administration	\$14,250	\$750	\$15,000
	1.3	MPO Representation	\$57,000	\$3,000	\$60,000
	1.4	Professional Development	\$52,250	\$2,750	\$55,000
2.0 Regional Coordination and Engagement	2.1	Public Participation	\$19,000	\$1,000	\$20,000
	2.2	Regional Transit Coordination and Engagement	\$12,350	\$650	\$13,000
3.0 Regional Multimodal Planning	3.1	2040 Regional Transportation Plan (RTP)*	\$27,922	\$1,470	\$29,392
	3.2	Transit Planning*	\$90,250	\$4,750	\$95,000
	3.3	ITS Planning	\$13,348	\$703	\$14,050
	3.4	Updates to Supporting Regional Planning Documents and Policies*	\$33,250	\$1,750	\$35,000
	3.5	Regional Consistency Review	\$23,750	\$1,250	\$25,000
4.0 Transportation Performance Management	4.1	MAP-21/FAST Act Implementation and Performance Measures	\$30,400	\$1,600	\$32,000
	4.2	Update and Maintain the Transportation Improvement Program	\$22,800	\$1,200	\$24,000
	4.3	Maintain Travel Demand Model*	\$39,900	\$2,100	\$42,000
	4.4	Data Management, Collection, and Performance Measurement	\$42,750	\$2,250	\$45,000
5.0 Asset Planning and Management	5.1	Maintain Pavement Management System*	\$42,703	\$2,248	\$44,950
	5.2	Roadway Asset Management	\$28,500	\$1,500	\$30,000
	5.3	Non-Motorized Asset Management*	\$25,650	\$1,350	\$27,000
	5.4	Transit Asset Management	\$11,400	\$600	\$12,000
Total Funding			\$735,959	\$38,735	\$774,694

\*Consultant involvement is expected



## STAFF REPORT

**Report To:** The Carson Area Metropolitan Planning Organization (CAMPO)

**Meeting Date:** July 10, 2019

**Staff Contact:** Dirk Goering, Senior Transportation Planner

**Agenda Title: For Possible Action** – Presentation and discussion regarding the submittal of a request to the Nevada Department of Transportation (NDOT) to classify Santa Barbara Drive, between Stephanie Lane and Vicky Lane, and to classify Vicky Lane, between Santa Barbara Drive and Stephanie Lane, as Minor Collector Roadways.

**Staff Summary:** The Federal Highway Administration (FHWA) has established guidelines for state, regional, and local jurisdictions to follow in classifying roadways. As it pertains to CAMPO and the member agencies, proposals for classifications are to be initiated by the metropolitan planning organization and submitted to NDOT. Once submitted, NDOT will review the proposal and submit a final proposal to FHWA for approval.

**Agenda Action:** Formal Action/Motion

**Time Requested:** 10 minutes

### **Proposed Motion**

I move to approve submittal of the request as presented.

### **Background/Issues & Analysis**

Santa Barbara Drive, between Stephanie Lane and Vicky Lane, and Vicky Lane, between Santa Barbara Drive and Stephanie Lane, are currently classified as local roadways with characteristics typically associated with a Minor Collector. Both Santa Barbara Drive and Vicky Lane serve as critical roadways for gathering traffic from local roads and funneling them to the larger arterial transportation network.

The Douglas County Regional Transportation Commission took action on December 12, 2018, to approve pursuit of reclassifying Santa Barbara Drive and a portion of Vicky Lane. The reclassification will allow the roads to be eligible for certain federal funds.

### **Applicable Statute, Code, Policy, Rule or Regulation**

-N/A

**Financial Information**

Is there a fiscal impact?  Yes  No

If yes, Fund Name, Account Name / Account Number: There is a positive fiscal impact as noted below.

Is it currently budgeted?  Yes  No

Explanation of Fiscal Impact: If Santa Barbara Drive and a portion of Vicky Lane are classified as Minor Collector Roadways, they will become eligible for federal funds such as Surface Transportation Block Grants (STBG).

**Alternatives**

-Provide alternative direction to staff.

**Supporting Material**

- Exhibit-1: Roadway Functional Classification Map with proposed roadway reclassifications
- Exhibit-2: Accepted Minutes from the December 12, 2018, Douglas County Regional Transportation Commission Meeting

**Board Action Taken:**

Motion: \_\_\_\_\_

1) \_\_\_\_\_

2) \_\_\_\_\_

Aye/Nay

\_\_\_\_\_

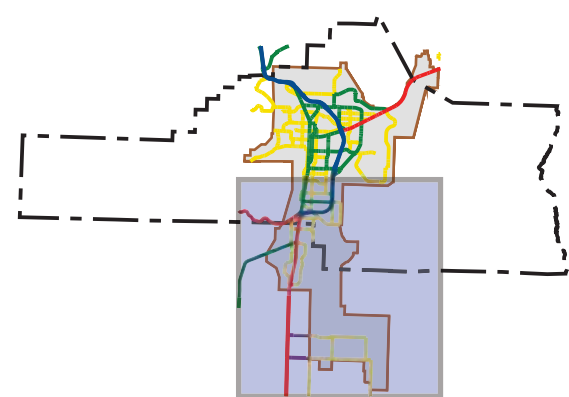
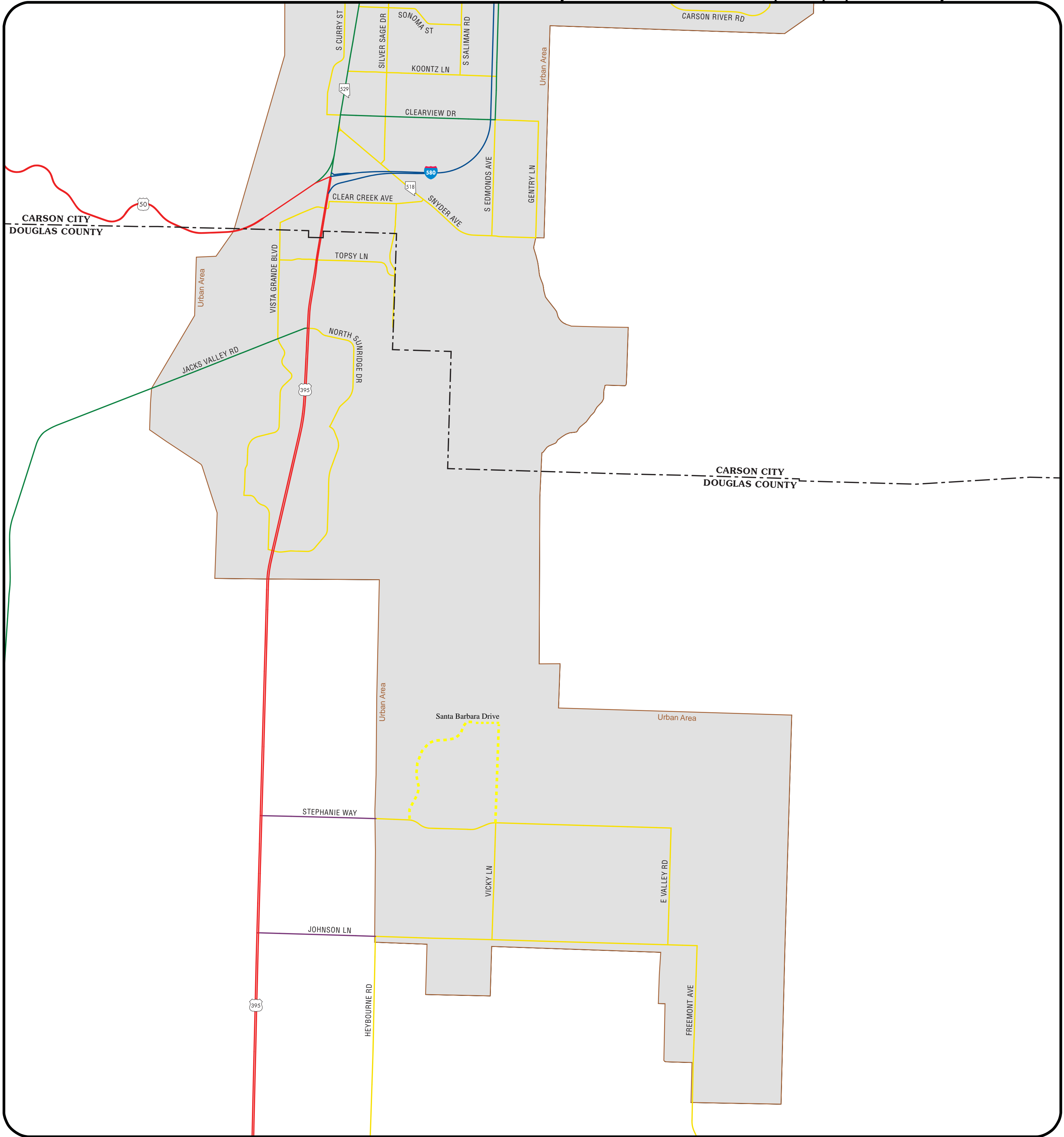
\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_  
(Vote Recorded By)



NEVADA

2017

PREPARED BY THE NEVADA DEPARTMENT OF TRANSPORTATION

- | Existing | Proposed Unbuilt |                                  |
|----------|------------------|----------------------------------|
|          |                  | 1 Interstates                    |
|          |                  | 2 Other Freeways and Expressways |
|          |                  | 3 Other Principal Arterials      |
|          |                  | 4 Minor Arterials                |
|          |                  | 5 Major Collectors               |
|          |                  | 6 Minor Collectors               |
|          |                  | 7 Local Roads                    |
|          |                  | Urban Limits                     |
|          |                  | State Line                       |
|          |                  | County Lines                     |



## ROADWAY FUNCTIONAL CLASSIFICATION

CARSON URBANIZED SOUTH

# CARSON CITY, NEVADA

**This page intentionally left blank.**

**Douglas County Regional Transportation Commission**

Jon Erb replies with that if they want to maintain that section then it is something we could take to the board. For that would be a BOCC decision. Nancy McDermid also stated that it would first go to the Indian Hills Board and see if they approve it and then if RTC would get behind it then Ms. McDermid felt that the BOCC would be all over that decision.

Barry Penzel asked if the \$76000 and change amount is one full quarter allotment that we get from CAMPO.

Jon Erb stated that the \$76,420 money is RTC money for the design work. Jon Erb doesn't want to get Federal money tied up in the design work for it will drag this project out another 2 years. This RTC money comes from the 5-year plan where Mr. Erb has set aside \$200,000 for engineer services. Nancy McDermid stated that essentially we are doing the design work and everything with the RTC funds and then getting the rest from CAMPO for the project. Nancy McDermid asked what the estimate be for the cost of the project.

Jon Erb stated that it looks to be about \$500,000 to possibly \$600,000. Mr. Erb stated that there is a need for curb and gutter on that road too.

Barry Penzel asked if you will be to use the 10% hedge for the project that the public works director has to approve of.

Jon Erb can't do that with the CAMPO funding.

Barry Penzel asked when we estimate the start of this project.

Jon Erb responded with hopefully early next year.

Nancy McDermid asked if Indian Hills is using Federal money.

Jon Erb said they are not using Federal money. He is working with NDOT to make sure the projects are separate. Separate in a sense of funding. Nancy McDermid asked if you could have the same contractor. Jon Erb said that is possible. He said that he will be working with NDOT on how to do this. Whether that means we have two separate projects or separate items on the bidding.

No Public Comment

<b>RESULT:</b>	<b>APPROVED [UNANIMOUS]</b>
<b>MOVER:</b>	Nancy McDermid, Chairwoman
<b>SECONDER:</b>	Barry Penzel, Vice Chairman
<b>AYES:</b>	McDermid, Penzel
<b>ABSENT:</b>	Hamer

**2. For possible action. Discussion on pursuing the NDOT reclassification from "local road" to "minor collector" for the following roadways: South Santa Barbara Drive; Vicki Lane (north of Stephanie Way); and Orchard Road (north of Toler Lane). (Jon Erb)**

Jon Erb presented to the board Josh Nordloh who is with Public Works.

Josh Nordloh stated how they want to change these roads classification. Reclassifying South Santa Barbara Drive and Vicki Lane allows us to pursue future funds from CAMPO. This will help with future construction projects like sidewalks and such. Orchard Road collects from Toller to Buckeye. NDOT did a traffic count this year and that road gets up to 700 daily trips going to Bentley, GE, and WNC.

Barry Penzel asked if reclassifying the road would we be able to raise the speed limit of Orchard Road.

## Douglas County Regional Transportation Commission

Josh Nordloh stated that we were not intending to but 2/3<sup>rd</sup> North portion of that road is 10 acre lots so there is not a lot of driveways there. The bottom 1/3<sup>rd</sup> lot smallest lot is about 2 acres. So there are driveways on that road but not a large amount.

Barry Penzel asked if there is there an amount of driveways that regulates on when we can change the speed limit or not.

Jon Erb states that there is not really a standard on that. We just don't want to get into a position where we trying to change a lot of residential roads into collectors that don't make sense.

Nancy McDermid states then you would have to maintain them. These are local roads so interms of that local roads are not maintain by RTC money. She just wanted to put that on the record.

Jon Erb states that there is a Federal process with how to change the classification of the road. there are moves that have to happen to get these roads classified. That is why this item is up for action. There is a process we have to do and we feel that this road meets the requirement to be reclassified.

Nancy McDermid asked if Orchard lane in the CAMPO area. Jon Erb and Josh Nordloh both responded no. Nancy McDermid reiterated that Orchard Lane is getting 700 trips a day.

Josh Nordloh said yes and that is the count they got from NDOT last month.

Barry Penzel said people must be are cutting through.

Nancy McDermid stated that Orchard isn't that long of a road and asked why would you want to change that.

Jon Erb responded that we want to change it because of the dynamics. It does connect to other region roadways and industrial area. There is more traffic to a work place as well as commercial traffic like delivery trucks going to and from on Orchard Lane.

Barry Penzel stated on above Buckeye there are two business that employ about 165 people total. Barry Penzel asked about Vicki Lane. He wanted to know how far this project goes up Vicki. He wanted to know if he goes to the pavement or to the dirt road.

Jon Erb when we present it to NDOT it will go from Stephanie to North Santa Barbara.

Nancy McDermid asked if you will be paving the dirt road. Jon Erb said no.

Barry Penzel asked if you are looking at that being an extension of East Valley.

Jon Erb responded no because we are just reclassifying the road from Vicki to S. Santa Barbara.

Barry Penzel then asked if Jon Erb is going to fix the drainage on Kim.

## Douglas County Regional Transportation Commission

Jon Erb that is the plan.

Barry Penzel asked if this reclassification has been told to the Home Owners Association.

Jon Erb said that it has not.

Nancy McDermid and Barry Penzel both agreed that it would be a good idea. Nancy McDermid stated that people don't like change unless they are involved with what that change is going to be. Therefore, this may be positive to them, but if you don't get their permission you may have to deal with, "well we didn't know this was happening".

Barry Penzel stated that this is only effects 550 homes and that he will hear from.

Nancy McDermid stated that it can't hurt to let the HOA know the process you are going through and why.

Barry Penzel stated that if you want to hold a meeting at the town hall or firestation on Johnson Lane. He will help you in any way he can.

Nancy McDermid asked if you think you will have any issues on Orchard Lane.

Jon Erb said no. He stated that is just a change of reclassification.

Nancy McDermid responded with that you are just rattling cages if you don't explain what you are proposing to do and what the positive outcome will be. That you aren't changing anything but making it eligible for different type of funding. Nancy McDermid brought up how Orchard Lane isn't eligible for CAMPO funding. She stated that Jon Erb stated that it does.

Jon Erb responded that it is a misstatement on his part. Vicki and South Santa Barbara are the only two roads eligible for CAMPO fund when changing the classification of these roads.

No Public Comment

<b>RESULT:</b>	<b>APPROVED [UNANIMOUS]</b>
<b>MOVER:</b>	Barry Penzel, Vice Chairman
<b>SECONDER:</b>	Nancy McDermid, Chairwoman
<b>AYES:</b>	McDermid, Penzel
<b>ABSENT:</b>	Hamer

### **3. For possible action. Discussion and update on the US 50 South Shore Community Revitalization Project, including a discussion and staff direction regarding the Regional Transportation Commission's priorities regarding transportation projects in the Lake Tahoe Basin.**

Jon Erb introduced Carl Hasty to give a summary with his project.

Carl Hasty reports that the project has been approved and he gave a brief over view on what to expect from the project. He discussed how they will be replacing 109 residential units on the California side, what will become of the new main street, and explained the highway realignment. Mr. Hasty talked about how Douglas County participation in design and building the new main street. He also brings up how the Douglas County 5% gas tax plays a key role in funding this new