

Final Report

FLAGSTAFF IN MOTION

A Community Transit Plan

05 - Year Plan



January 2023

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I. EXECUTIVE SUMMARY

TRANSIT VISION

Flagstaff in Motion is a Community Transit Plan (Plan) that identifies how best to provide and fund Mountain Line transit services. It captures known community transit needs for the next five years and prioritizes them into a list with recommendations to fund and implement for the near future. This Plan is a living document. As funding, conditions, and partner priorities are constantly evolving, Mountain Line will react and modify this Plan in order to best meet the diverse transit needs of the Flagstaff community it serves.

Two main goals guided the improvements selected for the Plan. The first goal was to target areas with the highest ridership potential. The second goal was to support transit dependent populations. Major considerations in the evaluation of prioritization were increased access and equity, and alignment with helping solve major community issues around affordability, climate action, housing, workforce shortage, and transportation infrastructure.

Flagstaff in Motion recommendations are supported by industry trends across the country, documented in the Guiding Principles of the *Move! That! Bus! 2022* publication from the National Association of City Transportation Officials (NACTO). While not a part of the prioritization process, the report outlines basic philosophies that must be in place to ensure transit service is successful:

- Transit is a public service, not a business.
- More frequent bus service means more freedom.
- People have jobs, lives, and transportation needs outside of 9-to-5 office hours.
- Streets that work for transit work better for everyone.

The Transit Vision increases annual operations cost by 77%, or \$5.8 million, and additional capital funding is needed to support operations. All improvements identified in Flagstaff in Motion need additional funding to implement. The rising cost of operations continues to impact operations and capital needs.

Figure 1. Transit Vision recommended improvements

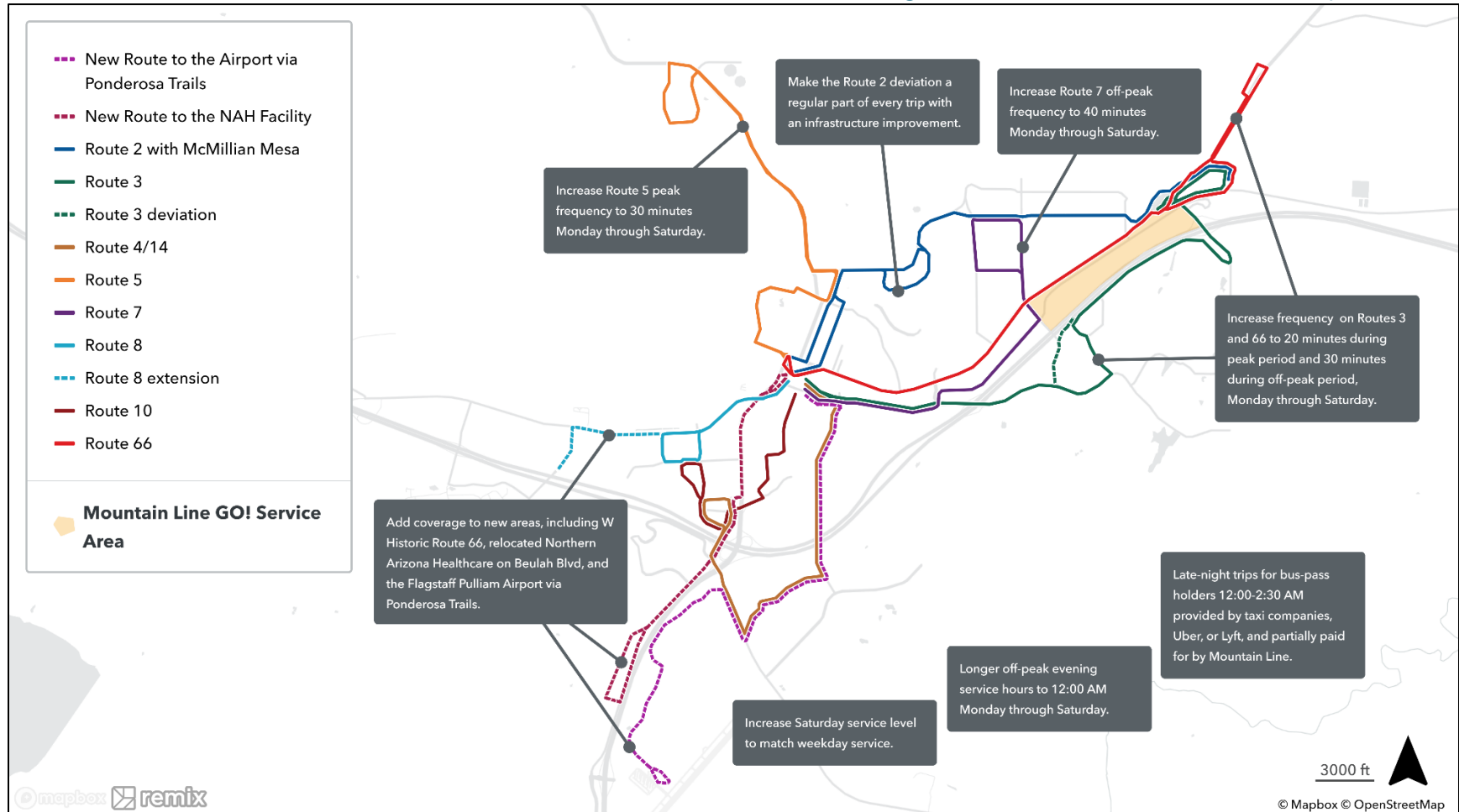


Figure 1 shows the recommended improvements of the Transit Vision. Mountain Line recommends offering the following improvements:

BUSES ARRIVE MORE OFTEN FOR LONGER PERIODS OF TIME ON THE MAJORITY OF ROUTES MONDAY THROUGH SATURDAY:



High-frequency, peak-period service to about 9:00 PM, depending on the route.



Increase frequency to achieve 20- to 30-minute frequency on all routes during peak period.



Increase frequency to 30- to 40-minute frequency during evenings on some routes.



Longer off-peak evening service hours to 12:00 AM.



Late-night trips within bus service area for pass-holders on Friday and Saturday nights from 12:00 to 2:30 AM provided by taxi companies, Uber, or Lyft, and partially paid for by Mountain Line.

ADD COVERAGE TO NEW AREAS, INCLUDING:



Improve access to the existing bus system with additional bus stops on some routes.



Make the Route 2 deviation a regular part of every trip with an infrastructure improvement to allow buses to make a left turn off McMillan Mesa.



Add a bus route along Beulah Blvd to the Fort Tuthill area, serving the proposed new location of the Northern Arizona Healthcare (NAH) campus, and truncate routes 4 and 14 to create a single bi-directional route (to reduce duplication of service on Milton Rd with the new bus route).



Extend Route 8 on W Historic Route 66 to Woody Mountain Rd seven days a week.



Add a bus route through the Ponderosa Trails neighborhood that connects to the Flagstaff Pulliam Airport.

Figure 2. Transit Vision improvements



	Service Period			
	Peak 6:00 AM - 6:00 PM Monday - Friday	Off-Peak 6:00 PM - 10:00 PM Monday - Friday	Peak 6:00 AM - 9:00 PM Monday - Saturday	Off-Peak 9:00 PM - 12:00 AM Monday - Saturday
	Current Frequency (minutes)		Transit Vision Frequency (minutes)	
Route 2	20	30	20	30
Route 3	30	60	20	30
Route 4/14	20 to 30	30 to 40	20	40
Route 5	60	60	30	60
Route 7	20	60	20	40
Route 8	30	60	30	30
Route 10	8	20	8	20
Route 66	30	60	20	30
New Route to the Relocated NAH Facility	-	-	20	30
New Route to the Airport via Ponderosa Trails	-	-	60	60

Blue shading indicates changes over current.

RECOMMENDATION TO INCREASE ACCESS

Accessibility is defined as the ease of reaching desired destinations. The main benefit of the Transit Vision is increased access to desired destinations by increasing frequency across the system, resulting in reduced travel time as more routes connect more often.

Figures 3a and 3b show the Transit Vision color-coded by frequency. Figure 3a is the frequency at noon on weekdays and Saturday, while Figure 3b is the frequency at 10:00 PM on weekdays and Saturday. The Transit Vision frequency will mean fewer people having to decide whether to be 20 minutes early to their appointment or 10 minutes late, with more arrival times to match their schedules. This demonstrates Mountain Line’s continued commitment to improving bus frequency in line with public interest, as more frequent bus service means more freedom.

Figure 3a. Transit Vision frequency (12:00 PM weekdays/Saturday)

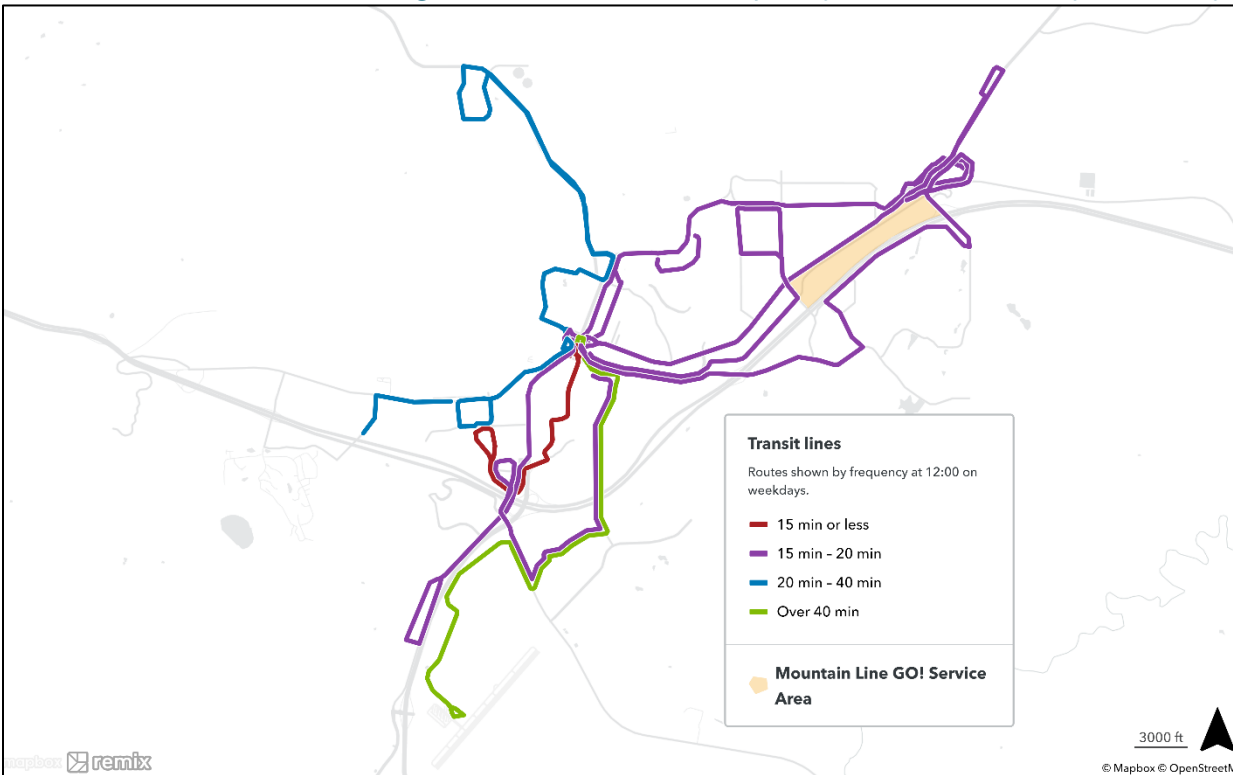
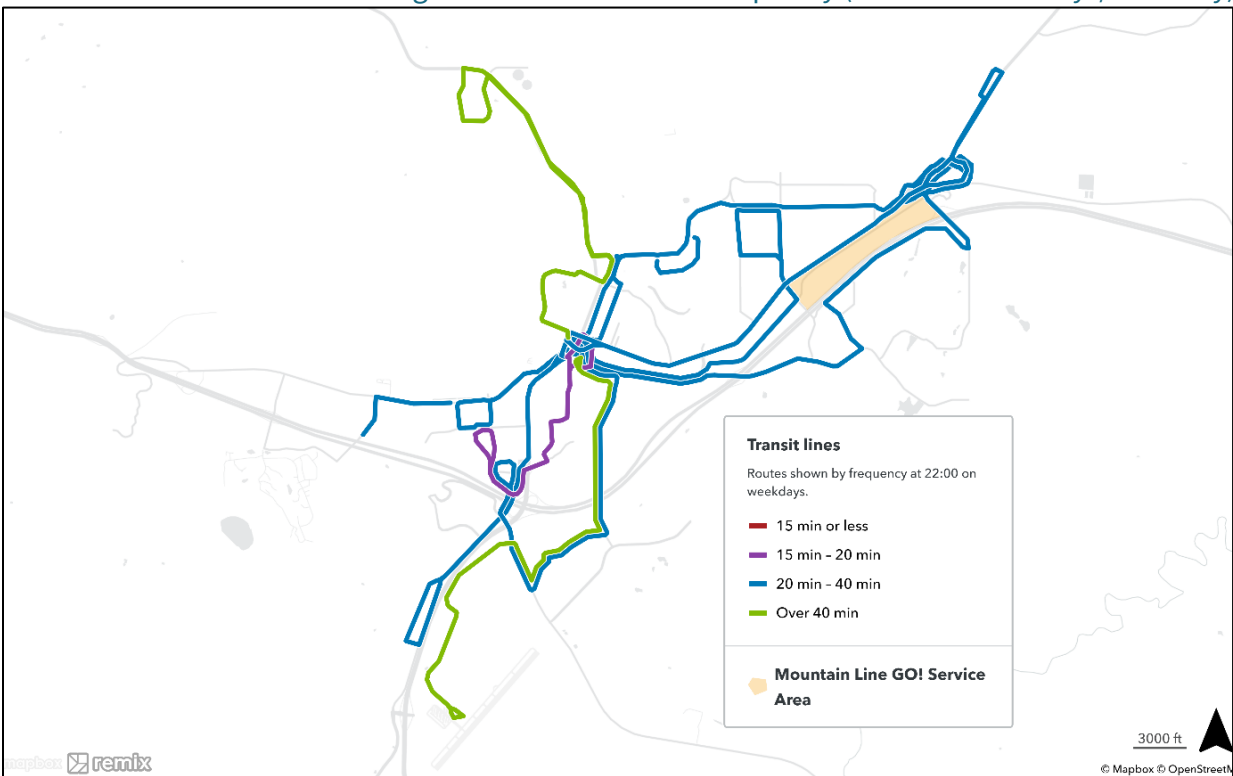



Figure 3b. Transit Vision frequency (10:00 PM weekdays/Saturday)





Figures 4a and 4b show how far someone at the Downtown Connection Center (DCC) can travel in 15 and 30 minutes at 12:00 PM (Figure 4a) and at 10:00 PM (Figure 4b) in the current bus system. Currently, no bus service is available at 10:00 PM, so Figure 4b shows the walking access from the DCC only.

Figure 5 shows how someone at the DCC can travel under the new Transit Vision. Riders can get farther in shorter amounts of time, reducing travel time and making transit a more attractive option. The expanded access is evident in the Transit Vision, giving people more freedom. The most dramatic difference is between Figure 4b and Figure 5, as the Transit Vision includes bus service until 12:00 AM, drastically increasing access for riders across Flagstaff and decreasing travel time.

FLAGSTAFF IN MOTION

Figure 4a. Current access at 12:00 PM weekdays

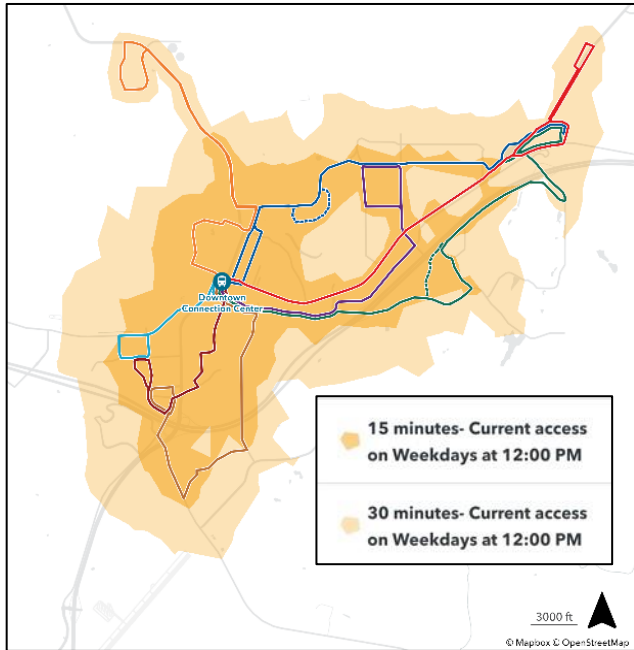


Figure 4b. Current access at 10:00 PM Saturday

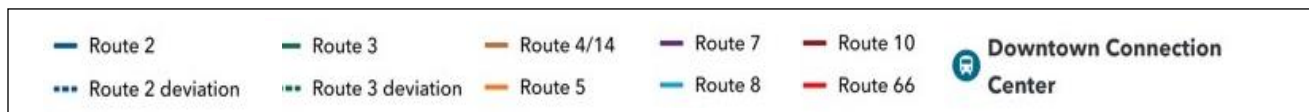
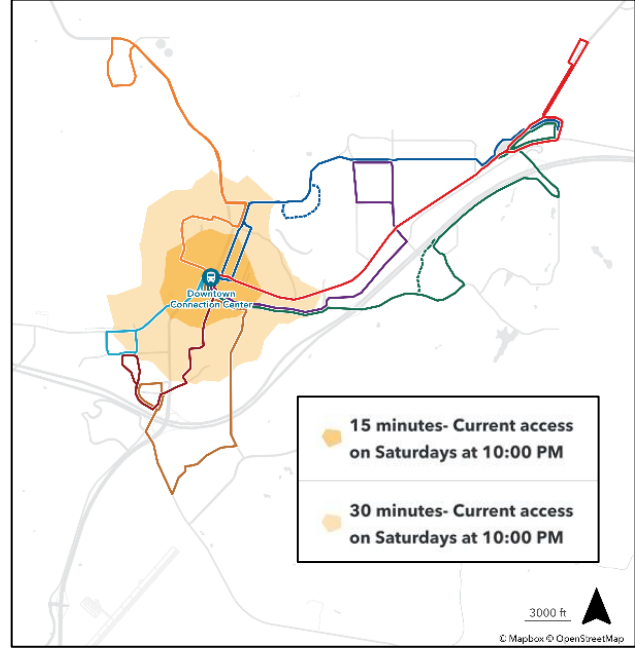
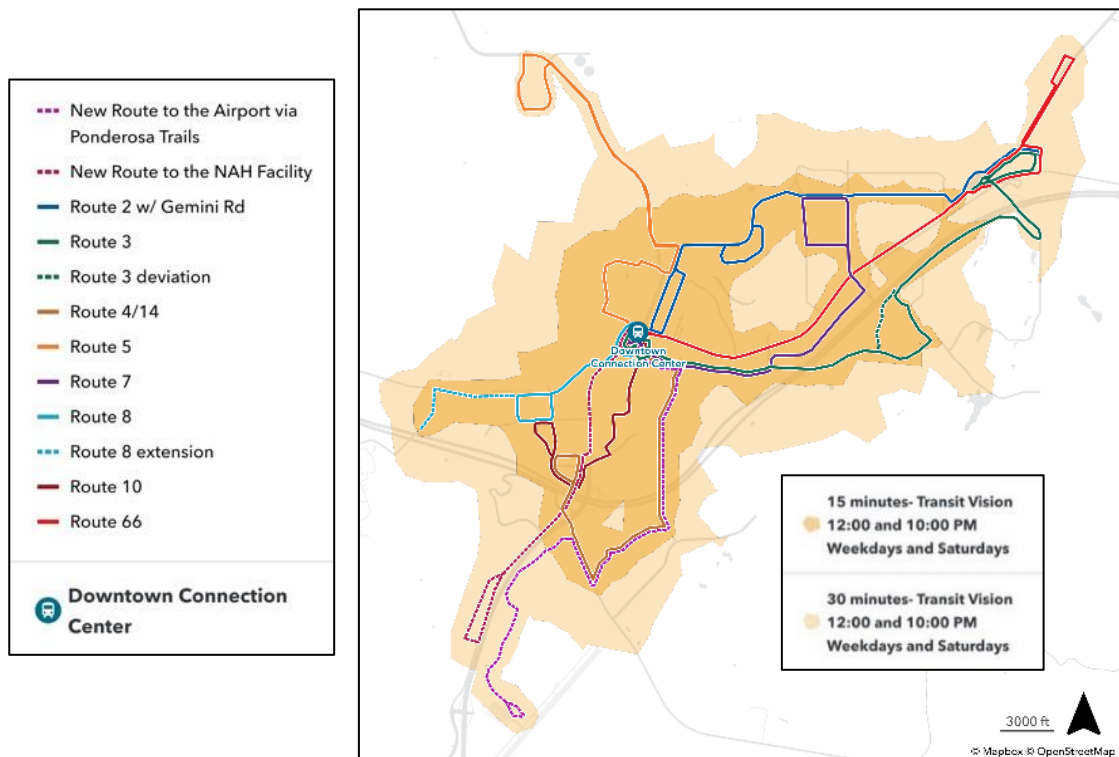


Figure 5. Transit Vision access at 12:00 PM and 10:00 PM weekdays/Saturday



II. HOW WE GOT HERE

Flagstaff in Motion is a Community Transit Plan (Plan) that identifies how best to provide and fund Mountain Line transit services. It captures known community transit needs for the next five years and prioritizes them into a list with recommendations to fund and implement. Two main goals guided the improvements selected for the Plan. The first goal was to target areas with the highest ridership potential. The second goal was to support transit dependent populations. Major considerations in the evaluation of prioritization were increased access and equity, and alignment with helping solve major community issues around affordability, climate action, housing, workforce shortage, and transportation infrastructure.

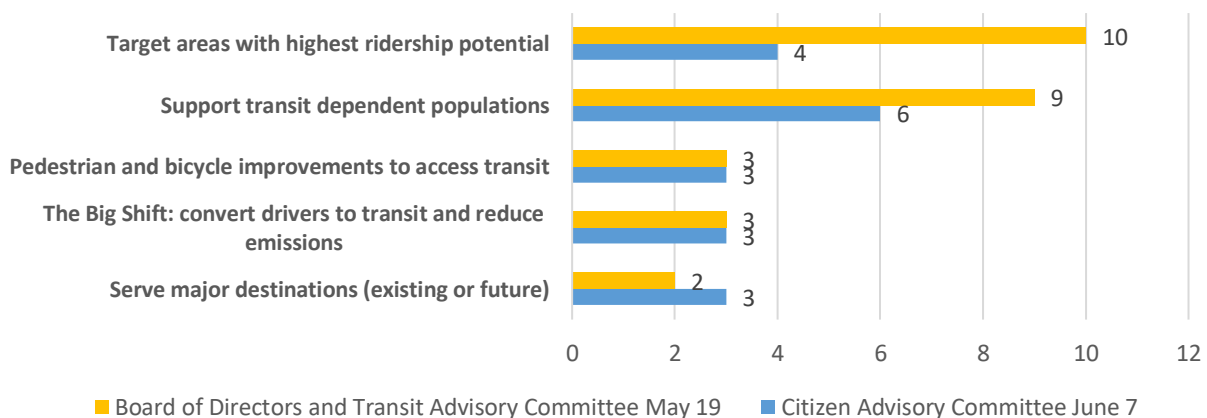
CITIZEN ADVISORY COMMITTEE

A Citizen Advisory Committee was formed for Flagstaff in Motion to collaborate with engaged citizens to create a community-driven plan that reflects the needs and priorities of Flagstaff. The 15 participants included transit riders, community leaders, and members of organizations whose mission overlaps with Mountain Line to ensure different views are represented in the decision-making process for this planning effort.

BOARD OF DIRECTORS AND CITIZEN ADVISORY COMMITTEE GOALS

Two main goals guided the improvements selected for the Plan, as seen in Figure 6. The first goal was to “Target areas with highest ridership potential.” The second goal was to “Support transit dependent populations.” These goals shaped the Evaluation Criteria and weighting used to develop a prioritized list of bus routes and Flagstaff neighborhoods, available in Appendices B and C, respectively.

Figure 6. Goals to guide Flagstaff in Motion



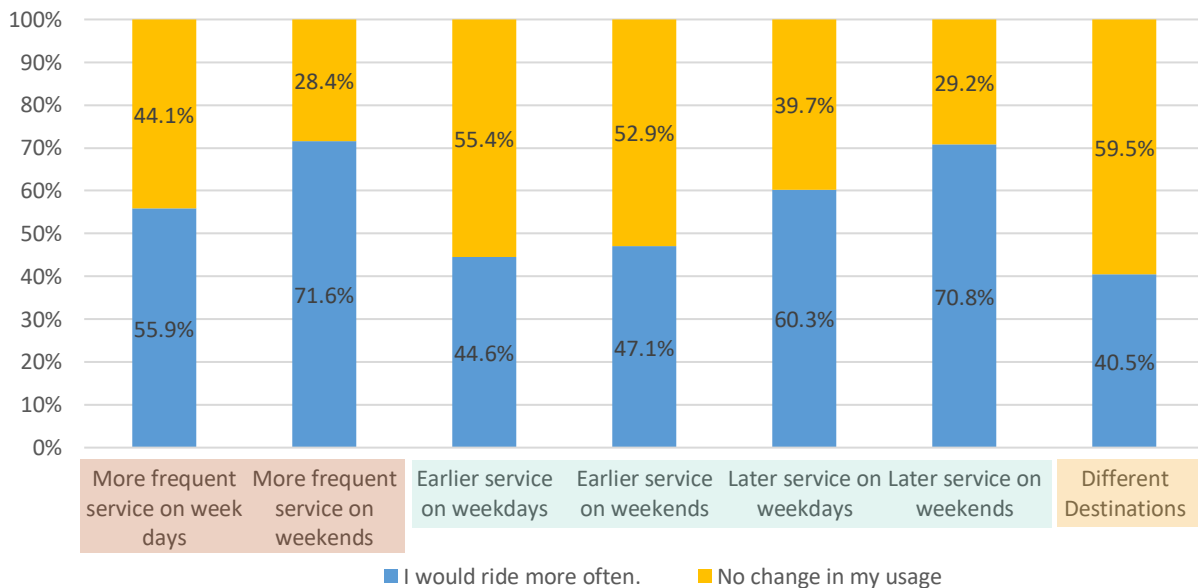
PUBLIC INPUT

Mountain Line regularly surveys riders and non-riders about what services would increase the likelihood of taking more bus trips. The top three requests for transit service improvements are:

- Coverage, or increasing bus service to areas not currently served¹;
- Frequency, or how often a bus arrives; and
- Span, or extending hours of service in the morning or night.

This is seen in the summary of public input in Figures 7a, 7b, and 7c, with coverage highlighted in yellow, frequency highlighted in orange, and span highlighted in blue. While these are the top three requests, other improvements are also requested, such as bus stop amenities, pedestrian and bicycle infrastructure, and electric buses. All suggestions, even if beyond the scope of Flagstaff in Motion, are considered and implemented if staff approve and the improvement is feasible within budgetary constraints.

Figure 7a. Onboard survey (2018) impact of improvements on ridership



¹ See Appendix D for more definitions of bus terminology used in the Plan.

Figure 7b. Never Rider survey (2019) service improvements

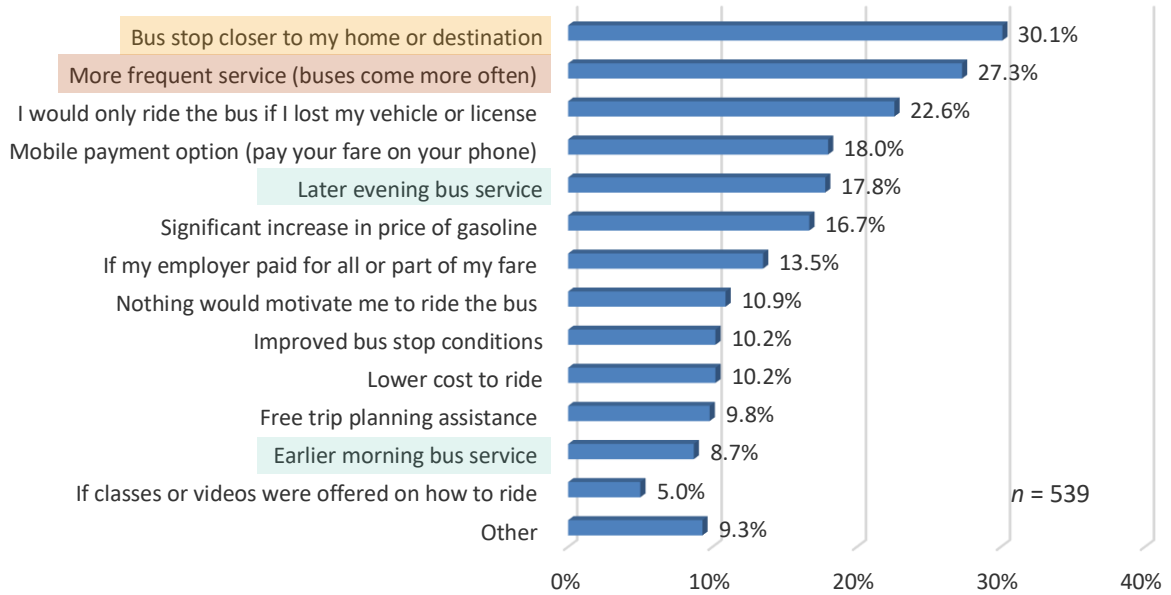
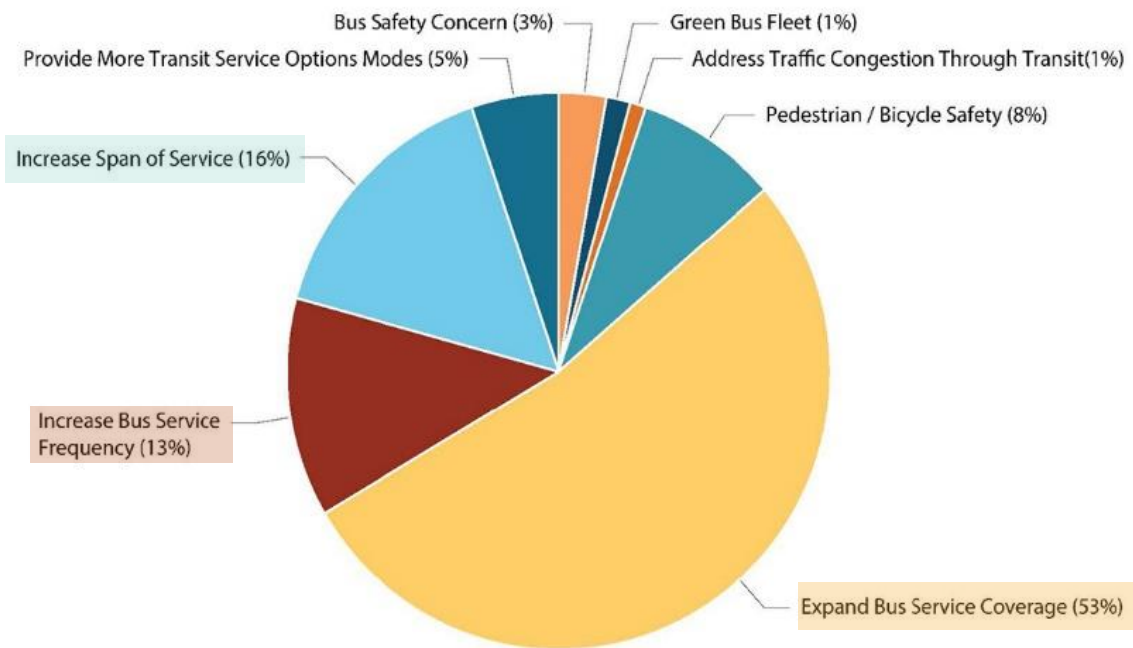


Figure 7c. Flagstaff in Motion (2021) service improvements



Mountain Line conducted an additional survey of riders as part of Flagstaff in Motion to get specific information about what days and hours riders wanted in these improvements. Figure 8 shows a summary of the survey results. When riders were asked to pick the one improvement most

Figure 8. Rider survey (2022) preferred improvements

Improvement		Rider Preference	Change from Current
Later service on Monday-Thursday		~ 12am	~ 11pm
Later service on Friday		~ 12am	~ 11pm
Later service on Saturday		~ 12am	~ 8pm
Later service on Sunday		~ 12am	~ 8pm
More frequent service Monday-Thursday		~ 9pm	~ 6pm
More frequent service on Friday		~ 9pm	~ 6pm
More frequent service on Saturday		More frequent	Most 60-minute frequency, 20/30/40-minute frequency
More frequent service on Sunday			

important to them, *more frequent service Monday through Thursday until 9:00 PM* was most requested. The next priorities, *later service on Monday through Thursday until 12 AM* and *later service on Saturday until 12 AM*, were nearly equally requested.

GUIDING PRINCIPLES FOR SUCCESSFUL TRANSIT

While not a part of the prioritization process, the transit service improvements outlined in Flagstaff in Motion are supported by industry trends, as documented in the National Association of City Transportation Officials (NACTO) Guiding Principles from its *2022 Move! That! Bus!* report. These principles set a basic framework for consideration in developing a successful transit system.

1. TRANSIT IS A PUBLIC SERVICE, NOT A BUSINESS

Public transportation is an essential public service that everyone, transit rider or not, relies on and benefits from. Decision-makers should prioritize service quality and rider needs with the understanding that better service will bring in more riders and help them better meet city safety, accessibility, sustainability, and equity goals.



2. MORE FREQUENT BUS SERVICE MEANS MORE FREEDOM

Increasing bus frequency encourages more people to ride transit more often. Frequent, all-day service makes destinations more accessible, giving people the freedom to get where they need to go regardless of time of day.

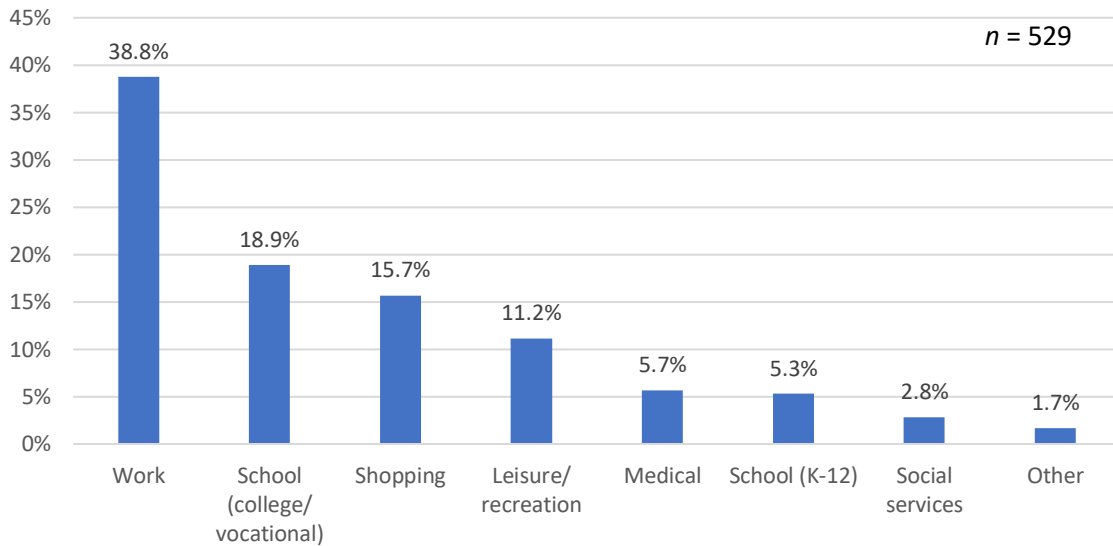


3. PEOPLE HAVE JOBS, LIVES, AND TRANSPORTATION NEEDS OUTSIDE OF 9-TO-5 OFFICE HOURS

While Figure 9 shows that the majority (57.7%) of trips that people make on Mountain Line buses are commute trips to work or school, increasing frequency and span of hours are essential to ensure transit gets people where they want to go outside the traditional 9-to-5 and support the service industry and third-shift employees for industries that operate 24 hours a day.



Figure 9. Rider survey (2022) trip purpose



4. STREETS THAT WORK FOR TRANSIT WORK BETTER FOR EVERYONE

Transit priority streets speed up bus service, making the bus more reliable, convenient, and accessible. They reduce conflicts between road users and are safer for people biking, walking, rolling, and driving. They're also proven to increase retail sales by increasing foot traffic and bringing in more customers. See the Transit Supportive Policies chapter for more ways Mountain Line hopes transit can work with its agency partners.



Rider and non-rider preferences align in the selection of transit service improvements seen in the Transit Vision.

III. RECOMMENDATIONS

Recommendations in this Plan are divided into two categories: Improve Access to the Existing Bus System and Transit Service Improvements.

IMPROVE ACCESS TO THE EXISTING BUS SYSTEM

The existing bus system is focused on the corridors with a high density of homes and jobs, so Mountain Line is already targeting the highest ridership areas. Therefore, improving access to this core network, also known as first- and last-mile improvements, will do the most to support high ridership. Figure 10 shows recommended methods to improve access, including bus stop additions, Kiss-and-Ride locations, bus treatments, enhanced pedestrian crossings and wayfinding, and E-bike and E-scooter share. These improvements are defined in the following sections and detailed in Appendix A.

Figure 10. Recommended improvements to access

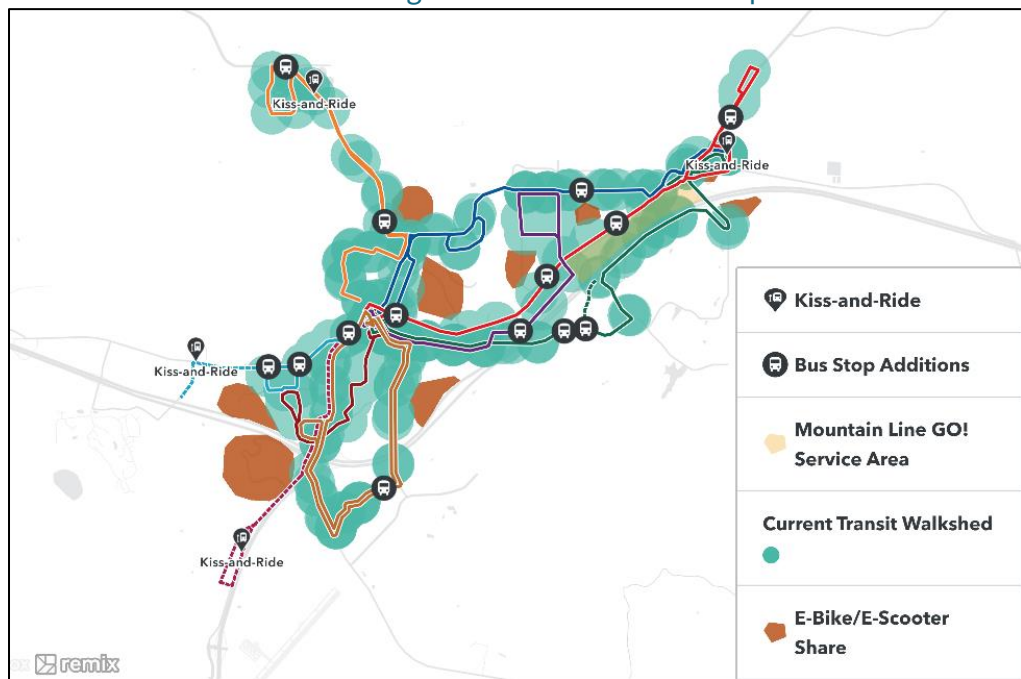
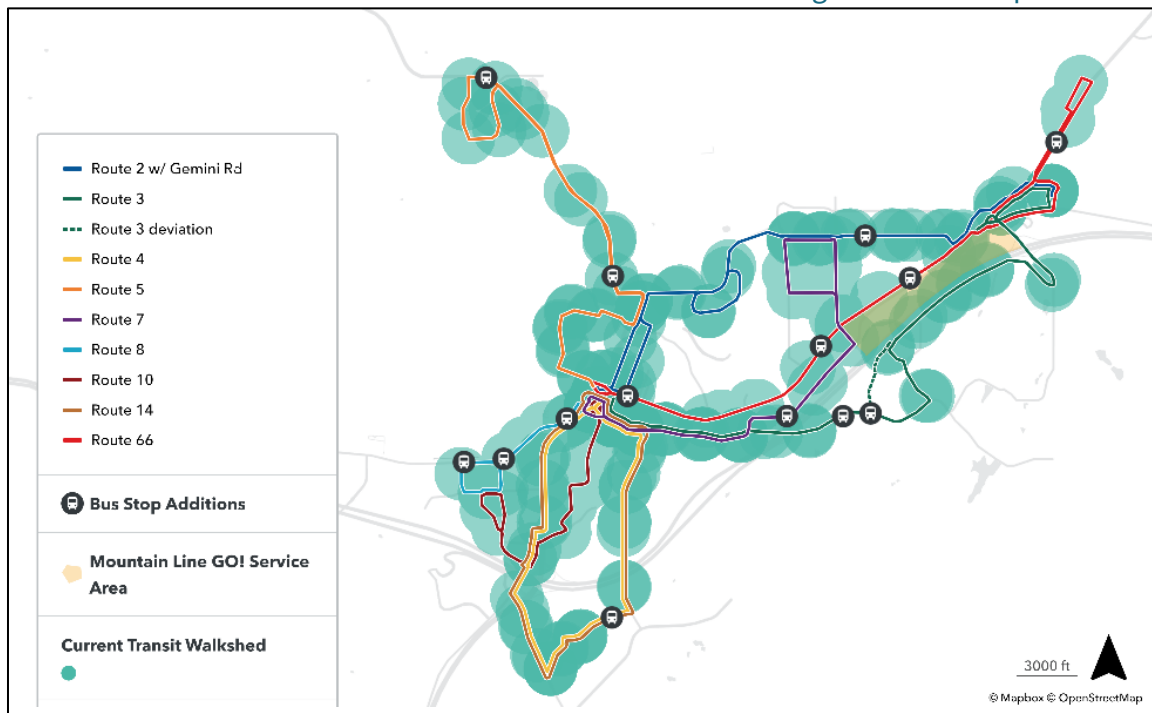


Figure 10 also shows the transit walkshed as a shaded area around bus routes. The shading extends ¼ mile around bus stops on the road network, which is the industry standard distance a person will walk to access a bus stop. Excellent pedestrian and bicycle facilities around bus stops can increase that distance to ½ mile and 3 miles, respectively. The adopted Flagstaff Active Transportation Master Plan (ATMP) include improvements identified by Mountain Line to address deficiencies in accessing bus stops.

BUS STOP ADDITIONS

You can see gaps in the transit walkshed shown in Figure 10, and the Plan identifies 21 bus stop additions to improve access to the existing bus system, listed in Appendix A. When roads are not in a grid, people often have to walk longer distances to access bus stops, sometimes to the point that using transit is no longer feasible. These bus stop additions are meant to improve access to Flagstaff neighborhoods, and some of them have been identified in partner agency projects for years, such as new stops on Route 3 added as part of the City of Flagstaff’s Butler Avenue and Fourth Street Project. Implementation of each bus stop is not guaranteed and may change as opportunities and challenges arise.

Figure 11. Bus stop additions



Please note some bus stop additions may require an enhanced pedestrian crossing, which requires agency partners to implement and manage. Anticipated locations have been added to the Pedestrian and Bicycle list under Infrastructure.

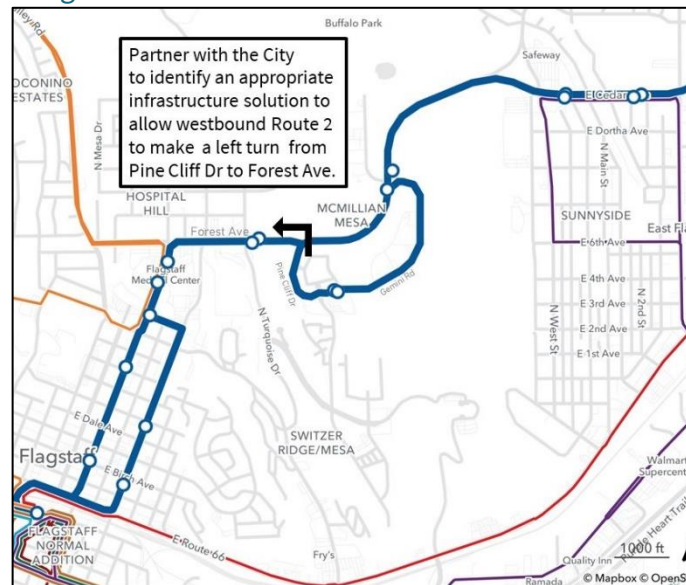
KISS-AND-RIDE

Kiss-and-Ride locations would give people living outside of Flagstaff (Bellemont, Doney Park, Fort Valley, Kachina Village, and Mountainaire) a way to utilize the bus system. Kiss-and-Ride locations identified in the map are representative, as they assume extension of Route 8 and a new route to the NAH facility. This would require infrastructure improvements to support a space for passenger cars to temporarily park to drop people off near a bus stop, enabling them to continue their trip for the day by bus. Other ways to support communities outside of Flagstaff city limits are discussed in the Other Improvements to Consider section of this Plan.

BUS TREATMENT FOR THE FOREST AVE AND GEMINI RD INTERSECTION

Route 2 currently serves Gemini Rd, shown in Figure 12, once in the morning and once in the afternoon, Monday through Friday, when school is in session. Mountain Line recognizes the current transit needs of the youth, seniors, veterans, and residents in the McMillan Mesa neighborhood support regular service and have identified an infrastructure solution is needed to enable regular bus service to this neighborhood. Mountain Line will partner with the City of Flagstaff to seek grant funding for planning of the appropriate bus treatment for the intersection, then seek design and construction grant funding. Serving Gemini Road on every trip heading east and west, every day, would require one-time capital funding and no additional annual funding. However, the timeline for this required infrastructure improvement is unknown and likely many years out.

Figure 12. Forest Ave and Gemini Rd bus treatment



ENHANCED PEDESTRIAN CROSSINGS AND WAYFINDING

Mountain Line fully supports Flagstaff's Active Transportation Master Plan (ATMP) to support access to bus stops with infrastructure improvements like enhanced pedestrian crossings, sidewalks, and bike lanes. However, the locations identified below are specific barriers to accessing bus stops and Mountain Line identifies these as high priority.

Some bus stop additions may also require enhanced pedestrian crossings to enable implementation per agency partners' engineering criteria. They may also require warrants or thresholds to be met, which was not vetted through this Plan. Additional consideration is needed on how pedestrian crossings get funded, built, and who is responsible for ongoing maintenance associated with them. Whether they should be part of a future funding tax question or not is still to be determined.

Many of these pedestrian and bicycle improvements are identified as needs in the Arizona Department of Transportation (ADOT) Milton Road and US 180 Corridor Master Plans.

The wayfinding/signage/marketing of connections to transit is a communications strategy. For example, there is good infrastructure to get from the University Heights neighborhood to Route 10 bus stops in Woodlands Village and it is a reasonably short distance to travel by foot or bike. The missing piece may be ensuring the public recognizes this strong connection to transit to improve access for the University Heights area.

Figure 13. Enhanced pedestrian crossing and wayfinding recommendations

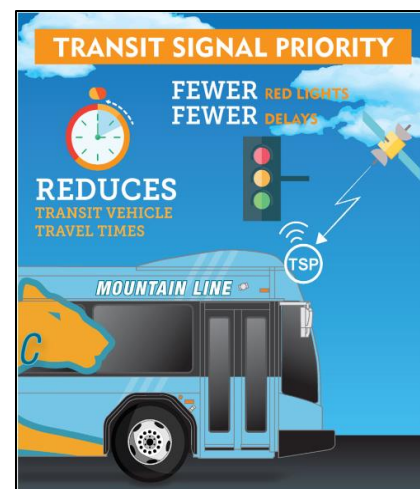
Route	Bike/Ped Improvements	Quantity
2	Cedar Ave <ul style="list-style-type: none"> near Aris St near East St 	2
3	Soliere Ave <ul style="list-style-type: none"> Fox Lair Dr west Fox Lair Dr east Elk Run St Butterfield Apartments Timberline Place 	5
4/14	Per ADOT Corridor Master Plan on Milton Rd <ul style="list-style-type: none"> Starbucks Lake Mary Rd <ul style="list-style-type: none"> near Mohawk Dr near Walapai Dr 	5
5	Per ADOT US180 Corridor Master Plan on US 180 <ul style="list-style-type: none"> near Forest Ave near Meade Ln near Whipple Rd 	3
7	Huntington Ave near Grant St	1
8	W Historic Route 66, exact locations of crossings in to be identified in a future corridor master plan <ul style="list-style-type: none"> near Railroad Springs Blvd near Northwestern St near Woody Mountain Rd 	3
10	Wayfinding/signage/marketing of ped/bike connections to transit in University Heights neighborhood	N/A
66	US 89 at Snowflake Dr/Trails End Dr (Sacred Peaks Health Center)	1
All	Milton Rd at Phoenix Ave (requires a traffic signal)	1

TRANSIT SIGNAL PRIORITY

Transit Signal Priority (TSP) lets buses move through congested areas faster and makes riding the bus more attractive, as shown in Figure 14. The Mountain Line Strategic Investment Plan (SIP) identified the intersections that are currently congested, impacting on-time performance and reliability of service for riders. As traffic grows, congestion will only increase, further delaying transit to the point where Mountain Line would need to add additional buses to service to maintain current frequencies.

See Appendix A for SIP recommendations for consideration of TSP treatment.

Figure 14. TSP benefits



E-BIKE & E-SCOOTER SHARE

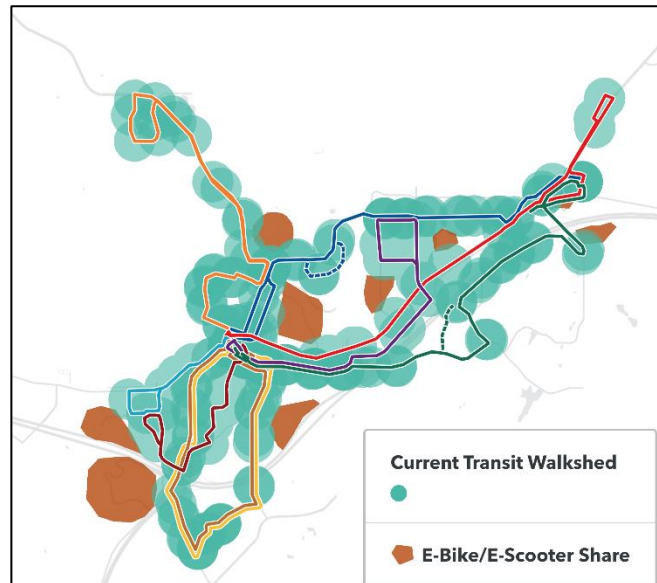
E-bike and E-scooter shares are affordably priced short-term rentals that would be stationed at hubs around Flagstaff, as pictured in the example in Figure 15. This is a great first- and last-mile solution to access transit and is utilized in many cities around the world. The City of Flagstaff and Northern Arizona University (NAU) are in the process of contracting with an E-bike or E-scooter share vendor to implement sharing hubs around town. Mountain Line has identified a few neighborhoods that make sense for an E-bike or E-scooter share to fill first- and last-mile connections to bus stops and would work with the City’s vendor to suggest some hub locations. These include but are not limited to:

- Boulder Point
- University Heights
- Pine Knoll/Rio Homes
- Switzer Canyon
- Sunnyside
- Lower Greenlaw
- Boulder Ridge
- Purina Factory
- W.L. Gore & Associates (Fourth St. and Woody Mountain facilities)

Figure 15. Shared E-bikes and E-scooters



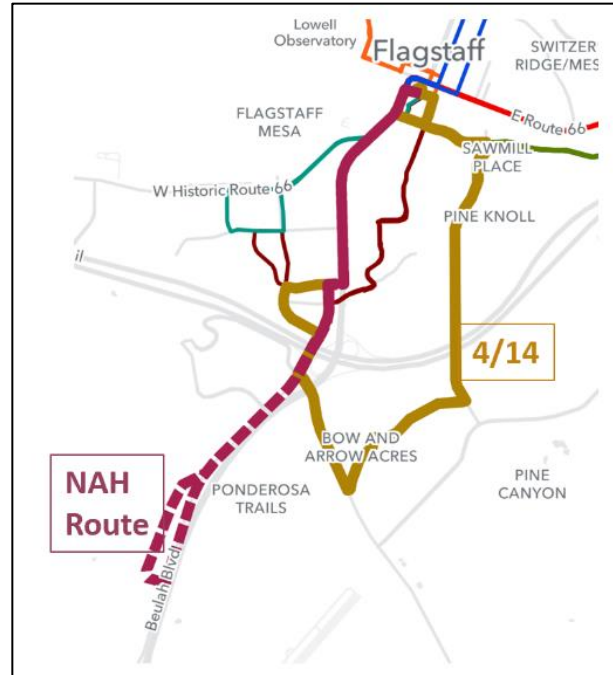
Figure 16. E-bike and E-scooter share locations



TRANSIT SERVICE IMPROVEMENTS

NEW BUS ROUTE TO THE RELOCATED NORTHERN ARIZONA HEALTHCARE FACILITY

At the time of publication, the current Northern Arizona Healthcare (NAH) major medical facility was applying for City permitting for relocation on Beulah Blvd near Fort Tuthill. This location is 1.5 miles south of existing transit service and in an undeveloped part of town with few nearby destinations that support transit service. The current location of the NAH facility is on Beaver Street and has excellent bus service with 15-minute frequency from Routes 2 and 5. Ridership at the two stops adjacent to this facility is in our top quartile with a typical combined 245 boardings and alightings each day pre-COVID. Similar or higher ridership is anticipated at the new location, as people who walk and bike to the current NAH facility will no longer have that option and will likely take transit instead of a personal vehicle.



The new bus route to NAH on Beulah Blvd is not prioritized but rather an assumed community necessity and to be funded as a part of the Transit Vision. The Mountain Line Board of Directors has identified transit service to the regional healthcare provider and the largest employer in the Flagstaff area is critical for community equity. Mountain Line does not recommend reducing current bus service and redirecting funding to add a new bus route to NAH.

Annual Operations Cost	\$870,942
<i>New route to NAH facility</i>	<i>\$1,264,113</i>
<i>Cost savings to combine 4/14</i>	<i>-\$393,171</i>
Annual Ridership	353,343
Capital Impact	Yes
Paratransit Impact	Yes

PRIORITIZED TRANSIT SERVICE IMPROVEMENTS OF THE TRANSIT VISION

The Transit Vision improvements listed below represent Mountain Line’s priorities, in order. The annual operational cost to implement all of the improvements is a 77% increase, or \$5.8 million dollars, over current bus system expenses. This increase may exceed the reasonable amount of funding for voters to approve for funding. Therefore, additional consideration is needed on what the appropriate amount to increase is, and potential refinements to the improvements to be

funded in the available amount. Please note each improvement is cumulative of all previously listed improvements; if there is modification to the order then the cost and ridership impacts would need to be adjusted.

<h2 style="margin: 0;">Transit Service Evaluation Criteria</h2> <p style="margin: 0; font-style: italic;">Each transit improvement is described below using the following metrics:</p>
<p>COSTS</p> <p>Costs are in FY 2023 dollars and estimated for direct operations using revenue hours and miles. Direct Cost is inclusive of fixed direct (HR staff, office supplies) and variable direct (fuel, mechanics, operators).</p>
<p>RIDERSHIP</p> <p>Ridership is estimated using Mountain Line data and applying a percent change to FY 2019/pre-COVID boarding data. These are estimates and not a prediction, as travel patterns shift with service changes and do not account for cumulative impacts of transit service improvements.</p>
<p>CAPITAL IMPACT</p> <p>Capital Impact lists improvements needed to support the operations, if any. These could include bus stop additions, improvements to access bus stops, roadway bus treatment, or transit signal priority and are described in the Capital Improvements section. Cost estimates for all capital improvements are included in Appendix A.</p>
<p>PARATRANSIT IMPACT</p> <p>Paratransit Impact identifies if the improvement triggers a change to the current Americans with Disabilities Act (ADA) paratransit service area. Paratransit is an on-demand service with unpredictable ridership patterns. Therefore, total ridership and costs are not estimated within this plan. Mountain Line provides ADA Paratransit service around ¾ mile of all fixed-route service, per the requirements of the Federal Transit Administrations, and provides ADA Plus paratransit service to Flagstaff city limits. Typically, it is assumed that changes to the paratransit service area will introduce additional costs. However, as all transit service improvements are within Flagstaff city limits (the area already served), paratransit ridership may not increase because these areas may not see an increase in demand. It should be noted that fare revenue from paratransit trips will likely decrease as ADA Plus trips are replaced with ADA Paratransit, as ADA Paratransit has a lower fare. Impacted areas will have people transitioning from ADA Plus to regular ADA; however, some people on ADA Plus may now be able to use the fixed-route bus.</p>

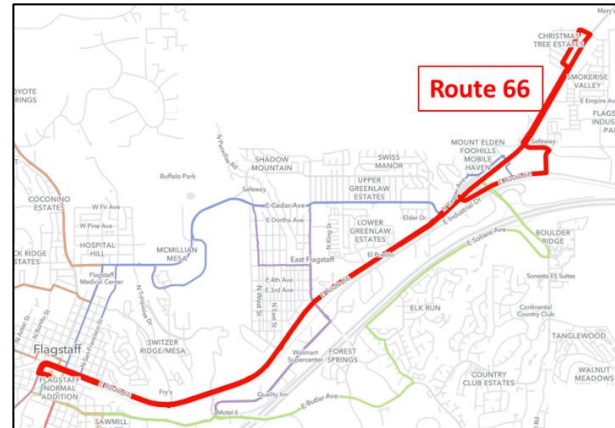
In addition to operating funds needed for these Transit Service Improvements, funding will be needed for capital improvements (buses, bus stops, and access to bus stops) to support some of these transit service improvements. See Appendix A for operations and capital costs in Fiscal Year 2023 dollars; additional consideration is needed to account for cost escalation and implementation timeline.

Route 66 Frequency

#1

Increase peak frequency Monday through Friday to 20 minutes. Route 66 is currently at 30 minutes.

Annual Operations Cost	\$314,022
Annual Ridership	51,107
Capital Impact	Yes
Paratransit Impact	No



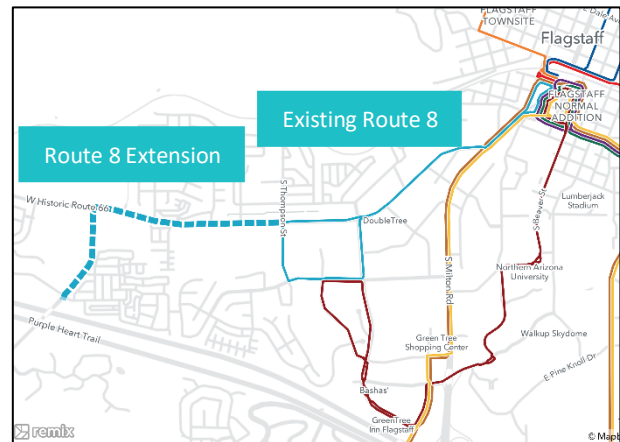
Route 8 Extension

#2

Extend Route 8 to Woody Mountain Rd roundabout, maintain existing peak frequency of 30 minutes and improve off-peak to 30 minutes.

Route 8 currently interlines with Route 7 during weekday evenings, weekends, and holidays. Extending Route 8 would require a dedicated bus during the off-peak period that it currently shares with Route 7. An additional impact would result in off-peak frequency on Route 7 increasing to 40 minutes (it is currently at a 60-minute frequency).

Annual Operations Cost	\$278,196
Annual Ridership	65,981
Capital Impact	Yes
Paratransit Impact	Yes

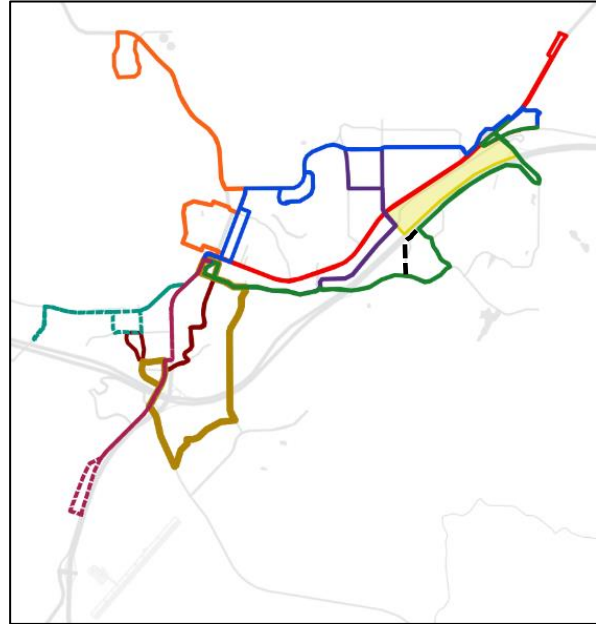


12:00 AM Service End

#3

End bus service around 12:00 AM Monday through Saturday (Sunday ends at current time of 8:00 PM).

Mountain Line bus service currently ends around 10:00 PM Monday through Friday and around 8:00 PM on weekends and holidays. This improvement originally applied to all seven days of the week, but riders ranked late night service on Sunday as lower priority than other days of the week. Additional consideration may be needed on whether the 8:00 PM service end on Sunday should be extended. Based on available funding, certain routes may be prioritized for this improvement.

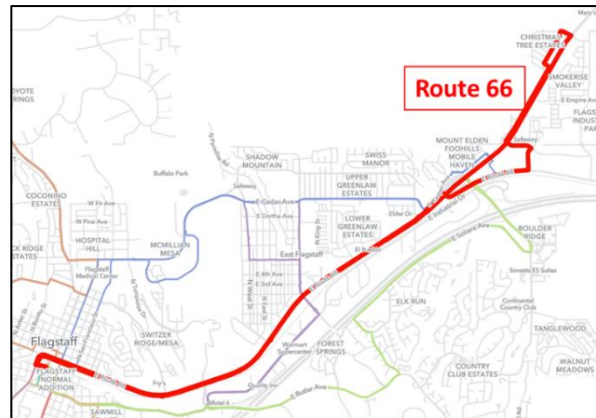


Annual Operations Cost	\$1,087,300
Annual Ridership	40,939
Capital Impact	No
Paratransit Impact	Yes

Route 66 Frequency

#4

Increase frequency to 30 minutes during the evening Monday through Friday. Route 66 is currently 60 minutes during this off-peak period from about 6:00 to 10:00 PM.

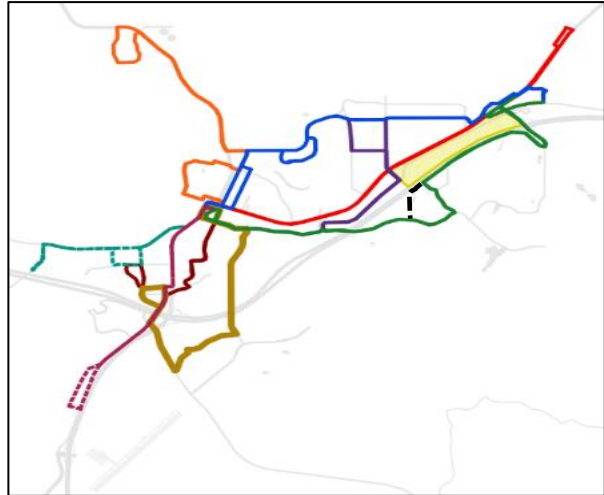


Annual Operations Cost	\$143,841
Annual Ridership	25,897
Capital Impact	No
Paratransit Impact	No

Increase Saturday Service: Match Weekday Frequency and Span

#5

Saturday schedules would now match weekday service for each route, so for Route 5 that only means extending hours as it operates at a 60-minute frequency at this point in the cumulative improvements. This means doubling frequency during peak period to 20- or 30-minute frequency (most routes currently have 60-minute frequency on Saturday) and extending hours in the morning and evening. Saturday service would start around 6:00 AM and end around 12:00 AM (midnight); currently Saturday service starts around 7:00 AM and ends around 8:00 PM.

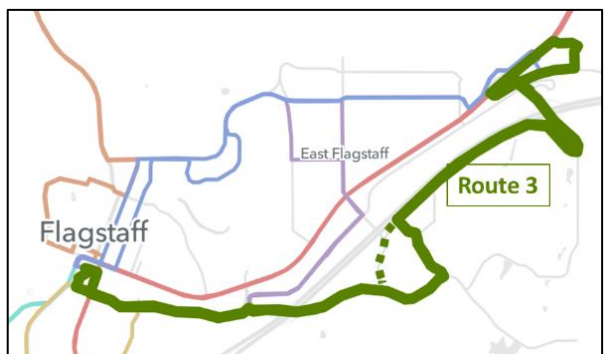


Annual Operations Cost	\$754,994
Annual Ridership	248,091
Capital Impact	No
Paratransit Impact	Yes

Route 3 Frequency

#6

Increase Route 3 peak frequency to 20 minutes from about 6:00 AM to 6:00 PM, Monday through Saturday. Currently Route 3 has 30-minute peak frequency.



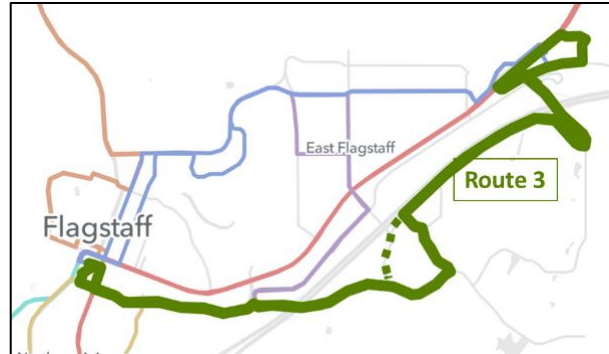
Annual Operations Cost	\$323,128
Annual Ridership	33,619
Capital Impact	Yes
Paratransit Impact	No

▶▶ FLAGSTAFF IN MOTION ▶▶

Route 3 Frequency

#7

Increase Route 3 off-peak frequency to 30 minutes during evenings Monday through Saturday. Currently Route 3 has a 60-minute frequency, which would remain on Sundays.

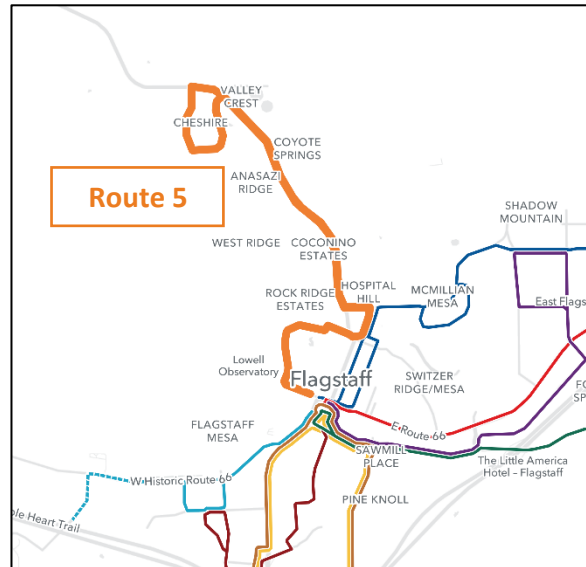


Annual Operations Cost	\$190,576
Annual Ridership	17,035
Capital Impact	Yes
Paratransit Impact	No

Route 5 Frequency

#8

Increase Route 5 peak frequency to 30 minutes Monday through Saturday, 6:00 AM to 6:00 PM. Route 5 currently operates at a 60-minute frequency and does not have peak service. Route 5 has the lowest riders per hour in the Mountain Line system, likely due to infrequent service that is difficult to use.



Annual Operations Cost	\$291,286
Annual Ridership	15,789
Capital Impact	Yes
Paratransit Impact	No

Peak Extended to 9:00 PM

#9

Peak service, or the span of hours that Mountain Line operates at the highest frequency, currently starts around 6:00 AM and ends around 6:00 PM Monday through Friday. Extending peak service to 9:00 PM would achieve two guiding principles: frequency is freedom and people don't live 9-to-5 lives. With the preceding transit improvement that Saturday match weekday frequency and span, this improvement is assumed to apply to Saturday.



Annual Operations Cost	\$551,777
Annual Ridership	124,005
Capital Impact	No
Paratransit Impact	No

New Route to Airport via Ponderosa Trails

#10

A new bus route is proposed to extend into the Ponderosa Trails neighborhood to the Flagstaff Pulliam Airport, operating seven days a week every 60 minutes. This route would interline with Route 4/14, hence the alignment on Lone Tree Rd and Lake Mary Rd. The Ponderosa Trails bus route would match service hours in the system, assumed to be until 12:00 AM Monday through Saturday.



Annual Operations Cost	\$651,310
Annual Ridership	75,762
Capital Impact	Yes
Paratransit Impact	Yes

Late-Night Taxi Partnership Friday & Saturday 12:00 AM to 2:30 AM

#11 Keep the end of transit service at 12:00 AM and add Transportation Network Company (TNC) partnerships to support trips between the end of service and 2:30 AM on Friday and Saturday.



Service would be eligible for transit riders only, as fare is subsidized and assumed to be equal to that of a one-way bus fare (\$1.25). Additional consideration is needed on the actual end time of service as there is an unquantified transit need for third-shift workers from 2:30 to 6:00 AM, the ability of local TNCs to fulfill trip requests, and fare policy for this service.

Annual Operations Cost	\$324,576
Annual Ridership	20,286
Capital Impact	No
Paratransit Impact	No

PERMANENT TRANSIT NETWORK

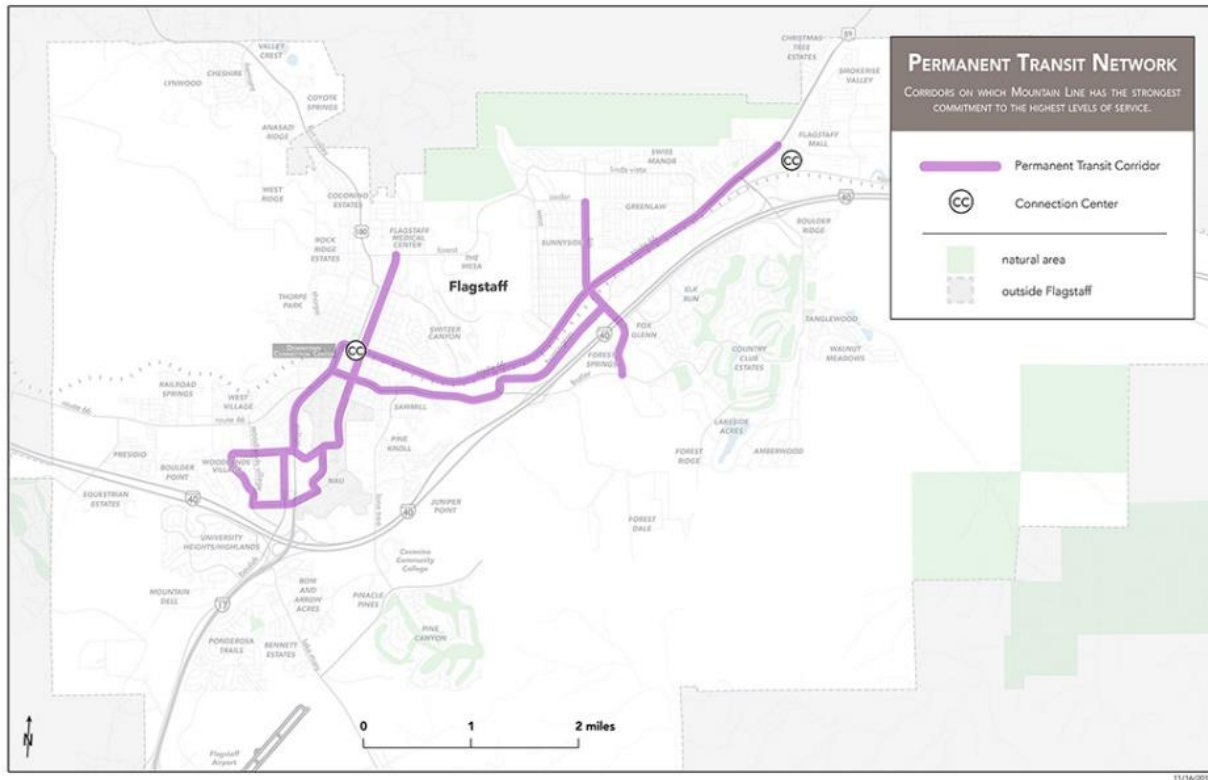
While the recommended Transit Service Improvements above are an ambitious Plan to make transit an attractive mode choice in the community, the Permanent Transit Network continues to plan a vital role. As part of the previous Five-Year Plan, Mountain Line and its partners identified a set of corridors on which the agency can make the strongest commitment to service. Figure 17 shows these corridors highlighted in purple.

The Permanent Transit Network is Mountain Line’s contribution to the ongoing conversation among transit planners, land-use planners, developers, and private organizations about how and where the city should have Transit Oriented Development. Development, street improvements, and transit priority projects on these corridors will do the most to help Mountain Line deliver efficient and high-ridership service in the future.

A number of other organizations have a role to play in the success of the transit network and are likely to find that their own transit-related goals are more successful once they take into account the Permanent Transit Network. These organizations will have an opportunity to refine their policies, practices, and regulations now that Mountain Line has defined the Permanent Transit Network. These include the City of Flagstaff, Arizona Department of Transportation, large institutions like

Northern Arizona University and healthcare providers, real estate developers, and MetroPlan.

Figure 17. Permanent Transit Network



FINANCIAL IMPACT

The annual operations cost of the Transit Vision is an average of \$14.4 million each year, representing a 100% increase of the current transit sales tax. This value does not include cost escalation.

Total capital costs to support the Transit Vision are \$25.9 million, not including cost escalation. This figure does not include current operations, projects in the FY 2023 Financial Plan including fleet replacement and the Downtown Connection Center, or future facility projects such as the Kaspar Headquarters Master Plan. Capital improvements would be implemented over 10 years and are dependent upon federal and other funding. Historically Mountain Line has received federal funds to offset the local share and anticipate keeping the local share at 20% of the total cost. See Appendix A for all cost details.

HOW DO WE FUND THIS / REVENUE SOURCES AND AMOUNTS

Mountain Line explored many funding options, as shown in Figure 18. The various revenue sources were evaluated against four factors: Yield, equity, administrative, and legal (detailed below).

Evaluation Factors	
Yield:	Annual revenue, stability
Equity:	Impact on low-income households
Administrative:	Collection mechanism already in place, difficulty
Legal:	Action required by state legislature, by local government, by voter approval

Figure 18. Revenue sources and amounts

Type	Revenue Source	Yield	Equity	Admin	Legal
Broad-based taxes	<ul style="list-style-type: none"> Sales Tax* Property Tax Employer-Paid Payroll Tax Second Home Property Tax 	<ul style="list-style-type: none"> High High Medium Medium 	<ul style="list-style-type: none"> Low Medium High High 	<ul style="list-style-type: none"> High High Medium High 	<ul style="list-style-type: none"> Medium Medium Low Medium
Federal Grants	<ul style="list-style-type: none"> Formula (FTA Section 5307, 5310)* Discretionary (RAISE, LowNo grants)* 	<ul style="list-style-type: none"> Medium High 	<ul style="list-style-type: none"> High High 	<ul style="list-style-type: none"> High High 	<ul style="list-style-type: none"> High High
Fare Revenue	<ul style="list-style-type: none"> General Fare Revenue* NAU & CCC uPass ecoPass* 	<ul style="list-style-type: none"> Low Medium Medium 	<ul style="list-style-type: none"> Medium High High 	<ul style="list-style-type: none"> High High High 	<ul style="list-style-type: none"> Medium Medium Medium
Transportation-related taxes and fees	<ul style="list-style-type: none"> Vehicle-Miles Traveled (VMT) Tax Vehicle Registration Fee Transportation Network Provider Tax Rental Car Tax 	<ul style="list-style-type: none"> High High Low Low 	<ul style="list-style-type: none"> Medium Medium Medium High 	<ul style="list-style-type: none"> Low High Low Low 	<ul style="list-style-type: none"> Low High Low Low
Other	<ul style="list-style-type: none"> Climate Action Fee/Tax Marijuana Sales 	<ul style="list-style-type: none"> Low Low 	<ul style="list-style-type: none"> Medium Medium 	<ul style="list-style-type: none"> Low Medium 	<ul style="list-style-type: none"> Low Medium
Value Capture	<ul style="list-style-type: none"> Developer Fee Transportation Utility Fee (TUF) 	<ul style="list-style-type: none"> Low Low 	<ul style="list-style-type: none"> Medium Medium 	<ul style="list-style-type: none"> Low Low 	<ul style="list-style-type: none"> Low Low

* Existing funding source

Based on the revenue amount Mountain Line could generate from the various sources, consensus was to keep funding simple. Therefore, this Plan’s recommendation is to seek an increase in the dedicated transit sales tax to be the majority of revenue, and also diversify funding with other non-local sources including State of Arizona funding and public and private partnerships to achieve operations and capital needs. Additionally, Mountain Line’s 2020-2025 Strategic Plan includes the Fiscal Responsibility objective to diversify funding sources to reduce dependency on federal funding for ongoing operations.

Ultimately, including one or more transit ballot questions to increase the transit sales tax is determined by the City of Flagstaff. Mountain Line intends to make a recommendation to the City regarding potential transit tax increases for the November 2024 ballot, but it is the City Council's choice what and if it goes on the ballot.

Mountain Line's main local funding source is currently the City of Flagstaff dedicated transit sales tax, whose existence and amount allocated is determined by voting residents who are registered within Flagstaff City limits. As transit service improvements beyond the city limits are considered, a local funding source other than City sales tax is anticipated to be needed to cover the related expenses. Some of the funding sources listed above may be a good fit for possible transit services outside of city limits.

TRANSIT-SUPPORTIVE ACTIONS

Mountain Line recommends four action items to achieve the goals and guiding principles of this Plan:

SEEK NEW FUNDING AND PARTNERSHIPS TO IMPLEMENT FLAGSTAFF IN MOTION.

The services identified in this Plan help achieve community goals for access, equity, affordability, and climate action. However, none of the projects are identified in Mountain Line's financial planning documents and were never contemplated when the Transit Tax was formulated in 2008 or renewed in 2016. In order to achieve the recommendations in the Plan, new funding is needed. Mountain Line will actively pursue funding sources to implement improvements including increased local match, grants, and partnerships.

PARTICIPATE IN TRANSPORTATION PLANNING AND CAPITAL PROJECTS TO ENSURE TRANSIT AND FIRST- AND LAST- MILE IMPROVEMENTS ARE INCLUDED.

Major transportation plans and capital projects have the ability to greatly enhance the performance, reliability, and comfort of the transit system. Excellent first- and last-mile infrastructure is critical to getting people to and from bus stops and can encourage or discourage the use of a system. Therefore, Mountain Line will actively participate in the planning and design process of transportation projects with Mountain Line's service area.

ACTIVELY PROPOSE MODIFICATIONS TO ROADWAY JURISDICTIONS' CODES AND STANDARDS TO BETTER INCORPORATE TRANSIT.

As identified in the *Move! That! Bus!* report, streets that work for transit work better for everyone. A challenge Mountain Line has faced in the implementation of service is lack of inclusion of transit in City codes and standards. Mountain Line currently relies on partnerships with private and public organizations to implement many large and small capital transit projects such as bus stop additions, amenity upgrades, and access improvements. The ability to ask for transit to be included in new development will be greatly increased by ensuring City processes consider transit much like they consider bicycles and pedestrians. Mountain Line will actively propose amendments to City of Flagstaff zoning codes and the engineering standards of jurisdictional roadway owners.

PROPOSE ADOPTION OF MOUNTAIN LINE PLANS TO LOCAL AGENCY PARTNERS, INCLUDING NAU, CCC, CITY OF FLAGSTAFF, COCONINO COUNTY, METROPLAN, AND ADOT.

Much like proposing revisions to codes and standards above, the ability to ask for items in Transit Planning documents is limited when they are not adopted by partner agencies. Mountain Line will consider proposing the adoption of Flagstaff in Motion and the Transit Guidelines in whole or part as an amendment to the Regional Plan.

OTHER OPPORTUNITIES TO CONSIDER IN THE FUTURE

ZERO EMISSION BUS (ZEB) CHARGING NEEDS

Mountain Line's Zero-Emission Bus (ZEB) Transition Plan identified that Routes 4, 7, and 10 may not have enough time in their layovers at the DCC to charge for the predicted number of minutes needed. This Plan recommends monitoring actual charging time under a variety of conditions as the first electric buses enter service in 2023 and re-evaluate necessary steps at that time. Route 4 will be addressed with the creation of the Route 4/14 bidirectional route and implementation of the new route to serve Beulah Blvd to Fort Tuthill, as the schedule was built to accommodate charging time at the DCC. Runtime and on-time performance for Routes 7 and 10 may not allow schedule adjustment to create more layover time at DCC, but the recommendation of this Plan is to be strategic and prioritize efficiency. Other solutions may include:

- Assuming a few rounds of charging are missed during peak congestion periods,
- Adjusting timepoints,
- Interlining between routes that allow for more layover, and
- Implementing Transit Signal Priority (TSP).

BUS RAPID TRANSIT

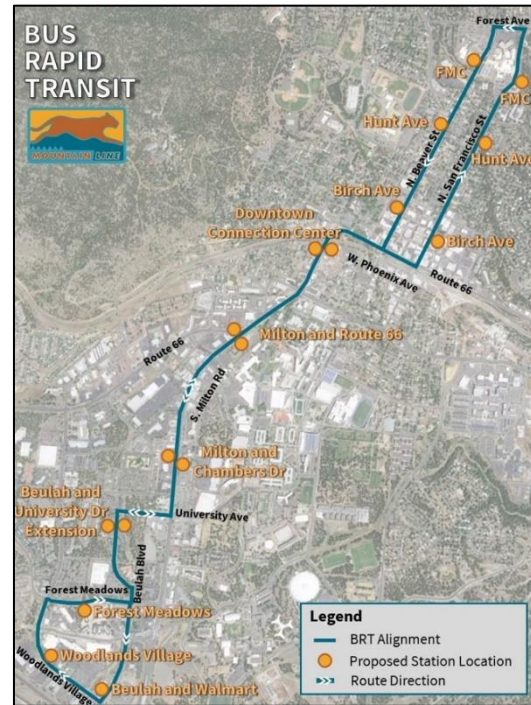
Bus Rapid Transit (BRT) is a collection of capital improvements and transit priority treatment along a route that enables it to move as fast or faster than personal vehicles, as well as 15-minute frequency or better, making transit an attractive travel option. While the Transit Vision demonstrates that increasing frequency is a top priority, this Plan recommends achieving 20-minute frequency on more routes before seeking to increase a few routes to 15 minutes or better. Additionally, BRT requires capital investment in roadway treatments to support faster bus movement, which requires jurisdiction support to implement. Main corridors that could warrant BRT funding and service levels may not have willing partners within the jurisdiction who own the roadway. Potential BRT corridors may require being under City of Flagstaff jurisdiction to align with transit goals and capital requirements of BRT projects.

Mountain Line is very interested in and supportive of BRT options—Route 10 was a Small Starts BRT implemented in 2011 and has proven to be a very successful transit line in terms of ridership as well as the NAU partnership to enable bus-only road sections along the route. Mountain Line has a second BRT project in the Capital Investments Grant (CIG) program of the Federal Transit Administration

(FTA), shown in Figure 19. The project has been paused since 2021 for two main reasons:

1. The north anchor of the route was Northern Arizona Healthcare, but the facility is planning to move south of town to the Fort Tuthill area in the immediate future. Mountain Line and FTA are waiting to see what proposed development may occur to consider modification to alignment of the BRT.
2. Thirty percent of the proposed BRT corridor was to operate on Milton Rd, which is under ADOT jurisdiction. Mountain Line did not have the partnership and support from ADOT to facilitate the capital improvements to Milton Rd needed to support the BRT project.

Figure 19. Proposed second BRT



START OF SERVICE EARLIER IN MORNING

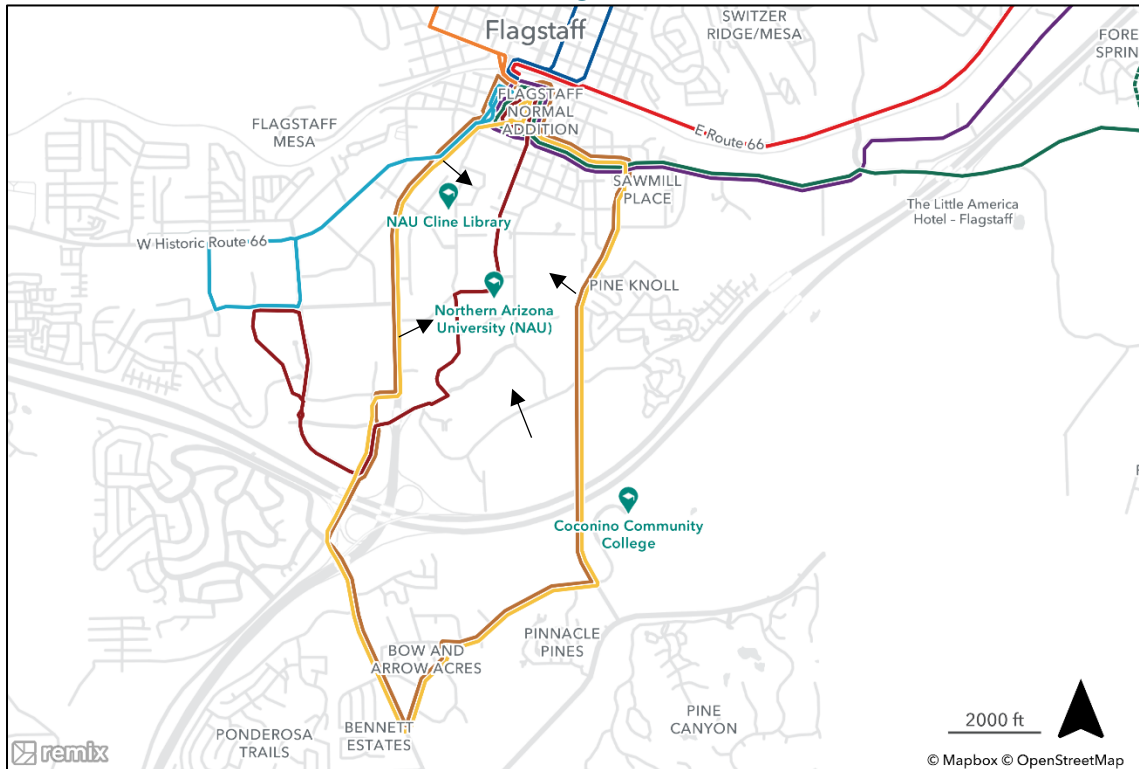
While the majority of requests for longer span of service are asking for late-night transit, early morning is also identified as a need in the Flagstaff community. Third-shift workers at some of the largest employers, including NAH, Purina, and W.L. Gore & Associates, as well as an unquantified number of service industry employees, consistently ask for transit service between 2:00 and 6:00 AM. Additional consideration is needed to support this transit need in the Flagstaff workforce.

BETTER ACCESS ON AND OFF NAU CAMPUS

Public input received in Flagstaff in Motion identified Coconino County College (CCC) students need a more direct transit connection from the CCC campus to the NAU campus, with the Cline Library being a shared facility with CCC and a major campus destination. Figure 20 shows the possible ways to get between the locations, all of which are circuitous and time-consuming. Driving requires parking on campus and paying over \$400 per semester, out of budget range for most students. Mountain Line would like additional east-to-west connections on campus, and plans such, as the Campus Entry Study completed in conjunction with NAU recommended a new entrance onto the NAU campus from eastbound W Historic Route 66. Additional options may exist farther south on campus as well.

Additionally, efficient transit options require better east-to-west campus movement, which are supported by the Campus Entry Study recommendations. There is no funding identified for these capital improvements.

Figure 20. Connections between CCC and NAU



ZERO FARE

Some transit agencies have eliminated fare collection for a variety of reasons: to make it easier to ride the bus and therefore increase ridership, to make transit a more equitable travel mode, to reduce bus operators' conflicts with passengers over fare, to increase route efficiency and reduce wait time at stops and improve on-time performance, and/or to eliminate costs and staffing associated with fare collection. Regardless of the reason, all benefits listed are realized by the transit agency. Drawbacks to zero fare include reduced revenue from fare collection and concerns about riders on buses without having a destination. While this Plan did not explore zero fare, this option may be considered in the future.

W.L. GORE & ASSOCIATES

As Flagstaff's third largest employer with around 2,000 staff, W. L. Gore & Associates (Gore) partnered with Mountain Line to conduct a survey of their workforce on their transportation needs. The survey found 18% of respondents have experienced transportation issues that prevented them from working in the past year, and a majority expressed interest in taking a bus or vanpool to their job at Gore.

Gore has two manufacturing facilities in Flagstaff, and the facility on Fourth St is within the transit walkshed, but the Woody Mountain facility is 2.5 miles from the closest bus stop on Route 8. Flagstaff in Motion recommends extending Route 8 to the Woody Mountain Rd roundabout, but this is still over one mile from the future bus stop to the furthest Gore facility. Some first- and

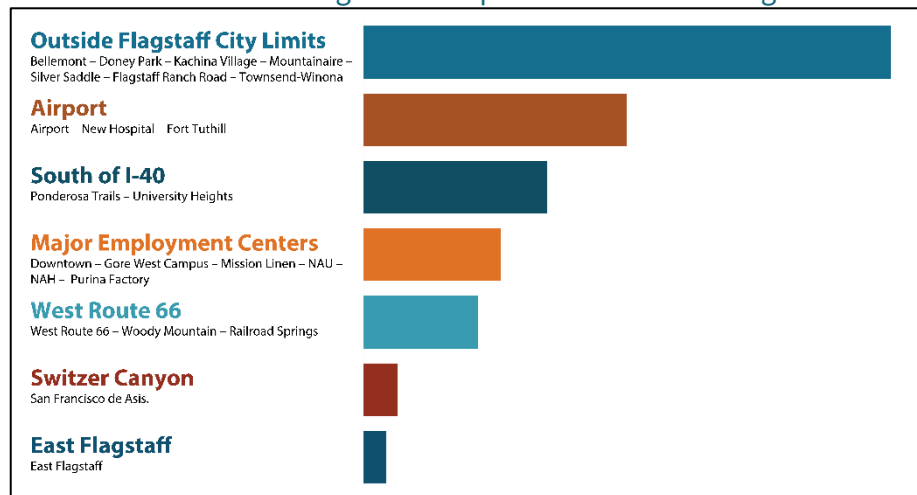
last-mile solutions may support the Gore workforce, such as an E-bike or E-scooter share with Flagstaff’s future vendor, company-owned bike library or golf carts, and pedestrian and bicycle improvements identified in the ATMP along Woody Mountain Rd., especially the bridge over I-40. While not considered as part of this Plan, Mountain Line envisions bus service in the long-term future in the southwest quadrant of Flagstaff that would support Gore as well as development around the potential relocation of NAH near Fort Tuthill.

Gore also draws employees from the Northern Arizona region, and for these individuals the Mountain Line vanpool program may be beneficial. Mountain Line has provided information on bus and vanpool services for distribution to the Gore workforce and continues to discuss service options with Gore.

SERVICE OUTSIDE OF FLAGSTAFF CITY LIMITS

As part of Flagstaff in Motion public input, Mountain Line heard transportation needs for service beyond the Flagstaff City limits, which Figure 21 shows was the top request when people indicated they want expanded coverage. This is also a regular request during rider and non-rider surveys, and from individuals who send

Figure 21. Expanded transit coverage locations

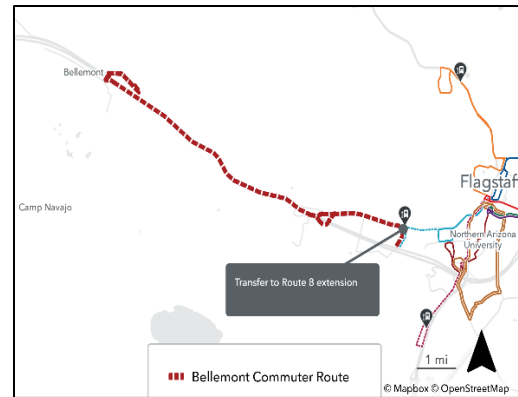


service requests to Mountain Line without being prompted. Mountain Line acknowledges the practicalities of providing service would likely deter riders, as the total service cost would likely result in low frequency and limited hours of service, and low neighborhood densities would require the majority of riders to find feasible first- and last-mile(s) solutions to access the closest bus stop, making them less attractive choices. However, equity and access needs remain. As discussed in the funding section of this Plan, the dedicated transit sales tax is approved by Flagstaff residents living within city limits, and it would have to be a special and specific consideration of the City of Flagstaff to spend money on service outside of City limits. Should a local funding source be available for new service outside of city limits, this Plan has identified a commuter service to support the five neighboring communities of Bellemont, Doney Park, Fort Valley, Kachina Village, and Mountaineire. The proposed service would operate Monday through Friday from 6:00 to 9:00 AM and 3:00 to 6:00 PM with 30-minute frequency. It is proposed that these commuter routes would require riders to transfer to another bus route once inside city limits. Improvement details below show the proposed alignment and estimated cost and ridership for these services.

Fare, route alignment, stop locations, and schedules would require community engagement to help define services prior to implementation. Additional consideration may be needed on the best approach to phase-in service, as some communities may warrant an on-demand service before implementing a commuter route.

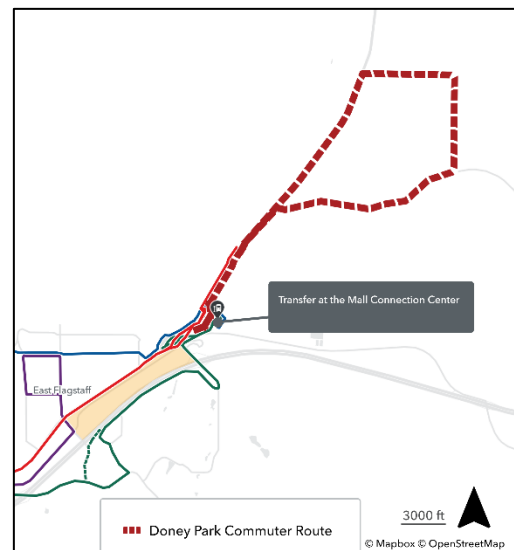
BELLEMONT

Annual Operations Cost	\$352,437
Annual Ridership	7,800
Capital Impact	Yes
Paratransit Impact	Yes



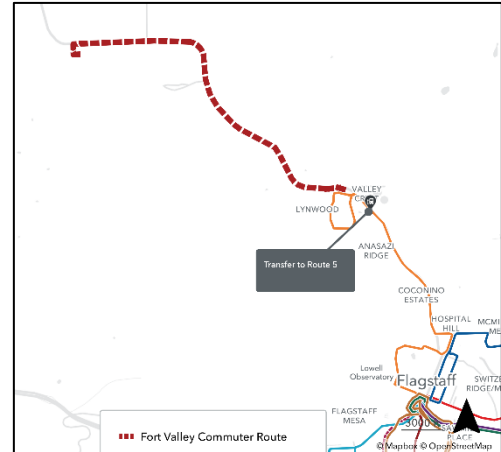
DONEY PARK

Annual Operations Cost	\$265,835
Annual Ridership	20,800
Capital Impact	Yes
Paratransit Impact	Yes



FORT VALLEY

Annual Operations Cost	\$280,996
Annual Ridership	6,500
Capital Impact	Yes
Paratransit Impact	Yes



KACHINA VILLAGE & MOUNTAINAIRE

Annual Operations Cost	\$276,242
Annual Ridership	54,600
Capital Impact	Yes
Paratransit Impact	Yes



REQUEST FOR SERVICE OUTSIDE THE BOUNDARIES POLICY

Periodically Mountain Line receives requests to provide service between Flagstaff and more distant communities such as Tuba City, Winslow, Tusayan, etc., or tourist destinations such as the south rim of the Grand Canyon. Mountain Line’s Request for Service Outside the Boundaries Policy clarifies terms and conditions for how Mountain Line will consider requests for service outside the Northern Arizona Intergovernmental Public Transportation Authority (NAIPTA) boundary. Mountain Line partners closely with the Northern Arizona Council of Governments (NACOG) on services outside of the NAIPTA boundary.

APPENDIX A

ANNUAL OPERATION COST ESTIMATE AND ONE-TIME CAPITAL COSTS IN FY 2023 DOLLARS

Transit Vision Improvements	Operations		Capital				
	Improvement Subtotal (in FY2023 dollars)	Paratransit Impacts	Buses		Bus Stops		Infrastructure
			Qty	Cost (FY2023 dollars)	Qty	Cost (FY2023 dollars)	Cost (FY2023 dollars)
Assumed Improvements							
Bus Stop Additions and Improvements to Access Transit	\$ -	no	0		21	\$ 2,799,420	\$ 6,485,000
Route 2 - Make Gemini Loop Permanent	\$ -	yes	0		1	\$ 45,271	\$ 2,500,000
New Route to NAH Facility * Combine 4/14	\$ 870,942	yes	2.6	\$ 2,635,209	5	\$ 1,344,602	
Prioritized Improvements							
1 Route 66 Frequency Peak 20 Mins, M-F	\$ 314,022	no	1.2	\$ 1,216,250			
2 Route 8 Extension 7 days a week	\$ 278,196	yes	1.2	\$ 1,216,250	6	\$ 1,007,626	\$ 1,080,000
3 12:00 AM Service End All Routes, Monday-Saturday	\$ 1,087,300	yes	0				
4 Route 66 Frequency Off-Peak 30 Min, M-F	\$ 143,841	no	0				
5 Increase Saturday Service: Match Weekday Frequency & Span	\$ 754,994	yes	0				
6 Route 3 Frequency Peak 20 Min, M-F	\$ 323,128	no	1.2	\$ 1,216,250			
7 Route 3 Frequency Off-Peak 30 Min, M-F	\$ 190,576	no	0				
8 Route 5 Frequency Peak 30 Min, M-F	\$ 291,286	no	1.2	\$ 1,216,250			
9 Peak Extended to 9:00 PM	\$ 551,777	no	0	\$ -			
10 New Route to Airport via Ponderosa Trails 7 days a week, 60 min frequency	\$ 651,310	yes	1.2	\$ 1,216,250	11	\$ 1,983,981	
11 Late-Night TNC Fri & Sat 12:00-2:30 AM	\$ 324,576	no	0	\$ -			
Transit Vision Total Cost	\$ 5,781,949	yes	8.6	\$ 8,716,461	44	\$ 7,180,900	\$ 10,065,000
Current Annual Operations Cost **	\$ 7,758,031						
Total Cost of Transit Vision Operations and Capital + Current Operations	\$ 39,502,340						
<p>* The New Route to NAH Facility is not prioritized but rather an assumed community necessity and to be funded as part of the Transit Vision.</p> <p>** Current annual operations costs include existing bus service and O&M of assets. It does not include cost escalation, fleet replacement, Downtown Connection Center facility construction or O&M, or other future facility needs identified in the Kaspar Headquarters Master Plan.</p>							

STRATEGIC INVESTMENT PLAN (SIP) RECOMMENDATIONS FOR CONSIDERATION OF TRANSIT SIGNAL PRIORITY (TSP) TREATMENT

All TSP locations below would need planning studies to understand return on investment before final recommendations are made. Therefore, no cost estimates are provided.

Location	Project Group
Milton/Butler	Butler Corridor West (Higher Priority)
Butler Ave/Beaver St	
Butler/San Francisco	
Butler/Lone Tree	
Butler/Sawmill	Butler Corridor East (Lower Priority)
Butler/Babbitt	
Butler/Huntington	
Milton/Phoenix	Milton/Beulah Corridor
Milton/Historic 66	
Milton/Riordan	
Milton/Plaza Way	
Beulah/Forest Meadows	
Beulah Blvd/McConnell Dr	
Beulah Blvd/Woodlands Village Blvd	
Beulah/Lake Mary	Milton/Beulah Corridor (future)
Milton/University Dr	
University Dr/Beulah	Route 10 Priority
University/Knoles	
Woodlands Village/Forest Meadows	
4th/Huntington	Other Route Priority
4th/Route 66	
US-180/Route 66	

ADDITIONAL BUS STOPS FOR EXISTING ROUTES

<i>Improve Access to the Existing Bus System</i>		21	\$ 2,799,420	
Route	Bus Stop Location	Quantity	Total Cost (FY2023 dollars)	Notes
2	On Lockett Rd near Patterson Blvd OB & IB	2 Bus Shelters w/ bike rack, trash receptacle, horizontal, easement	\$90,542	
3	On Butler Ave - near Woodshire OB & IB - near Fourth St OB & IB	4 Bus Shelters w/ bike rack, trash receptacle	\$125,084	City including horizontal and easement as part of Butler & Fourth Street corridor master plan. Mountain Line paying for shelter amenity.
4/14	On Zuni Dr near Lone Tree Rd OB & IB	2 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement	\$390,542	
5	On US 180 - near Whipple Rd OB - near Peak View St OB	2 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement - Would likely require enhanced pedestrian crossing for implementation, see Ped/Bike attachment for cost.	\$390,542	May be contingent on construction of enhanced crossings per ADOT US 180 Corridor Master Plan recommendations.
7	On Huntington Ave near Grant St OB & IB	2 Bus Shelters w/ bike rack, trash receptacle, horizontal, easement - Would likely require enhanced pedestrian crossing for implementation, see Ped/Bike attachment for cost.	\$45,271	May be contingent on construction of enhanced crossing per City of Flagstaff.
8	On Milton Rd near Malpais Ln OB On W Historic Route 66 - near Woodlands Village Rd OB - near Thompson St OB	3 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement - Would likely require enhanced pedestrian crossing for implementation, see Ped/Bike attachment for cost.	\$585,813	May be contingent on construction of enhanced crossings. Implemented in coordination w/ US W Route 66 Corridor Master Plan.
10				
66	On US Historic Route 66 - near San Francisco St OB - near First St OB & IB - near Park Dr OB & IB On US 89 near Empire OB	6 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement	\$1,171,626	

BUS STOPS TO SUPPORT NEW ROUTES

New or Changed Routes		23	\$ 3,990,938	
Route	Bus Stop Location	Quantity	Total Cost (FY2023 dollars)	Notes
2	On Gemini Rd near BASIS OB	1 Bus Shelters w/ bike rack, trash receptacle, horizontal, easement	\$45,271	Gemini Rd OB needed when served as regular part of route.
NAH Route	On Beulah Rd - near Lake Mary Rd OB & IB - near S. University Heights OB & IB - at the relocated NAH Facility (shelter cost only)	4 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement 1 Bus Shelter w/ bike rack, trash receptacle	\$954,060	City/NAH including horizontal and easement as part of Beulah Rd improvements. Mountain Line paying for shelter amenities.
Extended Route 8	On W Historic Route 66 - near Thompson IB - near Railroad Springs OB & IB - near S. Northwestern St OB & IB - near Woody Mountain Rd OB	5 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement 1 Bus Shelter w/ bike rack, trash receptacle (in partnership w/ Sky Cottages development)	\$1,007,626	May be contingent on construction of enhanced crossings. Implemented in coordination w/ US W Route 66 Corridor Master Plan.
Ponderosa Trails & Airport Route	On High Country Trail Rd - near Wild West OB & IB - near Cattle Dr Trail OB & IB - near Windfall Trail OB & IB On Pulliam Dr: - near Amethyst OB & IB - near John Wesley Powell Blvd OB & IB - at Flagstaff Pulliam Airport	10 Bus Shelters w/ pullout, bike rack, trash receptacle, horizontal, easement 1 Bus Shelter w/ bike rack, trash receptacle (in partnership w/ Airport)	\$1,983,981	

Bus Stop Amenity Cost Estimates (FY2023 dollars)	
\$ 45,271	Shelter: \$10K pad/permitting, \$31,271 bus shelter package; \$4K easement acquisition
\$ 16,731	Logo Stop: \$5K pad/permitting, \$8331 logo stop package; \$3400 easement acquisition
\$ 150,000	Bus Pullout

ENHANCED PEDESTRIAN CROSSINGS AND WAYFINDING

Mountain Line is in full support of the Flagstaff Active Transportation Master Plan (ATMP). These are specific barriers to access transit.

Route	Bike/Ped Improvements	Quantity	Cost per Unit	Total Cost	Notes
2	Cedar Ave - near Aris St - near East St	2	\$360,000	\$720,000	These figures should be considered as planning-level estimates, and do not account for differences in circumstances at different locations and for the specifics of individual crossings.
3	Soliere Ave - Fox Lair Dr west - Fox Lair Dr east - Elk Run St - Butterfield Apartments - Timberline Place	5	\$360,000	\$1,800,000	
4/14	Per ADOT Corridor Master Plan on Milton Rd - Starbucks Lake Mary Rd - near Mohawk Dr - near Walapai Dr	5	\$360,000	\$1,800,000	
5	Per ADOT US180 Corridor Master Plan on US 180 - near Forest Ave - near Meade Ln - near Whipple Rd	3	\$360,000	\$1,080,000	
7	Huntington Ave near Grant St	1	\$360,000	\$360,000	
8	W Historic Route 66, exact locations of crossings in to be identified in a future corridor master plan - near Railroad Springs Blvd - near Northwestern St - near Woody Mountain Rd	3	\$360,000	\$1,080,000	
10	Wayfinding/signage/marketing of ped/bike connections to transit in University Heights neighborhood	N/A	\$5,000	\$5,000	
66	US 89 at Snowflake Dr / Trails End Dr (Sacred Peaks Health Center)	1	\$360,000	\$360,000	
All	Milton Rd at Phoenix Ave (requires a traffic signal)	1	\$360,000	\$360,000	

INTERSECTION BUS TREATMENT AT FOREST AVE AND GEMINI RD

Route	Infrastructure Improvements	Quantity	Cost per Unit	Total Cost	Notes
2	<p>Intersection Bus Treatment</p> <p>Pursue 5305e grant for planning study on best way to make left-turn from northbound Gemini onto westbound Forest Ave to enable Route 2 to serve Gemini Rd on every trip. Per recommendations, seek engineering and construction funding from grants.</p>	1	\$2,500,000	\$2,500,000	Cost estimate based on Kaspar Intersection cost estimate (planning, engineering, construction)

APPENDIX B

EVALUATION CRITERIA

The following Evaluation Criteria and metrics were used to rank Mountain Line bus routes and Flagstaff neighborhoods to determine priority for transit service improvements.

Goals	Evaluation Criteria	Metrics
RIDER EXPERIENCE <i>Continue to improve the efficiency and reliability of transit services in northern Arizona</i>	Transit Efficiency	<ul style="list-style-type: none"> Peak and off-peak headways of bus route On-time performance of bus route Span of service of bus route
	Transfer Opportunities	<ul style="list-style-type: none"> Number of intersecting bus routes (not at DCC) providing transfer opportunities Transfer opportunities in 10 minutes including opposite direction
ACCESSIBILITY AND MOBILITY <i>Enhance accessibility and connectivity, and continue to improve mobility through transit</i>	Existing Population and Employment	<ul style="list-style-type: none"> Existing population and job density within 1/4-mile of transit stops
	Future Population and Employment (2030)	<ul style="list-style-type: none"> Future population and job density within 1/4-mile of transit stops
	Activity Centers	<ul style="list-style-type: none"> Number of local and regional activity centers within 1/4-mile of transit stops
	Educational Institutions	<ul style="list-style-type: none"> Number of schools (public and private) and colleges/university within 1/4-mile of transit stops
	Healthcare Facilities	<ul style="list-style-type: none"> Number of health facilities within 1/4-mile of transit stops (hospitals, urgent cares, nursing homes, and pharmacies)
	Social Service Agencies	<ul style="list-style-type: none"> Number of social service agencies within 1/4-mile of transit stops
EQUITY <i>Provide transit service for people of all ages, abilities, and backgrounds</i>	Title VI Communities	<ul style="list-style-type: none"> Percent of people living within 1/4-mile of transit stops (low-income and minority population) Minority Routes
	Transit Dependent Populations	<ul style="list-style-type: none"> Percent of people living within 1/4-mile of transit stops (people living with disabilities, senior and youth population)
	Equity Index Score	<ul style="list-style-type: none"> Equity index score for each route (density per acre for minority, low-income, LEP, disabilities, senior, youth, and zero-car population)

Goals	Evaluation Criteria	Metrics
SUSTAINABILITY <i>Continue to provide attractive and convenient transit services to promote a healthier and more sustainable community</i>	Vehicle Miles Traveled	<ul style="list-style-type: none"> Comparison of new vehicle miles traveled to existing vehicle miles traveled
	Active Transportation Facilities	<ul style="list-style-type: none"> Number/miles of existing active transportation facilities within 1/4-mile of transit stops (bike lanes, bikeway intersections, sidewalks, enhanced crossings, and FUTS trails)
INVESTMENT <i>Integrate transit services with land use planning policies to support economic development and community growth</i>	Existing Ridership	<ul style="list-style-type: none"> Average weekday boardings per bus route (2019)
	Projected Ridership	<ul style="list-style-type: none"> Average weekday boardings per bus route (2030)
	Future Developments	<ul style="list-style-type: none"> Number of future developments within 1/4-mile of transit stops
LIVING AFFORDABILITY <i>Continue to reduce the cost of living in Northern Arizona by providing affordable transportation options</i>	Car Free Households	<ul style="list-style-type: none"> Percent of households that are car free within 1/4-mile of transit stops
	Affordable Housing	<ul style="list-style-type: none"> Number of affordable housing units within 1/4-mile of transit stops (Flagstaff Housing Authority, senior assisted living, tax credit apartments, and affordable units)

APPENDIX C

PRIORITIZED LIST OF TRANSIT ROUTES AND FLAGSTAFF NEIGHBORHOODS

Use of the Evaluation Criteria in Appendix B resulted in the following prioritized list of Mountain Line transit routes and Flagstaff neighborhoods.

Rank	Prioritized Areas and Routes for Transit Service	Technical Analysis Score	Public Input Score	Normalized Score
1	Route 66	4.5	9	10
2	West Route 66, north side (Railroad Springs, West Village, Crestview)	18.5	22.5	9.03
3	Route 7	6.83	5	8.76
4	Route 2	4.33	7	8.39
5	Route 10	8.16	3	8.27
6	Lower Greenlaw Estates (East Flagstaff)	26	11.25	8.15
7	West Route 66, south side (Presidio, Timber Sky, Boulder Point)	14.5	22.5	8.09
8	Greenlaw Townhomes (East Flagstaff)	25.5	11.25	8.03
9	Upper Greenlaw Estates (East Flagstaff)	23	11.25	7.45
10	Ponderosa Trails/Airport	7	27	7.39
11	Sunnyside (East Flagstaff)	22	11.25	7.21
12	Route 4	5.66	4	7.16
13	Route 5	1.16	8	6.79
14	Route 3	2.83	6	6.54
15	Huntington/Industrial	17.5	11.25	6.16
16	University Heights (South of I-40)	10.5	18	6.1
17	Doney Park	3.5	24.75	6.05
18	Route 14	6.16	2	6.04
19	Switzer Canyon	19.5	6.75	5.58
20	McMillan Mesa	19	6.75	5.46
21	Kachina Village	4	20.25	5.11
22	Smokerise	13	11.25	5.11
23	Route 8	5.83	1	5.06
24	South Country Club (Country Club Estates)	7.5	15.75	4.88
25	Pine Knoll/Rio Homes	22.5	0	4.7

Rank	Prioritized Areas and Routes for Transit Service	Technical Analysis Score	Public Input Score	Normalized Score
26	South 4th St & Butler Ave area (Canyon Del Rio, Sinagua Heights, and Forest Springs)	10.5	11.25	4.53
27	Swiss Manor (East Flagstaff)	21	0	4.35
28	Cherry Hill	20.5	0	4.23
29	Boulder Ridge (east of Country Club)	4.5	11.25	3.12
30	Bellemont	2	13.5	3.06
32	NoHo	12	0	2.25
33	Baderville	2.5	0	0.03
Not Ranked	Regional service - long term Winslow/ Grand Canyon/PHX	N/A	N/A	N/A
High	Relocated Hospital on Beulah Blvd*	N/A	N/A	N/A

* Current conditions in the proposed hospital relocation area do not allow for evaluation but it is ranked as high as Mountain Line identifies bus service to the largest regional hospital as being of great importance.

APPENDIX D

DEFINITIONS

This is a list of industry standard terms used in the Flagstaff in Motion Report. This list is not exhaustive but is intended to support recommendations of this Plan.

Access/Accessibility - The ability and level of ease with which all bus riders—including those with disabilities, special requirements, or other needs—can access bus stops and places they want to go using the bus.

Capital Improvement Grant (CIG) - A competitive funding program for Bus Rapid Transit (BRT) projects available under the Federal Transit Administration. BRT is a collection of capital improvements and transit priority treatment along a route that enables it to move as fast or faster than personal vehicles, as well as 15-minute frequency or better, making transit an attractive travel option.

Coverage - The geographic area that has access to transit, usually considered to be a ¼ mile walking distance around bus routes.

E-Bike and E-Scooter Share - A first- and last-mile solution to support transit access, electric bikes (E-Bike) and/or electric scooters (E-Scooter) are short-term rentals for an affordable price that are stationed at charging hubs.

Enhanced Pedestrian Crossing - A first- and last-mile solution to support transit access, enhanced pedestrian crossings have features that make crossing a street more visible to cars in an effort to make it easier to walk or bike across the street. Features can include but are not limited to a flashing beacon, different color pavement, raised pavement, protected refuge in the middle of the street, among others.

Federal Transit Administration (FTA) - The government agency overseeing local public transit systems. The FTA administers competitive grants and formula funding and requires reporting to demonstrate transit system's strict adherence to regulations.

First- and Last-Mile - The beginning or end of an individual trip made primarily by public transportation. In many cases, people will walk to transit if it is close enough. However, on either end of a public transit trip, the origin or destination may be difficult or impossible to access by a short walk. This gap from public transit to destination is termed a last-mile connection.

Frequency - The time between bus arrivals for a given route. NACTO's guiding principles recommend increasing bus frequency to encourage more people to ride transit more often.

Frequent, all-day service makes destinations more accessible, giving people the freedom to get where they need to go regardless of time of day. More frequent bus service means more freedom.

Kiss-and-Ride – Supports transit use for people living beyond access of the transit system by providing a location on the periphery of the transit system where people can drop-off and pick-up passenger(s) using the bus for the day. It's like park-and-ride but with a temporary parking location.

Off-Peak – Hours outside of peak when bus frequency is lower.

Peak – The time period that bus service operates at the highest frequency, traditionally associated with 9-to-5 office hours to coincide when transit riding is busiest. Mountain Line's peak currently starts around 6:00 AM and ends around 6:00 PM Monday through Friday. NACTO's guiding principles recommend increasing frequency and span of hours are essential to support jobs, lives, and transportation needs outside of 9-to-5 office hours and ensure transit gets people where they want to go.

Pedestrian and Bicycle Improvements – The vast majority of transit trips begin on foot or bicycle as transit routes oftentimes do not operate outside of someone's front door of their house, office, school, or other place they want to go. Pedestrian and bicycle improvements are crucial to support access to transit.

Span – Time period that bus service is available. Mountain Line's hours currently span from about 6:00 AM to about 10:00 PM Monday through Friday, and about 7:00 AM to 8:00 PM on weekends.

Transit Walkshed - $\frac{1}{4}$ mile around bus stops following the road network, which is the industry standard distance a person can reasonably be expected to walk to access a bus stop. Excellent pedestrian and bicycle facilities around bus stops can increase that distance to $\frac{1}{2}$ mile and 3 miles, respectively. A person's physical or mental ability often reduces their distance, especially under inclement conditions such as heat, cold, high traffic roads, high exposure to traffic, etc.