GILBERT TRANSIT STUDY

Final Report

August 2022

VALLEY METRO

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SECTION 1

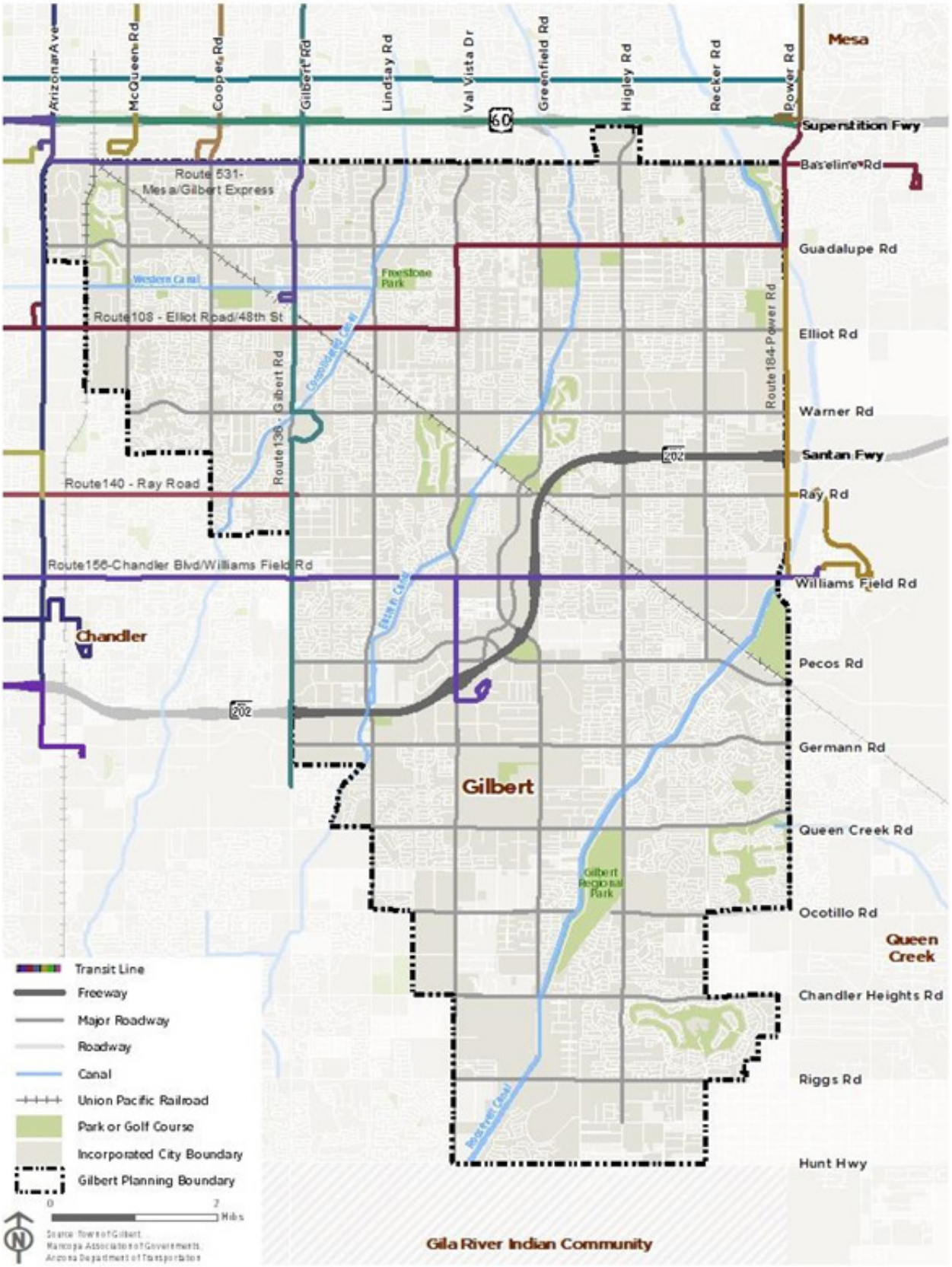
GILBERT TRANSIT STUDY: EXISTING CONDITIONS

INTRODUCTION

Valley Metro, in partnership with the Town of Gilbert (Gilbert or Town), is conducting the Gilbert Transit Planning Study. Gilbert is updating its broader Transportation Master Plan concurrently, and this effort will inform the transit portion of that document. The purpose of the study is to assess the current and future public transportation needs in the Town of Gilbert and create corresponding transit service suggestions. These suggestions will be modeled to estimate cost and demand, and ranked based on Town priorities, potential performance, and other relevant characteristics. Figure 1 shows the extent of the study area as the town boundary, including county islands, and the current transit network.

This memo summarizes a preliminary assessment of existing conditions, detailing relevant demographics, land-use characteristics, transit data and transit studies. This analysis will show the distributions of key transit dependent populations, identify important travel destinations, outline transit service performance and explore alternative transit modes for consideration in the study's next phase. Additionally, a review of recent transit studies will show the broad spectrum of existing transit proposals and provide several options for further modeling and analysis. These data points will form the foundation for the study's upcoming transit service planning.

Figure 1 - Gilbert Transit Study Area



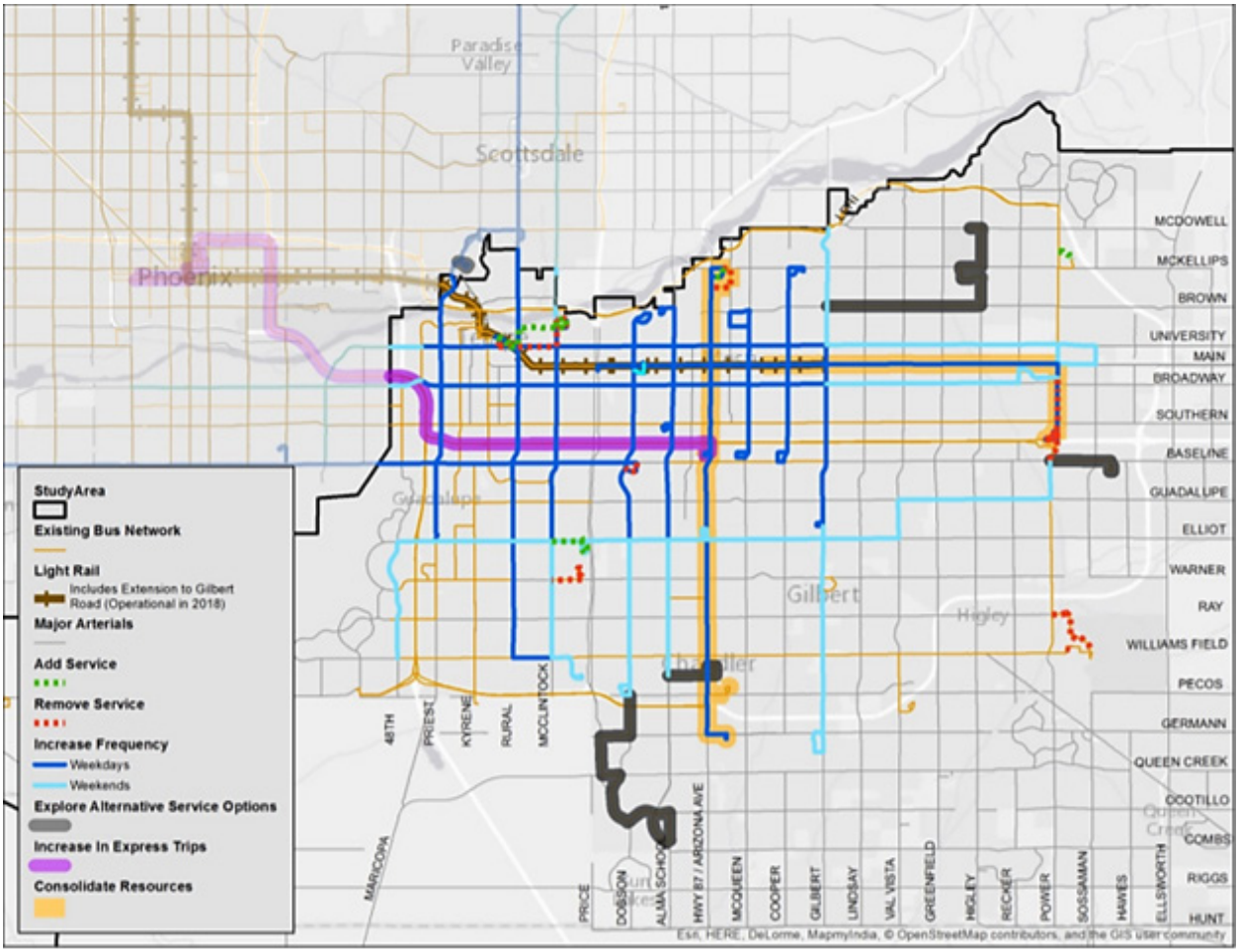
TRANSIT PLAN AND STUDY REVIEW

This section evaluates past transit plans and studies' recommendations for future transit investments in Gilbert. Outlining the needs and opportunities identified in these prior works will allow the Town to pick up where these efforts left off. The suggestions of these studies will be summarized at the end of this section.

Southeast Valley Transit System Study (2015)

The Southeast Valley Transit System Study identified short-, medium- and long-term data driven enhancements to transit service with a sub-regional focus stretching from Ahwatukee to the northwest portion of Pinal County. In the short term for the Town the study recommends improving weekend service frequency on the Gilbert Road and Elliot Road routes, and weekday frequency along Gilbert Road from University to the Gilbert Park-and-Ride. The full suite of sub-regional short-term recommendations can be seen in Figure 2.1.

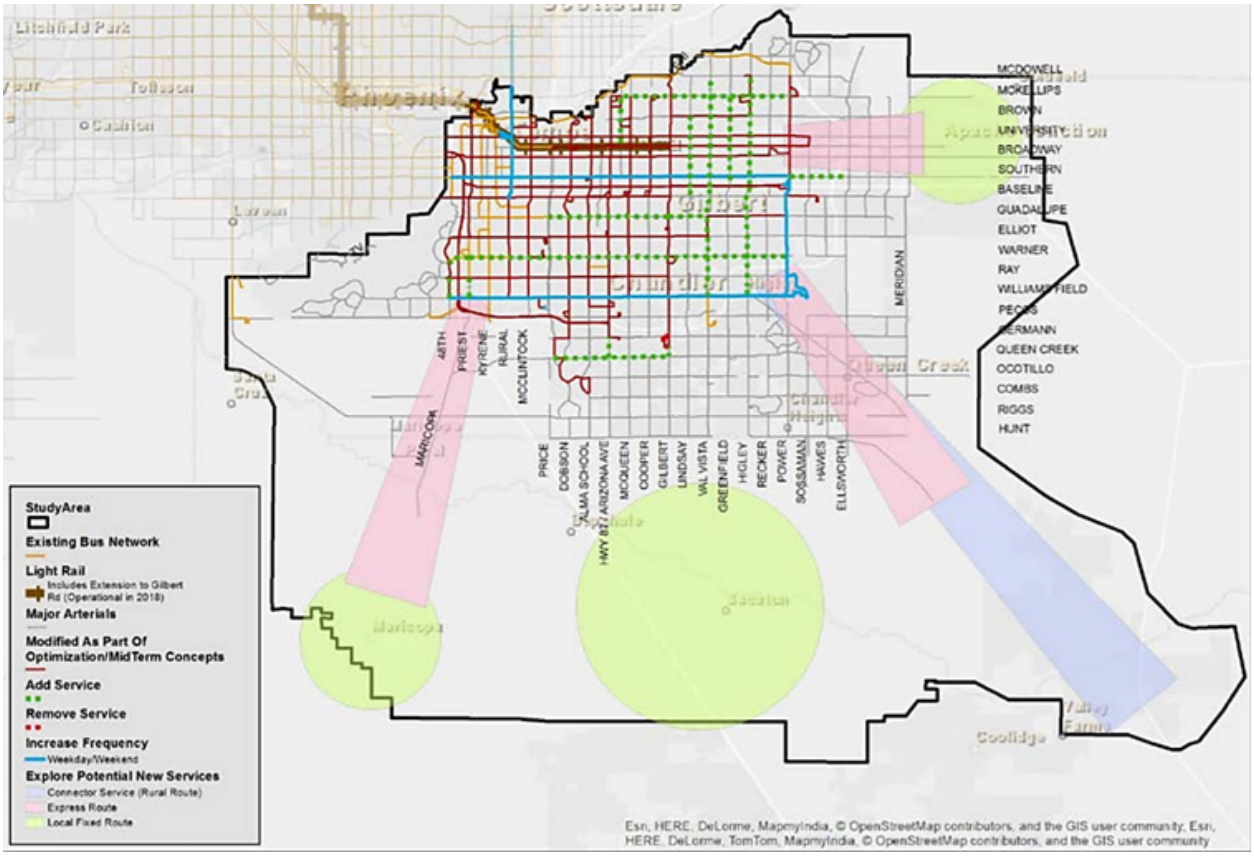
Figure 2.1 - SVTS Short Range Transit Service Recommendations



Credit: Southeast Valley Transit System Study (2015)

In the medium term a circulator was suggested for the Town south of Ray Road. In the long term several new services are suggested north of Williams Field Road, including routes along Val Vista Drive, Warner Road and Higley Road. This would reduce the number of service gaps north of Williams Field Road but leave the area south of the corridor largely unserved, as shown in Figure 2.2.

Figure 2.2 - Long Range Transit Service Recommendations from SVTS Study



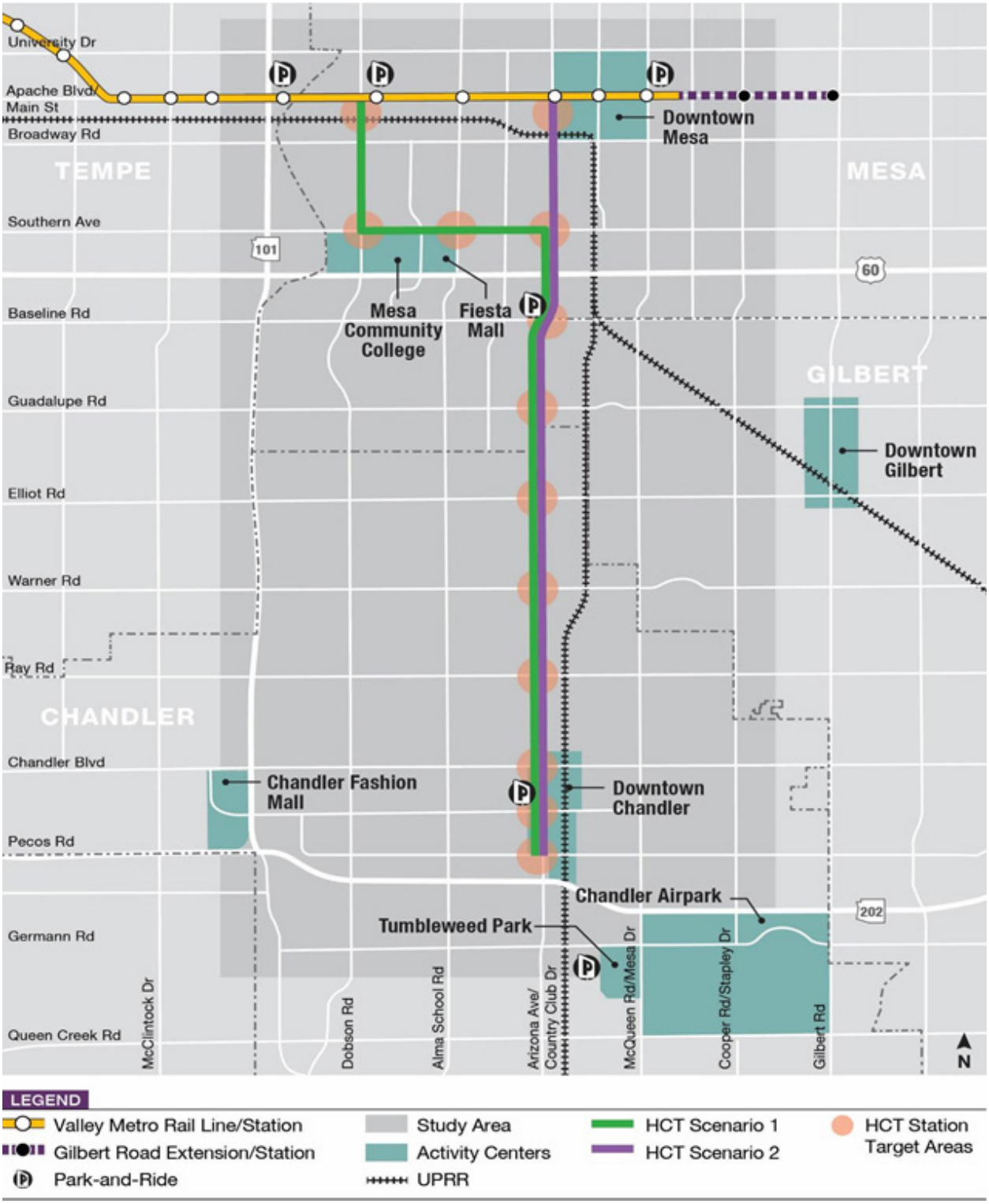
Credit: Southeast Valley Transit System Study (2015)

Fiesta-Downtown Chandler Transit Corridor Study (2017)

Valley Metro in cooperation with Mesa, Gilbert and Chandler, began efforts to assess the feasibility of extending light rail transit from Downtown Mesa to Pecos Road along the Fiesta-Downtown Chandler Corridor. The feasibility study evaluated various mobility improvements to local bus service for the short-, mid- and long-term time periods that would support a future high-capacity transit (HCT) corridor. Additionally, various transit modes and two distinct scenarios were also evaluated to determine which HCT scenario should move forward for further analysis to be conducted in the Arizona Avenue Alternatives Analysis discussed later.

The two corridors analyzed for their potential to host HCT are shown in Figure 2.3. Both alternatives run the same way along the western edge of Gilbert along Arizona Avenue, where current Route 112 local bus service runs. Two stations were suggested along the Town boarder, one at the Guadalupe Road intersection and another at Baseline Road. Ultimately, the preferred option of the study was HCT Scenario 1 shown in green in Figure 2.3. The study recommended the development be phased, with the first portion being built from light rail to the northwest edge of Gilbert at Baseline Road and Arizona Avenue, and the southern portion to Pecos Road to be completed in a second phase.

Figure 2.3 - FDCTCS High-Capacity Corridors Analyzed

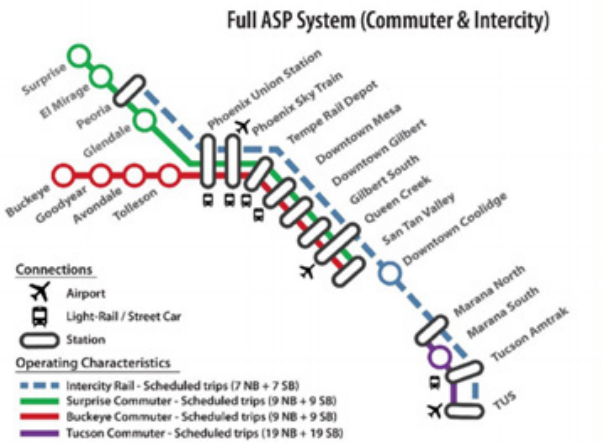


Credit: Southeast Valley Transit System Study (2017)

Gilbert Transit Framework Study (2018)

The Gilbert Transit Framework Study examined the overall transit landscape in the Town of Gilbert and how transit services can be bolstered to best capitalize on the changes in the Town, including the potential for new commuter rail stations. It proposes urban design elements and the development of supporting transit route alignments to compliment the proposed commuter rail service outlined in the ADOT Passenger Rail Corridor Study (2015) and the MAG Commuter Rail Study. As seen in Figure 2.4 two stations are planned along the current Union Pacific Railroad right-of-way in the Gilbert at Heritage District Station and Cooley Station.

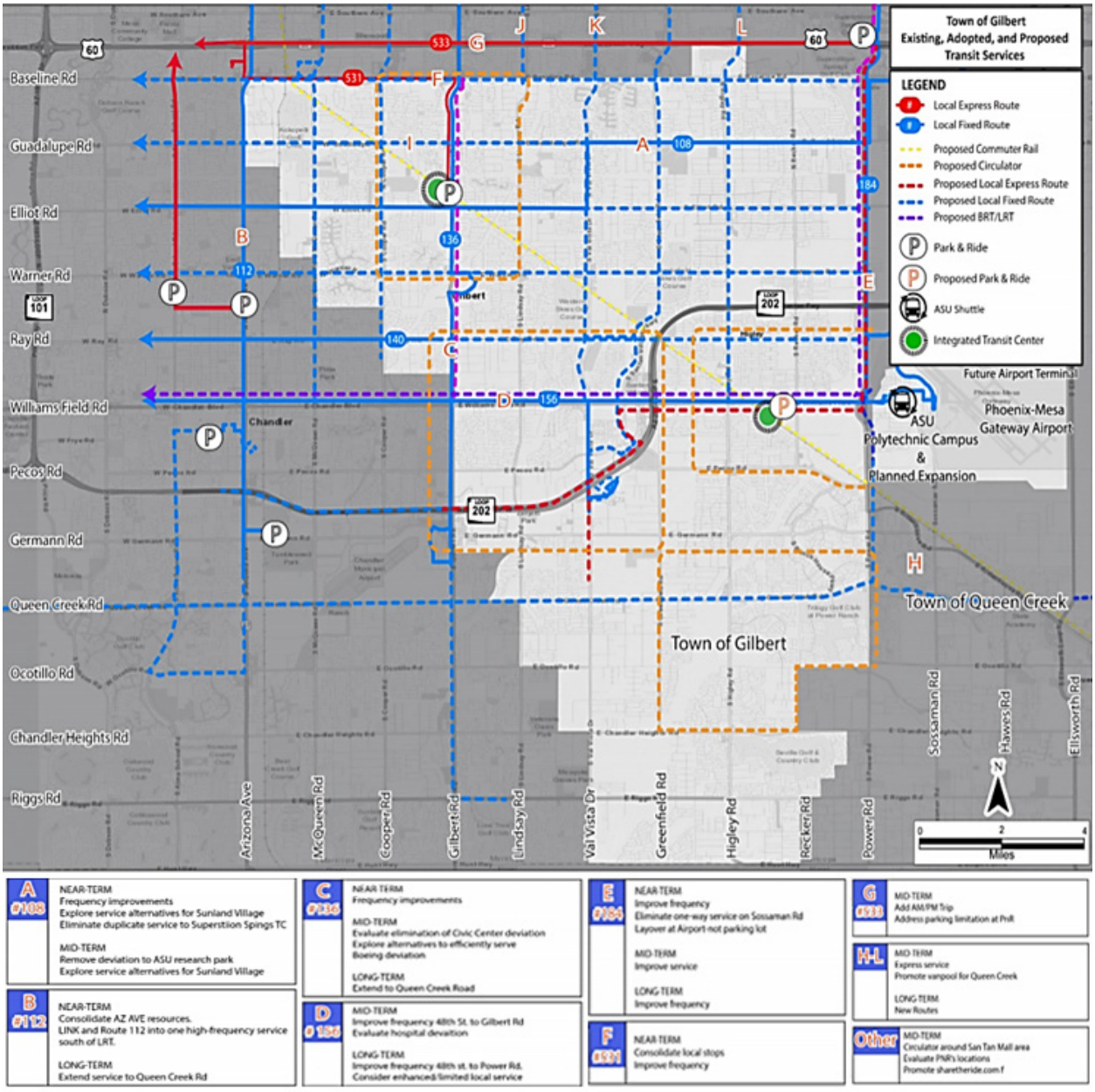
Figure 2.4 - Commuter Rail Map from the Transit Framework Study



Credit: Gilbert Transit Framework Study (2018)

As shown in Figure 2.5 a variety of improvements to the current network are suggested. New circulator service is suggested to cover much of the Town along and south of Ray Road, and a portion in the northwest part of Town. The study also recommends the arterial grid north of Ray Road be fully covered by local bus services north/south and east/west. Many of these local services would extend beyond Town borders into Chandler and Mesa. Bus rapid transit services are also suggested along Williams Field Road and Power Road. These frame and connect with most of the route proposals made. Overall, the study suggested filling existing gaps throughout Gilbert and adding new modes including BRT, commuter rail and circulators.

Figure 2.5 - Map of Transit Service Recommendations from the Gilbert Transit Framework Study

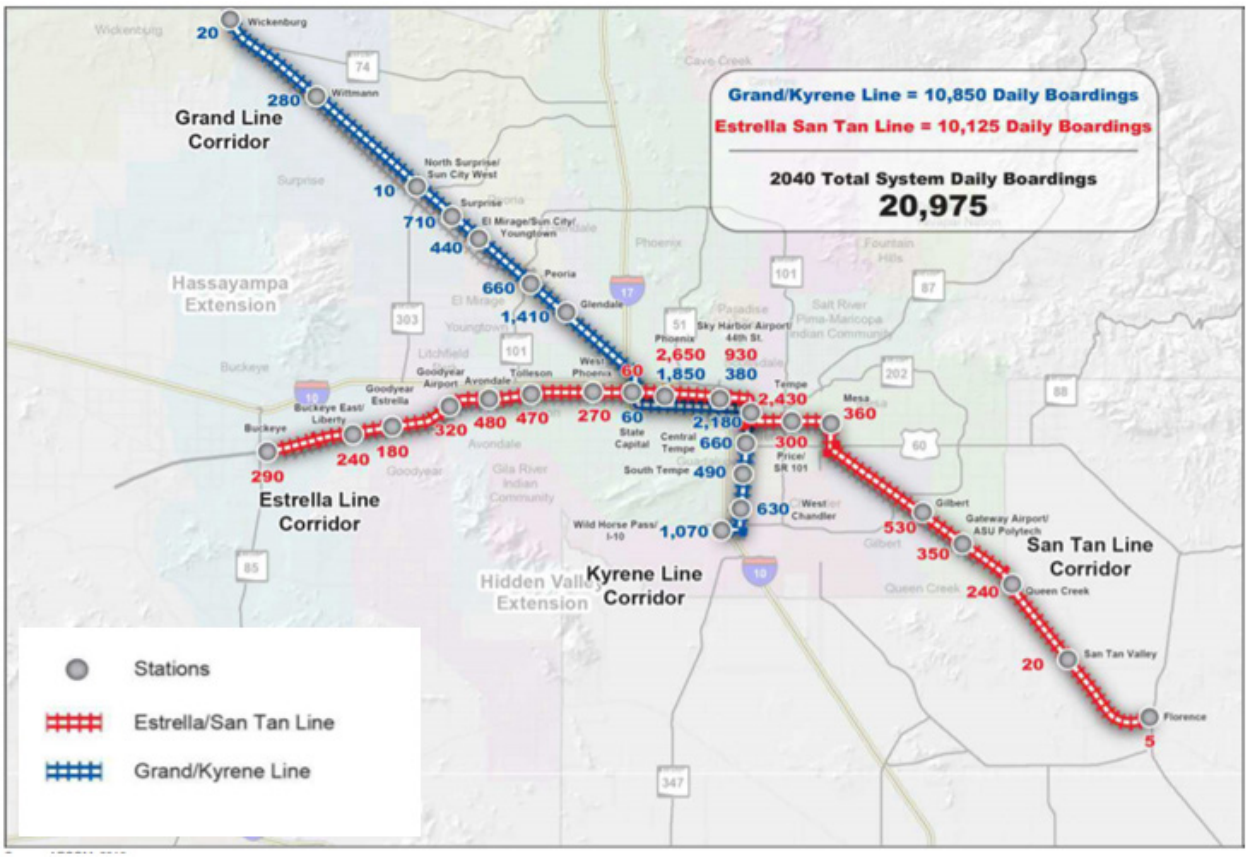


Credit: Gilbert Transit Framework Study (2018)

Regional Commuter Rail System Study (2018)

The 2018 Regional Commuter Rail System Study Update analyzed the feasibility, cost and productivity of different commuter rail alignments from Wickenburg to Florence. The alignment of one line, the Estrella San Tan Line between Buckeye and Florence, suggested one stop in Central Gilbert and another at the Town's southern border at the ASU Polytech Campus. Figure 2.6 shows both the alignments of the studied corridors, and the projected daily boardings by station projected for 2040. The projected estimates for the two stations mentioned totaled 880 boardings per day.

Figure 2.6 - Commuter Rail Study Map Showing Station Placement and Projected Boardings for 2040



Credit: Regional Commuter Rail System Study (2018)

Heritage District Redevelopment Plan (2018)

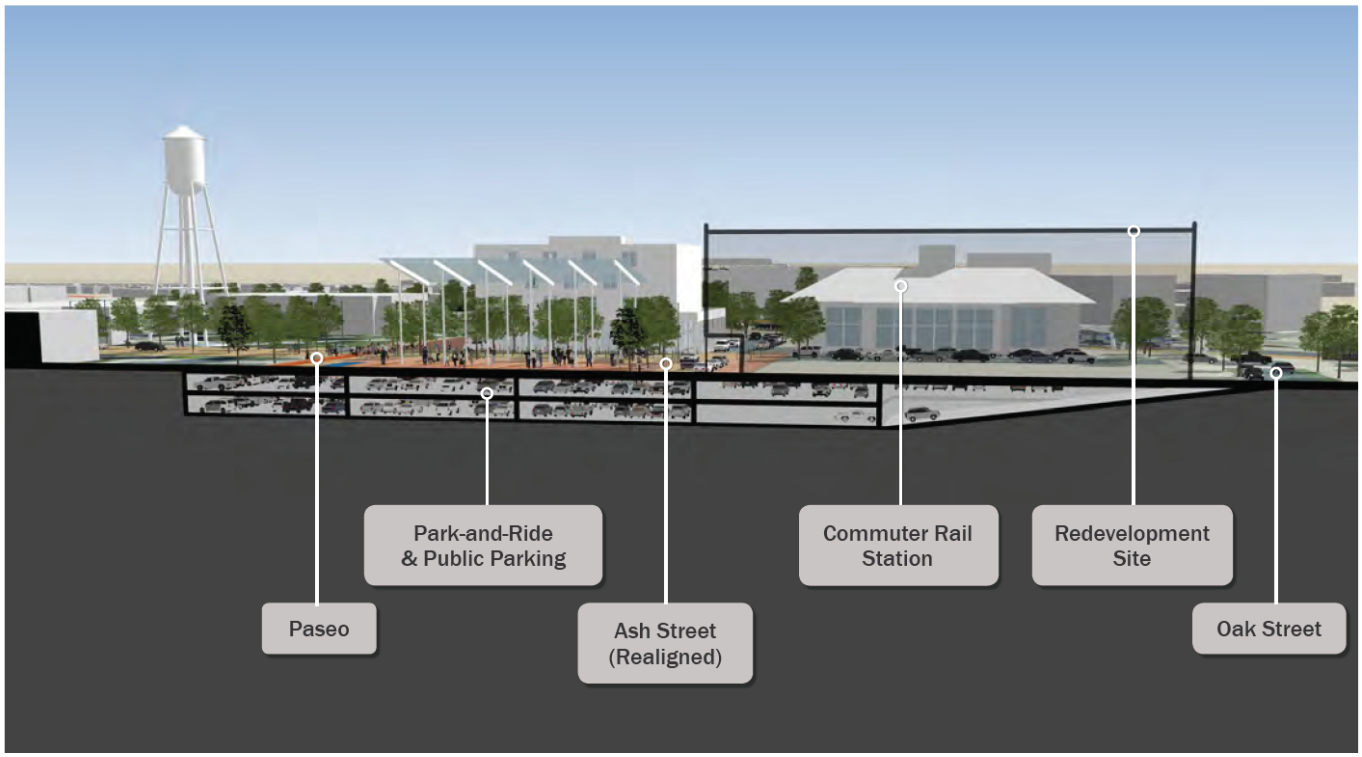
The Heritage District Redevelopment Plan provides comprehensive land use and transportation planning for downtown Gilbert. One key goal was to provide a district circulation network for pedestrians, bicycles, transit, and vehicles consisting of safe, direct, and convenient routes for all modes.

It outlines a preferred and alternative transit center location for the district, which includes a planned connection to regional rail. These proposals aim to create a future transit center with commuter rail service that honors the Town's railroad heritage. Figure 2.6.1 shows elements of those transit hubs at the proposed and alternative location within the town. They are anchored to the Union Pacific alignment the proposed commuter rail service would run along and provide parking and active transportation network connections that feed into local transit.

Figure 2.6.1 - Renderings of Proposed Transit Centers in The Heritage District

Preferred Transit Center Location (Long Range Planning Area)

Alternative Transit Center Location (Existing Park-and-Ride) – Section Looking South



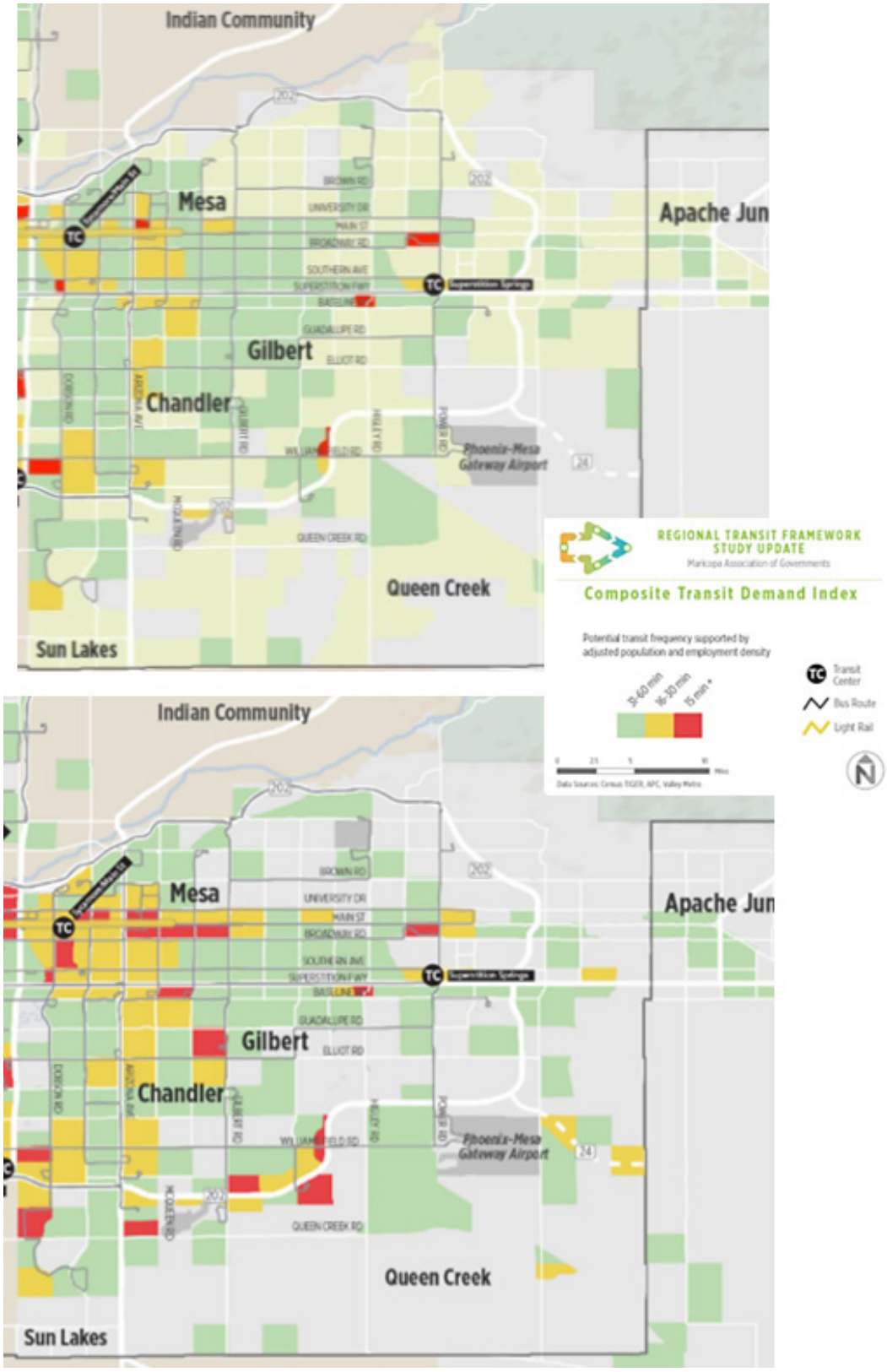
Regional Transit Framework Study (2019)

The Regional Framework Study analyzed the Phoenix metro region for new potential high-capacity transit corridors. High-capacity transit modes considered in the study included light rail and bus rapid transit. Demographic and land use analysis, as well as ridership levels of current transit were compiled to gauge demand for high-capacity service. Figure 2.7 shows suggested high-capacity corridor candidates, including a strong potential corridor down Gilbert Road from the current light rail end of line to Elliot Road. Figure 2.8 shows underlying transit demand estimated for 2015, and another for 2040 using projected land use and demographic growth. The development of hotspots along Gilbert Road and by Gilbert Mercy Hospital suggest those will be important areas to serve as the Town develops.

Figure 2.7 - High-Capacity Transit Service Corridor Potential Map

Credit: Regional Transit Framework Study (2019)

Figure 2.8 - Composite Transit Demand comparison from 2015 (Top) to 2040 (Bottom)



Credit: Regional Transit Framework Study (2019)

Commuter Bus Feasibility Study (2020)

MAG conducted a Commuter Bus Feasibility study to recommend improvements to current commuter service and new potential commuter routes. Analysis of existing and emerging job centers, and the travel flows between those centers and residential areas guided the creation of new routes. Valley Metro Transit Standards and Performance Measures were used to examine current routings.

The study suggested consolidation of some of the local stops on Route 531-Mesa/Gilbert Express resulting in just two stops including the Gilbert Park and Ride. This would bring the route in alignment with current regional transit standards, as the route currently has five local stops including exception stops.

Figure 2.9 shows current and projected travel flows between key regional employment centers and drivesheds around existing park-and-rides. Figure 2.10 shows new route suggestions that were ranked highest among new analyzed alternatives. Notably, new routes from the Gilbert Park-and-Ride were suggested to both Downtown Tempe and Phoenix North Central. These are the two new employment hubs with the current travel flows that indicate sufficient demand for new routes, and if implemented would triple the number of commuter destination options.

Figure 2.9 - Significant Travel Flows Between Key Employment Centers and PNR Drivesheds, for 2020 (left) and 2040 (right)

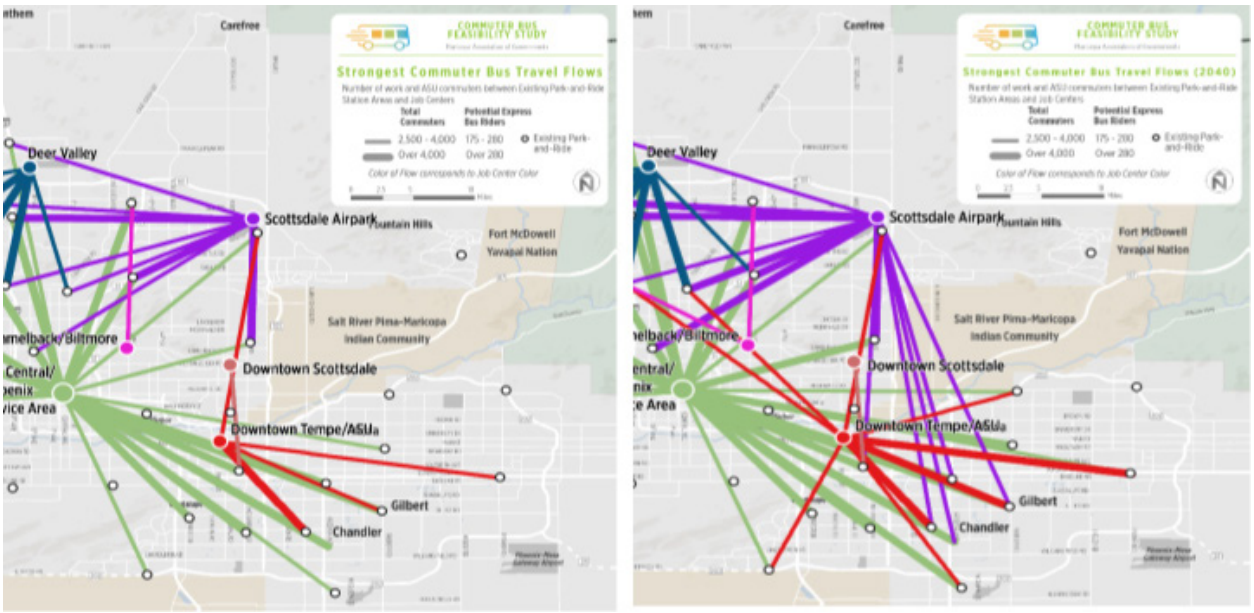
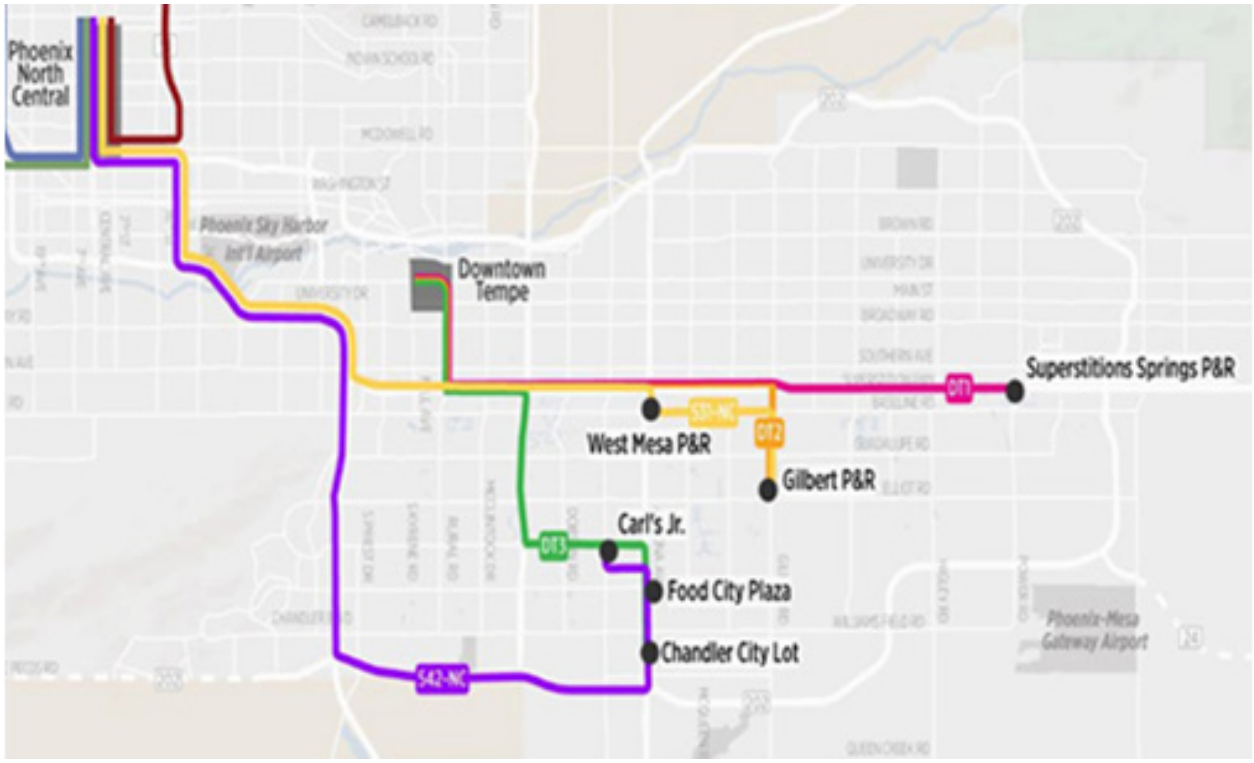


Figure 2.10 - New Recommended Express Bus Routes with the Highest Potential



Credit: Commuter Bus Feasibility Study (2020)

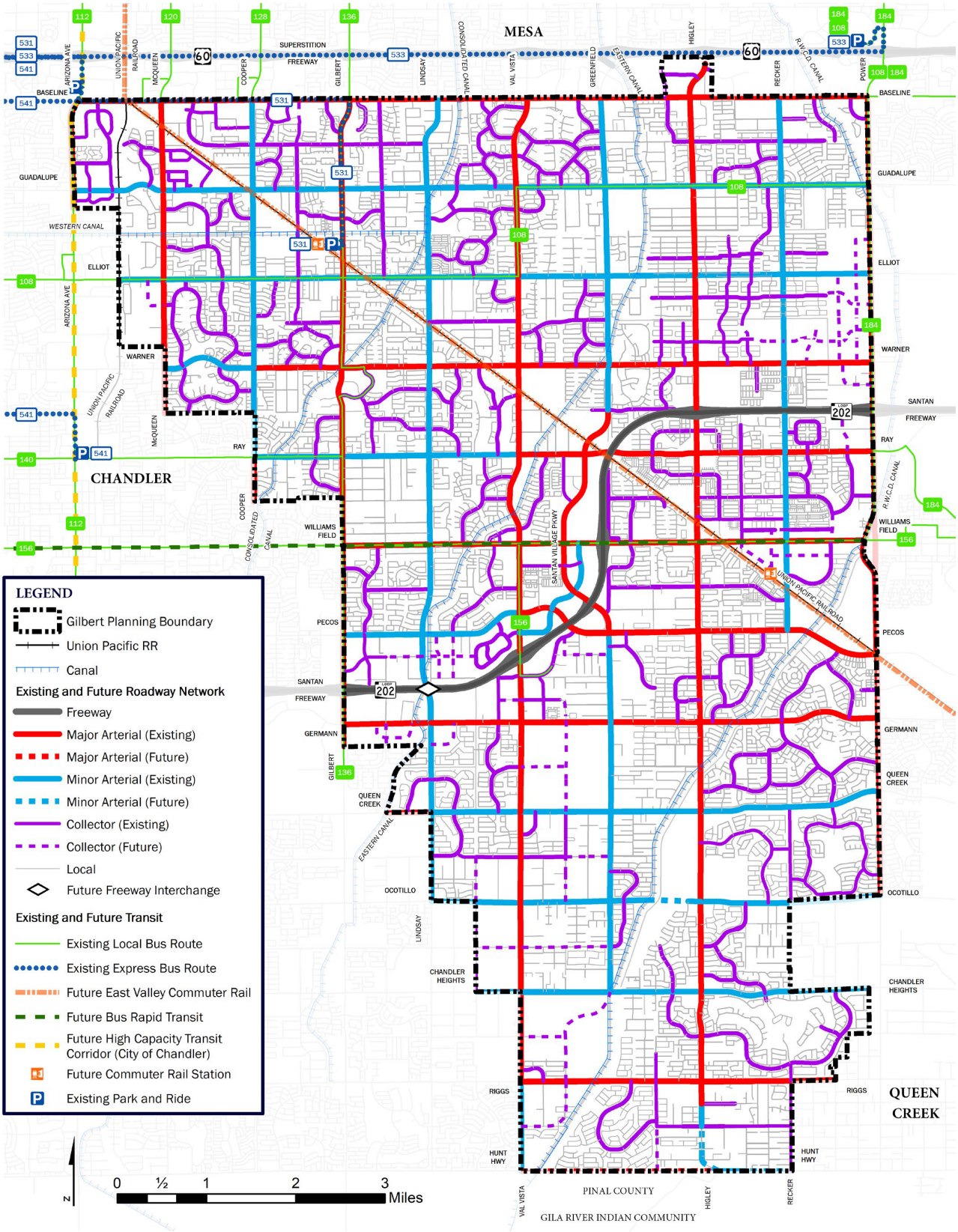
Gilbert General Plan (2020)

The Gilbert General Plan from 2020 provided a holistic overview of town planning including transportation and transit. It outlined proposals for Bus Rapid Transit (BRT) and High-Capacity Transit (HCT) as shown in Figure 2.10.1.

The map also shows proposed stations in Gilbert for the planned Phoenix area commuter rail and Phoenix-Tucson passenger rail systems. These lines are expected to use the existing Union Pacific rail corridor with rail stations proposed in the Heritage District and at Cooley as noted in the Regional Commuter Rail Study mentioned earlier.

Credit: Short Range Transit Program (2021)

Figure 2.10.1 - General Plan Map Showing Existing and Future Road and Transit Investments



Short Range Transit Program (2021)

Valley Metro's Short Range Transit Program is an annually updated document that details the planned transit service changes over the next five fiscal years. It also establishes the quartiles for performance among several key metrics, and details land use and demographic projections. In Table 2.1 we see the changes slated for the next five years as of winter 2020 related to the Town. These include improving night and weekend service span and frequency along Gilbert Road, and the addition of a new route along Val Vista Drive which were recommended in the SVTS Study. Route extensions along Ray Road and Mesa Drive further fill in gaps in the network north of Williams Field Road as recommended in several studies as well.

Table 2.1 - Short Range Transit Program Service Change Inventory

ROUTE	ROUTE NUMBER	SERVICE TYPE	CHANGE TYPE	FISCAL YEAR	POTENTIAL SERVICE CHANGE CONCEPT
Gilbert Rd	136	Local	Service Increase	FY24	Improve peak weekday frequency in Gilbert and Mesa (Main to Elliot).
Gilbert Rd	136	Local	Service Increase	FY24	Extend evening service weekdays and Saturdays to Chandler.
Mesa Dr/ McQueen	120	Local	Route Extension	FY25	Extend to Warner Road in Gilbert.
Ray Rd	140	Local	Service Increase	FY25	Add Sunday service.
Ray Rd	140	Local	Route Extension	FY25	Extend 140 from Gilbert Rd to Power Rd on Warner.
Val Vista	New	Local	New Route	FY25	New local route on Val Vista Dr. from Greenfield on Baseline Rd. to south of Pecos Rd. to Gilbert Mercy Hospital, replacing deviation of Route 156.
Gilbert Express	New	Express	New Route	FY26	Add new commuter Express from Williams Field Rd. and Greenfield Rd. to Downtown Phoenix.

Arizona Avenue Alternatives Analysis (2021)

Currently, Valley Metro and the City of Chandler are conducting an Alternatives Analysis to evaluate high-capacity transit options that would connect downtown Chandler to high-capacity transit in the Southeast Valley. This work picks up from previous Fiesta District high-capacity transit analysis that recommended the Arizona Avenue alignment connect with light rail either directly at Country Club Drive or to the west at Dobson Road (Figure 2.3). The study will identify which type of high-capacity transit such as bus rapid transit, light rail or modern streetcar, will best meet the area's transportation needs. Among the three alternatives scored, two run along the western edge of Gilbert.

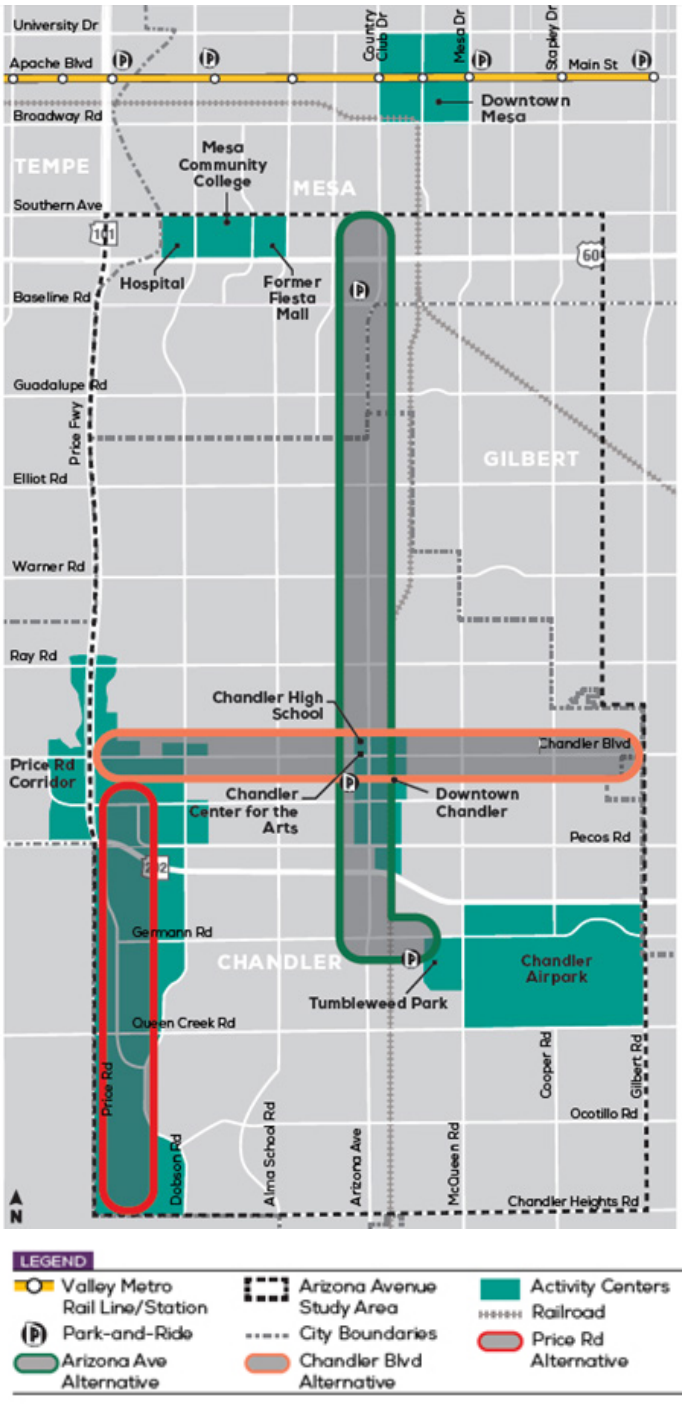
These alignments, seen in Figure 2.11, would run along Arizona Avenue and Chandler Boulevard. The Arizona Avenue alignment would run from Germann Rd to the Fiesta District and will take one of two paths to light rail noted earlier. This alignment would feature two stops along Gilbert at Baseline Road and Guadalupe Road. The Chandler Boulevard alignment would run along Chandler Boulevard to the Town's western edge at Gilbert Road and feature one stop in the Town.

Among the three alternatives weighed in the study, the Arizona Avenue corridor shows the highest potential for ridership in travel models. Both rail and BRT alternatives remain viable options, with BRT emerging as more cost competitive to build and operate.

Summary

These transit studies have a few significant recurring themes. One theme is filling in transit deserts. Specifically, adding service to the major arterial grid in the north of Gilbert is listed in several plans and studies, and would eliminate the existing gap in service between Williams Field Road and Elliot Road. Another recurring suggestion is the increase of service along existing major corridors like Gilbert Road, Williams Field Road and Power Road. From increases in span of service to increases in frequency and even suggestions of BRT service, strengthening the backbone of the network

Figure 2.11 - AAAA Main HCT Corridor Alternatives Map



Credit: Arizona Avenue Alternatives Analysis (2021)

along these major corridors is a recurring priority. A final recurring theme is a diversification of transit modes. Added circulator and BRT service would reinforce the first two themes by filling in geographic gaps and bolstering frequent service, respectively. Even considerations of complimenting potential commuter rail service reinforce the idea of accommodating the Town's growing transportation needs with a variety of service offerings. Table 2.2 summarizes these recommendations which provide a jumping off point for forthcoming service planning.

Table 2.2 - Transit Plan and Study Summary Table

RECOMMENDATION TYPE	CORRIDORS	SERVICE CHANGE DESCRIPTION	TIME FRAME
Frequency Increase	Route 108 Elliot Road	Weekday and weekend frequency improvements (currently 30-minute frequency)	Short Term
	Route 136 Gilbert Road	Weekday and weekend frequency improvements (currently 30-minute frequency	Short Term
	Route 156- Chandler Blvd/ Williams Field Road	Frequency Improvements (currently 30-minute frequency)	Long Term
	Route 184 Power Road	Frequency Improvements	Service Increase
Span Increase	Route 136-Gilbert Road	Extend Evening Service Weekdays and Saturdays	Short Term
New Local Bus Route	Val Vista Drive	Local Service Extending from Mesa south to Gilbert Mercy, replacing Route 156 Deviation	Mid Term
	Greenfield Road	Local service from SR 202 north to Mesa along Greenfield Road	Long Term
	Higley Road	Local service from Williams Field Road north to Mesa along Higley Road	Long Term
	Warner Road	Local service from Power Road west into Chandler along Warner Road	Long Term
	Queen Creek Road	Local service extending west and east into Chandler and Queen Creek along Queen Creek Road	Long Term
Route Extension	Route 140-Ray Road	Extend route to Warner Road or Power Road	Long Term
New Circulator Route	Northwest Gilbert Circulator	Half-hour, neighborhood service near Downtown	Mid Term
	Central Gilbert Circulator	Half-hour neighborhood service between Ray Road and Chandler Heights Road	Mid Term
New Express Route	North Central Phoenix Express	From current PNR to North Central Phoenix Business District	Short Term
	Downtown Tempe Express	From current PNR to Downtown Tempe	Short Term
	South Gilbert Express	Express Route along SR 202 to downtown Phoenix	Mid Term
New BRT/ HCT Route	Gilbert Road BRT	Enhanced Frequency, Limited Stop Service	Long Term
	Williams Field Road BRT	Enhanced Frequency, Limited Stop Service	Long Term
	Power Road BRT	Enhanced Frequency, Limited Stop Service	Long Term
	Arizona Avenue HCT	Enhanced Frequency, Limited Stop, Dedicated ROW	Long Term
New Commuter Rail Service	Downtown Gilbert Station	Interregional, limited stop rail with potential service to Tucson, Florence, Phoenix, and the west Valley	Long Term
	ASU Polytech Station	Interregional, limited stop rail with potential service to Tucson, Florence, Phoenix, and the west Valley	Long Term
	Short Term-1-5 Years	Mid Term-5-10 Years	Long Term- 10+ Years

DEMOGRAPHIC ANALYSIS

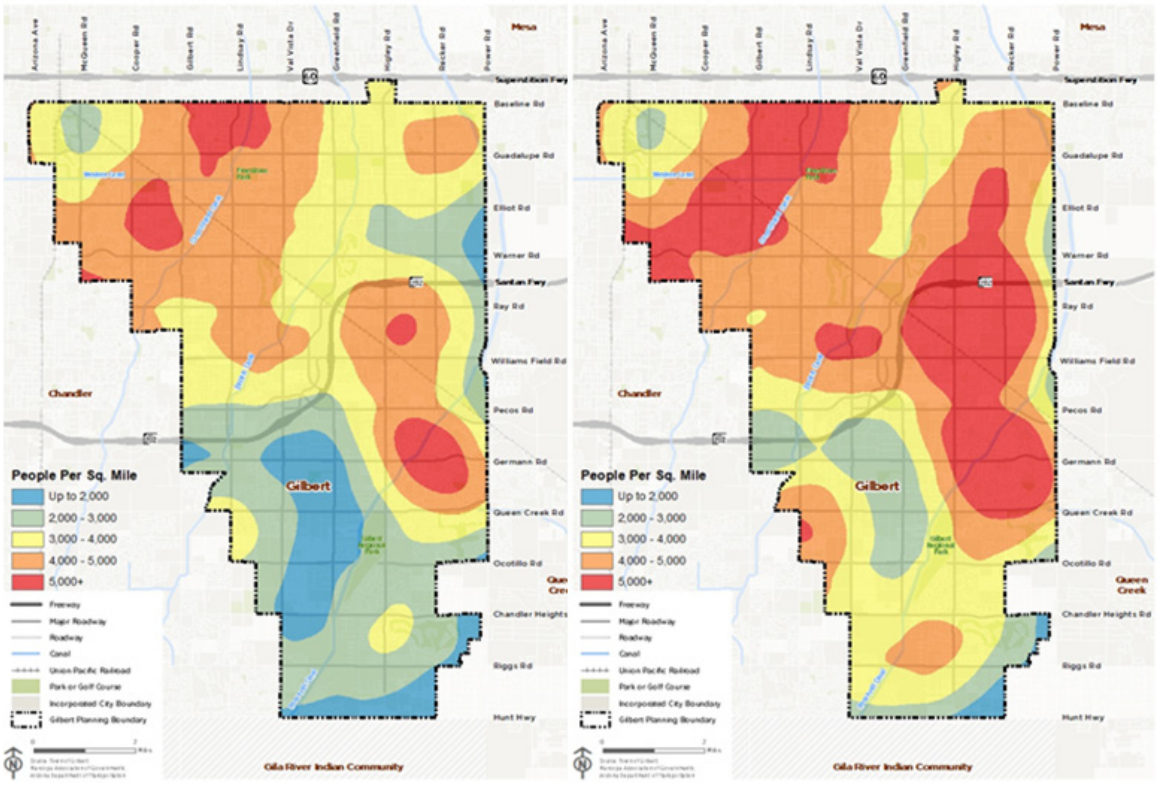
Population dynamics in Gilbert are important indicators of transit demand and public investment equity. This analysis will show how key groups of Town residents such as low-income individuals, the elderly, minorities, etc. are distributed throughout the jurisdiction. This will ensure that service planning in the study includes these areas, and the residents that live there. This is important not just because these populations are associated with higher transit ridership, but also higher transit dependence. Including the population centers identified as key neighborhoods to serve ensures social equity in future investments and increases the likely productivity of that service.

Population Density

Population density is one of the single most important indicators of potential productive transit service, and a strong indicator of overall travel demand. As transit is usually considered accessible by foot within about a quarter mile, the more people living or traveling to locations within that distance from a stop, the more potential riders you have. Figure 3.1 shows the current and projected population density in the Town.

Projections for 2040 show that overall, the population will increase in density in nearly every part of town, and the highest density areas will continue to be in the northwest corner and central eastern edge by Higley Road and Recker Road. The northwest hotspot is served by transit service on Gilbert Road, Elliot Road and the downtown express but future demand growth in the east would likely benefit from service improvements like those identified earlier for existing and proposed routes. The eastern population center is served only somewhat by the Williams Field Road service and indicates the potential productivity of proposed service improvements along Higley Road and Recker Road.

Figure 3.1 - Population Density from 2020 (left) to 2040 (right)



Credit: Maricopa Association of Governments

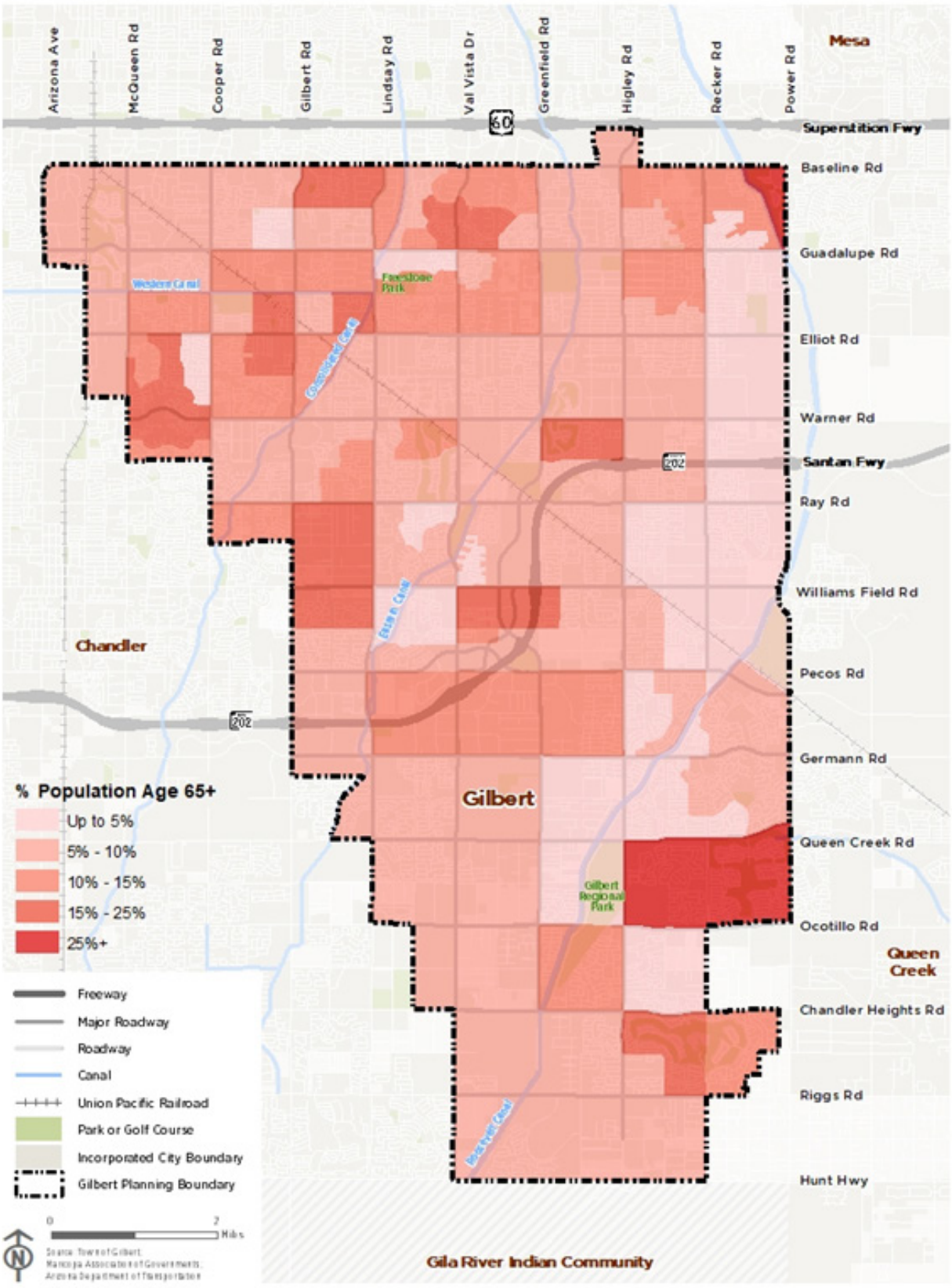
Population Age

Typically, transit use and transit reliance increase at both ends of the age spectrum. While there are many contributing factors, it often results from a lower proportion of active drivers in elderly or young populations relative to the overall population. These populations also have unique travel demand, involving more medical or education related trips that likely do not adhere to typical commute peak times and may rely more heavily on mid-day and weekend service.

The concentrations of the 65+ population are shown in Figure 3.2. The strongest concentration is in the east between Queen Creek Road and Ocotillo Road. However, there is generally a significant concentration of this population in the northeast portion of the Town. An important consideration with this population is the impact on paratransit service that results from changing local policies. The Town currently provides paratransit service town wide. If it reduced its service area to the legally mandated service area within 3/4 mile of local transit service, many of these areas where seniors represent 20 to 25 percent of the population would likely be heavily impacted.

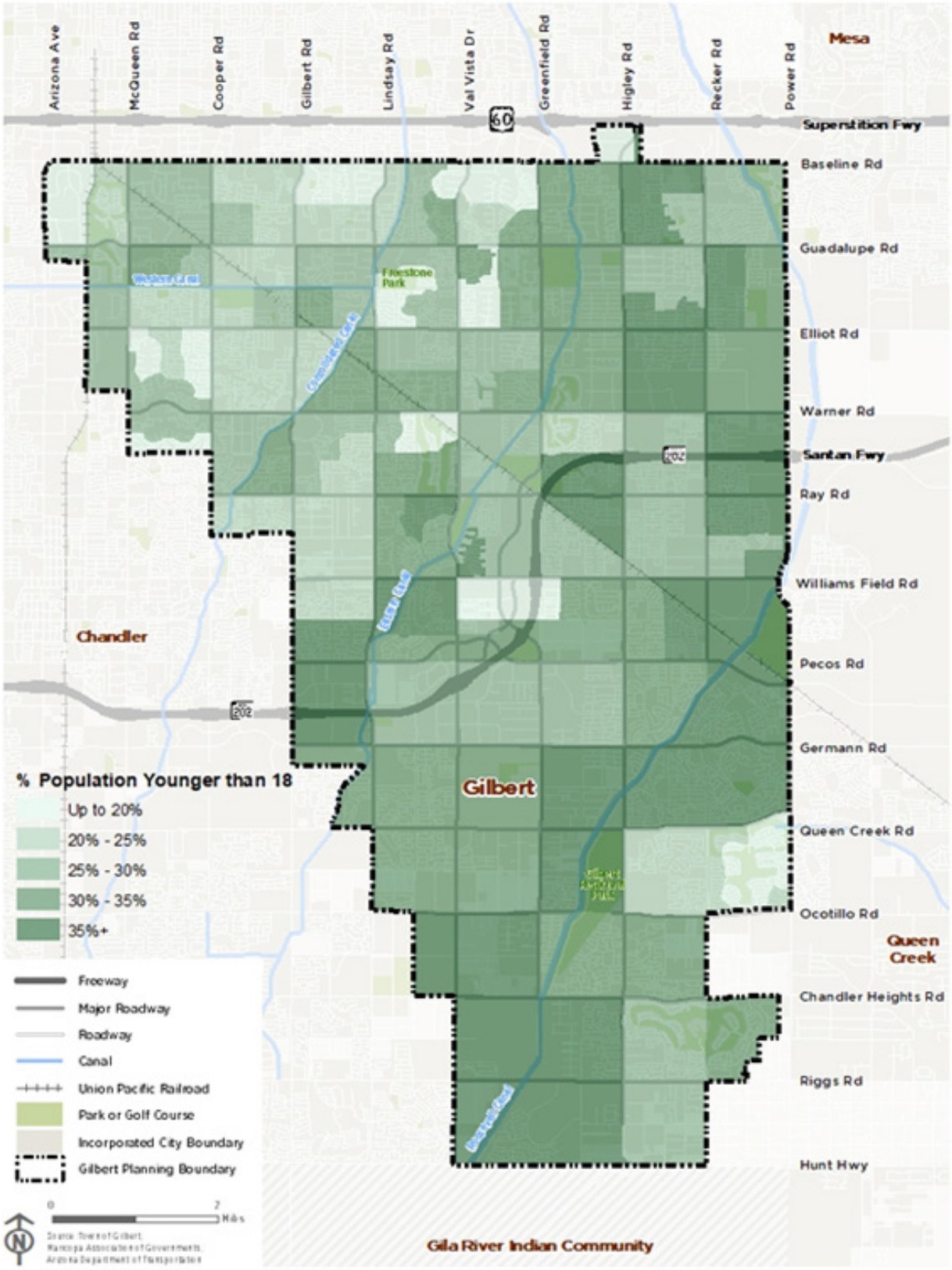
The population distribution of those aged 18 and younger are shown in Figure 3.3. The concentrations of these populations are distinct from the senior concentrations. The youth population is generally higher toward the southern areas of town. Current service along Williams Field Road does cross a high concentration of youth, but further south there are no transit options in an area where 25 to 33 percent of the population is younger than 18.

Figure 3.2 - Elderly Population Distribution



Credit: American Community Survey 2019

Figure 3.3 - Youth Population Distribution

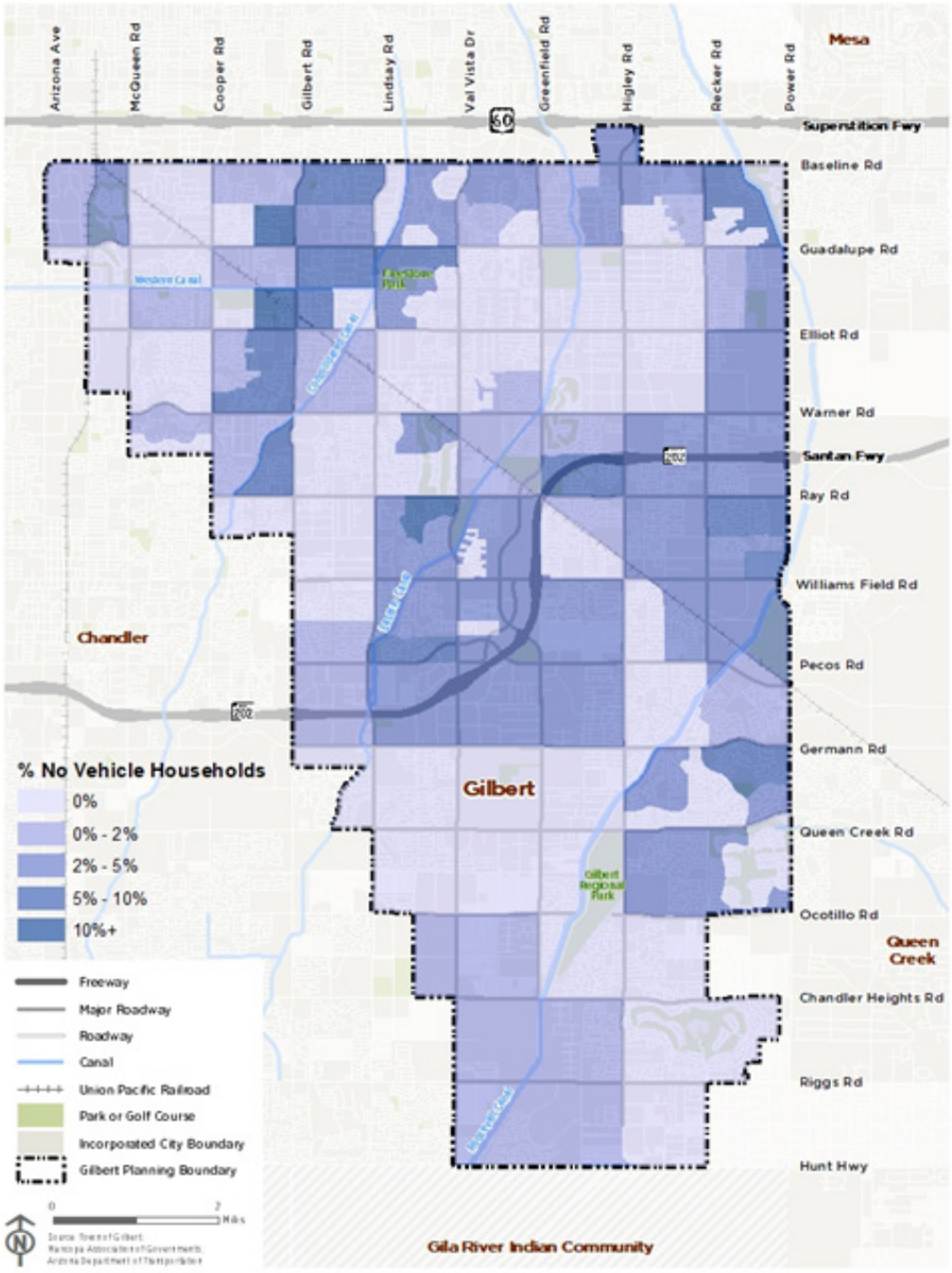


Credit: American Community Survey 2019

Auto Ownership

Those in the community without a car are naturally more reliant on alternative modes of transportation than the rest of the community. Figure 3.4 shows the concentrations of households without cars throughout Gilbert. The highest concentrations are along SR 202 and Gilbert Road. Many of these areas are currently served by bus routes, however additional service along Recker Road and Ray Road as proposed in previous studies would fill remaining gaps where these concentrations are the highest.

Figure 3.4 - Zero Car Household Distribution



Credit: American Community Survey 2019

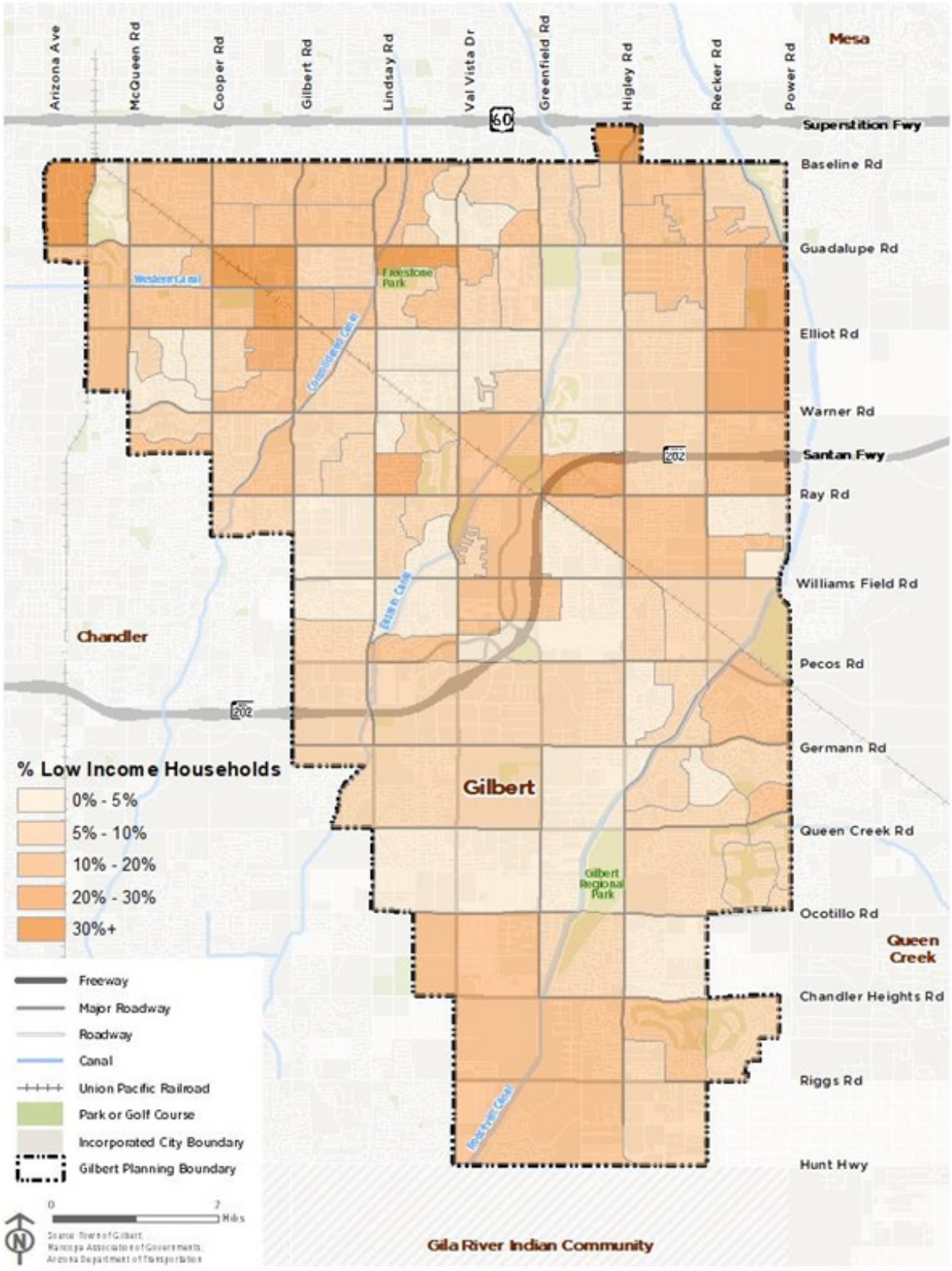
Minority and Low-Income Populations

Minority and low-income populations often receive special consideration in transit planning for a variety of reasons. High concentrations of these populations correlate positively with high transit ridership. These populations are often more dependent on alternative forms of transportation as well, underscoring the importance of providing alternatives in neighborhoods with higher rates of minority and low-income individuals. These populations are also safeguarded by federal Title VI laws that deem them protected classes, and require that transit service changes and investments consider potential disproportionate impacts these populations may bear.

Figure 3.5 shows the distribution of low-income household proportions within Gilbert. The definition of low-income used here is 150% of the national HHS standard (consistent with Valley Metro Title VI guidelines). Concentrations are generally low in the Town, with small pockets along Gilbert Road, Power Road, SR 202 and south of Ocotillo Road. In these areas at least one in five households are considered low income.

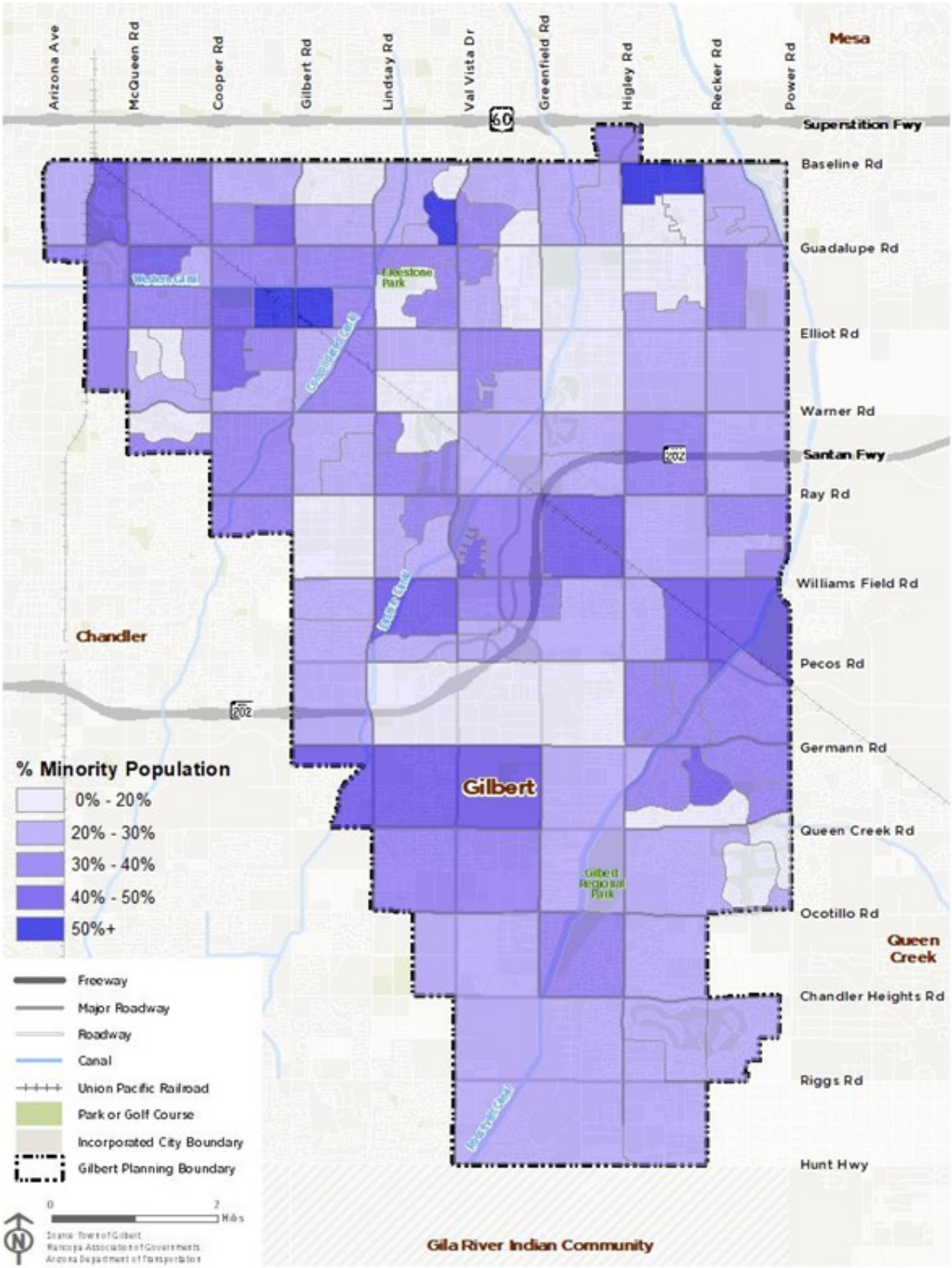
Figure 3.6 shows the distribution of the minority population throughout the Town. Significant pockets are shown at the intersection of Gilbert Road and Elliot Road, Guadalupe Road and Val Vista Drive, and Recker Road and Baseline Road where more than half of the residents are minorities. Current routes along Gilbert Road and Elliot Road/Guadalupe Road provide service to two of these three communities. Minorities also make up more than one out of every three people in many census block groups adjacent to Williams Field Road and Germann Road. The Williams Field Road route provides service to several of these communities, however the blocks south of Germann Road do not. As the transit network and investments of the Town evolve with its growing needs, including the areas in which these communities reside, and minimizing the impacts of potential changes to them, will be key in maintaining equity.

Figure 3.5 - Low Income Household Distribution



Credit: American Community Survey 2019

Figure 3.6 - Minority Population Distribution



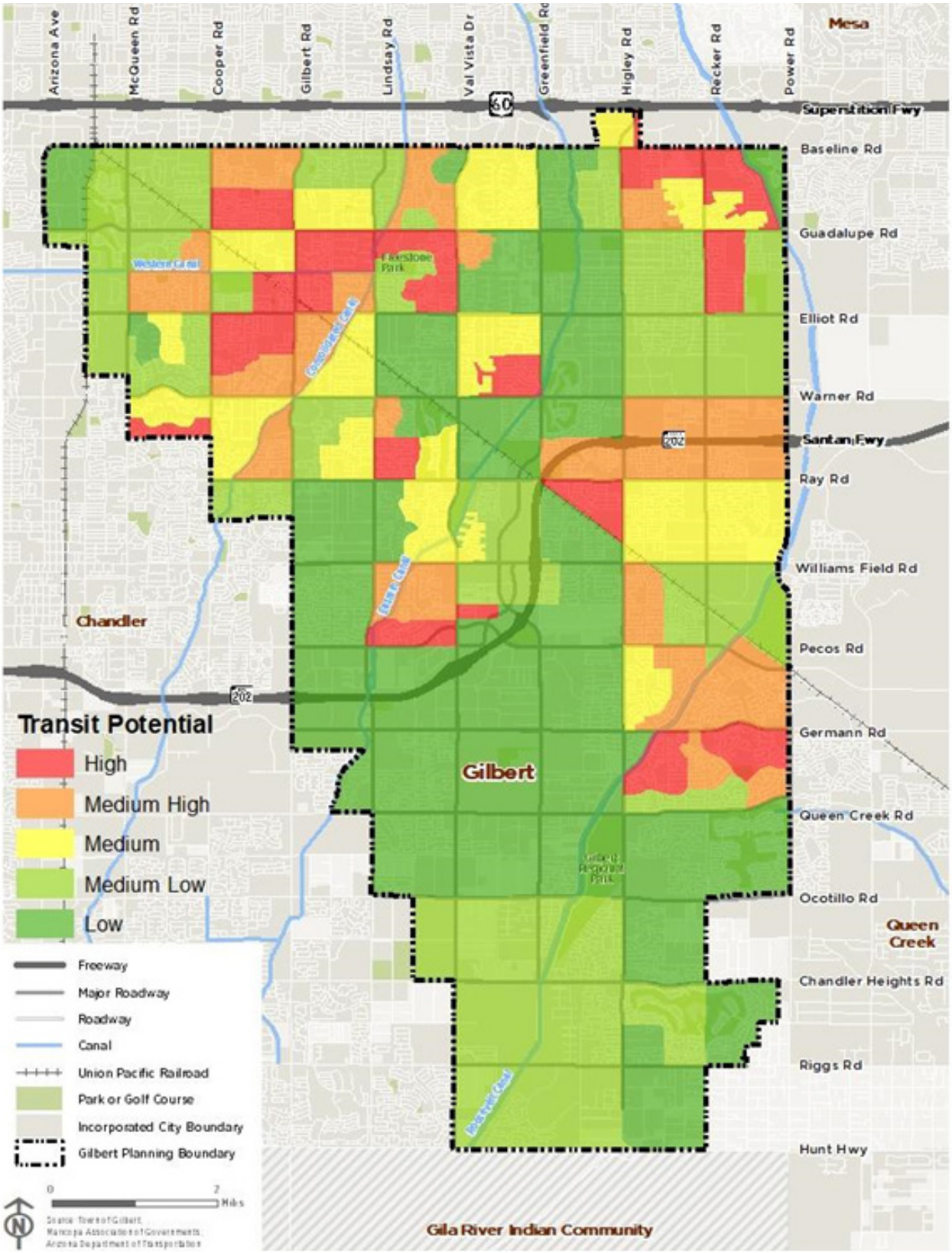
Credit: American Community Survey 2019

Transit Demographic Composite

The many demographics analyzed here all come into consideration when determining what areas might have the highest potential demand for transit service in the area. Figure 3.7 shows a composite of the previously mentioned characteristics of a population traditionally associated with higher transit dependence and demand. Within each category, census block groups were ranked and scored according to their quartile for that demographic. These quartile scores were then combined across demographics to create this composite, where block groups in consistently higher quartiles score higher and vice versa.

Generally, higher scores are seen in the northern part of Town where densities are high and pockets of minority, elderly or other groups of individuals are more prevalent. Hotspots along Guadalupe Road, Germann Road and Gilbert Road represent the high points of transit propensity, where demand is likely highest in the entire study area. Many of these block groups are adjacent to existing service, though some along Warner Road and Germann Road remain unserved. If new service were added in the Town, these areas would likely be some of the most productive to explore.

Figure 3.7 - Transit Demographic Composite

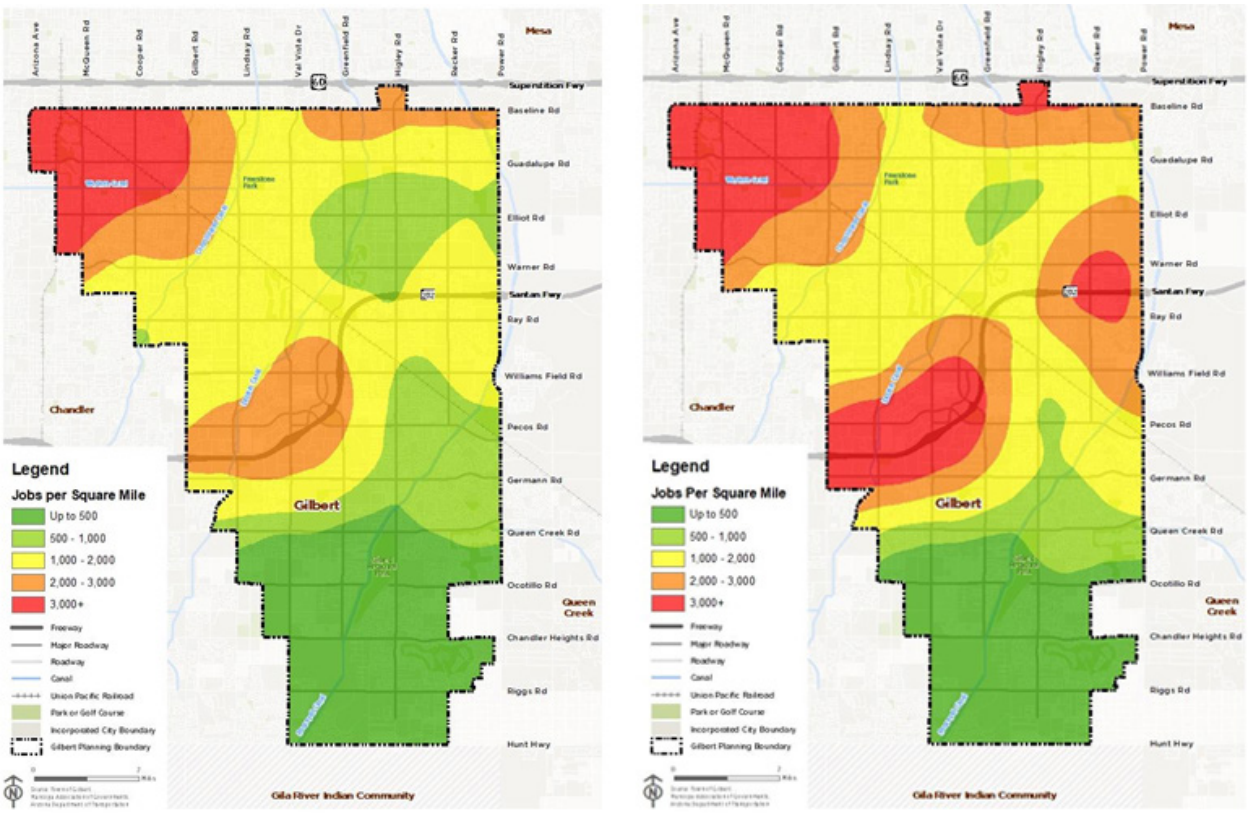


Credit: American Community Survey 2019

Employment Density

Beyond those who live within Gilbert, those employed at Gilbert's various businesses account for a large amount of travel demand in the Town. Knowing where employment in the Town is most intense, and how it will change over time is key to understanding how to meet this demand. Figure 3.8 shows current and future levels of employment density in the study area. Densities top off at about 3,000 jobs per square mile, and peak in the northwest corner of the Town and along SR 202. Looking forward, these areas are set to grow, especially along SR202 as shown in the map to the right. Conversely, the portion of the Town south of Queen Creek Road will remain without much employment over the next several decades.

Figure 3.8 - Employment Density in 2020 (left) and 2040 (right)



Credit: Maricopa Association of Governments

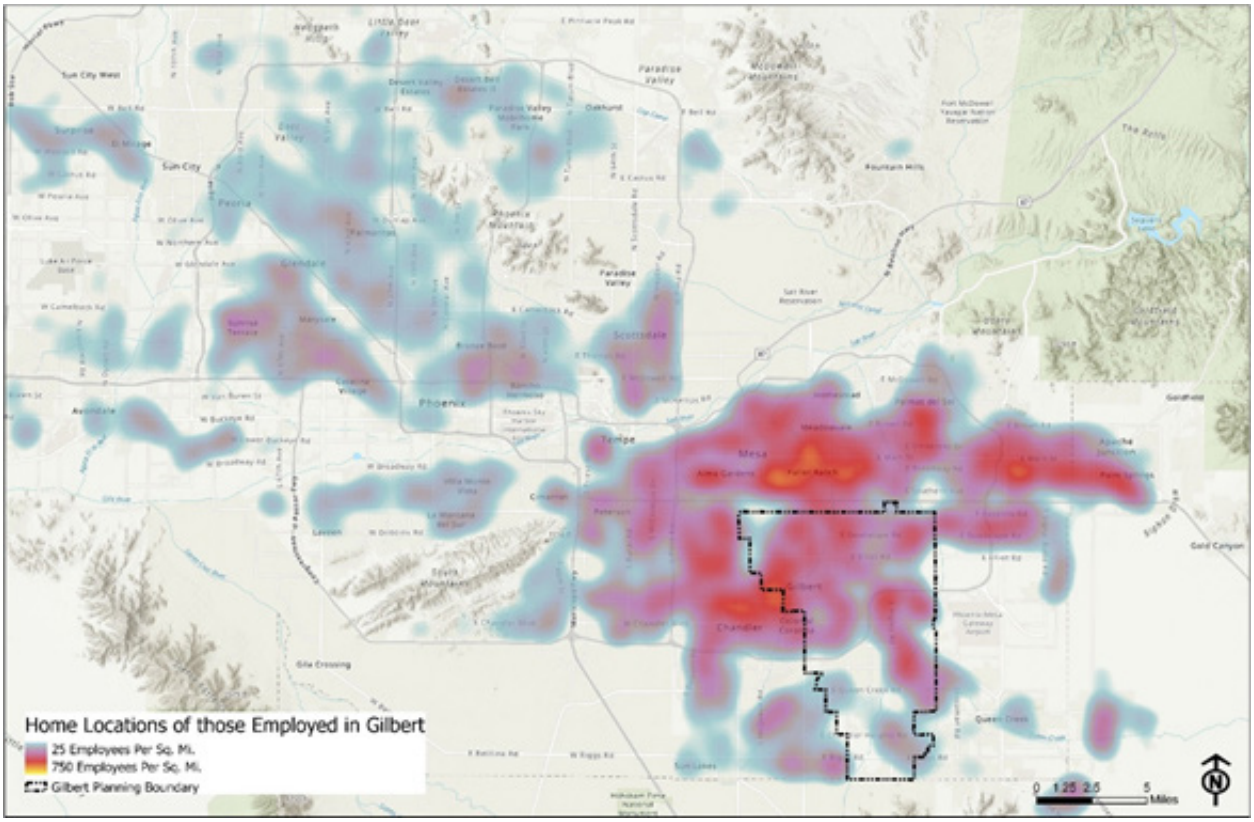
Commuter Destinations

Understanding where Gilbert residents are commuting to throughout the valley, and where people employed in Gilbert are coming from helps to see where the highest commute demand is. This data is collected nationally on a regular basis in a manner similar to American community Survey data and distributed as the Longitudinal Employer-Household Dynamics/Origin-Destination Employment Statistics, or LODES data. Figure 3.9 shows home location density for those employed in Gilbert, and Figure 3.10 shows the density of job locations of Gilbert Residents, both based on the latest LODES data.

Workers coming into town are largely located in Mesa, Chandler and Apache Junction, with Central Mesa having the highest densities. These relatively short distance commutes would be more appropriately served by local or limited stop service as opposed to express commuter service. High peak frequencies on local routes to these areas would likely draw more of these commuters.

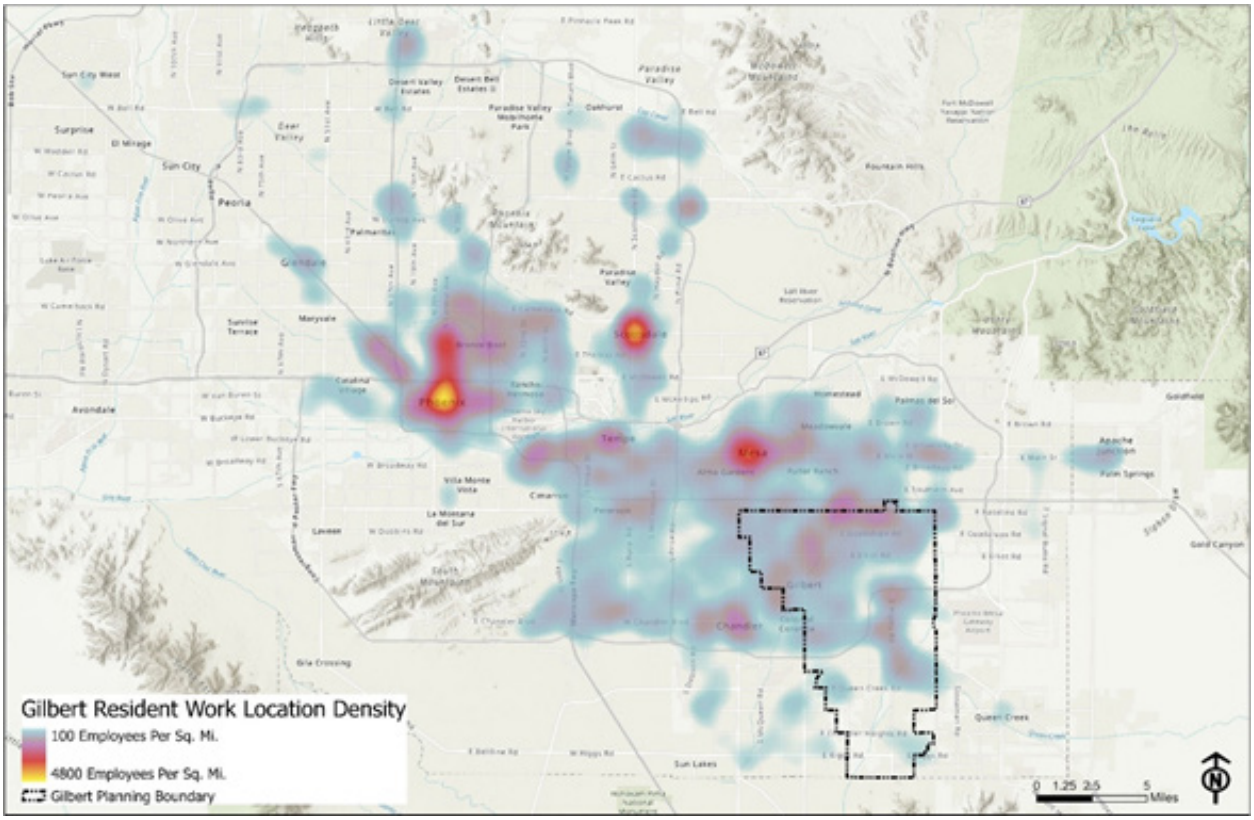
The job locations of Gilbert residents are more concentrated, with major hotspots in downtown Phoenix, downtown Scottsdale and Mesa. While current transit service provides express connection to downtown Phoenix, the Scottsdale hotspot suggests that downtown Scottsdale also might have potential to be a productive express connection.

Figure 3.9 - Home Location Density of People Employed in Gilbert



Credit: LODES Data

Figure 3.10 - Employment Location Density of Gilbert Residents



Credit: LODES Data

Summary

Understanding the makeup of Gilbert residents and how the overall population and its subsections are distributed across the Town are essential to estimating how current services are meeting potential demand, and how potential changes could be optimized to meet demand. Groups traditionally associated with higher transit usage compiled in the transit demographic composite show that higher population densities, and concentrations of low income, zero car households and young people are generally higher in the northwest portion of the Town and taper off in the southern portion. Population and employment density increases projected over the next 20 years show that current high-density areas like those around Gilbert Road and Elliot Road do feature transit options, but growing areas in the eastern and central portions of the Town will exacerbate the need for alternatives in current network gaps.

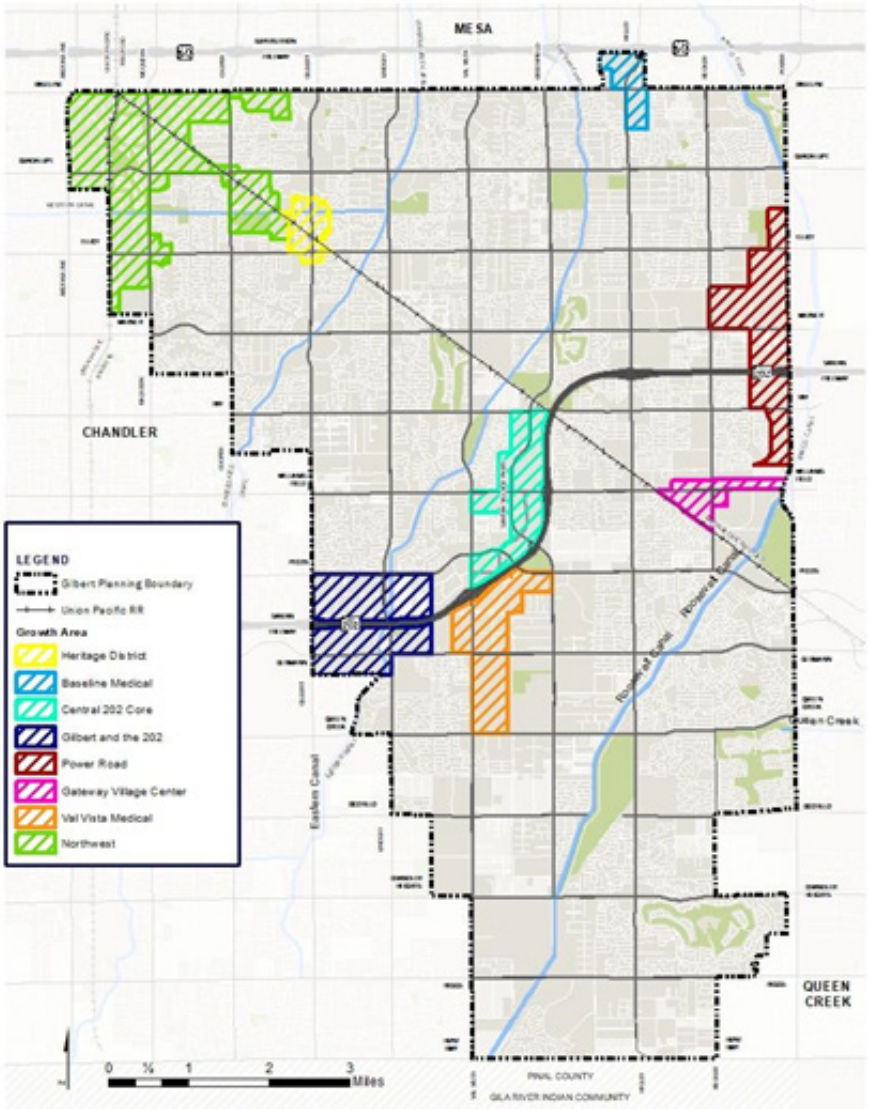
Land Use

The built environment naturally has a profound impact on local travel demand and the viability of transit alternatives. The layout of the street network, the density of development, and the mix of land uses dictate how accessible transit service can be and how large/diverse the pool of potential trips within a given corridor likely is. These variables dictating accessibility and demand set the tone for what kind of ridership productivity we can expect and what service models best suit the landscape.

Figure 4.1 shows key growth districts identified by the Town. These areas are planned for the highest level of development over the foreseeable future. Current transit service runs through many of these areas, including along Gilbert Road and Power Road. Growing travel demand along SR 202 west of Greenfield Road provides opportunities for future new potential local service corridors.

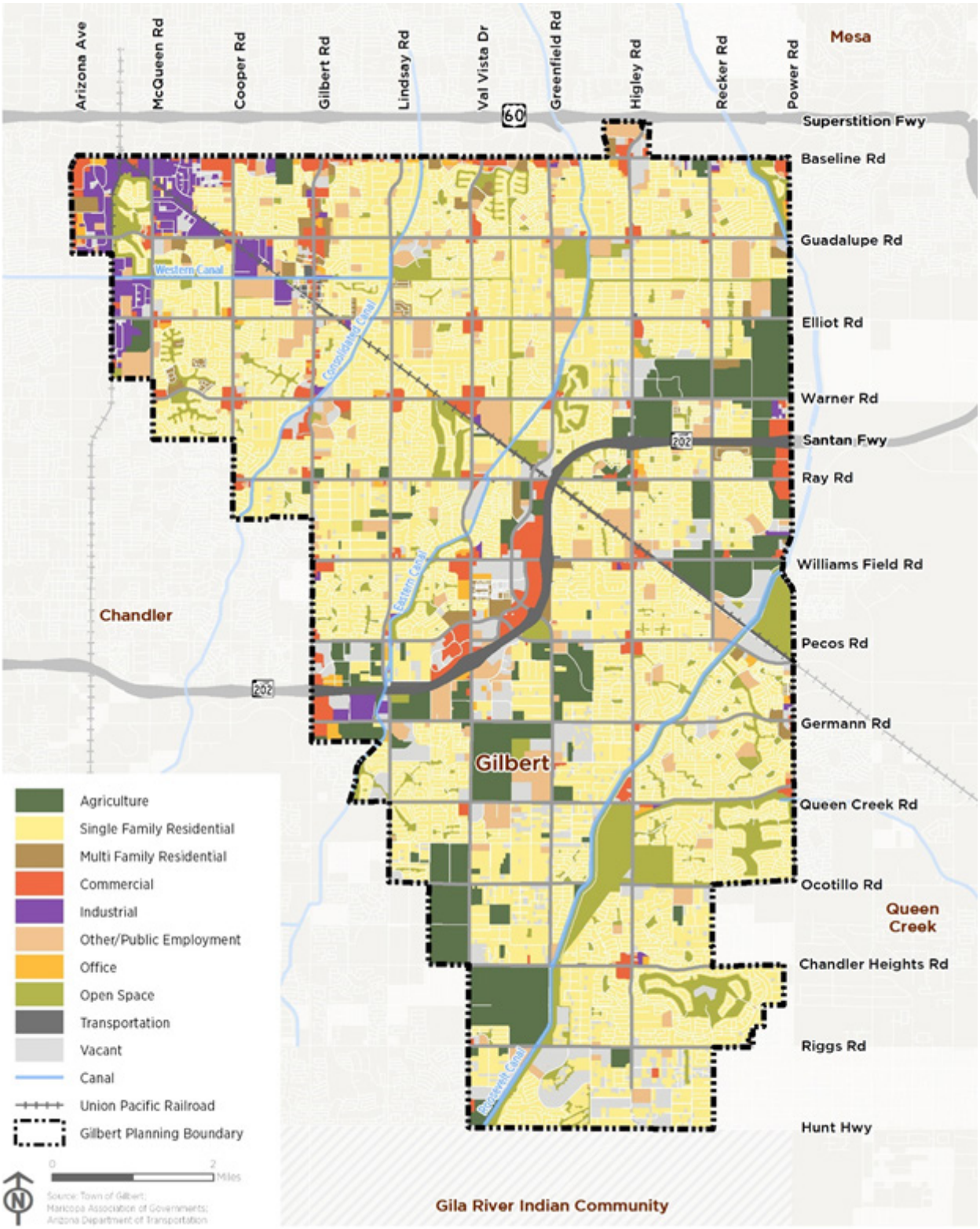
The land use of the Town is shown in Figure 4.2. The predominantly low density residential makeup of the study area is shown by the large orange and yellow portions of the map. These neighborhoods are difficult to serve with fixed route transit because there are relatively few potential transit users, and street/ sidewalk network layout in these neighborhoods are typically circuitous and do not offer direct, convenient access to main arterials where service typically runs. These areas could be served by an on-demand flexible route or microtransit, where service is only run when needed and reduces walking distance for users. Conversely, the denser, mixed use development along northern Power Road, northern Gilbert Road and SR 202 provides better access to a wider range of trip types and potential transit users.

Figure 4.1 - Growth Districts of Gilbert



Credit: Town of Gilbert

Figure 4.2 - Town Land Use Map



Credit: Town of Gilbert

Transit Service

There are currently six local bus routes and one downtown express bus route that operate in the Town of Gilbert. The alignment of these routes is shown in the map below. Over the past five years these routes collectively served roughly 225,000 riders each year. Ridership totals by route within the Town of Gilbert are shown in Table 5.1 for FY19. The Gilbert Road service carries more riders than any other service, with Elliot Road and Williams Field Road service coming in second and third respectively, with about half that ridership. Costs per route and passenger shown here demonstrate the range of investment efficiency, from the very effective investments on Gilbert Road and the Downtown Express, to the costly services along Williams Field Road and Power Road on weekends.

Overall, as shown in Figure 5.2, ridership in the Town has stayed steady over the last few years, maintaining roughly 225K-245K riders per year during this period, excluding FY20 which was down due to the pandemic.

Figure 5.1 - Town Transit Map

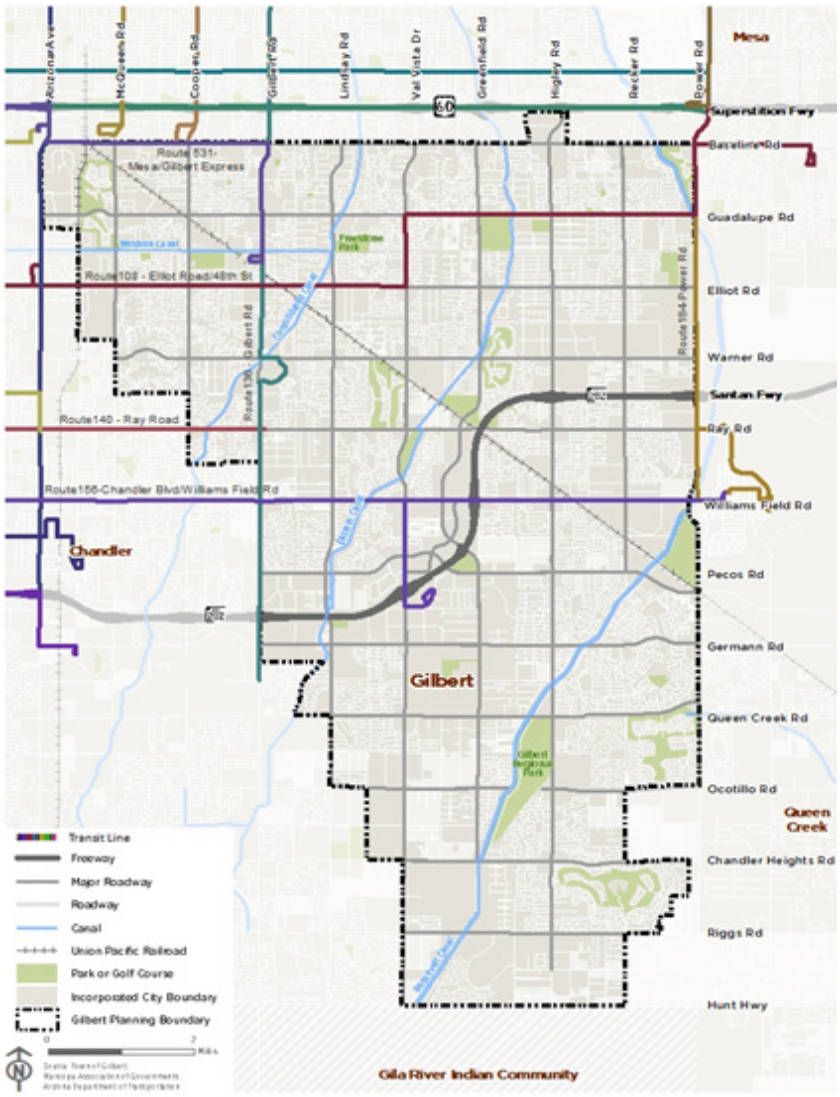
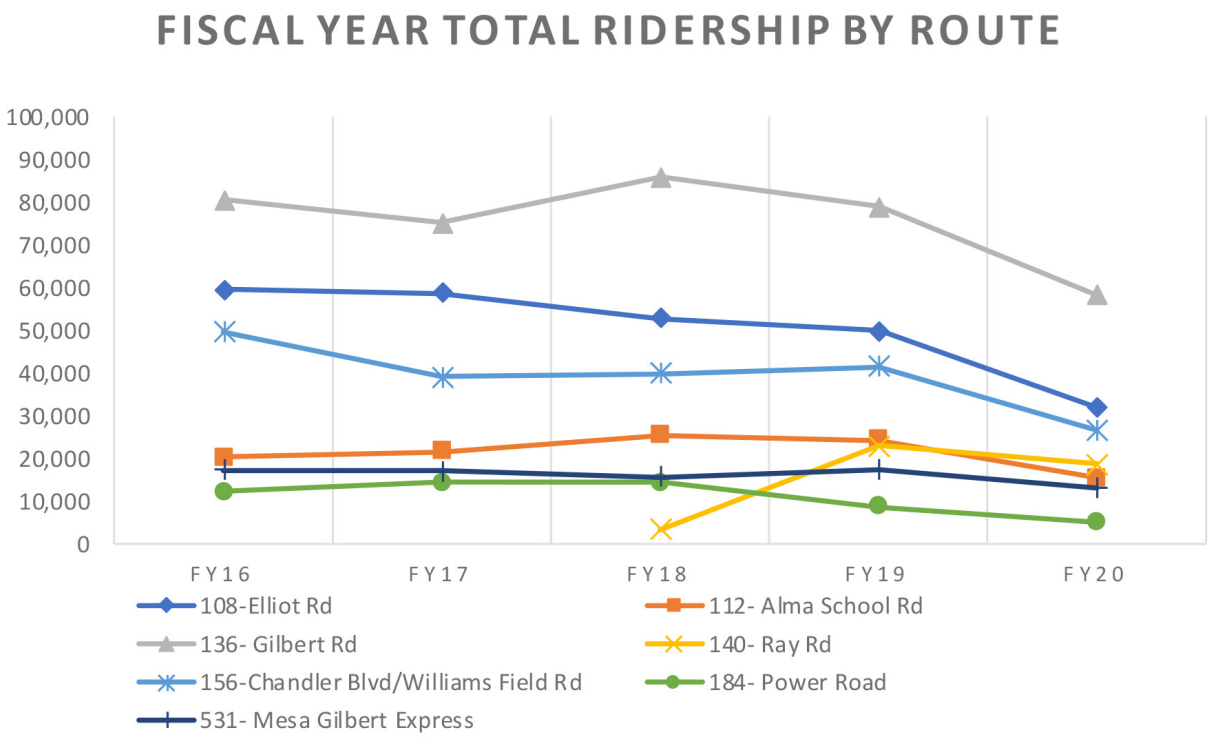


Table 5.1 - Transit Ridership and Cost by Route and Daytype (FY19)

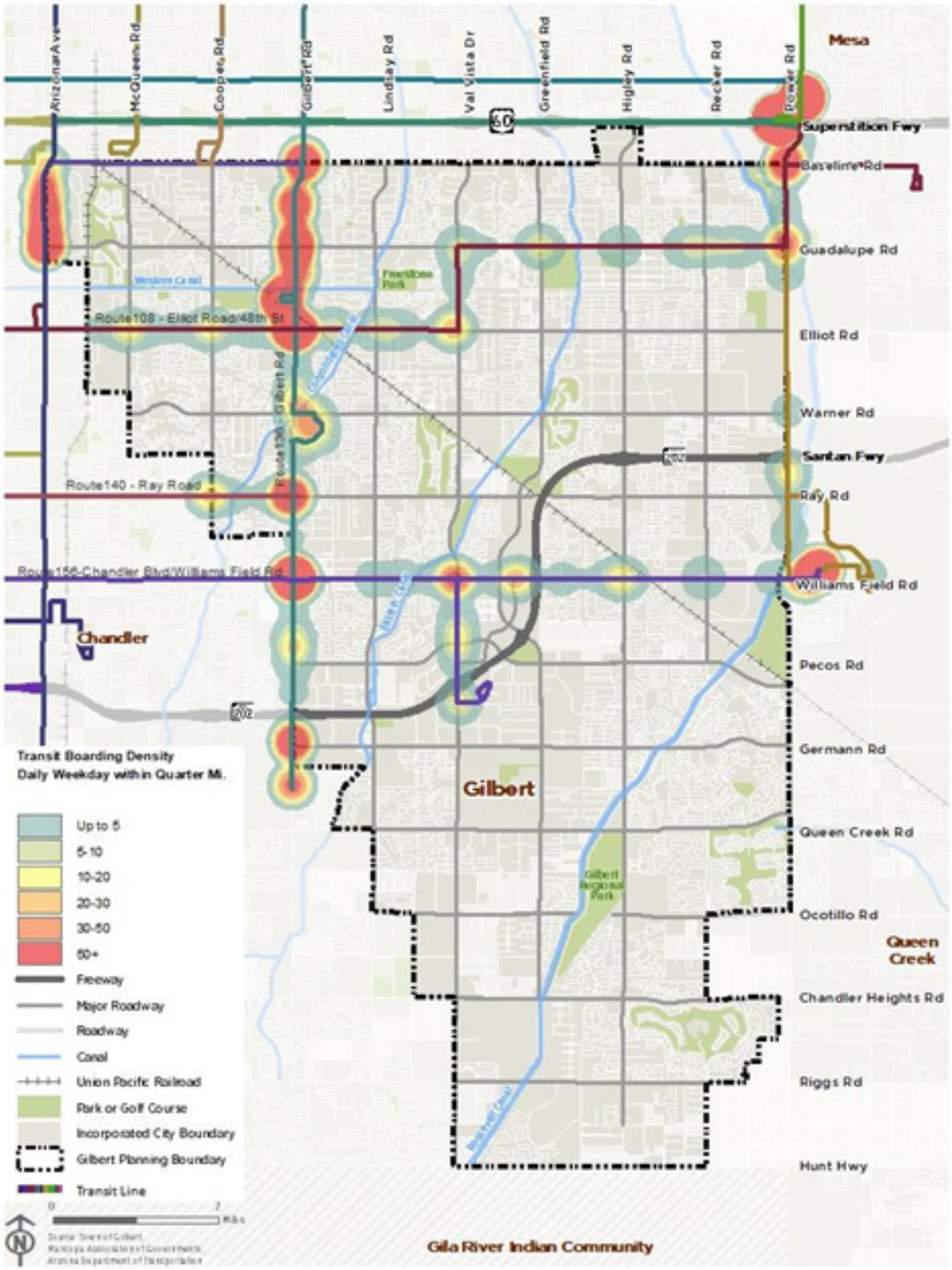
ROUTE	DAYTYPE	MILES	GROSS COST	NET COST	RIDERS	GROSS COST PER RIDER	NET COST PER RIDER
108	Weekday	157,282	1,005,618	906,434	43,802	$22.96	$20.69
112	Weekday	22,221	142,078	118,824	19,695	$7.21	$6.03
136	Weekday	92,477	591,273	496,589	73,168	$8.08	$6.79
140	Weekday	10,852	69,387	61,664	22,630	$3.07	$2.72
156	Weekday	165,527	1,058,334	965,783	35,090	$30.16	$27.52
184	Weekday	42,268	270,247	242,653	7,763	$34.81	$31.26
531	Weekday	14,379	97,289	66,994	17,374	$5.60	$3.86
108	Saturday	15,059	96,280	87,473	3,384	$28.45	$25.85
112	Saturday	2,591	16,563	13,893	2,468	$6.71	$5.63
136	Saturday	13,797	88,211	78,208	5,823	$15.15	$13.43
140	Saturday	1,988	12,709	11,690	428	$29.69	$27.31
156	Saturday	29,251	187,025	172,522	3,773	$49.57	$45.73
184	Saturday	3,693	23,612	21,336	613	$38.52	$34.81
108	Sunday	16,357	104,584	95,805	2,590	$40.38	$36.99
112	Sunday	2,557	16,348	13,849	2,092	$7.81	$6.62
156	Sunday	28,619	182,984	169,210	2,572	$71.14	$65.79
184	Sunday	4,320	27,620	25,357	410	$67.37	$61.85
Total		**623,238**	**3,990,162**	**3,548,284**	**243,675**	**$16.37**	**$14.56**

Figure 5.2 - Fiscal Year Total Ridership by Route



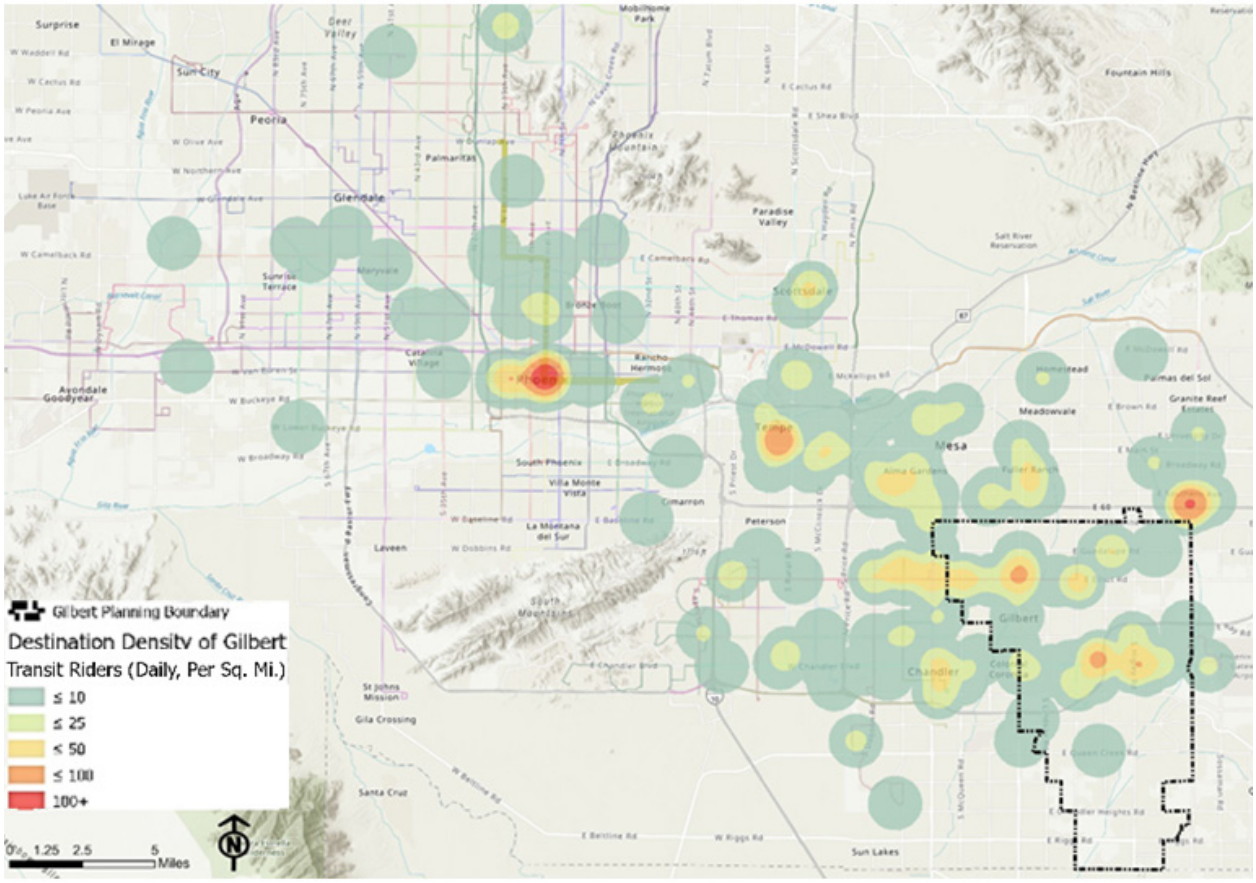
The density of transit boardings across the Town of Gilbert and immediately outside is shown in Figure 5.3. As seen in the previous table and figure, Gilbert Road sees the highest concentration of ridership of any route in the Town. Generally, ridership tapers off toward the east, though strong end of line connections at ASU Polytech and Superstition Springs Mall show the regional importance of these eastern connections. Providing additional connections or other means of access to these stretches of routes between Gilbert Road and Power Road would likely bolster their performance in this area.

Figure 5.3 - Transit Rider Boarding Location Density Map (2019)



Mapping the distribution of Gilbert transit rider destinations shows us rthe most in-demand regional and local connections made by system users. Figure 5.4 shows the density of destinations of transit riders originating in Gilbert as captured in the 2019 VM Origin Destination Study. Currently, direct service is offered to hot spots such as downtown Phoenix and Superstition Springs Mall/ Transit Center. A hotspot in downtown Tempe however, can only be reached via a transfer to light rail or another local route such as Route 72 - Scottsdale Road. This suggests latent demand for an express route to this destination as recommended in previous transit studies. Within the Town, the destination density layout shows sustained high densities along Elliot Road and Chandler Boulevard by the SR 202.

Figure 5.4 - Transit Rider Destination Location Density Map



Credit: VM Origin/Destination Study 2019

Origin Destination Survey Data

To gain a deeper understanding of riders' travel demand, Valley Metro regularly conducts a rider origin and destination survey. The most recent version was conducted in Spring 2019. Questions on how riders access service, the purpose of their trips, their destination and how many transfers they made allow the agency to better adapt services to riders' patterns and needs. Table 5.2 breaks down how Gilbert transit riders accessed service, showing two of every three riders walked to the service. This emphasizes the importance of a safe and well-connected pedestrian network for promoting transit access and productivity. Table 5.3 shows the most prominent trip purposes for Gilbert riders. Home-based work trips make up almost two of every three trips. Key employment centers (previously identified in figures 5.4 and 3.10) such as downtown Gilbert, downtown Phoenix, downtown Tempe and Superstition Springs Transit Center are likely key drivers of this demand. Table 5.4 shows how many transfers Gilbert riders generally require to get to their final destination. Over 60% take a direct trip while roughly 40% require one or more route transfers. The direct trip rate is slightly higher than the regional direct trip rate of 55%.

Table 5.2 - Transit Access Mode

TRANSPORT TO STOP	PERCENT
Drove alone and parked	17.1%
Drove or rode with others and parked	2.6%
Rode a bike	3.5%
Used Uber, Lyft, Waymo, or similar service	1.7%
Walked all the way	66.6%
Was dropped off by someone (not paid)	8.0%
Wheelchair / mobility scooter	0.5%

Table 5.3 -Transit Trip Purpose

TRIP PURPOSE	PERCENT
Home-Based College Trip	3.6%
Home-Based Medical Trip	3.7%
Home-Based Other Trip	11.3%
Home-Based School Trip	0.4%
Home-Based Shopping Trip	8.2%
Home-Based Work Trip	65.0%
Non-Home Based Trip	7.9%

Table 5.4 - Transfer Count

TOTAL TRANSFERS	PERCENT
0	61.3%
1	23.8%
2	10.9%
3	3.3%
4	0.6%

Credit: VM Origin/ Destination Study 2019

Regional Paratransit

To provide transportation service to those who are not able to use our regional fixed route system, paratransit service is provided. Additionally, the regional RideChoice program offers low-cost access to a variety of rideshare providers such as Uber and taxi service. These door-to-door services provide transportation access to those with mobility challenges at fares comparable to those in the fixed route bus system. Figure 5.5 shows the distribution of paratransit boardings in Gilbert, which are higher in the west toward Gilbert Road and taper off toward the east and south. This map shows the most crucial areas of paratransit service to this community, and suggests what areas might have potential for a productive microtransit service overlay, also available to the public, as a comparable alternative. Table 5.5 shows the proportion of Gilbert paratransit riders whose destination is in different regional cities. Mesa is the most popular out of town destination with 17% of trips heading there in FY19, and Chandler was second with roughly 9%. Most trips however are internal to Gilbert, showing that paratransit traffic is largely internal circulation.

Figure 5.5 - Gilbert Paratransit Boarding Location Density Map (2016-2019)

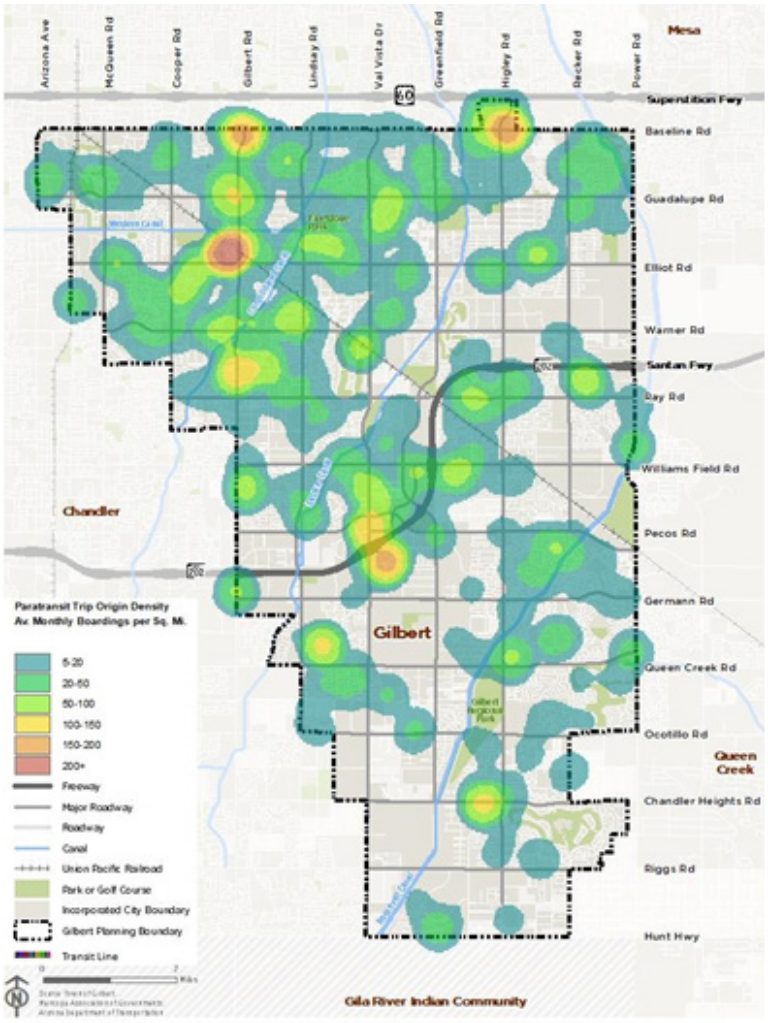


Table 5.5 - Gilbert Paratransit Destinations by Jurisdiction (FY19)

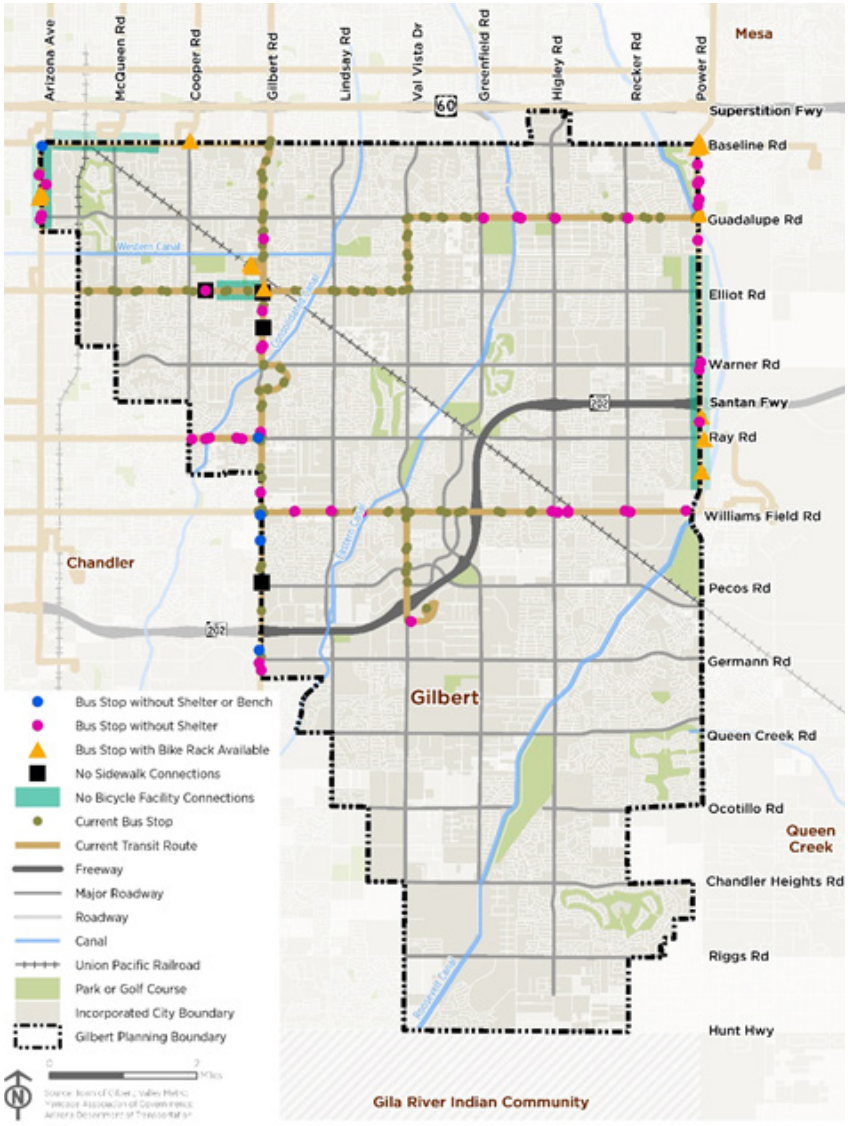
ROW LABELS	SUM OF TOTAL PASSENGERS
Apache Junction	0.81%
Chandler	8.88%
Gilbert	60.27%
Glendale	0.29%
Guadalupe	0.02%
Laveen	0.01%
Mesa	17.23%
Paradise Valley	0.07%
Peoria	0.09%
Phoenix	4.23%
Scottsdale	1.88%
Sun City	0.02%
Tempe	6.23%

Transit Stop Amenities

The stops along Gilbert's current bus routes have a variety of amenities that enhance the customer experience. Shelters, benches and other infrastructure improve access, ease the experience of waiting, and protect users from the harsh heat and rain common in our region. Figure 5.6 shows how key amenities are distributed throughout the current transit network, including their connectivity with bicycle and pedestrian facilities.

When compared to the ridership distribution in Figure 5.3, we can see that areas of higher ridership generally have stops with benches and shelters, though some hotspots remain without these amenities. Notably, the intersection of Ray Road and Gilbert Road, and along Arizona Avenue are all areas that have relatively high ridership but lack shelter. Targeting future stop improvements by comparing them to ridership in this manner will maximize the benefit of these investments for Town transit users.

Figure 5.6 - Gilbert Transit Bus Stop Amenities



Bicycle and Pedestrian amenities and connectivity, shown in Figure 5.6, are also important elements related to service access. Most notably, the northern stretch of Gilbert Road has a long section that lacks bicycle facility connections, and some stops on or south of Elliot in this area even lack sidewalk connections. Addressing these broader multimodal network connectivity issues in the overall Transportation Master Plan would improve safety and access to this heavily used area in the future.

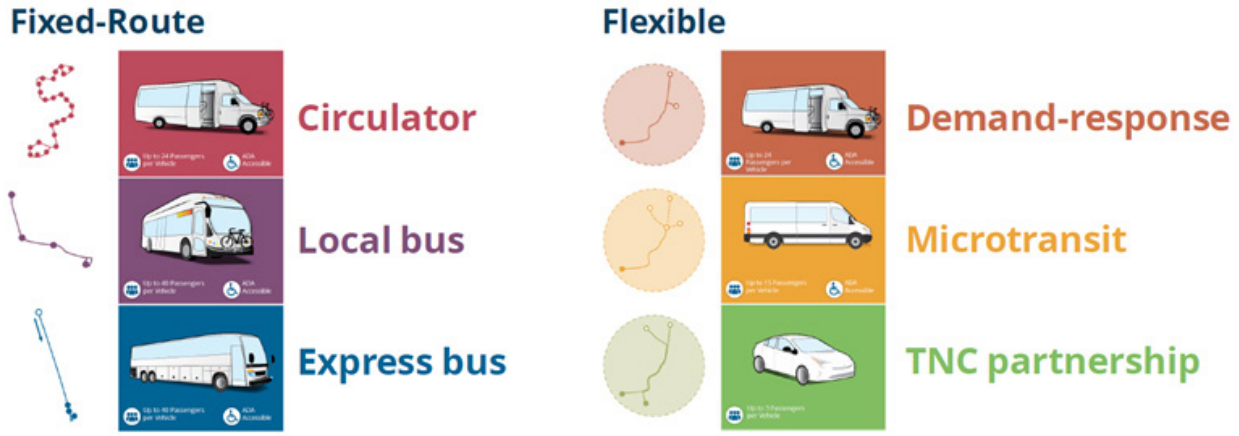
Service Alternative Identification

In addition to examining traditional fixed-route network optimizations, the study also seeks to analyze the viability and potential of new, alternative service modes. Figure 6.1 shows a spectrum of potential transit modes (exclusive of fixed guideway modes). Gilbert currently has several local bus routes and an express route to downtown. Additionally, this study will examine circulator service as suggested in previous transit studies, to potentially fill in current network gaps and provide access to the broader regional system. In addition, Bus Rapid Transit (BRT) service, also recommended in previous studies, will be examined. BRT is essentially a high performing subset of local bus service offering high frequencies of 15 minutes or less for 12+ hours, as well as intersection improvements, limited stops and dedicated right-of-way to improve operating speed and on-time performance.

Flexible, demand-response service currently provided for paratransit riders will also be considered for expansion to the broader public as a microtransit service with complimentary app hailing and ride tracking. Given the general land use pattern of the Town, options such microtransit, or even a subsidized first/last mile TNC partnership would provide transportation options with significantly shorter walking distances and times to transit service, regardless of pedestrian network connectivity.

Due to the relatively high expense of operating and maintaining rail service, and the distance between the Gilbert and existing rail, light rail will not be examined in the study. Commuter rail, while a regional possibility in the long term, will not be developed here beyond what has already been summarized from previous studies. The regional importance of potential stations will however be considered in longer term planning efforts around these proposed areas.

Figure 6.1 - Alternative Potential Transit Service Modes



Credit: Maricopa Association of Governments

CONCLUSION

The studies, demographics, land use and transit information laid out in this summary will provide the foundation for the service planning in Task 2 of the study. Areas of highest service demand highlighted by current system usage data, and demographic analysis show the areas of the Town in which it is most critical to retain and bolster service , and which regional destinations are the most important to improve connection with. With the population density in the Town projected to shift east, there is an imminent need to prepare more options in this area for the long term.

Land-use analysis shows the corridors with the densest and most diverse development in town lie along Gilbert Road, Power Road and SR 202, while much of the rest of the study area features low density residential development that poses unique challenges to mobility access that service proposals must address. The prevalence of work-based traffic on the current system highlights the importance of catering to employment, both in the Town and at key regional commercial/industrial centers. This is especially true in Gilbert where employment growth is predicted to rise significantly over the next several years.

Previous transit studies suggested a broad spectrum of service improvements, from modest span and frequency improvements on existing routes, to many new routes to fill in gaps in the current service network. These reports underscore the potential to branch out into new travel markets such as express service to Tempe or Scottsdale, or more accessible neighborhood services between existing arterial services.

In concert with the broader Transportation Master Plan update, existing conditions information will be provided to the public, providing an opportunity for input on transportation needs of all kinds. Going forward, this study will use that public input and the above analysis to compile and design transit network optimizations for the Town. With financial feasibility and recent technological developments in mind, these recommendations will seek to best serve the demand hotspots identified here in Task 1 and provide Gilbert with a range of options to meet its evolving transportation demand.

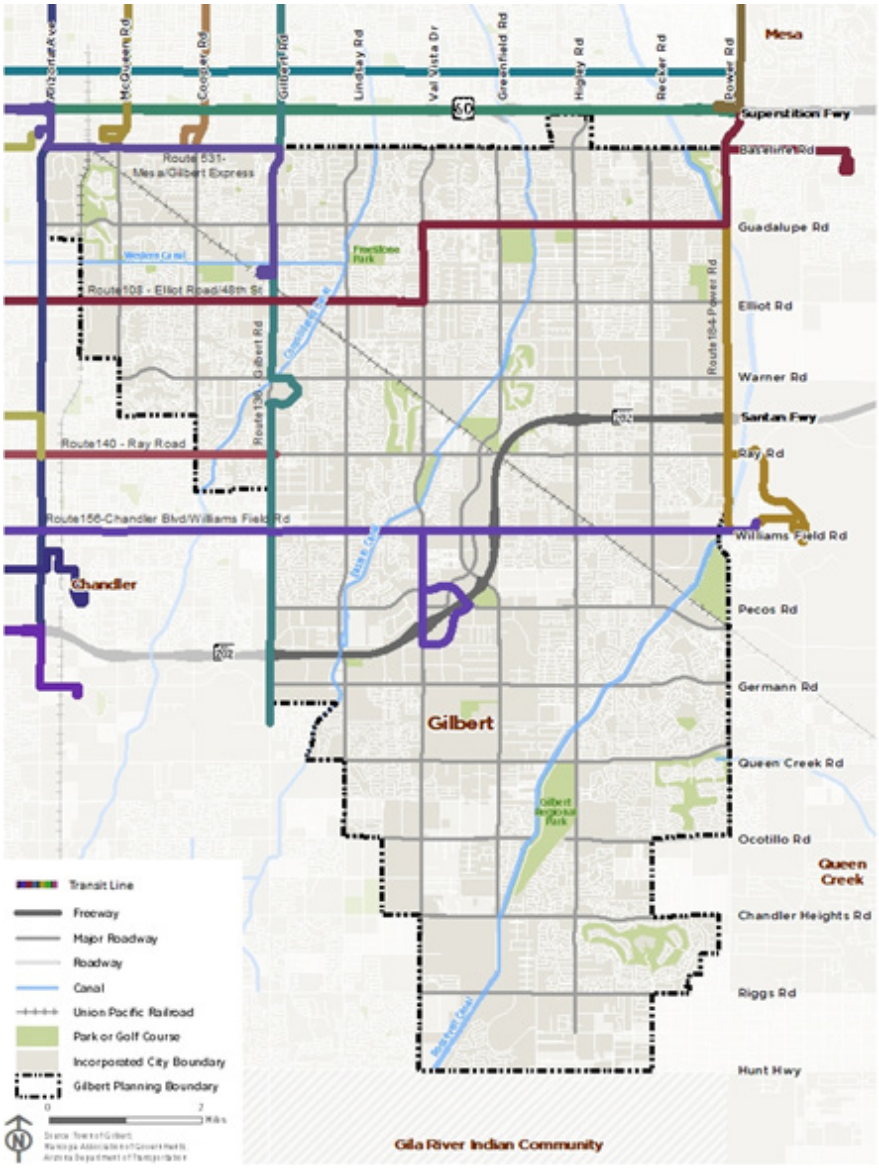
SECTION 2
TRANSIT SERVICE PROPOSALS AND ANALYSIS

INTRODUCTION

Based on the analyses and the findings from the existing conditions analysis, the project team has developed a series of transit service and infrastructure recommendations. Service concepts were designed to meet current community needs/priorities identified, and the regional service standards set forth in the Transit Standards and Performance Measures (TSPM) guide. Information on routing, operations, cost and productivity is outlined for these service recommendations.

Opportunities for transit service or infrastructure pilots are identified as well with accompanying examples from across the nation. Microtransit service identified as feasible was also analyzed, and similar information on operations, productivity and cost were collected for these alternatives as well. Paratransit policy alternatives and implications are outlined, including the potential for comingling these services with microtransit.

Figure 1 - Map of Study Area and Current Valley Metro Transit Service



TRANSIT SERVICE RECOMMENDATIONS

Current transit services in Gilbert consist of local and express bus routes. The proposals outlined here expand on these services to raise offerings to regional standards, provide transit to new neighborhoods and accommodate the town's rising travel demand.

Proposals are categorized by mode, and within each mode category proposals are split between short, medium and long term. They are accompanied by statistics on local demographics, service cost, and predicted ridership productivity impact. Planning periods are given to proposals based on annual service cost, the capital investment required and the amount of intermunicipal cooperation/ funding required to reach key destinations. Proposals are ranked at the end of the section based on factors of cost, productivity and equity.

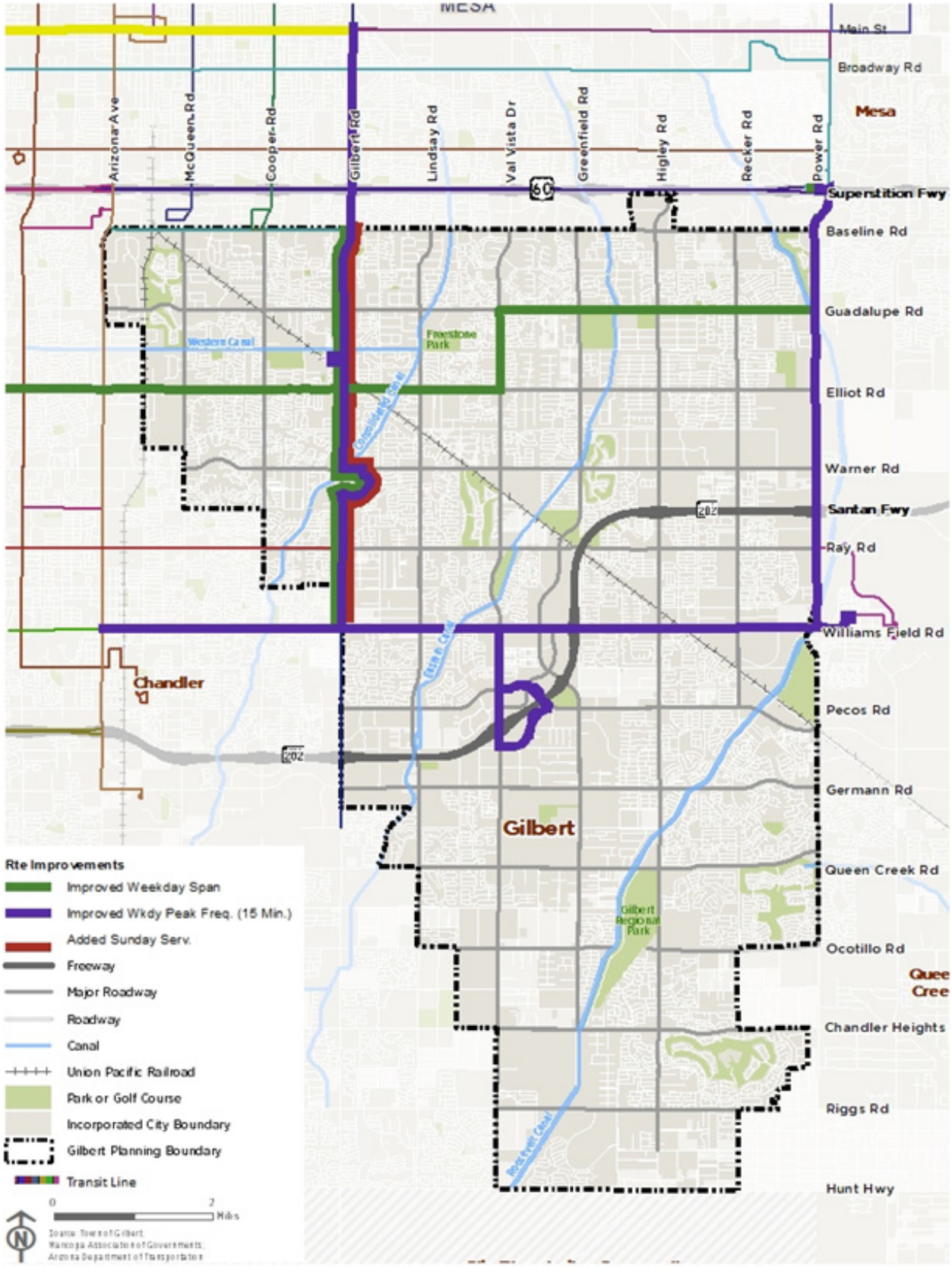
Local Bus

Local bus service currently makes up most service in Gilbert. These proposals seek to improve existing local services and add new corridors to expand transit access. These proposals have been refined through the study team's examination of ridership data, public input, service cost, demographic analysis and travel demand modeling. Descriptions of the proposed changes to existing service corridors are below in Figure 2 including an estimate of a reasonable time scale. Figure 3 shows these improvements on a map. These improvements are relatively low cost, require no capital investment and can often be implemented in the short term.

Figure 2 - Existing Service Improvement Proposals

ROUTE	PROPOSAL	TERM
108 - Elliot Rd / 48th St	Extend weekday service span in Gilbert to match Chandler.	Short
136 - Gilbert Rd	Increase weekday peak frequencies (6 a.m. - 9 a.m., 3 p.m. - 6 p.m.) to 15 minutes from Williams Field Rd to Main St/light rail.	Medium
	Extend weekday service span to match Mesa south to Williams Field Rd (11:30 p.m.).	Short
	Extend Sunday service to Williams Field Rd to match Mesa (Roughly 11:30 p.m.).	Short
156 - Chandler Blvd/ Williams Field Rd	Increase weekday peak frequencies (6 a.m. - 9 a.m., 3 p.m. - 6 p.m.) to 15 minutes from Arizona Avenue to the eastern end of line at ASU Polytechnic.	Medium
184 - Power Rd	Increase weekday peak frequencies (6 a.m. - 9 a.m., 3 p.m. - 6 p.m.) to 15 minutes from Arizona Avenue to the eastern end of line at ASU Polytechnic.	Short
Short Term: 1-5 years | Medium Term: 5-10 years | Long Term: 10+ Years		

Figure 3 - Map of Existing Service Improvement Proposals



Proposals for new routes and expansions of existing routes are described in Figure 4, with an accompanying map of proposals in Figure 5. These expansions will provide access to new residences, businesses and services for Gilbert residents and regional transit users alike. Expanding into new corridors requires more service investment than the incremental cost of improving an existing transit corridor.

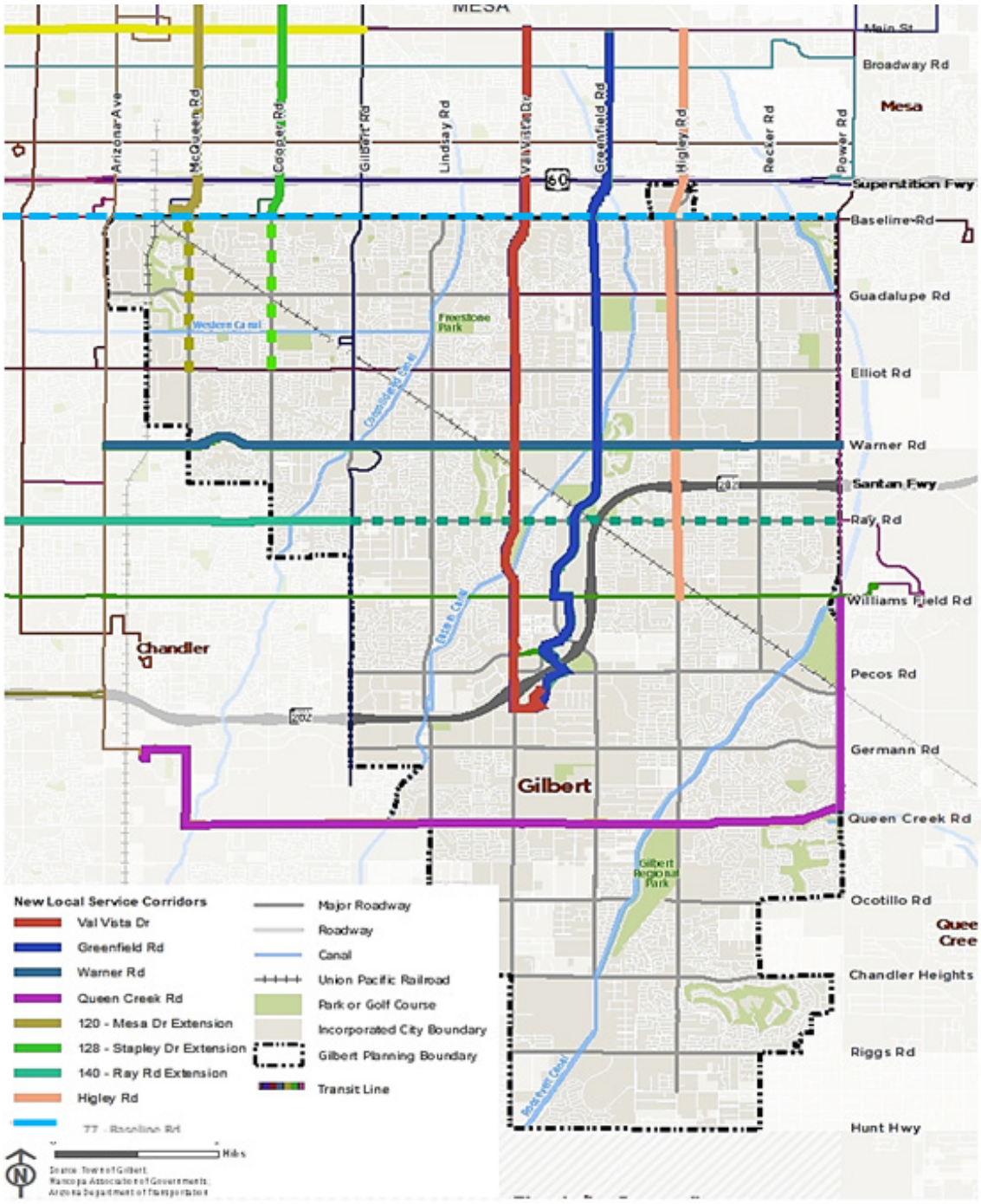
Additionally, upfront capital investment for stops is required. These costs start around $10,000 per bidirectional mile for required concrete pads and signs at roughly 1 stop per 0.3 mi, and can increase depending on the density of stops and the inclusion of amenities like shelters, benches, trash cans, etc. Further information on prioritizing these amenity investments for existing and proposed stops are included in a later section. New routes are assumed to provide regional standard service outlined in the Transit Standards and Performance measures. Standards for local routes recommend the following:

- Operating Days: Mon-Sun
- Frequency:
  - 30-minute frequencies weekdays between 6AM and 6PM
  - 60-minute off peak
- Span of Service:
  - Weekday-16 Hours
  - Saturday - 14 Hours
- Sunday – 12 Hours

Figure 4 - New Route and Existing Route Expansion Proposals

ROUTE	PROPOSAL	TERM
77 - Baseline Rd	Extend route east to Gilbert Rd from AM to PM peak on weekdays	Short
	Extend route east to Power Rd from AM to PM peak on weekdays	Medium
120 - Mesa Dr	Extend all trips south to Elliot Rd	Medium
128 - Stapley Dr	Extend all trips south to Elliot Rd	Short
140 - Ray Road	Extend all trips east to Power Rd	Medium
Greenfield Rd	New N/S route on Greenfield Rd from Main St in the north to Mercy Rd/ Mercy Gilbert Hospital in the south	Long
Higley Rd	New N/S route on Higley Rd from Main St in the north to Williams Field Rd in the south	Long
Queen Creek Rd	New E/W route on Queen Creek Rd from the Chandler PNR at Tumbleweed Park (by Arizona Avenue and Germann Rd) in the west to Power Rd in the east.	Long
Val Vista Dr	New N/S route from Main St in the north to Mercy Rd/Mercy Gilbert Hospital in the south	Long
Warner Rd	New E/W route on Warner Rd from Arizona Avenue in the west to Power Rd in the east	Medium
Short Term: 1-5 years | Medium Term: 5-10 years | Long Term: 10+ Years		

Figure 5 - New Route and Existing Route Expansion Proposals Map



Key neighborhood, productivity and cost data is summarized in Figure 6 for the local service proposals. These figures highlight the relative population and job pool impacted, and the amount of projected ridership. The ridership estimates are the product of a travel demand model, and cost estimates are gross per mile rates based on FY22 east valley service costs. Resulting cost per added rider estimates are also calculated to show the relative cost effectiveness of the investments outlined. The number of transit connections is included because investments in a route often benefit connected routes, and prioritizing improvements with many connections promotes a robust, interconnected network.

Figure 6 - New Route and Existing Route Proposal Statistics

ROUTE	POPULATION 2020	JOBS 2020	ANNUAL RIDERSHIP ADDED	TRANSIT CONNECTIONS	COST	COST PER RIDER
77 - Baseline Rd Ext to Gilbert Rd	57,646	27,520	105,825	29	$319,515	$3.02
77 - Baseline Rd Ext to Power Rd	68,508	36,164	158,865	31	$813,960	$5.12
108 - Elliot Rd / 48th St Improved Span	50,208	33,345	33,145	16	$411,000	$12.40
120 - Mesa Dr Extended	19,346	15,518	26,257	7	$234,000	$8.91
128 - Stapley Dr Extended	21,587	9,828	55,335	6	$192,000	$3.47
136 - Gilbert Rd Improved Peak Freq	32,990	12,580	189,542	7	$532,000	$2.81
136 - Gilbert Rd Improved Span	32,990	12,580	118,538	8	$147,000	$1.24
136 - Gilbert Rd Sunday Service	32,990	12,580	24,685	8	$95,000	$3.85
140 - Ray Rd Extension	44,051	18,016	115,950	11	$920,000	$7.93
156 - Chandler Blvd Improved Peak Freq	38,523	30,273	63,921	3	$587,000	$9.18
184 - Power Rd Improved Peak Freq	16,455	10,503	159,513	7	$321,000	$2.01
Greenfield Rd	16,559	12,576	347,923	5	$1,339,000	$3.85
Higley Rd	16,500	5,964	133,912	5	$1,172,000	$8.75
Queen Creek Rd	16,039	4,345	63,799	2	$1,891,000	$29.64
Val Vista Dr	22,113	8,124	383,703	5	$1,511,000	$3.94
Warner Road	19,193	6,623	218,586	3	$1,396,000	$6.39
Source: 2019 ACS, Valley Metro GTFS		0.25mi radius around existing/estimated stops used as service area				

Express Bus

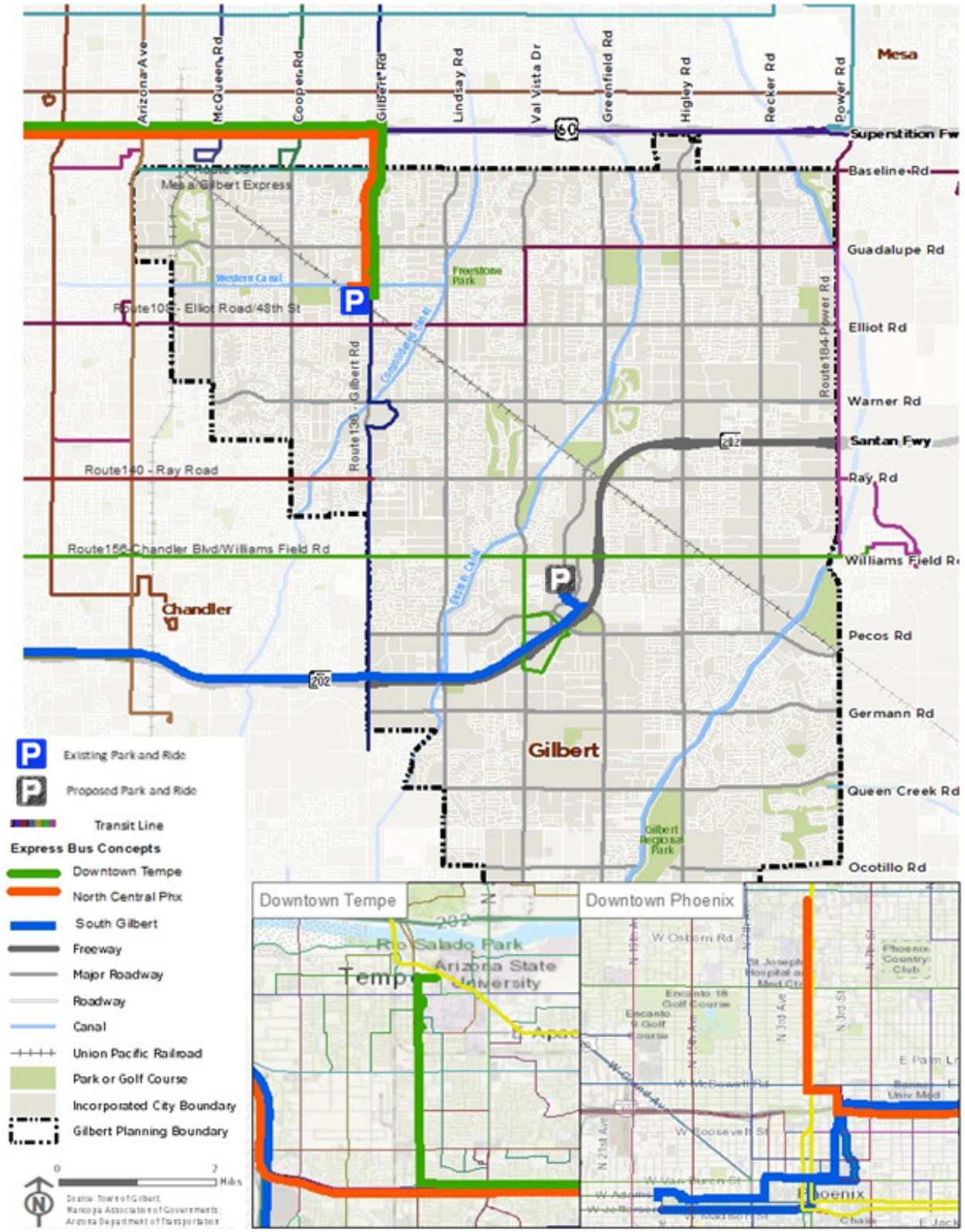
Express bus service provides limited stop service between central park-and-ride locations in town and another downtown, typically downtown Phoenix. The study recommends three new potential express routes for expanding this service. These services run only on weekdays during peak hours, and only one direction in each travel peak (6-9AM and 3-6PM). Therefore they are affordable to implement and can be implemented in the short term, pending existing fleet capacity

The details of the express bus proposals are outlined in Figure 7 and depicted in the map in Figure 8. These proposals expand on the existing express destinations currently only downtown Phoenix between Central Ave and the State Capitol. These proposals include service to downtown Tempe, and north central Phoenix. Residents could access the service from the existing Gilbert Park-and-Ride on Gilbert Rd, in addition to a the new proposed park-and-ride location near Williams Field Rd and Route 202. The specific location for this proposed park-and-ride is not prescribed, though the many commercial lots in the area could easily accommodate a park-and-ride carveout. A proper access agreement and modest signage investments would be required.

Figure 7 - New Express Route Proposal Descriptions

ROUTE	PROPOSAL	TERM
Downtown Tempe Express	New express route from Gilbert PNR to Tempe Transit Center with select stops in downtown Tempe along Mill Ave.	Short
North Central Express	New express route from Gilbert PNR to stops in downtown Phoenix and along Central Ave between McDowell Rd and Indian School Rd.	Medium
South Gilbert Express	New express route from a new PNR near Greenfield Rd and Williams Field Rd to downtown Phoenix serving stops between Central Station and the State Capitol.	Medium
Short Term: 1-5 years | Medium Term: 5-10 years | Long Term: 10+ Years		

Figure 8 - New Express Route Proposals Map



The information on the population and jobs accessible by the express service proposals is outlined in Figure 9. Also included are estimates for cost and ridership. Service levels are assumed to meet regional standards of four inbound trips in the AM peak and four outbound trips in the PM peak. The ridership estimates are the product of a travel demand model, and cost estimates are gross per mile rates based on FY22 east valley service contract costs. Resulting cost per added rider estimates are also calculated to show the relative cost effectiveness of the investments outlined.

Figure 9 - Express Route Proposal Statistics

ROUTE	POPULATION 2020	JOBS 2020	ANNUAL RIDERSHIP ADDED	TRANSIT CONNECTIONS	COST	COST PER RIDER
Downtown Tempe Express	105,700	67,500	14,325	10	$207,000	$14.45
North Central Express	105,700	67,500	13,125	5	$359,000	$27.35
South Gilbert Express	88,900	35,800	12,325	9	$474,000	$38.46
Source: 2019 ACS, Valley Metro GTFS 3-mile radius around PNRs used for population, 0.25-mile radius downtown for jobs data						

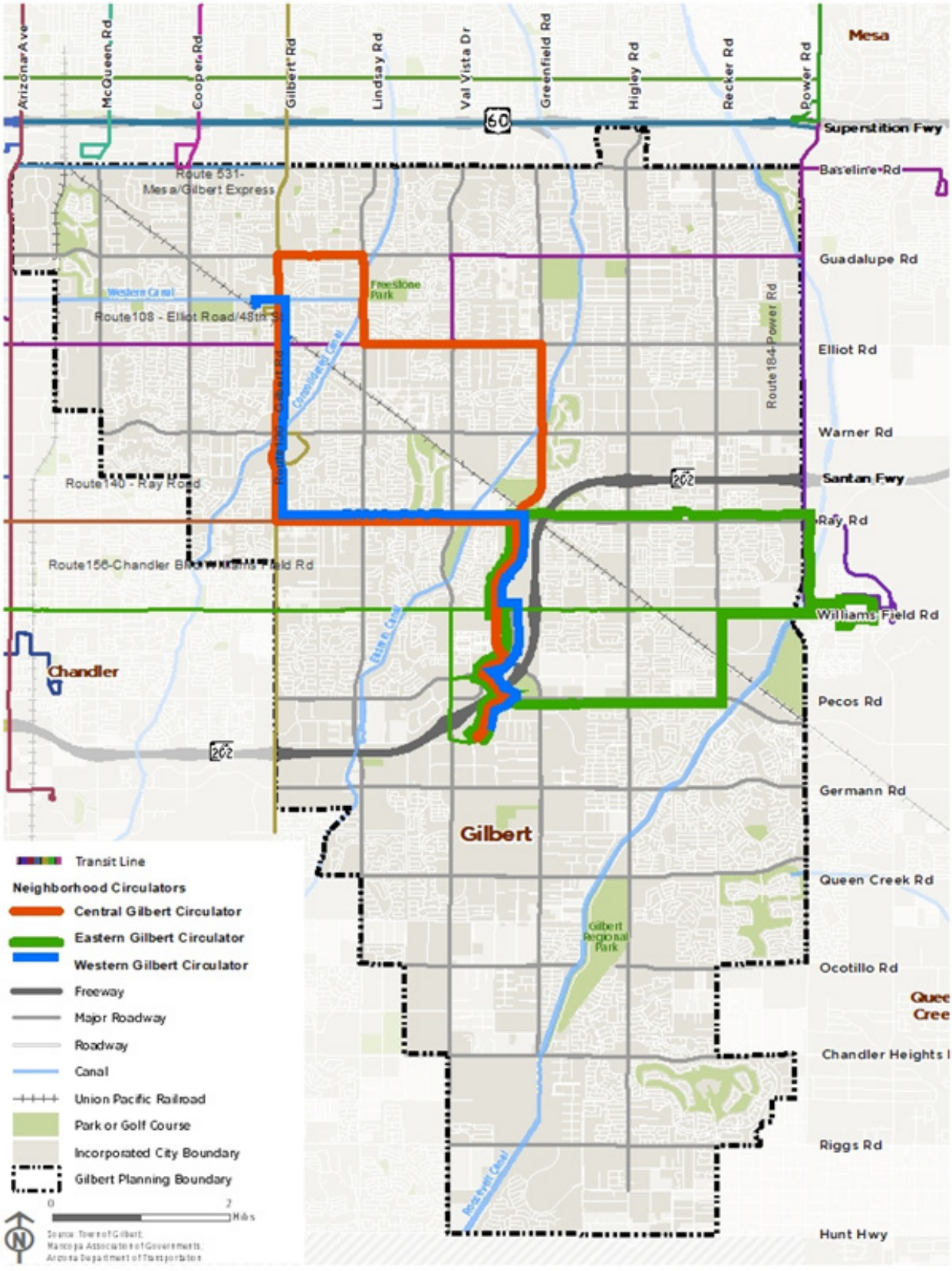
Circulator Service

While not currently in service within Gilbert, neighborhoods circulators have the potential to greatly expand transit access within the town. They can provide service to corridors where none currently exists, and direct trips between key destinations across existing transit corridors. The details of the circulator proposals are outlined in Figure 10 and depicted in the map of Figure 11. These new proposals increase access to ASU, Mercy Hospital and downtown Gilbert while providing transit connections into the regional network for several new residential neighborhoods. In part because they are new corridors, these proposals would require capital investments that make them more feasible in the medium and long term.

Figure 10 - New Circulator Route Proposal Descriptions

ROUTE	PROPOSAL	TERM
Central Gilbert Circulator	New circulator route serving downtown Gilbert, and Mercy Hospital, extending service along Ray Rd and adding Service to Greenfield Rd.	Medium
East Gilbert Circulator	New circulator route serving ASU Polytechnic and Mercy Hospital, adding service along Ray Rd and Greenfield Rd.	Long
West Gilbert Circulator	New circulator route serving downtown Gilbert, and Mercy Hospital, extending service along Ray Rd and adding service to Greenfield Rd.	Medium
Short Term: 1-5 years | Medium Term: 5-10years | Long Term: 10+ Years		

Figure 11 - New Circulator Route Proposal Descriptions



The population information for the neighborhoods benefiting from the circulator service proposals, and estimates for cost and ridership are shown in Figure 12. Service levels are assumed to meet the following regional standards:

- Operating Days: Mon-Fri
- Frequency: 30-minute headways
- Span of Service: 12 Hours

The ridership estimates are the product of a travel demand model, and cost estimates are gross per mile rates based on existing east valley service costs. Resulting cost per added rider estimates are also calculated to show the relative cost effectiveness of the investments outlined.

Additionally, upfront capital investment for stops are required where local stops do not already exist. These costs start around $10,000 per bidirectional mile for required concrete pads and signs assuming roughly 0.25mi stop spacing, and can increase depending on the density of stops and the inclusion of amenities like shelters, benches, trash cans, etc.

Figure 12 - Circulator Route Proposal Statistics

ROUTE	POPULATION 2020	JOBS 2020	ANNUAL RIDERSHIP ADDED	TRANSIT CONNECTIONS	COST	COST PER RIDER
Central Gilbert Circulator	29,098	16,078	263,639	3	$1,281,000	$4.86
East Gilbert Circulator	22,768	13,591	101,750	2	$1,541,000	$15.14
West Gilbert Circulator	16,060	12,914	92,250	3	$717,000	$7.77
Source: 2019 ACS, Valley Metro GTFS | 0.25mi radius around local stops used as service area | 0.25 mi stop spacing						

High-Capacity Transit

High-capacity transit modes include light rail, streetcar and Bus Rapid Transit (BRT). These modes can carry many times over what a typical local bus route can for a variety of reasons. These services tend to operate more frequently with headways of 15 minutes or better and utilize larger vehicles like linked train cars and articulated buses. To maintain high, consistent operating speeds and avoid bunching and delay BRT uses dedicated right-of-way and transit signal priority wherever possible (Figure 13). A high travel demand must be present to justify investment in these services. As town travel needs grow with development and population expansion, these improvements can be seen as the next step in fortifying the backbones of the town transit system.

These added benefits come with added costs that can be prohibitively high, especially with regard to light rail construction which runs over $150 million per mile for light rail track. For this reason rail is likely an option only if the City of Chandler opts to pursue it along Arizona Ave where extensive high capacity transit planning has taken place over the past decade. In this corridor, cost sharing would be fairly modest for Gilbert with the City of Chandler absorbing most costs.

The remaining proposals focus on BRT routes along corridors with established transit ridership such as Gilbert Rd and Power Rd. They could be implemented in a variety of ways, though it is highly recommended that these services have a large portion of their service running on dedicated right-of-way. This will help to achieve efficiencies of operation required to make these services true BRT that is competitive with personal auto travel times.

Figure 13 - Distinguishing Characteristics Bus Rapid Transit

While commuter rail has also been proposed in the region, the planning of its service are beyond the scope of this study. As noted in the existing conditions analysis, local commuter rail stations are tentatively planned for the ASU Polytechnic area and downtown Gilbert. The many transit proposals outlined in this report would support riders boarding and alighting at those key destinations to access destinations throughout the town.

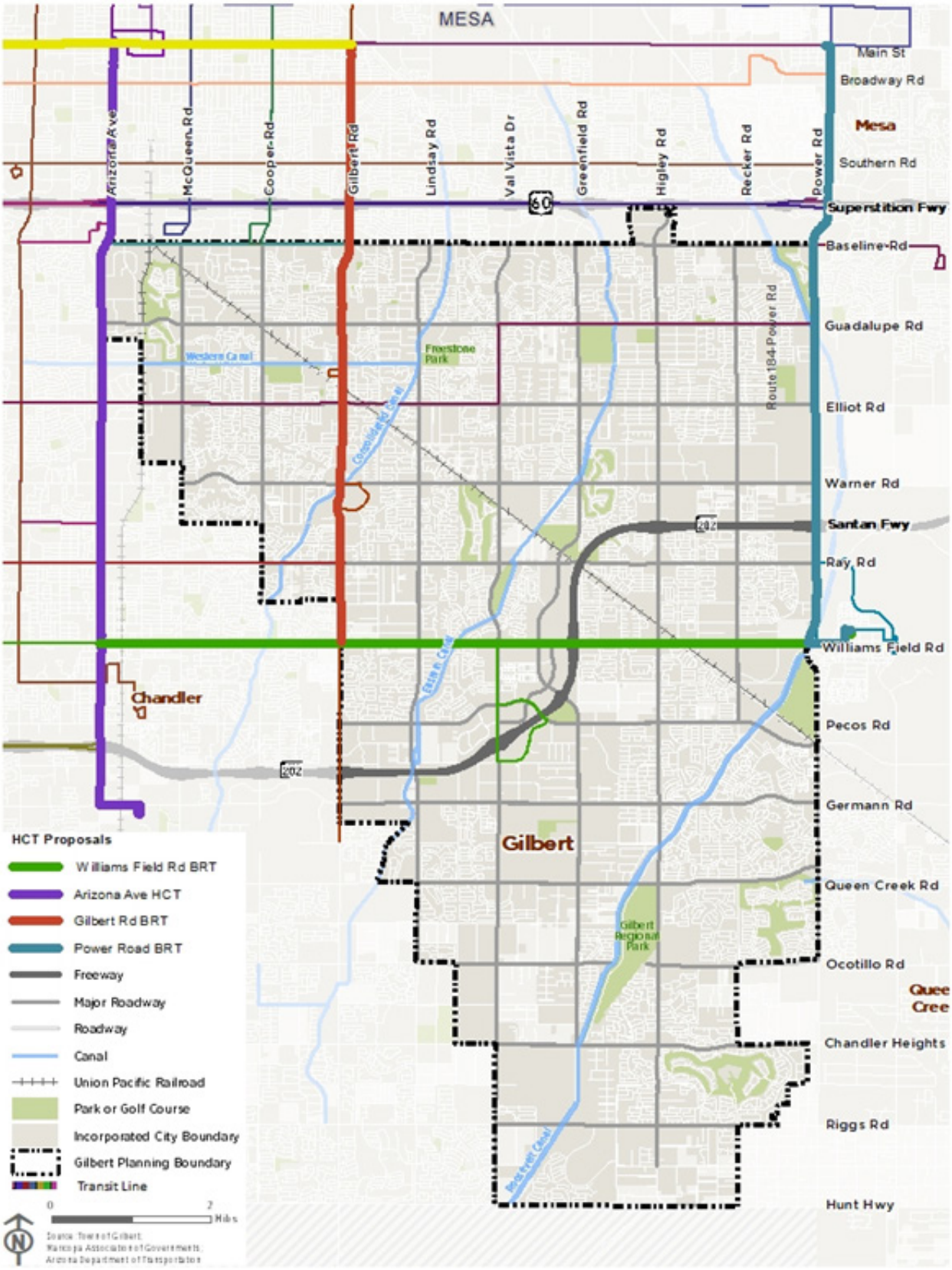
A critical element of integrating BRT service into existing local service corridors involves coordinating or combining local bus and BRT service. BRT service could be overlaid on existing local service to achieve the more express style, limited stop service of BRT while maintaining the local stop density of local service.

However, customer education is key, as confusion can arise when using a BRT system that does not serve all stops. As demonstrated by the previous LINK service in the region, overlays can make the service less convenient if individuals are forced to walk backward to a location they are accustomed to accessing on the local service. Local stop densities can usually be retained on BRT without issue if proper dedicated right-of-way and signal priority is provided. This helps mitigate the negative travel time reliability impact caused by congestion and by the need to reenter traffic after stopping. The details of the high-capacity proposals are outlined in Figure 14 and depicted in the map in Figure 15.

Figure 14 - High-Capacity Transit Proposal Descriptions

ROUTE	PROPOSAL	TERM
Arizona Ave HCT	A new N/S rail or BRT route along Arizona Avenue from Main St/light rail in the north to the current Route 122 end of line at Tumbleweed Park (SE of Germann Rd and Arizona Ave intersection).	Long
Gilbert Rd BRT	A new N/S BRT route along Gilbert Rd between Main St/light rail in the north to Williams Field Rd in the south.	Long
Power Rd BRT	A new N/S BRT route along Power Rd between Main St in the north to Williams Field Rd in the south.	Long
Williams Field Rd BRT	A new E/W BRT route along Williams Field Rd between Power Rd in the east to Arizona Ave to the west.	Long
Short Term: 1-5 years | Medium Term: 5-10years | Long Term: 10+ Years		

Figure 15 - High-Capacity Transit Proposal Descriptions



The population information of the neighborhoods benefiting from the high-capacity service proposals, and estimates for cost and ridership of each proposal are shown in Figure 16. Service levels are assumed to meet the following regional standards for BRT:

- Operating Days: Mon-Sun
- Frequency:
  - 12-minute frequencies weekdays between 6AM and 6PM
  - 20-minute off peak
- Span of Service:
  - Weekday-16 Hours
  - Saturday - 14 Hours
  - Sunday – 12 Hours

The ridership estimates are the product of a travel demand model, and cost estimates are gross per mile rates based on existing east valley service costs. Resulting cost per added rider estimates are also calculated to show the relative cost effectiveness of the investments outlined.

Additionally, upfront capital investment for corridor improvements would be required to provide dedicated right-of-way, transit signal priority and bus stop improvements. The scope of these costs has been explored for Arizona Ave in the Arizona Ave Alternative Analysis, but proper cost estimates for remaining corridors would require similar, corridor-specific study and scoping.

Figure 16 - High-Capacity Transit Proposal Neighborhood Statistics

ROUTE	POPULATION 2020	JOBS 2020	ANNUAL RIDERSHIP ADDED	TRANSIT CONNECTIONS	COST	COST PER RIDER
Arizona Ave HCT	25,825	15,675	386,675	9	$ 3,263,000	$ 8.44
Gilbert Rd BRT	15,425	6,381	221,449	7	$ 3,111,000	$ 14.05
Power Road BRT	9,702	7,486	234,935	7	$ 2,470,000	$ 10.51
Williams Field Rd BRT	12,669	6,105	130,154	3	$3,113,000	$23.92
Source: 2019 ACS, Valley Metro GTFS			0.25mi radius around local stops used as service area			

Microtransit

Microtransit service provides flexible, on-demand routing within a designated service zone, similar to ridesharing service. With a smartphone or web browser riders can hail rides, pay their fare, and track their vehicle's location in real-time as shown in Figure 17. Service operators can provide curb-to-curb service for greater convenience, or corner-to-corner for greater operating efficiency.

Microtransit service zones are designed so that in addition to short local trips, regional trips are also served by connecting with the regional transit system. Vehicles like passenger vans or minibuses provide shared trips that reduce traffic and optimize the efficiency of the service (Figure 18). Fares are typically on par with the cost of local bus fare, and can be structured, adjusted and gamified to kickstart a pilot, incentivize flex and fixed route use, control demand, etc. Demand can also be controlled through the app by limiting the number of rides a rider may request in a month, year, etc.

To complement existing and proposed services several microtransit zones were studied. Recommended zones are depicted in Figure 19, and Figure 20 shows alternative zones studied. These zones are designed to fill existing gaps in transit service within the town and improve access to main transit corridors.

Figure 17 - Example smartphone ride-hailing and fare payment for microtransit

Figure 18 - Microtransit Vehicle Types and Tradeoffs

Figure 19 - Recommended Microtransit Service Zones

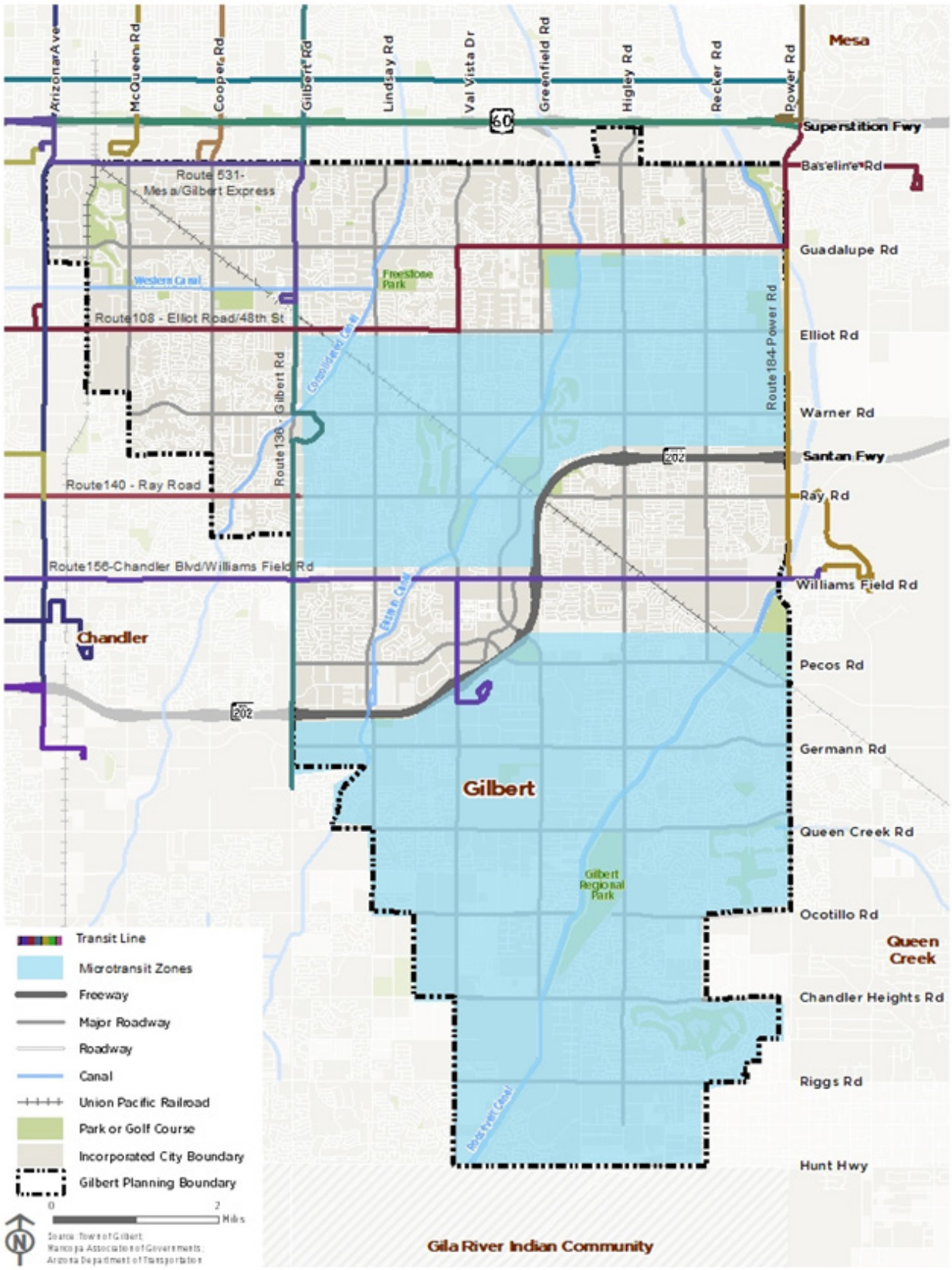
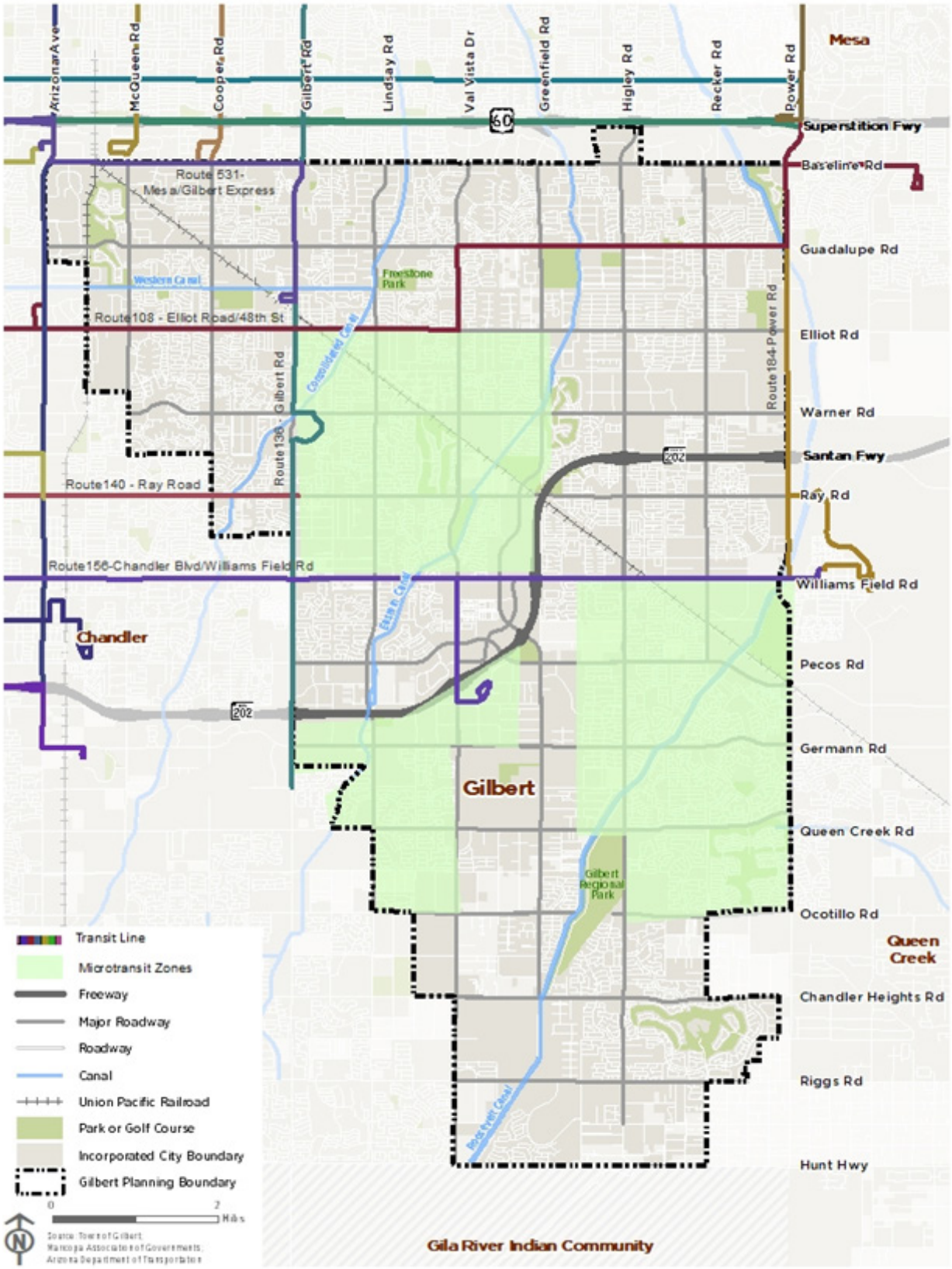


Figure 20 - Alternative Microtransit Service Zones



Demographic information for the two recommended zones is shown in Figure 21. To estimate the cost of service, fleet needs, potential demand and other key factors these zones were analyzed using travel demand modeling. Modeling results for the recommended and alternative zones are shown in Figure 22. The costs shown assume turnkey service which includes operations, software and administrative costs. Service is assumed to run 14 hours per day Monday through Saturday.

Logistically, Valley Metro can operate microtransit service for the Town if requested. Valley Metro can solicit microtransit software providers for a Transportation as a Service (TaaS) contract. These software companies can work with local service operation contractors. Once the service begins, Valley Metro would oversee operations similar to existing contracted operations throughout the valley, and Gilbert would be able to alter service at its discretion to best meet its needs.

The Town may be able to reduce costs in the long term by procuring its own dedicated fleet, hiring operators, and running its own service by purchasing Software as a Service (SaaS) from a microtransit provider. Generally, the increased upfront investment for this option are recovered after the second year of service due to the relative cost savings between TaaS and SaaS.

Figure 21 - Recommended Microtransit Service Zone Neighborhood Statistics

ZONE	POP. 2020	POP. 2030	JOBS 2020	JOBS 2030	NETWORK CONNECTIONS	COST PER RIDER
North Zone	52,359	55,982	16,224	18,214	4	$8.44
South Zone	77,900	86,700	16,600	23,800	2	$14.05
Power Road BRT	9,702	7,486	234,935	7	$2,470,000	$10.51
Williams Field Rd BRT	12,669	6,105	130,154	3	$3,113,000	$23.92
Source: 2019 ACS, Valley Metro GTFS			0.25mi radius around local stops used as service area			

Figure 22 - Microtransit Service Zone Operating Statistics

	NORTH RECOMMENDED ZONE	SOUTH RECOMMENDED ZONE	ALTERNATIVE ZONES
Zone Size (Sq. Mi.)	14	27	3.5 - 9
Projected Annual Demand*	76,750	46,050	21,490-46,050
Wait Time	20-30	20-30	10 - 15
Walking Distance (Ft.)	300	300	150
Fleet	3	5	2 - 4
Annual Cost	$600K	$1.2M	$500K – $1.1M
Per Passenger Cost	$8	$26	$13-$40
**Mon-Sat 14 Hr./Day service Assumed*		*Source: RideCo*	

Service Proposal Ranking

To collectively analyze the proposals outlined above in a uniform and objective manner a ranking criterion was used which incorporated their various demographic, cost and productivity statistics. Ranking criteria focusing on various town priorities in transit service, such as productivity, equity and cost effectiveness, have been compiled. Variables used for each ranking are outlined in Figure 23 below.

These five themed rankings were then averaged for a final composite score. The final ranking, and the various themed ranking outcomes are shown in Figure 24. This tiered ranking structure provides flexibility in implementation so implementation sequence and timing can adapt with the priorities of the town. Timeframe estimates are also included here to show the distribution of projects that can be implemented in the short-, medium- and long-term within each tier.

Figure 23 - Alternative Service Proposal Rankings

VERSION	THEME			VARIABLES		
1	**General**	Cost	Ridership	Population 2020	Jobs 2020	Network Connections
2	**Productivity**	Ridership	Cost Per Rider	Population 2020	Network Connections	Jobs 2020
3	**Equity**	Population 2020	Minority	Low Income	Zero Car	Ridership
4	**Cost Effectiveness**	Cost	Cost Per Rider	Network Connections	Population 2020	Jobs 2020
5	**Growth Oriented**	Pop 2030	Jobs 2030	Ridership	Cost	

Figure 24 - Proposal Ranking Outcomes Chart

PROPOSAL	RANKING VERSION QUARTILE					AVG	TIER	TIMEFRAME		
	1	2	3	4	5			Short	Med	Long
136 - Gilbert Rd Improved Peak Freq.	4	4	4	4	4	4.0	Top		●	
136 - Gilbert Rd Sunday Service	4	4	4	4	4	4.0	Top	●		
77- Baseline Rd Extension to Gilbert Rd	4	4	4	4	4	4.0	Top	●		
77- Baseline Rd Extension to Power Rd	4	4	4	4	4	4.0	Top		●	
140 Ray Rd Extension to Power Rd	4	4	3	4	3	3.6	Top		●	
136- Gilbert Rd Improved Weekday Span	4	3	3	4	3	3.4	Top	●		
156- Chandler Blvd Improved Peak Freq	3	3	4	3	4	3.4	Top		●	
108-Elliot Rd / 48th St Improved Span	4	3	2	4	4	3.4	Top	●		
Arizona Ave HCT	3	4	4	3	3	3.4	Top			●
128- Stapley Dr Extension to Elliot Rd	3	2	4	3	3	3.0	Up Mid	●		
Central Gilbert Circulator	3	3	2	2	4	2.8	Up Mid		●	
Northern Microtransit Region	3	3	2	3	3	2.8	Up Mid	●		
120- Mesa Dr Extension to Elliot Rd	3	2	4	3	2	2.8	Up Mid		●	
Val Vista Dr Route	3	4	3	2	2	2.8	Up Mid			●
Southern Microtransit Region	3	3	1	3	4	2.8	Up Mid		●	
Downtown Tempe Express	3	2	2	3	3	2.6	Low Mid	○		
North Central Express	3	2	2	2	4	2.6	Low Mid		○	
Greenfield Rd Route	2	3	3	2	2	2.4	Low Mid			○
West Gilbert Circulator	2	3	1	2	3	2.2	Low Mid		○	
East Gilbert Circulator	2	3	2	2	2	2.2	Low Mid			○
Gilbert Rd BRT	1	2	4	1	1	1.8	Bottom			●
Warner Rd Route	2	2	2	1	2	1.8	Bottom		●	
Higley Rd Route	2	2	2	1	2	1.8	Bottom			●
184 Power Rd Improved Peak Freq.	2	1	1	2	2	1.6	Bottom	●		
Power Road BRT	2	2	2	1	1	1.6	Bottom			●
Williams Field Rd BRT	1	1	3	1	1	1.4	Bottom			●
South Gilbert Express Route	2	1	1	1	1	1.2	Bottom		●	
Queen Creek Rd Route	1	1	1	1	1	1.0	Bottom			●
Short Term: 1-5 years | Medium Term: 5-10years | Long Term: 10+ Years										

Ranking Key

4 - Top Quartile
3 - Upper Middle Quartile
2 - Lower Middle Quartile
1 - Bottom Quartile

Paratransit Service Options

Paratransit service in Gilbert consists of ADA paratransit and RideChoice coverage throughout the Town. The ADA requires that ADA paratransit service be provided within 3/4 mile of local bus service. In Gilbert, ADA certified residents, regardless of their origin or destination, have the option of taking a regional trip either through the ADA paratransit system for $4/trip, or they can take a RideChoice trip with a third party like a taxi for $3 for the first eight miles and $2 for each additional mile. ADA paratransit trips must be booked in advance, and are not subject to availability. RideChoice trips can be booked on demand and are subject to availability and a limit on the number of trips allowed monthly to each user. This coverage is shown in Figure 25.

The current policy provides more options for riders and is simple to understand. However, considering the higher cost of paratransit compared to RideChoice rides, shown in Figure 26, service could be more cost effective if only required ADA paratransit service were provided.

Figure 25 - Current East Valley Paratransit Service Boundaries

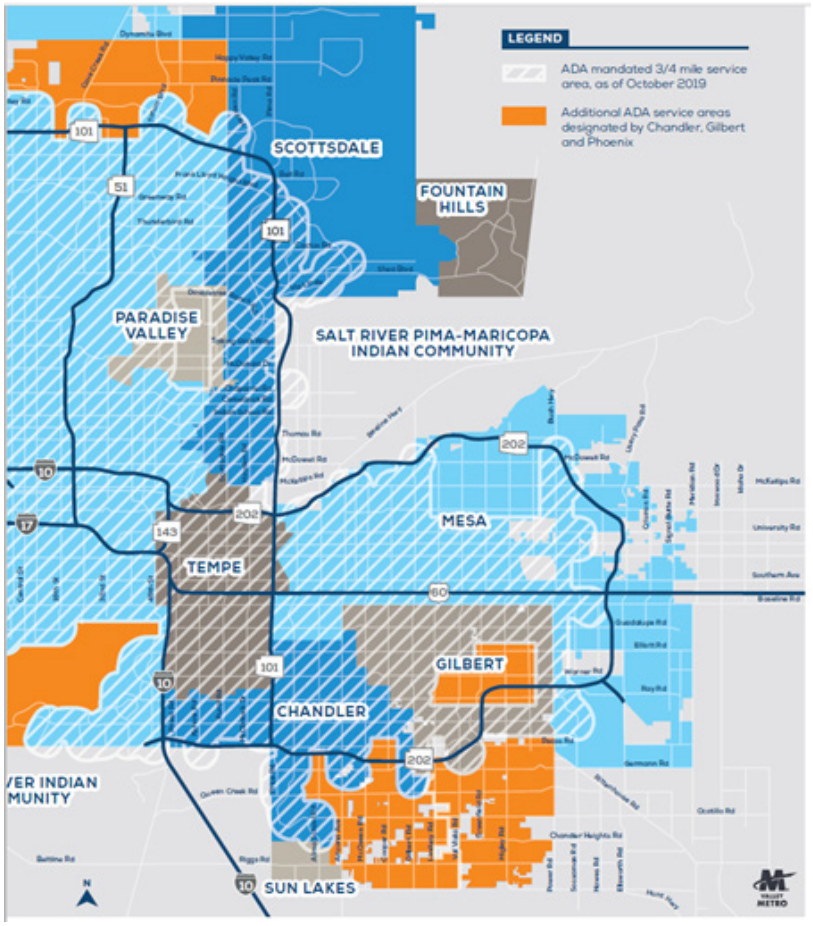
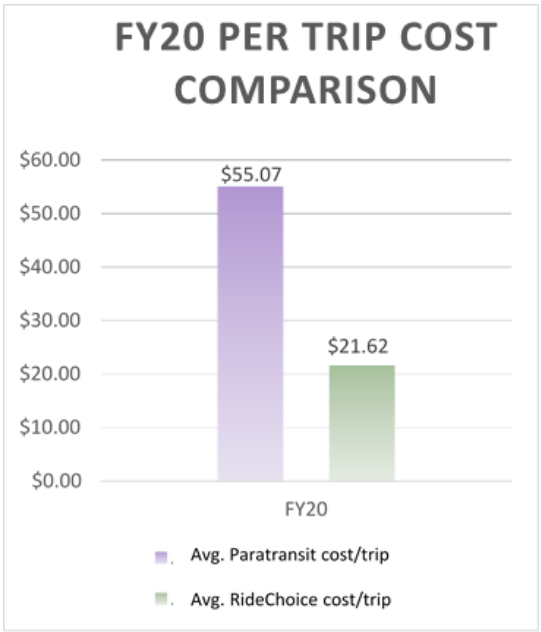


Figure - 26



The town could reduce paratransit coverage to the 3/4-mile federally mandated area around fixed route transit service and retain RideChoice service throughout the Town. This would divert more trips onto the more cost-effective RideChoice and be consistent with most other municipalities in the region. To measure the effect this would have on the existing rider population, past trips were analyzed to establish the proportion of trips that would be impacted by this kind of policy shift.

Figures 27 and 28 shows the proportion of trips that were within the ADA-mandated area before and after the pandemic, showing about one third of the rides venture outside of this area, but a large majority are contained within it. This proportion is consistent across ambulatory and non-ambulatory users. Considering RideChoice trips cost less than half of the average paratransit trip, and roughly 30% of riders would be impacted, this change may reduce overall paratransit costs by approximately 15%.

Figure 27 - Pre-COVID Paratransit Rides and Trips Data (March 2016 – May 2019)

PASSENGER TYPE	TOWN TOTAL		OUT OF MANDATED AREA			
	Total Rides	Total Trips	Total Rides	Total Trips	% Rides	% Trips
Ambulatory	119,151	110,161	39,158	35,474	32.9%	32.2%
Wheelchair/Require Assistance	37,879	31,811	11,446	9,548	30.2%	30.0%
Grand Total	**157,030**	**141,972**	**50,604**	**45,022**	**32.2%**	**31.7%**

Figure 28 - COVID Era Paratransit Rides Ride Data (2021)

	TOWN TOTAL	WITHIN MANDATED AREA	OUTSIDE MANDATED AREA	% WITHIN MANDATED AREA
Total	**22,953**	**15,924**	**7,029**	**30.6%**

Another paratransit service alternative involves reducing both RideChoice and paratransit service to the mandated 3/4-mile from fixed route service and serving the remaining areas of town with accessible microtransit service, similar to the zones recommended which fill existing fixed route gaps. This comingling of general access on-demand service with paratransit on-demand service can be facilitated by some vendors and operators, and can potentially provide an overall cost reduction of the combined programs. Diverting paratransit trips to accessible microtransit could potentially reduce paratransit costs because cost per trip estimates are lower than paratransit (similar to RideChoice).

Cost savings potential for trips just within proposed microtransit zones is modest, estimated at $15-$20K per year. These paratransit cost savings would make up just about 10% the cost of the microtransit service at most. Also, replacing RideChoice with microtransit in southern Gilbert could have the unintended consequence of raising paratransit costs. If transfers to paratransit or RideChoice are required for a rider's regional trip from southern Gilbert then riders are forced to transfer to the mandated paratransit service are while not necessarily being diverted to the cost-effective regional option of RideChoice. For this reason, it may be more cost effective and convenient to provide the incentive of a non-transfer regional trip with RideChoice outside the mandated area by providing only mandated 3/4-mile paratransit service and retaining RideChoice throughout town regardless of microtransit coverage.

Looking ahead to the extension of existing Proposition 400 funding, paratransit service outside the mandated 3/4-mile buffer around fixed route service will not be eligible for regional funding. This means rides outside the mandated area like those identified Figures 27 and 28 will need to be locally funded by the Town after December 2025.

The primary policy options for paratransit service are summarized below:

OPTION	PARATRANSIT COVERAGE	RIDECHOICE COVERAGE	RIDER CONSIDERATIONS	COST CONSIDERATIONS
Full Coverage (Current)	Town-wide	Town-wide	Easy to understand. Provides more options.	Most expensive option. No incentive to choose more cost-effective RideChoice.
Mandated Coverage	3/4 – mile around fixed routes	3/4 – mile around fixed routes	1/3rd of current trips occur outside, and would no longer be possible. Reduced reach throughout town.	Reduces costs to bare minimum (approx. 30% estimated reduction from current).
Minimal Paratransit / Full RideChoice	3/4 – mile around fixed routes	Town-wide	Retains town-wide coverage. Removes paratransit option for those outside mandated 3/4 – mile area.	Incentive to choose more cost-effective option for those outside of mandated area (approx. 15% estimated cost reduction from current).
Microtransit Comingling*	Town-wide or 3/4 – mile	Town-wide or 3/4 – mile	Provides another option for service with benefits like app and potentially lower wait times. May share trips with gen. pop.	Can replace more costly paratransit trips within its zone. Estimated comingling cost savings are about 10% of microtransit service costs.

*Microtransit comingling can be incorporated with any of the three previous options listed

Public Outreach and Input

Public comments were received before and after the drafting of proposals outlined above. The study team worked in coordination with the concurrent Transportation Master Plan Update to solicit feedback on the transit system and the community's perception of transportation in Gilbert. To gather feedback, the study teams hosted virtual open houses, provided online surveys with comment maps and provided direct methods of contact by phone and email. The input provided by the public shaped the priorities that the transit proposals addressed and were revised based on proposal specific feedback.

Figures 29 through 32 show some highlights from the first round of outreach in the online survey. Figure 29 shows public perception of travel trends by mode, and whether the community thinks the situation with that mode is getting better, staying the same or worsening. Notably, car travel is most often predicted to get worse as population and congestion increases. This likely contributes to transit ranking second most important among transportation investments in Gilbert according to residents (Figure 30).

Figure - 29

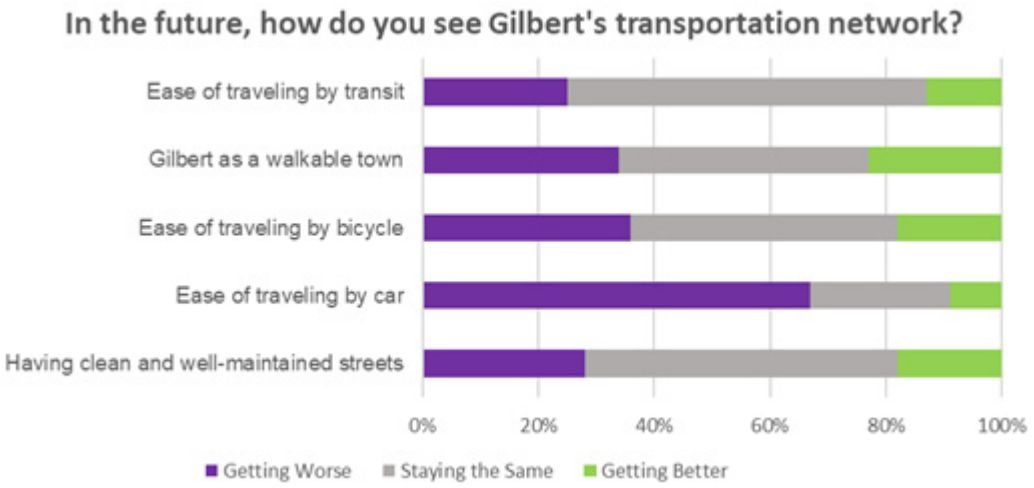
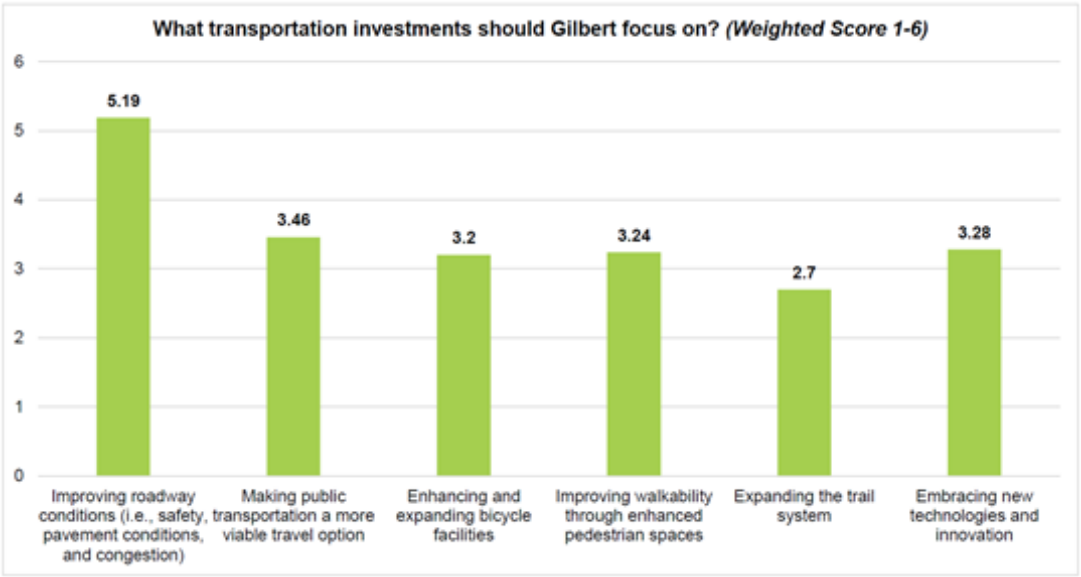


Figure - 30



More transit specific responses were solicited to gauge preferences on a variety of general transit service qualities. For example, Figure 31 shows 52% of the public prefers geographic expansion of public transit coverage and only 30% who prefer increasing service frequency. To address this, several new services are proposed that could add new corridors or zones to the existing service network.

This preference is reiterated in Figure 32, as expanding coverage remains a top priority among an even greater group of priority options. Generally, greater transit access built through expanded coverage and improved frequency is preferred over factors such as on-demand service and stop amenities.

More affordable improvements such as better service information and evening service also rank highly. For a modest investment, these improvements can make a valued impact on rider experience.

Figure - 31

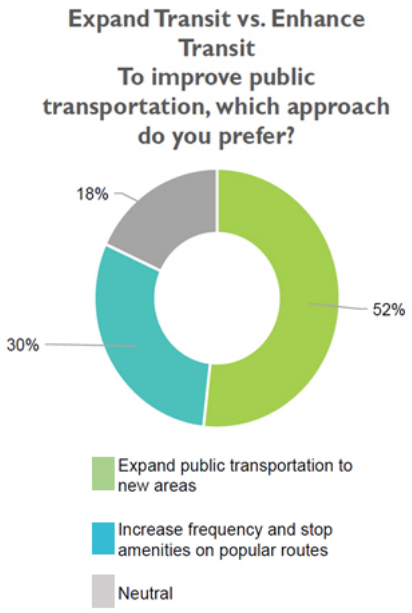
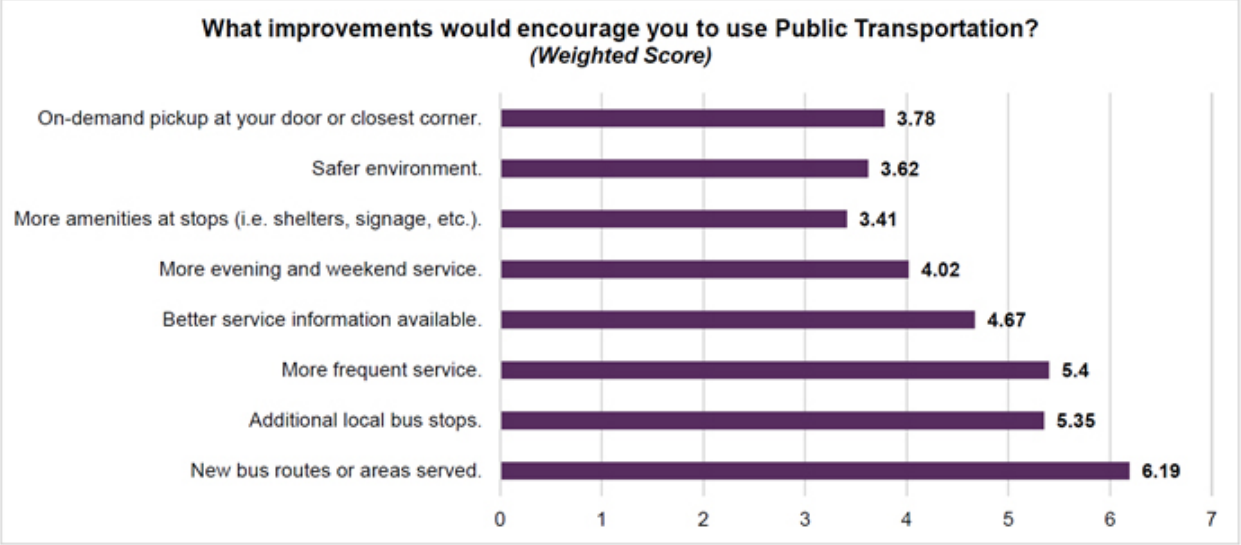


Figure - 32



After drafting service proposals, the study team went out for a second round of outreach in early 2022 to get feedback on these proposals and adjust them accordingly. Figure 33 shows that among the higher tier proposals provided to the public, some of the most popular were the Central Gilbert Circulator, improved service on Route136, and express routes to and from new areas such as downtown Tempe and southern Gilbert, respectively. This supports the previous feedback that expanding service to new areas was generally preferred to improving service along existing corridors.

Figure 34 deals specifically with microtransit, showing how people believe their travel patterns would change if the town introduced such a service. While 37% said they would not change their habits, 44% anticipated a reduced reliance on their car. One third also noted that they would use transit more if microtransit was available. These two points underscore the potential for microtransit to boost transit ridership while reducing traffic within Gilbert.

Figure - 33

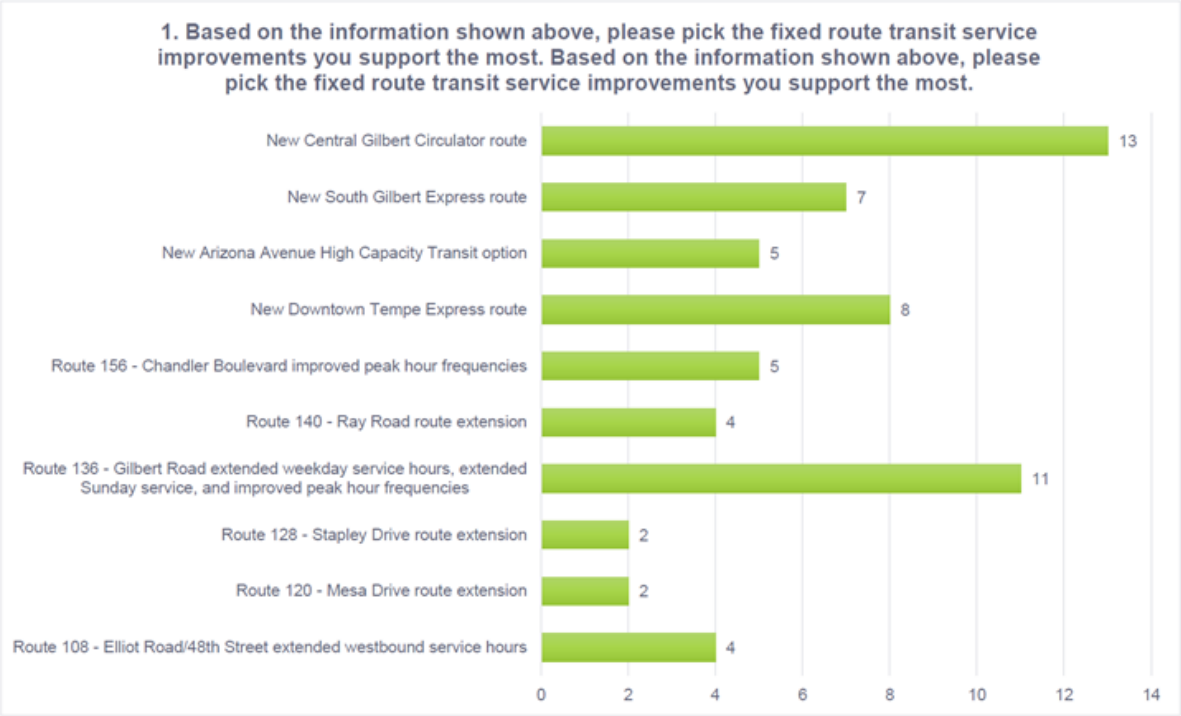
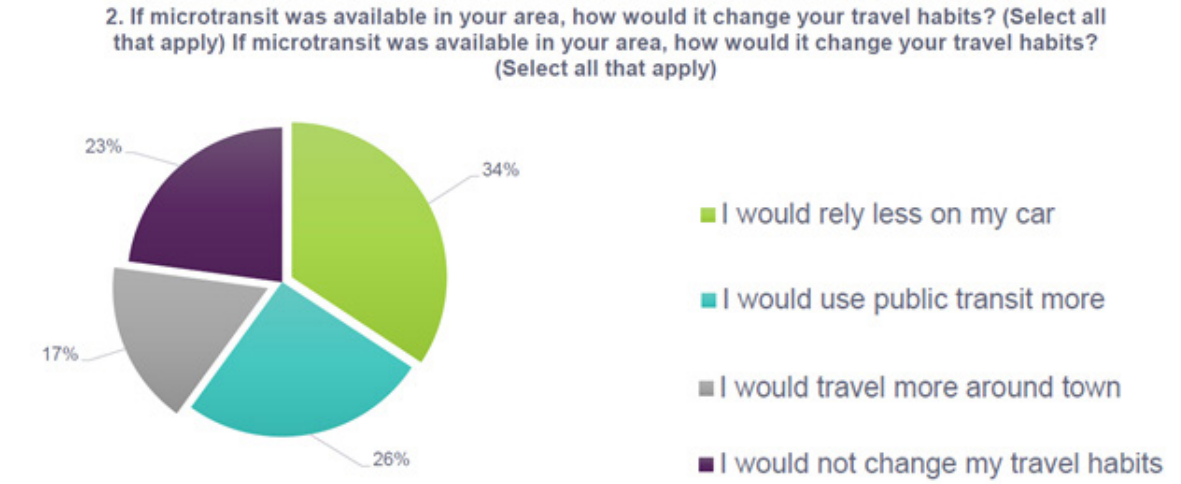


Figure - 34



Demonstration Projects and Pilot Ideas

Demonstrations and pilots are a great way to experiment with the variety of service options available within and beyond this study. They allow towns and community groups the ability to gain real-world, local experience on a variety of emerging service concepts and street designs with limited financial commitment and regulatory hindrance. Examples of transit infrastructure and service demonstrations/ pilots that could be feasibly undertaken by Gilbert include:

- Pop-up Bus Lane- A temporary dedicated bus lane of varying length that can facilitate queue jumps and reduce the impact of congestion on bus operations. It can be carried out with cones, striping or barriers to test the impact of dedicated right-of-way on transit operations, ridership, and overall road level of service prior to implementing BRT service. These have been implemented nationally with positive results. For example, Boston's transit Authority (MBTA) implemented a temporary lane using just cones (Figure 35) and an electronic sign to reduce travel times by 50% and travel time variability by 40% with negligible impact on general use lane level of service.
  - Shared bus/bike- Similar to the bus lane concept with added bike access. Can benefit bike and transit network simultaneously but may compromise on-time performance.
  - Weekday Peak Only Bus Lane- Similar to the bus lane concept but only restricted during peak hours, similar to regional high occupancy vehicle (HOV) lanes. This provides the bus with a travel time advantage during peaks while leaving the roadway unrestricted most of the time.
  - Microtransit pilot- A pilot of on-demand service lasting several months to a year that tests the demand for microtransit. Ridership data will show what areas have the highest demand for future fixed route or microtransit investments.
  - Public art/community space enhancement- A temporary design or art installation that draws attention to transit stops and improves the community aesthetic. Designs could include wayfinding signage for informational benefit as well. These projects have been undertaken to engage local community groups and facilitate transit spot improvements that may become long-term. Figure 36 shows an example of this in north Los Angeles where an art and wayfinding project led by a community group triggered a significant increase in neighborhood walking and transit use.

Figure 35 - Pop-up Peak Hour Bus/Bike Only Lane north of Boston

Figure 36 - Images of Public Art and Wayfinding Installation in North L.A.

Transit Spot Improvements

Investing in bus stops, Park-and-Rides and other transit facilities is important for maintaining a respectable image of transit and providing good customer service. Providing shading, seating, wayfinding materials and public art makes transit more comfortable, understandable and enjoyable.

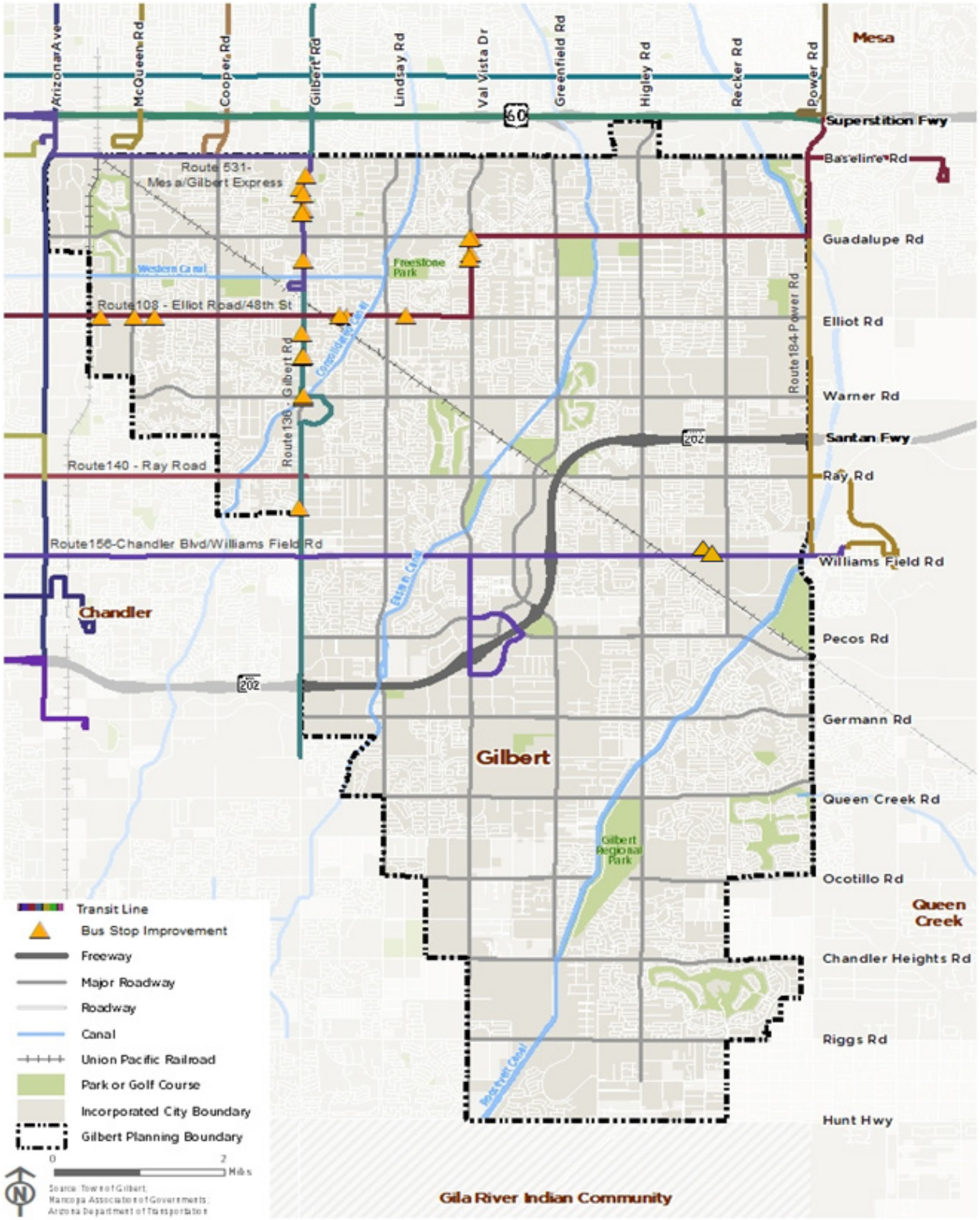
The Town of Gilbert has identified several bus stops for potential improvements based on condition and demand, listed below in Figure 37 and mapped in Figure 38 (subject to change as needed). As bus stops are locally owned, maintenance is locally funded. However, bus stop improvements are eligible for regional funding. In the current and proposed transportation funding propositions, PTF (regional tax funding) may be programmed in the Transit Life Cycle Program (TLCP) for bus stop improvements, Park-and-Rides and Transit Centers.

Local bus stop improvement

Figure 37 - Identified Bus Stop Improvement Location List

MAIN CORRIDOR	INTERSECTING CORRIDOR	CORNER	NEXTRIDE ID
Elliot Rd	Gilbert Tiger Dr	NW	15878
	Burk St	NW	15880
	William Dillard Dr	SE	15821
	McQueen Rd	SE	15822
	Islands Dr	SE	15823
	Burk St	SE	15830
Williams Field Rd	Wade Dr	NW	17539
		SE	17538
Val Vista Dr	Guadalupe Rd	SW	15871
		SE	15839
	Juniper Ave	SW	15872
		NE	15838
Gilbert Rd	Ash St	SW	16276
	Encinas St	SW	16277
		NE	16192
	Hackamore	SW	16283
		SE	16185
	Harrison St	SW	16290
	Juniper	NE	16189
	Houston Ave	NE	16193
	Dignity Health	SE	16194
	Silver Creek Rd	NW	10034
	Warner	NE	16184
		SE	16284

Figure 38 - Identified Bus Stop Improvement Location Map



Going forward Valley Metro has several resources available that can help Gilbert effectively identify bus stop improvement locations, including the Bus System Handbook (2019). This document includes guidance on bus stop specifications, amenities, and warrants. An example of the Bus Stop Amenities Warrants in Figure 39 shows one way of establishing priorities for targeting bus stop improvements.

Stop-level ridership and accessibility data collected as a part of the Bus Stop Inventory and Accessibility Study (2018) provides additional guidance. This study surveyed the region's bus stops to evaluate applicable accessibility criteria as codified in the Americans with Disabilities Act of 1990 (ADA) and the Proposed Right-of-Way Accessibility Guidelines (PROWAG).

Figure - 39

Bus Stop Amenities Warrants Sample

Bus stops that accumulate 10 points or more may be considered for shelter placement; 6 points or more may warrant a bench and trash receptacle.

- **7 points** High boarding count or transfer location - Number of riders getting on the bus at this stop exceeds 50 people per day. (Variations can include 3 points for 10 people per day, 10 points for 100 people per day, 15 points for 200 people per day)
- **4 points** Special needs – Includes small facilities or people with special requirements for shelter that might not qualify for attention based on boarding counts (senior citizen centers, medical offices, libraries, persons with certain disabilities, etc.)
- **3-4 points** Activity Location - Locations with high density of people and thus high potential for ridership (apartments, high-rise office building, shopping center, schools, and hospitals.)
- **3 points** Exposure to elements – Locations with no landscape or buildings to offer shade/rain protection, no seat walls, no area to stand outside of sidewalk, and 2-3 lanes of traffic of 40 mph or more, giving patron no feeling of security at stop.
- **2 points** Long waiting time for bus – stops at which riders wait 30 minutes or more between buses.
- **1 point** Request for improvement – Citizen requests improvements at stop.

SUMMARY

As the Town of Gilbert grows, so does the demand, value and congestion of the road network. Optimizing existing and future roadway investments with transit enhancements increases the productivity of the town transportation network by concentrating riders into high-occupancy vehicles instead of spreading them out across many low-occupancy vehicles. It provides equitable access to street investments for residents regardless of driver's license status or car ownership. And as residents perceive roadway congestion worsening in coming years, they see transit as an important investment for addressing the growing pains in the nation's fastest growing metro area.

The many proposals outlined in this section considered these public needs and transportation trends, in addition to regional transit standards and fiscal restraint. They provide a flexible menu of options for expanding transit access with more fixed route coverage, higher frequencies during travel peaks and more off-peak lifeline service. Flexible, on-demand service zone proposals surmount issues of transit access posed by sprawling, walled residential development that hinders fixed-route transit productivity. And as development continues to intensify over the long-term Bus Rapid Transit options are available to boost potential capacity of the transit system to the next level.

As the town works through its investment priorities in the coming years, proposals can be adapted and sampled through demonstration and pilot projects. In the next section, the existing and forecasted status of Gilbert's transit funding will be outlined. This funding information will provide guidance on how much financial capacity the town has for transit improvements through the end of the existing transportation funding proposition. Additional information will be provided on proposals for the region's next transportation tax proposition, and how changes in these new proposals will affect the town's ability to invest in transit long-term.

SECTION 3:
FINANCIAL ANALYSIS

Understanding the funding status of the town and available options for supplementing existing funding sources plays a critical role in implementing study recommendations. The project team prepared ranked recommendations that included estimated annual operating costs for the transit service concepts outlined in the previous section.

Additionally, the project team conducted a review of existing funding sources to identify anticipated funding levels. The project team also identified several funding considerations to support the transit service implementation and sustainability. The comparison between the available funding and the estimated expense for improvements gives clarity on the amount of increase possible within a balanced budget.

Current TLCP Funding Status

Currently the town relies solely on regional funding to provide service throughout the jurisdiction. Figure 1 shows the status of the Transit Life Cycle Program (TLCP) as of FY22. Currently the town is projected to have a positive balance through the remainder of Proposition 400, through CY2025, of just over $8.8Million. The East Valley subregion which Gilbert is part of is projected to have a net positive balance of over $50Million.

Figure 1 - FY22 TLCP Status of Gilbert and East Valley Subregion

JURISDICTION	TOTAL PROGRAMMED PTF	TOTAL POLICY PTF	JE UNDER (JE OVER)	JE CALCULATED PERCENT	JE POLICY PERCENT
Gilbert	$81,454,255	$90,278,933	$8,824,678	5.519%	6.117%
Ev Total	**$785,857,318**	**$836,522,788**	**$50,665,473**	**53.247%**	**56.680%**

These estimates are subject to change as actual and projected revenues come in through the end of the proposition. These estimates include all PTF funded improvements currently outlined in the SRTP, which are:

- Route 136 Gilbert Rd- Improve weekday peak frequency from Main St in Mesa to Elliot Rd in Gilbert
- Route 136 Gilbert Rd- Extended span of service weekday and Saturdays through to Chandler

Eligible expenses for this funding include:

- Fixed route transit service (except circulators)
- Paratransit Service
- Capital Improvements
  - Park-and-Rides
  - Transit Centers
  - Bus stop Improvements (Shelters, Benches, ADA, etc.)

Figure 2 shows ranked proposals with cost estimates to compare with the estimated balance shown in Figure 1 to get a sense of the possible additions a balanced budget could sustain.

Figure 2 - Ranked Service Proposals with Cost

PROPOSAL	RANK AVG.	TIER	ESTIMATED ANNUAL OPERATING COST	TIMEFRAME		
				SHORT	MED	LONG
136- Gilbert Rd Improved Peak Freq.	4.0	Top	$ 532,000		●	
136- Gilbert Rd Sunday Service	4.0	Top	$ 95,000	●		
77- Baseline Rd Extension to Gilbert Rd	4.0	Top	$ 319,515	●		
77- Baseline Rd Extension to Power Rd	4.0	Top	$ 813,960		●	
140- Ray Rd Extension to Power Rd	3.6	Top	$ 920,000		●	
136- Gilbert Rd Improved Weekday Span	3.4	Top	$ 147,000	●		
156- Chandler Blvd Improved Peak Freq	3.4	Top	$ 587,000		●	
108-Elliot Rd / 48th St Improved Span	3.4	Top	$ 411,000	●		
Arizona Ave HCT	3.4	Top	$ 3,263,000			●
128- Stapley Dr Extension to Elliot Rd	3.0	Up Mid	$ 192,000	●		
Central Gilbert Circulator	2.8	Up Mid	$ 1,281,000		●	
Northern Microtransit Region	2.8	Up Mid	$ 600,000	●		
120- Mesa Dr Extension to Elliot Rd	2.8	Up Mid	$ 234,000		●	
Val Vista Dr Route	2.8	Up Mid	$ 1,511,000			●
Southern Microtransit Region	2.8	Up Mid	$ 1,200,000		●	
Downtown Tempe Express	2.6	Low Mid	$ 207,000	○		
North Central Express	2.6	Low Mid	$ 359,000		○	
Greenfield Rd Route	2.4	Low Mid	$ 1,339,000			○
West Gilbert Circulator	2.2	Low Mid	$ 717,000		○	
East Gilbert Circulator	2.2	Low Mid	$ 1,541,000			○
Gilbert Rd BRT	1.8	Bottom	$ 3,111,000			●
Warner Rd Route	1.8	Bottom	$ 1,396,000		●	
Higley Rd Route	1.8	Bottom	$ 1,172,000			●
184 Power Rd Improved Peak Freq	1.6	Bottom	$ 321,000	●		
Power Road BRT	1.6	Bottom	$ 2,470,000			●
Williams Field Rd BRT	1.4	Bottom	$ 3,113,000			●
South Gilbert Express Route	1.2	Bottom	$ 474,000		●	
Queen Creek Rd Route	1.0	Bottom	$ 1,891,000			●

Proposition 400 Extension

The extension of Proposition 400 is anticipated to go out to voters in Fall 2022. If passed, it will maintain the current half cent regional transportation sales tax level so funding levels overall will remain similar. However, in the Regional Transportation Plan which this extension will help fund, there are several notable changes that will impact the amount of funding Gilbert receives and what will be eligible for funding. These changes are as follows:

- Funding will be distributed partly by a jurisdiction's size, and partly through a competitive funding pool that considers ridership and revenue miles of service run. This shifts funding overall to cities with more service and ridership productivity (Phoenix is excluded).
- Funding for ADA paratransit may only be used for service inside the federally mandated 3/4 mile buffer around fixed route service.
- Circulators will be eligible for limited regional funding:
  - Up to 10% of formula funding allocation will be available for circulators.
  - A prorated share will be distributed if requests exceed 10%.
  - Up to 30% of a jurisdiction's circulator costs can be PTF funded, if funding is available.
  - Formula funding variables (Ridership & Revenue Miles) will be reduced by 50% for circulators to make less competitive than regional routes.

Microtransit and flex route circulators will remain ineligible for regional funding.

Funding projections for the proposition extension have not yet been established. It is also currently undetermined how remaining proposition 400 funds will be distributed after December 2025. Because of this, it is unclear what a sustainable amount of service increase going forward may be.

Intermunicipal Coordination

Many of the service proposals put forth in the study extend beyond the boundaries of Gilbert. This was done with a regional perspective to optimize network connectivity and ridership productivity in and around Gilbert. The benefits of these intermunicipal connections requires coordinating service levels and payments with other municipalities. Without the cooperation of adjacent municipalities to pay for service in their jurisdiction, the town would be responsible for funding service it requests outside its boundaries.

Additional Funding Sources

Supplementing existing funding streams for transit service ensures sustainability and robustness of service even through uncertain financial circumstances. Below is a list of potential funding sources for the Town to consider as it plans transit services:

- FTA Section 5310 Enhanced Mobility for Seniors and Individuals with Disabilities: Section 5310 provides formula funding to states where local governments can be subrecipients. It is meant to assist in meeting the transportation needs of older adults and people with disabilities when the transportation service provided is unavailable, insufficient, or inappropriate to meeting these needs. The program is competitive and generally oversubscribed. Traditional Section 5310 project expenses include:
  - Buses and vans
  - Wheelchair lifts/ramps
  - Transit-related information technology systems, including scheduling/routing systems
  - Mobility management programs
  - Acquisition of transportation services under a contract, lease, or other arrangement

- Arizona Lottery Fund: The State provides limited funding for municipalities from the lottery which can be used for transit expenses.
- Local tax funding: Many municipalities have chosen to provide local tax funding for their transit service. This has contributed to a decision to keep regional tax levels the same going forward despite planned/needed service expansions. The proposition extension funding structure considers these additional local tax sources and assumes network expansion will largely be born by non-PTF sources. Regional funding from a Proposition 400 extension is intended to focus on funding regional transportation services. Because of this, providing local tax funding to transit would be important to consider if significant network expansion or microtransit is desired.
- FTA Grant funding: In addition to 5310 Grant funding the federal government offers a of other grants for transit. The vast majority will not pay for operating expenses in an urban area of our size. Formula FTA funding can be available for capital costs and piloting service. Competitive opportunities are also available. The running list of official offerings can be found at transit.dot.gov/grants.
- Additional Grant Funding: Grant funding often becomes available from different organizations, usually from the state government or nonprofit entities. Like federal grants they often require a match locally and will only pay for a portion of eligible service or capital expenses, though the amount varies among opportunities. Upfront capital costs or service pilots are often the focus, such as buying vehicles or testing microtransit. Many also include funding for further service study and ongoing operations for a set number of months/years. This funding is constrained on what expenses are eligible and when purchases can be made. Incorporating advanced technologies like electric vehicles is often a way to expand eligibility for grants and increase competitiveness. Valley Metro and MAG can often provide information on these and other similar funding opportunities.
- Fare Revenue: If microtransit service were implemented fare revenue would defray costs of operation. Assuming the ridership productivity estimates provided for microtransit suggestions each zone could earn roughly $50,000-$75,000 annually if fares were $1, between 5%-10% of service cost. This would reliably cover a portion of the service and would increase with demand. Collecting fares comes with costs for vendors facilitating and securing financial transactions. However, handling transactions online and through apps, common among microtransit services, is less costly than traditional bus farebox operations.

Funding Strategies and Considerations

With Proposition 400 funding coming to an end in less than three years some uncertainty remains about jurisdiction-specific, long-term financial status during the new extension. Additionally, several significant cost uncertainties complicate forecasts even over the next several years. These include the current labor and supply chain shortages, wage and gas hikes, and record inflation. Also, no decisions have been made about how remaining Proposition 400 funding will be treated after it ends in December 2025. These uncertainties generally support more conservative programming of new service or capital improvements. All things considered, it may be prudent to plan only modest investment in the short term.

Utilizing pilots to test new services or infrastructure provides valuable experience on implementation for a relatively small cost and is a great way to avoid costly investments that do not produce the benefits intended. They provide greater financial flexibility, and often offer the opportunity to work with local community groups to achieve a community betterment at a lesser expense to the Town.

As the region transitions to a more performance-based funding structure, productivity gains added financial importance. Focusing investment on service recommendations with high productivity is most likely to have the added benefit of optimizing funding for transit in the Town.

It is recommended the Town actively seek grant funding opportunities over the next few years to

pilot and improve service, especially microtransit service which is ineligible for regional funding. Coordinating with surrounding jurisdictions will allow greater flexibility in the grants as they can share costs for shared projects. Generally, supplementing regional funding with other sources and working across jurisdictional bounds will be critical if the town seeks to leverage service improvements greater than the existing $8 Million existing underallocation in the TLCP through the end of Proposition 400, approximately $2Million annually.