ALEXANDRIA

Transit Vision

Your City. Your Transit Network.

Concepts Report

February 11, 2019

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1. Introduction

Introduction

What is the Alexandria Transit Vision?

The Alexandria Transit Vision is taking a fresh look at transit service in the City of Alexandria. Through this Vision, the City is taking an unconstrained look at how the bus network in the city can best serve existing needs, as well as the new residents, businesses, and visitors who will come to Alexandria in the next 10–20 years.

The City's DASH system and WMATA's Metrobus services within the city connect a variety of people and places, including places where people work, live, and shop. They also link to key transit connections such as Virginia Railway Express (VRE), Metrorail, and other bus operators such as Fairfax Connector and Arlington Transit (ART).

> The bus network in Alexandria has been adjusted in small ways over time but has never been rethought in its entirety.

The existing network may be based too much on history and not enough on the needs and values of Alexandria today, or the forecasted demands from future growth.

This study is about the bus network in the City of Alexandria. It will consider the context of travel patterns into, out of, and through Alexandria, because the city is part of the much larger regional economy and so many people need and want to travel into, out of, and through the city every day. Improved transit in Alexandria means easier access to more of the city from surrounding areas, and easier access to jobs and opportunities in surrounding areas for Alexandrians.

The Alexandria Transit Vision will identify existing and future bus transit needs and community priorities in the City of Alexandria as a basis for designing a future bus network that improves mobility, access, and overall cost efficiency. This process is being led by the City of Alexandria and the local transit agency, DASH, in close coordination with WMATA, Arlington County, Fairfax County, and the Northern Virginia Transportation Commission. Through this vision process, the City and DASH will do the following:

- Assess the existing transit network and the geometry of today's city.
- Analyze existing travel patterns and consider changing trends and technologies in transportation.
- Engage the public, stakeholders, and elected officials in a conversation about the goals of transit in Alexandria.
- Develop recommendations for changing the transit network.

The City and DASH have already completed an initial phase of analysis and engagement around understanding the existing system and asking the public about the overall goals for transit. In October, the City published a Choices Report, held two public meetings, and invited feedback through an online survey about the transit goals in Alexandria. This Concepts Report begins the next phase of engagement and thinking about how to redesign transit in Alexandria.

What is a Concepts Report?

Using feedback from the public and the assessment of the existing system in the Choices Report, the study team has developed two different concepts of what transit in Alexandria could look like. This report describes those two concepts, their outcomes, and the goals that underly their design.

The two concepts differ in the degree to which they emphasize different goals for transit. These concepts represent a spectrum of possibilities and they are not intended to be an either/or proposition. By showing the public, stakeholders, and decision makers the range of possibilities, the City and DASH are asking the public to give an informed response about how they would balance these two goals.

Figure 1: A DASH bus at Braddock Road Metrorail Station connects people within Alexandria to the greater Washington region.

How to Use This Report

This Concepts Report shows two different ways that transit could be designed for Alexandria in the future. To assess those concepts and how they fit your goals for transit, we suggest that you take the following steps in reading this report:

- Read and consider the goals for transit in the next section, and the trade-offs between different goals described in the Choices Report.
- Look at the detailed network maps starting on page 12. Find the places you care about, and notice which routes go by there. Note the colors of the routes, which represent their frequencies and their spans of service each day and each week. Note where else those routes go.
  - Also, consider where all routes go, and how they connect the whole city as you consider how these networks use the City's resources.
- Note that the bus route numbers in these Concepts are very different from the existing numbering! Do not simply look for your route by its current number, or you risk overlooking an improved route near you, with a different number.
- The frequencies and spans of every route in each Concept are shown in the tables starting on page 17. This is where you can see if the route(s) you would care about run at the times of day, and on the days of the week, when you would want them to, and at what frequencies.
- Remember, do not simply look for your route number—start by looking at the maps to find routes near you, and then reference these tables.
- If you care about proximity to transit, look at the charts beginning on page 23, which show how many people and jobs are near any transit service, and near frequent service.
- For a more vivid demonstration of how the two Concepts would affect travel times, look at the "isochrones" (access areas) for people starting on page 26.

What Goals Does Transit Serve?

Transit can serve many goals, but different people and communities value these goals differently. Understanding which goals matter most in Alexandria is a key step in developing the Transit Vision.

Possible goals for transit include:

- **Economic:** transit can give businesses access to more workers, and workers access to more jobs. Transit can help attract certain industries, new residents, tourists, or other economic contributors. Higher-ridership transit costs less to operate per rider. By maintaining access and mobility in the face of congestion, transit can increase the economic potential of a city.
- **Environmental:** increased transit use can reduce air pollution and greenhouse gas emissions. Transit can also support more compact development and help conserve land.
- **Health:** transit can be a tool to support physical activity by walking. This is partly because most riders walk to their bus stop, but also because riders will tend to walk more in between their transit trips.
- **Personal Liberty:** By providing people the ability to reach more places than they otherwise would, a transit system can be a tool for personal liberty, empowering people to make choices and fulfill their individual goals.
- **Social:** transit can help meet the needs of people who are in various situations of disadvantage, such as low-income or disability, providing lifeline access to services and jobs. Transit also provides mobility options to people who might not otherwise have many options.

Some of these goals are served by high transit ridership. For example, the environmental benefits of transit only arise from many people riding the bus rather than driving. Subsidy per rider is lower when ridership is maximized. We call such goals "ridership goals" because they are achieved in part through many people riding transit.

Other goals are served by the mere presence of transit. A bus route through a neighborhood provides residents insurance against isolation, even if the route is infrequent, not very useful, and few people ride it.

A route may fulfill political or social obligations, for example by getting service close to every taxpayer or into every political district. We call these types of goals "coverage goals" because they are achieved in part by covering geographic areas with service, regardless of ridership.

Phase 1 Public Input

In the first round of engagement for the Alexandria Transit Vision, or "Choices" phase, the project team asked the public and community stakeholders about their values and priorities for transit, and how they might balance certain trade-offs related to transit service in Alexandria. These trade-offs are consistent with the findings presented in the Choices Report in October 2018.

During this first of three phases of engagement, the study team held:

- a stakeholder workshop;
- two in-person community meetings;
- nine pop-up events at activity centers across Alexandria;
- a meeting with DASH bus drivers;

Figure 2: Is an empty bus failing? It depends on why you are running it.

- briefings to the Alexandria Transportation Commission and DASH Board;
- extensive social media outreach through DASH and City channels on Twitter and Facebook; and
- digital outreach via email blasts from the City and DASH and via the project website.

Throughout these outreach efforts, a Choices Survey was available online and on paper in both English and Spanish. The following summarizes some of the key takeaways from the survey. More detailed results from the compiled Choices Survey are in Appendix A.

Summary of Respondents

In total, the study team received 320 responses from the public to the survey. Of those, 287 (90%) either lived or worked in the City of Alexandria. About half of respondents (47%) ride the bus more than 15 days per month, while the percentage of frequent Metrorail riders was slightly lower at 37%. In general, the demographic characteristics of survey respondents were fairly in-line with the makeup of the city for age and income. In terms of ethnicity, non-Hispanic whites were overrepresented in the survey response and the Hispanic and African American populations were under-represented. Additional efforts will be made to reach these groups in the second round of engagement.

The stakeholder group is comprised of civic leaders from across the city, representative of a variety of interests and expertise. Fifty stakeholders attended the Choices Workshop, where they worked in a hands-on manner, exploring trade-offs in transit network design. Based on the day's work, polling was conducted to understand the group's values related to the key transit choices.

The results from the public survey and stakeholder polling were generally consistent, though some questions were asked in different ways. The following sections present a summary of the public survey responses. Results from stakeholder polling are included the Appendix A.

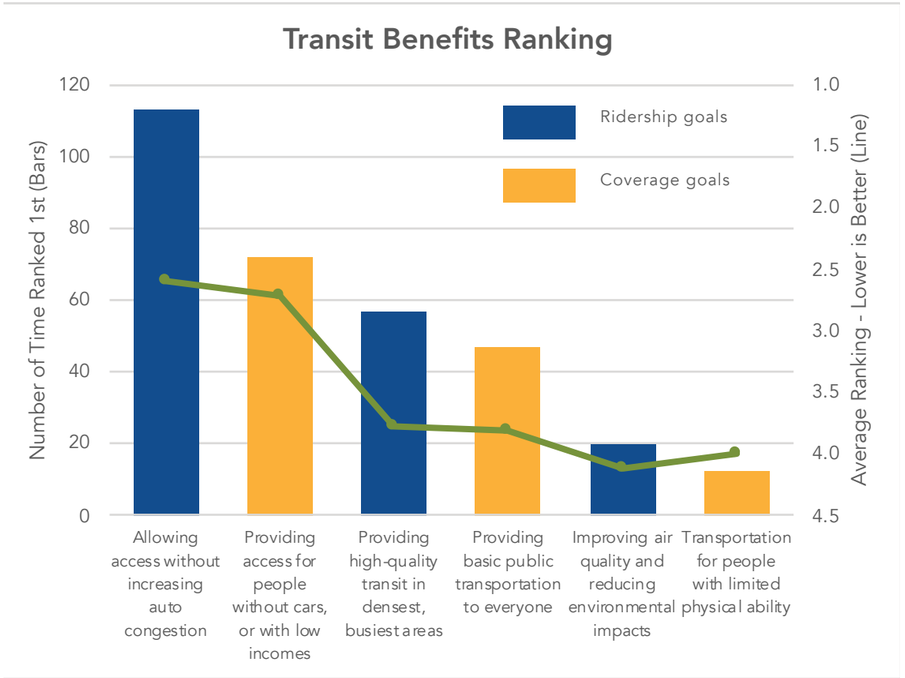


Figure 3: Survey respondents had a wide range of opinions on the most important benefits of transit.

Transit Benefits

The first survey question asked respondents to prioritize six benefits of transit. The top four responses (in order) were:

- Allowing people to move around the city efficiently without increasing auto congestion
- Providing access to jobs and services for people who don't have a car, or those with low incomes
- Providing high-quality transit in areas where the service will be used by a lot of people
- Providing basic public transportation to everyone, regardless of where they live

The first and third statements relate to the benefits of ridership-focused networks. The second and fourth statements correlate to coverage goals. This suggests some divergence in the goals that people in Alexandria want transit to achieve. This is understandable, as people often want transit to achieve many goals, even when those goals lead agencies in opposite directions on service design.

Coverage versus Frequency

The next question asked if respondents preferred a transit system that prioritized coverage or ridership and frequency and it provided an example of what each network would look like. Figure 4 shows the responses. Approximately 56% of respondents selected the option that preferred the frequent network but also provided some coverage service. Only 20% of respondents preferred or strongly preferred the high-coverage scenario.

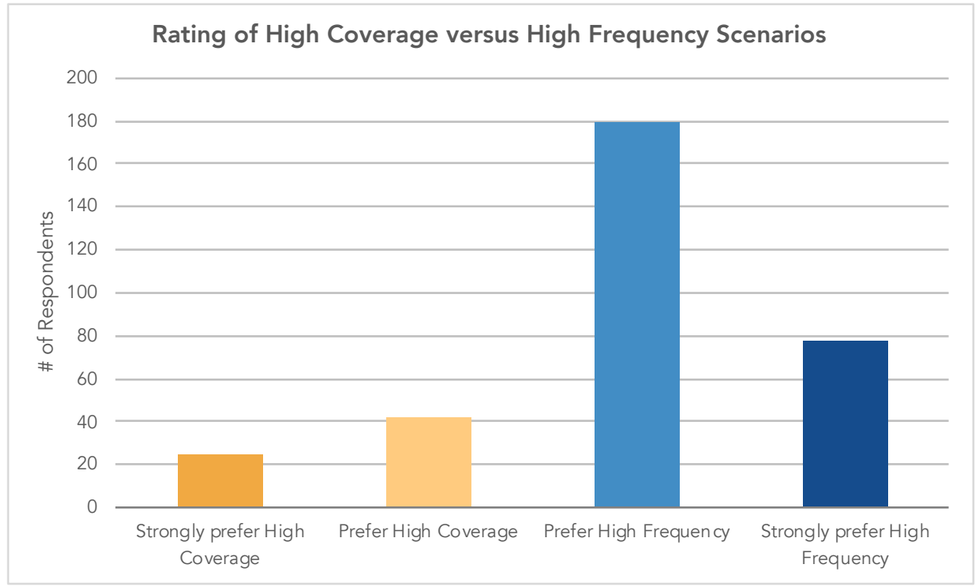


Figure 4: Survey respondents generally said they preferred a High Frequency system.

Walking Versus Waiting

The third question asked respondents if they would prefer to walk longer and wait less at a bus stop or wait longer but not have to walk as far. Figure 5 shows the responses. Approximately 90% of respondents preferred or strongly preferred the trip with less waiting, even if it meant more walking. This preference correlates to ridership networks, in which routes would run more frequently on major corridors and walks might be longer.

Transfers

The last question asked respondents if they preferred a faster overall trip, even if it meant transferring, or if they preferred a one-seat ride, even if the overall travel time was longer. Figure 6 shows the responses. Approximately 74% of respondents preferred or strongly preferred the faster trip. This preference correlates to ridership networks, where fewer, high-frequency routes provide faster trips, but tend to require more transfers.

Investment Priorities

The final technical question on the survey asked respondents to rank their priorities for new investment in transit service. Response options included the following choices:

- Providing additional service during the peaks
- Adding service on off-peak or weekends
- Providing service to places that don't have service
- Adding more amenities
- Reducing fares

A plurality of 42% respondents ranked "adding frequency during weekday rush hours to reduce the waiting time between buses" as their first choice. The second highest was "providing service to places that don't currently have service," although only 18% percent of respondents ranked it first. Providing more service during peak would generally correlate with ridership networks, but peak-only service can be very costly, as described in the Choices Report, and therefore adding more peak service is not always the most cost-effective way to get higher ridership.

Respondents could also indicate their priorities for other investments in a free-response option on the survey. A review of these responses indicated various desired improvements, but several themes reoccurred across multiple responses. These common themes are shown in the word cloud below. Note that ideas that were more common in responses are formatted to stand out more than others.

Summary of Results

Survey respondents showed a strong tendency to favor ridership network characteristics over coverage networks on most of the questions asked. Feedback from the public survey strongly correlated with that of the stakeholder group. This input helped to shape the draft concepts and will inform future policy decisions made by the City and DASH related to transit service. The feedback may be used in other City and DASH initiatives such as the Transit Element of Alexandria Mobility Plan and future Transit Development Plans.

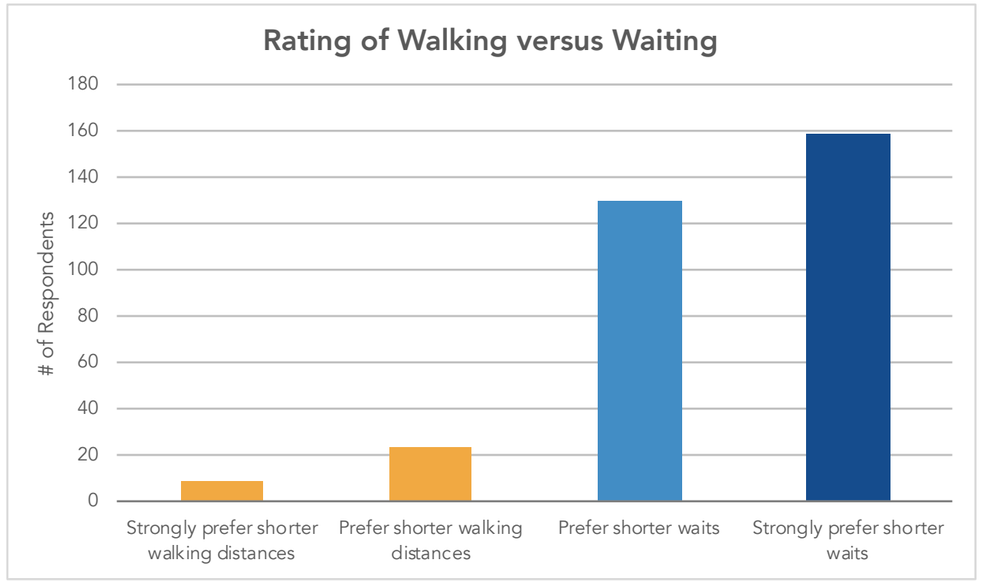


Figure 5: Most survey respondents said they preferred a shorter wait.

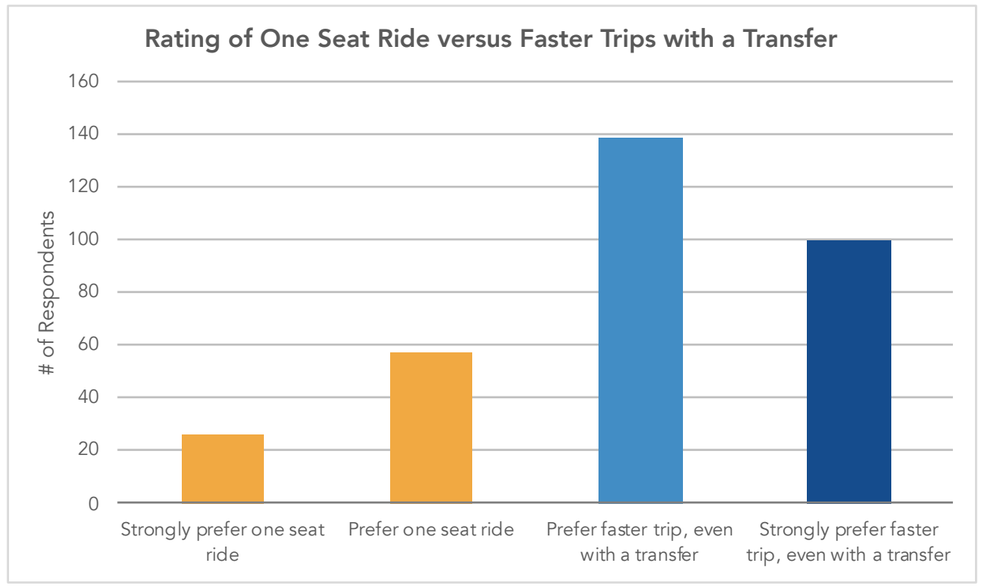


Figure 6: Most survey respondents said they preferred a faster trip, even it if required a transfer.

2. Network Concepts

Network Concepts

Introduction to the Network Concepts

This chapter introduces two alternative network design concepts for Alexandria. **Both concepts assume about 20% more service** than today,[1] but each concept has the same amount of service, so they show different ways of allocating the same total resources.

The two concepts differ in the degree to which they emphasize ridership goals as opposed to coverage goals. These concepts represent a spectrum of possibilities and they are not intended to be an either/or proposition. By showing the public, stakeholders, and decision makers the range of possibilities, the City and DASH are asking: "Now that you see the outcomes of emphasizing one goal over another, how do you balance ridership and coverage goals? In other words, if you want better service, what is your definition of better?"

The community's answers to these questions will provide guidance to the study team and decision makers to help develop the final plan with the right balance between these different goals.

As discussed in the Choices Report, the existing system devotes about 50% of its resources toward ridership goals, and about 50% to coverage goals. The Coverage Concepts in this report puts 70% of its resources toward ridership and 30% toward coverage goals while the Ridership Concepts puts about 90% of its resources toward ridership goals and 10% toward coverage goals.

Concepts, Not Proposals

A proposal is something that the proposer recommends. At this stage, the study team is not proposing anything. The result of the public conversation about these concepts will help guide the development of an actual network proposal.

Some features are common to all conceptual networks, as outlined under the Key Assumptions section, but even these are not proposals yet. In designing the concepts, we wanted to highlight the ridership-coverage trade-off, and to do this, we tended to make a single choice about matters that were unrelated to that trade-off, and keep that choice constant across all concepts. That does not mean that different choices could not have been made, and we welcome public comment about these features of the plan.

No Preferred Concept

Neither the consultant nor local staff has any preference among these concepts, and has no desire to steer the conversation to a particular result.

The most important word in this report is **"if"**. The Coverage Concept shows what might happen **if** DASH chose to emphasize coverage goals, but with consistent service design guidelines. At the other extreme, the Ridership Concept shows what might happen **if** DASH chose to shift toward ridership as the primary goal. **No decision has been made yet.**

Because the Ridership Concept is the most different from the existing system, this report puts greater focus on explaining it, including both its upsides and downsides. This can create the illusion that this concept is being promoted; this is not the intent. The Ridership Concept is simply an illustration of what would happen if ridership were further emphasized as the top priority.

The Big Picture Matters More than Details

These concepts have not been refined to the point that they would be ready to implement, because their purpose is to illustrate choices at a higher altitude. A later stage of planning will refine a final plan, based on public feedback on the concepts, and at that point all the details will be filled in.

In general, these concepts are intended to be complete descriptions of the regularly recurring midday pattern of services, seven days a week. The concepts show frequencies going up and down by time of day, and day of the week. Details on the routing of additional peak service is provided at a general level on page 20.

[1] By additional service, we mean the quantity of bus service provided, calculated as the total annual service hours.

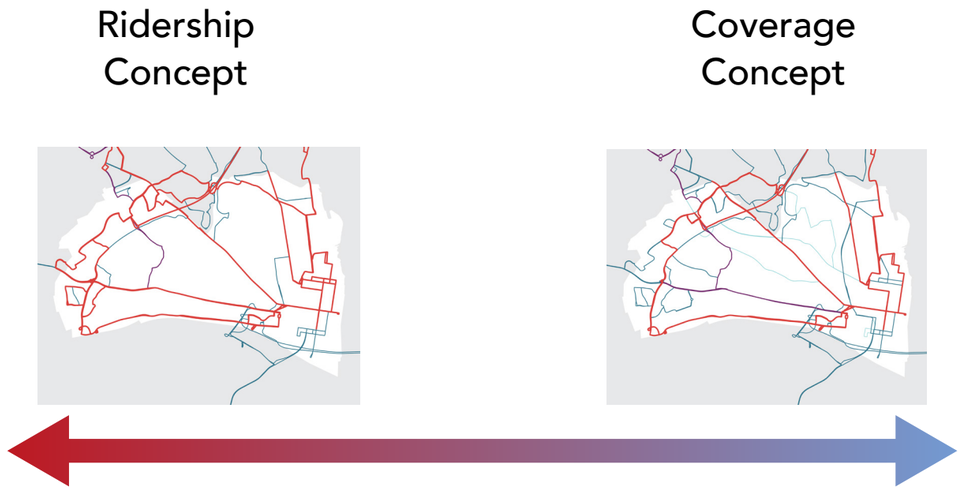


Figure 7: The two concepts shown in this report represent opposite ends of the spectrum for possible approaches that could be taken to redesign the Alexandria transit network.

However, these concepts **should not** be treated as detailed regarding:

- Services designed around the morning and evening peaks
- Services designed around school peaks
- Specialized commute services consisting of only a few trips
- Local routing details such as turnarounds
- Details of scheduling. For example, the concepts identify frequencies for each period of the day, but an actual schedule will include a transition from one frequency to the other
- Minor deviations and variants affecting small numbers of trips, where these are necessary

All of this detail would be added later in a final plan, but doing so would be premature at this conceptual stage.

Key Assumptions

Year and Investment

Both the Ridership and Coverage Concepts are visions of a future transit network for Alexandria that could be possible by 2030. Each assumes a 20% increase in service, which would require additional financial investment by the City or others to support that increased service. Both concepts are neutral about who would operate most routes. Either DASH or WMATA could operate most of the routes designed.

Bus-to-Rail/Rail-to-Bus Transfer

Both concepts assume that the fare penalty for transferring between Metrorail and bus is eliminated. This would mean that if you rode Metrorail, a transfer to a local bus would be free. When transferring from bus to Metrorail, the full bus fare would be deducted from the rail fare, since rail fares are variable by distance and time of day and are usually higher than bus fares.

Potomac Yard Metrorail

The City and WMATA are working together to construct an in-fill station (a new station on an existing transit line) on the Blue and Yellow Metrorail lines in the Potomac Yard neighborhood of Alexandria. There will be facilities provided to accommodate bus-rail connections to the station. Both concepts assume the station is open and that Metrorail service is operating at its current frequency and span of service.

Potomac Yard Development and Amazon

Both Concepts were designed just prior to the announcement that Amazon would bring part of its HQ2 development to the Potomac Yard site. Nevertheless, both Concepts were designed with the North Potomac Yard Small Area Plan and Crystal City Sector Plan for Arlington County in mind. The North Potomac Yard Small Area Plan envisions a substantial increase the number of jobs and residents in the area, with many multi-story buildings across most of the area. Also, the study team was aware of the high likelihood of substantial development and redevelopment in this part of the city. Therefore, both Concepts already assume the level of activity in Potomac Yard, Crystal City, and Pentagon City would increase and, therefore, services to these areas are improved in both concepts.

Expanding Weekend and Evening Service

Evening and weekend service is relatively inexpensive to operate compared to peak service, and it is crucial to a large segment of transit riders. People who work in most retail and entertainment sectors have to work on weekends and often late into the evening. Having some transit then is important to making it possible for them to rely on transit at all.

Houston recently had great success with a network redesign that extended evening service and expanded Saturday and Sunday service to be the same level as weekday service, but without the peak period.

Both concepts dramatically expand weekend and evening service and generally make hours of service more consistent among all routes. Service hours and frequencies are still a little lower on Saturdays and Sundays than on weekdays in each concept, but are much closer to weekday levels than in today's network.

Metroway

Both concepts assume that more dedicated space is provided for Metroway through the new development in Potomac Yard. Both concepts assume that service is standardized to operate between Pentagon City and Braddock Road Metrorail stations every 10 minutes for most of the day.

West End Transitway and Duke Street Transitway

In the western parts of Alexandria, the City is proposing a BRT system to provide high-capacity transit service using a combination of dedicated and shared lanes and high-quality stations with rider amenities. The ultimate vision is for the West End Transitway to connect major transit centers, like Van Dorn Metro Station, Mark Center Transit Center, Shirlington Transit Center, and the Pentagon Transit Center, with several neighborhoods along the corridor, including Landmark, a redeveloped Landmark Mall, and Beauregard.

Along Duke Street, the City is studying improvements to increase the speed and reliability of bus service. The City is studying a variety of possible measures, including dedicated lanes, queue jump lanes at intersections, and transit signal priority.

Both concepts assume that at least the transit signal priority infrastructure elements of the West End Transitway and Duke Street Transitway have been built.

Both concepts include a route (C6 in Coverage and R6 in Ridership) that would use the West End Transitway alignment and stations.

Southern Towers and Landmark Mall

Both concepts assume that new transit centers are built on-site at Southern Towers and at the redeveloped Landmark Mall property. The new Southern Towers transit center would replace the multiple stops that routes make today in the parking lot of the towers. Both transit centers would allow people to make easy connections between local routes in Western Alexandria, connect between local routes and the West End Transitway route, and to and from routes that would use the I-395 HOT lanes to get to Pentagon Metrorail station.

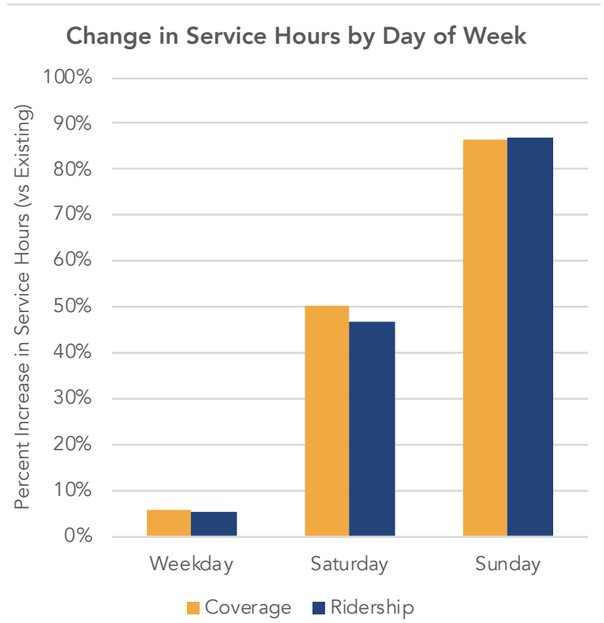


Figure 8: Both Concepts would dramatically increase service on Saturday and Sunday.

King Street Trolley

In both concepts, there is no separate King Street Trolley route, but there is a route that runs from Eisenhower East to the Waterfront via King Street in a pattern similar to today's King Street Trolley. The new route has hours of operation that are consistent with the rest of the network. This allows the new route to be a seamless part of the overall transit network.

This route might still be fare free, or a fare could be charged to make the route more consistent with other routes in the system. If the City and DASH chose to charge a fare on this route, visitors could be encouraged to use transit through free day passes and other discounted transit fare programs in cooperation with hotels and Visit Alexandria.

Other Assumptions

In some places, the concepts assume that turns that are not possible today would be possible in the future with changes to intersections design, signal infrastructure, or turn prohibitions.

Existing Network

To help the reader compare the two concepts on the following pages to the existing network, a map of the existing network is shown at right. Every bus route is color-coded based on its frequency during midday on a weekday. This shows the frequency of service that is generally available from 9am to 3pm on weekdays. During the weekday morning and afternoon rush hours many routes have more frequent service, or additional routes operate to additional places.

Metrorail stations and lines are shown in gray. The Metrorail Yellow and Blue lines through Alexandria are scheduled to operate every 12 minutes in the midday, and thus where they run together the combined frequency is every 6 minutes. A map of existing routes in Old Town is shown on page 11.

As the map shows, there are only four frequent routes in the city today, and only three serve Alexandria significantly. The four frequent routes (running every 15 minutes or better) include

- Metroway from Braddock Road Metro, through Potomac Yard, to Crystal City in Arlington;
- Metrobus Route 10A and B combine for frequent service from Old Town to Braddock Road Metro and north along Mount Vernon Avenue to Arlington;
- The King Street Trolley, operated by DASH, from King Street Metro to the Waterfront; and
- Metrobus Route 7M from Pentagon to Mark Center, direct with no stops in between.

The King Street Trolley is unique in that it does not run in the AM peak period and it does not cost anything to ride. Being free makes the service very easy to use; however the service is not useful for many trips because it is not available until 10 AM.

Other than Route 7M, which only touches Alexandria at one stop, there is no frequent service west of Mount Vernon Avenue. But there are many overlapping routes that, if combined or coordinated, could provide more frequent service across the western parts of the city.

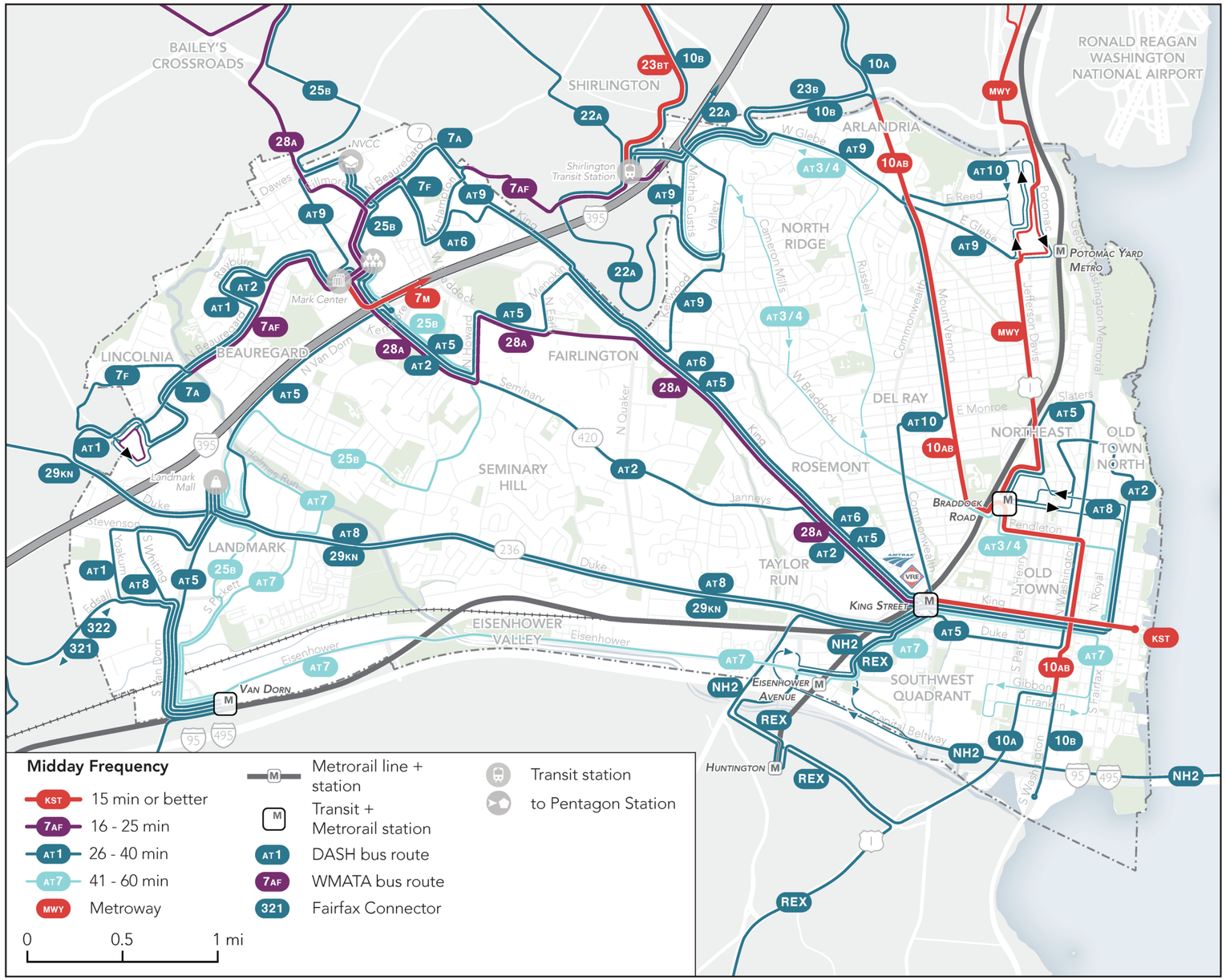


Figure 9: Existing Midday Bus Frequency

Existing Old Town Network

Figure 10 shows the current bus network within and around Old Town Alexandria. Despite having three frequent routes that approach Old Town, only two frequent routes (the trolley and Metrobus 10A+B) actually serve Old Town. Metroway, which runs from Pentagon City to Braddock Road Metrorail station, does not penetrate into Old Town.

Also, service is spread across many different streets around Old Town. For example, buses are running on three different north/south streets from King Street to Pendleton Street.

- AT5 and Metrobus 10A+B run north/south on Washington Street.
- AT2 and AT8 run both directions north/south on Fairfax Street, while AT 3/4 only runs northbound here.
- AT3/4 runs southbound on Royal Street.

This is close route spacing, as Washington and Fairfax Streets are less than 1/4 mile apart, and Fairfax Street is only 800 feet from the waterfront. Similarly, many routes run on King Street (the trolley, AT2, AT7, and AT8) while AT5 runs on Duke Street, only 800 feet to the south. Many people are willing to walk up to 1/4 mile for frequent transit service. Thus a logical route spacing of frequent service would space routes 1/2 mile apart. Of course, local geography often limits the ability to space routes in a perfectly consistent pattern.

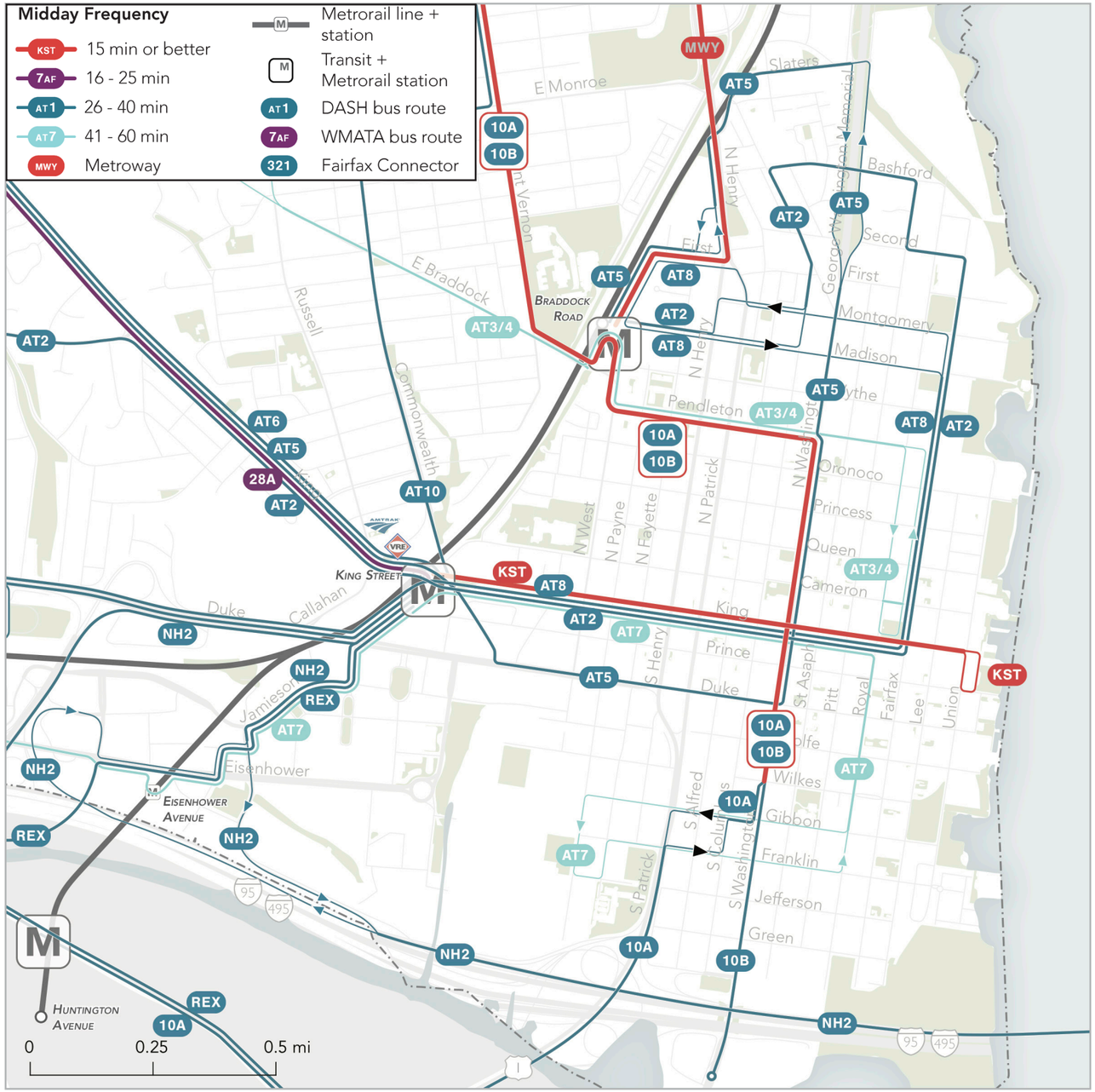


Figure 10: Many routes run within close proximity of each other downtown, but are not coordinated.

Coverage Concept

The Coverage Concept is similar to the existing network in that most areas with a route nearby today would have a route nearby in this concept.

This concept has five frequent, all-day routes that offer radial service from Old Town as well as an orbital route that runs on the west to northwest side of Alexandria. Though this concept is still covering similar areas, it also removes some duplicative service, thereby reducing the number of routes, and runs service consistently, seven days a week.

To explore this network and its relevance to your life, or the lives of people you care about, you can:

1. Find a place you care about on the map, using the labeled streets.
2. Note which routes are nearby, by number and by color.
3. Look at the legend at bottom left, to see what frequency those routes would have on weekdays.
4. Look at where else those routes go, besides the place you care about. They may go farther than your routes do today.
5. Refer to the table on page 17 to learn how the frequencies of these routes would change throughout a weekday, how many days of the week they operate, and what hours of service they offer.

Other information that you may want to review:

- A more detailed map of Old Town and the surrounding area is shown on page 13.
- The number of residents and jobs this concept would get close to with any service, and with frequent service, is shown on page 23.
- Isochrones illustrating how people's travel time would be affected from sample locations are shown starting on page 26.

One unique feature of this network is that parts of North Ridge and Park Fairfax are served with a deviated fixed route service (Route C14). This route would operate along the path shown, but would be able to deviate to pickup and drop-off riders within the shaded zone (Deviated Service Area). For a pickup off the main route, a rider would need to call or use an app to make a reservation ahead of time.

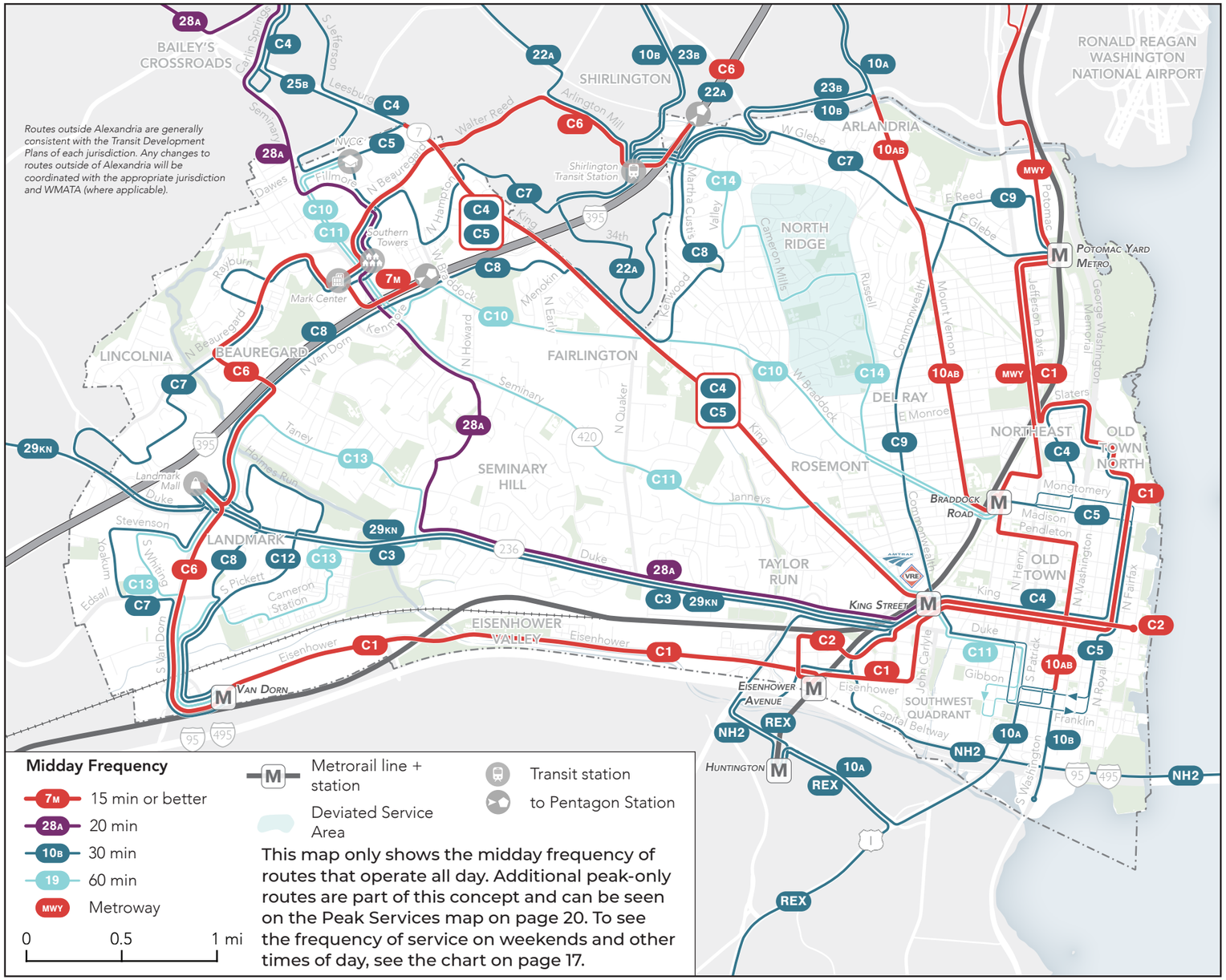


Figure 11: Midday Bus Frequency for the Coverage Concept

Coverage Concept in Old Town

The map to the right shows the detail of how routes in the Coverage Concept would serve Old Town and surrounding areas. In comparison to the Ridership Concept, one key difference is the organization of Routes C4 and C5:

- The King Street Routes (C4 and C5) provide service every 15 minutes west of the King Street-Old Town Metrorail station, but diverge within Old Town so that C5 can provide service to the southern parts of Old Town and C4 can provide service in Old Town North.
  - This design reduces the walking distance to service, and the number of transfers that riders might have to make, at the expense of having longer waits due to the lower frequency of service.

C4 C5

This symbol on the map means that Routes C4 and C5 run together for an extended length, and that their schedules are combined so riders could expect a bus every 15 minutes. This is similar to how WMATA Routes 10A/B operate today on Mount Vernon Avenue. Some may wonder why it is not possible to do a similar combined frequency with all of the routes running on Duke Street. The WMATA Routes on Duke Street (29K/N and 28A) only make limited stops, and therefore their frequency cannot be combined with Route C3, which would make local stops. Also, it is not possible to combine a 20 minute route (28A) and a 30 minute route (29K/N) into a consistent frequency.

Midday Frequency

- 7M 15 min or better
- 28A 20 min
- 10B 30 min
- 19 60 min
- MWY Metroway

- M Metrorail line + station
- Deviated Service Area
- Transit station
- to Pentagon Station

This map only shows the midday frequency of routes that operate all day. Additional peak-only routes are part of this concept and can be seen on the Peak Services map on page 20. To see the frequency of service on weekends and other times of day, see the chart on page 17.

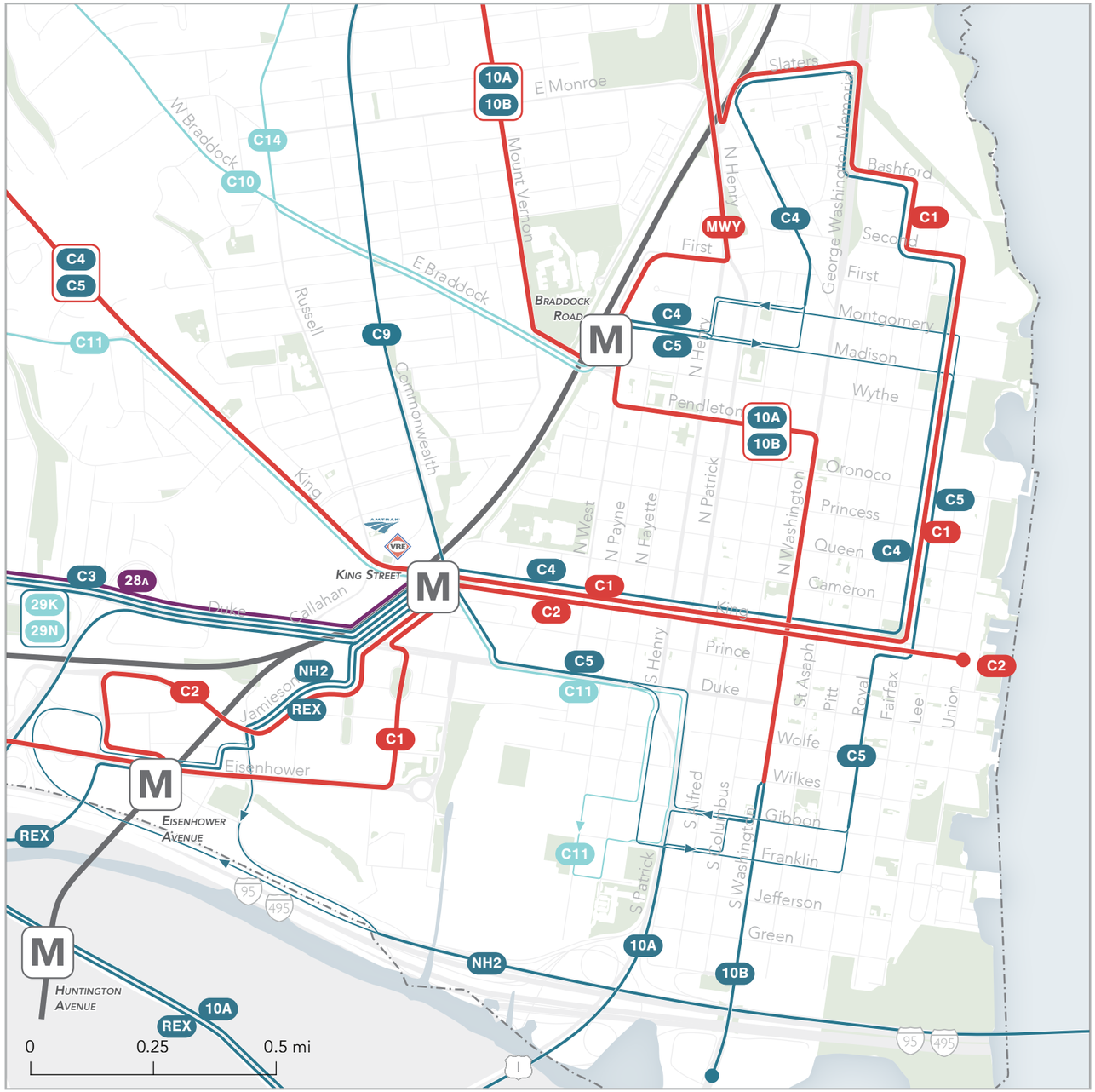


Figure 12: Old Town Detail of the Midday Bus Frequency for the Coverage Concept

Ridership Concept

The Ridership Concept is very different from the existing network and the Coverage Concept. Service is concentrated into fewer routes in the areas where the most people live, work, and study, so that more people are likely to ride. These fewer routes can be more frequent, so that a bus is more likely to be coming when someone needs it.

Concentrating service into fewer routes means that less is available to spread widely, so some areas that are covered today would be a longer walk from service, or too far to walk at all, in this concept.

This concept has six frequent, all-day routes that offer radial service from Old Town as well as two frequent orbital routes that run on the west to northwest side of Alexandria. This is two more frequent routes than in the Coverage Concept.

Other information about this concept that you may want to review:

- A more detailed map of Old Town and the surrounding area is shown on page 15.
- The number of residents and jobs this concept would get close to with any service, and with frequent service, is shown on page 23.
- Isochrones illustrating how people's travel time would be affected from sample locations are shown starting on page 26.

The study team is certain that, were this concept to be implemented, it would get higher ridership than the Coverage Concept. Why are we so certain?

- Repeated, wide-scale research has shown that higher frequencies and longer spans of service are a major factor in predicting ridership. This is true in many different kinds of urban areas.
- The outcomes reported in Chapter 3 show that this network gets many more jobs within a reasonable travel time for the average resident than do the existing network or the Coverage Concept. People choose transit if it is workable given their destination and their time constraints, so **making more destinations accessible within less time for a large number of people is a straightforward way to attract more riders**.

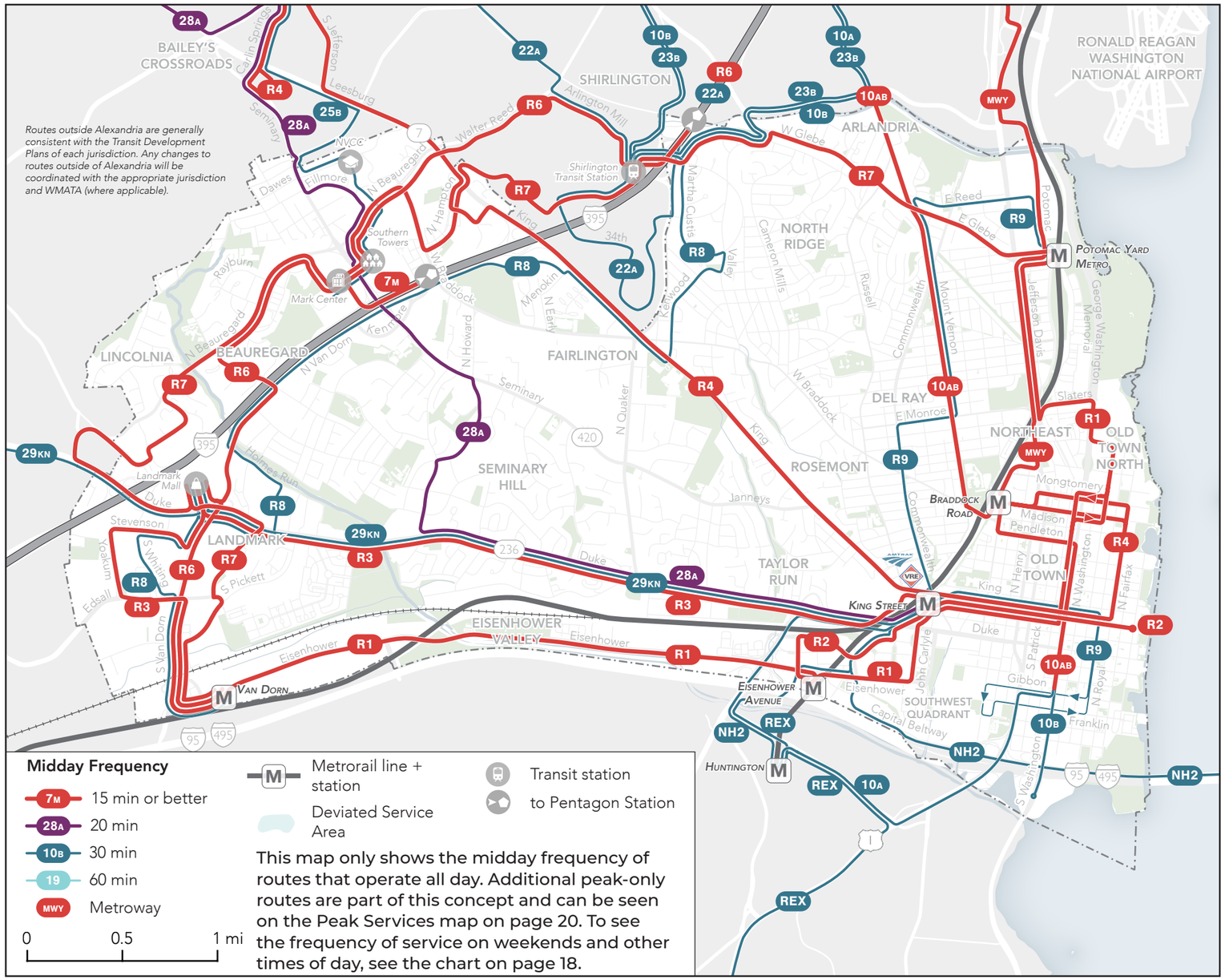
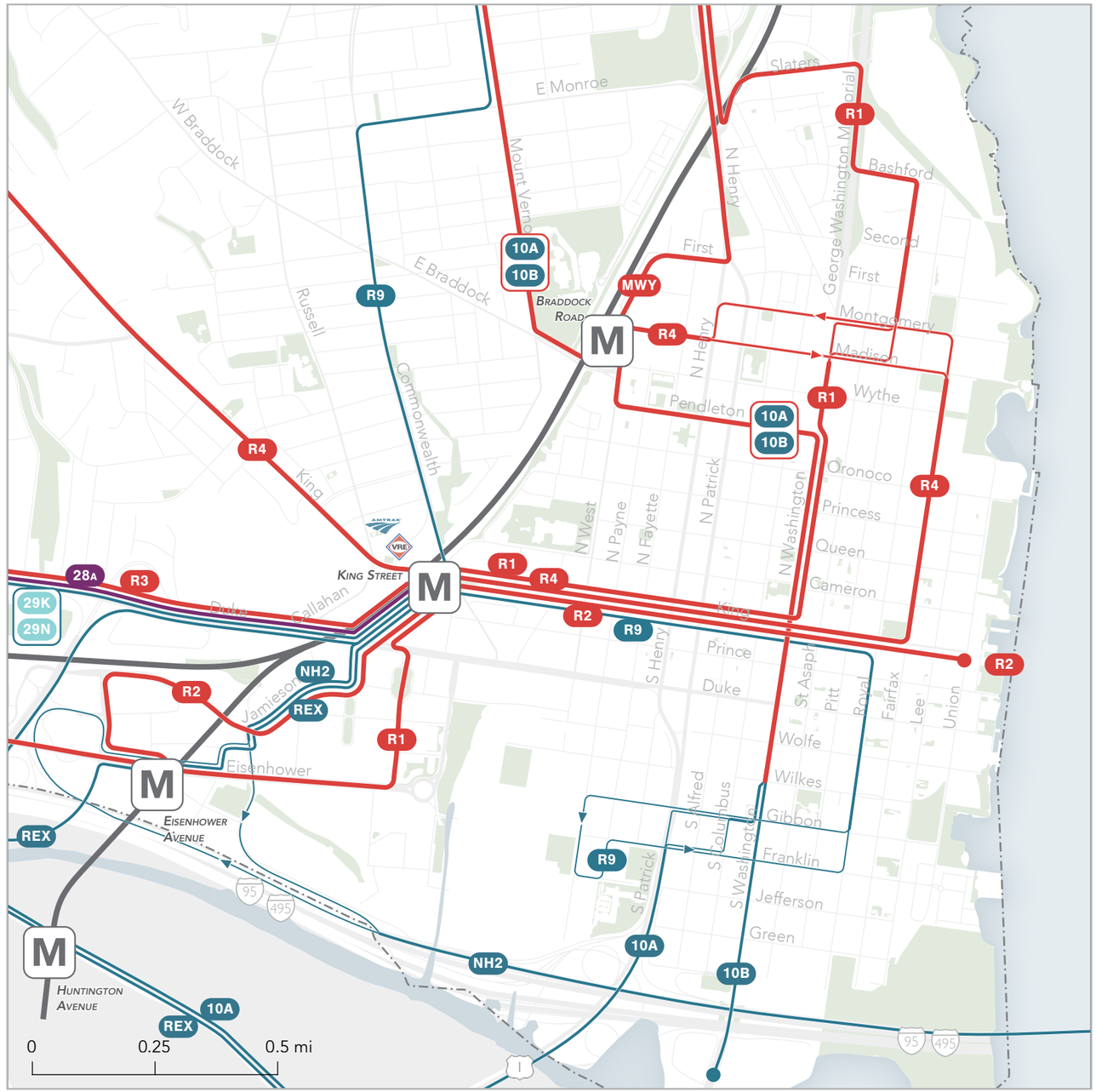


Figure 13: Midday Bus Frequency for the Ridership Concept

Ridership Concept in Old Town

The map to the right shows the detail of how routes in the Ridership Concept would serve Old Town and surrounding areas. In comparison to the Coverage Concept, the key difference is the organization of Route R4.

- The King Street Route R4 provides service every 15 minutes west of Old Town, through Old Town on King Street, and north to Madison and Montgomery Streets to Braddock Road Metrorail station. Unlike the Coverage Concept, the route does not split within Old Town.
- To provide 30-minute service in southern Old Town, this concept extends Route R9 east of King Street Metrorail station, via King and Royal Streets to the Southwest Quadrant.
- In Old Town North, there are fewer routes on fewer streets, but the frequency of service is higher, so walks may be longer for some, but waits are shorter.



Midday Frequency

- 7M — 15 min or better
- 28A — 20 min
- 10B — 30 min
- 19 — 60 min
- MWY — Metroway

- M — Metrorail line + station
- Deviated Service Area
- Transit station to Pentagon Station

This map only shows the midday frequency of routes that operate all day. Additional peak-only routes are part of this concept and can be seen on the Peak Services map on page 20. To see the frequency of service on weekends and other times of day, see the chart on page 18.

Figure 14: Old Town Detail of the Midday Bus Frequency for the Ridership Concept

Existing Span of Service

For transit to be useful, it must be there at the times of day you need it. The times of day transit operates is called “span of service.” In today’s transit network in Alexandria, only three DASH routes provide service after 11 pm, and only one route, AT8, serves customers after midnight. Metrobus provides some service after 11 pm on four routes.

Frequency of service varies dramatically throughout the day and week, with most service concentrated in the weekday rush hours. Only one DASH route provides frequent service at midday, the King Street Trolley; however, the King Street Trolley doesn’t operate at all in the morning peak. The AT6 and AT7 do not operate at all on weekends.

The inconsistencies in frequency and which routes are available throughout the day make the network more difficult to understand, and limit the types of trips the network can be useful for.

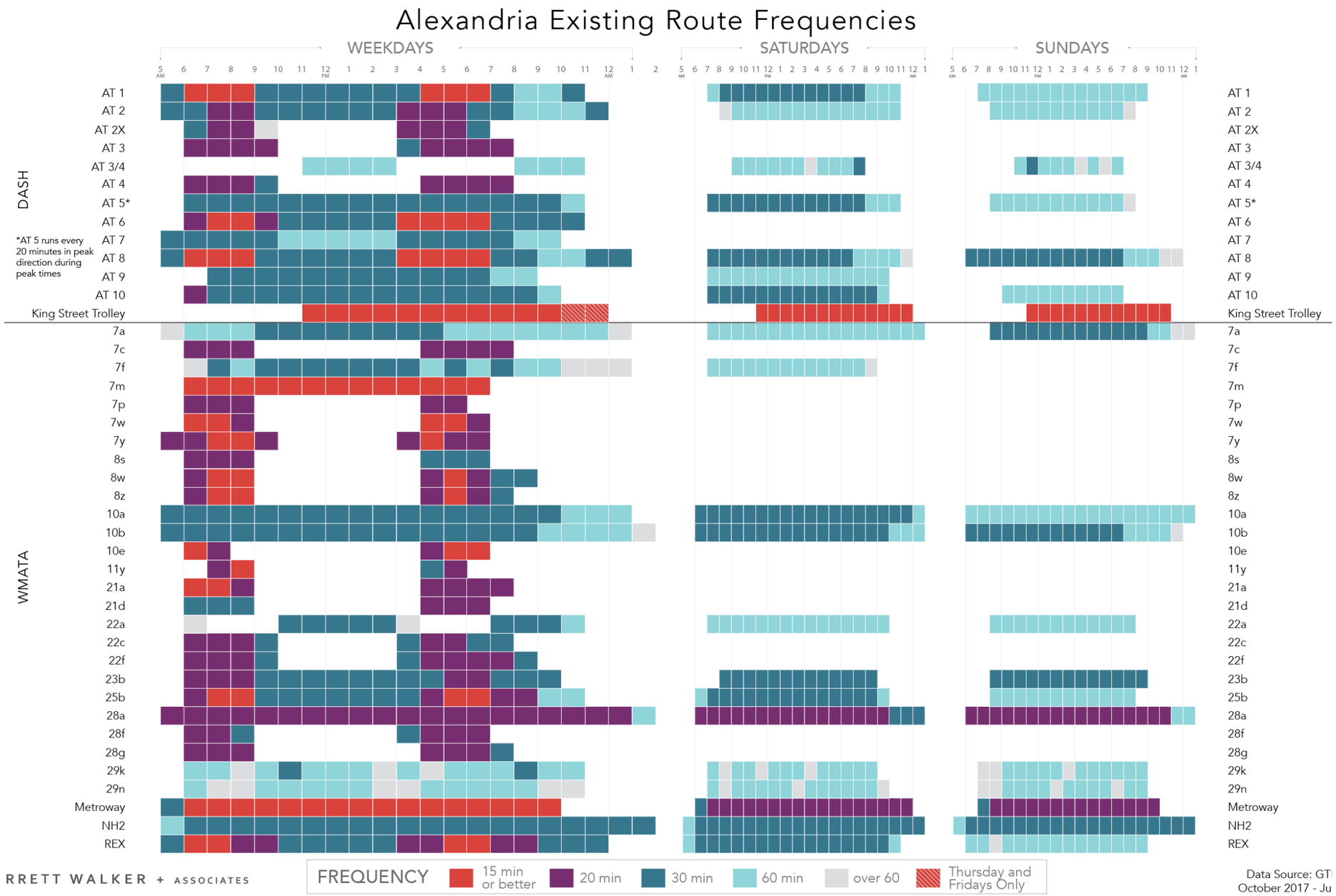


Figure 15: Span of Service for the Existing Transit Network in Alexandria

Coverage Span of Service

The Coverage Concept has fewer routes than the existing network; however, all the routes run consistently from 5 am until at least 10 pm, and every route also runs on the weekend. Most routes in this concept have a 30- or 60-minute frequency in order to have enough routes to continue covering the areas that have service nearby today.

Coverage Alternative: City of Alexandria

Route Frequencies and Spans of Service

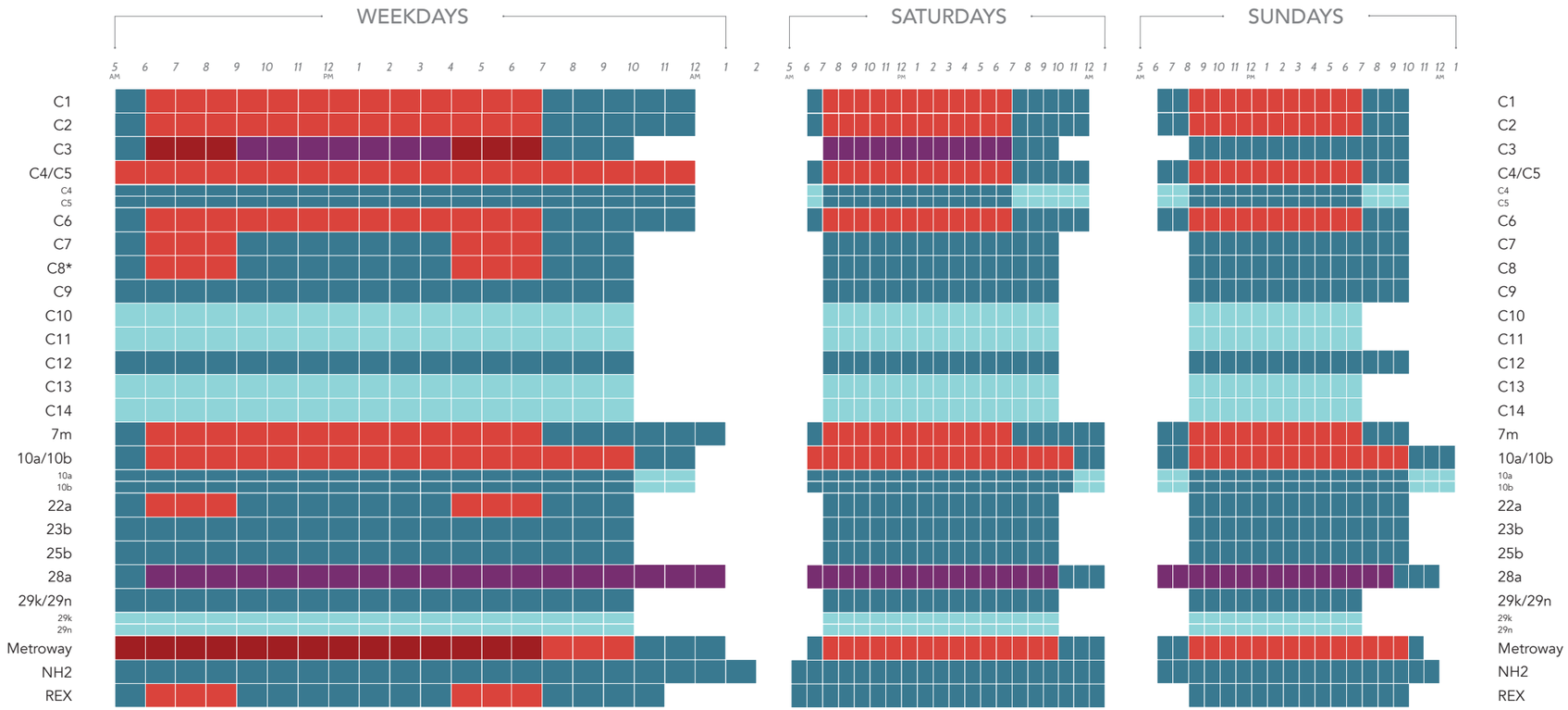


Figure 16: Span of Service for the Coverage Concept

Ridership Span of Service

While there are fewer routes in the Ridership Concept than in Coverage, all of the routes have 30-minute frequency or better. This alternative offers more routes that have frequent service seven days a week and with a longer span of service. This concept has the same quantity of service as the Coverage Concept, but is concentrated into fewer routes, so that each route can be more frequent, operate longer each day, and on more days of the week.

Having nine frequent routes means being able to get to more places faster because more frequent service means less waiting for connections where these frequent routes cross.

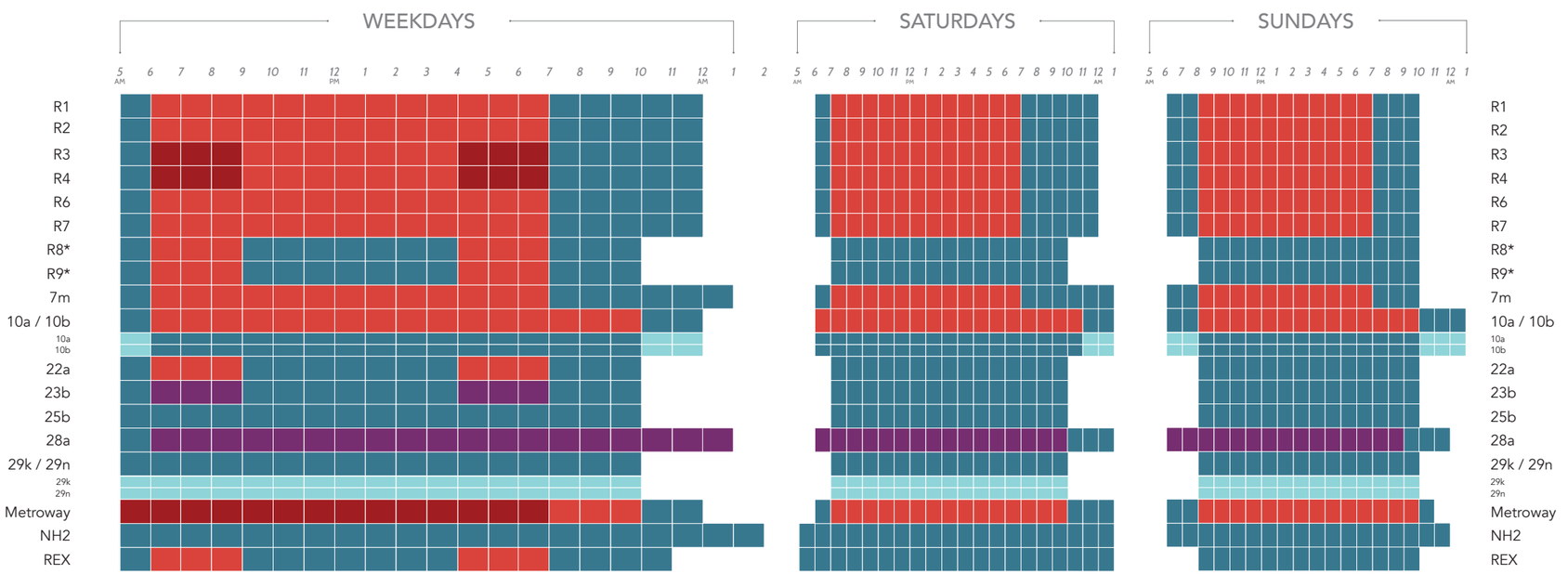


Figure 17: Span of Service for the Ridership Concept

Weekend Service Comparison

Another way to compare the difference between the existing network and the two concepts on the weekends is to look at the network by frequency at different times and days. The simplified set of maps to the right show the existing network on the left, the Coverage Concept in the middle, and the Ridership Concept on the right. The top set of maps show the network by frequency at midday on Saturday. The bottom set of maps show the network by frequency at midday on Sunday.

As the maps clearly show, both concepts have significantly more service at higher frequency across most of the city on both Saturday and Sunday. A significant part of the additional service included in both concepts is in the form of more weekend and evening service. As previously noted, weekend and evening service is critical for people who work in retail and entertainment sectors. Having some transit at these times is important to making it possible for them to rely on transit at all. Other cities have had significant success with ridership increases from improving evening and weekend service.

Saturdays

Existing

Coverage

Ridership

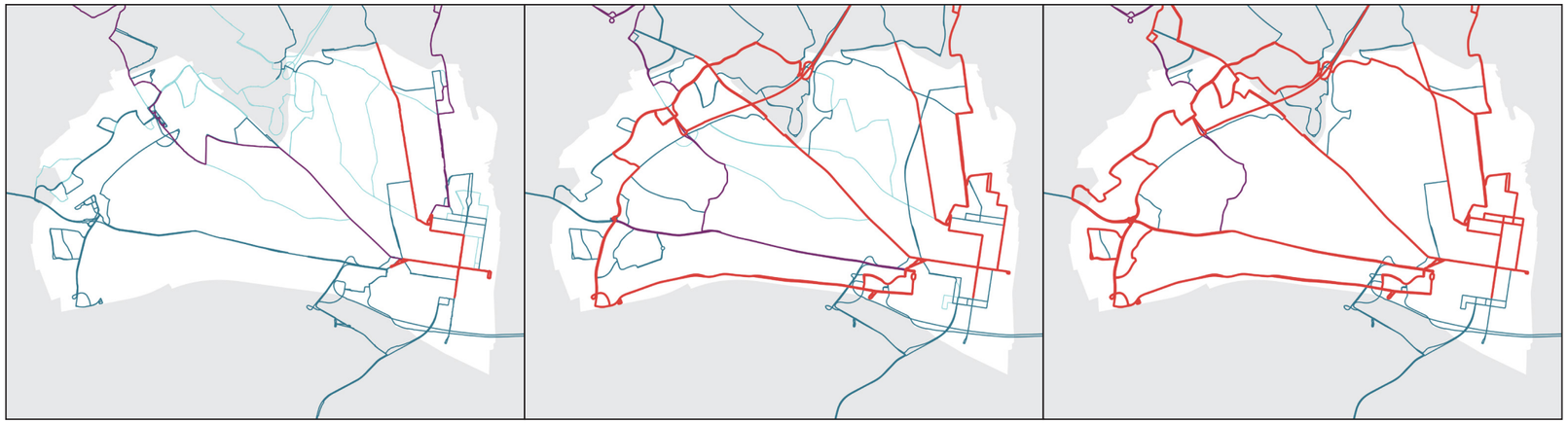


Figure 18: Frequency of service by route on Saturdays for the existing network and both concepts.

Sundays

Existing

Coverage

Ridership

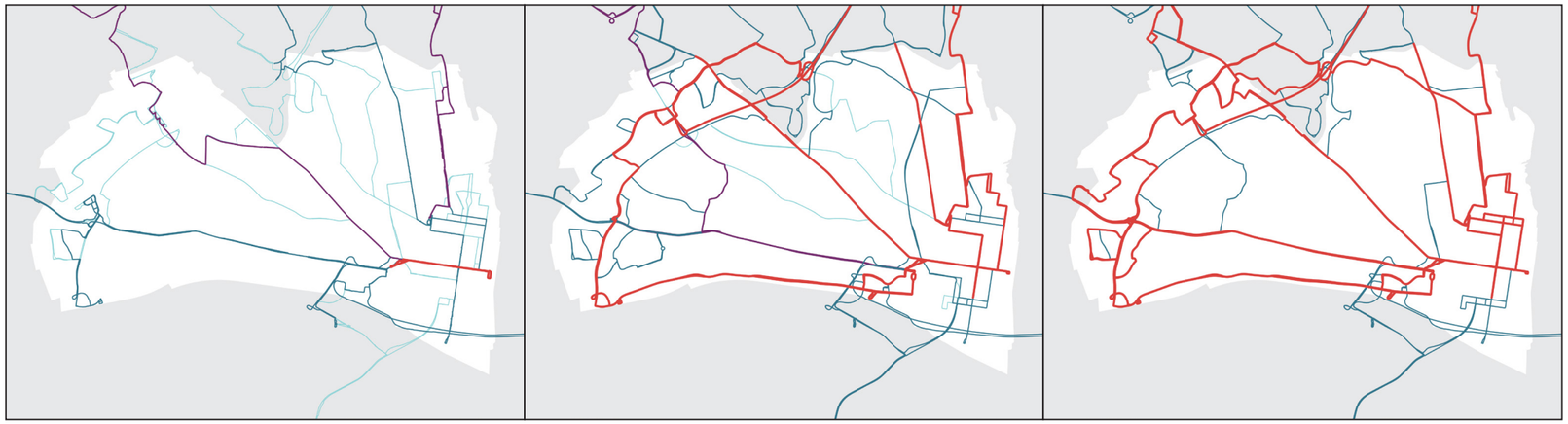


Figure 19: Frequency of service by route on Sundays for the existing network and both concepts.

Peak Services

In addition to the all-day routes shown previously, both the Coverage and Ridership Concepts would include additional service at peak times (Monday through Friday in the morning and evening rush hours) to meet the higher demands for service at the busiest commuting times.

Figure 20 shows the additional routes or overlay routes that would operate at peak commute times. Many of these routes are identical to today's peak only routes (such as Routes 8W and 8Z). Others are similar but modified versions of today's peak-only routes, such as the 7Y. Routes that are similar to existing Metrobus peak-only routes have been given the names of current Metrobus routes. These routes would likely operate similar schedules and frequencies as they do today.

Some routes would operate in an overlay pattern, providing additional frequency or extensions of all-day routes. For example, Route P8 would supplement service along the northern parts of Van Dorn and through Park Fairfax, providing more frequency at peak times in the areas served by either Route C8 (in the Coverage Concept) or R8 (in the Ridership Concept). Also, Route P8 would extend service to the Pentagon during peak times. Likewise, Route 7M would operate along Beauregard to Mark Center and Pentagon in addition to the all-day route on Beauregard (C7 in Coverage, and R7 in Ridership). For overlay routes, the combined frequency would generally be every 15 minutes or better during peak times, but the exact timing and scheduling of trips would depend on many factors that would be determined in later phases of planning for these routes.

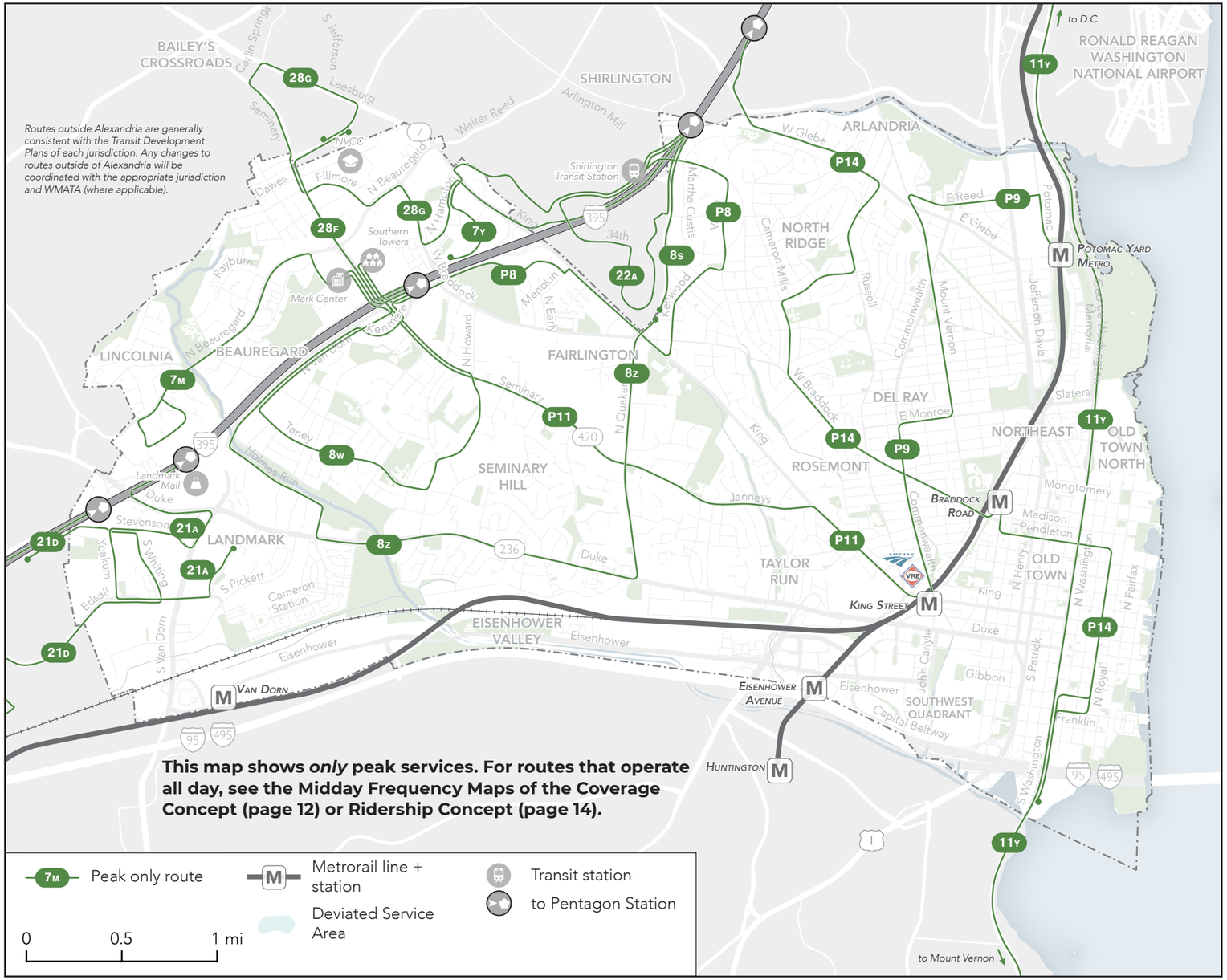


Figure 20: Peak Services

3. Comparing Outcomes

Comparing Outcomes

This chapter reports on two different ways of measuring the potential outcomes of the concepts.

These measurements are not forecasts; they do not make assumptions about how culture, technology, prices, or other factors will change during the next few years. These are simple arithmetic measures that combine existing distance, time, and population information to show the potential of each concept and how they each differ from the existing network.

Proximity

The first measure reported, on the next page, is very simple: How many residents and jobs are near transit? This is sometimes called "coverage".

Proximity does not tell us how useful people will find transit service—only that it is nearby. We also report on proximity to frequent transit service, to provide a little more information about how many people are near service that they are more likely to use.

> Proximity does not tell us how useful people will find transit service; only that it is nearby.

Isochrones

To understand the benefits of a network change, consider this question: Where could I get to, in a given amount of time, from where I am?

This question refers to the physical dimension of liberty and opportunity. To the extent that you want to do things outside of your neighborhood, your life will be more free, and you will have more opportunities, if you can get to more places in a given amount of time.

Isochrones provide a visual explanation of how a transit network changes people's freedom to travel, on foot and by transit, to or from a place of interest. Isochrones are explained starting on page 25, and a few examples are included in this report.

Summary of Outcomes

In plain language, the concepts would likely have these effects on transit outcomes:

- **Ridership potential** would increase (because of the investment in new service) in the Coverage Concept, and would increase a great deal in the Ridership Concept.
  - **In the Ridership Concept, more people can reach more opportunities in a given amount of time.** This is even more the case for low-income people.
  - Other factors would affect whether or not people choose to ride, such as fares, parking pricing, gas prices, employment levels, etc. Holding all of these other factors constant, when more people can make more of their trips faster, by transit, more people will choose to ride.
- **Larger parts of the city are unserved in the Ridership Concept than in the Coverage Concept**, which is obvious when you compare the midday network maps.
  - However, because the uncovered areas are mostly low-density areas, the number of residents and jobs who lose coverage is lower than you might expect from the visual impression given by the maps.
- **The Coverage Concept would slightly increase the number of residents near any all-day service, and near frequent service compared to the existing network.**
- Frequency correlates strongly with high ridership, especially when frequent services (routes that come at least every 15 minutes) are combined into a connected network. The Ridership Concept includes more frequent lines that create a larger and more interconnected frequent network (the network of frequent routes). **The number of people living near the frequent network is 40% higher in the Ridership Concept, because there are more frequent lines.**
- **The Coverage Concept is somewhat simpler than the existing network. The Ridership Concept is much simpler.** Simplicity is important to attract spontaneous and new riders. There are 26 all-day routes in both the existing network and Coverage Concept, though the routing and service hours are simpler in the Coverage Concept. There are only 20 all-day routes in the Ridership Concept. Fewer lines mean a network is easier to remember, and more frequent lines with more consistent spans make trip-planning easier.

Overall, the Coverage Concept provides **a small to moderate increase in freedom and access** for nearly all people and places than the existing system and slightly expands the number of people and jobs near any transit service.

In contrast, the Ridership Concept provides **a moderate to large increase in freedom and access** for most, but not all, people and places compared to the existing system, but reduces the number of people and jobs near any transit service.

Proximity to Transit Service

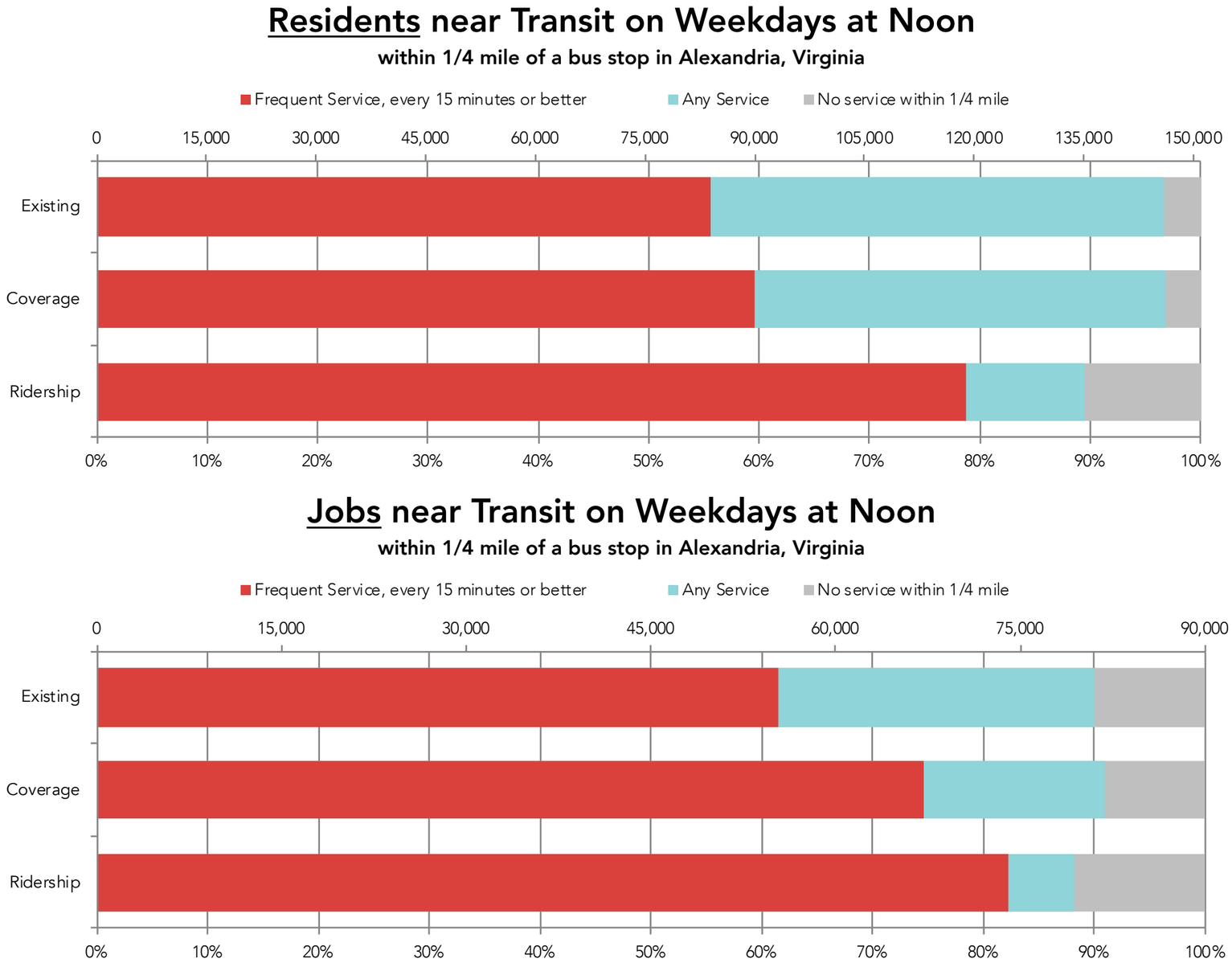
The number of people within a certain distance of transit is the simplest measure of transit outcomes. In this report we call this measure "proximity" or "coverage."

The two charts at right show how many residents (at top) and jobs (at bottom) would be within 1/4 mile[1] of any all-day service, or frequent service for the existing system and the Coverage and Ridership Concepts.

- The Coverage Concept would result in more people and jobs being near any transit service, but not significantly more than today. About 95% of people and about 90% of jobs would be near any transit service, which is comparable to the percentage near any service today.
  - The Coverage Concept results in more people and jobs near frequent service than the existing network because there is more service, and therefore the high level of existing coverage can be maintained while also increasing frequency on some corridors.
- The Ridership Concept would result in fewer people and jobs near any transit service, with about 90% of people and about 88% of jobs near any transit service. It would dramatically increase the number of people and jobs near frequent service, with nearly 80% of people and more than 80% of jobs near frequent service.

Proximity to service of any type is a good measure of an agency's success toward a coverage goal (though more specific investigations are essential to determine whether vulnerable people and important destinations are covered). Proximity does not tell us how useful the service is to people—only that it is nearby. In pursuit of a coverage goal, an agency will spread service thinly, to cover as many people as possible. Spreading transit thinly means routes have low frequencies, short spans, and circuitous routing. A route that is not very useful, but is proximate to many people, is helping an agency meet a coverage goal.

Figure 21: The total number of people or jobs near any service is higher in the Coverage Concept, but the number of people and jobs near frequent service is much higher in the Ridership Concept.



[1] Different people are willing and able to walk a different distance to transit. Different street environments make such a walk easier or harder. People will walk longer distances to services that offer shorter waits or faster speeds. Notwithstanding this variety in tolerable walking distances, we have assumed that someone is "proximate" to transit service if they are within 1/4 mile of a bus stop, as-the-crow-flies. Walking 1/4 mile over flat ground takes the average person about 5 minutes.

Proximity to frequent service is a key measure of ridership potential. Frequent service is more expensive relative to the area it covers, but it is more useful and therefore tends to attract higher ridership. Thus, the more people and jobs near frequent service, the more a network is achieving a ridership goal.

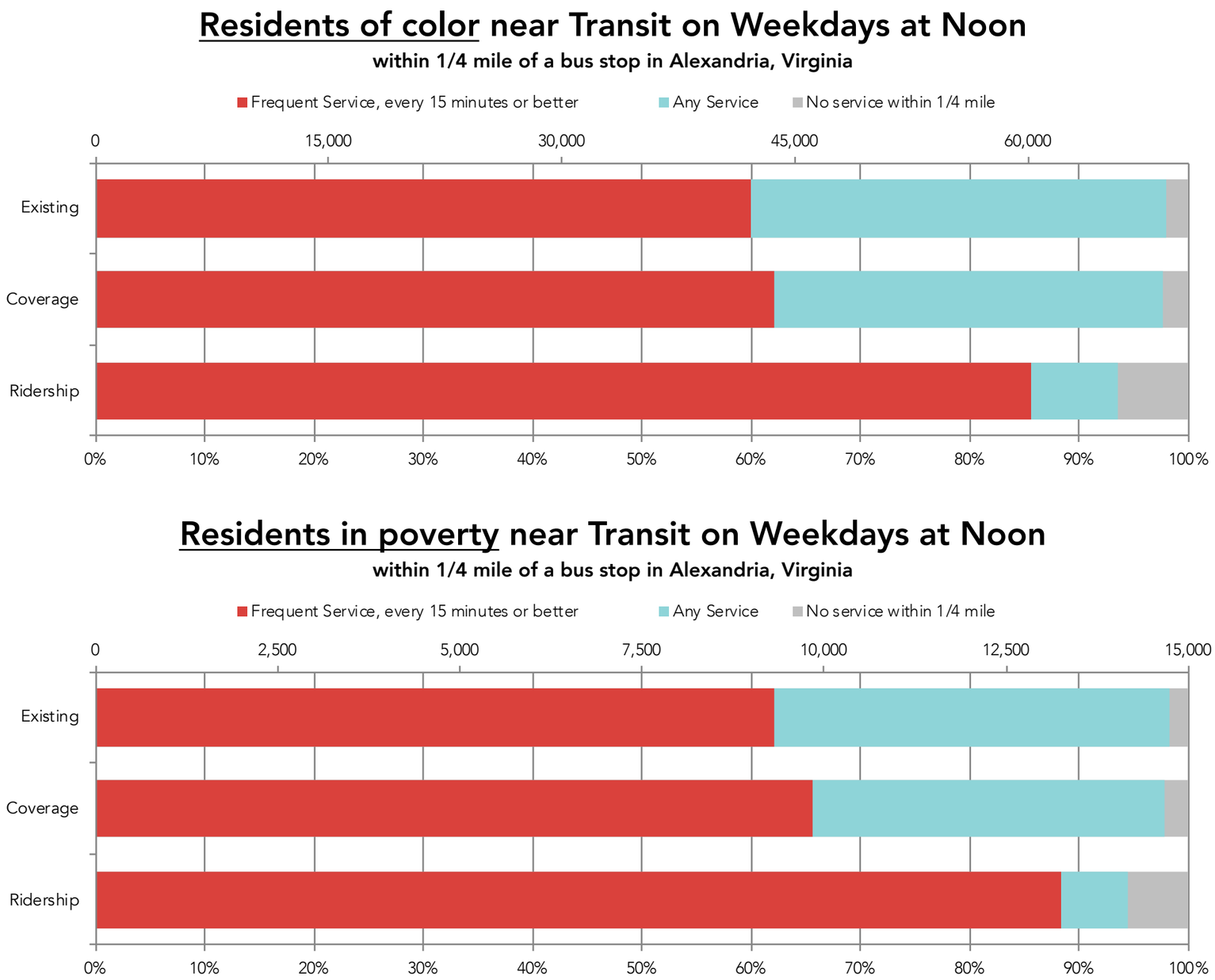
The gain in proximity to frequent service, and the loss in proximity to non-frequent services, in the Ridership Concept is another illustration of the geometric trade-off between ridership and coverage goals.

Transit is often tasked with providing affordable transportation for low-income residents, which is why agencies provide service to some people and areas, regardless of ridership potential. Federal laws also protect those with low incomes from disparate transportation impacts, which is why agencies sometimes provide transit service in places where poverty is high, even if this does not maximize ridership. Similarly, federal civil rights laws (particularly Title VI) requires that transit agencies assess the impacts of changes to service on minority communities to ensure there are no disproportionate negative impacts.

The charts to the right show the differences in proximity to service for residents of color and residents in poverty. Similar to the effects on all people, the Coverage Concept has similar levels of proximity to both groups, with nearly all being within 1/4 mile of any service in the existing system and Coverage Concept. In the Coverage Concept, the number of residents of color and residents in poverty who are near frequent service increases slightly.

Under the Ridership Concept, the numbers of residents of color and residents in poverty who are near frequent service increases dramatically, while the number near any service declines slightly. This is similar to the effects of the Ridership Concept on all residents.

Figure 22: As with all residents, more people of color and people in poverty have access to any service in the Coverage Concept, but far more have access to frequent service with the Ridership Concept.



Isochrones: Maps of Liberty and Opportunity

Putting transit, even high-frequency transit, near people is not enough to attract large numbers of people to actually ride. Transit needs to go where they want to go, and also when they want to go.

A proximity analysis only tells us how many people are near transit, not where and when transit meets their needs. We need a way to describe the kind of access that becomes possible on a complete and connected transit network.

We can do that by asking a question like, "Where can I get in 30 minutes on this network?" To answer that question, we analyze every trip that can be made by walking and transit. The geographic border around the trips you can take in a set amount of time is called an "isochrone."

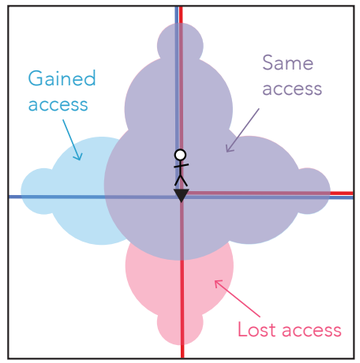
We refer to these as maps of liberty and opportunity because they show how free someone is to access the opportunities around them using transit.

Large isochrones, centered on places where large numbers of people live, mean not only that ridership will be high, but also that a great number of people will be free to pursue the opportunities offered across the urban area.

Everyone's Time is Valuable

All kinds of people find that their time is valuable, especially low-income and working people. Because their time is valuable, they will find another option if riding transit takes too long.[1] For low-income people, the other option might be to buy a car (and forgo other opportunities to cover the cost); to use a taxi, Uber, or Lyft; to get a ride from someone; or, worst of all, to simply not make the trip.

Ridership is not the only payoff of large isochrones. Liberty and opportunity have their own value to the community, aside from how they affect transit ridership. For lower income people, transportation is the biggest barrier to employment, and can also limit access to education. When low-income people are able to get to more places in less time, it means they have more choices in their lives, and in that sense, more freedom.



How to Read Isochrones

In the sample isochrones in this chapter, you will see a dot at the starting location. Around this starting point are blobs of color, which show where a person could be, in the noted amount of time, by some combination of walking and riding transit.[2]

The three colors on the map mean:

- **Blue:** Areas that would become accessible in the concept but are not accessible in the existing network.
- **Red:** Areas that are accessible in the existing network but would no longer be accessible in the concept.
- **Purple:** Areas that are accessible in the existing network and would remain accessible in the concept.

The sample isochrones in this chapter show how far someone could get within 30 minutes of travel. When looking at these isochrones, keep in mind that:

- Waiting time counts![3]
- A long walk to a high-frequency route can get people farther, faster, than a short walk to an infrequent route.
- Much of the access shown in these isochrones isn't reached via a single route, but rather two routes, or one bus route and a transfer to Metrorail. Especially with more high-frequency routes in the Ridership Concept, some places are reachable quickly even when the trip involves a transfer.

You can use this tool to think about access in the reverse. For a worksite or store at the center of the isochrone, it shows who could readily get there—the employees it could attract or the customers who could shop there.

Not Just the Area – Also What is Inside the Area

The real measure of usefulness is not just how much geographic area we can reach, but how many useful destinations are in that area.

This is why each map on the next four pages reports the change in the numbers of jobs and residents within each isochrone, relative to the existing network. This is also why the access analysis shown on page 26 takes into account not just the areas that are reachable within a certain amount of time, but also the number of people living or working in those areas.

It has long been known that ridership arises from service being useful, for more people, to get to more busy places. That's why predictive models of ridership do this very same analysis behind-the-scenes.

The isochrones on the next few pages compare the Coverage and Ridership Concepts to the existing network for eight locations around Alexandria.

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[1] Travel time is not the only reason to choose transit, but it is a major factor in nearly every potential rider's decision. Subjective features such as comfort, amenity, and perceptions of safety also influence the choice. Those other factors matter less until the service is basically useful—it takes people where they want to go in an amount of time they find reasonable.

[2] The isochrones assume that people must walk along the street network. The isochrone accounts for situations in which there are few through-streets and walking is harder; however, it conversely doesn't account for opportunities to walk across parking lots, lawns, and parks.

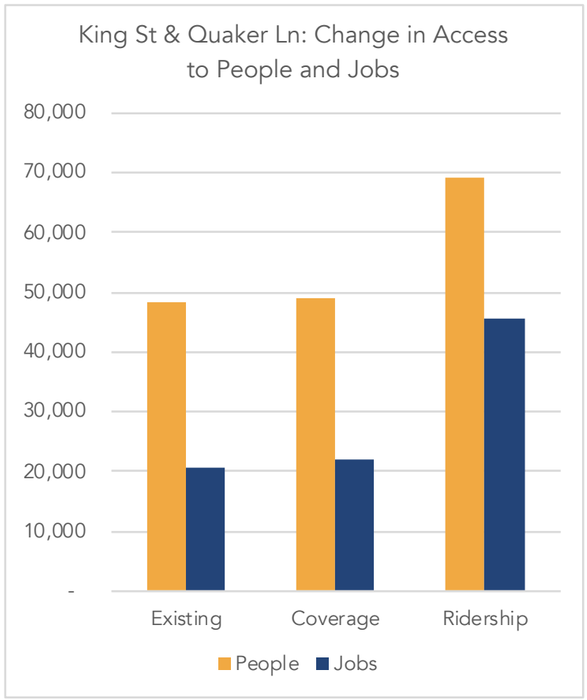
[3] Even if you don't wait at the bus stop, a lower-frequency route often makes you wait at your destination because it forces you to arrive very early (rather than be late). Very few people have the liberty of arriving whenever they please for all of their trips, and no one can make it so that they are released from events like doctor's appointments or movies at exactly the right time to catch the bus home. Riding transit means waiting somewhere. The more frequent the transit, the shorter the wait. On average, you will wait one-half of the frequency of the route, and that is the waiting time assumed in these isochrones.

T.C. Williams/Bradlee Shopping Center

From the intersection of King Street and Quaker Lane (near T.C. Williams High School and the Bradlee Shopping Center), the isochrone maps to the right show that both concepts have an increase in access to residents and jobs over the existing network. Both show some loss of access to the Seminary Road corridor near I-395 because both concepts include the rerouting of Metrobus 28A to Duke Street.

In the Coverage Concept, 2% more residents and 6% more jobs can be reach in 30 minutes. The additional access is largely due to the improved frequency of service along King Street provided by the combined C4/C5 routes.

In the Ridership Concept, access to Old Town improves dramatically in part because the 15-minute frequent service on the R4 (King Street Route) continues through Old Town. Therefore, all connections between the high-frequency routes in Old Town (10A/B, R1, R2, R3) become easier, with less waiting time.



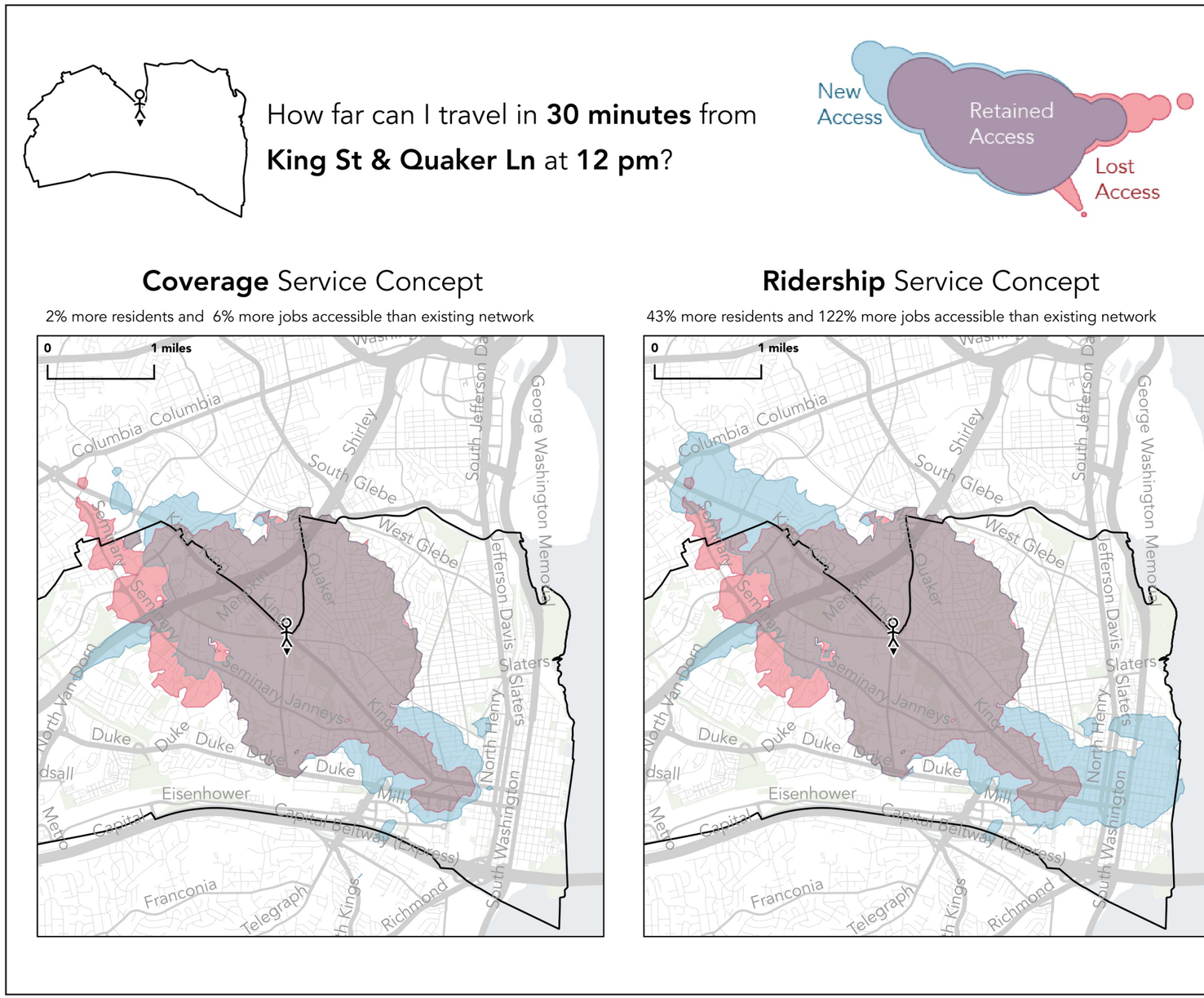
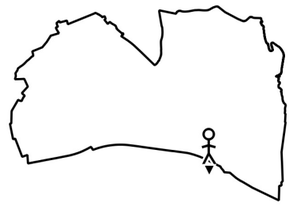


Figure 23: Isochrone showing the change in access from King Street and Quaker Lane.

Other Example Isochrones

On this and the following six pages are examples of the access changes in eight other locations around the city. Each map and chart follows the same pattern as the map and chart on this page. The locations provided include:

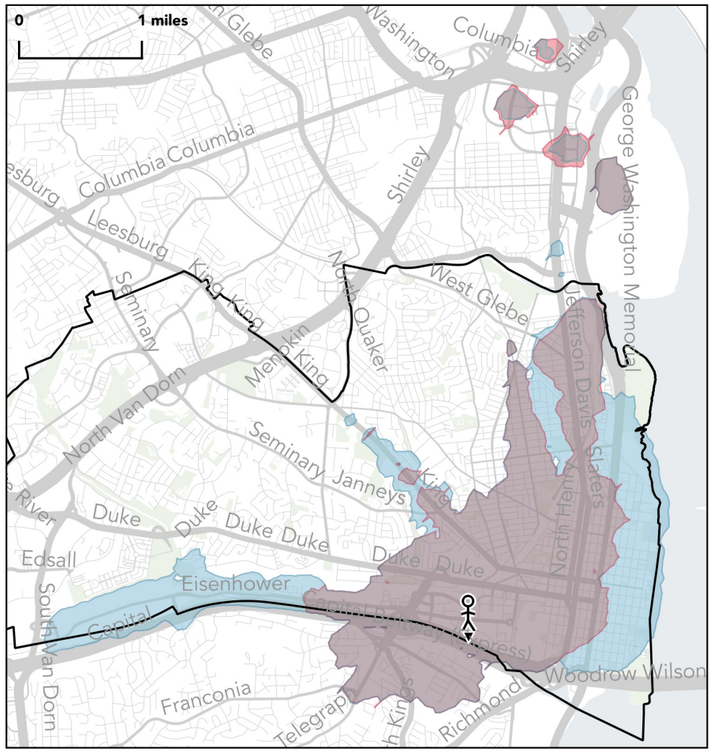
- Eisenhower East (this page)
- Inova Hospital
- Landmark Mall
- Mark Center
- Mount Vernon Ave & Del Ray Ave
- Old Town (King St & Washington St)
- Arlandria (W Glebe & Old Dominion)



How far can I travel in **30 minutes** from **Eisenhower East** at **12 pm**?

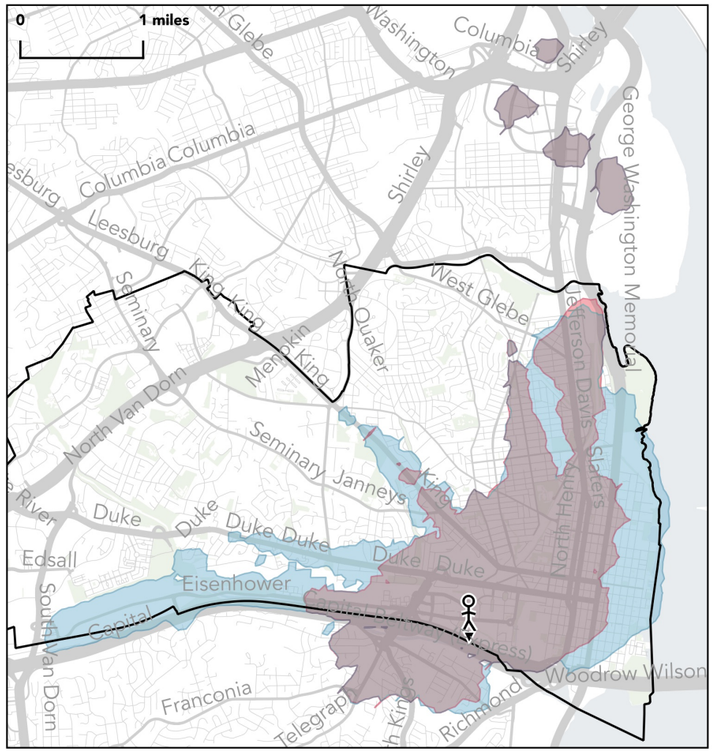
Coverage Service Concept

29% more residents and 50% more jobs accessible than existing network

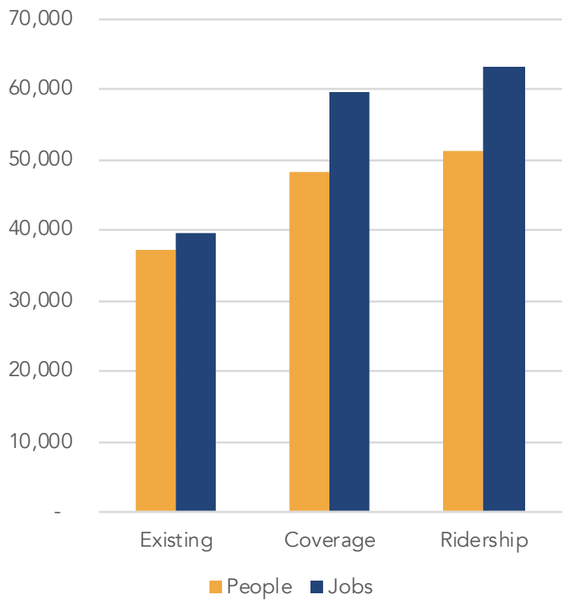


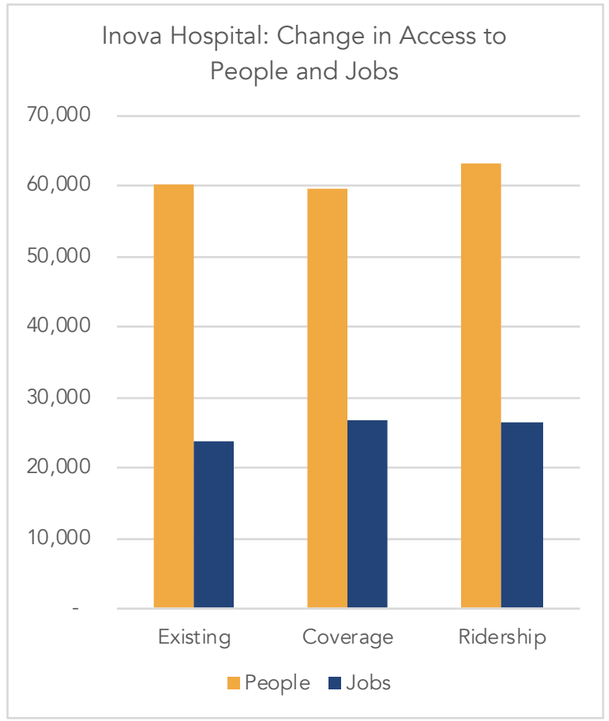
Ridership Service Concept

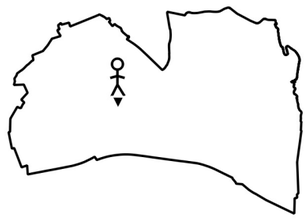
37% more residents and 59% more jobs accessible than existing network



Eisenhower East: Change in Access to People and Jobs



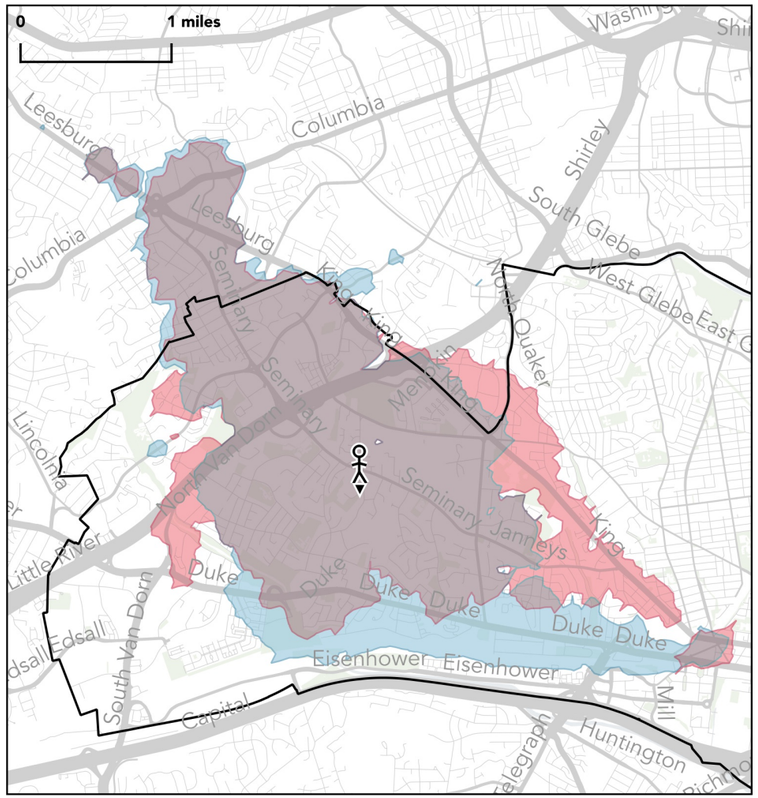




How far can I travel in **30 minutes** from **Inova Alexandria Hospital** at **12 pm**?

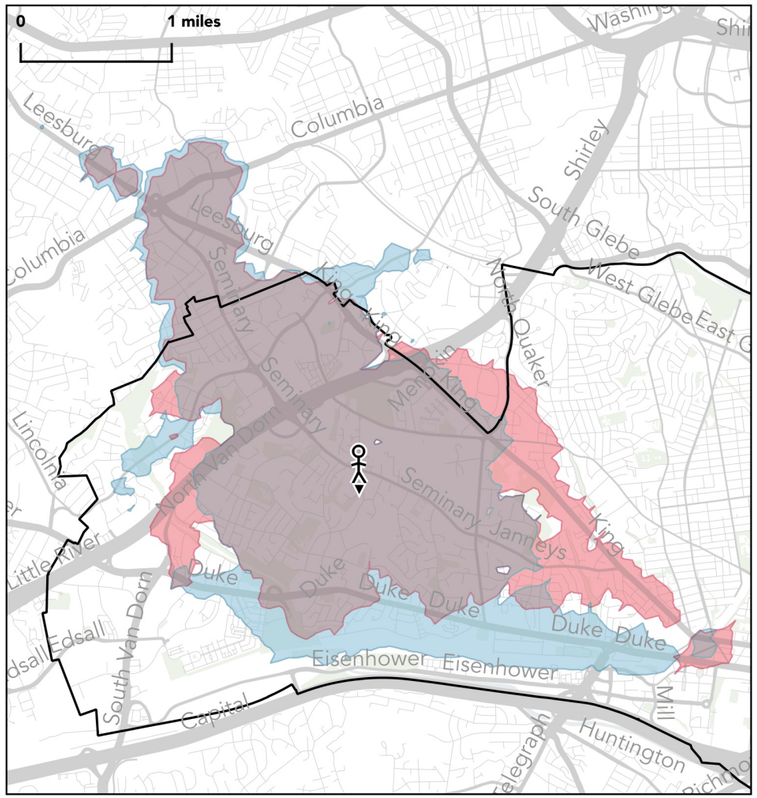
Coverage Service Concept

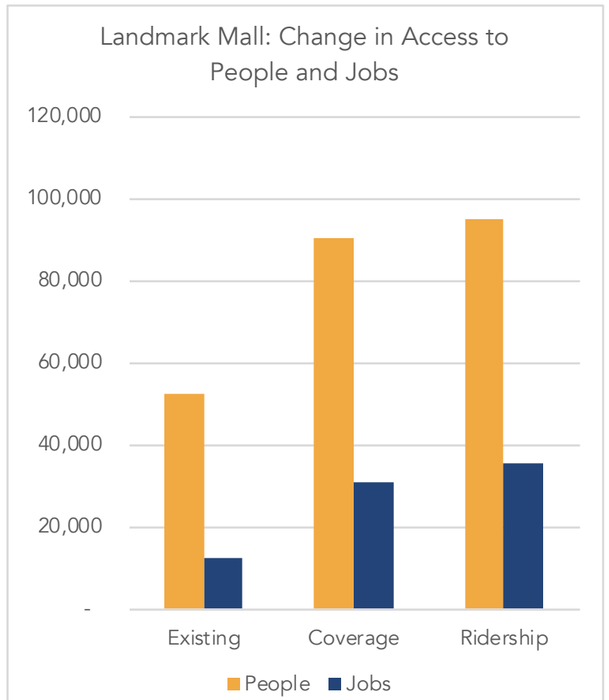
1% fewer residents and 14% more jobs accessible than existing network



Ridership Service Concept

5% more residents and 13% more jobs accessible than existing network

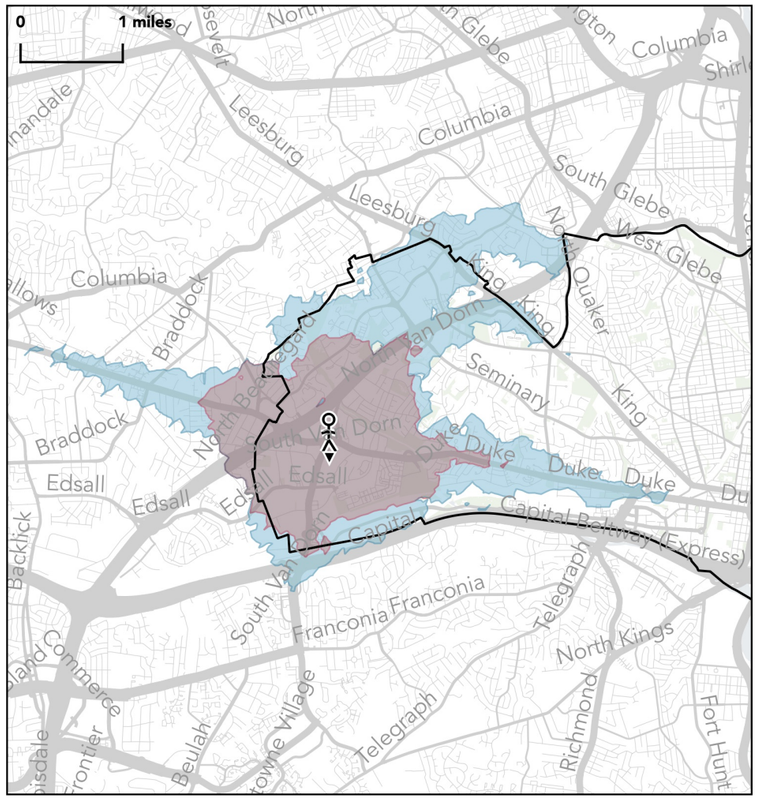




How far can I travel in **30 minutes** from **Landmark Mall** at **12 pm**?

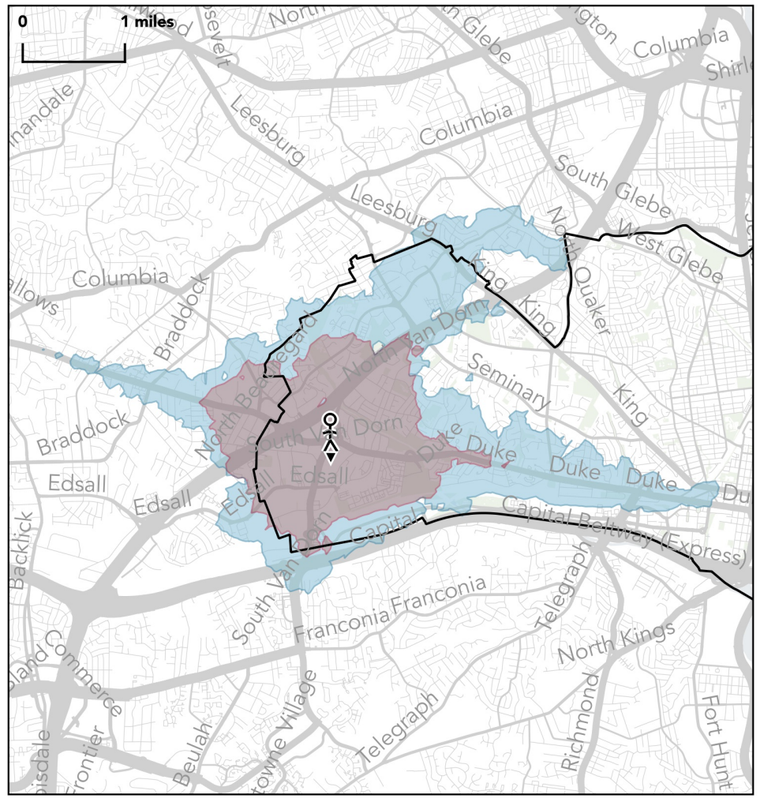
Coverage Service Concept

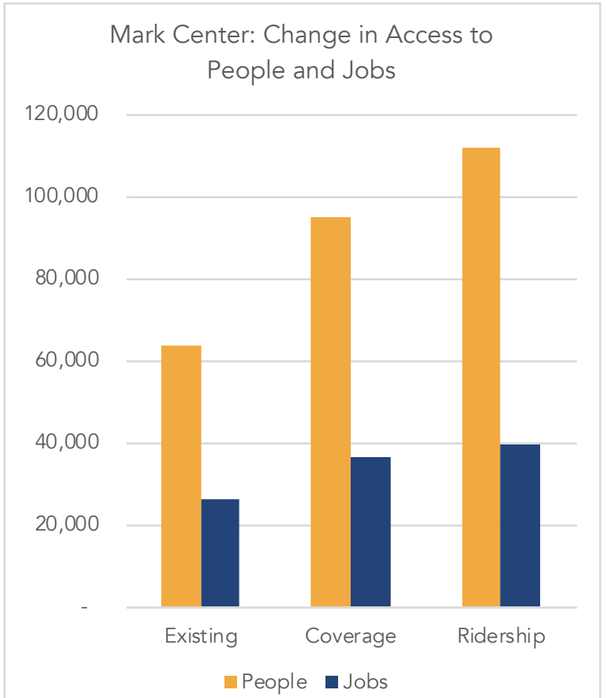
72% more residents and 144% more jobs accessible than existing network



Ridership Service Concept

81% more residents and 184% more jobs accessible than existing network

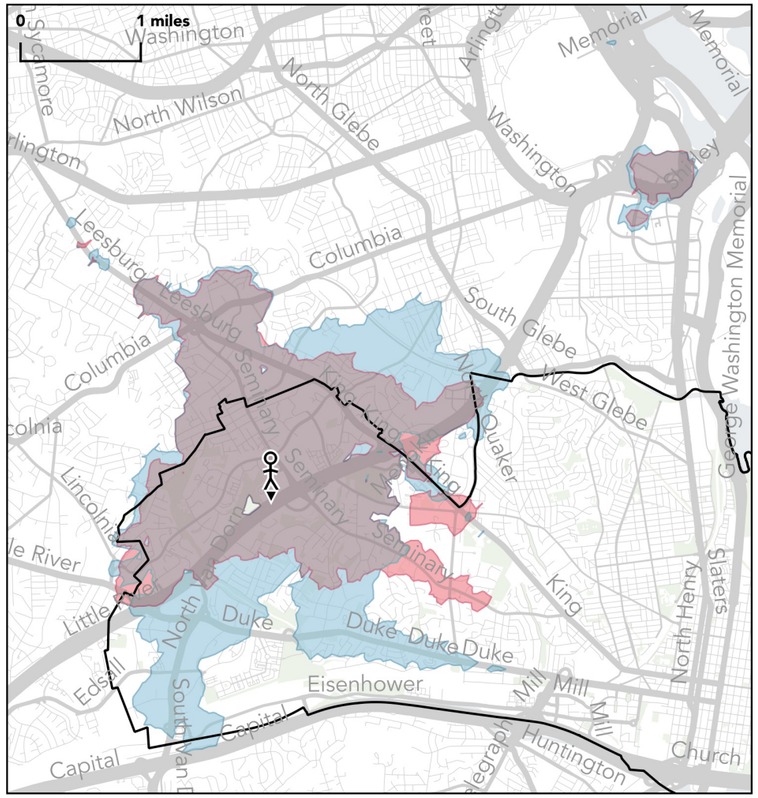




How far can I travel in **30 minutes** from **Mark Center** at **12 pm**?

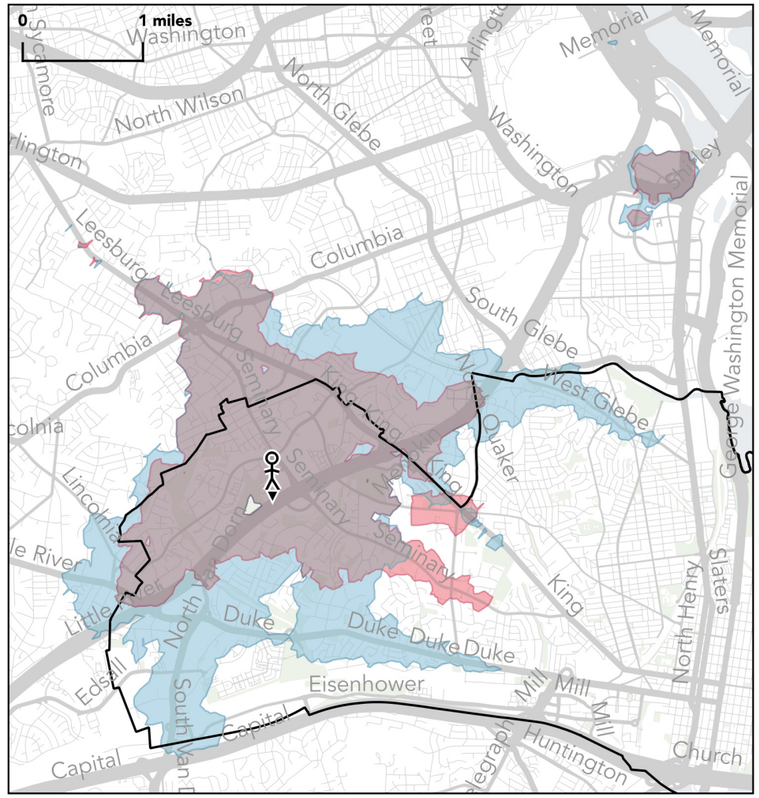
Coverage Service Concept

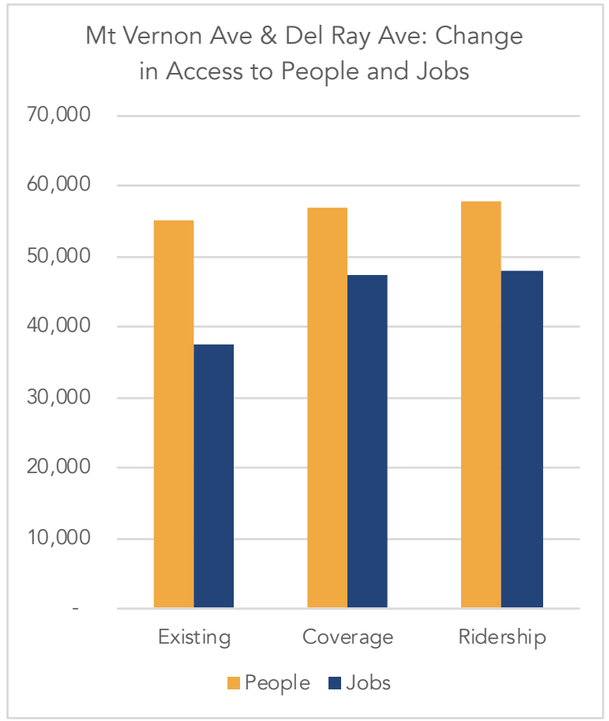
49% more residents and 39% more jobs accessible than existing network

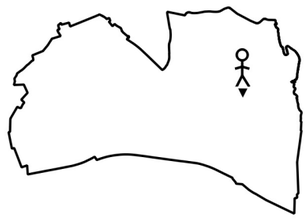


Ridership Service Concept

75% more residents and 51% more jobs accessible than existing network



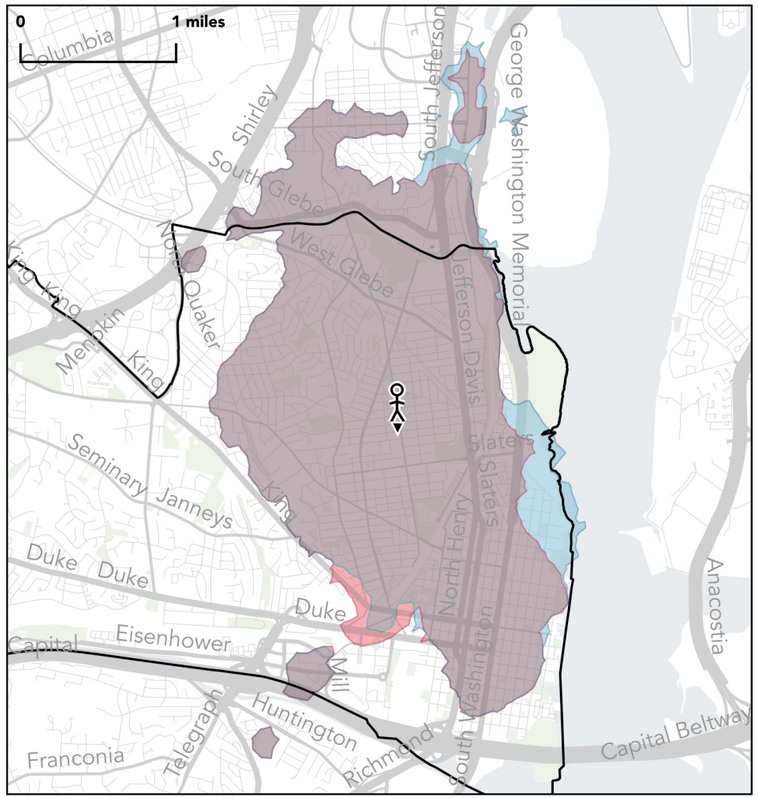




How far can I travel in **30 minutes** from **Mt Vernon & Del Ray Ave** at **12 pm**?

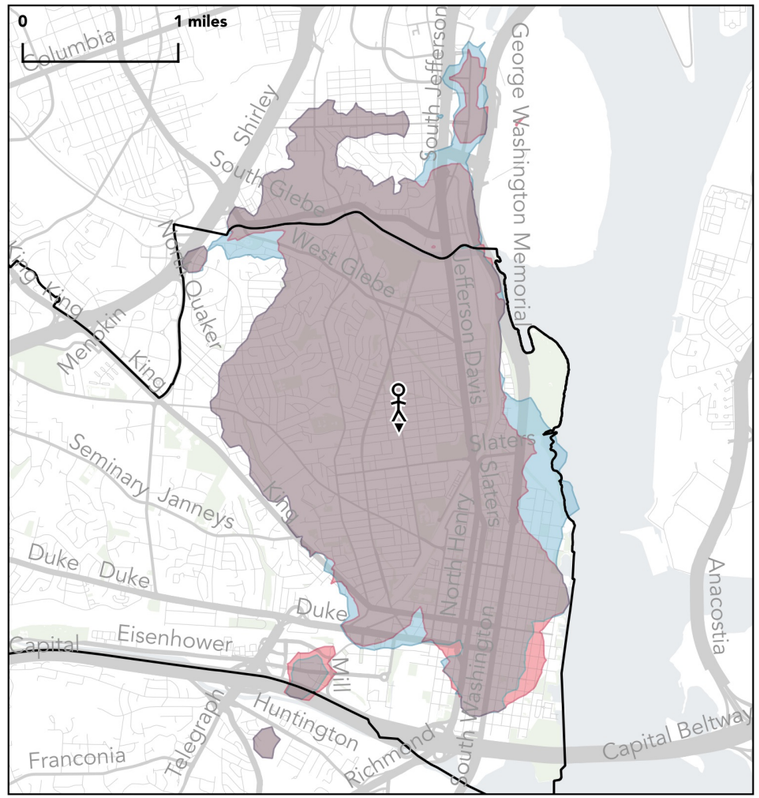
Coverage Service Concept

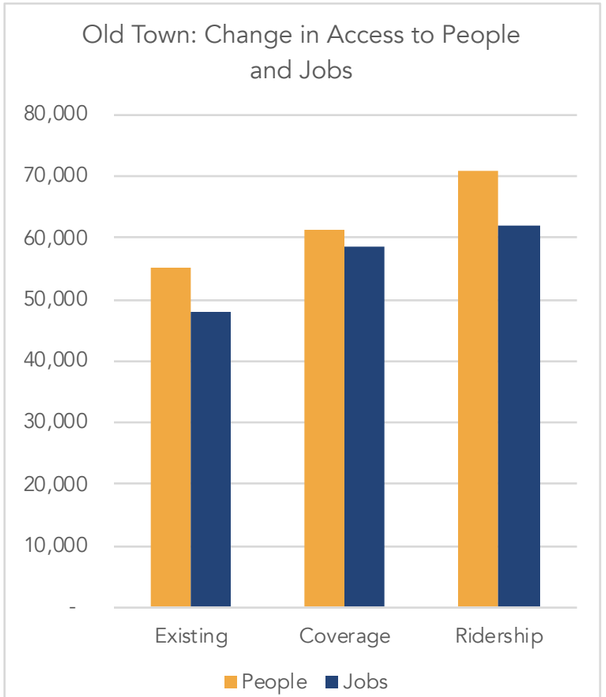
3% more residents and 26% more jobs accessible than existing network

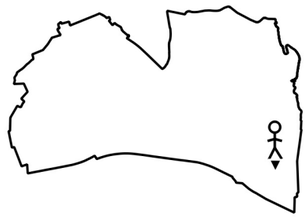


Ridership Service Concept

5% more residents and 28% more jobs accessible than existing network



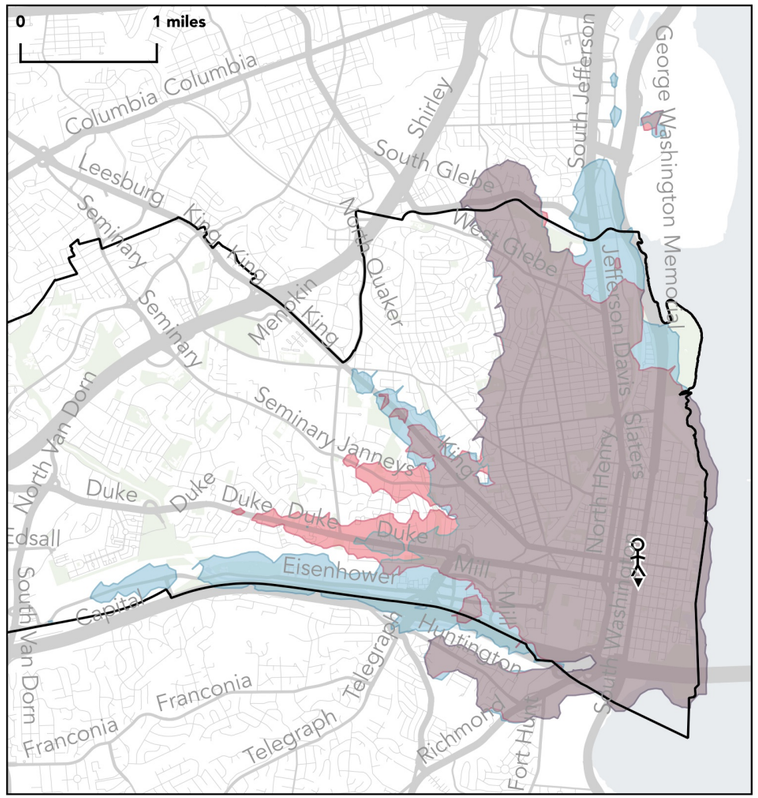




How far can I travel in **30 minutes** from **Old Town** at **12 pm**?

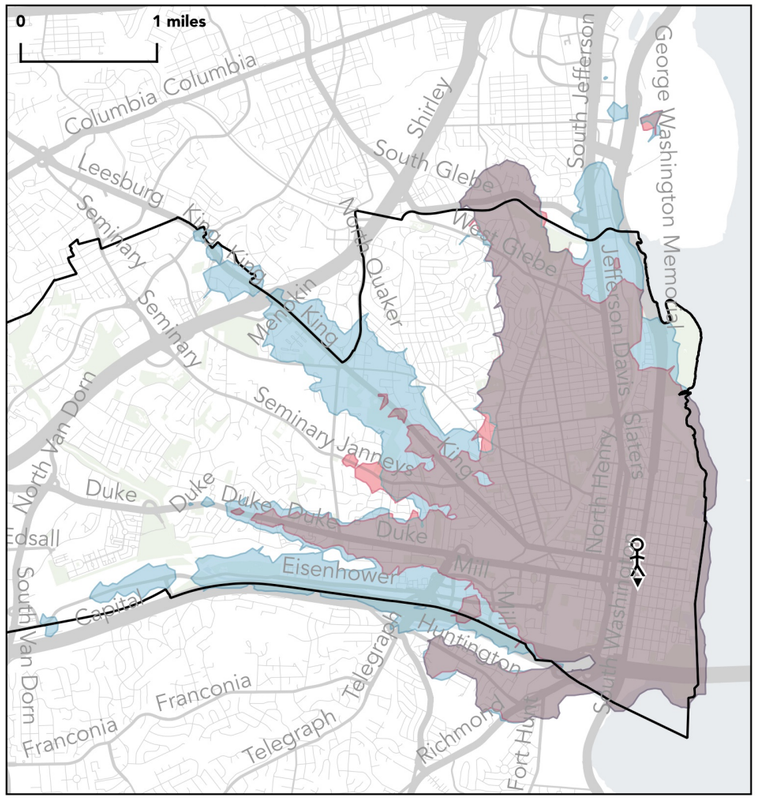
Coverage Service Concept

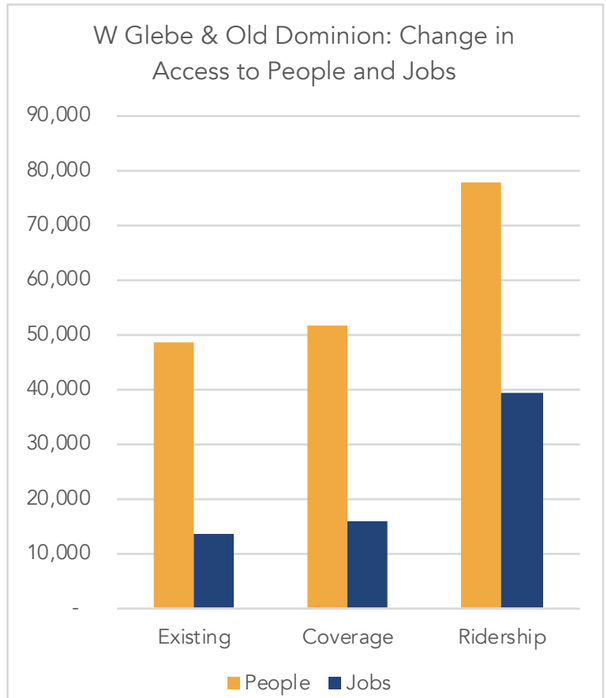
11% more residents and 22% more jobs accessible than existing network

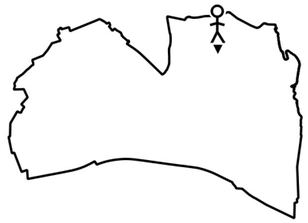


Ridership Service Concept

28% more residents and 29% more jobs accessible than existing network



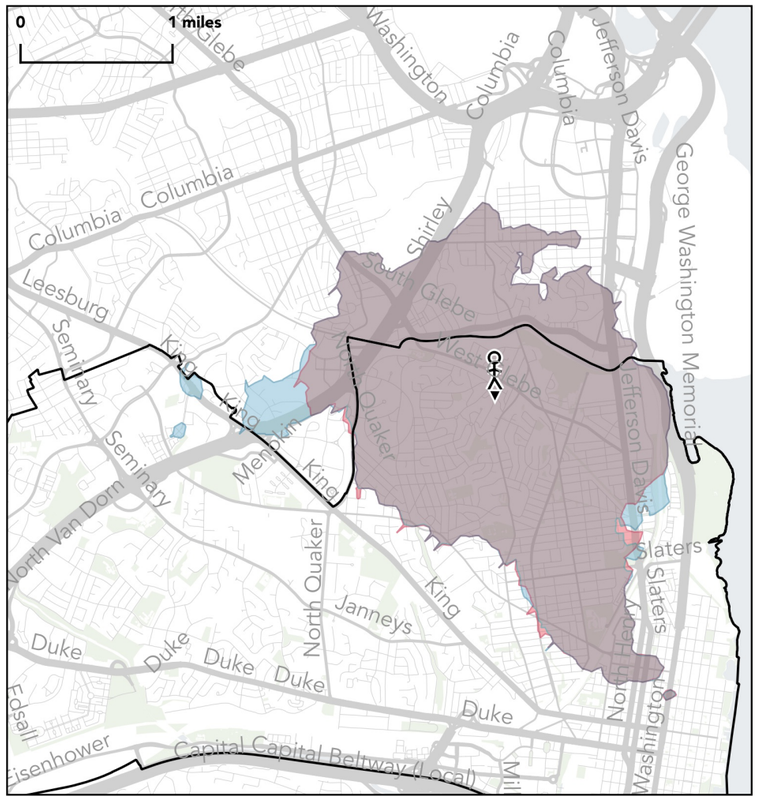




How far can I travel in **30 minutes** from **W Glebe & Old Dominion** at **12 pm**?

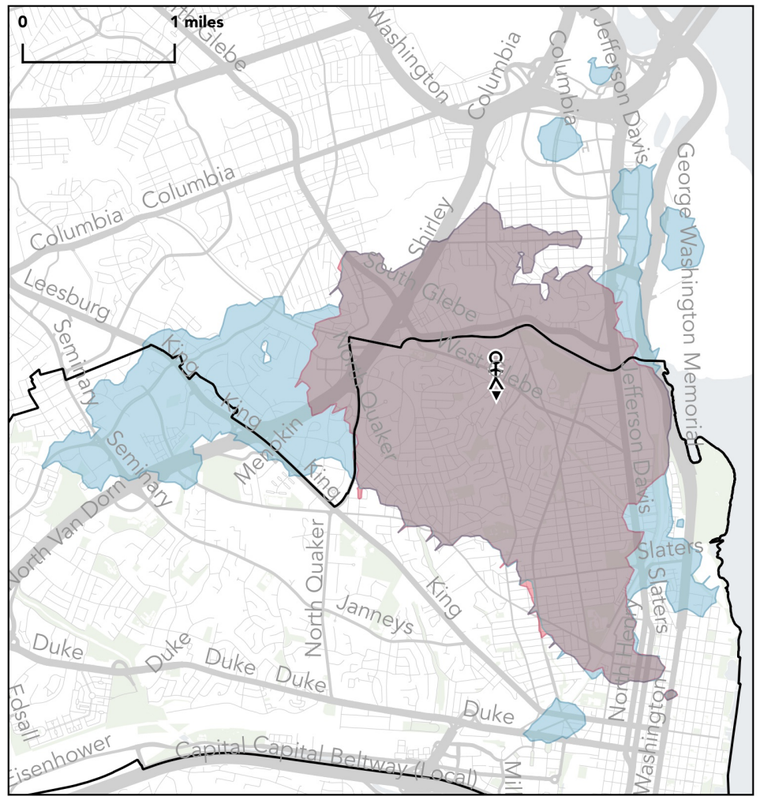
Coverage Service Concept

6% more residents and 16% more jobs accessible than existing network



Ridership Service Concept

60% more residents and 189% more jobs accessible than existing network



Access to National Landing

The newly branded National Landing area was announced in November 2018 as home of one of Amazon's new headquarters 'HQ2'. The concepts were designed just prior to the announcement, yet the National Landing area, which encompasses the Pentagon City, Crystal City, and Potomac Yard Metrorail stations areas, and the Innovation Campus in the Oakville Triangle area of Alexandria, are or were planned to be major job centers and were therefore considered important destinations as the concepts were designed.

Information published to date shows that most Amazon jobs will likely be closer to Pentagon City. Nevertheless, all three Metrorail station areas will likely be home to many new jobs and residents as additional development occurs around the area.

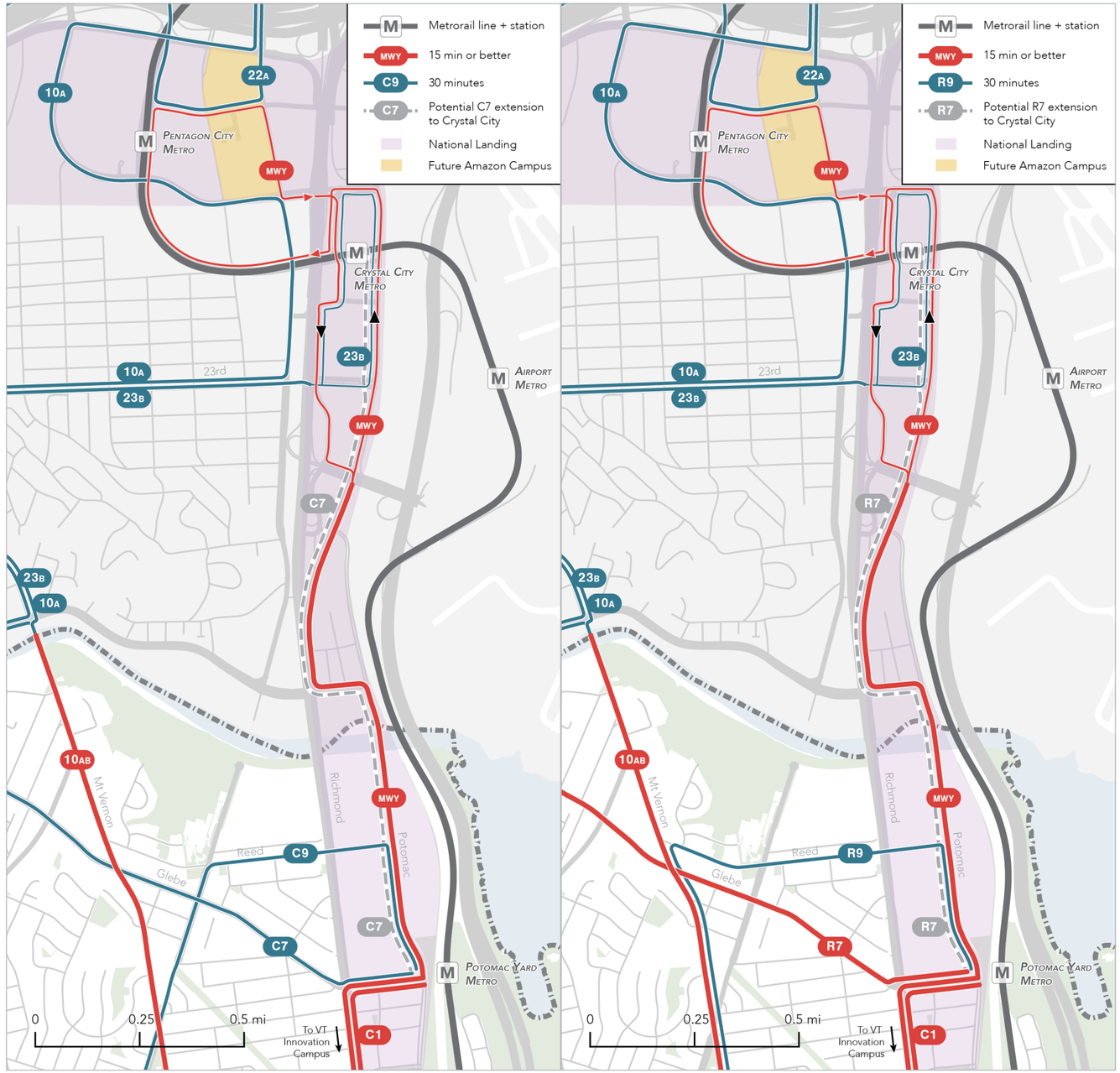
With Metrorail access, the new Metrorail station at Potomac Yard, and Metroway, most of eastern Alexandria has relatively good transit access to National Landing. When looking at access to National Landing from western Alexandria, the new C7 route in the Coverage Concept or R7 route in the Ridership Concept would both provide direct access from western Alexandria to Potomac Yard, where a frequent connection to Metrorail or Metroway would provide easy access to northern Potomac Yard and southern Crystal City. For people starting their trip south of Seminary Road, a connection via the 7M route, or a more direct peak route at peak times to Pentagon, would generally be the fastest way to reach either Crystal City or Pentagon City.

Given the importance of this job center, it is worthwhile to consider if additional improvements could further improve access to National Landing. Going forward, the study team will assess the costs and benefits of additional improvements such as:

- Changing the pattern of how peak routes and other routes that travel along I-395 terminate in and around the Pentagon and Pentagon City area.
- Increasing the frequency of WMATA Route 23B, which goes from Ballston to Shirlington to Crystal City.
- Extending Route R7 in Ridership or C7 in Coverage north from Potomac Yard following the Metroway alignment and ending at Crystal City (as shown in Figure 24).

The team will work in close coordination with Arlington County and WMATA through the remainder of the visioning process and into later phases of planning for implementation to understand these service patterns in context of the key choices.

Figure 24: One possibility to improve access to National Landing would be to extend the C7 in the Coverage Concept or the R7 in the Ridership Concept north into Crystal City.



4. Key Choices and Next Steps

Key Choices

The two contrasting concepts presented in this report illustrate many of the key choices considered in the Alexandria Transit Vision process. The public and stakeholders are being consulted about these key choices, and these concepts are one step in that consultation.

How Should Alexandria Balance High Ridership with Wide Coverage?

There is a policy-level choice for City leaders, in particular the City Council and DASH Board, about the importance of high ridership. Within a fixed budget, increasing ridership requires reducing coverage. Both goals are valued, so how should the City trade them off against one another?

This trade-off can also be expressed as "Frequency vs. Coverage" or even "Span vs. Coverage" since those trade-offs are forced by the basic math of transit. Concentrating service into more frequent routes, or routes with longer spans of service each day and week, means that less service is available to spread around and cover more areas. Frequency and span are both key parts of a high-ridership strategy.

Recall that high ridership serves several popular goals for transit, including:

- Reducing car costs, emissions and traffic.
- Achieving low public subsidy per rider.
- Allowing denser development without an enormous traffic congestion.
- Giving people more personal and economic freedom.

On the other hand, many popular transit goals do not require high ridership in order to be achieved. These include:

- Ensuring that everyone in Alexandria has access to some transit service, no matter where they live.
- Providing lifeline access to critical services.
- Providing access for people with severe needs.

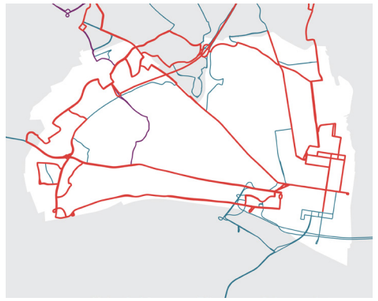
No transit agency focuses solely on just one of these goals. Most transit agencies have some direct, frequent, long-span routes on which ridership and productivity are high, and others which run at lower frequencies and more limited times, for specific coverage purposes. Both concepts that have been provided include services that meet some of each goal.

Alexandrians should think about this choice not as binary, "yes or no" or either/or decision, but as a sliding scale (as in the drawing to the right) that the community can help to set, using these concepts to help frame the range of possibilities for that spectrum.

This is not a technical question, but one that relates to the values and needs of a community.

In Phase 1 of public and stakeholder engagement, responses indicated that the community was interested in a shift toward ridership goals and higher frequency. The existing system is about 50% ridership and 50% coverage. The Coverage Concept spends about 70% of its resources on ridership goals, and about 30% on coverage goals. The Ridership Concept spends about 90% of its resources on ridership goals and about 10% on coverage goals. So these concepts show the community the outcomes of shifting toward ridership goals, either slightly or more dramatically. With these concepts, the community can consider more clearly the direction it wants to shift—either toward higher ridership or toward wider coverage—and how fast Alexandrians want to make that shift.

Ridership Concept



Coverage Concept

Where should the transit network be, on this spectrum?

Figure 25: The two concepts shown in this report represent opposite ends of the spectrum for possible approaches that could be taken to redesign the Alexandria transit network.

How much of the transit budget should Alexandria spend on the most useful service, in pursuit of high ridership? How much should Alexandria spend providing coverage so that people with acute needs have access to some service?

How Much Transit Does Alexandria Want?

Wrestling with how to balance ridership and coverage, and altering the transit network to meet new, clearer goals and match community values, may improve people's sense that the transit network is delivering on their goals and is therefore worth further investment.

As discussed in the Choices Report, Alexandria is growing, and is expected to grow by about 20% in both jobs and residents from 2015 to 2030[1]. The typical transit demand curve tells us that the forecasted increases in density will greatly increase the demand for transit. Since transit is one of the most space-efficient forms of mobility, it is absolutely essential that transit service increase if the City wishes to grow without traffic becoming an impossible burden.

The challenge of maintaining and improving mobility in a growing city that is increasing in density can also be addressed through improving other space-efficient modes, like walking and biking. In addition, new technology solutions, like bike share, scooter share, and car sharing, can play a role in reducing the number of private cars and vehicular traffic.

Since both concepts assume the city's projected growth, both include 20% more service or roughly two percent annual growth in service levels between now and 2030. That new service would require additional financial resources from the City or others to pay for more buses and more drivers to provide the additional service. The increased access shown in the isochrone results, and the improved proximity to frequent service seen in both concepts, would not be possible without the additional service.

So a key question for stakeholders and the public is whether or not to invest more in transit, and if so how much more?

How much should Alexandria invest in transit service, considering its plans for development and forecasted growth?

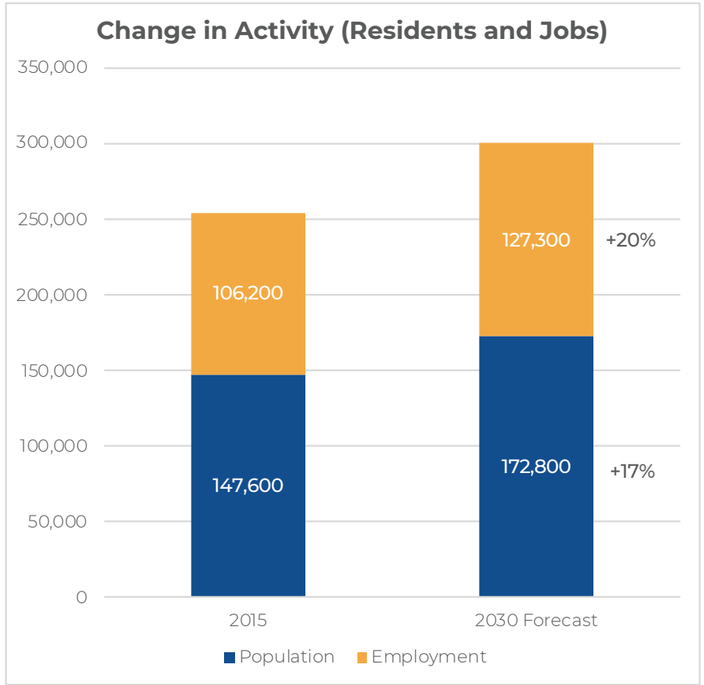


Figure 26: Population and employment in Alexandria is expected to increase by about 20% by 2030.

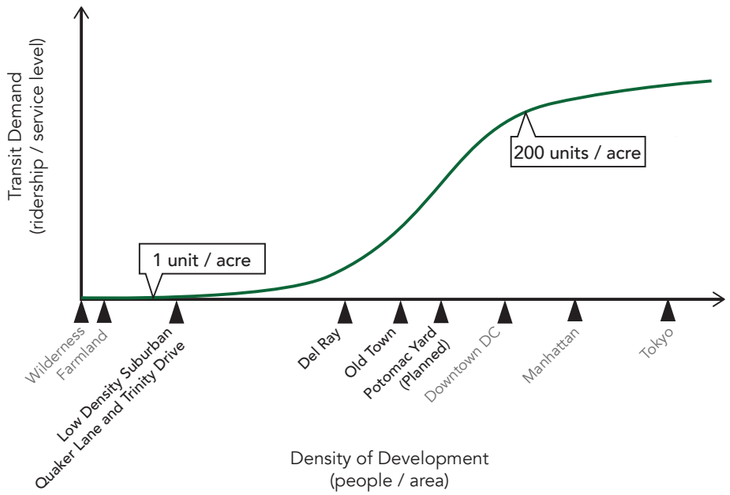


Figure 27: As density increases beyond suburban levels, transit demand increases faster than density.

[1] Per regional forecasts from the Metropolitan Washington Council of Governments

Next Steps

This report is the second step in the Alexandria Transit Vision. It kicks off a second round of public engagement in the choices faced by the City and DASH.

In the fall of 2018, starting with the publication of a Choices Report (which can be downloaded from the project website), the public was consulted on key transit trade-offs that the City and DASH must make in the future design of its service.

In the spring of 2019, these concepts will give people a more vivid illustration of the range of possibilities for the future, with regards to a major trade-off: how to balance ridership and coverage goals within the existing budget.

In the summer of 2019, this process will produce a Network Plan, incorporating input from the first two rounds of engagement and guidance from the DASH board. If the City and DASH decide to move ahead with any of the recommendations of that Network Plan, then there will be additional community engagement, first when those recommendations are incorporated into DASH's updated Transit Development Plan, and again before any actual service changes are made.

We hope you will encourage other people you know to learn about this effort and get involved by:

- Visiting the project website and encouraging others to read this report.
- Joining the email list by contacting either Steve Sindiong (City of Alexandria) at 703.746.4047 or steve.sindiong@alexandriava.gov or Martin Barna (DASH) at 703.746.5644 or martin.barna@alexandriava.gov.
- Providing input via an online survey, which will be available from February 18 to March 18 at the project website.
- Meeting the project team at a public event—places and times are listed on the project website and will be announced to the project email list as well.

Figure 28: This Concepts Report starts the second of three rounds of engagement during the Alexandria Transit Vision.