

## Chapter 2

### Goals, Objectives, and Standards

## 1.0 Introduction

There are a series of published goals and objectives and service standards that act as frameworks to guide transit operations, development, and investment within Alexandria. These include strategic goals and objectives for long-term transit development as outlined in the Transit section of the City of Alexandria's Transportation Master Plan as well as service standards and service design principles for both the DASH system (including standards used to guide recommendations made in the DASH system Comprehensive Operations Analysis) and WMATA service within the City. Each of these is summarized below.

## 2.0 Transit Section of the Transportation Master Plan

The transit section of the City's Transportation Master Plan outlines *"a progressive vision for the future of travel within the City of Alexandria with the development of the City of Alexandria Transit Concept Plan"*. The basis of this vision is *"a system of innovative transit vehicles operating along three primary transit corridors within secure rights-of-way dedicated exclusively to transit use. These corridors will provide access to the City's major population and activity centers, and connectivity to local and regional destinations. The state-of-the-art vehicles will provide for a clean, quiet, enjoyable commuting experience, resulting in minimal impact on existing neighborhoods, traffic routes, and the environment. The City's new transit system will be linked through circulator shuttles as well as intermediate transit services offered via DASH that complete the transit network, providing access to all residents who are not located in direct proximity of the newly designated transit corridors. The entire transit network will be linked by way of Smart Stops, Shelters, and Stations along all transit routes"*.

The Transit Concept Plan outlines the primary components of the proposed system as well as a framework for the system's implementation. The overall framework for the concept plan is based on the goal and objective, as follows:

**Goal:** Ensure that people can travel into, within and out of the City of Alexandria by providing a mass transit system that combines different modes of travel into a seamless, comprehensive and coordinated effort.

**Objective:** A reliable and convenient mass transit system integrated with surrounding land uses and existing transportation connections that offers travel time savings and an enjoyable transit experience for its riders, featuring advanced technology and passenger amenities.

This overarching strategic goal and objective is further elaborated upon within the Transit Concept Plan with a discussion of the primary issue facing transit in the City and a proposed comprehensive solution to the issue:

**Issue: Transit is not viewed as a comparable alternative to the private automobile** (as stated in the Transit Concept Plan) – Metrobus, Metrorail, Virginia Railway Express, and DASH lack the flexibility, efficiency, and convenience of the automobile. Transit usage is often a result of necessity versus choice and is generally perceived unfavorably, particularly concerning reliability and safety. Insufficient service hours, geographic coverage, capacity and frequency have all been identified as problems. Lack of real-time information, long headways, difficulty of transfers, and lack of connections to preferred destinations discourage existing and potential riders.

**Solution: Secure dedicated, congestion free, transit rights-of-way for future transit services using advanced technologies** (as stated in the Transit Concept Plan) – The main emphasis of the Transit Concept Plan is to secure dedicated, congestion free, transit rights-of-way for future transit services. The expansion of transit and dedicated lanes will provide the residents of Alexandria an alternative mode of travel that is fast, efficient, comfortable, and reliable. Existing local bus service in general, is characterized by frequent stops routed along, or traveling on congested roads, thus offering limited incentives to riders in terms of travel time, comfort, and convenience. The Transit Concept Plan’s success will hinge upon the ability to provide superior transit service levels that:

- Are competitive with the private automobile;
- Coordinate feeder services and enhancements to the existing local transit services offered by DASH; and
- Connect with existing local and regional services including WMATA Metrorail, commuter rail, other rail-based transit services, and major highway portals.

This transit concept must be fully integrated with existing regional services and coordinated with future services in order to truly serve Alexandrians. The City will work diligently to foster regional cooperation and coordination with the future transit plans of Arlington, Fairfax and other regional entities to ensure that new services are coordinated, and provide the most efficient means of operation.

Three corridors were identified as part of Transit Concept Plan

- Corridor A – Route 1/North-South recommendation – this corridor runs between the Braddock Road Metro Station north along Route 1 and through Potomac Yards. This corridor then extends into the Potomac Yard and Crystal City areas of Arlington. This corridor has recently been implemented as the new Metroway service.
- Corridor B – Duke Street/Eisenhower Avenue – This overall corridor, which consists of a number of alternative alignments, provides a critical link between Alexandria and Fairfax County. Traveling east from Fairfax County the corridor will provide access to the Landmark Mall area, Foxchase, Alexandria Commons, and the King Street Metrorail Station. At its eastern terminus Corridor B will follow a loop around the East Eisenhower area.
- Corridor C – Corridor C is currently in the NEPA/Preliminary engineering phase of project development. The proposed Build Alternative alignment would start in the south at the Van Dorn Metrorail station and would continue north via Van Dorn Street. Service would divert from Van Dorn to serve the Landmark Mall. From there it would continue north on Van Dorn and transition to the Beauregard Street corridor via Sanger Lane. After serving the Mark Center, the alignment would split. One leg would enter I-395 at Seminary Road and run directly to the Pentagon via the I-395 HOV lanes. The second leg would run through the Northern Virginia Community College campus and then cross into Arlington via Walter Reed Drive before accessing I-395 via Arlington Mill Drive. Once on I-395, this leg would run into the Pentagon via the HOV lanes.

To support the implementation of Transit Concept, the following actions and strategies were developed:

- T1. The City will conduct extensive public outreach to educate citizens and stakeholders on the proposed concept, the process, and to determine where the greatest support lies for implementation of a major transit investment.
- T2. The City will coordinate closely with adjacent jurisdictions, specifically Arlington County, Prince George’s County in Maryland, Fairfax County, WMATA, the City of Fairfax and other stakeholders to ensure that the City Transit Concept is integrated into existing services where feasible and to explore opportunities for future connections that would provide for enhanced regional connectivity.
- T3. The City will prioritize transit corridors for investment.
- T4. The City will develop corridor-specific plans for dedicated transit lanes along these corridors and ensure that new developments do not preclude development of dedicated transit lanes.
- T5. The City will identify locations for smart stations that will serve both the new system and existing transit modes.
- T6. The City will ensure that development and redevelopment does not preclude efforts to expand public transit infrastructure.
- T7. The City will further identify specific transit mode technology and newest techniques best suited in the identified transit corridors and for the system as a whole.
- T8. The City will integrate existing DASH bus service with new transit system elements for DASH to serve as a high-frequency feeder system.
- T9. The City will incorporate traffic signal priority, traffic signal changes, pedestrian and other on-street enhancements into the new system for the benefit of transit vehicles and riders.
- T10. The City will create Transportation Management Plans, Transit Overlay Zoning Districts, Parking Management Zones etc. to coordinate efforts to support the system.
- T11. The City will investigate potential funding available through existing, new, and innovative revenue sources.
  - Develop a funding priority plan that identifies potential funding opportunities, applicability, deadlines and requirements for requesting funds.
- T12. The City will develop an extensive public outreach and marketing campaign to energize the citizenry around Alexandria’s transportation future.
- T13. The City will coordinate with pertinent Alexandria Boards and Commissions, such as the Commission on Aging and the Alexandria Commission on Persons with Disabilities, to ensure that the special needs of all citizens are considered.

The Transit Concept Plan also discusses generally the need to integrate transit and land use and specifically advocates for a policy to encourage future transit supportive land-use and also proposes City

Department of Planning and Zoning efforts to adequately review and comment on all new land use/development adjacent to the designated transitway corridors, including:

- Identification of rights-of-way to be dedicated as part of future development planning or approvals.
- Encouragement and coordination of an appropriate mixture and density of activity around transit stations.

### 3.0 Service Evaluation Metrics

DASH recently completed a Comprehensive Operations Analysis (COA) of its system and one element of the analysis was an evaluation of existing DASH service. This existing service analysis incorporated two evaluations, one of service performance and one of service quality and customer experience.

The service performance evaluation relied on three metrics, outlined below:

- **Service Effectiveness (Productivity) – Boardings per Revenue Hour** – No specific standard for boardings per revenue hour was set for the COA but boardings per revenue hour were evaluated for each route by day for weekdays, Saturdays and Sundays and were further broken out for weekdays by time of day and by route segment. A proposed standard for future service evaluations would be for a route to be identified as productive if it's boardings per revenue hour equals or exceeds 24, which is the average boardings per revenue hour of the systems evaluated in the peer analysis contained in Chapter 3.
- **Financial Effectiveness (Farebox Recovery)** – Farebox recovery was the first of two financial effectiveness metrics utilized in the COA. No specific standard for farebox recovery was set for the COA but total all-day farebox recovery data was provided for weekday, Saturday, and Sunday service. Fare recovery was further broken out by segment for all-day weekday. A proposed standard for future service evaluations would be for a route to be considered financially effective if its farebox recovery is equal to or exceeds 23%. This is the average fare recovery for the systems evaluated in the peer analysis in Chapter 3.
- **Financial Effectiveness (Subsidy per Passenger)** – The second financial effectiveness metric utilized in the COA was subsidy per passenger. As with the other metrics, no specific standard for subsidy per passenger was set for the COA but total all-day subsidy per passenger was provided for weekday, Saturday, and Sunday service. Subsidy per passenger was further broken out by segment for all-day weekday. A potential standard for future service evaluations would be for a route to be considered financially effective if its subsidy per passenger were equal to or below \$5.00.

The results of this analysis were utilized in the development of COA service recommendations and were also an important resource in the development of this Transit Development Plan.

A financial effectiveness measure that was not utilized in the COA but which should be considered for future service evaluations would be cost per boarding. A proposed standard for cost per boarding is that a route is considered financially effective if its cost per boarding is equal to or below \$4.40 per hour, which is the average cost per boarding for the systems evaluated in the peer analysis in Chapter 3.

A final proposed evaluation metric is boardings per revenue mile. The proposed metric is that a route is considered productive if its boardings per revenue mile meet or exceed 2.15, the average for the systems evaluated in Chapter 3.

The service quality and customer experience evaluation incorporated six metrics, each of which is summarized below.

- Passenger wait time (service frequency) – the first of the service quality and customer experience evaluation metrics utilized in the COA was service frequency. As with the performance evaluation metrics, a specific service frequency standard was not set but weekday service frequency data was generated and presented for each DASH route for both the peak and off-peak time periods as well as all-day data for Saturday and Sunday. A proposed frequency standard, reflecting the urban nature of Alexandria, is 15 minute service in the weekday peak and 30 minutes in the weekday off-peak and 30 minutes on weekends.
- Travel time (operating speed) – all day operating speed data was generated for each DASH route on weekdays. In addition, weekday operating speed by line segment for each DASH route was also generated and presented in the COA.
- Service Reliability (on-time performance) – All-day weekday on-time performance data was generated and presented as part of the COA analysis.
- Access to coverage (stop spacing and coverage) – Stop spacing, or distance between stops, data was generated and presented for each route in the DASH system.
- Capacity utilization (passenger loads) – Passenger load data was evaluated in the COA in order to determine if there are crowding issues on DASH routes. The findings showed that one route, the AT8, experienced crowding on select peak period trips but that crowding was not an issue on other routes during the week or on Saturdays and Sundays.
- Customer comments – In addition to the numerical-based evaluations described above, the service quality and customer experience evaluation incorporated a review of customer comments received from on-board and telephone survey.

As with the performance evaluation, the results of the service quality and customer experience evaluation were utilized in the development of the COA service recommendations and were also an important resource in the development of this Transit Development Plan.

#### 4.0 Service Design Goals and Strategies

In addition to the evaluation metrics described above, a series of goals and strategies were also developed as part of the COA to guide the development of the recommendations made in the COA. As with the evaluation metrics outlined above, these design goals and strategies were an important resource in the development of this Transit Development Plan.

- **Goal 1 – Build on Market Strengths.** This overall category focused on three areas that provide a strong basis for current and future DASH service.

*Strategies*

- Support population and employment growth – the significant growth occurring in Alexandria, including the growth in population and employment density, provides a strong basis for a successful DASH system.
  - Maintain community support for the DASH system.
  - Maintain Metrorail and Metrobus Presence – Investment around existing and planned Metrorail stations supports ongoing community growth and supports transit usage. Ensuring efficient transit connections at Metrorail stations is vital to the performance of DASH service.
- **Goal 2 – Build on Success of Current Network.** This overall category focuses on enhancing DASH service based on a strong existing transit network.

*Strategies*

- Support strong corridors – there are currently strong transit corridors already in place within Alexandria and this principle states that transit investment should build on these existing strengths.
  - Serve high density trip generators – a second design principle related to the current network is to link key customer origins to activity centers throughout Alexandria in order to best leverage the DASH system.
  - Integrate with other transit modes – this principle focuses on schedule coordination at key transit hubs within Alexandria in order to enhance overall network connectivity.
- **Goal 3 – Enhance the Customer Experience.** This overall category focuses on enhancing the customer experience on DASH in order to make it more attractive to riders and to enhance its role in providing mobility to Alexandria residents.

*Strategies*

- Add more frequent service – this design principle focuses on creating spontaneous use, or walk up, DASH service frequencies (ideally 10 minutes during peak and 15 minutes minimum, including during the off-peak) and streamlining routes where possible to reduce customer waits and travel times. These efforts would lead to a network focused on fast and frequent service that would support network synergy on both the DASH system and the overall regional network.
- Leverage technology – this design principle focuses on advance technology such as automated vehicle location (AVL), on-board automated passenger counters (APC) and computer aided dispatch (CAD). AVL allows DASH to communicate real-time information such as next bus arrivals to customers, thus enhancing customer convenience. Automated passenger counters provide detailed passenger boarding and alighting and passenger load data, thus allowing for sophisticated service planning backed by detailed data. Computer aided dispatch allows for greater control of vehicles in service, thus ensuring optimized service on a day-to-day basis.

- **Goal 4 – Improve Financial Sustainability.** This overall category focuses on ensuring the DASH system as currently operated as well as in the future is financially sustainable:

*Strategies*

- Effectively use resources – this design principle is focused on the best use of limited financial resources and states that efficiency should be designed into each route and the DASH network overall and that resources should be focused where transit is most competitive.
- Grow ridership – this design principle states that increased ridership increases revenues, thus decreasing the required subsidy. This decrease in required subsidy allows more service to be operated with the same subsidy.
- Properly match service needs to demand – this design principle states simply that service levels should be consistent with market demand for service. The principle further states that DASH service frequencies should be supportive of Metrorail frequencies and frequencies on the proposed transitways.

## 5.0 WMATA Productivity and Service Standards

As noted above, WMATA is an important provider of regional bus service within Alexandria. When evaluating service, WMATA currently relies on a set of productivity and service standards that have been used in each of the Priority Corridor Network (PCN) restructuring studies. WMATA is currently working on updating these standards but this effort has not been finalized. The current standards utilized are outlined below:

- Service Standards – WMATA has two service standards; one related to hours of service and one related to service frequencies. These standards are further segregated based on the characteristics of the route’s service area. For an urban route class, which reflects the densely populated nature of Alexandria, the service standards are as follows:
  - Hours of Service Standards
    - Weekday
      - The first AM trip of the day should arrive at its final destination terminus no later than 7:00 AM.
      - The final trip of the day should depart from its starting terminus no earlier than 10:00 PM.
    - Saturday
      - The first AM trip of the day should arrive at its final destination terminus no later than 7:00 AM.
      - The final trip of the day should depart from its starting terminus no earlier than 10:00 PM.
    - Sunday
      - The first AM trip of the day should arrive at its final destination terminus no later than 8:00 AM.
      - The final trip of the day should depart from its starting terminus no earlier than 10:00 PM.
  - Service Frequency Standards

- Weekday
  - Minimum service frequency – peak period – 15 minutes
  - Minimum service frequency – mid-day – 30 minutes
- Weekend
  - Minimum service frequency – all day – 30 minutes
- Productivity and Financial Effectiveness Standards – WMATA has outlined the following productivity and financial effectiveness standards in their Metrobus Service Guidelines. These metrics are calculated by Metrobus line type: regional or non-regional, with the metrics for a regional line compared against all other regional lines and a non-regional line compared against all other non-regional lines.

The metrics are as follows:

- Ridership: If ridership on a line is less than 1/8 the average line ridership for the entire Metrobus system for its line type (regional or non-regional), the line fails to meet the minimum criteria for ridership.
- Cost Recovery: A line must recover at least ½ the average cost recovery for the entire Metrobus system for its line type in order to meet the minimum criteria for cost recovery.
- Average Subsidy per Passenger: A line fails to meet the minimum criteria for subsidy per passenger when its subsidy per passenger is at least twice the system average for its line type.
- Passengers per Revenue Trip: If passengers-per-trip on a line is less than 1/3 the system average for its line type then the line fails to meet the minimum criteria for passengers per trip.
- Passengers per Revenue Mile: If passengers-per-revenue mile on a line is less than 1/3 the system average for its line type then the line fails to meet the minimum criteria for passengers per revenue mile.