

Title VI Service Equity Analysis

City of Phoenix Proposed April 2023 Service Change



City of Phoenix Public Transit Department



INTRODUCTION

Title VI of the Civil Rights Acts of 1964 prohibits discrimination on the basis of race, color, or national origin in programs and activities receiving federal financial assistance. Federal law requires the City of Phoenix to evaluate service changes and proposed improvements at the planning and programming stages to determine whether those changes have a discriminatory impact. This process will be used to evaluate bus services in an objective manner to identify the potential for adverse, disproportionately high, or disparate impacts to minority and/or low-income populations.

The Phoenix Public Transit Department (PTD) manages modification to the region's transit network through service changes. Bus service changes are coordinated regionally and occur in April and October each year. Service modifications that are considered major service changes require service equity analysis to be conducted and considered by the Phoenix City Council before approval.

SERVICE EQUITY ANALYSIS POLICIES

This section describes Phoenix's Title VI Service Equity analysis policy, definition, and data analysis procedures. The City of Phoenix Public Transit Title VI Program is posted at <https://www.phoenix.gov/publictransit/title-vi-notice>

Major Service Change

The Major Service Change and Service Equity Policy developed jointly by both the City of Phoenix and Valley Metro defines a major service change as follows:

- Adding or Eliminating an entire route
- Expanding or reducing existing revenue miles on a route by more than 25% on Weekday, Saturday, or Sunday
- Expanding or reducing number of route directional miles more than 25%
- A change resulting in a 25% or greater variance from the existing route alignment¹²

¹ A change of 25 percent in weekly route revenue miles and/or route directional miles is the City of Phoenix threshold for determining whether a potential transit service change qualifies as a major service change (or "substantial" service change), according to the City of Phoenix resolution (1990). This percentage is generally an industry-wide percentage threshold used by peer transit systems throughout the United States. The City of Phoenix resolution also specifies that a public comment period will be initiated when a change in transit service of 25 percent or more is determined. Valley Metro has adopted the same thresholds.

² A change of 25 percent in Express/RAPID service route revenue miles and/or route directional miles does not apply to the portion of the routes that are on the freeway/highway because there are no stops or service. Only the portion of the routes that occurs on surface streets applies to the 25 percent threshold for a major service change.



All service change proposals that are determined to be a major service change will undergo Service Equity Analysis.

Adverse Effect

An adverse effect is defined as a reduction or addition in service that includes but is not limited to: changes in span of service, changes to frequency of service, the addition of new routes, the elimination of routes or route segments, or the modification of routes or route segments.

Disparate Impact

When the difference in adverse impacts between minority ridership³ and/or population⁴ and non-minority ridership and/or population on the affected service is equal to or greater than **five percent** compared to the transit system's minority and non-minority ridership⁵ and/or population, there would be a disparate impact.

Disproportionate Burden

When the difference in adverse impacts between low-income ridership³ and/or population⁴ and non-low-income ridership and/or population on an affected service is equal to or greater than **five percent** compared to the transit system's low-income and non-low-income ridership⁵ and/or population, there would be a disproportionate burden impact.

Should Valley Metro or the City of Phoenix find any disparate impact or disproportionate burden is found during the service equity analysis, steps will be taken to avoid, minimize, or mitigate the impacts.

Equity Analysis Data Sources

The following table identifies the data source for the service equity analysis depending on the type of service change being proposed.

³ The determination of the transit system and an affected route's minority and/or low-income ridership will be derived from the most recently completed, statistically valid regional on-board origin/destination survey.

⁴ The determination of the potential ridership for service expansion or the addition of a new service will be derived from the most recent American Community Survey data for the census tract or census block group surrounding the expanded route or new route.

⁵ The transit system's ridership is separated into Local Bus Service (local fixed bus routes, key local service, light rail, streetcar and circulator bus service) and Express/RAPID Service (commuter bus service). The affected service would be compared to the overall transit system's ridership by Local Bus Service or Express/RAPID Bus Service.



Category	Action	Sub Action	Evaluation Method
Service Level ⁶ Change	Reduction	Not Applicable	O/D ⁷ Data
	Expansion	Not Applicable	
Route Length	Reduction	Not Applicable	O/D Data
	Expansion	Not Applicable	Census Data
Route Alignment Change	Reduction	Not Applicable	O/D Data
	Expansion	Not Applicable	O/D Data and Census Data
	Modification	Eliminated Segment(s)	O/D Data and Census Data
		Segment(s) to New Areas	Census Data
	Elimination	Not Applicable	O/D Data
New Route	New Route	Not Applicable	Census Data
Fare Media Access	Modifications	Not Applicable	O/D Data Census Data

Transit System Minority/ Low-Income Population Benchmarks

Service Equity Analysis benchmarks based on October 2022 Service Area Census Data (2020 Census):

Service Type	Minority	Low-Income (150%)
Local Bus	51.44%	65.92%
Circulator	54.31%	72.56%
Express/RAPID Bus	53.47%	69.86%

Service Equity Analysis benchmarks based on 2019 O/D Data

Service Type	Minority	Low-Income
Local Bus	62.2%	45.0%
Circulator	60.1%	45.8%
Express/RAPID Bus	43.5%	4.9%

⁶ Service Level- Refers to the span of service, days of operations, trips and headways (service frequencies) for a transit route or the regional transit system.

⁷ Origin/Destination Survey Data



SERVICE EQUITY ANALYSIS OF APRIL 2023 SERVICE CHANGES

Description of Proposed Changes

The Public Transit Department (PTD) is proposing to extend the reach of local bus service in the north and southwest sections. The route improvements are part of PTD's T2050 Transportation Plan (T2050) to expand the reach of Phoenix's transit network.

The proposed service changes are:

- Route 28 (Lower Buckeye Rd) – extend the route west to 99th Avenue.
- Route 35 (35th Ave)- Split the route at Metrocenter Transit Center. Existing bus service south of Metrocenter Transit Center remained as Route 35. Bus service north of Metrocenter Transit Center will be incorporated into new Route 36.
- Route 36 (35th Ave North) – new route operating from Metrocenter Transit Center to Dove Valley Road via 35th Avenue, Norterra Pkwy and North Valley Pkwy. The route will terminate at Honor Health Sonoran Crossing Medical Center.
- Route 61 (Southern Ave)- extend the route west to 51st Avenue.

CURRENT ROUTING

Route 28 (Lower Buckeye Rd) – The city of Phoenix operates the 7-mile local route on Lower Buckeye Road between 22nd and 75th avenues in southwest Phoenix. The route operates at a 30-minute frequency daily and connects with five other local bus routes.

Route 35 (35th Ave) – The city of Phoenix operates the 28-mile local route on 35th Avenue between 27th Avenue/Baseline Park and Ride (to the south) and Happy Valley Road and 21st Avenue (to the north). The route makes a deviation to Metrocenter Transit Center between Dunlap and Peoria avenues. The route operates at a 30-minute frequency daily, increasing to every 15 minutes during weekday peak hours (6 – 9 a.m. and 3 – 6 p.m.) between the Baseline Park and Ride and the Metrocenter Transit Center. The route currently connects with 21 other local bus routes in the region.

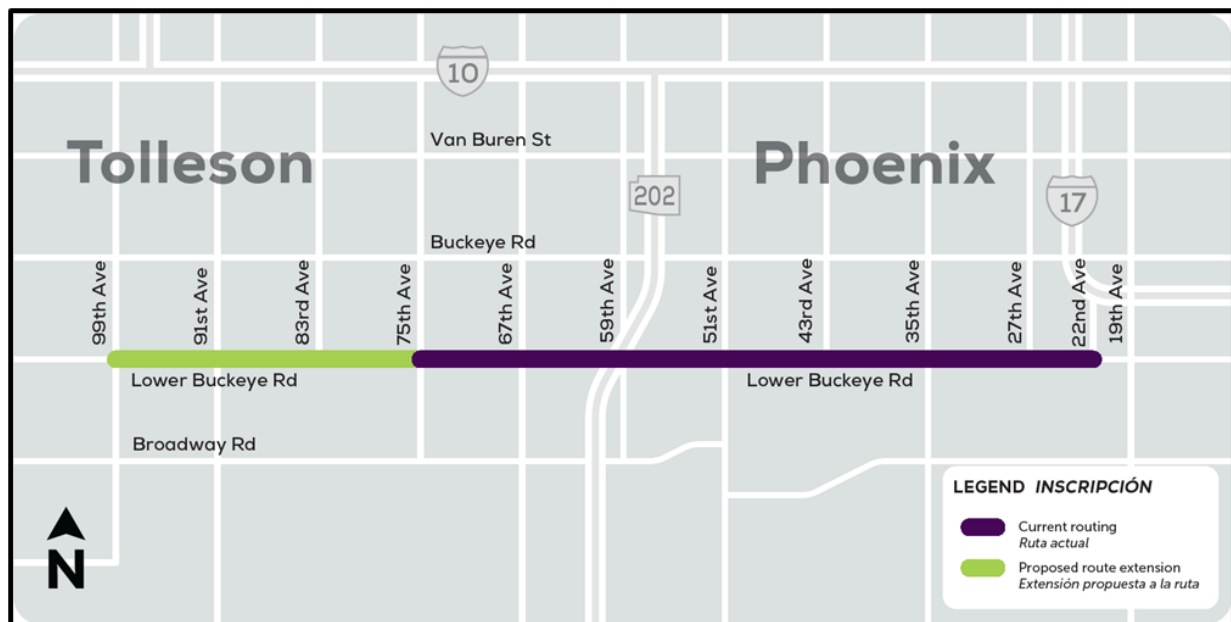
Route 61 (Southern Ave) – Valley Metro operates this 28-mile local route on Southern Avenue between Superstition Springs Transit Center in Mesa and 43rd Avenue in Phoenix. The route operates in Phoenix, Tempe, and Mesa. The route operates at a 30-minute frequency daily, increasing to every 15 minutes during weekday peak hours (6 – 9 a.m. and 3 – 6 p.m.). The route currently connects with 25 other local bus routes, three circulator routes, and four express routes.

PROPOSED CHANGES



Route 28 (Lower Buckeye Rd) – Expanding the regional bus network in southwest Phoenix has long been a goal for the department and is identified in the T2050 plan. Initially, PTD had planned to propose a route extension on Lower Buckeye Road in early 2020, but the plan was interrupted by the global pandemic. As the workforce of our bus operating contractors stabilizes, the department now proposes this 3-mile extension west to 99th Avenue.

The proposed extension west will provide transit service into an area that has seen recent growth along Lower Buckeye Road between 75th and 99th avenues. The service area of the route extension is estimated to cover 15,000 more residents and 3,700 households in southwest Phoenix.





Route 35 (35th Avenue) and Route 36 (35th Ave North) – There has been an ongoing conversation between PTD and north Phoenix residents, businesses and medical providers to expand Route 35 north of Happy Valley Road. In 2019, PTD engaged in an extensive conversation with Honor Health Sonoran Crossing Medical, located at 32nd Avenue and Dove Valley Road, to explore options to provide new transit opportunities for patients and workers.

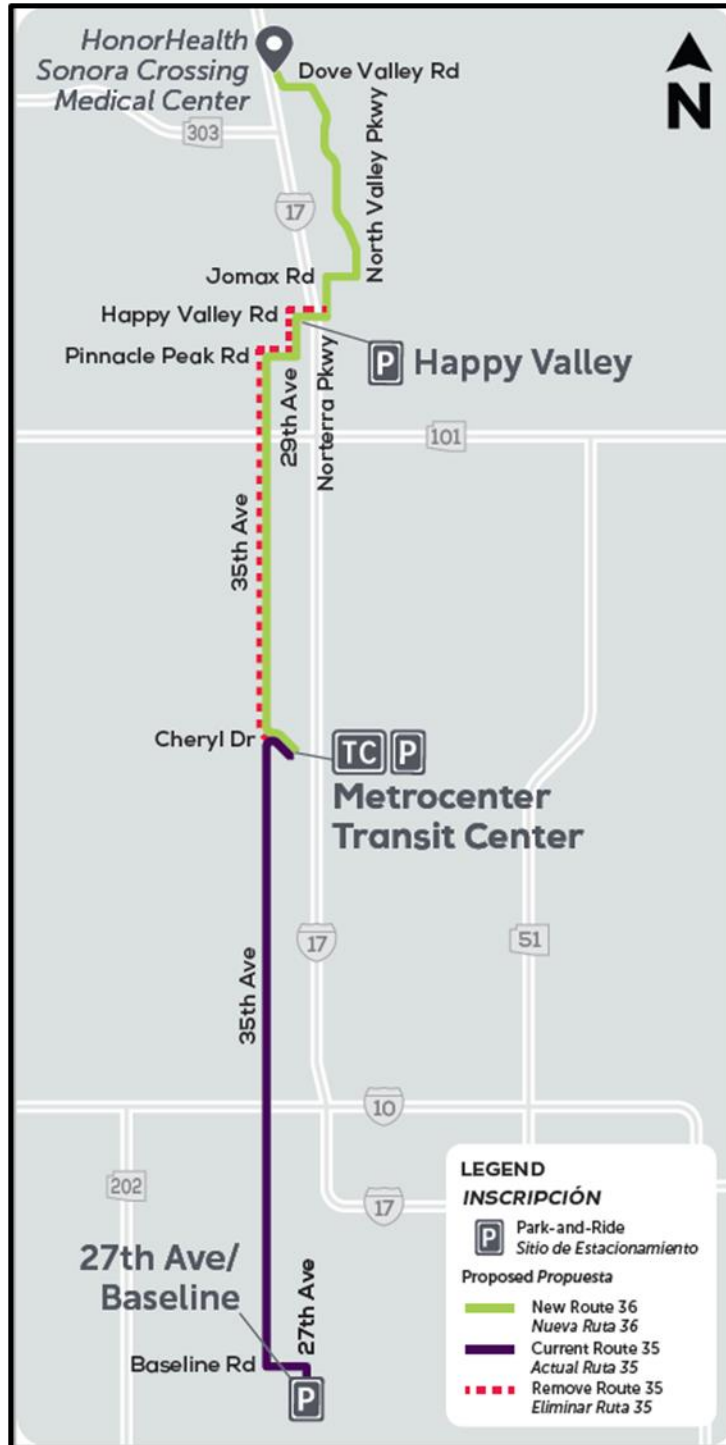
The proposed 7-mile extension would utilize Norterra Parkway, Jomax Road, North Valley Parkway, Dove Valley Road and 32nd Avenue to maximize the route's reach to connect residences, workplaces, medical centers, grocery stores, and shops into the region's vast transit network.

To make the proposed extension north of Happy Valley Road feasible, PTD proposes to end Route 35 at the Metrocenter Transit Center, where the new Route 36 would now provide bus service between Metrocenter and 32nd Avenue and Dove Valley Road. The shortened Route 35 would continue to operate at its current frequency schedule, including the peak hour weekday service; and the new Route 36 would operate daily at a 30-minute frequency.

The split route operation provides the following benefit and mitigation to transit operations:

- Longer trips could become increasingly difficult to operate and maintain a reliable schedule. Currently, Route 35 is one of the longest routes in the region.
- Route 36 would connect with nine other local bus routes, which would expand opportunities to reach the new segment with only one transfer. If Route 36 only operated north of Happy Valley Road, the route would only make bus connections to Routes 19 and 35.
- Routes terminating at Metrocenter Transit Center provides an ideal situation to provide operators a break and a timed transfer between routes.

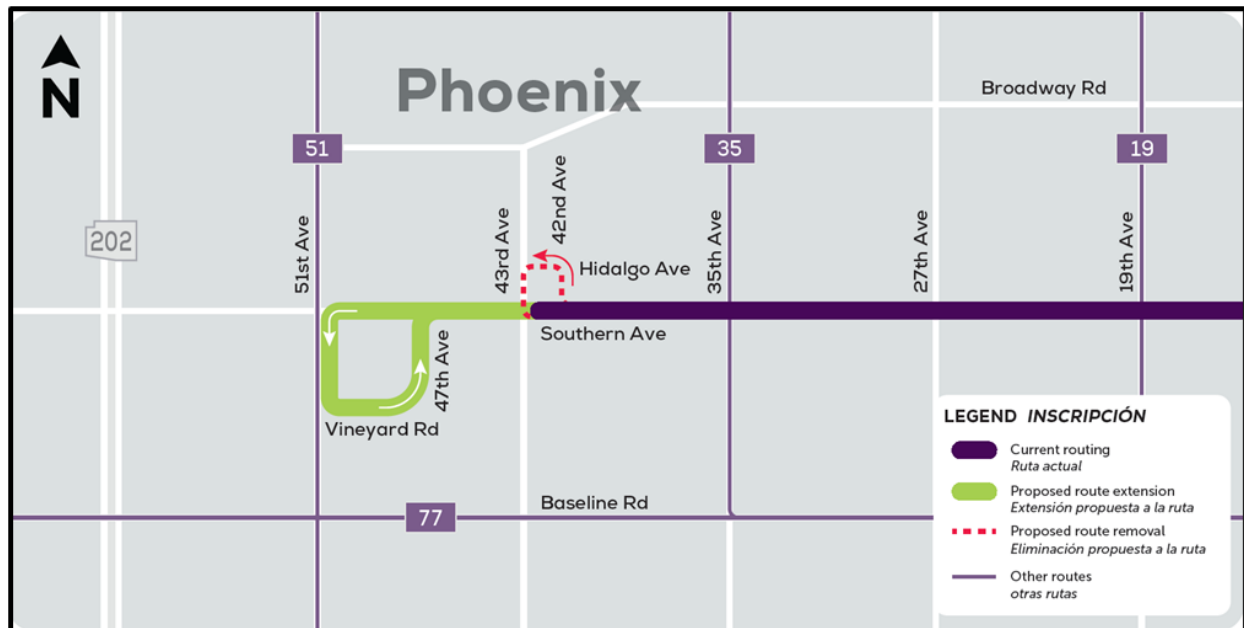
The service area of the route extension is estimated to cover 8,000 more residents and 2,700 households in north Phoenix.





Route 61 (Southern Ave) – Recent roadways improvements made by Maricopa County near 43rd and Southern avenues have resulted in a detour to 51st Avenue for a bus turnaround. To make the temporary detour permanent and provide connection between bus routes, Phoenix and Valley Metro propose to extend Route 61 one mile west to 51st Avenue. The extension would add connections to two major local routes Route 51 and Route 61.

The service area of the route extension is estimated to cover 7,600 more residents and 2,200 households in southwest Phoenix.





Public Input Process

The Public Transit Department will use the locally adopted public outreach process to solicit public feedback on proposed service changes. Phoenix and Valley Metro staff will conduct in-person and virtual outreach utilizing posters and A-Frame signs placed at key areas along each route to notify the public of the proposed changes, and direct passengers to visit Valley Metro's website to submit comments through December. The proposed changes will also be advertised via social media, interactive webinars, and a public hearing.

Magnitude of Service Change

The first step of the Title VI assessment is to measure and document the magnitude of service change being proposed to determine if a project qualifies as a "major service change". For routes that cross jurisdictional boundaries, revenue and directional miles are summarized for both total route and Phoenix portion only.

Table 1: Magnitude of Impact- Major Change Indicators by Individual Projects

	Add or Eliminate Route	Expanding or reducing existing route by more than 25% of Weekday route revenue miles	Expanding or reducing existing route by more than 25% of Saturday routes revenue miles	Expanding or reducing existing route by more than 25% of Sunday route revenue miles	Expanding or reducing number of route directional miles more than 25%	A change resulting in a 25% or greater variance from the existing route alignment	Continue to Assess Mitigation
Route 28	NO	YES	YES	YES	YES	NO	YES
Route 35	NO	YES	YES	YES	YES	NO	YES
Route 36	YES	YES	YES	YES	YES	YES	YES
Route 61	NO	NO	NO	NO	NO	NO	NO

Table 2: Revenue Miles Change

	Current Revenue Miles			Proposed Revenue Miles			% Difference		
Routes	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday
Route 28	522	496	496	757	718	718	44.9%	44.7%	44.7%
Route 35	2,619	2,088	2,088	1,665	1,180	1,180	-36.4%	-43.5%	-43.5%
Route 36	-	-	-	1,558	1,482	1,482	100.0%	100.0%	100.0%
Route 61	1,042	759	738	1,252	912	887	20.1%	20.1%	20.1%

Table 3: Directional Miles Change



Routes	Current Directional Miles	Proposed Directional Miles	% Difference
Route 28	13.4	19.4	45%
Route 35	55.0	31.7	-42%
Route 36	-	38.0	100%
Route 61	20.69	24.9	20%

Table 4: Route Service Area Title VI Populations by Census Block Group*

Route		Percent Minority Population	Percent Low Income Population
All Local		51%	24%
Rt 28	Existing Route	81%	26%
Rt 28	New Segment	87%	21%
Rt 28	Total New Route	84%	23%
Rt 35	Existing Route	64%	30%
Rt 35	Eliminated Segment	42%	23%
Rt 35	Total Remaining Route	78%	35%
Rt 36	Currently Serviced by Rt 35	42%	23%
Rt 36	New Service Segment	32%	7%
Rt 36	Total New Route	40%	20%
Rt 61	Existing Route	63%	28%
Rt 61	New Segment	75%	22%
Rt 61	Total New Route	64%	28%
* Population figures are proportionate to the portion of the Census Block Group within 3/4 mile buffer of route.			
		Above system average by five percent	

Table 5. Route Rider Population from 2019 Valley Metro Origin and Destination Data

Route	Percent Minority Population	Percent Low Income Population
All Locals	62%	45%
Rt 28 Existing	85%	15%
Rt 61 Existing	67%	39%
Rt 35 Existing	62%	57%
Rt 35 Elimated Segment	55%	55%
Rt 36 New Route	NA	NA



Findings

Three of the four April 2023 proposed service changes do qualify as a major service change: Route 28, Route 35, and Route 36. Route 61 extension does not meet any of the criteria for requiring further analysis.

Route 28 Proposed Change Disparate Impact and Disproportional Burden Threshold

The Route 28 new area to be served by the extension is 87% minority and 21% low income, placing it 36% above the local average for minority population and 3% below the average for low income. Based on the established threshold for qualification of potential disparate impact to minority population or disproportional burden to low-income population (5% above system average), Route 28 qualifies as potentially having disparate impact to minority population should the proposed service change is a reduction in service. However, since the proposed service change is a service expansion and improvement, no further analysis or modification is required on the proposed service change.

Route 35 Proposed Change Disparate Impact and Disproportional Burden Threshold

Route 35 restructuring produces a significant decrease in service miles for that route. The existing route ridership is at or above the local average for both minority and low-income populations, at 62% and 57% respectively. Route 35's low-income rider threshold is 12% above the local route average, placing the route service change qualified as potentially causing disproportional burden to low-income riders.

Route 35 Proposed Change Mitigation Strategy

While Route 35's proposed service does not remove transit service in its service because the eliminated segment is proposed to be replaced by a new Route 36, PTD will further mitigate the impact of the service change proposal by ensuring the scheduled between the two routes would be synchronized to meet at Metrocenter Transit Center with minimize wait time for short transfer time between the two routes.

Route 36 Proposed Change Disparate Impact and Disproportional Burden Threshold

The proposed Route 36 service area is below the local route average for both minority and low-income population at 32% and 7% respectively. As it is a service improvement, no mitigation is required.

Route 61 Proposed Change Disparate Impact and Disproportional Burden Threshold



Route 61 ridership is above local average for percent minority population at 67% and below local average low-income population at 39%. The new area served by the route extension is above average for both minority and low income, at 64% and 28% respectively.

Based on the established threshold for qualification of potential disparate impact to minority population or disproportional burden to low-income population (5% above system average), Route 61 qualifies as potentially having disparate impact to minority population should the proposed service change is a reduction in service. However, since the proposed service change is a service expansion and improvement, no further analysis or modification is required on the proposed service change.

Phoenix Only Route 61

This section will assess the Route 61 service change impacts to the City of Phoenix riders and service area alone. The full route is assessed in the previous section.

	Current Revenue Miles			Proposed Revenue Miles			% Difference			Current Directional Miles	Proposed Directional Miles	% Difference
	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday	Weekday	Saturday	Sunday			
Route 61 Phoenix Only	1,042	759	738	1,252	912	887	20.1%	20.1%	20.1%	20	24.2	21%

Route	Percent Minority Population	Percent Low Income Population
Rt 61 Existing Riders Phoenix Only*	79%	35%
Rt 61 Future Service Area**	75%	22%
* 2019 Valley Metro Origin and Destination Study		
** Population figures are proportionate to the portion of the Census Block Group within 3/5 mile buffer of route.		

Findings

The service change in revenue miles and directional miles does not exceed 25% so does not qualify as a major service change. No further analysis is required.

Conclusion

Route 28- The proposed service change is a service expansion and improvement, no disparate impact to minority population or disproportional burden is found.



Route 35- The proposed service change on Route 35 would cause low-income population to experience disproportional burden. The impact is mitigated by having new Route 36 taking over the eliminated segment as well as synchronize transfer between routes to minimize wait time for passengers.

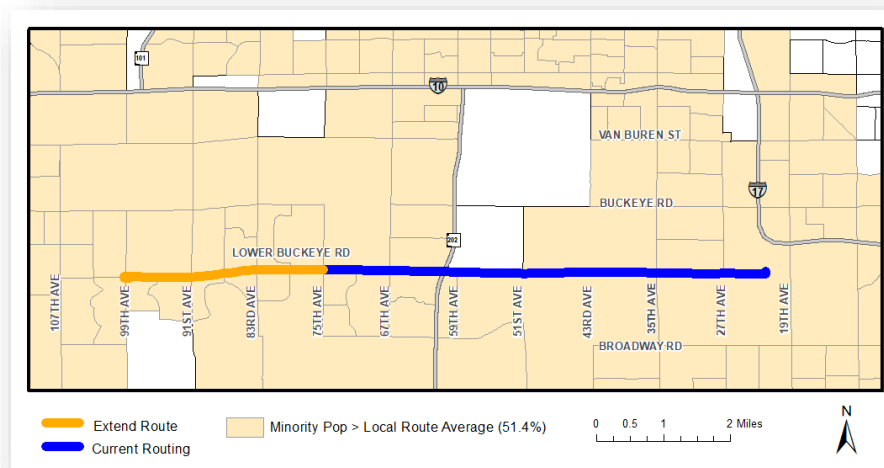
Route 36- The proposed service change is a service expansion and improvement, no disparate impact to minority population or disproportional burden is found.

Route 61- The proposed service change is a service expansion and improvement, no disparate impact to minority population or disproportional burden is found.

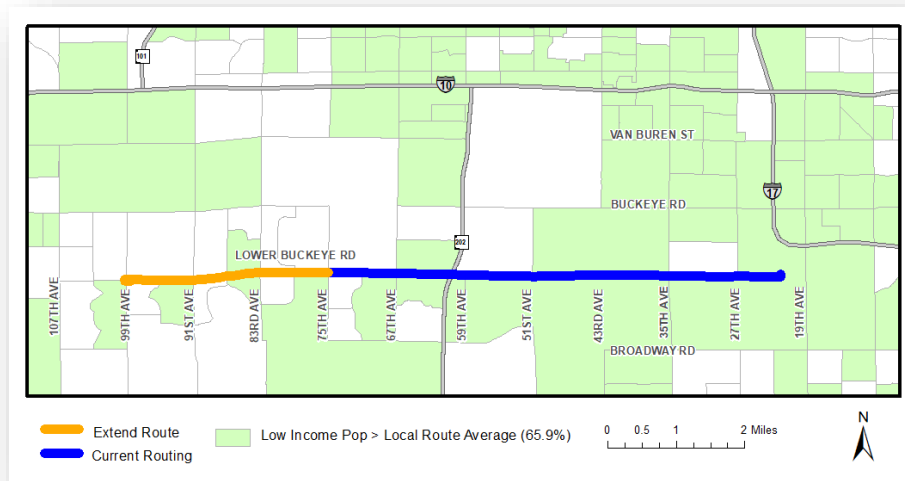
Demographic Maps

Map 1 and Map 2 illustrate the distribution of Title VI populations and the proposed April 2023 service changes to Route 28. Map 3 and Map 4 illustrate the distribution of Title VI populations and Route 35. Map 5 and Map 6 illustrate the distribution of Title VI populations and Route 36. Map 7 and Map 8 illustrate the distribution of Title VI populations and Route 61. Map 9 and Map 10 illustrate the distribution of Title VI populations and Route 61 in Phoenix Only.

Map 1: April 2023 Service Change and Minority Population Route 28

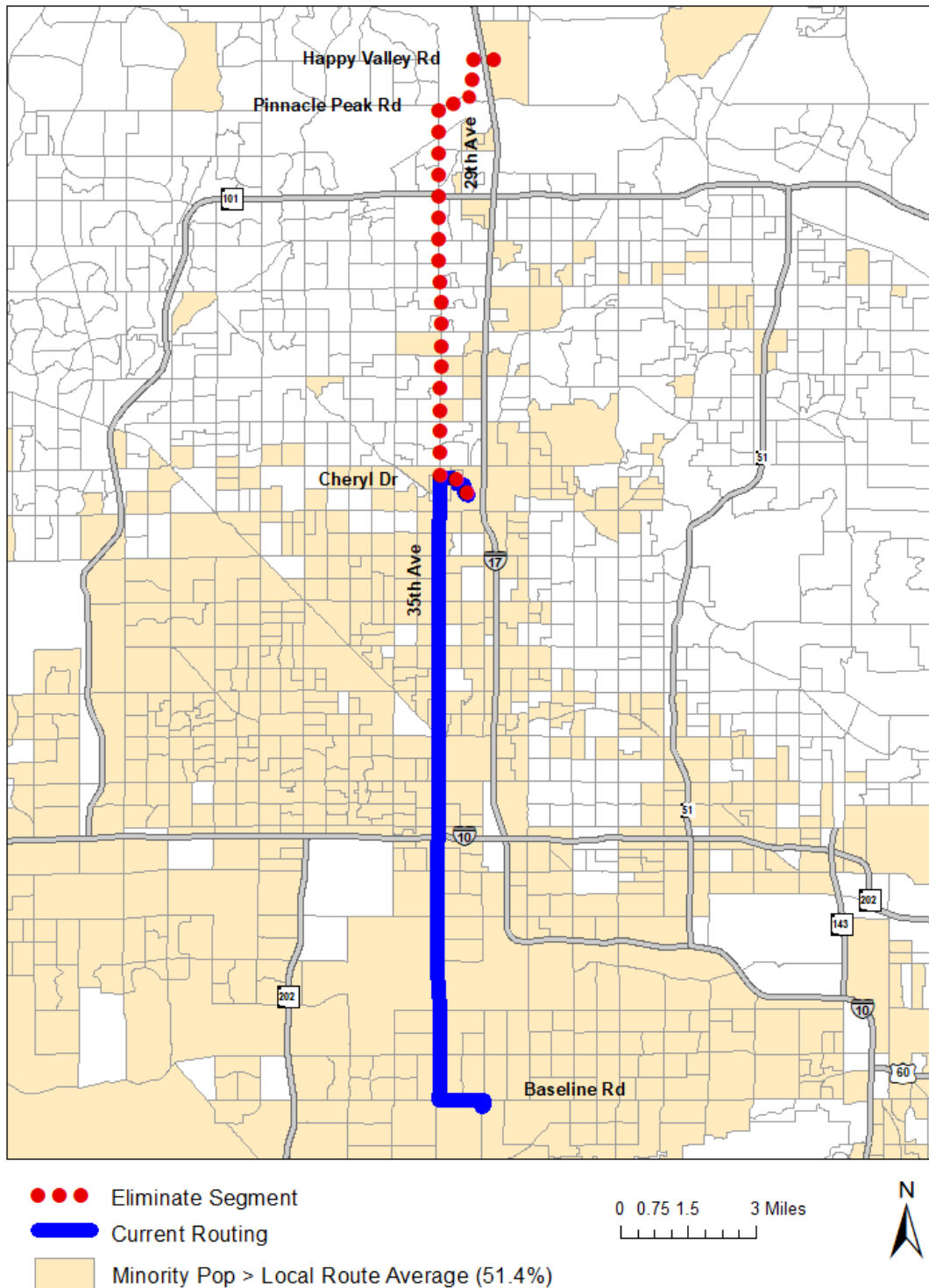


Map 2: April 2023 Service Change and Low-Income Population Route 28



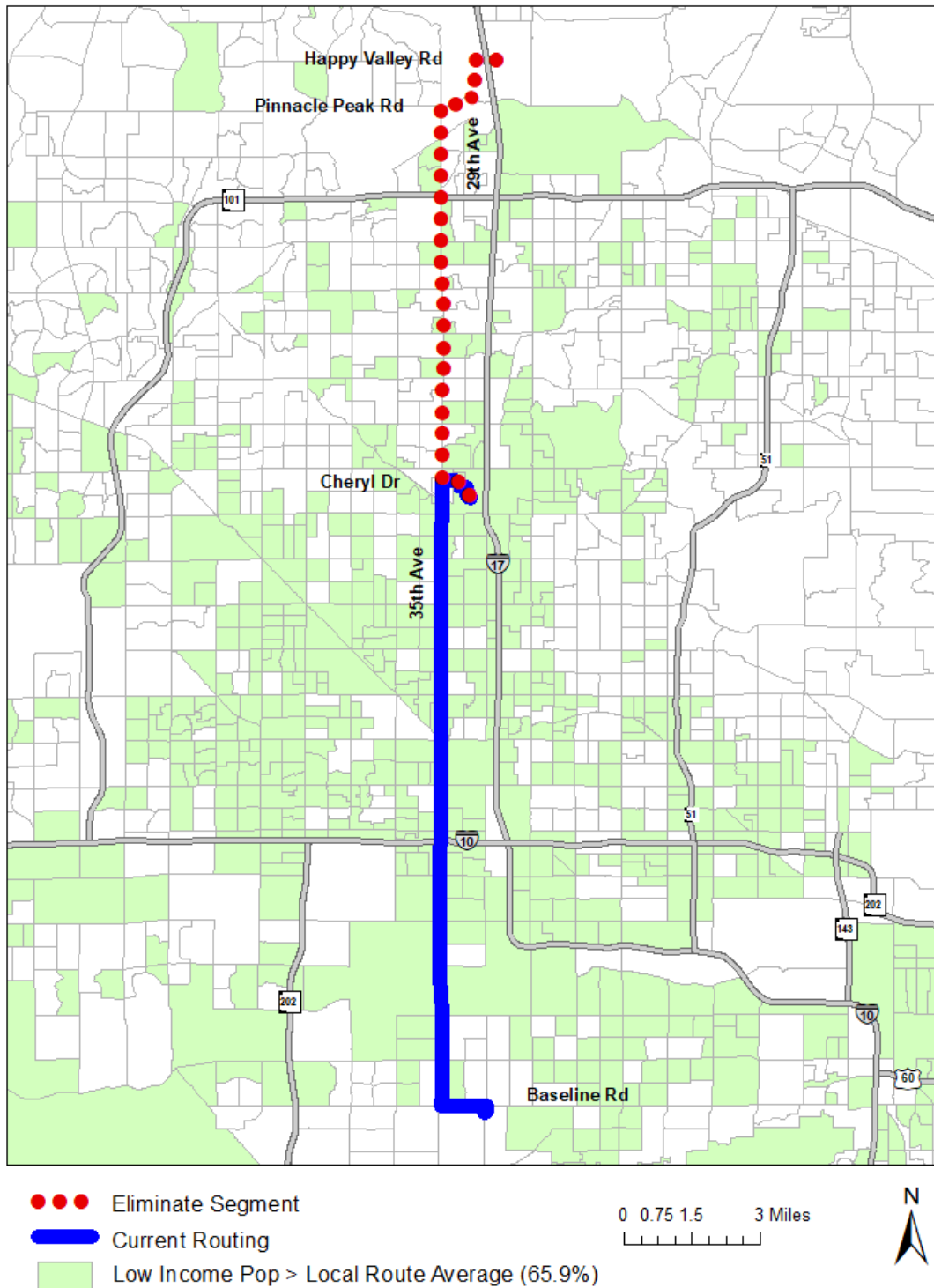


Map 3: April 2023 Service Change and Minority Population Route 35



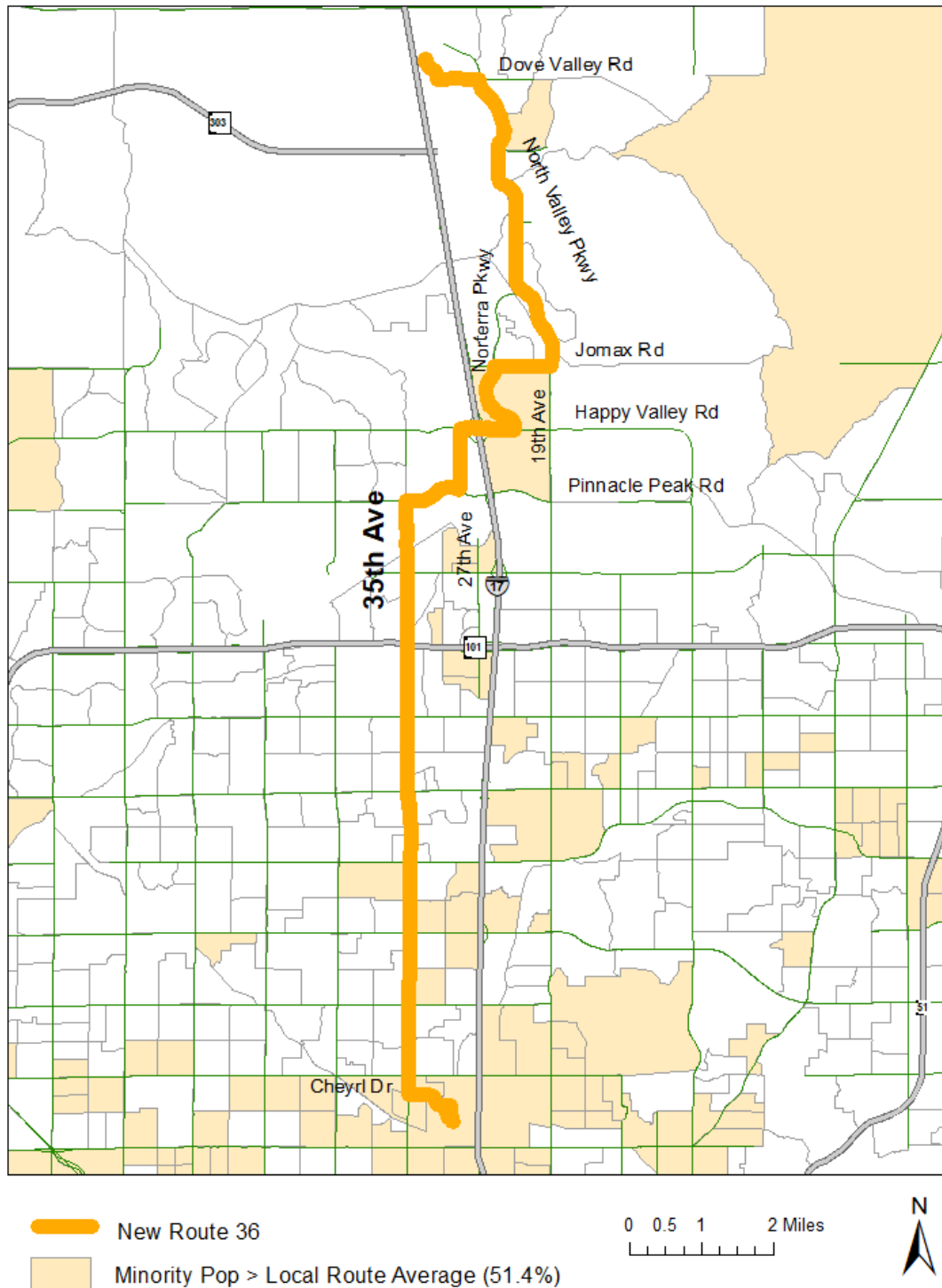


Map 4: April 2023 Service Change and Low-Income Population Route 35



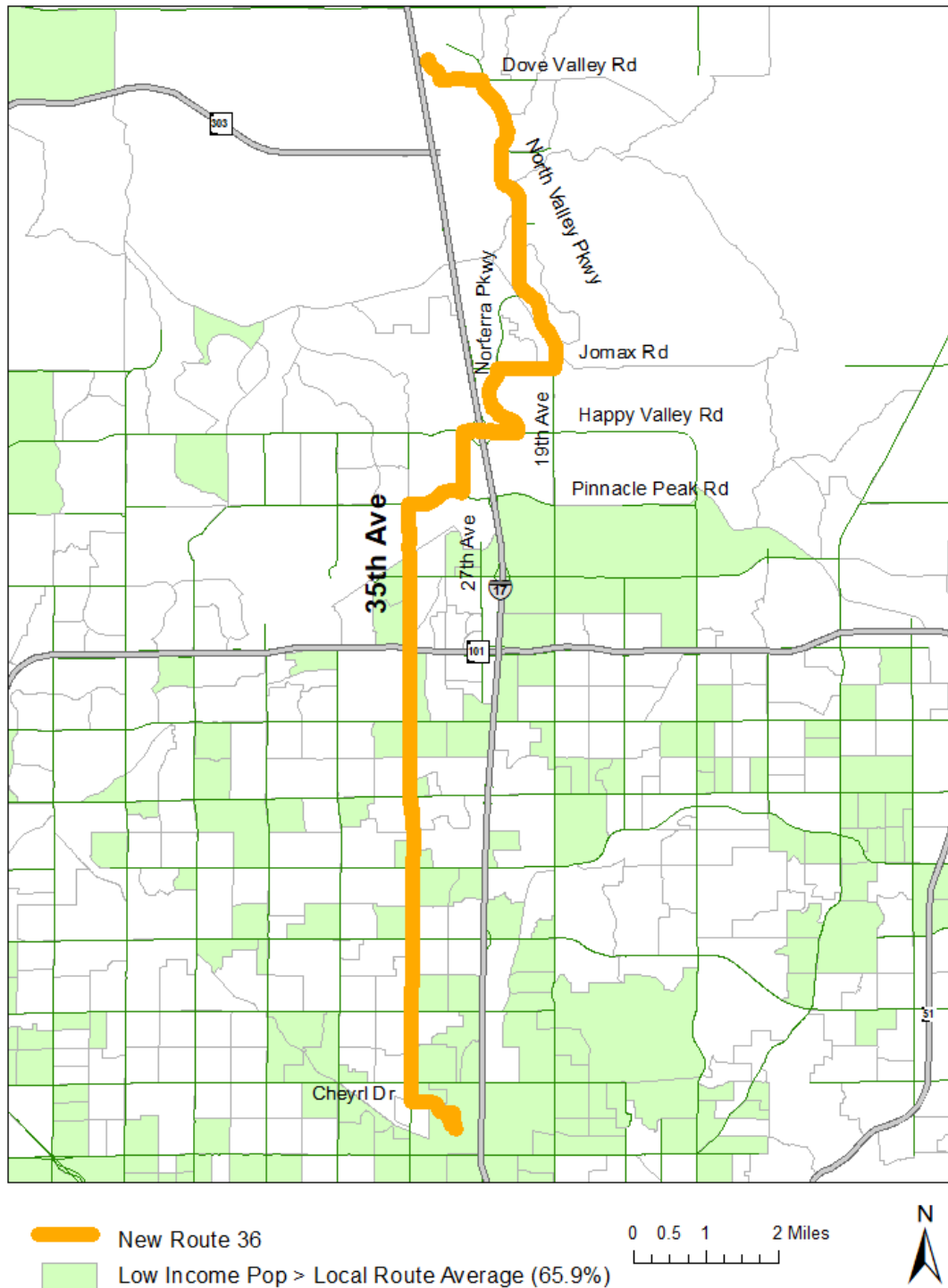


Map 5: April 2023 Service Change and Minority Population Route 36



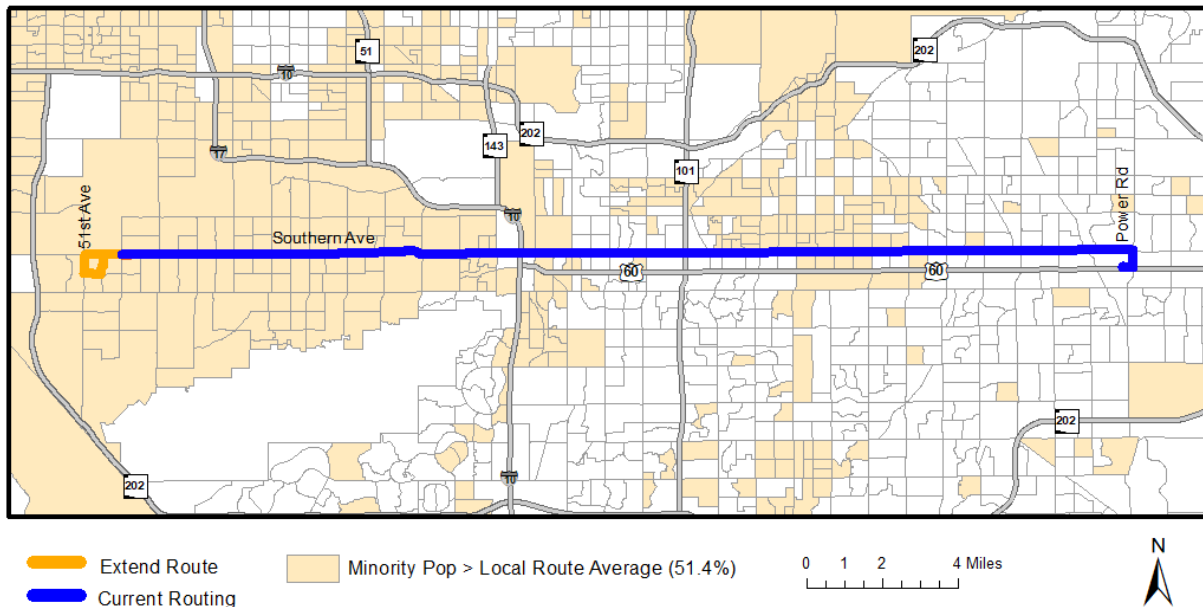


Map 6: April 2023 Service Change and Low-Income Population Route 36

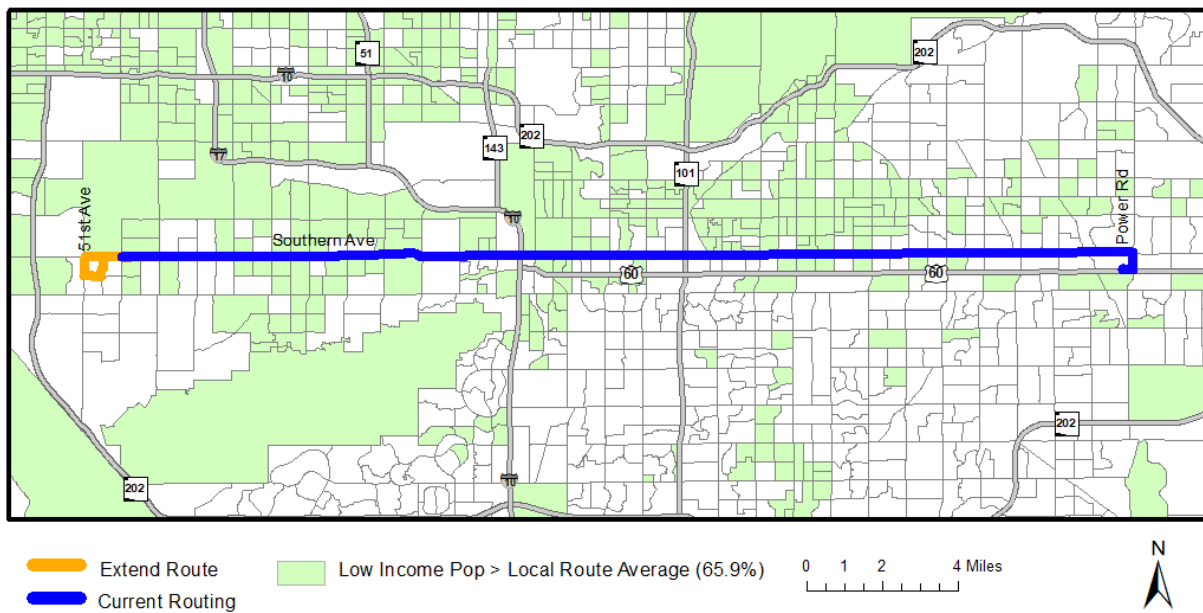




Map 7: April 2023 Service Change and Minority Population Route 61

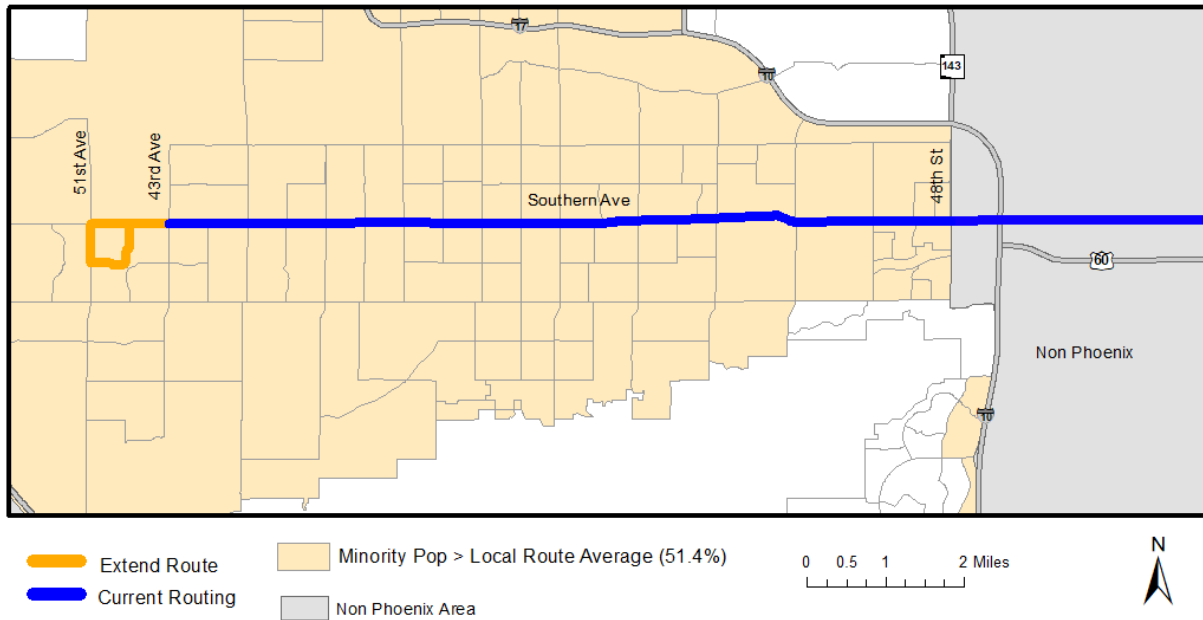


Map 8: April 2023 Service Change and Low-Income Population Route 61





Map 9: April 2023 Service Change and Minority Population Route 61 – Phoenix



Map 10: April 2023 Service Change and Low-Income Population Route 61 – Phoenix

