

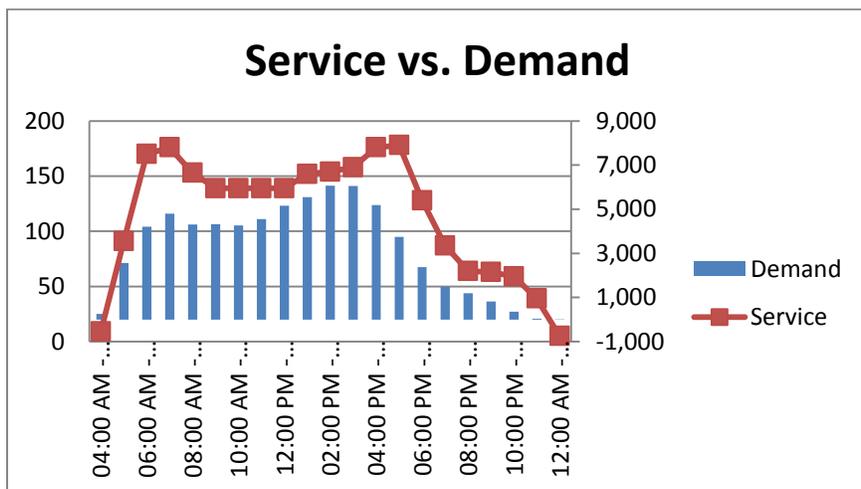
# MEMORANDUM



**To:** Carlos de Leon, Deputy Director of Transportation  
**From:** Mary McLain and Kate Riley  
**Date:** 5/9/2014  
**Re:** Recommended Bus Service Changes For FY2015

**Background:**

A Comprehensive Operational Analysis (COA), an in-depth study of the transit system identifying current strengths and weaknesses, was conducted by Veolia Transportation and Sun Tran staff during 2013. Recommendations designed for the continual improvement of the transit services were developed based as part of this study. The COA recommendations were market based, using ridership statistics and responses to a passenger survey by which to evaluate the current service structure. This was accomplished by reviewing data at the route level, route segment level and in some cases by individual bus stops. Ridership was evaluated by time of day and it was learned that the current service provision, which is based upon decades-old patterns of ridership peaks in the morning and afternoon, no longer exist. The current ridership pattern presents a mid-day peak. Realignment of service frequency was developed to match the actual demand for service.



While the COA planning team was aware of budgetary concerns facing the City in fiscal year 2015, individual route evaluations were conducted solely using the market data. The evaluation demonstrated a need for both expansion and reduction of service areas; as well as increased and decreased frequencies along certain routes at varying times of the day. Individual assessments included both increased costs and decreased costs; and reflected a net decrease

in costs. Once the individual route assessments were completed and the market based recommendations were developed; the proposed system structure was built. At this point, efforts were made by the planning team to maximize system efficiencies; combining the individual route proposals using transit planning techniques such as route interlining, route blocking and effective operator run cutting procedures.

The potential estimated City annual savings of \$2.4 million represents the combination of all individual route increases and decreases resulting from the COA and the Bus/Rail Interface Report proposals with the efficiencies realized through the scheduling processes described above, and reflects the net potential savings based upon the system-wide structure.

**Recommended Action:**

The Sun Tran planning and management teams recommend that the proposals made through the COA and the Bus/Rail Interface Report be implemented, with the exception of a route segment discontinuation on route 109X which had been made in the COA resulting from a loss of a turn-around terminus and park and ride location. This exception is made due to the combined efforts of passengers and staff who are working to confirm another park and ride agreement which will enable the service to be continued. Staff recently conducted the federally-mandated equity analyses to determine whether disparate impact to minorities or disproportionate burden to passengers with low income would result from the recommendations. These analyses conformed to specific FTA regulations in the evaluation of the potential negative impact upon minorities and persons with low income.

This recommendation addresses the potential overall impact to passengers and to the community.

**Responses to survey:**

Staff reviewed the results of the passenger intercept survey conducted by Moore and Associates, and averaged certain data to evaluate the system-wide response to the proposals.

	Avg. Fixed	Avg. Express	Avg. *Special
More Convenient/ No Impact	12.7%	10.4%	15.0%
Less Convenient to Make Trip	9.8%	1.7%	8.0%
Would be Unable to Make Trip	2.5%	1.7%	1.4%

The Special classification represents the Downtown Loop which does not meet the criteria for fixed route service.

**Impact from Potential Frequency Realignment:**

Twelve (12) Sun Tran fixed routes include frequency realignments; nine (9) have increased frequencies and eleven (11) have reductions during part of the day. While waiting additional time to board a bus could prove less convenient to those passengers impacted, the longest additional wait on any route as a result of the proposal weekdays is fifteen (15) minutes. Ridership data demonstrates that there is a need to increase frequencies during parts of the day and/or weekends along certain routes to avoid overcrowded buses or possible missed trips due to capacity issues. These increases, while not previously possible from a budgetary perspective, can now be implemented through the system-wide frequency realignments.

<b>FIXED ROUTE</b>	<b>FREQUENCY DESCRIPTION</b>	<b>LARGEST INCREASE IN MINUTES</b>	<b>LARGEST REDUCTION IN MINUTES</b>
3	Realignment consists of increased frequency during some times of day and reduced frequency during other times of day	10	15
4	Realignment consists of increased frequency during some times of day and reduced frequency during other times of day	5	5
6	One segment of the route has a reduction		15
7	Reduction		5
8	Realignment consists of increased frequency during some times of day and reduced frequency during other times of day	2.5	15
9/20	Reduction in afternoon		15
11/50	Realignment consists of increased frequency during some times of day and reduced frequency during other times of day	5	10
15	Realignment consists of increased frequency during some times of day and reduced frequency during other times of day	5	5
16	Weekday - Realignment consists of increased frequency during some times of day and reduced frequency during one hour only in the evening.	2.5	15
	Saturday increased frequency	15	
	Sunday includes increased and decreased frequencies	10	5
21/22	Saturday only - merged routes frequency same as current 22, represents a reduction for current 21		30
27	Reduction		15
34	Mid-day frequency increased	10	

**Impact to Service Access:**

The COA recommendations did not change the service span (hours of service). Recommendations were made to specific route segments, either to provide service to areas not currently served or to discontinue service to segments where the current service is either duplicated by another route or is not currently used productively. The majority of route segment realignments do not remove service access to customers because the stops impacted are either already served by duplicative routes or will be served by new stops.

Routes with segment reductions impacting passengers without such direct alternatives:

ROUTE	# Stops	# Avg. Daily Boardings	% Avg Daily Route Ridership
1	6	3	0.14%
2	5	35	2.51%
3	3	1	0.03%
21/22	13	102	6.55%
37	18	16	1.93%
102X	4	1	1.05%
103X	5	4	4.21%
105X	2	14	12.61%
107X	4	6	6.32%

The FY2013 system-wide average daily ridership is 68,895. The percentage of total impact to system-wide ridership is .26%. Segment realignments to fixed routes provide service to previously unserved areas such as the Northern Arizona University Tucson Campus, Arizona State University College of Public Programs, Pima Community College Community Campus, City of Tucson Neighborhood Service, Carrington College, United Way of Tucson Volunteer Center and the retail/professional area called The Bridges.

*Impact per Public Comments:*

A review of public comments indicates that there is an overall resistance to change expressed by members of the public, some confusion whereby individuals indicate that service will be removed from areas where it is not proposed to be removed, and some confusion whereby individuals indicate a loss of access to a bus stop when the stop has alternative service being provided. Sun Tran recommends public education efforts for implementation of the proposed service plan to include an additional open house, revised Ride Guides detailing the schedules and route maps, flyers for the buses, website announcements and a hands-on trip planning forum open to the public to receive assistance toward determining the best route pattern and connections for any desired trips.

*Impact to Future Growth and Transit Needs:*

Due to budgetary constraints experienced over the past several years, requests by businesses for service enhancements to their new or potentially planned locations have not been possible. The recommended service plan enables the stabilization of the General Fund transit investment and through this stabilization the future potential to be financially capable to expand service to new major ridership destinations is increased.

The realignment of service frequencies and route segments to match market demand with growth potential increases the value of the system to the community by being mindful of the costs and benefits of the service to riders and non-riders alike.

# Recommended Service Plan

## Route 1 Glenn Street/ Swan Road

Route 1 operates north-south via Swan Road and east-west via Glenn Street between 22nd Street/Country Club Road and the downtown Ronstadt Transit Center.

### **Recommendation:**

Based on Route 1's ridership numbers collected from the Automated Passenger Counters and data collectors and its duplicative service with Route 17 along 29th Street, it is recommended that Route 1 is restructured to no longer operate between Country Club Road/ 22nd Street and 29th Street/Swan Road. All trips will operate between the downtown Ronstadt Transit Center and 29th Street/ Swan Road. This route segment elimination will result in financial savings. Current service along 29th St is duplicated by Rt. 17. Southbound buses will terminate at the U.S. Border Patrol entrance and utilize the designated U-turn at the Davis-Monthan Air Force Base, Swan Road Gate.

# Route 1 – Glenn Street/Swan Road

## Proposed Map Changes



# Recommended Service Plan

## Route 2 Pueblo Gardens

Route 2 serves the Pueblo Gardens neighborhood. The route operates east-west via Irvington Road and north-south via Country Club Road before it enters the Pueblo Gardens neighborhood. Route 2 exits the neighborhood and operates east-west via Silverlake Road and north-south via Park Avenue to the Ronstadt Transit Center

### **Recommendation:**

Based on Route 2's ridership numbers collected from the Automated Passenger Counters, data collector's passenger counts and running times, it is recommended that Route 2 be restructured through realignment, simplifying its routing through Pueblo Gardens. This re-alignment will decrease the travel time for customers riding through the neighborhood, increase the overall route productivity, and decrease its subsidy per passenger boardings. Another restructuring recommendation for Route 2 represents the new provision of service to a retail area, and future employment opportunities at the University of Arizona Biosciences Tech Park, currently unserved. This additional service is in response to previous customer requests for the service. The restructured addition is a realignment to include 36th Street from Kino Boulevard to S. 6th Avenue to Ronstadt Transit Center.



# Recommended Service Plan

## Route 3 6th Street/ Wilmot Road

Route 3 operates from Pima Community College West Campus via Anklam Road through the downtown Ronstadt Transit Center and operates east-west via 6th and 5th Streets, north-south via Wilmot Road and east-west via Stella Road to Pima Community College East Campus. Some peak period trips only operate as far east as Wilmot Road/Broadway Boulevard.

### Recommendation:

Restructure the Route 3 by splitting the existing Route 3 at the Downtown Ronstadt Transit Center:

- Route 3 (NEW) will operate between the downtown Ronstadt Transit Center and Pima Community College East Campus.
  - All trips operate through to Pima Community College East Campus instead of trips alternating between Wilmot Road/ Broadway and Pima Community College East Campus during peak periods.
  - Restructure service level to reflect market demand by changing the Peak period service to operate every 20 minutes instead of every 15 minutes.
- Route 28 (NEW) will operate between the downtown Ronstadt Transit Center and Pima Community College West Campus.
  - Restructure service level to reflect market demand by changing the Peak period frequency to operate every 30 minutes instead of every 15 minutes.

The recommendations are based upon market demand. The existing route has differing productivity levels along its segments. Separating this route enables different service levels along each segment, meeting the service needs in a more productive manner.

# Route 3 – 6th Street/Wilmot Road

## Proposed Map Changes



# Recommended Service Plan

## Route 4 Speedway Boulevard

Route 4 operates from the downtown Ronstadt Transit Center and operates east-west via Speedway Boulevard to Kolb Road where the route branches. One branch continues to operate east-west via Speedway Boulevard to Harrison Road. The other branch operates north-south via Kolb Road to Golf Links Road.

### **Recommendation:**

Adjust service levels to reflect market demand. This will result in increasing productivity and decreasing the subsidy per passenger.

Weekdays:

- Operate trunk service every 15 minutes during peak periods instead of every 10 minutes.
  - Operate service on the branches every 30 minutes during peak periods instead of every 20 minutes.
- Operate trunk service every 10 minutes during the midday instead of every 15 minutes.
  - Operate service on the branches every 20 minutes during the midday instead of every 30 minutes.

# Recommended Service Plan

## Route 6 S Park Avenue/ N 1st Avenue

Route 6 operates north-south along S Park Avenue, N Euclid Avenue and N 1st Avenue between the Tohono Tadaï Transit Center and Tucson International Airport. Some trips end at the Roy Laos Transit Center.

### Recommendation:

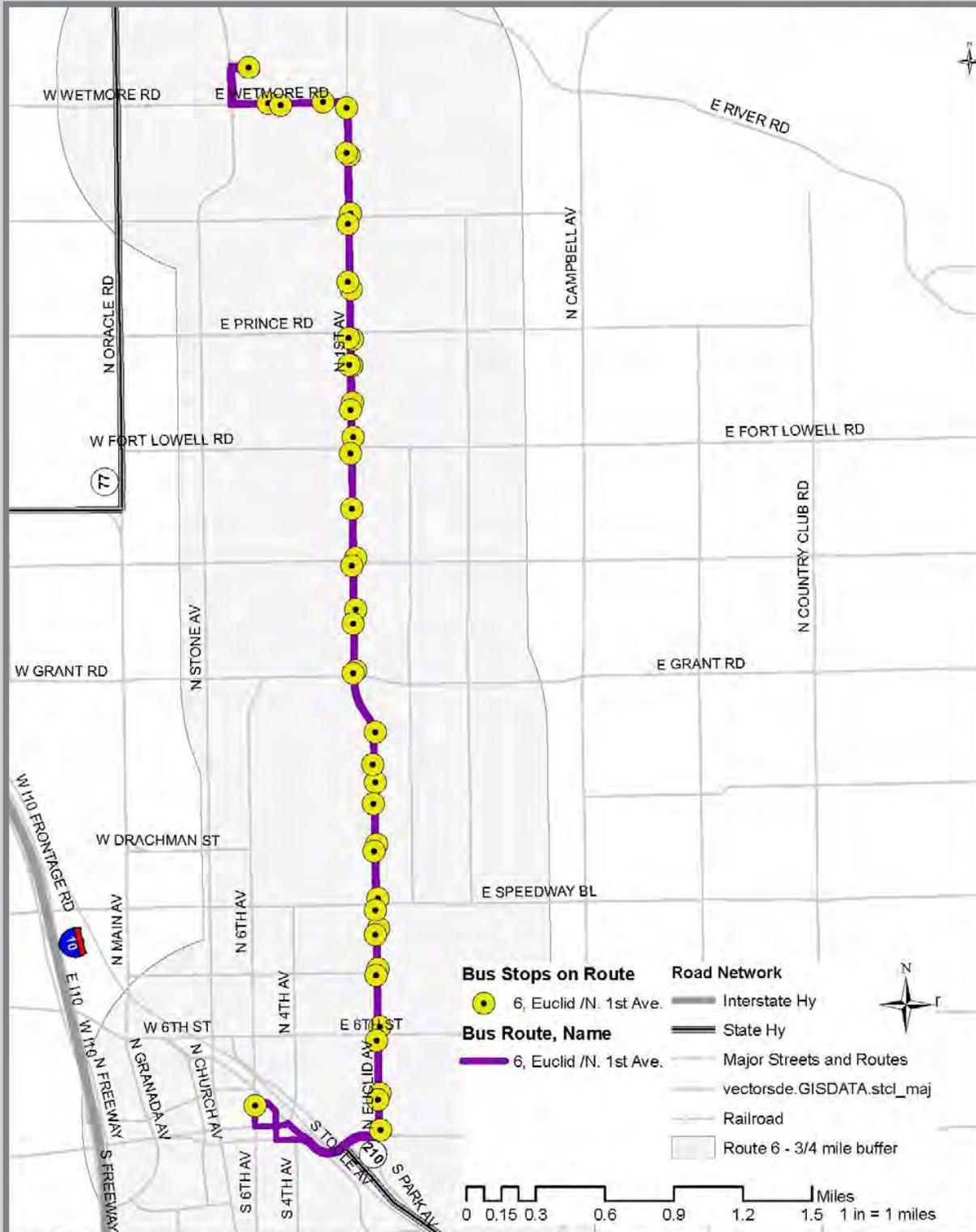
Restructure route by splitting existing Route 6 at the downtown Ronstadt Transit Center and restructure the service levels of the two:

- Route 6 (NEW) will operate between downtown Ronstadt Transit Center and Tohono Tadaï Center.
- Route 25 (New) will operate between downtown Ronstadt Transit Center and the Tucson International Airport.
  - Saturday and Sunday some trips will only operate between downtown Ronstadt Transit Center and the Roy Laos Transit Center.

Using Automated Passenger Counter and data collector ridership data, market demand was determined to be greater on the portion north of downtown (Rt. 6). The dividing of the route will allow for weekday 15 minute peak hour frequency north of downtown and 30 minute all day frequency south (Rt. 25) to reflect market demand. Weekend frequencies will remain the same. The recommendation will improve route productivity resulting in lowering the subsidy per passenger boarding.

# Route 6 – S Park Avenue/N 1st Avenue

## Proposed Map Changes



# Recommended Service Plan

## Route 7 22nd Street

Route 7 operates north-south via 10th Avenue and east-west via 22nd Street between downtown Ronstadt Transit Center and Harrison Road.

### **Recommendation:**

Weekdays:

- Restructure service levels to reflect market demand. Operate service every 20 minutes instead of every 15 minutes from the start of service until 1:00pm and again from 3:00pm until 6:00pm.

# Recommended Service Plan

## Route 8 Broadway/ S 6th Avenue

Route 8 serves two major corridors in Tucson and South Tucson. The route operates north-south along S 6th Avenue between Roy Laos Transit Center and downtown Ronstadt Transit Center. From Ronstadt, the route operates east-west along via Broadway Boulevard where it splits into two branches at Wilmot Road. One branch continues to operate east-west on Broadway Boulevard to Speedway Boulevard/ Harrison Rd while the other operates north-south on Wilmot Road to Lee Street.

### Recommendation:

Restructure route by splitting existing Route 8 at downtown Ronstadt Transit Center: Demand for service on Broadway Boulevard and S. 6th Avenue are markedly different with S. 6th Avenue being the higher of the two. Separating the route will allow service levels along each segment to differ and to reflect market demand.

- Route 8 (NEW) operates between downtown Ronstadt Transit Center and either Wilmot Road/Lee St or Speedway Boulevard/Harrison Road.
  - Service on the trunk will operate every 15 minutes between downtown Ronstadt Transit Center and Wilmot Road/ Broadway from the start of service until 11:30am and from 4:30pm until 7:00pm.
    - Service on the branches north of Wilmot Road to Wilmot/Lee, and east to Speedway Boulevard/Harrison Road will operate every 30 minutes during those periods.
      - ~ Additional service will be provided on Route 108X to Speedway Boulevard/Harrison Road.
  - Service on the trunk will operate every 10 minutes between Ronstadt Transit Center and Wilmot Road/ Broadway from 11:30am until 4:30pm.
    - Service on the branches north of Wilmot Road to Wilmot Road/Lee Street and east to Speedway Boulevard/Harrison Road will operate every 20 minutes from 11:30am until 4:30pm.
- Route 18 (NEW) operates between downtown Ronstadt Transit Center and Roy Laos Transit Center.
  - Service will operate every 15 minutes from the start of service until 8:00am and from 6:00pm until 7:00pm weekdays.
  - Service will operate every 7-10 minutes from 8:00am until 6:00pm.

# Route 8 – Broadway/S 6th Avenue

## Proposed Map Changes



# Recommended Service Plan

## Route 9 Grant Road

Route 9 operates east-west via 6th St, north-south via Campbell Road and again east-west via Grant between downtown Ronstadt Transit Center and Tanque Verde Road/Sabino Canyon Road.

### **Recommendation:**

Restructure the Routes 9 and 20 by combining them.

To address overlap with the Sun Link Streetcar, Route 9 is recommended to merge with Route 20 and operate Grant Road from Tanque Verde/Sabino Canyon to Ironwood Hill/Sterling Apts.

Service will operate every 30 minutes weekdays and hourly weeknights and on weekends. Direct service to the UA and downtown Tucson will no longer be provided. Customers wishing to travel to UA will have to ride an expanded Route 109X or continue riding a Route 9 and transfer at Campbell Avenue to the Route 15. Customers wishing to travel downtown will have to ride Route 109X or transfer to Route 16 at Oracle Road, Route 19 at Stone Avenue, or connect to the Sun Link streetcar after transferring to reach UA.

# Route 9 – Grant Road

## Proposed Map Changes



# Recommended Service Plan

## Route 11 Alvernon Way

Route 11 operates north-south via Alvernon Way from Dodge Road/ River Road to Ajo Way. At Ajo Way, the route branches and operates east-west via Ajo Way to the Roy Laos Transit Center or via Alvernon Way to Tucson International Airport.

Route 50 operates north-south via 6th Avenue and east-west via Ajo Way.

### Recommendation:

- Based on Route 50's ridership numbers collected from the Automated Passenger Counters and data collectors, it is recommended that Route 50 be merged with the Ajo Way branch of Route 11 to create an Ajo Way crosstown route that does not operate into Roy Laos Transit Center. Routes 2, 8, 16, and 23 all transfer to and from Routes 8 and 50 on Ajo Way. Each of those routes goes to Roy Laos Transit Center. Elimination of service to Roy Laos Transit Center will result in financial efficiencies while still giving passengers wishing to travel to the center options to get there.
- Service on the trunk will operate every 15 minutes between Dodge Road/River Road and Ajo Way/Palo Verde Way from the start of service until 12:00pm and from 4:00pm until 7:00pm.
  - Service on the branches south and west of Ajo Way/Palo Verde Way will operate every 30 minutes during those periods.
- Service on the trunk will operate every 10 minutes between Dodge Road/River Road and Ajo Way/Palo Verde Way between 12:00pm and 4:00pm.
  - Service on the branches south and west of Ajo Way/Palo Verde Way will operate every 20 minutes during those periods.



# Recommended Service Plan

## Route 12 12th Avenue

Route 16 operates between Roy Laos Transit Center and Ina Road/Thornydale Road. Route 16 operates north-south along S 12th Avenue and Oracle Road and east-west via Ina Road. Every other trip operates between Roy Laos Transit Center and Tohono Tadaï Transit Center.

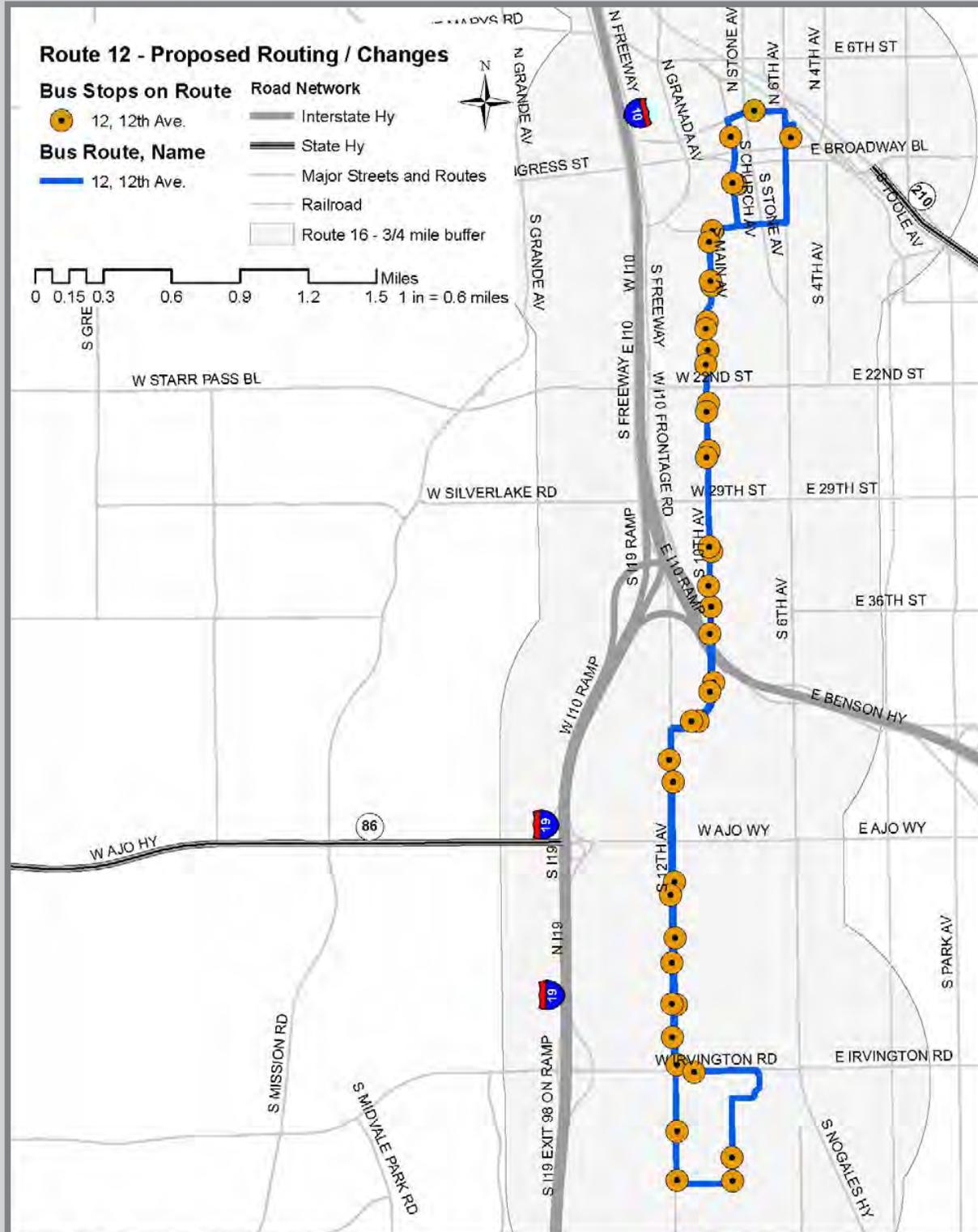
### Recommendation:

Restructure routing by splitting existing Route 16 at the Tohono Transit Center: Restructure service to reflect market demand. Demand for service on S. 10th/12th Avenue and Oracle Road are markedly different with Oracle being the higher of the two. Separating the route will allow establishing service levels along each segment separately to reflect market demand upon each.

- Route 12 (NEW) operates between Roy Laos Transit Center and downtown Ronstadt Transit Center.
  - Operate Route 12 every 15 minutes, weekdays.
  - Operate Route 12 every 30 minutes on weekends.
- Route 16 (NEW) operates between downtown Ronstadt Transit Center and Tohono Tadaï Transit Center or Ina Road/Thornydale Road.
  - Operate Route 16 during peak periods every 15 minutes.
  - Operate Route 16 during the midday every 7.5-10 minutes.
  - Operate Route 16 between 10:00am and 4:00pm on Saturdays every 20 minutes.

# Route 12 – 12th Avenue

## Proposed Map Changes



# Recommended Service Plan

## Route 15 Campbell Avenue

Route 15 operates north-south via Campbell Avenue and Stone Avenue between 22nd Street/Country Club Road and the Tohono Tadaí Transit Center. Every other trip during peak periods and midday on weekdays operates between the University of Arizona Mall and the Tohono Tadaí Transit Center.

### **Recommendation:**

Based on Route 15's ridership numbers collected from the Automated Passenger Counters and data collectors, it is recommended that service levels be restructured with the frequency being reduced to 20 minutes, which reflects demand.

#### Weekdays:

- Operate all trips to Country Club Road/22nd Street.
- Operate peak period service every 20 minutes instead of every 15 minutes.
- Operate midday service every 20 minutes instead of every 15 minutes.

# Recommended Service Plan

## Route 16 Oracle Road/ 12th Avenue

Route 16 operates between Roy Laos Transit Center and Ina Road/Thornydale Road. Route 16 operates north-south along S 12th Avenue and Oracle Road and east-west via Ina Road. Every other trip operates between Roy Laos Transit Center and Tohono Tadaí Transit Center.

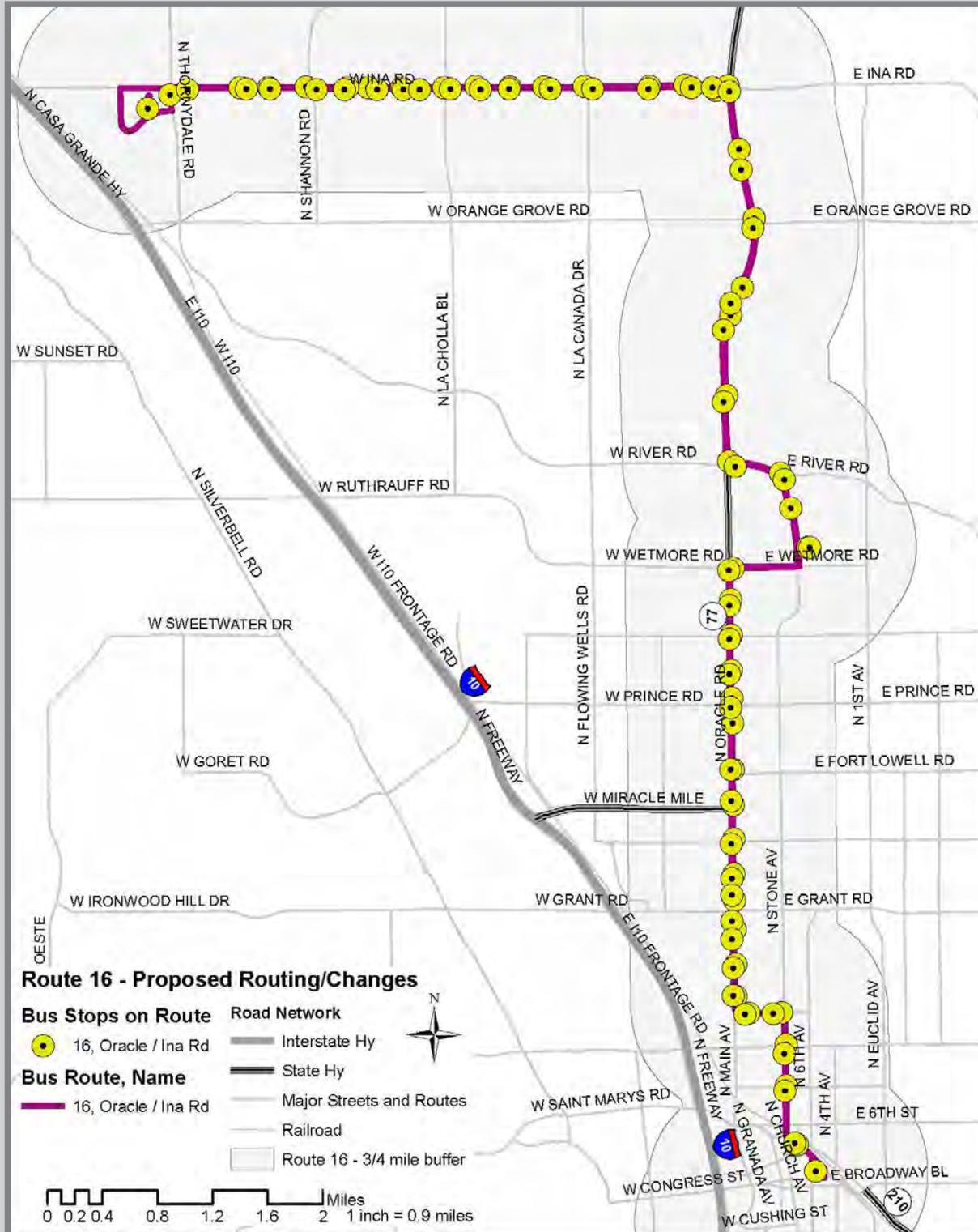
### Recommendation:

Restructure routing by splitting existing Route 16 at the Tohono Transit Center: Restructure service to reflect market demand. Demand for service on S. 10th/12th Avenue and Oracle Road are markedly different with Oracle being the higher of the two. Separating the route will allow establishing service levels along each segment separately to reflect market demand upon each.

- Route 16 (NEW) operates between downtown Ronstadt Transit Center and Tohono Tadaí Transit Center or Ina Road/Thornydale Road.
  - Operate Route 16 during peak periods every 15 minutes.
  - Operate Route 16 during the midday every 7.5-10 minutes.
  - Operate Route 16 between 10:00am and 4:00pm on Saturdays every 20 minutes.
- Route 12 (NEW) operates between Roy Laos Transit Center and downtown Ronstadt Transit Center.
  - Operate Route 12 every 15 minutes, weekdays.
  - Operate Route 12 every 30 minutes on weekends.

# Route 16 – Oracle Road/12th Avenue

## Proposed Map Changes



# Recommended Service Plan

## Route 18 S 6th Avenue

Route 8 serves two major corridors in Tucson and South Tucson. The route operates north-south along S 6th Avenue between Roy Laos Transit Center and downtown Ronstadt Transit Center. From Ronstadt, the route operates east-west along via Broadway Boulevard where it splits into two branches at Wilmot Road. One branch continues to operate east-west on Broadway Boulevard to Speedway Boulevard/ Harrison Rd while the other operates north-south on Wilmot Road to Lee Street.

### Recommendation:

Restructure route by splitting existing Route 8 at downtown Ronstadt Transit Center: Demand for service on Broadway Boulevard and S. 6th Avenue are markedly different with S. 6th Avenue being the higher of the two. Separating the route will allow service levels along each segment to differ and to reflect market demand.

- Route 8 (NEW) operates between downtown Ronstadt Transit Center and either Wilmot Road/Lee St or Speedway Boulevard/Harrison Road.
  - o Service on the trunk will operate every 15 minutes between downtown Ronstadt Transit Center and Wilmot Road/ Broadway from the start of service until 11:30am and from 4:30pm until 7:00pm.
    - Service on the branches north of Wilmot Road to Wilmot/Lee, and east to Speedway Boulevard/Harrison Road will operate every 30 minutes during those periods.
      - ~ Additional service will be provided on Route 108X to Speedway Boulevard/Harrison Road.
  - o Service on the trunk will operate every 10 minutes between Ronstadt Transit Center and Wilmot Road/ Broadway from 11:30am until 4:30pm.
    - Service on the branches north of Wilmot Road to Wilmot Road/Lee Street and east to Speedway Boulevard/Harrison Road will operate every 20 minutes from 11:30am until 4:30pm.
- Route 18 (NEW) operates between downtown Ronstadt Transit Center and Roy Laos Transit Center.
  - o Service will operate every 15 minutes from the start of service until 8:00am and from 6:00pm until 7:00pm weekdays.
  - o Service will operate every 7-10 minutes from 8:00am until 6:00pm.



# Recommended Service Plan

## Route 20 West Grant Road

Route 20 operates north-south via Campbell Road and east-west Grant Road between the University of Arizona Mall and Sterling University Villas.

### **Recommendation:**

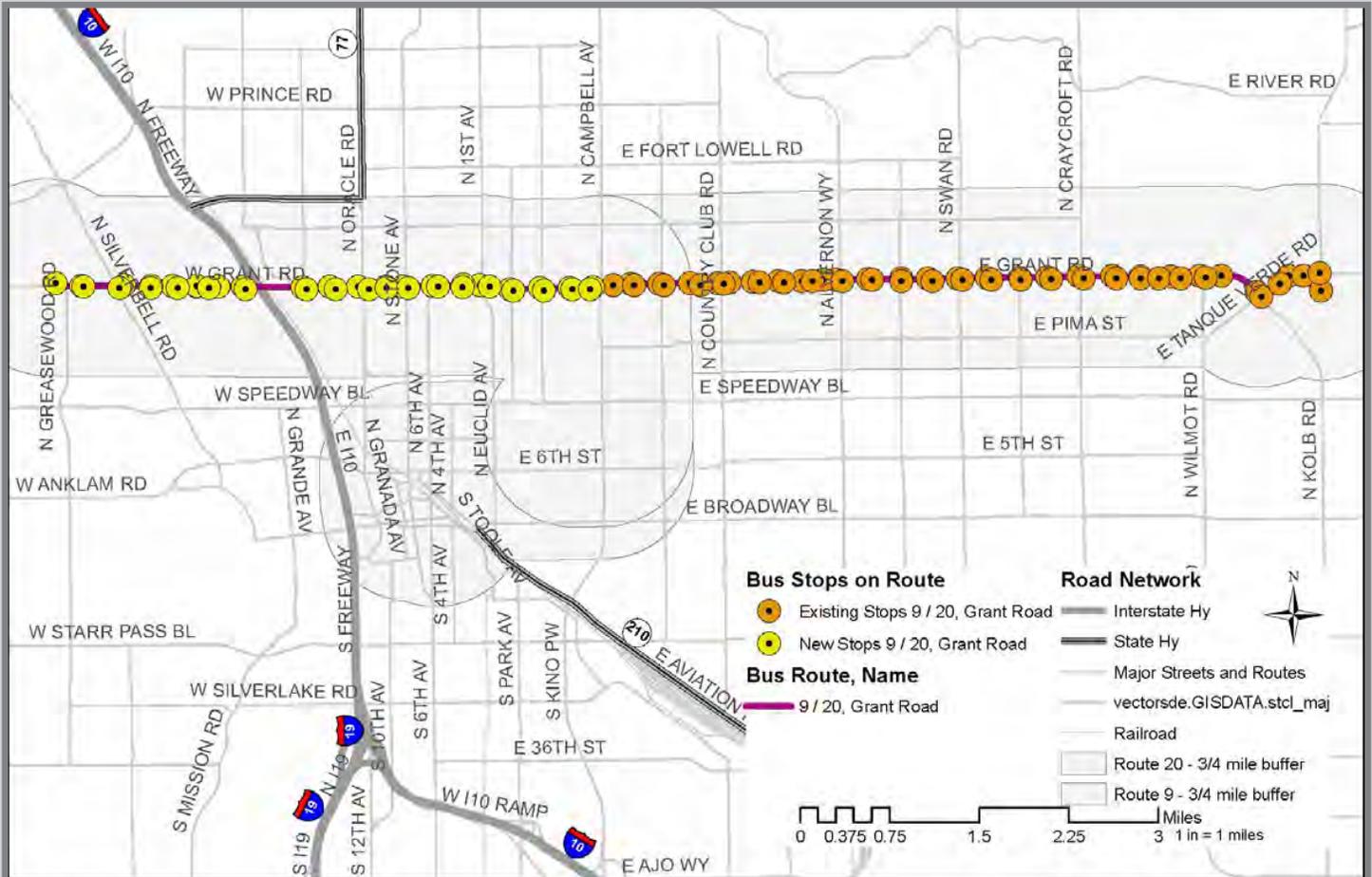
Restructure the Routes 9 and 20 by combining them.

To address overlap with the Sun Link Streetcar, Route 20 is recommended to merge with Route 9 and operate Grant Road from Tanque Verde/Sabino Canyon to Ironwood Hill/Sterling Apts.

Service will operate every 30 minutes weekdays and hourly weeknights and on weekends. Direct service to the UA and downtown Tucson will no longer be provided. Customers wishing to travel to UA will have to ride an expanded Route 109X or continue riding a Route 9 and transfer at Campbell Avenue to the Route 15. Customers wishing to travel downtown will have to ride Route 109X or transfer to Route 16 at Oracle Road, Route 19 at Stone Avenue, or connect to the Sun Link streetcar after transferring to reach UA.

# Route 20 – West Grant Road

## Proposed Map Changes



# Recommended Service Plan

## Route 21 Silverbell Road

Route 21 operates east-west via Congress Boulevard and north-south via Silverbell Road between downtown Ronstadt Transit Center and Dales Crossing Drive at Goret Road/ Silverbell Road.

Route 22 operates east-west via Congress Boulevard and north-south on Grande Avenue and El Rio Road between downtown Ronstadt Transit Center and Grant Road/ Silverbell Road.

### **Recommendation:**

Based on Route 21 and Route 22's ridership numbers collected from the Automated Passenger Counters, data collectors, and its duplicative service with each other, restructured routing is recommended to merge Route 21 with the Route 22. The combined route will operate over the segments of both previous routes with higher ridership. The combination of the two routes will improve productivity resulting in a lower subsidy per passenger boarding. The new combined route will also serve Pima Community College, Community Campus and the City of Tucson, Community Resource Center on Bonita Avenue.

### Weekdays:

- Operate the merged route every 30 minutes during peak periods and middays, hourly during the evenings.

### Weekends:

- Operate the merged route hourly throughout its service.



# Recommended Service Plan

## Route 22 Grande Avenue

Route 21 operates east-west via Congress Boulevard and north-south via Silverbell Road between downtown Ronstadt Transit Center and Dales Crossing Drive at Goret Road/ Silverbell Road.

Route 22 operates east-west via Congress Boulevard and north-south on Grande Avenue and El Rio Road between downtown Ronstadt Transit Center and Grant Road/ Silverbell Road.

### **Recommendation:**

Based on Route 21 and Route 22's ridership numbers collected from the Automated Passenger Counters, data collectors, and its duplicative service with each other, restructured routing is recommended to merge Route 21 with the Route 22. The combined route will operate over the segments of both previous routes with higher ridership. The combination of the two routes will improve productivity resulting in a lower subsidy per passenger boarding. The new combined route will also serve Pima Community College, Community Campus and the City of Tucson, Community Resource Center on Bonita Avenue.

### Weekdays:

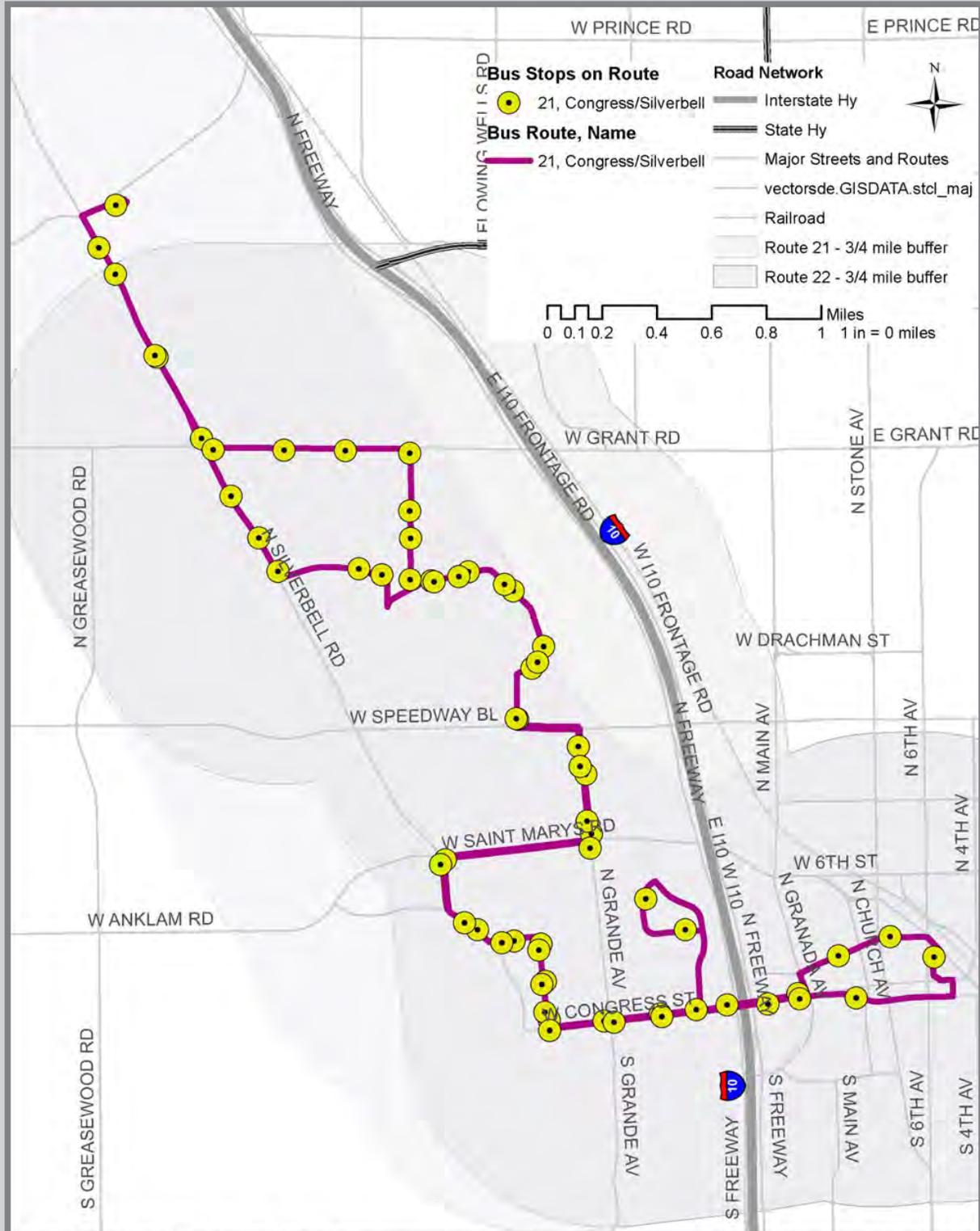
- Operate the merged route every 30 minutes during peak periods and middays, hourly during the evenings.

### Weekends:

- Operate the merged route hourly throughout its service.

# Route 22 – Grande Avenue

## Proposed Map Changes



# Recommended Service Plan

## Route 25 S Park Avenue

Route 6 operates north-south along S Park Avenue, N Euclid Avenue and N 1st Avenue between the Tohono Tadaï Transit Center and Tucson International Airport. Some trips end at the Roy Laos Transit Center.

### **Recommendation:**

Restructure route by splitting existing Route 6 at the downtown Ronstadt Transit Center and restructure the service levels of the two:

- Route 6 (NEW) will operate between downtown Ronstadt Transit Center and Tohono Tadaï Center.
- Route 25 (NEW) will operate between downtown Ronstadt Transit Center and Tucson International Airport.
  - Some trips will only operate between downtown Ronstadt Transit Center and the Roy Laos Transit Center.

Using Automated Passenger Counter and data collector ridership data, market demand was determined to be greater on the portion north of downtown (Rt. 6). The dividing of the route will allow for weekday 15 minute peak hour frequency north of downtown and 30 minute all day frequency south (Rt. 25) to reflect market demand. Weekend frequencies will remain the same. The recommendation will improve route productivity resulting in lowering the subsidy per passenger boarding.

# Route 25 – S Park Avenue

## Proposed Map Changes



# Recommended Service Plan

## Route 26 Benson Highway

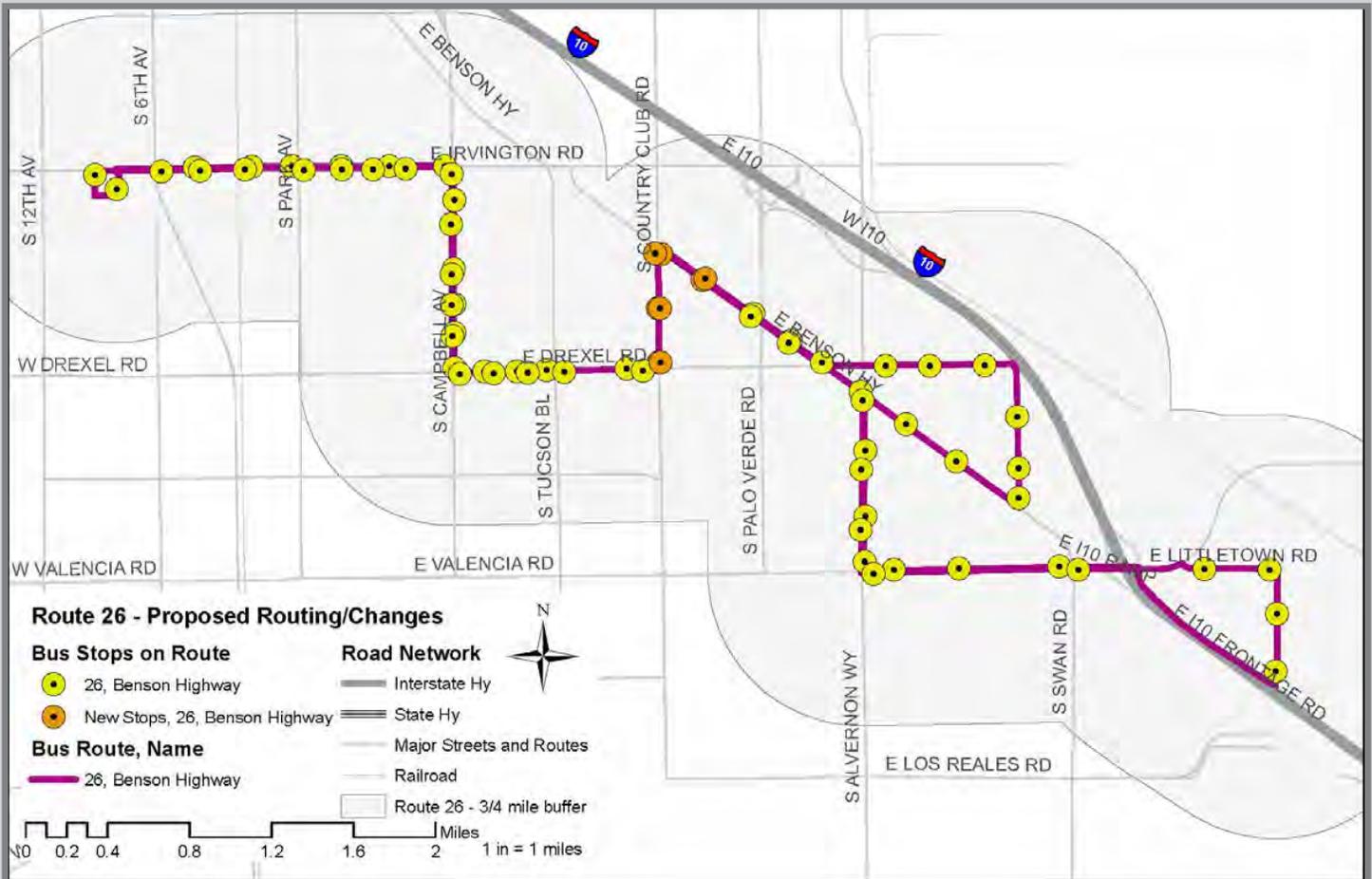
Route 26 operates via Benson Highway between Roy Laos Transit Center and Craycroft Road/Benson Highway.

### **Recommendation:**

Operate route via Country Club Road between Drexel Road and Benson Hwy instead of Masterson Avenue. This restructure in routing addresses a safety and operational issue. Traveling on Country Club will alleviate the concern.

# Route 26 – Benson Highway

## Proposed Map Changes



# Recommended Service Plan

## Route 27 Midvale Park

Route 27 operates north-south via Santa Clara Avenue, Midvale Park Road and Cardinal Avenue and east-west via Valencia Road and Drexel Road. Route 27 operates between Roy Laos Transit Center and Casino Del Sol.

### Recommendation:

Weekdays:

- Restructure service level to reflect market demand. Due to low ridership, it is recommended that peak service operate every 30 minutes instead of every 15 minutes.

# Recommended Service Plan

## Route 28 St. Mary's Road

Route 3 operates from Pima Community College West Campus via Anklam Road through the downtown Ronstadt Transit Center and operates east-west via 6th and 5th Streets, north-south via Wilmot Road and east-west via Stella Road to Pima Community College East Campus. Some peak period trips only operate as far east as Wilmot Road/Broadway Boulevard.

### Recommendation:

Restructure the Route 3 by splitting the existing Route 3 at the Downtown Ronstadt Transit Center:

- Route 3 (NEW) will operate between the downtown Ronstadt Transit Center and Pima Community College East Campus.
  - All trips operate through to Pima Community College East Campus instead of trips alternating between Wilmot Road/ Broadway and Pima Community College East Campus during peak periods.
  - Restructure service level to reflect market demand by changing the Peak period service to operate every 20 minutes instead of every 15 minutes.
- Route 28 (NEW) will operate between the downtown Ronstadt Transit Center and Pima Community College West Campus.
  - Restructure service level to reflect market demand by changing the Peak period frequency to operate every 30 minutes instead of every 15 minutes.

The recommendations are based upon market demand. The existing route has differing productivity levels along its segments. Separating this route enables different service levels along each segment, meeting the service needs in a more productive manner.

# Route 28 – St. Mary’s Road Proposed Map Changes



# Recommended Service Plan

## Route 34 Craycroft Road/ Fort Lowell Road

Route 34 operates north-south via 1st Avenue and Craycroft Road and east-west via Fort Lowell Road.

### **Recommendation:**

Restructure routing by removing route from local streets at Craycroft Road/30th Street, maintain northbound trip on a major street, Craycroft Road; and complete route recovery time at designated bus pullout on Craycroft Road at 29th Street. The segment to be removed is a turnaround that is no longer needed. Based on Route 34's ridership numbers collected from the Automated Passenger Counters, restructuring the service level to reflect market demand is recommended. Operate Route 34 every 20 minutes from 1:00pm until 4:00pm.

### Weekdays:

- Operate Route 34 every 20 minutes instead of every 30 minutes between 1:00pm and 4:00pm.

# Route 34 – Craycroft Rd./Fort Lowell Rd. Proposed Map Changes



# Recommended Service Plan

## Route 37 Pantano Road

Route 37 operates north-south via Pantano Road between Pima Community College East and Cloud Road/ Pantano Road.

### **Recommendation:**

Based on passenger boarding data collected from the Automated Passenger Counters and data collectors, routing restructuring is recommended that service along an unproductive segment of the route be discontinued. The recommended discontinued segment is from north of Tanque Verde Road along Sabino Canyon Road to Cloud Road/Pantano Road. All trips will operate between Tanque Verde/Sabino Canyon and Pima Community College East Campus. The recommendation will improve the route productivity resulting in a lower subsidy per passenger boarding.

# Route/Ruta 37 – Pantano Road

## Proposed Map Changes/Propuesta de Cambios a Mapa



# Recommended Service Plan

## Route 50 Alvernon Way

Route 11 operates north-south via Alvernon Way from Dodge Road/ River Road to Ajo Way. At Ajo Way, the route branches and operates east-west via Ajo Way to the Roy Laos Transit Center or via Alvernon Way to Tucson International Airport.

Route 50 operates north-south via 6th Avenue and east-west via Ajo Way.

### Recommendation:

- Based on Route 50's ridership numbers collected from the Automated Passenger Counters and data collectors, it is recommended that Route 50 be merged with the Ajo Way branch of Route 11 to create an Ajo Way crosstown route that does not operate into Roy Laos Transit Center. Routes 2, 8, 16, and 23 all transfer to and from Routes 8 and 50 on Ajo Way. Each of those routes goes to Roy Laos Transit Center. Elimination of service to Roy Laos Transit Center will result in financial efficiencies while still giving passengers wishing to travel to the center options to get there.
- Service on the trunk will operate every 15 minutes between Dodge Road/River Road and Ajo Way/Palo Verde Way from the start of service until 12:00pm and from 4:00pm until 7:00pm.
  - Service on the branches south and west of Ajo Way/Palo Verde Way will operate every 30 minutes during those periods.
- Service on the trunk will operate every 10 minutes between Dodge Road/River Road and Ajo Way/Palo Verde Way between 12:00pm and 4:00pm.
  - Service on the branches south and west of Ajo Way/Palo Verde Way will operate every 20 minutes during those periods.

# Route/Ruta 50 – Alvernon Way

## Proposed Map Changes/Propuesta de Cambios a Mapa



# Recommended Service Plan

## Route 102X Golf Links- Downtown Express

Route 102X operates east-west via Ina Road and Speedway Boulevard and north-south via I-10 to downtown Tucson and the University of Arizona.

### **Recommendation:**

Based on Route 102X's ridership numbers collected from the Automated Passenger Counters and data collectors, restructured routing is recommended to discontinue service along an unproductive segment. It is recommended that Route 102X operate between Foothills Mall and University of Arizona Hospital. Service along the recommended discontinued segment is provided by the Route 103X. The recommendation reflects market demand and increases route productivity by removing segments of duplicated service.

# Route 102X – Northwest-UA Express

## Proposed Map Changes



# Recommended Service Plan

## Route 103X Northwest-Downtown Express

Route 103X operates east-west via Ina Road and Speedway Boulevard and north-south via Oracle Road and Campbell Avenue to the University of Arizona and downtown Tucson.

### **Recommendation:**

Based on Route 103X's ridership numbers collected from the Automated Passenger Counters and data collectors, it is recommended that service levels be restructured to reflect market demand. Route 103X be realigned to operate from Rancho Vistoso Park & Ride to Foothills Mall where it will continue via Ina Road and River Road to 1st Avenue (Euclid) to Speedway Boulevard where it will terminate at the University of Arizona Mall. Route 103X will no longer duplicate Routes 15 and 102X. It is also recommended that the service level be restricted to reflect market demand, with Route 103X only operating three trips in both directions instead of four. The recommendations increase route productivity by removing segments of duplicated service and adjusting service frequency.



# Recommended Service Plan

## Route 105X Foothills-Downtown Express

Route 105X operates east-west via Sunrise Drive and Speedway Boulevard and north-south via Swan Road to the University of Arizona and downtown Tucson.

### **Recommendation:**

Based on Route 105X's ridership numbers collected from the Automated Passenger Counters and data collectors, restructured routing is recommended to discontinue service along an unproductive segment. The recommendation is that Route 105X no longer serve the Kolb Road/ Sunrise Drive stops. The recommendation will improve the route productivity resulting in a lower subsidy per passenger boarding.

# Route 105X – Foothills- Downtown Express

## Proposed Map Changes



# Recommended Service Plan

## Route 107X Oro Valley-Downtown Express

Route 107 operates north-south via Oracle Road and Stone Avenue between Oro Valley and Downtown Tucson.

### **Recommendation:**

Restructure the routing of the 107X between Rancho Vistoso Park & Ride and Orange Grove Road/ Oracle Road to serve current Route 312X stops between Lambert Road and Orange Grove Road. The restructured routing will also be discontinued along a segment to be operated by another route to avoid duplication. The segment of the existing route along Lambert and La Canada will be operated by Route 103X.

# Route 107X – Oro Valley-Downtown Express

## Proposed Map Changes



# Recommended Service Plan

## Route 108X Broadway-Downtown Express

Route 108X operates via Broadway Boulevard between Speedway Boulevard and Harrison Road and downtown Tucson.

### **Recommendation:**

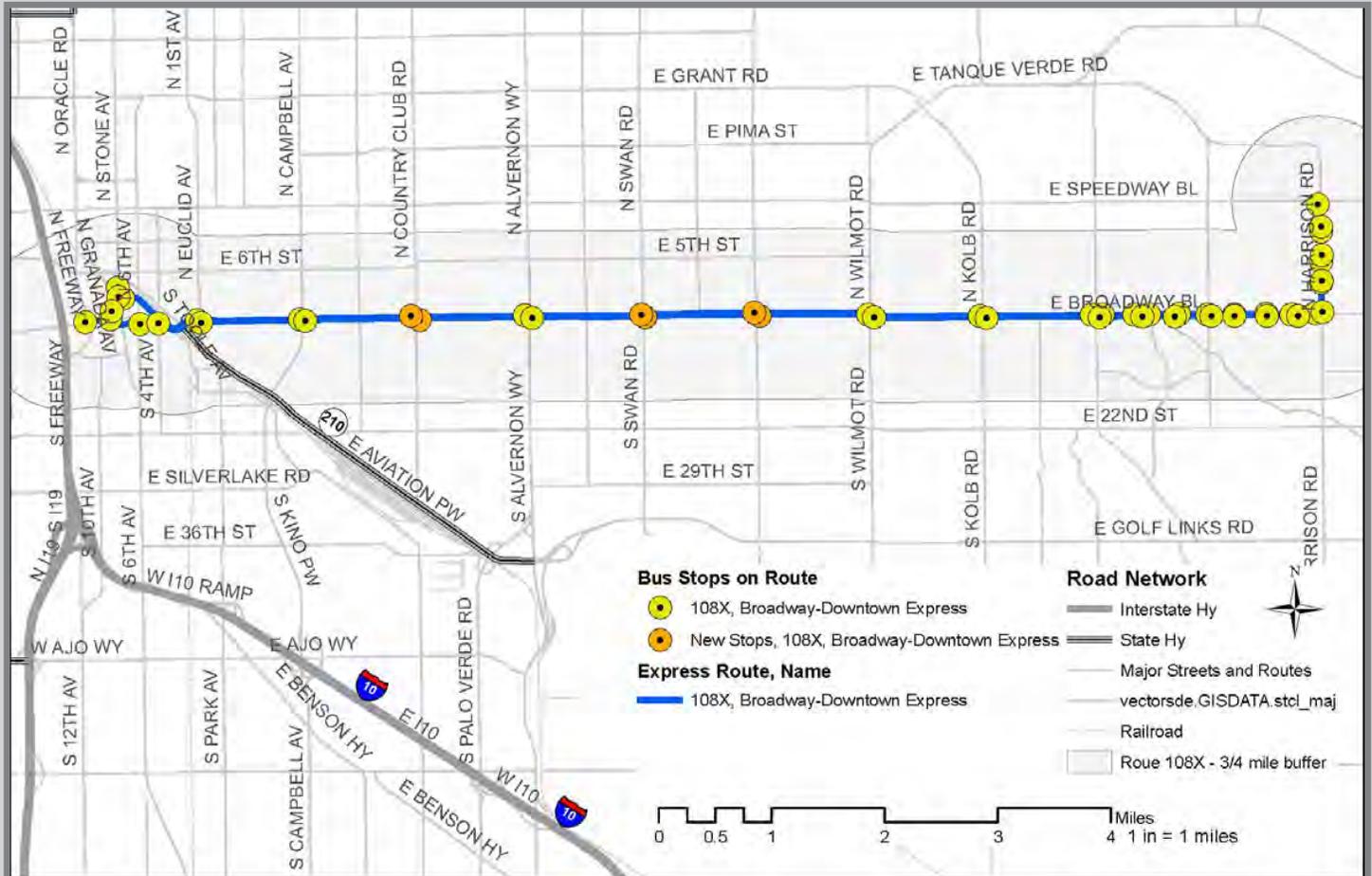
Based on Route 108X's ridership numbers collected from the Automated Passenger Counters and data collectors, coupled with the fact that service is duplicated by the Route 8, consideration was given for the discontinuance of this route. However, as part of the short-term recommendations, efforts could be made to improve the overall productivity of the route. It is recommended that changes be made in the stop locations for the Route 108X to attract more riders. It is also recommended to restructure the service times so that they differ from the Broadway Boulevard local Route 8.

### Additional Stops:

- Broadway /Country Club Road
- Broadway /Swan Road
- Broadway /Craycroft Road

# Route 108X – Broadway-Downtown Express

## Proposed Map Changes



# Recommended Service Plan

## Route 109X Catalina Highway- Downtown Express

Route 109X operates east-west via Catalina Highway and Speedway Boulevard between Bear Canyon Road/Tanque Verde Road and downtown Tucson.

### Recommendation:

It is recommended that routing be restructured to discontinue service along a segment of the Route 109X, from Catalina Highway to Wrightstown Road/ Pantano Road. The recommendation is made to address operational concerns due to a lack of a Park & Ride (or other suitable bus turn-around point) at Catalina Highway. Route 109X will operate via Wrightstown Road to Tanque Verde Road to Grant Road to Campbell Avenue where it will resume its current routing from Speedway Boulevard/ Campbell Avenue into downtown Tucson.

### Additional Stops:

- Wrightstown Road/Pantano Road
- Grant Road/Alvernon Way
- Grant Road/Country Club Road
- Grant Road/Campbell Avenue

### Additional Bus/Rail Interface recommendations:

The Route 109X is recommended to have expanded service hours and operate in the reverse peak direction. Current service allows for three (3) morning and three (3) afternoon trips. Proposed service will offer four (4) morning round trips and six (6) afternoon round trips. The larger number of trips in the afternoon is due to a longer period of high demand in the afternoon. The COA already recommended making additional stops on Route 109X to attract additional customers. The new routing will have bus stops on all east bound trips to mirror the west bound trips.

# Route/Ruta 109X – Catalina Hwy-Downtown Express

## Proposed Map Changes/Propuesta de Cambios a Mapa



# Recommended Service Plan

## Route 110X Rita Ranch- Downtown Express

Route 110X operates via Rita Road and I-10 between Rita Ranch and downtown Tucson.

### **Recommendation:**

No recommendations are made to restructure routing or service levels. It is recommended to adjust the time of the trips provided to improve connections with the northbound trips from other express routes in downtown Tucson.

# Recommended Service Plan

## Route 202X Northwest- Aero Park Express

Route 202X operates north-south on La Cholla Boulevard then east-west on Ina Road and north-south via I-10, I-19, and Nogales Highway between Tucson and AeroPark Boulevard and Raytheon. Route 202X makes an additional stop outside Roy Laos Transit Center.

### **Recommendation:**

Based on Route 202X and 203X's passenger boarding data from the Automated Passenger Counters and data collectors, route restructuring is recommended to combine the two routes. It is recommended that Route 202X no longer operates via the lightest used segment along La Cholla Boulevard and instead is merged with Route 203X north of Ina Road. Route 203X would be discontinued. The segment of Route 203X which would be discontinued is an area where there are no current stops, Ina Road and Irvington Road. This recommendation will improve the route productivity resulting in a lower subsidy per passenger boarding.

# Route 202X – Northwest-Aero Park Express

## Proposed Map Changes



# Recommended Service Plan

## Route 203X Oro Valley- Aero Park Express

Route 203X operates via Rancho Vistoso, east-west via Orange Grove and north-south via I-10, I-19 and Nogales Highway between Oro Valley and AeroPark Boulevard and Raytheon. Route 203X makes an additional stop outside Roy Laos Transit Center.

### **Recommendation:**

Based on Route 202X and 203X's passenger boarding data from the Automated Passenger Counters and data collectors, route restructuring is recommended to combine the two routes. It is recommended that Route 202X no longer operates via the lightest used segment along La Cholla Boulevard and instead is merged with Route 203X north of Ina Road. Route 203X would be discontinued. The segment of Route 203X which would be discontinued is an area where there are no current stops, Ina Road and Irvington Road. This recommendation will improve the route productivity resulting in a lower subsidy per passenger boarding.



# Recommended Service Plan

## Route 312X Oro Valley- Tohono Express

Route 312X operates north-south via Oracle Road between Oro Valley and the Tohono Transit Center.

### **Recommendation:**

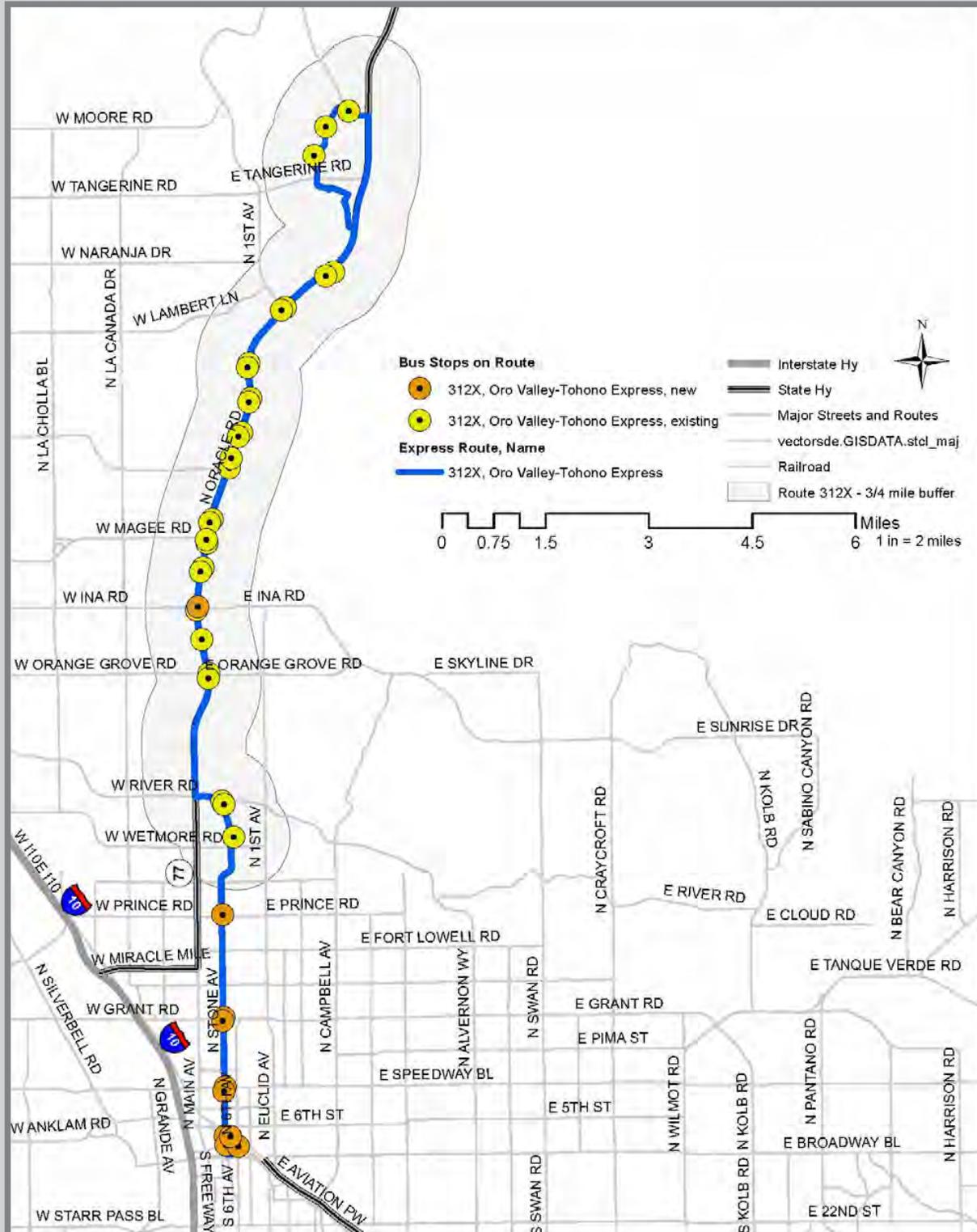
Based on Route 312X's ridership numbers collected from the Automated Passenger Counters and data collectors, restructured routing is recommended to extend the route south from the Tohono Tadaí Transit Center to the downtown Ronstadt Transit Center. Route 312X will begin service northbound in the morning from downtown on Stone Avenue to Tohono Tadaí Transit Center and north along Oracle to Rancho Vistoso Park and Ride. Afternoon service would travel southbound utilizing the opposite of the morning route. This service will allow passengers currently riding Route 312X in the reverse commute to continue to ride Sun Tran. For southbound service in the morning and northbound service in the afternoon, passengers may use Sun Tran's Route 107X or Sun Shuttle's Route 401, which both operate over the current Route 312X's route. This recommendation extends service, which expands access for residents from the City of Tucson to jobs further north, addressing previous passenger requests. Operating this route as a reverse commute express service reflects market demand.

### Additional Stops:

- Downtown Ronstadt Transit Center
- Euclid Avenue/Speedway Boulevard
- Euclid Avenue/Grant Road
- Euclid Avenue/Prince Road

# Route 312X – Oro Valley-Tohono Express

## Proposed Map Changes



# Recommended Service Plan

## Downtown Loop

With the opening of the Sun Link streetcar in summer 2014, the Downtown Loop will become a duplicative service. Many of the Downtown Loop's major stops are within walking distance of Sun Link or existing Sun Tran service.

### **Recommendation:**

Two stops, Pima Community College, Community Campus and the City of Tucson, Community Resource Center are across from the Santa Cruz River along Bonita Avenue and are outside of the walking distance to Sun Link or Sun Tran. As part of the Comprehensive Operational Analysis recommendations, it was proposed that the new Route 21 be routed to serve the Bonita Avenue corridor, serving the two major Downtown Loop generators.

Downtown Loop ridership decreased in fiscal year 2013 from fiscal year 2012, with further reductions being experienced thus far in fiscal year 2014. In July 2013, the Department of Economic Services office, a primary destination along the loop closed and this stop was discontinued. The route was also affected by streetcar construction forcing significant detours.

It is recommended that the Downtown Loop be discontinued once the streetcar service is activated and Sun Tran system route changes are made.