



BUS STOP MASTER PLAN

Mountain Line

Missoula Urban Transportation District

Final Plan

Adopted by Board of Directors on September 3, 2015

August 2015



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1 EXECUTIVE SUMMARY

Background

The development of a Bus Stop Master Plan for the Mountain Line system is essential in establishing consistent and transparent guidelines for bus stop provision, design, and placement. The plan will provide a roadmap for achieving a network of stops that enhances Mountain Line customer experience and increases operational efficiency. A key component of the Bus Stop Master Plan is the consolidation of stops to improve schedule reliability and maximize bus travel speeds. Reducing the number of stops will also minimize future maintenance costs as Mountain Line updates stop signage and installs new stop amenities. Initial implementation of the Bus Stop Master Plan will follow significant changes to the Mountain Line bus system.

Mountain Line implemented a zero-fare policy in January 2015, making the agency one of the largest fare-free transit systems in the country. System ridership increased by 36% from the previous year within seven (7) months of the fare change. The three year zero-fare demonstration project is jointly funded by a group of community partners. Benefits of the new fare policy include:

- Significant ridership increases
 - Existing customers riding more often
 - New customers
- Faster and more reliable service
 - Reduced dwell times at stops
 - Reduced overall travel time
- Livability benefits
 - Reduced traffic
 - Improved air quality
- Financial benefits
 - Decreased administrative costs
 - The possibility of increased federal funding

Mountain Line also expanded its premium BOLT service in January 2015 by upgrading the Route 2 weekday headway from 30 to 15 minutes and extending hours on Routes 1 and 2 to 10 p.m. Routes 1 and 2 currently constitute over 35% of the total ridership for all Mountain Line routes.

Plan Development

Mountain Line is committed to improving the comfort, safety, and accessibility of stops throughout the entire Mountain Line system. Many bus stops in the current system lack a concrete landing pad, sidewalk connection, and basic amenities.

The Bus Stop Master Plan serves as a framework for achieving system-wide goals by providing:

- Guidelines for the spacing, placement, and design of bus stops
- Recommendations for stop consolidation and installation for each route
- Implementation plan for improving bus stop signage and amenities

Stop spacing guidelines are intended to guide the placement of future stops, while balancing customer convenience with operating efficiency. Stop placement guidelines describe the considerations that are involved in making decisions regarding new or relocated bus stops. Stop design guidelines are based on transit best practices and incorporate street and pedestrian conditions found within the Mountain Line service area.

Recommendations for specific bus stop changes are based on an analysis of current stop spacing, recent ridership statistics, and an extensive review of existing conditions. Specific stop recommendations are mostly aligned with previously mentioned stop guidelines.

In addition to identifying opportunities for opportunities for stop consolidation, the Bus Stop Master Plan provides a tiered bus stop amenity program that identifies the adequate level of investment for each proposed stop. Site plan drawings for all proposed stops on Routes 1 and 2 provide a detailed plan for upgrading stops with unique amenities branded to highlight the premium BOLT service. The Bus Stop Master Plan also includes a phased implementation plan to upgrade proposed stops based on improvement costs and expected financial resources.

2 BUS STOP SPACING GUIDELINES

The optimal spacing between bus stops involves a balance of customer convenience and operating efficiency. Customer convenience involves a tradeoff between distance to stops and travel speeds. Closely spaced stops reduce the distance to/from customer origins and destinations but result in slower bus speeds and less reliable service. Stops spaced far apart result in faster, more reliable service but can significantly increase walking distance. Due to differences in customer preferences and abilities, Mountain Line seeks bus stop spacing that maximizes speed, reliability, and customer access.

Bus stop spacing may vary across the Mountain Line service area based on adjacent land uses and densities. In general, areas with high population and employment density have shorter stop spacing than areas with moderate or low densities. Figure 1 provides stop spacing guidelines based on population and employment density characteristics. Actual stop spacing will vary based on built environment characteristics.

Figure 1 Design Criteria for Bus Stop Spacing

Density Classification	Population and Employment Characteristics	Spacing Dimensions
High Density	16+ persons or jobs per acre	Approximately every 1/4 mile
Moderate Density	8-16 persons or jobs per acre	Every 1/4 - 1/2 mile
	4-8 persons or jobs per acre	Every 1/2 - 3/4 mile
Low Density	0-4 persons or jobs per acre	As needed

Population density for the Mountain Line service area is depicted in Figure 2. Areas with the highest population densities include Westside Missoula, the University District, 34th Street between Russell and Bancroft, and the Windsor Park neighborhood in northwest Missoula.

Employment density for the Mountain Line service area is depicted in Figure 3. Areas with the highest employment densities include The Heart of Missoula (downtown), The University of Montana, and the Southgate Mall area. Areas served by transit with low population and employment densities include the Rattlesnake neighborhood, East Missoula, Bonner-West Riverside, and Orchard Homes.

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Figure 2 2010 Population Density by Census Block

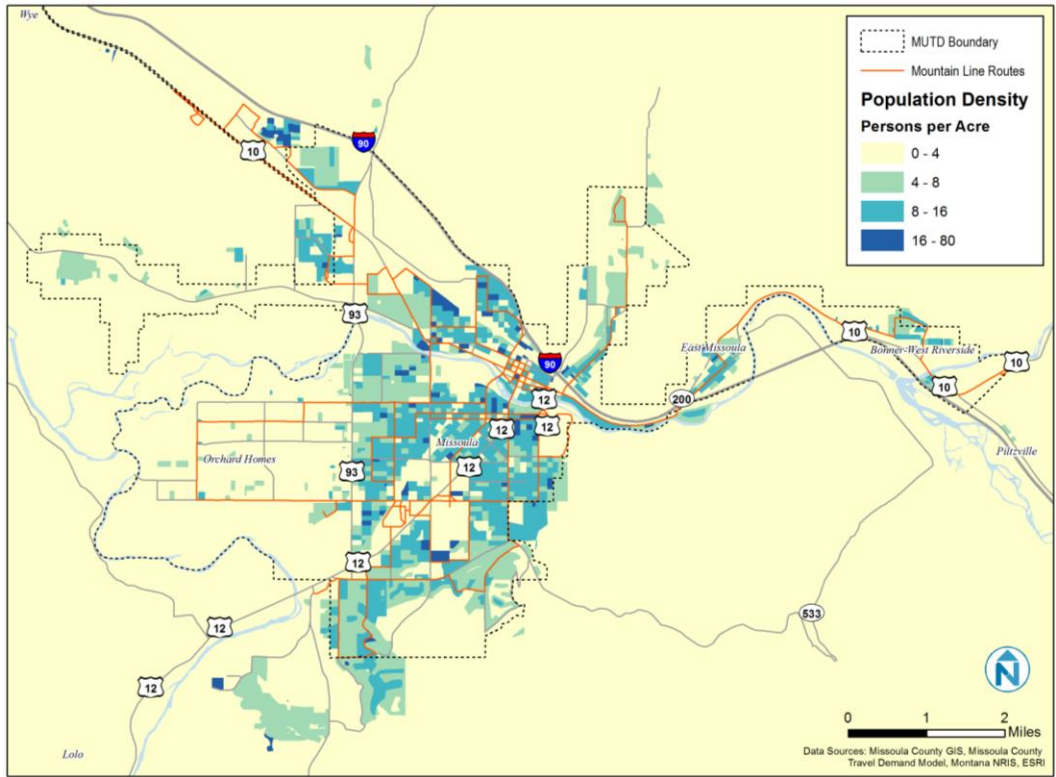
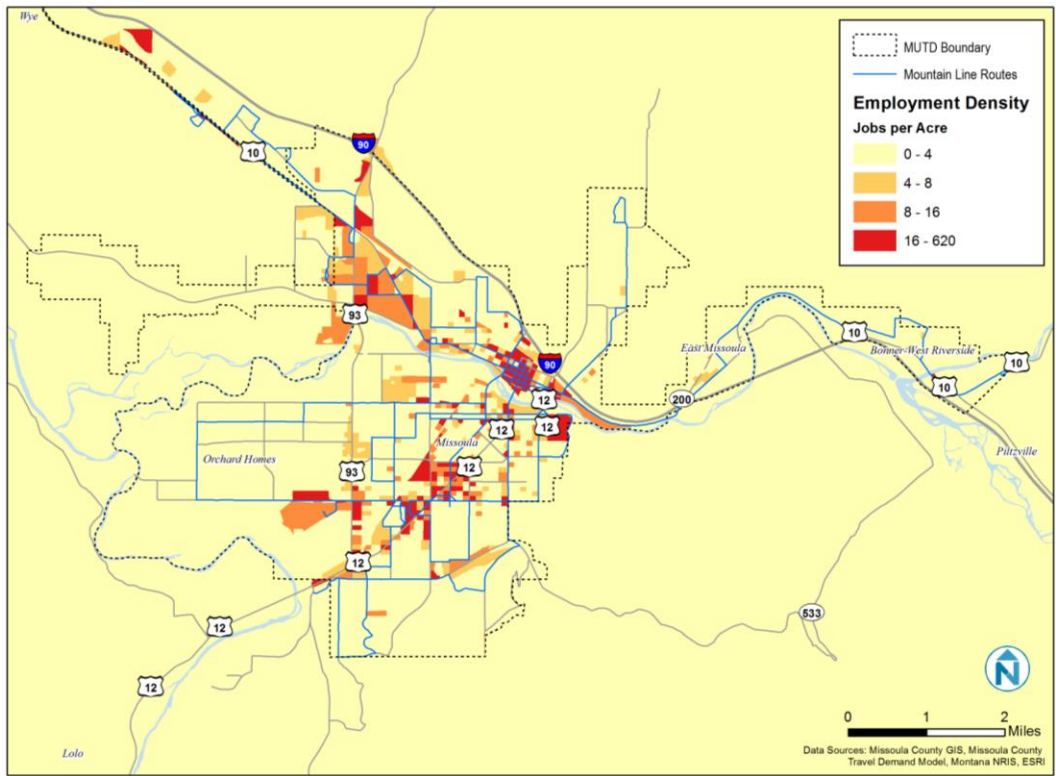


Figure 3 2010 Employment Density by Census Block



3 BUS STOP PLACEMENT GUIDELINES

The proper location of bus stops is critical to the safety of passengers, pedestrians, and motorists, as well as the safe and efficient operation of buses. Bus stop locations are recommended by Mountain Line and approved by the local jurisdictions. The current practice of allowing flag stops in outlying, low-density areas should be discontinued to reduce potential safety issues. New stop requests submitted by current or potential customers should be evaluated by Mountain Line and if approved, upgraded to Americans with Disabilities Act (ADA) accessibility standards.

Bus Stop Placement Options

The initial step of determining placement of a new or relocated bus stop involves its proximity to the intersection. The placement of each bus stop can be classified as one of the following:

- Near-side—immediately prior to an intersection
- Far-side—immediately after an intersection
- Mid-block—between two intersections

Bus stops are generally located at street intersections to maximize pedestrian accessibility from both sides of the street and provide connectivity to intersecting bus routes. Bus turning movements, driveways, and dedicated turn lanes sometimes restrict the placement of stops at or near an intersection and necessitate a mid-block stop. Mid-block stops may also be considered when destinations are a significant distance from intersections.

Bus Stop Placement Considerations

Each new or relocated bus stop must be examined on a case-by-case basis to determine their exact location. The following list details bus stop placement considerations related to customer convenience and comfort, accessibility, operational safety, and adjacent land use:









- Customer Convenience and Comfort
 - Proximity to expected trip generators
 - Visibility of bus stop zone and presence of street illumination
 - Connections to intersecting bus routes
- Accessibility

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- Adequate right-of-way to ensure the bus stop meets the Americans with Disabilities Act (ADA) accessibility standards
- Presence and conditions of sidewalks leading to trip generators
- Marked crosswalks and curb ramps at street intersections or midblock crossings
- Operational Safety
 - Volume and turning movements of other vehicles including bicycles
 - Adequate curb space to accommodate multiple buses, if necessary
 - Adequate sight distance to/from adjacent streets, intersections, and driveways
 - Proximity to rail crossings
- Adjacent Land Use
 - Ridership potential to support the investment of new stops
 - Adequate right-of-way to prevent encroachment onto private property

Key advantages and disadvantages of each bus stop placement option are described in Figure 4.

Figure 4 Bus Stop Placement Considerations

	Advantages	Disadvantages
Near-side stops	 <p>Shortest distance from bus door to a crosswalk, which encourages riders to use crosswalks</p>	 <p>Most exposure to traffic delays. May require more than one traffic cycle</p>  <p>Increases conflict with right-turning vehicles</p>  <p>May block travel lane with queuing buses</p>  <p>May obscure motorists' view of traffic control devices and crossing pedestrians</p>
Mid-block stops	 <p>Typically improves access to destinations on large tracts</p>	 <p>May require bus pullout on high-speed streets</p>  <p>Encourages riders to cross street mid-block</p>

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Far-side stops	 Encourages riders to use nearby crosswalks  Allows bus operators to use intersection as a deceleration lane  Allows additional right-turning capacity before intersection	 Minimizes motorist and pedestrian line of sight concerns  May restrict travel lanes on far-side of intersection
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Bus Stop Placement Best Practices

The following situations are common determinants of bus stop placement:

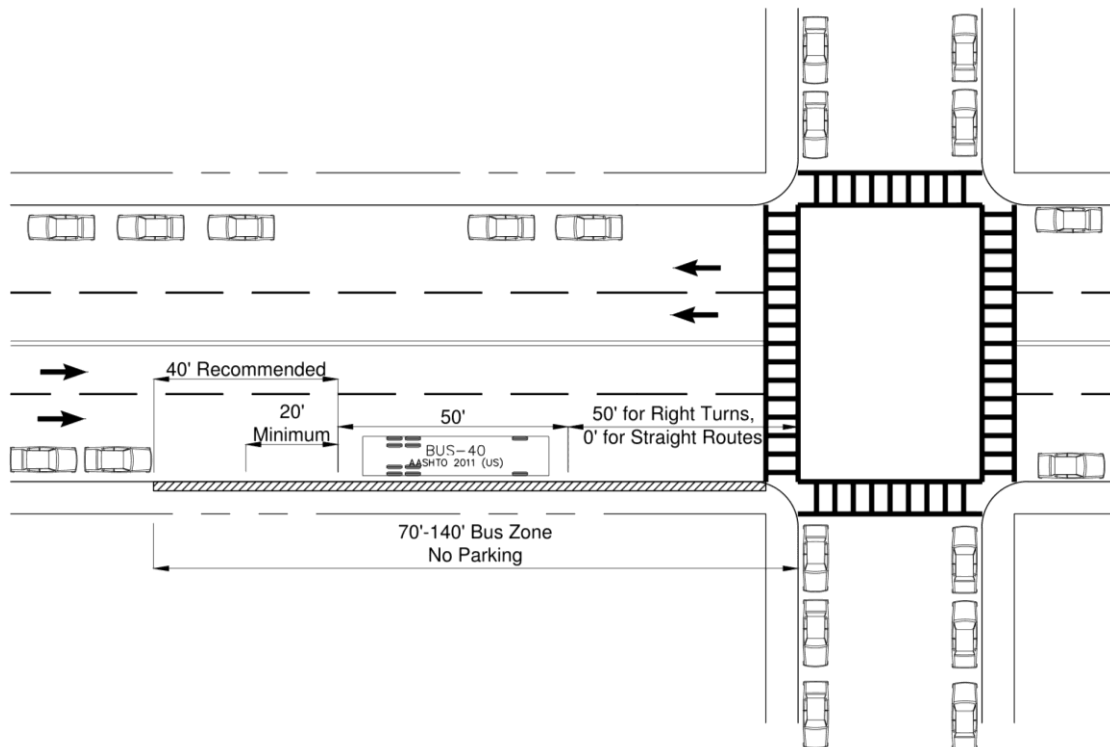
- If the route alignment turns left at an intersection, the preferred location for the stop is the far-side of the intersection after the bus turns.
- If the route alignment turns right at the intersection, the preferred location for the bus stop should be on the far-side of the intersection after the bus turns.
- If there is a high volume of vehicles turning right at an intersection, the preferred location for a bus stop is on the far-side of the intersection after the turn.
- At intersections with complex, multi-phased traffic signals or dual right or left turn lanes, far-side bus stops are preferred because they eliminate buses from an area of complicated traffic movement at that intersection.
- When the route alignment requires the bus to make a left turn and it is not feasible or desirable to locate the bus stop on the far-side of the intersection after the bus turns, a mid-block stop may be warranted.
- Mid-block bus stops prior to left turns should be located a distance from the intersection that allows the bus to easily maneuver into the proper lane to turn left (a minimum of 100-150 feet for each lane change, depending on street speeds).
- When connections between two bus routes show a strong directional pairing (e.g., passengers connecting from eastbound to southbound route), placing one bus stop on the nearside and the other on the far-side can reduce pedestrian crossings at the intersection.
- Stops may be situated within the travel lane along state highways situated within the urban core with moderate auto speeds and two travel lanes in the same direction (e.g., Russell and Brooks).

- Bus pullouts are generally preferred on state highways with single travel lanes in the same direction and/or high auto speeds (e.g. segments of Higgins and Broadway).

Bus Stop Dimensions

Recommended bus stop zone dimensions are illustrated in the following figures. Each drawing depicts ideal bus stop dimensions in terms of ingress, bus zone, and egress for near-side, far-side, and mid-block stops. Entry and exit tapers enable buses to return to the traffic stream without a hard left turn. No parking zones reduce conflict with parked autos and maximize line of sight for bus operators, motorists, and cyclists. The application of bus stop dimensions are preferred but with variances allowed given particular site context.

Figure 5 Near-side Bus Stop Recommended Dimensions



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Figure 6 Far-Side Bus Stop Recommended Dimensions

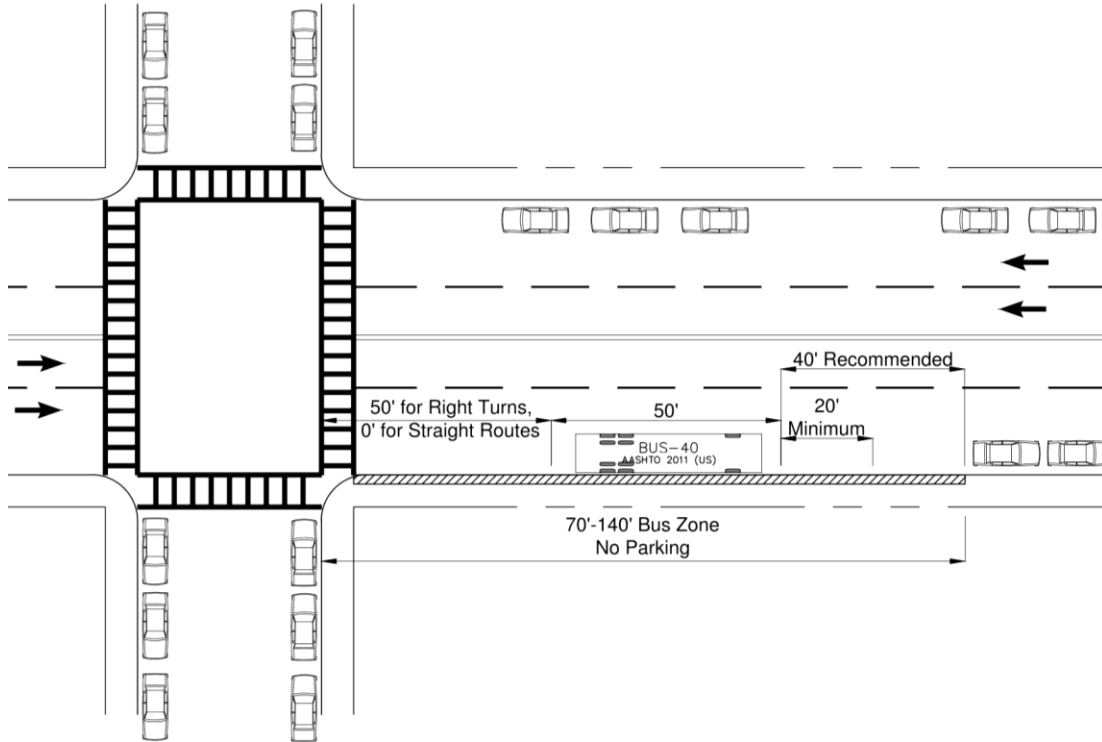
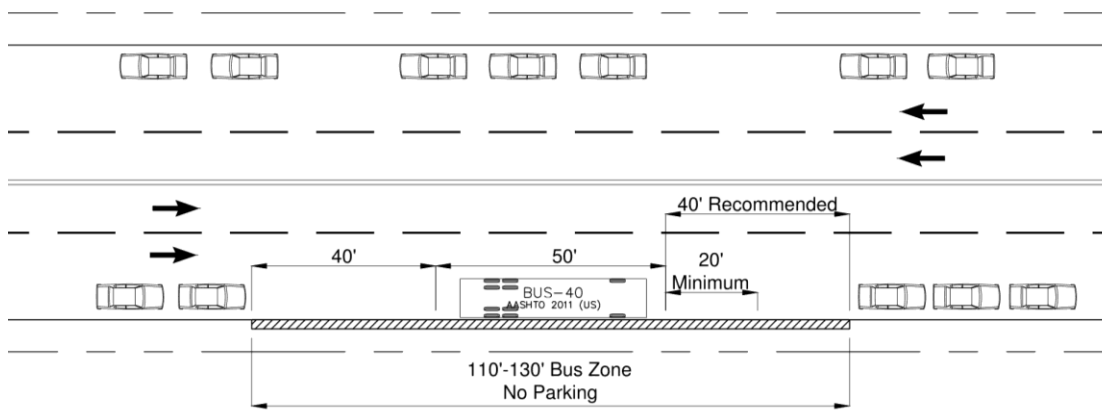


Figure 7 Mid-Block Bus Stop Recommended Dimensions



Bus Turnouts

Bus turnouts are recessed bus stop zones along arterial streets that enable traffic to move around a bus when passengers are boarding and alighting. Bus turnouts must be sited carefully to provide adequate sight distance for bus operators to safely re-enter the traffic stream while minimizing schedule delay and increased transit passenger travel time.

Bus turnouts should be considered at selected locations where passenger volumes and the flow of traffic could be significantly impeded by stopped transit buses. Bus turnouts may also be needed at locations where traffic speed exceeds 40 miles per hour.

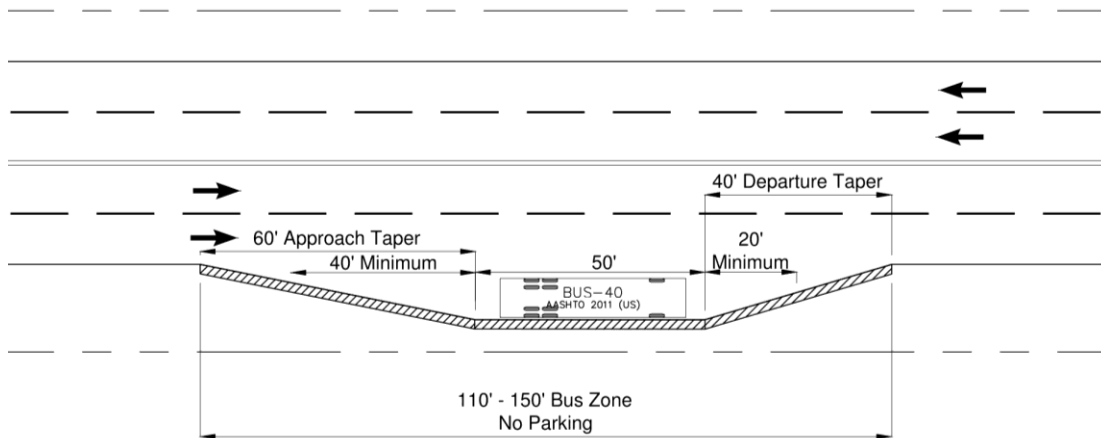
Turnouts may be warranted in areas where speeds are less than 40 miles per hour when one or more of the following conditions exists:

- Average peak-period dwell time exceeds 30 seconds per bus
- Buses are expected to layover at a designated timepoint or the end of a trip
- Potential for auto/bus conflicts warrant separation of transit and passenger vehicles
- History of repeated traffic and/or pedestrian accidents at stop location
- Right-of-way width is adequate to construct the bay without adversely affecting sidewalk pedestrian movement
- Sight distances (e.g. hills, curves, etc.) prevent traffic from stopping safely behind a bus
- A right-turn lane is used by buses as a queue jumper lane
- Appropriate bus signal priority treatment exists at an intersection
- Bus parking in the curb lane is prohibited

The minimum recommended width for bus turnouts is 10 feet to provide sufficient space to enable bus operators to properly maneuver the bus and avoid conflict with adjacent traffic. Construction of bus turnouts on highways may require additional buffering from traffic because of increased speeds on the roadways.

The ideal dimensions of a mid-block bus turnout are shown in Figure 8.

Figure 8 Mid-Block Bus Pullout Recommended Dimensions



Bicycle Lanes

Several Mountain Line routes operate along corridors with established bike lanes. Every effort should be made to allow bus routes and bicycle lanes co-exist as complimentary alternative modes of transportation. However, Mountain Line should also monitor bus activity along these corridors to determine if conflicts regularly occur. Potential, yet costly remedies for bike-bus conflicts include cycle tracks or bus pullouts.

Stops situated on corridors with adjacent cycle tracks (grade-separated bike lanes) should be designed to minimize conflicts between cyclists and bus stops. When sufficient right-of-way exists, cycle tracks should wrap around bus stops to avoid making cyclists utilize the auto travel lane traffic or stop behind a stopped bus. To increase cyclist awareness of entering a bus stop waiting area, the elevation of the cycle path will change as it wraps around the bus stop. This change in elevation and direction alerts cyclists that their path is in closer proximity to waiting passengers, or people crossing the cycle path. This heightened awareness translates to slower travel speed of the cyclist. That same elevation change allows ADA users of the bus stop to be aware of cyclists as they leave the sidewalk and cross the cycle path to reach the bus stop waiting area.

Driveways

Whenever possible, bus stops should not be placed within proximity of a driveway. However, if a driveway is unavoidable:

- Attempt to keep at least one exit and entrance open to vehicles accessing the property while a bus is loading or unloading passengers.
- Locate bus stops to allow good visibility for vehicles leaving the property and to minimize vehicle/bus conflicts. This is best accomplished by placing bus stops where driveways are behind the stopped bus.
- Never place a bus stop that forces passengers to wait for a bus in the middle of a driveway.

- It is preferable to fully rather than partially block a driveway to prevent vehicles from attempting to squeeze by the bus in a situation with reduced sight distance.

Areas without Curb, Gutter, and/or Sidewalk

Pedestrian pathways should be paved to ensure that they are accessible to everyone. In underdeveloped areas with no curb, gutter, and/or sidewalk:

- A flat, level area should be located to place the stop.
- Adequate drainage should be provided to avoid muddy conditions at the bus stops.
- A concrete waiting area should be provided to which a shelter and other bus stop amenities can be anchored. The paved area should include curb ramps and asphalt or concrete pathway to the nearest intersection or development should also be considered. On roads without curbs, the local jurisdiction should consider placing a tactile warning device (such as grooved concrete or truncated domes) between the road's shoulder and the passenger waiting area.

4 BUS STOP AMENITIES GUIDELINES

This chapter provides guidance on the installation and placement of bus stop amenities. Bus stop amenities enhance the customer experience by improving comfort and convenience. Consequently, transit systems with well-designed and maintained amenities have the potential to attract and retain riders. Bus stop amenities also influence the community’s image perception of Mountain Line. Bus stop amenities are described in Figure 9.

Figure 9 Bus Stop Amenities

Amenity	Description
Pole and Sign	Installed at all bus stops
Shelter	Installed at stops meeting specific qualifying criteria.
Seating	Installed at stops meeting specific qualifying criteria.
Trash Receptacles	Installed in agreement with interested entities or community groups.
Bicycle Rack	Installed at stops in areas of high demand or in coordination with other local entities.
Route Information	Installed at all bus stops

Unfortunately, limited agency resources and insufficient right-of-way prevents Mountain Line from upgrading all stops. As a result, a criterion for bus stop amenities sets priorities for bus stop improvements based on average daily boardings, adjacent land use, and service characteristics.

Bicycle racks should be considered for installation at bus stops with high boarding activity, particularly in outlying areas that do not have direct access to off-street bicycle paths. Bicycle racks eliminate the need for customers to lock bikes to street signs, fences, or trees within public or private property.

Mountain Line should conduct a review of bus stop amenities guidelines periodically to ensure alignment with goals, objectives, and resource availability.

Bus Stop Amenities Criteria

Three tiers of amenities are proposed for Mountain Line bus stops.

Tier 1 Bus Stop

Bus stops generating at least 40 daily boardings are classified as Tier 1 stops and qualify for a shelter and seating (6-8' bench). Alternatively, stops that generate at least 20 daily boardings and meet one of the following criteria are also classified as Tier 1:

- Medical, senior, social service, public or special needs facilities within ¼ mile
- Grocery stores within ¼ mile
- Major employment centers within ¼ mile
- Apartments, dorms, or senior housing with 100+ units within ¼ mile
- High schools, colleges, or universities within ¼ mile
- Service frequency of 60 minutes or greater

The conceptual design of a Tier 1 bus stop shelter is depicted in Figure 10.

Figure 10 **Conceptual Tier 1 Bus Stop Shelter**



Tier 1 bus stop shelters should be available in two sizes due to variations in available right-of-way and boarding activity:

- Large shelter: 20' width x 5' depth x 8' height
- Medium shelter: 12' width x 5' depth x 8' height

Tier 2 Bus Stop

Bus stops generating at least 10 boardings per weekday are classified as Tier 2 stops and qualify for seating (6-8' bench).

Tier 3 Bus Stop

Bus stops generating fewer than 10 boardings per weekday are classified as Tier 3 stops and should only include a pole and signage. Mountain Line prototype bus stop signage is depicted in Figure 11.

Figure 11 New Bus Stop Signage



Hybrid Bench/Pole

Mountain Line should consider one amenity design that offers a solution for stops with enough riders to justify seating, even when benches might not be afforded, or space is limited. Manufactured by the Simme-Seat Company (Figure 11.1) the hybrid bus pole/seat provides one or two seats on a base that supports the bus stop sign pole as well.

Figure 11.1 Simme-Seat Co. Alternative



Trash Receptacles

Currently, trash receptacles are only installed when maintained by an external entity or community group. Mountain Line should consider adopting a policy in which trash receptacles are required at all Tier 1 and Tier 2 stops in an effort to reduce littering and enhance the quality of bus stops. This improvement would potentially require additional staff and equipment (heavy-duty flatbed truck) to support regular maintenance.

Bicycle Racks

Bicycle racks should be considered for installation at bus stops with high boarding activity, particularly in outlying areas that do not have direct access to off-street bicycle paths. Bicycle racks eliminate the need for customers to lock bikes to street signs, fences, or trees within public or private property. Mountain Line may consider partnering with adjacent property owners in designing and installing standard or custom bicycle racks.

Bicycle Shelters

Bicycle shelters, such as “The Bike Den” at the Downtown Transfer Center provide added storage capacity, shelter from the elements, and a greater sense of security. Bicycle shelters typically include amenities such air pumps, tools for basic repairs, snack/drink machines, and route/schedule information.



Factors Impacting Installation of Bus Stop Amenities

Circumstances that might preclude installation of shelters, seating, trash receptacles, and/or bicycle racks at a particular stop meeting recommended thresholds are as follows:

- Amenities would compromise pedestrian or operational safety
- Adequate right-of-way is not available
- Regulations enforced by City, County, State, or Federal government
- Installation costs are excessive
- Plans are in place to relocate or close the stops

Bus Stop Layout

Bus stop signage should be placed at far end of stop and mark the stopping point of the bus. Signage should typically be installed behind the sidewalk at a distance of 5-10' from the curb to reduce pedestrian conflict while maximizing visibility. Specific signage location should take surrounding poles, signage, vegetation, and structures into consideration.

Each new or upgraded bus stop should include a landing pad aligned with the front door of the stopped bus to meet regulations included in the American with Disabilities Act. Landing pads should have a minimum dimension of 5' wide x 8' deep, which may consist of the space under a shelter so long as there are no physical obstructions such as seating or shelter posts. Landing pads should cover the back door of the bus for stops averaging more than 10 alightings per day.

Bus stop amenities should ideally be placed nearside of signage to minimize the distance to bus doors and reduce dwell times. Available right-of-way may influence the placement

of amenities. When sufficient right-of-way exists, amenities should be placed behind sidewalk and/or 7 feet from curb to allow space for snow removal.

Bus Stop Signage

Mountain Line should install separate route and schedule information panels at each bus stop pole. Route information signage should be consistent for all route types (BOLT! routes and regular routes) to minimize inventory and materials costs. The bottom of the sign should be installed seven feet from the ground. The sign should include the Mountain Line logo, route number, route name, directional terminal point, customer service line, website <www.mountainline.com>.

Schedule information signage should also be consistent for BOLT! routes and regular routes as some stops may serve both route types. Route information panels should measure at least 4 inches wide by 12 inches tall to maximize visibility and be installed at eye level.

Bus stop signage should also include the unique stop identification number, which can be used to access schedule information by calling the Mountain Line customer service line or accessing real-time arrival information.

Signature/Custom Bus Stop Design

Mountain Line may consider partnering with adjacent property owners to design and install custom or signature bus stop amenities that reflect the adjacent architecture or urban landscape. Signature stops should be designed within the same basic parameters or regular Mountain Line stops in terms of signage and visibility. Additionally, signature bus stops should be easily identifiable and adhere to the same placement guidelines as all stops.

Signature stops are intended to encourage creative and attractive urban design while enhancing customer experience. A memorandum of understanding should be developed for each signature stop that holds the partnering entity accountable for maintenance and removal, if necessary.

No Parking Restrictions

The lack of parking restrictions can negatively impact bus service by limiting sight distances and passenger access. Potential issues that may arise include:

- Buses not being able to access the curb/sidewalk area to pick or drop off passengers
- Passengers forced to maneuver between parked vehicles when they board or deboard
- Buses blocking travel lanes due to inability to access the curb

Due to the varying lengths of bus stop zones, additional information regarding no parking restrictions can be communicated by installing free-standing no parking signage at the one or both ends of the restricted parking zone or by painting the curb.

5 BUS STOP RECOMMENDATIONS

Bus stop recommendations include consolidation, elimination, and relocation of existing stops. Stop consolidation is based on stop spacing, current and potential ridership, adjacent land use, and pedestrian infrastructure. Stop elimination is based on stop spacing and current ridership. Recommendations for relocated stops are primarily based on operational challenges and/or pedestrian connectivity issues.

Downtown stop placement recommendations have been approved by the Missoula Parking Commission. Stop changes along state-maintained roadways require approval from Missoula Department of Transportation (MDOT) engineers.

The following tables and maps compare current and proposed bus stops for each route.

Figure 12 Bus Stops by Route

Route	Current ¹	Proposed ²	Reduction
1	47	41	13%
2	67	55	18%
3	13	11	15%
4	70	26	63%
5	41	30	27%
6	67	59	12%
7	50	41	18%
8	65	58	11%
9	69	52	25%
11	51	49	4%
12	88	71	19%
14	14	12	14%

¹ Includes stops with missing poles/signs and flag stops

² Does not include potential flag stops along Routes 4 and 9

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Figure 13 Average Bus Stop Spacing By Route (miles)

Route	Current	Proposed
1	0.27	0.31
2	0.34	0.41
3	0.37	0.43
4	0.40	1.07
5	0.28	0.38
6	0.22	0.29
7	0.31	0.38
8	0.24	0.27
9	0.33	0.44
11	0.46	0.48
12	0.24	0.29
14	0.19	0.22

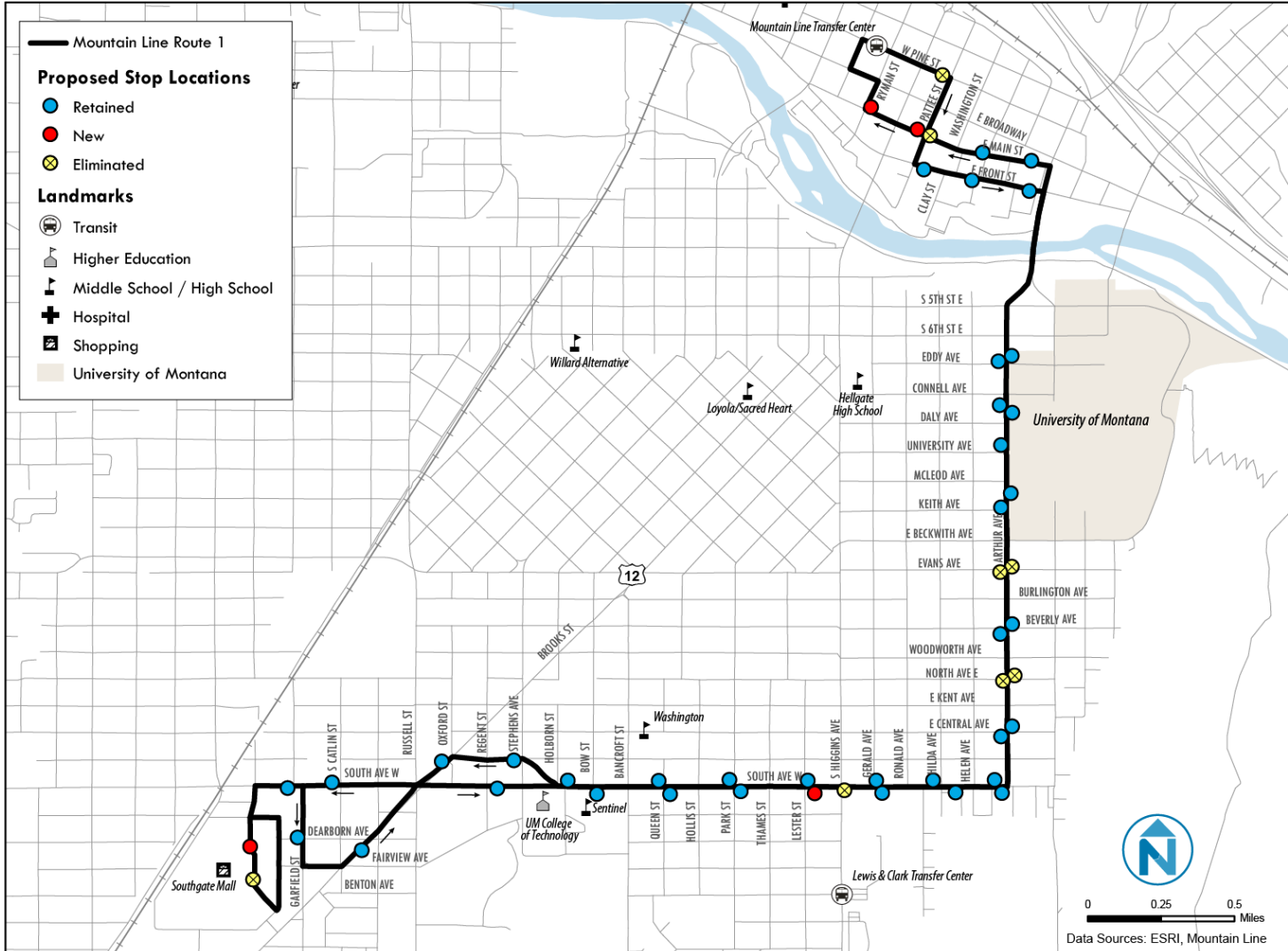
Figure 14 Unique Bus Stops by Tier

Tier	Current	Proposed
1 – Shelter and Seating	43	58
2 – Seating Only	68	98
3 – Pole Only	264	278
4 – No Assets	216 ³	0
Total	591	434

³ Includes stops with missing poles/signs and flag stops

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Missoula Urban Transportation District

Proposed Stop Changes – Route 1



BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 1
Inbound**

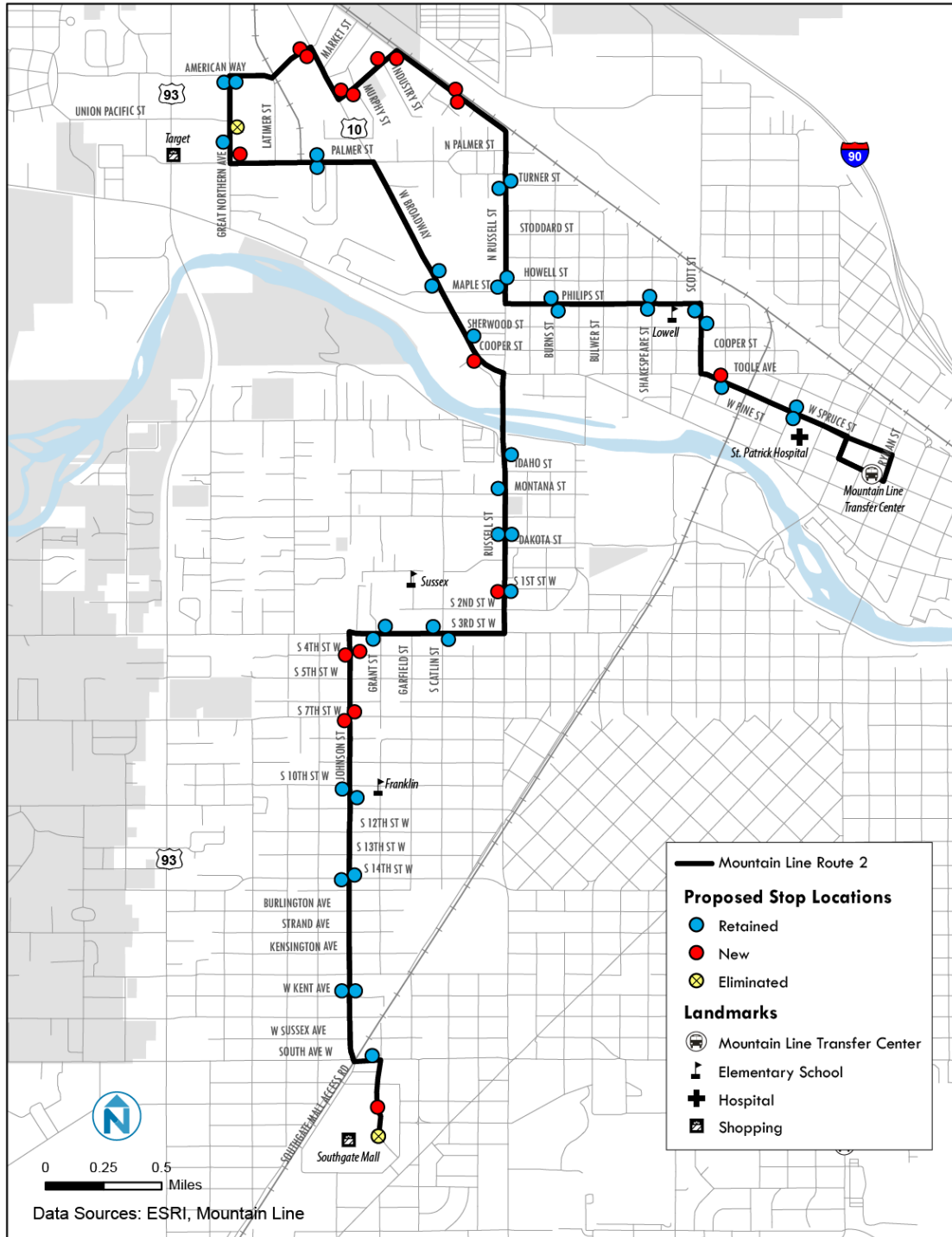
Seq.	Stop	Tier
1	Southgate Mall	1
2	South & Grant	1
3	Garfield & Dearborn	1
4	Brooks & Fairview	3
5	South & Regent	1
6	South & Bow	1
7	South & Queen	3
8	South & Park	2
9	South & Lester	2
10	South & Gerald	1
11	South & Hilda	1
12	South & Arthur	2
13	Arthur & Central	3
14	Arthur & Beverly	3
15	Arthur & Keith	1
16	Arthur & Daly	1
17	Arthur & Eddy	2
18	Main & Madison	1
19	Main & Adams	1
20	Main & Pattee	2
21	Ryman & Main	2
22	Transfer Center	1

**Proposed Stops – Route 1
Outbound**

Seq.	Stop	Tier
1	Transfer Center	1
2	Front & Pattee	2
3	Front & Adams	1
4	Front & Madison	3
5	Arthur & Eddy	2
6	Arthur & Daly	3
7	Arthur & University	1
8	Arthur & Keith	2
9	Arthur & Beverly	3
10	Arthur & Central	3
11	South & Arthur	3
12	South & Hilda	3
13	South & Gerald	3
14	South & Lester	2
15	South & Park	2
16	South & Queen	3
17	South & Holborn	1
18	Sussex & Regent	3
19	Brooks & Oxford	2
20	South & Catlin	3
21	Southgate Mall	1

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Proposed Stop Changes – Route 2



BUS STOP MASTER PLAN
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**Proposed Stops – Route 2
Inbound**

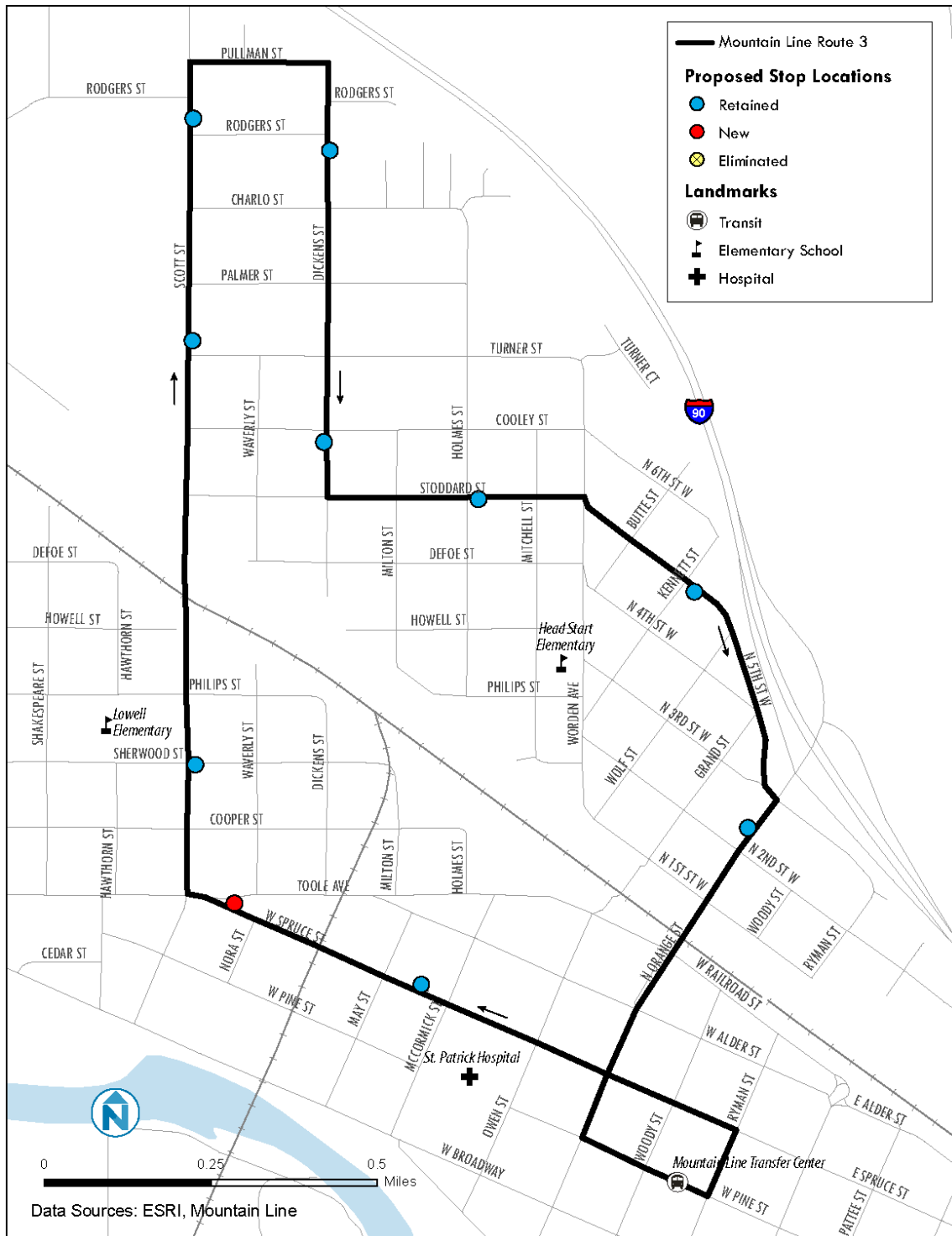
Seq.	Stop	Tier
1	Southgate Mall	1
2	South Ave & Grant	1
3	Johnson & Kent	3
4	Johnson & 14 th	3
5	Johnson & 10 th	2
6	Johnson & 7 th	3
7	Johnson & 4 th	3
8	3rd & Johnson	3
9	3rd & Catlin	2
10	Russell & 1 st	2
11	Russell & Dakota	1
12	Russell & River Road	2
13	Broadway & Sherwood	3
14	Broadway & Maple	2
15	Palmer @ State Offices	1
16	Palmer & Great Northern	2
17	Great Northern & American Way	1
18	Latimer & Broadway	3
19	Commerce & Murphy	3
20	Commerce & Railroad	3
21	Railroad & Well	3
22	Russell & Turner	1
23	Russell & Maple	2
24	Phillips & Burns	2
25	Phillips & Shakespeare	2
26	Scott & Phillips	1
27	Spruce & Nora	2
28	Spruce & McCormick	2
29	Transfer Center	1

**Proposed Stops – Route 2
Outbound**

Seq.	Stop	Tier
1	Transfer Center	1
2	Spruce & McCormick	1
3	Spruce & Nora	3
4	Scott & Sherwood	3
5	Phillips & Shakespeare	3
6	Phillips & Burns	3
7	Russell & Howell	2
8	Russell & Turner	2
9	Railroad & Well	3
10	Commerce & Industry	3
11	Commerce & W. Broadway	3
12	Latimer & Broadway	3
13	Great Northern & American Way	3
14	Great Northern & Union Pacific	2
15	Palmer @ State Offices	1
16	Broadway & Maple	2
17	Broadway & Russell	3
18	Russell & Montana	3
19	Russell & Dakota	1
20	Russell & 1 st	3
21	3rd & Catlin	2
22	3rd & Grant	2
23	Johnson & 4 th	3
24	Johnson & 7 th	3
25	Johnson & 10 th	2
26	Johnson & 14 th	3
27	Johnson & Kent	3
28	Southgate Mall	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 3

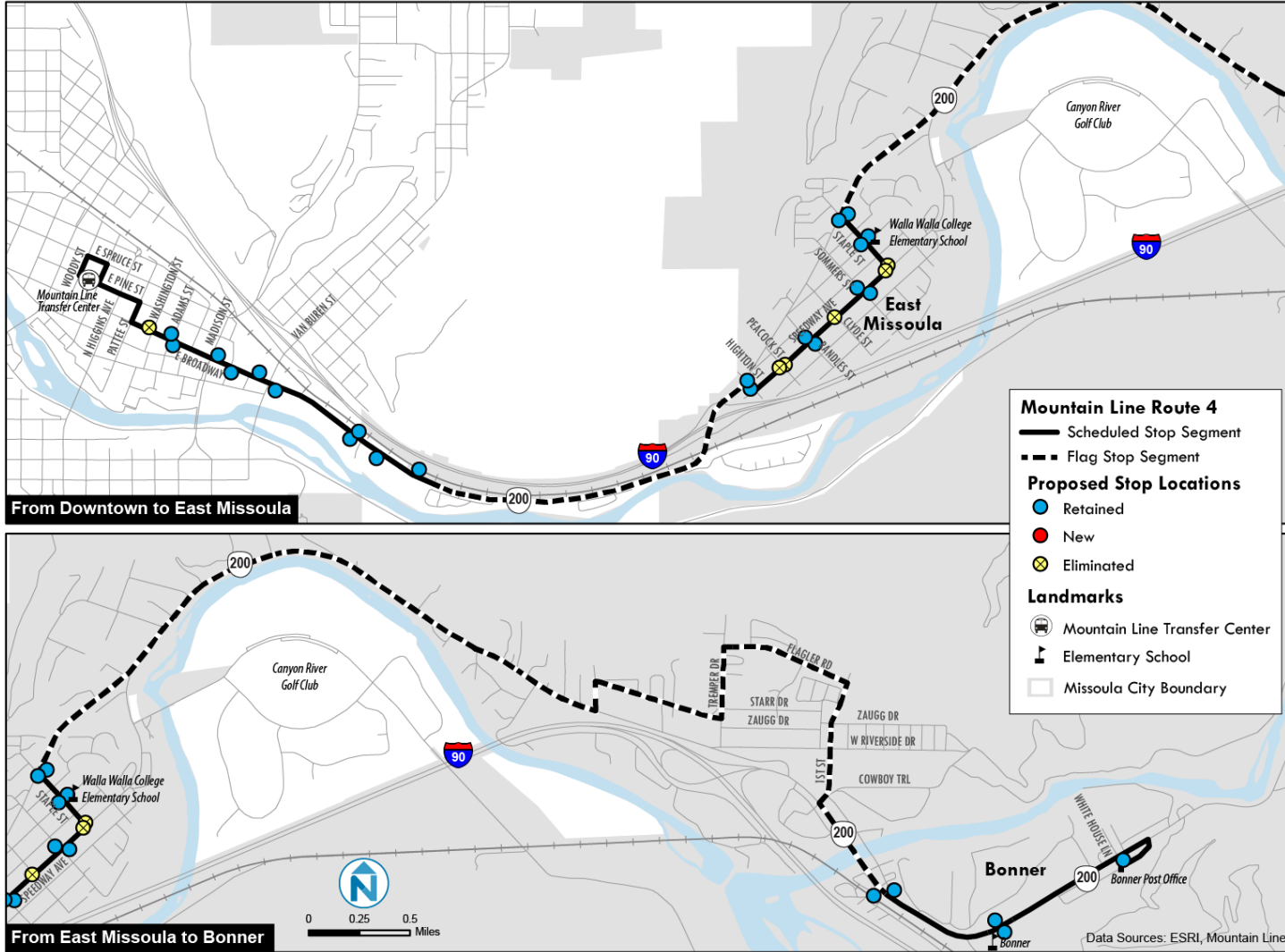


Proposed Stops – Route 3

Seq.	Stop	Tier
1	Transfer Center	1
2	Spruce & McCormick	1
3	Spruce & Nora	3
4	Scott & Sherwood	3
5	Scott & Turner	3
6	Scott & Rodgers	2
7	Dickens & Rodgers	2
8	Dickens & Cooley	2
9	Stoddard & Holmes	2
10	5 th Street W. & Kennett	2
11	Orange & N 2 nd	2
12	Transfer Center	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 4



BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 4
Inbound**

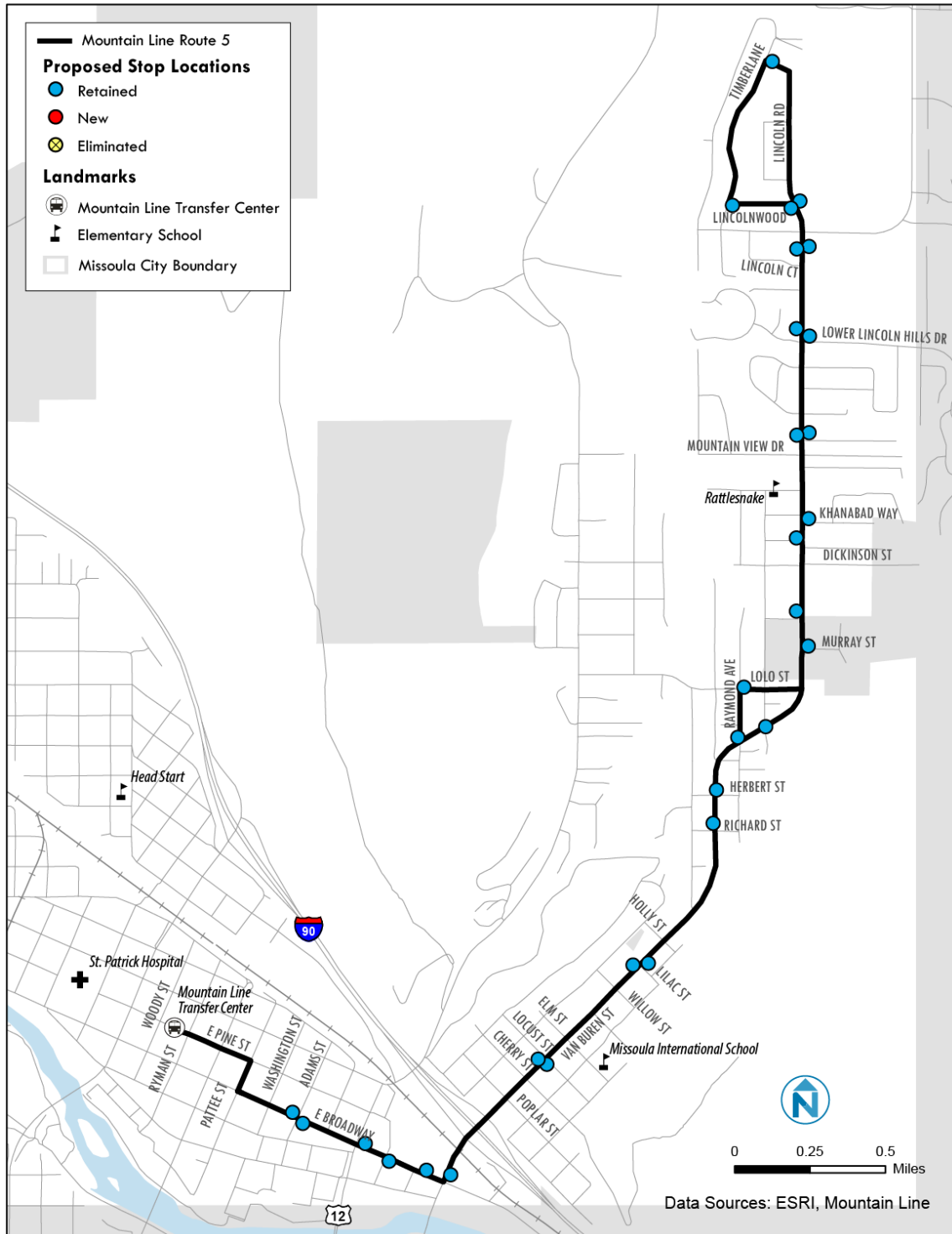
Seq.	Stop	Tier
1	Hwy 200 & Bonner Post Office	1
2	Hwy 200 & Bonner School	3
3	Hwy 200 & Two Rivers Market	1
4	Staple & Hwy 200 E	2
5	Staple & Michigan	3
6	Speedway & Sommers	3
7	Speedway & Randles	3
8	Highton & Hwy 200 E	3
9	Hwy 200 E & Vantage Villa	3
10	Hwy 200 E & Montana Tech	3
11	E Broadway & Van Buren	2
12	E Broadway & Madison	3
13	E Broadway & Adams	3
14	Transfer Center	1

Proposed Stops – Route 4 Outbound

Seq.	Stop	Tier
1	Transfer Center	1
2	Broadway & Adams	2
3	Broadway & Monroe	3
4	Broadway & Van Buren	1
5	Hwy 200 E & Montana Tech	2
6	East Broadway & Park and Ride	1
7	Hwy 200 E & Highton	3
8	Speedway & Randles	3
9	Speedway & Sommers	3
10	Staple & Michigan	3
11	Staple & Hwy 200 E	3
12	Hwy 200 & Two Rivers Market	3
13	Hwy 200 & Bonner School	1
14	Hwy 200 & Bonner Post Office	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 5



BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 5
Inbound**

Seq.	Stop	Tier
1	Lincolnwood Dr & Lincoln	3
2	Rattlesnake & Creek Crossing	3
3	Rattlesnake & Lincoln Hills	2
4	Rattlesnake & Stanley	2
5	Rattlesnake & Yellow Pine	3
6	Rattlesnake & Powell	3
7	Lolo & Raymond	3
8	Raymond & Rattlesnake	2
9	Rattlesnake & Richard	3
10	Van Buren & Lilac	2
11	Van Buren & Locust	2
12	E Broadway & Van Buren	2
13	E Broadway & Madison	3
14	E Broadway & Adams	3
15	Transfer Center	1

Proposed Stops – Route 5 Outbound

Seq.	Stop	Tier
1	Transfer Center	1
2	Broadway & Adams	2
3	Broadway & Monroe	3
4	Van Buren & Broadway	1
5	Van Buren & Locust	3
6	Van Buren & Lilac	3
7	Rattlesnake & Herbert	3
8	Rattlesnake & Gilbert	3
9	Rattlesnake & Murray	3
10	Rattlesnake & Khanabad	3
11	Rattlesnake & Stanley	2
12	Rattlesnake & Lincoln Hills	3
13	Rattlesnake & Creek Crossing	1
14	Lincoln & Lincolnwood	2
15	Lincoln & Timber Lane	3
16	Timber Lane & Lincolnwood	3
17	Lincolnwood & Lincoln	3

BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 6
Inbound**

Seq.	Stop	Tier
1	Community Medical Center	1
2	Old Fort Road & South	3
3	South & 26th	3
4	South & Clark	1
5	South & Eaton	3
6	South & Kemp	3
7	Southgate Mall	1
8	Dearborn & Garfield	3
9	Fairview & Washburn	3
10	Russell & Ernest	1
11	Russell & Russell Park West	2
12	34 th & Russell Square	1
13	34 th & Stephens	2
14	34 th & Bancroft	2
15	Bancroft & Dixon	2
16	Bancroft & Salish Ct	2
17	Bancroft & Dearborn	3
18	South & Queen	3
19	South & Park	2
20	South & Lester	2
21	Higgins & Sussex	2
22	Higgins & Central	2
23	Higgins & North	2
24	Higgins & Beverly	3
25	Higgins & Evans	2
26	Higgins & Keith	3
27	Higgins & University	2
28	Higgins & Connell	1

29	Higgins & 5 th	2
30	Higgins & Front	2
31	Transfer Center	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

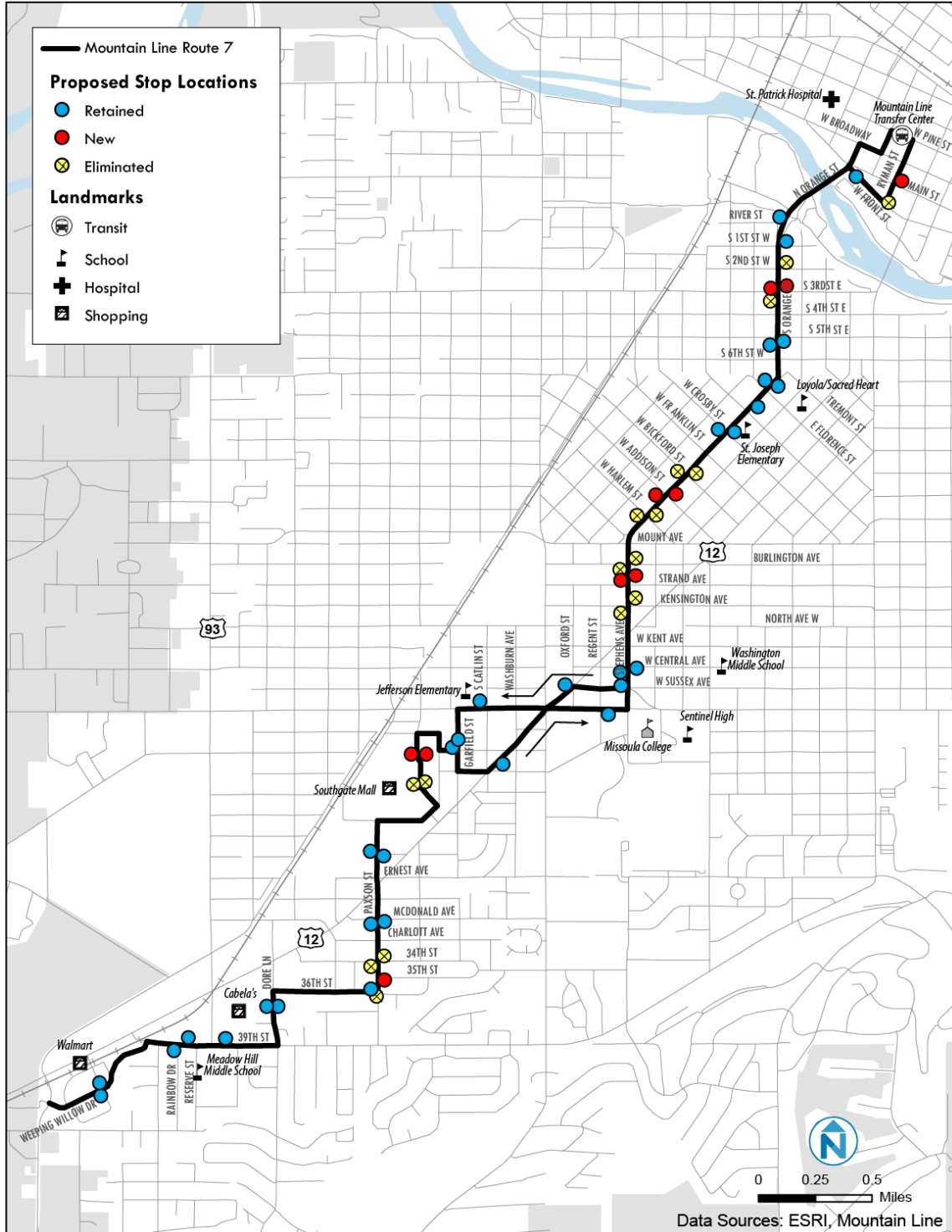
**Proposed Stops – Route 6
Outbound**

30	Community Medical Center	1
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Seq.	Stop	Tier
1	Transfer Center	1
2	Higgins & Front	2
3	Higgins & 4 th	3
4	Higgins & 5 th	3
5	Higgins & Connell	2
6	Higgins & Florence	3
7	Higgins & Keith	3
8	Higgins & Strand	3
9	Higgins & North	3
10	Higgins & Central	3
11	South & Lester	2
12	South & Park	2
13	South & Queen	3
14	Bancroft & Dearborn	3
15	Bancroft & Salish	3
16	Bancroft & Dixon	3
17	34 th & Bancroft	1
18	34 th & Stephens	2
19	34 th & Russell	1
20	Russell & McDonald	2
21	Russell & Ernest	2
22	Fairview & Washburn	3
23	Dearborn & Garfield	3
24	Southgate Mall	1
25	South & Kemp	3
26	South & Eaton	3
27	South & Reserve (near side)	3
28	South & 26 th	3
29	Old Fort Road & South	3

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 7



BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stops – Route 7 Inbound

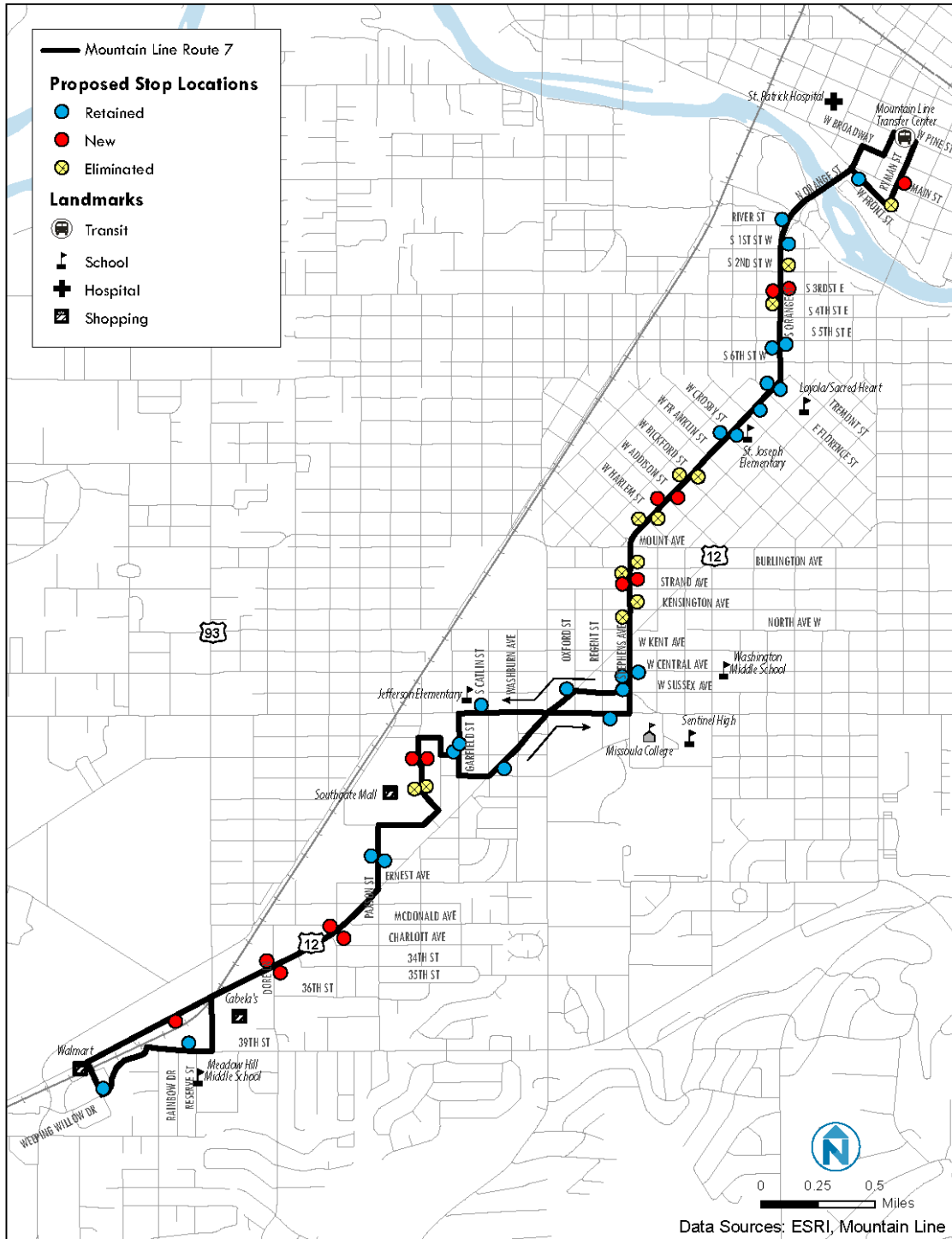
Seq.	Stop	Tier
1	Wal-Mart	1
2	39th & Rainbow	2
3	Dore & 36 th	2
4	Paxson & 35 th	3
5	Paxson & McDonald	3
6	Paxson & Harve	3
7	Southgate Mall	1
8	Dearborn & Garfield	3
9	Brooks & Fairview	3
10	South & Regent	1
11	Stephens & Central	2
12	Stephens & Strand	3
13	Stephens & Addison	2
14	Stephens & Crosby	2
15	Stephens & Beckwith	3
16	Stephens & Florence	3
17	Orange & 5 th	2
18	Orange & 3 rd	2
19	Orange & 1 st	3
20	Front & Orange	3
21	Ryman & Main	2
22	Transfer Center	1

Proposed Stops – Route 7 Outbound

Seq.	Stop	Tier
1	Transfer Center	1
2	Orange & Cregg	3
3	Orange & 3 rd	3
4	Orange & 5 th	2
5	Stephens & Florence	2
6	Stephens & Crosby	3
7	Stephens & Addison	3
8	Stephens & Strand	3
9	Stephens & Central	2
10	Sussex & Regent	3
11	Brooks & Oxford	2
12	South & Catlin	3
13	Dearborn & Garfield	3
14	Southgate Mall	1
15	Paxson & Harve	3
16	Paxson & McDonald	3
17	Paxson & 36 th	3
18	Dore & 36 th	3
19	39 th & Reserve (near side)	2
20	39 th & Reserve (far side)	2
21	Wal-Mart	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 7 – Brooks Realignment



BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 7 Inbound
Brooks Realignment**

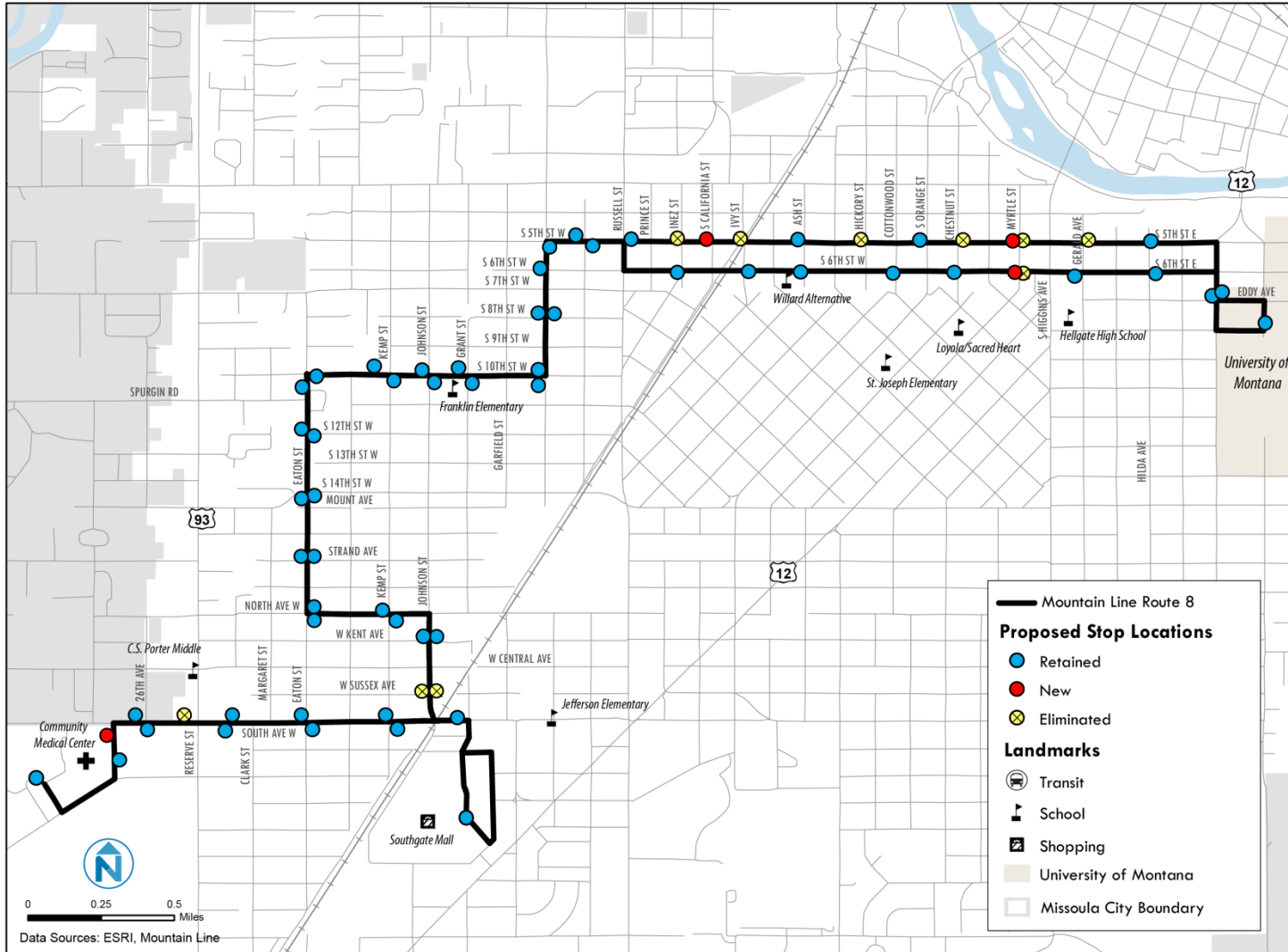
Seq.	Stop	Tier
1	Wal-Mart	1
2	Brooks & Reserve	3
3	Brooks & Dore	3
4	Brooks & McDonald	3
5	Paxson & Harve	3
6	Southgate Mall	1
7	Dearborn & Garfield	3
8	Brooks & Fairview	3
9	South & Regent	1
10	Stephens & Central	2
11	Stephens & Strand	3
12	Stephens & Addison	2
13	Stephens & Crosby	2
14	Stephens & Beckwith	3
15	Stephens & Florence	3
16	Orange & 5 th	2
17	Orange & 3 rd	2
18	Orange & 1 st	3
19	Front & Orange	3
20	Ryman & Main	2
21	Transfer Center	1

**Proposed Stops – Route 7
Outbound
Brooks Realignment**

Seq.	Stop	Tier
1	Transfer Center	1
2	Orange & Cregg	3
3	Orange & 3 rd	3
4	Orange & 5 th	2
5	Stephens & Florence	2
6	Stephens & Crosby	3
7	Stephens & Addison	3
8	Stephens & Strand	3
9	Stephens & Central	2
10	Sussex & Regent	3
11	Brooks & Oxford	2
12	South & Catlin	3
13	Dearborn & Garfield	3
14	Southgate Mall	1
15	Paxson & Harve	3
16	Brooks & McDonald	3
17	Brooks & Dore	3
18	39 th & Reserve (far side)	3
19	Wal-Mart	2

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 8



BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stops – Route 8 Inbound

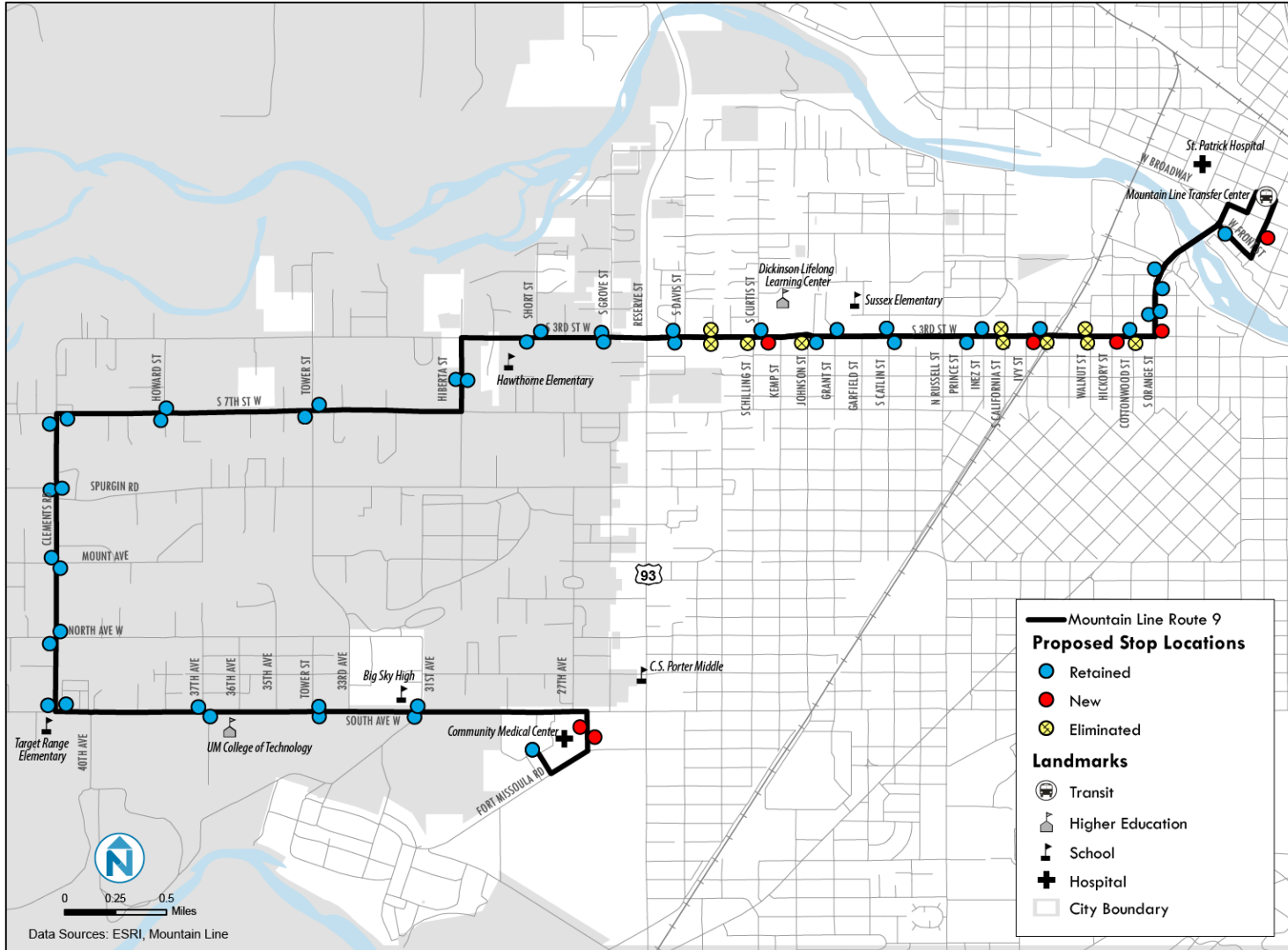
Seq.	Stop	Tier
1	Community Medical Center	1
2	Old Fort Road & South	3
3	South & 26 th	3
4	South & Clark	1
5	South & Eaton	3
6	South & Kemp	3
7	Southgate Mall	1
8	South & Grant	1
9	Johnson & Kent	3
10	North & Kemp	3
11	North & Eaton	3
12	Eaton & Strand	3
13	Eaton & Mount	3
14	Eaton & 12 th	3
15	10 th & Eaton	3
16	10 th & Kemp	3
17	10 th & Johnson	3
18	10 th & Grant	3
19	10 th & Catlin	3
20	Catlin & 8 th	3
21	Catlin & 5 th	3
22	5 th & Washburn	2
23	6 th & Inez	3
24	6 th & Ivy	3
25	6 th & Ash	2
26	6 th & Cottonwood	1
27	6 th & Chestnut	3
28	6 th & Myrtle	3
29	6 th & Gerald	3
30	6 th & Hilda	3
31	Arthur & Eddy	2
32	Connell & Maurice	2

Proposed Stops – Route 8 Outbound

Seq.	Stop	Tier
1	Connell & Maurice	1
2	Arthur & Eddy	2
3	5 th & Hilda	3
4	5 th & Myrtle	3
5	5 th & Orange	2
6	5 th & Ash	3
7	5 th & California	3
8	5 th & Russell	2
9	5 th & Washburn	3
10	Catlin & 6 th	3
11	Catlin & 8 th	3
12	Catlin & 10 th	3
13	10 th & Grant	2
14	10 th & Johnson	3
15	10 th & Kemp	3
16	Eaton & Spurgin	3
17	Eaton & 12 th	2
18	Eaton & Mount	3
19	Eaton & Strand	2
20	North & Eaton	3
21	North & Kemp	3
22	Johnson & Kent	3
23	South & Kemp	3
24	South & Eaton	3
25	South & Reserve (near side)	3
26	South & 26 th	3
27	Old Fort Road & South	3
28	Community Medical Center	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 9



BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stops – Route 9 Inbound

Seq.	Stop	Tier
1	Community Medical Center	1
2	Old Fort & South	3
3	South & 31 st	3
4	South & Tower	3
5	South & 37 th	3
6	South & Clements	3
7	Clements & North	3
8	Clements & Mount	3
9	Clements & Spurgin	3
10	Clements & 7 th	3
11	7 th & Howard	3
12	7 th & Tower	3
13	Hiberta & James	4
14	3 rd & Short	3
15	3 rd & Grove	3
16	3 rd & Darlene	3
17	3 rd & Curtis	3
18	3 rd & Johnson	3
19	3 rd & Catlin	2
20	3 rd & Prince	3
21	3 rd & Ivy	3
22	3 rd & Hickory	3
23	3 rd & Cottonwood	3
24	Orange & 3 rd	2
25	Orange & 2 nd	3
26	Orange & 1 st	3
27	Front & Orange	3
28	Ryman & Main	2
29	Transfer Center	1

Proposed Stops – Route 9 Outbound

Seq.	Stop	Tier
1	Transfer Center	1
2	Orange & Cregg	3
3	Orange & 2 nd	3
4	3 rd & Cottonwood	3
5	3 rd & Oak	3
6	3 rd & Inez	3
7	3 rd & Catlin	3
8	3 rd & Grant	2
9	3 rd & Curtis	3
10	3 rd & Darlene	3
11	3 rd & Grove	3
12	3 rd & Short	3
13	Hiberta & James	3
14	7 th & Tower	3
15	7 th & Howard	3
16	Clements & 7 th	3
17	Clements & Spurgin	3
18	Clements & Mount	3
19	Clements & North	3
20	Clements & South	3
21	South & 37 th	1
22	South & Tower	3
23	South & 31 st	1
24	Old Fort Road & South	2
25	Community Medical Center	1

BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 11
Inbound**

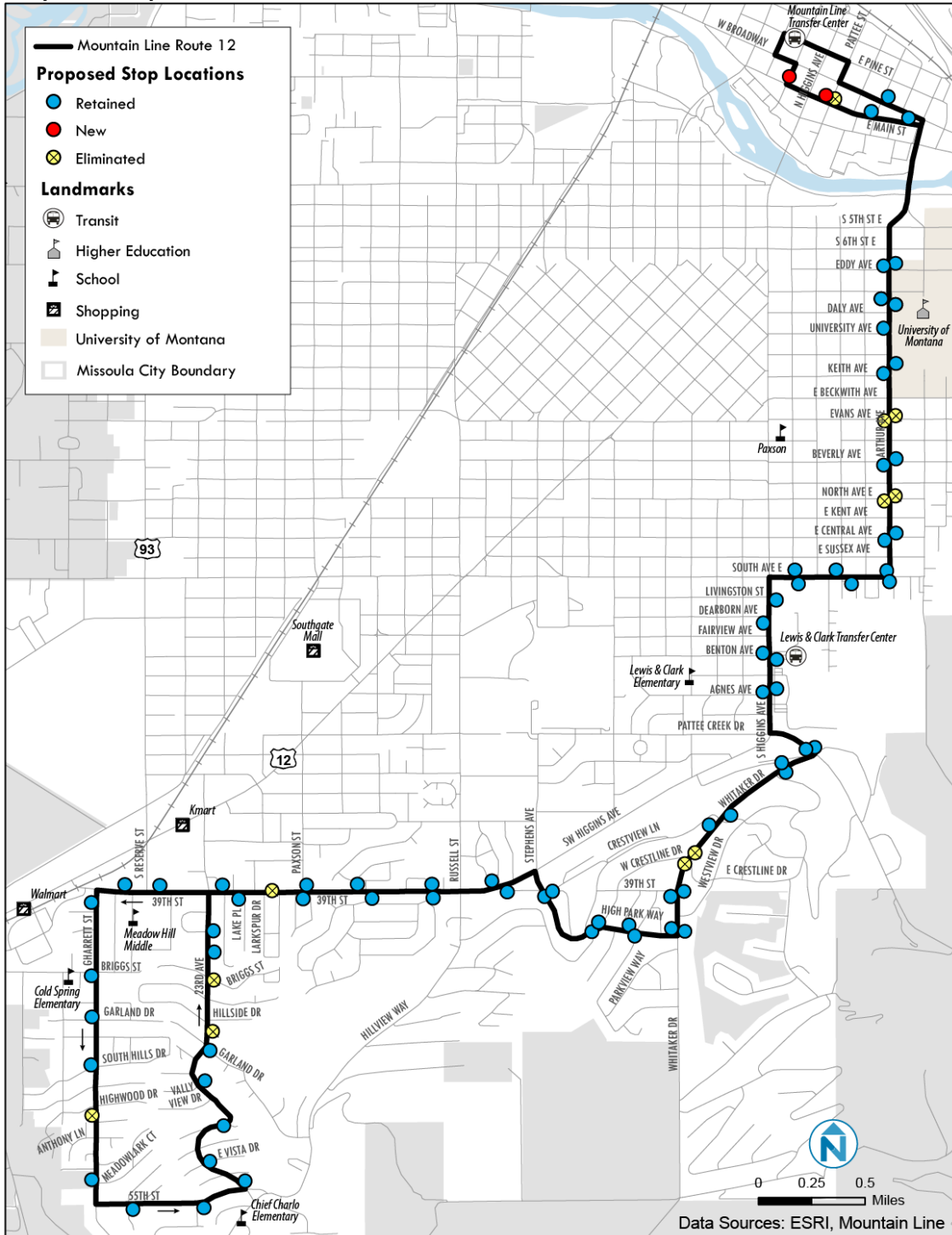
Seq.	Stop	Tier
1	Johnson Bell Dr. @ Airport	3
2	Airway Blvd & Expressway	3
3	Harrier & Airway Blvd	3
4	Technology & Harrier	3
5	Expressway & Canyon Creek	3
6	Majestic & Wheeler	3
7	Expressway & Crestview Apts	3
8	Expressway & Patterson	3
9	Reserve & Expressway	3
10	England @ Grant Creek Center	3
11	England & Tina	3
12	Connery & Chelsea	3
13	Connery & Flanagan	3
14	Union Pacific & Radio Way	3
15	Union Pacific & Great Northern	3
16	Great Northern & American Way	1
17	Latimer & Broadway	3
18	Broadway & Palmer	3
19	Broadway & Maple	2
20	Broadway & Russell	3
21	Broadway & Byron	3
22	Broadway & Burns	2
23	Broadway & Scott	1
24	Broadway & Owen	3
25	Transfer Center	1

**Proposed Stops – Route 11
Outbound**

Seq.	Stop	Tier
1	Transfer Center	1
2	Broadway & McCormick	1
3	Broadway & Scott	1
4	Broadway & Cedar	3
5	Broadway & Burton	3
6	Broadway & Sherwood	3
7	Broadway & Maple	2
8	Broadway & Palmer	3
9	Broadway & Commerce	3
10	Latimer & Broadway	3
11	Great Northern & American Way	3
12	Union Pacific & Great Northern	3
13	Union Pacific & Radio Way	3
14	Connery & American Way	3
15	Connery & Chelsea	3
16	England & Tina	3
17	Reserve & England	3
18	Expressway & Reserve	1
19	Expressway & Patterson	3
20	Expressway & Crestview Apts	3
21	Majestic & Wheeler	3
22	Expressway & Canyon Creek	3
23	Harrier & Technology	3
24	Harrier & Airway Blvd	3
25	Aviation Way @ Smokejumper	1
26	Johnson Bell @ Airport	3

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 12



BUS STOP MASTER PLAN
Missoula Urban Transportation District

**Proposed Stops – Route 12
Inbound**

Seq.	Stop	Tier
1	Gharrett & Meadow Lark	3
2	55 th & Bridger	3
3	55 th & Ebb Way	3
4	23 rd & 55 th	2
5	23 rd & Vista	3
6	23 rd & Foothills	3
7	23 rd & Valley View	3
8	23 rd & Garland	3
9	23 rd @ Trail	3
10	23 rd & Cloverdale	3
11	39 th & Lake	3
12	39 th & Virginia	2
13	39 th & Arrowhead	3
14	39 th & Wapikiya	3
15	SW Higgins & Russell	2
16	High Park & 39 th	3
17	High Park & Simmons	3
18	High Park & Parkview	3
19	Whitaker & High Park	3
20	Whitaker & 39 th	3
21	Whitaker & Artemos	3
22	Whitaker & Westview	3
23	Pattee Canyon & Whitaker	3
24	Higgins & Agnes	1
25	Higgins & Benton	1
26	Higgins & Livingston	2
27	South & Gerald	1
28	South & Hilda	1
29	South & Arthur	2
30	Arthur & Central	3
31	Arthur & Beverly	3
32	Arthur & Keith	1
33	Arthur & Daly	1
34	Arthur & Eddy	2

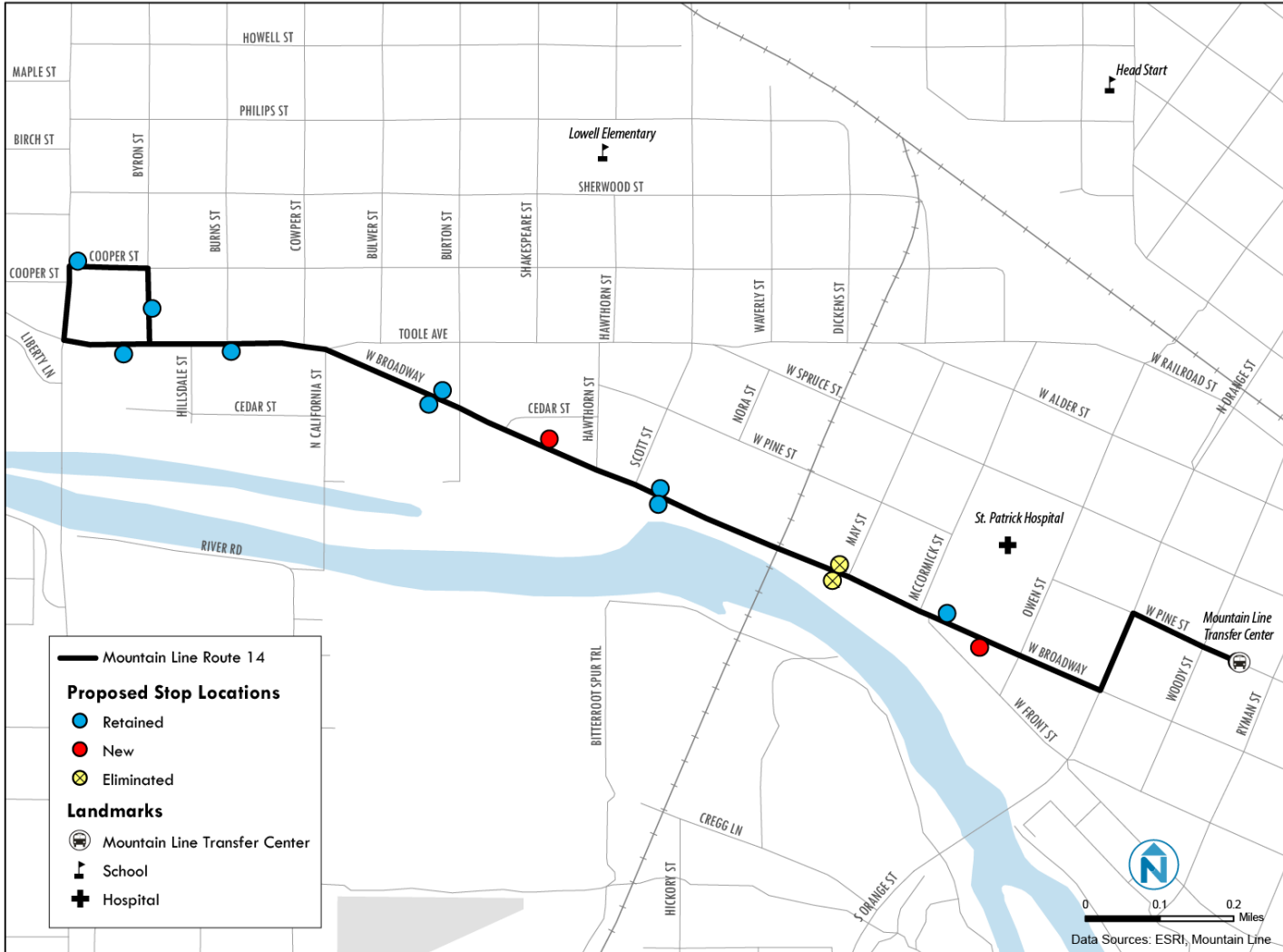
35	Main & Madison	1
36	Main & Adams	1
37	Main & Pattee	2
38	Ryman & Main	2
39	Transfer Center	1

**Proposed Stops – Route 12
Outbound**

Seq.	Stop	Tier
1	Transfer Center	1
2	Broadway & Adams	2
3	Arthur & Eddy	2
4	Arthur & Daly	1
5	Arthur & University	1
6	Arthur & Keith	2
7	Arthur & Beverly	3
8	Arthur & Central	3
9	South & Arthur	3
10	South & Hilda	3
11	South & Gerald	3
12	Higgins & Dearborn	3
13	Higgins & Benton	3
14	Higgins & Agnes	3
15	Whitaker & Pattee Canyon	3
16	Whitaker & Westview	3
17	Whitaker & Artemos	3
18	Whitaker & 39 th	3
19	Whitaker & Highpark	3
20	High Park & Parkview	3
21	High Park & Crestline	3
22	High Park & 39 th	3
23	SW Higgins & Russell	3
24	39 th & Pittmann	3
25	39 th & Lux	3
26	39 th & Paxon	3
27	39 th & 23 rd	3
28	39 th & Reserve	2
29	39 th & Rainbow	2
30	Gharrett & 39 th	2
31	Gharrett & Briggs	3
32	Gharrett & Garland	3
33	Gharrett & South Hills	3
34	Gharrett & Meadow Lark	3

BUS STOP MASTER PLAN
Missoula Urban Transportation District

Proposed Stop Changes – Route 14



**Proposed Stops – Route 14
Inbound**

Seq.	Stop	Tier
1	Transfer Center	1
2	Broadway & McCormick	1
3	Broadway & Scott	1
4	Broadway & Cedar	3
5	Broadway & Burton	3
6	Byron & Broadway	3
7	Cooper & Russell	3
8	Broadway & Russell	3
9	Broadway & Burns	2
10	Broadway & Burton	1
11	Broadway & Scott	1
12	Broadway & Owen	3
13	Transfer Center	1

6 IMPLEMENTATION PLAN

Implementation of comprehensive bus stop signage and amenity improvements is a multi-phased effort. The following capital improvement plan prioritizes improvements based on customer usage, geographical equity, and ease of implementation.

Phase 1 – Update Signage on All Bus Stops

Mountain Line bus stop signage currently consists of one of two unique designs (Figure 15). The majority of existing bus stops display an outdated logo with the customer service line, “no parking” and ADA-accessible symbols, and sticker(s) indicating route(s) served. Recently added or re-installed bus stop signs include the current Mountain Line logo, customer service line, ADA-accessible symbol, and “no parking” verbiage, and in some cases, sticker(s) indicating route(s) served. Bus stop signs are affixed to various objects, including free-standing signs, streetlights, and stop signs.

Figure 15 Existing Mountain Line Bus Stop Signage



Updating signage for all existing Mountain Line bus stops and installing signage at current flag stop locations would establish a uniform design with consistent installation practices.

Phase 2 – Upgrade Amenities on Route 1

Route 1 is a core, high ridership route, operating at a frequent, 15-minute headway and connecting Downtown Missoula with the University of Mountain and Southgate Mall. While shelters are present at several existing stops, a modern design with an information display case would enhance customer experience at some of the highest ridership locations in the Mountain Line system. New shelters would also attract attention from non-users traveling along the highly visible primary corridors of Arthur Avenue and South Avenue.

Figure 16 Existing Shelters



Phase 3 – Upgrade Amenities on Route 2

Route 2 was upgraded to a BOLT! route in January 2015, which improved its headway to 15 minutes. As one of the two highest ridership routes in the Mountain Line system, Route 2 traverses several neighborhoods and serves all three shopping districts in Missoula (Downtown, North Reserve Street, and Southgate Mall).

Improving amenities along this core route would further promote the BOLT! brand and add shelters and benches to several stops that currently lack adequate amenities.

Phase 4 – Upgrade Amenities on Remaining Tier 1 and Tier 2 stops

As a continuation of Phases 2 and 3, remaining Tier 1 and 2 stops should be upgraded over a 3-year period.