

LOWER KING STREET MULTIMODAL FEASIBILITY STUDY

Existing Conditions Memorandum

Prepared by: Toole Design Group with Kittelson and Associates

Prepared for: City of Alexandria

May 30, 2014



Alexandria City Hall
301 King St.
Alexandria, VA 22314



8484 Georgia Ave
Suite 800
Silver Spring, MD 20910



1850 Centennial Park Dr
Suite 130
Reston, Virginia 20191

1. INTRODUCTION

This memorandum establishes a baseline of existing multimodal conditions for the Lower King Street Multimodal Feasibility Study, which focuses on the 100 block of King Street (from Lee Street in the west to Union Street in the east, as shown in **Figure 1**) and the surrounding area in Old Town Alexandria, Virginia. The purpose of this study is to develop solutions that transform the 100 block of King Street into a gateway to Old Town and the revitalized Alexandria waterfront and that balance the street to address the needs of all users.

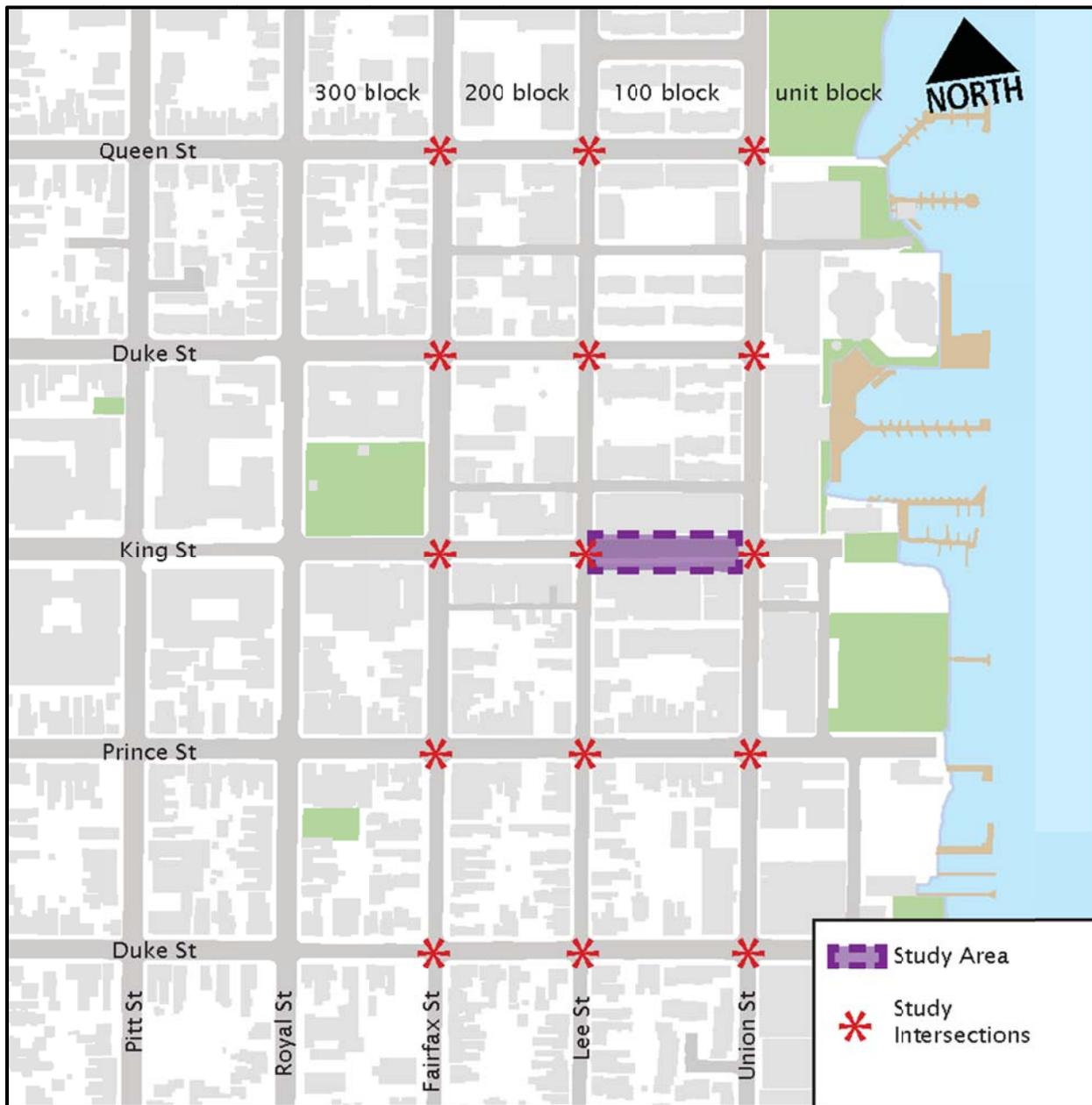


Figure 1: Study Area and Intersections Location Map



This memorandum summarizes the findings in the discovery phase of the project, including data collection and civic engagement, which established a baseline understanding of existing operations, issues, needs, constraints, and opportunities within the study area. Further, the existing conditions analysis includes an extensive traffic analysis (see **Attachment A**) at 15 intersections surrounding the study area, as shown in **Figure 1**. The information presented in this memorandum will inform the future feasibility study and future-year analysis.

2. BACKGROUND

King Street serves as a destination for people who work or live in the Old Town neighborhood, residents of the City of Alexandria and the metropolitan Washington, DC region, and tourists from around the world. Lower King Street is the heart of historic Old Town, with retail and restaurants serving these varying users. This feasibility study is preceded by several projects, studies, and plans, which all aim to improve Old Town as a regionally-significant destination.

2.1 Alexandria Waterfront Small Area Plan

The **Alexandria Waterfront Small Area Plan**, adopted by the City in 2012, identified King Street as a gateway to the City, and specifically noted that “the two blocks of King Street between Fairfax and Union Streets are among the City’s busiest during tourist season” (Chapter 3, Page 57). The Plan also recommended a pedestrian plaza at the unit block of King Street and the Strand, with easy access to the free King Street Trolley, which connects the waterfront to the King Street Metrorail Station. The Metrorail Station and the Alexandria Waterfront are approximately one mile apart.

This Lower King Street Multimodal Feasibility Study is an initiative based on the Plan’s recommendations to facilitate multimodal circulation along the Alexandria Waterfront in Old Town.

2.2 Other Completed and Ongoing Efforts

The 2005 **King Street Retail Strategy** provided a general overview of transportation, land use, and urban design issues along King Street and established a vision for the future of King Street, which initiated a number of additional studies, plans, and guidelines to expand upon this work.



The 2010 **Old Town Area Parking Study** evaluated on- and off-street parking in the Old Town vicinity. Recommendations included installing multi-space meters and extending meter hours, reviewing parking pricing, decreasing parking duration at high-turnover locations and residential permit districts, implementing wayfinding, and working with garage owners to improve ease of access to off-street parking. The Old Town Area Parking Study Work Group is a City-Manager-appointed stakeholder group which discusses key findings and observations from the study and advises City Staff.

The 2012 **Union Street Corridor Study** evaluated multimodal circulation and safety along the length of Union Street in Old Town and provided short- and long-term recommendations. The study, which was approved by the Transportation Commission, Planning Commission, and City Council, included the recommendation to transform Union Street between Prince Street and Cameron Street into a Shared Street and to pilot a pedestrian space at the foot of King Street. During this study, the Waterfront Commission recommended a study of the 100 block of King Street.

The ongoing **Waterfront Landscape Design Project** is evaluating and producing design plans for the landscape of the waterfront area, coordinating closely with the Flood Mitigation Project.

The ongoing **Waterfront Flood Mitigation Project** is engineering a flood mitigation design to reduce the impact of flooding along the Alexandria Waterfront, coordinating closely with the Landscape Design Project.

The **Foot of King Street Pedestrian Plaza** is a pilot project for a pedestrian plaza at the foot of King Street (between Union Street and the Strand) that will help extend the outdoor gathering space along lower King Street. The design includes a raised brick seating area that is defined by stone benches, planter boxes, and movable tables, chairs, and umbrellas. This location is a part of the Waterfront Landscape Design Project's detailed study and long-term design.

3. CIVIC ENGAGEMENT

The Lower King Street Multimodal Feasibility Study included an extensive civic engagement process, which involved City residents, business owners, the Waterfront Commission, other stakeholders, and the general public.



3.1 Stakeholder Engagement

The City hosted a walking tour of lower King Street on March 10, 2014 to meet with stakeholders on the site. Businesses on the unit, 100, and 200 blocks of King Street as well and adjacent blocks of Union, Prince, Cameron, Lee, and Fairfax Streets were invited to attend this tour and the focus group meeting that followed. Attendees included business owners and representatives from the Alexandria Convention and Visitors Association (ACVA), Alexandria Economic Development Partnership (AEDP), Alexandria Chamber of Commerce, Old Town Civic Association (OTCA), and Old Town Business and Professional Association (OTBPA). The purpose of this walking tour was to observe issues and opportunities for pedestrian, bicycle, automobile and transit improvements within the lower King Street area and to discuss land use, stormwater, and transportation concerns; integration of the Waterfront Plan; and other neighborhood livability issues.



March 10, 2014 Stakeholder Walking Tour

Following the Walking Tour, the City hosted three focus group meetings with (1) citizens, (2) businesses and tourism groups, and (3) various City departments. These meetings allowed various stakeholders to participate in a roundtable discussion of the issues and opportunities of lower King Street. A complete list of attendees is provided in **Attachment B**.



The project team also attended a Waterfront Commission meeting on February 18, 2014 and a Transportation Commission meeting on March 5, 2013, to present the study scope and goals and to gather feedback from the commission. The City also held a separate meeting with staff of the Alexandria Transit Company, which operates DASH and the free King Street Trolley, to discuss requirements and options for the trolley.

Key comments heard from stakeholders at these events emphasized the importance of:

- Providing case studies of shared street or pedestrian malls;
- A more walkable and pedestrian-friendly King Street;
- Attractive and functional design with good programming;
- Good wayfinding for all users;
- A plan for management and maintenance;
- Flexibility in design to meet the needs of different users at different times;
- Management of deliveries, motorcoaches, the King Street Trolley, and parking;
- Safety and congestion, particularly at the intersection of King and Union Streets.

3.5 Public Engagement

The City hosted an interactive public meeting on March 20, 2014, which included an overview of the project history, vision, and scope and a presentation on best practices for pedestrian plazas, shared streets, and great streets. The public was then asked to provide input via two interactive exercises.



March 20, 2014 Public Meeting



The first exercise collected visual preferences by allowing meeting attendees to select streetscape designs they liked and disliked from select examples of shared streets and pedestrian plazas. Generally, attendees liked the character, street trees, seating, and outdoor dining in the following images.



Photos preferred by the attendees of the public meeting on March 20, 2014

Detailed results of this exercise are provided in **Attachment B**. The second exercise asked attendees about their likes and dislikes of King Street today. Attendees also provided written general comments on their vision of the future of lower King Street. Generally, attendees:

- Expressed interest in a shared street and/or pedestrian-only street, though some preferred the existing design of King Street;
- Emphasized the importance of a high-quality, attractive streetscape with seating and outdoor dining;
- Shared concerns with conflicts between modes today and in the future;



4. EXISTING TRANSPORTATION CONDITIONS

This section describes the baseline of existing conditions of the 100 block of King Street and the surrounding area. All users of King Street were considered in this analysis, including pedestrians, bicyclists, users with disabilities, vehicles, motorcycles, delivery trucks, transit vehicles, emergency vehicles, and motorcoaches. Consideration was given to vehicle parking, valet parking, bicycle parking, delivery loading and unloading, motorcoach loading and unloading, outdoor dining, street composition, and other factors affecting safety, vibrancy, and mobility along King Street. **Figure 2** diagrams some of the existing conditions discussed in this section.

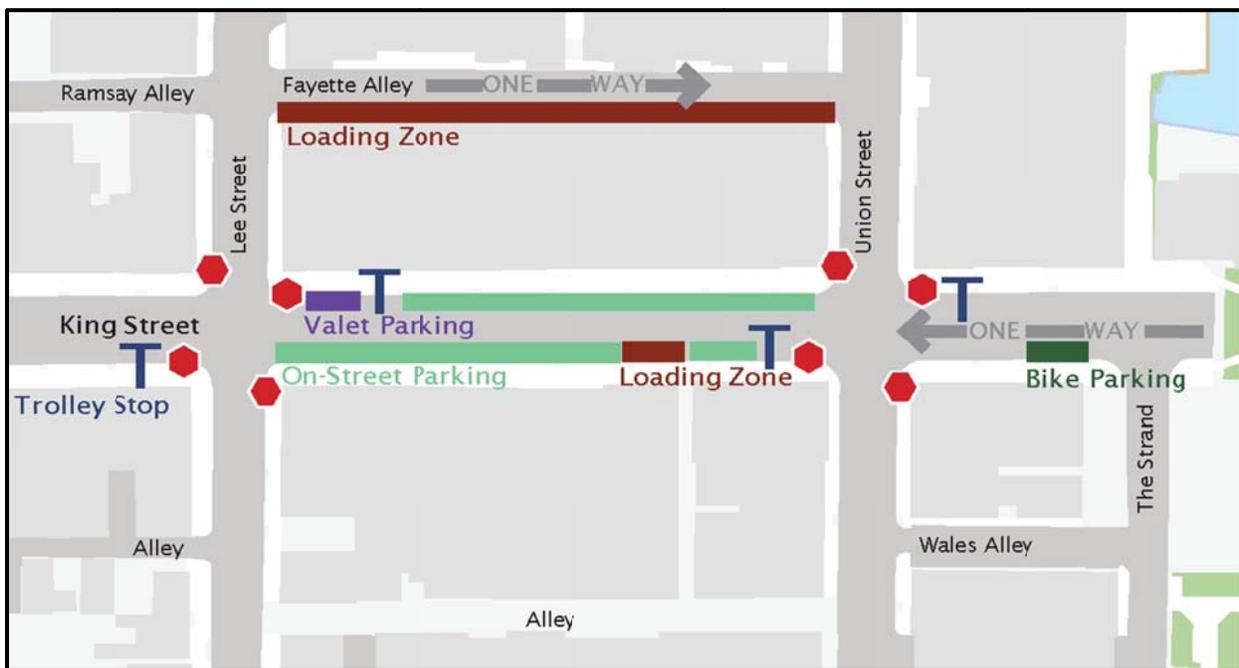


Figure 2: Lower King Street Existing Conditions Map

4.1 Existing Roadway Design

The existing King Street cross section consists of 65 feet from building face to building face. The north and south sidewalks are each approximately 14 feet from building face to face-of-curb. With a one-foot curb, outdoor dining, building frontage, and the furniture zone, which contains street trees, light posts, sign posts, parking meters, trash receptacles, etc., the effective sidewalk width, or the clear pedestrian zone, is 5 to 9 feet wide. **Figure 3** and **Figure 4** show two example cross sections along the north sidewalk where the effective sidewalk width varies.





Figure 3: Lower King Street Sidewalk Example Cross Section



Figure 4: Lower King Street Sidewalk Example Cross Section

The curb-to-curb width of King Street is 37 feet, with approximately 7.5 feet of parking on each side and two 11-foot travel lanes, as illustrated in **Figure 5**. There are no pavement markings delineating parking and travel lanes. The speed limit is 25 miles per hour. The 100 block of King Street is bounded by two all-way stop intersections with Lee Street to the west and Union Street to the east.





Figure 5: Lower King Street Curb-to-Curb Cross Section

4.2 Vehicles, Bicycles, and Pedestrians

Multimodal Traffic Volumes

Intersection movement counts represent the volume for each motor vehicle, heavy vehicle, and bicycle movement (i.e. left, thru and right) for each approach and the volume of pedestrians using each crosswalk at an intersection. Heavy vehicles include transit vehicles, motorcoaches, and delivery trucks. **Figure 6** and **Figure 7** illustrate the multimodal volumes for the Friday midday (12 PM – 1 PM) and Saturday afternoon (4 PM – 5 PM) peak hours, respectively. These figures show the intersection-by-intersection volumes of multimodal movements and mode breakdowns based on counts collected in March 2013.

The intersections on King Street are the busiest within the study area, with the highest volumes of pedestrians. Pedestrian movements outnumber vehicle movements during both peak periods at all three study intersections on King Street. Pedestrian volumes are also significantly higher throughout the study area during the Saturday afternoon peak hour, especially along King Street. Bicycle volumes are notably highest along Union Street and vehicle volumes are highest along Fairfax Street.

During the count days in March 2013, the weather was cloudy or clear with highs between 50 and 60 degrees Fahrenheit. Comparing these volumes to those collected in May 2012 for the Union Street corridor study, volumes were typically slightly higher during similar peak hours, but overall mode splits were similar.



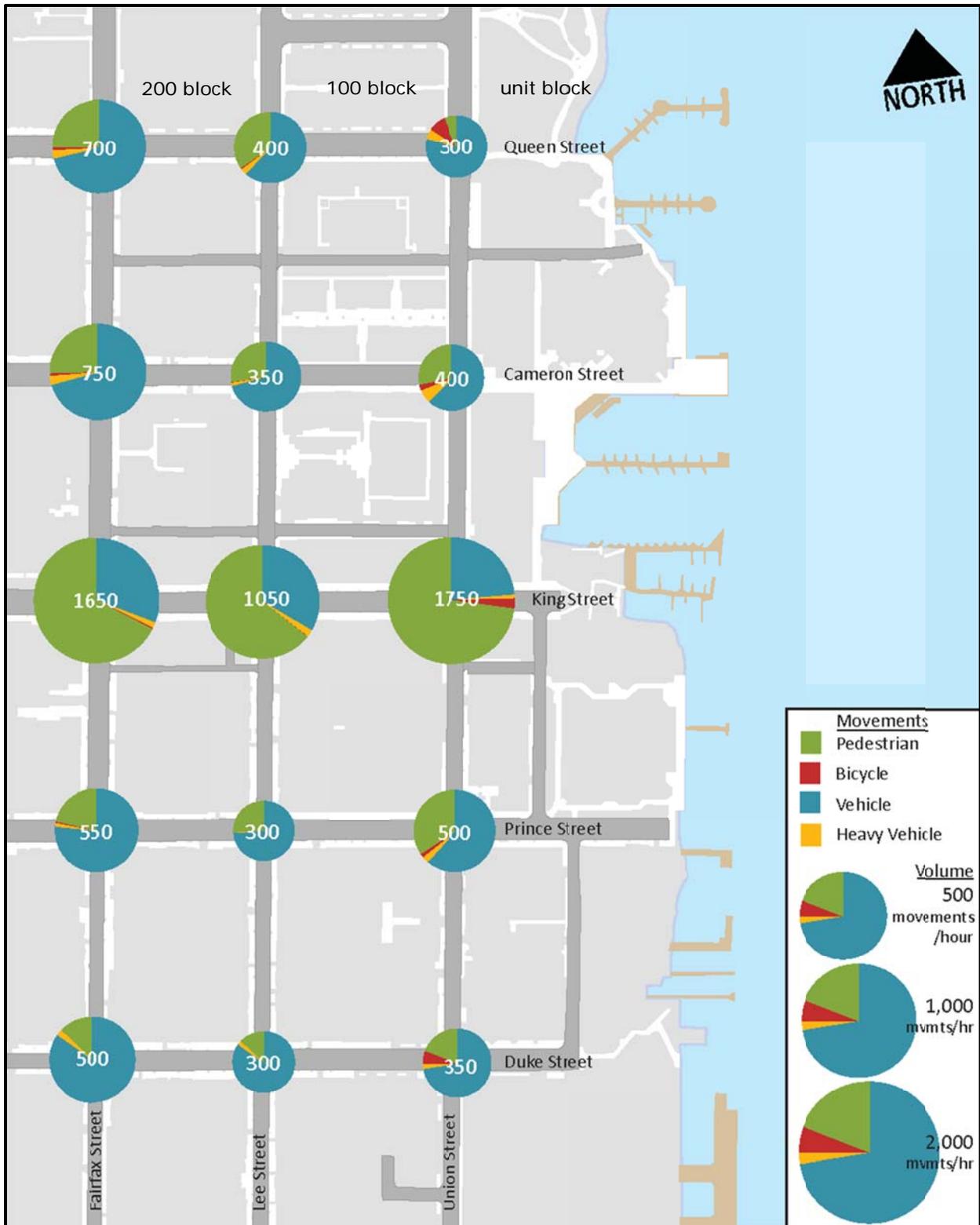


Figure 6: Friday 12:00 - 1:00 PM Multimodal Traffic Volumes



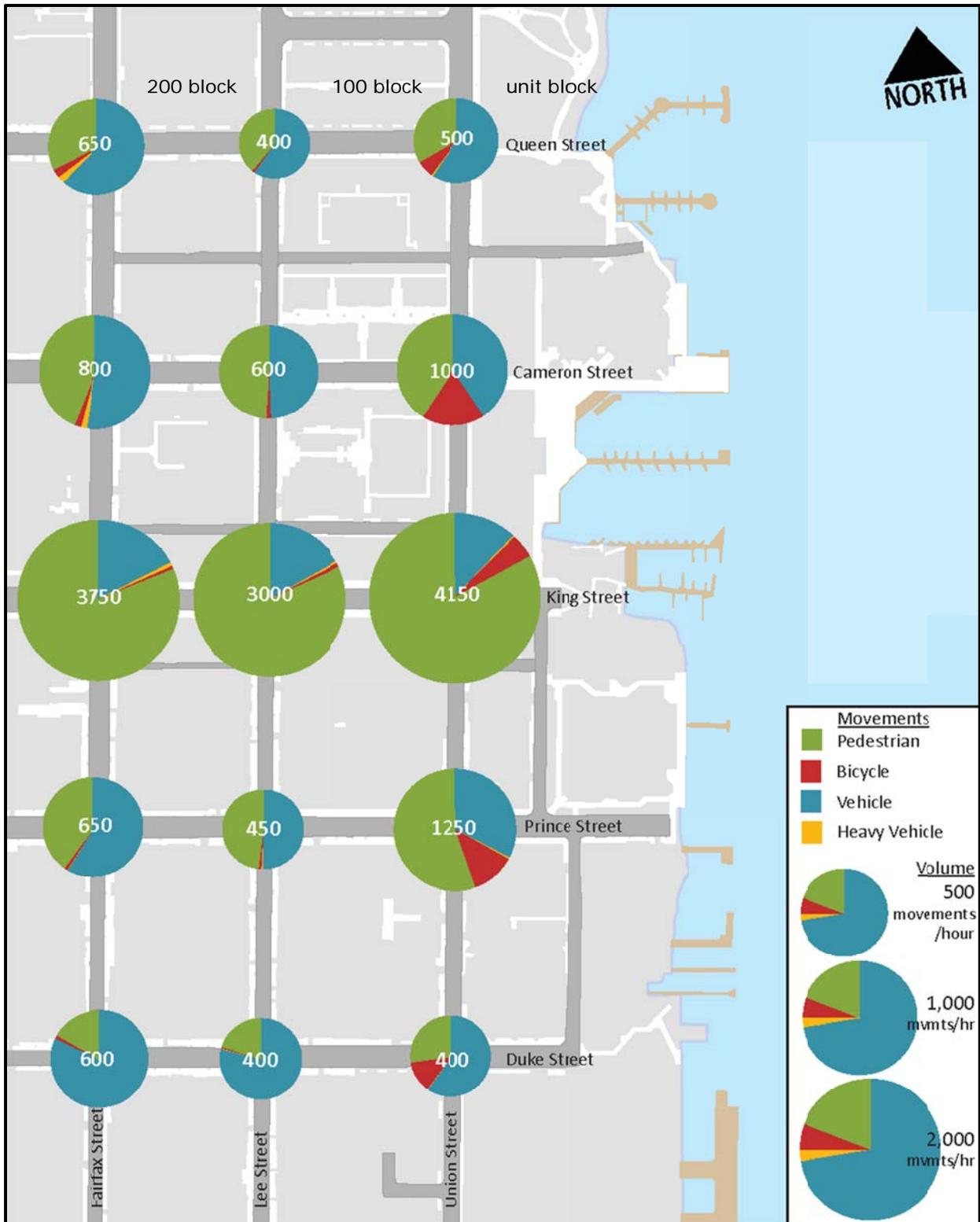


Figure 7: Saturday 4:00 - 5:00 PM Multimodal Traffic Volumes



Motor Vehicle Access and Operations

Motor vehicle access on almost all roadways in the area is two-way with no turn restrictions. The unit block of King Street is one-way westbound and the 100 block of Prince Street is one-way eastbound. Motor vehicle traffic operations were evaluated at each of the study intersections. Generally, intersections within the study area operate well and have adequate capacity for vehicles. However, as pedestrian volumes increase (e.g. the weekend midday and afternoon peak hours), the intersections on King Street and nearby intersections on Union Street experience congestion (i.e. delay and back-ups at intersections). Much of the congestion at these intersections is due to conflicts between motorists and pedestrians, making it challenging for motorists to cross the intersections. Additional details on the operational analysis at each of the study intersections can be found in **Attachment A**.

Motor Vehicle Parking

Parking along King Street is 2-hour metered parking from 8:00 AM to 7:00 PM Monday through Saturday with multi-space meters and pay-by-phone payment options. There are approximately 25 on-street parking spaces on the 100 block of King Street. Based on on-street parking data collected in 2012 for the Union Street Corridor Study and off-street parking data collected in 2009 for the Old Town Area Parking Study, there are over 2,500 public parking spaces within a quarter mile of the 100 block of King Street, shown in **Figure 8**. A quarter mile is approximately a 5-minute walk and considered an acceptable walking distance for mid- and long-term parking (over 1-2 hours).

Figure 9 illustrates the parking occupancy on a Saturday night, showing numerous parking spaces available in off-street lots or garages and some parking available on street within a quarter mile of lower King Street.





Figure 8: On-Street and Off-Street Parking Spaces within ¼ Mile of Lower King Street



Figure 9: Weekend Evening Parking Occupancy within ¼ Mile of Lower King Street



There is one valet parking zone on the north side of King Street, as shown in **Figure 2** (page 8), which restricts parking from 5:30 PM to 11:00 PM on Friday and Saturday. The valet zone is located in front of The Wharf Seafood Restaurant at 119 King Street; however, it is signed for use by Landini's at 115 King Street and The Fish Market at 105 King Street.

Bicycle Parking

There is no formal bicycle parking on the 100 block of King Street, though some bicycles were observed locked to sign posts and light posts. There is a bicycle corral on the unit block of King Street with parking capacity for 10 bicycles.

Sidewalk Condition

Though no formal accessibility analysis was performed, field observations noted that the sometimes-uneven brick sidewalks along King Street may be difficult for disabled users to traverse. At intersections, all corners have curb ramps with truncated domes.

Sidewalk Crowding and Conflicts at Intersections

As shown in the multimodal count figures, lower King Street is busy with pedestrians, motorists, heavy vehicles (e.g. trolley, delivery trucks) and bicyclists operating within a constrained right-of-way. Hundreds of pedestrians use the relatively narrow sidewalks where outdoor dining, building frontages, and other streetscape elements further constrain the available sidewalk space. Sidewalks are particularly crowded at corners where pedestrians wait to cross.

At intersections, pedestrians conflict with turning and through-moving motorists and all users must communicate their intended behavior and negotiate their opportunity to maneuver. As noted in the Union Street Corridor Study at the intersection of King and Union Streets, while most pedestrians are yielded to by motorists within the crosswalks, motorists frequently encroach on the crosswalks. Additionally, pedestrians occasionally cross outside of the crosswalk either to make a more direct route to their destination or because the crosswalks are overcrowded. While the user volumes are slightly lower at the intersection of King and Lee Streets, behaviors, conflicts and safety concerns are similar.

In the last five year, there was one reported collision involving a pedestrian on the 100 block of King Street, in which a motorist struck a pedestrian crossing the street on a rainy evening.



4.3 Transit, Motorcoaches, and Deliveries

King Street Trolley

The free King Street Trolley operates along King Street in both directions. The trolley runs daily from 11:30 AM to 10:15 PM with 15-minute headways. Eastbound, the trolley turns right on Union Street to turn around via the Strand. Westbound, the trolley travels west from the unit block of King Street toward the King Street Metro Station. There are four trolley stops in the immediate vicinity of the 100 block of King Street, as shown in **Figure 2** (page 8), two in each direction at the near side of the intersections with Union Street and Fairfax St. The stop on the unit block of King Street is an idling stop for trolley layovers. See **Figure 10** for a map of the existing trolley route and stops within a few blocks of the study area.



Figure 10: Existing King Street Trolley Routes and Stops

Motorcoaches

Motorcoaches frequently travel along King Street to access the motorcoach loading and unloading areas on the unit and 300 blocks of King Street and the short-term parking area on the 500 block of North Union Street. Old Town motorcoach parking reservation data from the last four years show that reservations are greatest in Old Town during the spring months, with an additional smaller peak in the fall, as illustrated in **Figure 11**. Parking reservations are

required for most, but not all, motorcoach parking spaces, so the data is not entirely comprehensive, but it is still likely representative of overall motorcoach activity in the area.

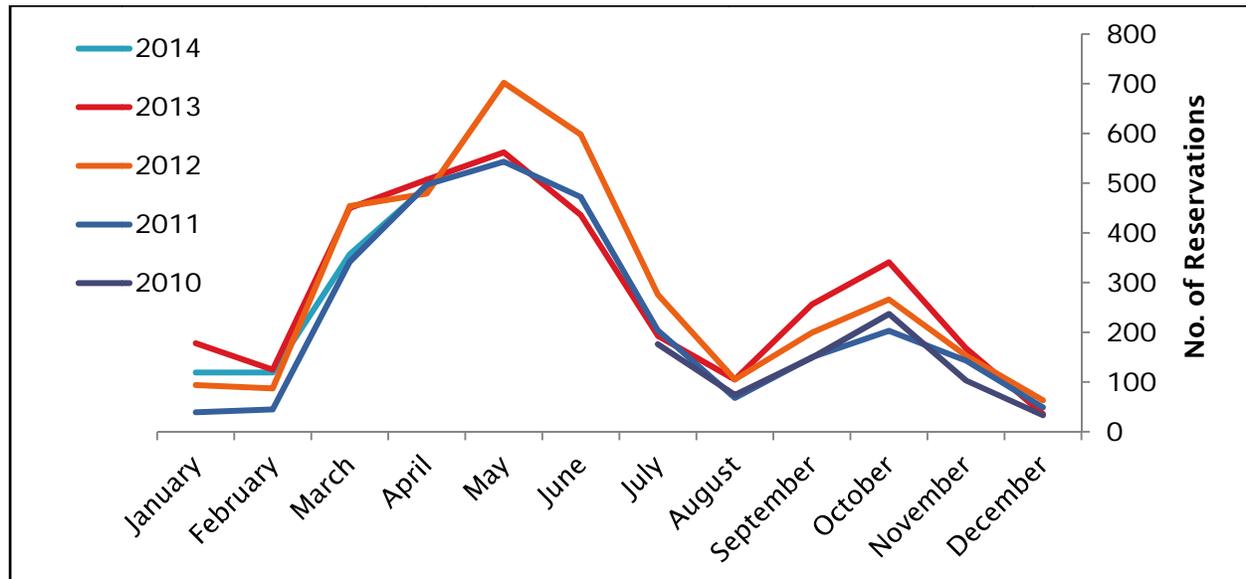


Figure 11: Motorcoach Parking Reservations by Month

Deliveries

There is one loading zone along the south side of King Street, as shown in **Figure 2** (page 8), which restricts parking from 8:00 AM to 7:00 PM Monday through Saturday. Deliveries occur in this loading zone and in the alleys parallel to King Street throughout the day and elsewhere along the street in the morning. Fayette Alley to the north is approximately 22 feet from face-of-curb to face-of-curb with a 3.5-foot sidewalk to the south and a 6-inch curb to the north. The south side is generally signed as a loading zone; however, it was observed to be used for longer-term parking during the afternoon and evening hours. The cart path is 15 feet wide and operates one-way eastbound. The alley to the south of King Street is 19 feet from building face to building face with no curb or parking. Where dumpsters protrude into the alley, the clear width is 11 feet.

5. SUMMARY OF FINDINGS

Lower King Street is active with vehicles, bicyclists, pedestrians, transit, motorcycles, motorcoaches, and deliveries. As a significant connection between the Alexandria Waterfront, the surrounding Old Town neighborhood and beyond, this block is a destination for local residents, employees, visitors and tourists.



Stakeholders and the public expressed interest in a more walkable and pedestrian-friendly King Street with a high-quality, attractive streetscape that enhances the existing assets of the historic street. They also emphasized the importance of flexibility in design and improved management of deliveries, motorcoaches, the King Street Trolley, and parking.

King Street experiences varying demands from different users throughout the day, week, and year. At times of peak activity pedestrians significantly outweigh all other users; however, pedestrians must operate in a constrained space (approximately 5 to 9 feet of effective sidewalk width). Further, during busy times, some of the intersections in the study area become congested and there are significant conflicts between motorists and pedestrians, making it challenging for motorists and uncomfortable for pedestrians to cross the intersection. Crosswalks also become crowded, pedestrians sometimes cross outside of the crosswalk, and motorists often encroach on crosswalks.

