# 2018 MASTER PLAN FOR THE CONSOLIDATION OF THE U.S. FDA HEADQUARTERS AT THE FEDERAL RESEARCH CENTER AT WHITE OAK LOCATED IN SILVVER SPRING MARYLAND

## Final Environmental Impact Statement: Appendix H

August 2018

*Prepared by:*

GSA

*In cooperation with:*

FDA U.S. FOOD & DRUG ADMINISTRATION

# APPENDIX H - 2018 Final Transportation Management Plan

# 2018 Master Plan for the Consolidation of the U.S. FDA Headquarters at the Federal Research Center at White Oak Located in Silver Spring, Maryland

## Final Transportation Management Plan

Prepared for:
United States General Administration Services
in cooperation with
the Food and Drug Administration

Prepared by:
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August 2018

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# Executive Summary

## Introduction

The United States General Services Administration (GSA), in cooperation with the United States Food and Drug Administration (FDA) is planning to expand the Federal Research Center (FRC) campus in White Oak, Maryland (White Oak Campus), as detailed in the *2018 Master Plan for the Consolidation of the U.S. FDA Headquarters at the Federal Research Center at White Oak Located in Silver Spring, Maryland* (2018 FDA Master Plan). The proposed expansion would consist of an increase in the number of employees and support staff assigned to the campus from 10,987 to up to approximately 18,000, through a combination of internal growth as well as the consolidation of employees from other leased locations in Montgomery County and Prince George's County, Maryland. To accommodate the planned growth, up to an additional 1.6 million gross square feet (GSF) of building space and 7,436 additional parking spaces (approximately one parking space for every 1.8 employees) is proposed.

## Purpose

The purpose of this report is to assess existing and projected future commuting patterns of FDA employees, and develop a Transportation Management Plan (TMP) that:

- Reduces single-occupancy vehicle (SOV) trips;
- Promotes the use of alternative transportation modes, such as transit, carpooling, and vanpooling; and,
- Increases vehicle occupancy.

## Goals

The 2018 FDA Master Plan includes a provision to provide approximately one parking space for every 1.8 employees. Therefore, excluding visitor parking, only approximately 54% of staff assigned to the campus would be able to park on campus. Therefore, 46% of employees must arrive by modes other than driving alone (i.e. transit, carpooling, and vanpooling), or telework from home or another off-site location.

Based on information contained in the employee commuter survey, approximately 75% of existing on-campus employees drive alone to work, while 79% of employees at leased locations are anticipated to drive alone to work if they are relocated to the White Oak campus. Furthermore, FDA currently has a robust telework program which also limits the number of employees on campus on any given day. According to the employee commuter survey results, only 31% of employees are on the campus every work day. Most (59%) work on campus three to four days per week typically teleworking Thursday and Friday, and 10% only work on campus one to two days per week. As a result, FDA reports that typical employee attendance on

campus peaks at approximately 85% of total assigned employees, typically on a Tuesday or Wednesday.

It is assumed that even with the consolidation of employees from leased locations, as well as organic growth, the peak percentage of employees on campus, after accounting for vacations, leave, sick-days, off-site meetings, etc., on any given day is anticipated to remain approximately the same (85%). This daily peak typically occurs between February and March. Therefore, assuming a peak daily employee attendance of 85% and the existing drive-alone mode share of 75%, the average daily drive-alone mode share for the White Oak campus would be approximately 64%. Therefore, if no additional transportation demand management (TDM) efforts, beyond those currently deployed today, were implemented, approximately 64% of all work-based trips would be made by driving alone.


Despite the relatively robust TDM programs currently deployed on campus that are anticipated to result in a base drive-alone mode share of 64%, the number of drive-alone trips must be reduced by an additional 10% to reach the maximum mode share of 54% within five years of full build-out. Furthermore, the proposed 2018 FDA Master Plan population rivals that of many small cities, and this population needs to be moved in and out every weekday. Therefore, a combination of new and expanding TDM strategies will have to be employed that:

- Enhance participation in existing programs;
- Dis-incentivize drive-alone vehicles parking onsite;
- Consider new strategies that may require changes to existing policies;
- Provide more direct shuttle/transit routes for commuting;
- Provide shuttle services, fleet management, and/or ridesharing for errands and meetings during the day to encourage alternative commute modes;
- Improve incentives for transit use and maximize the potential of the future BRT and Purple Line; and,
- Increase walk/bike mode share by leveraging planned nearby developments, such as Viva White Oak, as well as working with Montgomery and Prince George's County to connect the campus to regional bicycle facilities.

**Strategies**

People choose their mode of travel based on several factors, including convenience, cost, time, and habit/familiarity. An effective TDM program provides a variety of strategies that affect one or more of these factors. However, the lack of direct access to high-capacity transit, such as Metrorail, presents a challenge for FDA. FDA must employ a variety of strategies that go

above and beyond teleworking, shuttles, and carpools/vanpools, which are the typical strategies employed other Federal agencies in similar suburban.

The following TDM strategies are expected to reduce single occupancy vehicle trips, some of which are already being employed by FDA (percentages shown are target goals for additional mode share):

| Strategy (Mode Share Goal) | Current Implementation | Recommended Modifications |
|---|---|---|
| **Employee Transportation Coordinator (ETC)** | • One full time employee and two contract staff. | • Double the amount of staff designated as ETC's.<br>• Increase the visibility of ETC's by providing designated offices throughout the campus near building lobbies.<br>• Re-evaluate need for additional full-time or part-time staff as the program develops.<br>• Expand ETC services to support staff and contractors.<br>• Provide real-time traffic and transit information stations in all building lobbies. |
| **Carpool/Vanpool (1% - 2%)** | • Preferential parking for registered carpools, assigned parking for vanpools.<br>• Transhare subsidy for vanpools with at least six riders.<br>• Leased vanpool vehicles.<br>• Access to guaranteed ride home services. | • Increase marketing to employees that live in zip codes with a high concentration of employee residents. Consider pre-emptively developing ride matching lists for the top ten zip codes as a marketing tool.<br>• Pre-market carpool/vanpool services to employees that will move to the White Oak campus.<br>• Provide fleet vehicles, on-site carsharing, and/or contracts with rideshare companies (Uber/Lyft) to provide access to transportation during the day for errands and meetings.<br>• Enhance guaranteed ride home (GRH) programs to provide more than four emergency rides per year. |
| **Transit and Shuttles (2% - 4%)** | • Transit subsidies.<br>• Onsite transit information.<br>• Leased vanpool vehicles.<br>• Access to guaranteed ride home services.<br>• Six shuttle routes that connect to major transit facilities, including Metrorail stations. | • Continue coordination with Montgomery and Prince George's counties to improve and maximize connections to BRT and the Purple Line.<br>• On-site transit center which provides route information, displays real-time information, and sells transit passes.<br>• Provide real-time monitors for transit arrivals in all lobbies of major buildings on campus, including the conference center.<br>• De-stigmatize bus transit by conducting "challenges" which offer prizes for documented transit use, conduct transportation fairs on buses to instruct novice users, and establish a transit user group and transit ambassador program.<br>• Provide fleet vehicles, on-site carsharing, and/or contracts with rideshare companies (Uber/Lyft) to provide access to transportation during the day for errands and meetings.<br>• Work with Montgomery County to explore feasibility of a BRT stop on campus.<br>• Support additional shuttle or other similar private rideshare service |

| Strategy (Mode Share Goal) | Current Implementation | Recommended Modifications |
|---|---|---|
| | | (Uber, Lyft, Chariot, etc.) to areas that are underserved by existing transit.<br>• Provide more direct connections to the White Oak campus from transit facilities in areas with a high concentration of employee residences. Potential areas include:<br>  ○ Germantown/Gaithersburg/Rockville/Darnestown<br>  ○ Mt. Airy/Sykesville<br>  ○ Olney<br>  ○ Columbia/Ellicott City<br>  ○ Bowie/Upper Marlboro<br>• Work with WMATA to enhance existing transit connections to nearby Purple Line stations or expand Hillandale shuttle.<br>• Work with MTA to assess feasibility of realignment of Routes 305, 315, and 325 to serve the White Oak Campus.<br>• Promote the New Carrollton Purple Line station as a potential park-and-ride for employees that live to the south and east.<br>• Work with Montgomery County and MTA to install sheltered, secure, and attractive waiting areas where FDA employees will transfer from BRT or Purple Line to FDA shuttle.<br>• Encourage transit agencies to offer free transfers between services or utilize a common fare payment system. |
| **Telecommuting (1% - 2%)** | • Telecommuting support. | • Encourage telecommuting on Tuesdays, Wednesdays, and Thursdays to balance demand across the entire week by considering incentives such as preferential parking space for use on days that the employee is on-campus.<br>• Combine efforts with flexible/alternative work schedule employees to further help schedule and balance demand across the entire week. |
| **Flexible/Alternative Work Schedules (0.5% - 1%)** | • Core working hours are established.<br>• Alternative work schedules are permitted with flex days. | • Formalize a program that incentivizes balancing onsite demand across the entire week by providing incentives such as:<br>  ○ Assigned parking for late commuters.<br>  ○ Consider preferential parking for employees who utilize their flex day off on Tuesday, Wednesday, Thursday.<br>• Combine efforts with telecommuting program to further help schedule and balance demand across the entire week. |
| **Bike/Walk to Work (1% - 2%)** | • Onsite shower and locker facilities.<br>• Covered bicycle parking with tool and pump stations.<br>• Bicycle user group. | • Coordinate with MDOT SHA and Montgomery and Prince George's Counties to provide pedestrian and bicycle facilities on the local roadway network and improve and maximize connections to the Campus.<br>• Expand the existing multi-use trail along the New Hampshire Avenue frontage to a minimum of 10 feet.<br>• Coordinate with MDOT SHA and Montgomery and Prince George's Counties to provide bikeshare stations and/or dockless bikes on campus, as well as throughout the surrounding community.<br>• Expand bicycle user group to include pedestrians when nearby development sites are completed. |

| Strategy (Mode Share Goal) | Current Implementation | Recommended Modifications |
|---|---|---|
| | | • Improve on-site pedestrian/bicycle circulation and safety, including continuous sidewalks, bike lanes, and/or multi-use trails within the campus, connecting to the surrounding off-site network and transit stations.<br>• Continue to support GSA's commitment to exploring ways to provide public access to government lands. |
| **Live Near Your Work (1% - 2%)** | • None | • Expand circulator shuttle to include transit stops near major developments, such as Viva White Oak, and other large residential complexes within one mile of the campus.<br>• Encourage Counties to require that developers provide pedestrian and bicycle facilities that could be used to connect to the White Oak campus. |
| **Smart Transportation Technology** | • None | • Continue to monitor the development and implementation of connected and autonomous vehicle technology. Consider future areas for pick-up and drop-off activity.<br>• Consider parking garage designs that would permit future re-use if autonomous vehicle technology results in lower parking demand.<br>• Provide a queuing area with available wi-fi for rideshare vehicles. This could be expanded to accommodate autonomous vehicle pick-up/drop-off activity in the future.<br>• Provide rideshare kiosks for employees to schedule rides.<br>• Provide carshare/fleet vehicles in preferential locations on campus near building entrances.<br>• Provide electric vehicle charging stations in all major parking areas on campus. |
| **Parking** | • None (attendant assisted parking for overflow vehicles) | • Maintain a parking ratio of 1 space per 1.8 employees (parking would only be provided for 54% of employees). Attendant-assisted parking will no longer need.<br>• Work with agencies to consider providing dedicated FDA employee parking at park-and-ride lots along shuttle and transit routes.<br>• Evaluate the potential for parking fees and cash-out in the future if current federal regulations change.<br>• Implement smart-parking technology that informs drivers of the location of available parking onsite. |

**Monitoring**

This TMP is a flexible document that can be shaped and reshaped as commuting patterns and needs change. Each of the TDM strategies must be evaluated and changed as seen fit by the ETCs as the program grows. The ETCs will evaluate each strategy by setting the goals and then documenting the progress of each goal. It is expected that the TMP will be updated by the ETCs once every two years. Several options are available to the ETCs to gauge the success of these programs, including:

- Obtain annual commuter survey data to reevaluate the program. This would include determining whether the goals are being met and, based on the employee trends,

identifying programs which are successful and need to be emphasized and those that are not working. Additional supplemental surveys may be required to obtain information about FDA-specific programs. ETCs will develop and distribute these surveys as needed. An example survey is contained in Appendix A.

- Perform traffic counts at all the access points at all entrances to employee and visitor parking at least once per year for a period of at least five days. This data will be used to provide a check to survey results and other personnel estimates of drive-alone vehicle trips.
- Provide program participation documentation (e.g. application of transit subsidies, van registration, preferential parking registration).
- Provide packages to existing and perspective employees that identify the transit services and the incentives being offered.

**Implementation**

While the implementation of the 2018 FDA Master Plan is likely more than ten years out, many of the proposed strategies recommended in this TMP will require design considerations, planning, coordination with employees, and acquisition of funding, while others could be implemented relatively efficiently with the existing employees and expanded to consolidated/new employees once the 2018 FDA Master Plan has been implemented. The below implementation strategy provides a roadmap for FDA to ensure that resources and facilities are available as soon as they are needed, and is divided into four phases (see Section 6.0 for additional guidance):

- *Planning Phase (within the next 5 years)*: Begin to identify and secure funding for recommendations. Ensure that the design of onsite facilities, such as the transit center, incorporate specifications for transit vehicles, employee space, smart parking technology, etc. Continue coordination with agencies to identify methods to enhance access for transit, pedestrians, and bicyclists.
- *Preliminary Implementation (within 5 years of full build-out)*: Continue planning, funding, and design process for larger-scale recommendations. Begin to implement strategies that do not require new facilities to existing employees, support staff, and contractors. Incorporate consolidated/new employees as they move into new on-campus facilities.
- *Full Implementation (within 5 years after full build-out):* All recommended TDM strategies should be implemented and available to all employees, support staff, and contractors. Monitoring should begin, and FDA/GSA should evaluate the need for additional measures that may be needed to achieve the 54% SOV requirement.
- *Maintenance Phase (beyond 5 years after full build-out*): Continue to monitor TMP needs. Track new technology and incorporate new strategies as needed.

# Abbreviations

| | |
|---|---|
| BRT | Bus Rapid Transit |
| ETC | Employee Transportation Coordinator |
| FDA | Food & Drug Administration |
| GSA | General Services Administration |
| MDOT | Maryland Department of Transportation |
| M-NCPPC | Maryland-National Capital Park and Planning Commission |
| MPO | Metropolitan Planning Organization |
| MTA | Maryland Transit Administration |
| MWCOG | Metropolitan Washington Council of Governments |
| NCPC | National Capital Planning Commission |
| SHA | State Highway Administration |
| SOV | Single-Occupancy Vehicle |
| TDM | Transportation Demand Management |
| TMP | Transportation Management Plan |
| VMT | Vehicle Miles Traveled |
| WMATA | Washington Metropolitan Area Transit Authority |

# Glossary

| | |
|---|---|
| Autonomous Vehicles | A vehicle that is capable of operating on public roadways and in mixed traffic without the aid of a human driver. |
| Bikeshare | A service in which bicycles are made available for shared use to individuals on a short-term basis. |
| Bus Rapid Transit | A high-quality bus-based transit system that delivers efficient service that may include dedicated lanes, busways, traffic signal priority, off-board fare collection, elevated platforms and enhanced stations. |
| Carpool/Vanpool | An arrangement among a group of commuters that live and work within the same area to commute together in one vehicle, rather than driving individually. |
| Carshare | A service in which vehicles are made available for shared use to individuals on a short-term basis. |
| Connected Vehicles | Vehicles that have the capability of communicating with other vehicles and infrastructure to improve operation and safety. |
| Employee Transportation Coordinator | An employee or contractor whose sole responsibility is to administer and manage a TDM program. |
| Flexible/Alternative Work Schedule | An alternative work schedule that allows employees to work additional hours for a portion of a work week to take an additional day off. For example, four 10-hour work days, rather than five 8-hour work days. |
| Light Rail Transit | Rail-based transit that can operate on exclusive right-of-way, dedicated lanes, or within mixed-traffic. |
| Live Near Your Work | Strategies, such as pedestrian, bicycle and transit/shuttle connections, that encourage employees to live close to their place of work and commute by modes other than driving alone. |
| Mass Transit Facility | Systems that are intended to transport a large number of people by means that include buses, trains, subways, and elevated rail. |

| | |
|---|---|
| Rideshare | Transportation in a private vehicle driven by its owner, for free or for a fee, especially as arranged by means of a website or app. |
| Telecommuting | A program that allows an employee to work from home or at an off-site location at least one day per week. |
| Transit/Vanpool Subsidies | A financial incentive designed to encourage commuters to use public transit (or vanpools) by providing them with a monthly payment to cover a portion of their commuting expenses. |
| Transportation Demand Management | Strategies and policies that encourage employees to commute via other modes than driving alone, such as transit, carpool/vanpool, or walking and biking. |
| Transportation Management Plan | A guide to the implementation of transportation demand management strategies/policies that is specific to an employer. |

# 1.0 INTRODUCTION

The United States General Services Administration (GSA), in cooperation with the United States Food and Drug Administration (FDA) is planning to expand the Federal Research Center (FRC) campus in White Oak, Maryland (White Oak campus), as detailed in the *2018 Master Plan for the Consolidation of the U.S. FDA Headquarters at the Federal Research Center at White Oak Located in Silver Spring, Maryland* (2018 FDA Master Plan). The proposed expansion would consist of an increase in the number of employees and support staff assigned to the campus from 10,987 to up to approximately 18,000, through a combination of internal growth as well as the consolidation of employees from other leased locations in Montgomery County and Prince George's County, Maryland. To accommodate the planned growth, up to an additional 1.6 million gross square feet (GSF) of building space and 7,436 additional parking spaces (approximately 1 parking space for every 1.8 employees) is proposed.


**Figure 1: FDA FRC Project Area Map**

The National Capital Planning Commission (NCPC) serves as the central planning agency for federal activities and interests in the National Capital Region (NCR), and is primarily responsible for coordinating federal development activity. In 2016, the NCPC adopted the most recent version of its comprehensive plan entitled *Comprehensive Plan for the National Capital: Federal Elements*. The plan contains guidelines that require a Transportation Management Plan (TMP) for

all projects that will increase work site employment to 500 or more employees (existing and proposed). Therefore, this TMP has been developed to help FDA:

- Inventory existing and future transportation facilities, including the local roadway network, parking, pedestrian, bicycle, and transit;
- Understand existing and future employee commuting patterns and needs;
- Identify transportation demand management (TDM) strategies that reduce single-occupant vehicle trips and encourage change in travel behavior;
- Implement each TDM strategy through a work plan for each product and/or service; and
- Use specific bases of measurement to effectively monitor and evaluate achievement of goals and adjust TDM strategies as necessary.

## 1.1 PURPOSE

Within the last decade, regional, state, and local planning agencies within the NCR have recognized the critical need to reduce peak period traffic congestion and protect the region's environment and reduce greenhouse gas emissions. A review of several key planning documents, described herein, reveals that each agency has formulated environmental protection goals and objectives to be achieved through several strategies and monitored and evaluated based on specific performance measures. A common strategy calls for transportation system improvements and utilization of TDM methods that fully support opportunities to promote alternative modes of transportation

Therefore, the purpose of this report is to assess existing and projected future commuting patterns of FDA employees, and develop a TMP that:

- Reduces single-occupancy vehicle (SOV) trips;
- Promotes the use of alternative transportation modes, such as transit, carpooling, and vanpooling; and,
- Increases vehicle occupancy.

### 1.1.1 Regional

#### 1.1.1.1 National Capital Planning Commission (NCPC)

The *Comprehensive Plan for the National Capital* guides planning and development in Washington, DC and the surrounding region. It is a unified plan comprised of two components – the Federal and District Elements. The Federal Elements, prepared by NCPC, provide a policy framework for the federal government in managing its operations and activity in the NCR. The District Elements are developed by the District of Columbia and address traditional city planning issues such as land use, housing, and economic development. The Federal Elements of the *Comprehensive Plan* are living documents that are updated periodically to ensure that policies remain current, reflect recent planning initiatives, and are consistent with federal requirements and guidance. The 2016 Federal Elements were adopted on February 4, 2016 and became effective April 5, 2016.

The eight Federal Elements include Urban Design, Federal Workplace, Foreign Missions & International Organizations, Transportation, Parks & Open Space, Federal Environment, Historic Preservation, and Visitors & Commemoration. The goal within the Transportation Elements is to "develop and maintain a multi-modal regional transportation system that meets the travel needs of workers, residents, and visitors, while improving regional mobility and air quality through expanded transportation alternatives and transit-oriented development."

Each section within the Transportation Elements lays outs policies regarding each type of transportation mode, including mass transit, driving, and bicycling and walking. In particular, Section B prescribes parking ratios for workplaces to achieve as long-term vehicle occupancy goals (20-30 years). For the proposed FDA site, the proposed parking ratio is 1:1.8, which is consistent with the 1:1.5-2 range prescribed by the Comprehensive Plan for a suburban federal facility farther than 2,000 feet from a Metrorail station. Sections C and D encourage federal workplaces such as FDA to utilize TDM strategies to comply with other applicable policies.

### 1.1.1.2 Metropolitan Washington Council of Governments (MWCOG)

In 2010, the MWCOG Board of Directors approved Region Forward: *A Comprehensive Guide for Regional Planning and Measuring Progress in the 21st Century*. COG's Region Forward Vision focuses on creating a more prosperous, accessible, livable, and sustainable metropolitan Washington. It maps out ambitious goals and targets to guide future decisions and measure progress, including transportation goals that focus on sustainability and accessibility:

- We seek a broad range of public and private transportation choices for our Region which maximizes accessibility and affordability to everyone and minimizes reliance upon single occupancy use of the automobile. (Accessibility)
- We seek a transportation system that maximizes community connectivity and walkability and minimizes ecological harm to the Region and world beyond. (Accessibility)

**Targets**

*Accessibility*

- Increase the rate of construction of bike and pedestrian facilities from the Transportation Planning Board's plan
- Increase the share of walk, bike, and transit trips
- All Regional Activity Centers will have transit accessibility (bus or rail)
- Reduce vehicle miles traveled (VMT) per capita
- The region's transportation system will give priority to management, performance, maintenance, and safety of all transportation modes and facilities
- Transportation investments will link Regional Activity Centers

*Indicators*

- Triennial Aerial Survey of Freeway Congestion
- Vehicle Registration per capita

- Transit, bicycle and walk share in Regional Activity Centers
- Accessibility to jobs within 45 minutes
- Street/node ratio for Regional Activity Centers
- Accessibility of passengers and cargo to the region's airports
- Square feet of mixed-use development

#### 1.1.1.3 Transportation Planning Board (TPB)

The TPB is the metropolitan planning organization (MPO) for metropolitan Washington. The TPB has developed a policy framework, known as the Vision, that guides the region's transportation investments. Approved in 1998, the Vision is a long-range document laying out eight key goals with objectives and strategies that will help the region to develop the transportation system it needs to sustain economic development, environmental quality, and a high quality of life. The agencies that implement transportation projects must show that the goals of their projects are consistent with the Vision.

Goal 5 states that the Washington metropolitan region will plan and develop a transportation system that enhances and protects the region's natural environmental quality, cultural and historic resources, and communities. Several important measurable objectives include:

- Reduction in reliance on the single-occupant vehicle by offering attractive, efficient, and affordable alternatives.
- Increased transit, ridesharing, bicycling and walking mode shares.
- Reduction of per capita VMT.

TPB is dedicated to achieving these measurable objectives through supporting individual organization TDM strategies, including pricing strategies, subsidies, incentives and disincentives, and better transit options. This TMP will help FDA to direct their TDM strategies to remain consistent with TPB's Vision and achieve its goal.

Currently, Metropolitan Washington Council of Governments staff is drafting and conducting modeling activities for Visualize 2045, which TPB anticipates adopting in the Fall of 2018. This new LRTP will include TPB's policy framework to guide future regional transportation investments and a fiscally-constrained list of projects planned for implementation between 2018 and 2045. The US 29 interchanges at Stewart Lane, Tech Road/Industrial Parkway, Musgrove Road/ Fairland Road, Greencastle Road, and Blackburn Road are included in this draft document. This new LRTP will replace the existing Constrained Long-Range Plan (adopted 2016).

### 1.1.2 State

The Office of Planning and Capital Programming at the Maryland Department of Transportation (MDOT) has developed the 2035 Maryland Transportation Plan (MTP). The MTP contains statewide transportation strategies to meet six goals, including Environmental Stewardship. The goal of Environmental Stewardship is to ensure that the delivery of the State's transportation

infrastructure program conserves and enhances Maryland's natural, historic, and cultural resources by:

1. Making optimal use of energy resources in accordance with State goals for petroleum use reduction, greenhouse gas (GHG) emissions reduction, energy conservation and cost reduction, and support for renewable energy
2. Monitoring developments in alternative vehicle fuel technologies and evaluate for their application to transportation fleets
3. Continuing to explore the feasibility of integrating renewable energy generation technologies into the transportation system
4. Continuing to evolve practices to avoid and minimize impacts of the transportation system to natural and cultural resources and include enhancement and preservation wherever feasible, including, for example, tree planting and re-forestation measures
5. Maximizing opportunities to incorporate environmental benefits into all transportation projects to ensure compliance with state and federal requirements.

MDOT, the State Highway Administration (SHA), and Maryland Transit Administration (MTA) track performance of these strategies and goals through travel demand management (TDM) and Transportation Emission Reduction Measures (TERMs), including: Commuter Choice Maryland, Commuter Connections, Telework Partnership, transit marketing and subsidy programs, and statewide park-and-ride facilities. MDOT also tracks performance through transportation-related emissions by region and greenhouse gas emissions.

### 1.1.3 Local

Montgomery County Planning Department, part of the Maryland-National Capital Park and Planning Commission (M-NCPPC), is dedicated to improving the County's transportation network, and has released the *2014 White Oak Science Gateway Master Plan*. One of the goals in the *2014 White Oak Science Gateway Master Plan* Transportation Chapter is to provide residents and workers in Montgomery County with a safe, affordable, and accessible multimodal transportation system that effectively contributes to the timely achievement of county growth, development, community presentation, and revitalization goals. The transportation objectives to be achieved by developing according to land use plans include:

- Increase the proportion of transit trips to 25-30 percent.
- Reduce private automobile dependency, particularly for SOV trips
- Increase bicycle trips by expanding the existing local bicycle network.
- Establish a bus rapid transit network in White Oak.
- Construct roadway improvements along the US 29 corridor with intersection improvements and the formation of grade-separated interchanges.
- Discourage land dedicated to surface parking.

The *2009 Master Plan of Transportation* (MPoT) also reflects this goal. One goal of this document is to guide the County in managing capacity and minimizing congestion of the streets, roads, and highways network by safely and efficiently providing access for all users to existing and planned land uses, with emphasis on General Plan corridors and centers. "Using a complete

streets approach, top priority should go to projects supporting the establishment of safe, multimodal corridors that implement bicycle, pedestrian, and transit mobility strategies as an integral component of the project, thereby reducing the dependence on automobiles, reducing greenhouse gas emissions and traffic congestion, and preserving road infrastructure." One strategy to achieve this goal is to "implement TDM practices that reduce trips (through park-and-ride lots and other strategies) and trip length, manage routes and peak-period travel, and generally focus on changing travel behavior." The next update to the MPoT will be in 2019.

The latest update to the *General Plan*, *Plan Prince George's 2035*, states that "a number of planning documents and studies are already dedicated to improving the County's transportation network". Implementation will require continued and timely coordination and collaboration of local, state, and regional agencies and the development community. Alignment of capital programs with County transportation plans and economic development policies is essential to meeting this challenge."

Currently, Montgomery County Planning Department staff is drafting a comprehensive update to the Master Plan of Highways and Transitways, the first comprehensive update to the plan since 1955. This plan is to be adopted in late 2018 or early 2019.

## 1.2 DATA COLLECTED

Manual turning movement counts obtained by Sabra, Wang & Associates for the *White Oak Local Area Transportation Review (LATR)* were utilized for all study area intersections, except for the intersection of Beltsville Drive and Calverton Boulevard. Montgomery County provided permission to utilize these counts for this traffic technical report. These counts were performed during the AM peak period (6:00AM – 10:00AM) and PM peak period (4:00PM – 7:00PM) at 25 intersections (see Appendix B for the Transportation Technical Report for more details).

The turning movement count data was utilized in the traffic impact study. In addition to the turning movement counts, Stantec collected automatic traffic recorder (ATR) data at the access points to the White Oak campus in March 2016, the typical the peak for attendance on campus, for use in generating a site-specific trip generation rate per employee.

Finally, an employee survey was conducted via the internet from June 20, 2017 to July 14, 2017 to evaluate the commuting patterns of existing employees that are assigned to the White Oak Campus to estimate how they currently commute to/from the campus and identify opportunities to enhance non-auto modes. A separate survey was also distributed to employees that would be relocated to the White Oak Campus to determine how their commute mode may change if they were to be relocated.

## 1.3 TMP GOALS AND OBJECTIVES

The 2018 FDA Master Plan includes a provision to provide approximately one (1) parking space for every 1.8 employees. Therefore, when excluding visitor parking, only approximately 54% of

staff assigned to the campus would be able to park on campus. Therefore, 46% of employees must arrive by modes other than driving alone (i.e. transit, carpooling, and vanpooling), or telework from home or another off-site location.

Based on information contained in the employee commuter survey, approximately 75% of existing on-campus employees drive alone to work, while 79% of employees at leased locations are anticipated to drive alone to work if they are relocated to the White Oak campus. Furthermore, FDA currently has a robust telework program which also limits the number of employees on campus on any given day. According to the employee commuter survey results, only 31% of employees are on the campus every work day. Most (59%) work on campus three to four days per week typically teleworking Thursday and Friday, and 10% only work on campus one to two days per week. As a result, FDA reports that typical employee attendance on campus peaks at approximately 85% of total assigned employees, typically on a Tuesday or Wednesday.

It is assumed that even with the consolidation of employees from leased locations, as well as organic growth, the peak percentage of employees on campus on any given day is anticipated to remain approximately the same (85%). Therefore, assuming a peak employee attendance of 85% and the existing drive-alone mode share of 75%, the average daily drive-alone mode share for the White Oak campus would be approximately 64%. Therefore, if no additional transportation demand management (TDM) efforts, beyond those currently deployed today, were implemented, approximately 64% of all work-based trips would be made by driving alone.

Despite the relatively robust TDM programs currently deployed on campus that are anticipated to result in a base drive-alone mode share of 64%, the number of drive-alone trips must be reduced by an additional 10% to reach the maximum mode share of 54% within five years of full build-out. Furthermore, the proposed 2018 FDA Master Plan population rivals that of many small cities, and this population needs to be moved in and out every weekday. Therefore, a combination of new and expanding TDM strategies will have to be employed that:

- Enhance participation in existing programs;
- Dis-incentivize drive-alone vehicles parking onsite;
- Consider new strategies that may require changes to existing policies;
- Provide more direct shuttle/transit routes for commuting;
- Provide shuttle services, fleet management, and/or ridesharing for errands and meetings during the day to encourage alternative commute modes;
- Improve incentives for transit use and maximize the potential of the future BRT and Purple Line; and,
- Increase walk/bike mode share by leveraging planned nearby developments, such as Viva White Oak, as well as working with Montgomery and Prince George's County to connect the campus to regional bicycle facilities.

It should be noted that these goals are meant to guide the implementation of the TDM strategies. Better performance for certain strategies may offset lower performance of others. For example, if more employees commute via transit, the carpool/vanpool participation could be

lower. As such, this TMP should be considered a living document that needs to be updated and modified to respond to changing trends and needs.

# 2.0 TRANSPORTATION SYSTEM

## 2.1 LOCAL ROADWAY NETWORK

Regional access to the White Oak Campus is provided from US 29, I-95, the Capital Beltway (1-495), and New Hampshire Avenue (MD 650). The White Oak campus can be accessed via two driveways (Michelson Road and Mahan Road) on New Hampshire Avenue, as well as Cherry Hill Road via FDA Boulevard. Upon completion of the Viva White Oak development, the site would also be accessed via a planned extension of Industrial Parkway from US 29 to FDA Boulevard.

The Capital Beltway (Interstate 495) is an eight-lane divided freeway with a posted speed limit of 55 miles per hour, and annually carries approximately 250,000 average daily vehicles according to 2016 MD SHA traffic data. A full-movement, grade-separated interchange is provided at New Hampshire Avenue (MD 650). I-495 is a component of the National Highway System (NHS) and is owned and maintained by MDOT SHA.

Columbia Pike (US 29) is a six-lane divided roadway with a mixture of grade-separated interchanges and at-grade signalized intersections with a posted speed limit of 50 miles per hour. US 29 carries approximately 67,500 average daily vehicles according to 2016 MD SHA traffic data. A full-movement, grade-separated interchange is provided at New Hampshire Avenue (MD 650) and Cherry Hill Road, while an at-grade intersection is provided at Tech Road and Industrial Parkway. US 29 is a component of the National Highway System (NHS) and is owned and maintained by MDOT SHA.

I-95 is an eight-lane divided freeway with a posted speed limit of 55 miles per hour south of I-495, and annually carries approximately 215,000 average daily vehicles according to 2016 MD SHA traffic data. A full-movement, grade-separated interchange is provided at Powder Mill Road (MD 212) which can be used to access the site via Cherry Hill Road and FDA Boulevard. I-95 is a component of the National Highway System (NHS) and is owned and maintained by MDOT SHA.

New Hampshire Avenue (MD 650) is a six-lane divided arterial roadway with a posted speed limit of 40 miles per hour. It connects the Mahan Road and Michelson Road access roadways to I-495 and US 29. The Mahan Road and Michelson Road intersections are signalized. According to 2016 MD SHA traffic data, the roadway carries approximately 60,000 average daily vehicles. MD 650 is a component of the National Highway System (NHS) and is owned and maintained by MDOT SHA.

Cherry Hill Road is a two- to four-lane undivided roadway with some sections containing a two-way left-turn lane. It has a posted speed limit of 30 mph and carries approximately 34,000 average daily vehicles. It connects US 29 and Powder Mill Road (MD 212) to FDA Boulevard. The intersection of Cherry Hill Road and FDA Boulevard is signalized. Cherry Hill Road is owned and maintained by Montgomery and Prince George's counties in their respective jurisdictions.

## 2.2 PARKING FACILITIES

Parking has been identified as one of the key issues on the White Oak Campus. NCPC permitted 6,926 parking spaces (at a rate of 1:1.5 or 2 parking spaces for every 3 employees) as part of the 2009 Master Plan. However, a proposed parking structure that was to be located in the southeast side of the campus was not constructed. Thus, the FDA has implemented attendant-assisted parking to provide parking capacity for approximately 6,800 vehicles. The attendant-assisted parking is intended to be a stop-gap measure until additional parking can be provided because it is costly and not considered sustainable.

Based on NCPC guidelines, a suburban facility that is not located in close proximity to a high-capacity transit stop, such as a Metrorail station, can have a parking ratio as high as 1:1.5. Therefore, based on this ratio, up to 12,000 parking spaces for employees would be permissible on the White Oak Campus. However, it is important to think critically about parking supply and demand because additional parking would likely lead to an increase in vehicle trips. During days of peak attendance, it is likely that all parking spaces would be occupied. Therefore, the site would be expected to see an increase in peak period vehicle trips of approximately 5,200 vehicles over a three to four-hour period. This would likely have a significant impact on the study area roadway network.

A sensitivity analysis was performed early in the master planning process to identify the threshold at which major intersections along New Hampshire Avenue (MD 650), US 29, and Cherry Hill Road would begin to fail, making it difficult for employees to access the campus, and requiring significant roadway improvements on a scale that would likely not be feasible. The results of the sensitivity analysis revealed that a lower parking ratio, approximately 1:1.8 would be more appropriate, reducing peak period trip generation by 2,000 vehicles.

At a 1:1.8 parking ratio, approximately 10,000 parking spaces would be permitted for employees. However, some additional parking is needed for support staff and visitors. Thus, approximately 11,709 parking spaces are recommended in the 2018 FDA Master Plan.

## 2.3 TRANSIT FACILITIES

Existing and planned public transportation facilities which serve the White Oak campus are described below.

### 2.3.1 Existing Services

Existing public transportation facilities which service the White Oak Campus include bus and FDA shuttles. Descriptions of the available transit services are provided below. Several bus routes serve the White Oak Campus with stops along New Hampshire Avenue (MD 650) or internally within the campus. Table 1 provides information regarding each bus route. The majority of bus routes provide service during typical FDA operating hours at 15- to 30-minute headways.

**Table 1: Existing Transit Services**

| Route | Operation | Frequency | Metro Connections | Stops within Campus? |
|---|---|---|---|---|
| Montgomery County Ride-On Route 10 | Weekdays, Saturday, Sunday | Weekday Peak: 30 min<br>Weekday Off-Peak: 30 min<br>Weekend: 30 min | Twinbrook<br>Glenmont | No |
| Montgomery County Ride-On Route 22 | Weekday Peak Hours | Weekday Peak: 30 – 40 min | Silver Spring | Yes |
| Metrobus Route C8 | Weekday, Saturday (Does not enter White Oak Campus after 6:30 PM or on Saturdays) | Weekday Peak: 30 min<br>Weekday Off-Peak: 30 min<br>Weekend: 30 min | White Flint<br>Glenmont<br>College Park | Yes |
| Metrobus Route K6 | Weekdays, Saturday, Sunday | Weekday Peak: 15 min<br>Weekday Off-Peak: 20 min<br>Weekend: 15 - 30 min | Fort Totten Station | No |
| Metrobus Route K9 (Express Bus) | Weekday Peak Hours | Weekday Peak: 15 min<br>Weekday Off-Peak: 20 min<br>Weekend: 15 - 30 min | Fort Totten Station | Yes |
| MTA Commuter Bus Route 204 | Weekday Peak Hours (5 buses in the AM, 6 buses in the PM) | Weekday Peak: 30 min | College Park | Yes |

Three MDOT MTA Commuter Bus routes, including 305 (Columbia-Washington via US 29) 315 (Columbia-Washington via US 29) and 325 (Columbia-Washington via US 29), pass near the White Oak campus.

In addition to the bus services listed above, FDA operates six commuter shuttle routes that serve local Metro stations. These shuttles are intended to fill gaps in the existing public transit network. Table 2 provides information regarding each shuttle route. Circulator shuttles are also provided internally to link the buildings and parking lots on the White Oak Campus.

**Table 2: Existing Shuttle Routes (External)**

| Route | Number of Trips* | Average Weekly Ridership** | Average AM/PM Peak Period Ridership Per Trip | Metro Connections |
|---|---|---|---|---|
| White Oak-Hillandale | AM Peak: 4<br>Midday: 7<br>PM Peak: 4 | 124 | 2 | None |
| Twinbrook to White Oak | AM Peak: 4<br>Midday: 4<br>PM Peak: 5 | 338 | 12 | Twinbrook (All shuttles)<br>Glenmont (4 Departures, 6 Arrivals) |
| Medical Center to White Oak | AM Peak: 3<br>Midday: 6<br>PM Peak: 4 | 435 | 16 | Medical Center (All Shuttles)<br>Silver Spring (4 Departures, 1 Arrival) |
| College Park to White Oak | AM Peak: 3<br>Midday: 3<br>PM Peak: 3 | 106 | 13 | College Park |
| Shady Grove to White Oak | AM Peak: 3<br>Midday: 1<br>PM Peak: 2 | 429 | 21 | Shady Grove |
| Silver Spring to White Oak*** | AM Peak: 1<br>Midday: 11<br>PM Peak: 4 | 399 | 11 | Silver Spring |

*AM Peak: Before 10:00 AM, Midday 10:00 PM – 4:00 PM, PM Peak: 4:00 PM or Later
**Based on the average of weekly ridership for January – February 2016
***Additional AM, Midday, and PM peak service provided by Ride-On Route 22

### 2.3.2 Planned Transit Enhancements

#### 2.3.2.1 Bus Rapid Transit (BRT)

Montgomery County has identified seven potential BRT corridors that would provide enhanced transit mobility within the County through express, limited-stop, bus service. The BRT system would consist of branded stations, off-board fare collection, and priority at key intersections. Of the seven potential future routes, three would operate near the White Oak Campus, including:

- US 29 (Columbia Pike): Operating along US 29 between the Silver Spring Transit Center and the Burtonsville Park-and-Ride. The closest planned stop to the White Oak Campus would be the White Oak Transit Center on Lockwood Drive (see Figure 2).

- New Hampshire Avenue: Operating along New Hampshire Avenue between the Colesville Park and Ride and the DC city line. There is a planned stop on the White Oak Campus.

- Randolph Road: Operating along Randolph Road between the White Flint Metrorail Station, and US 29. Current plans indicate a potential terminus near FDA Boulevard in the VIVA White Oak development.

However, it should be noted that only the US 29/Columbia Pike corridor has been selected to advance to implementation in the near-term, and is expected to be in operation within the next five years and will carry approximately 13,000 riders per day. This corridor is anticipated to operate under two patterns. Where the patterns are combined, the headway will be 7.5 minutes during peak periods and 15-minutes off-peak. However, the White Oak Transit Center will only be served by one pattern, offering 15-minute peak headways and 30-minute off-peak headways to the White Oak Transit Center. Furthermore, it should be noted that the US 29/Columbia Pike corridor will operate more as an express bus option than what is typically considered as a BRT. Most of the corridor will operate in mixed traffic without queue jumpers at critical intersection.

The timing of the other corridors, including New Hampshire Avenue and Randolph Road, is less certain, but these corridors are anticipated to come online within the next 10 to 15 years.

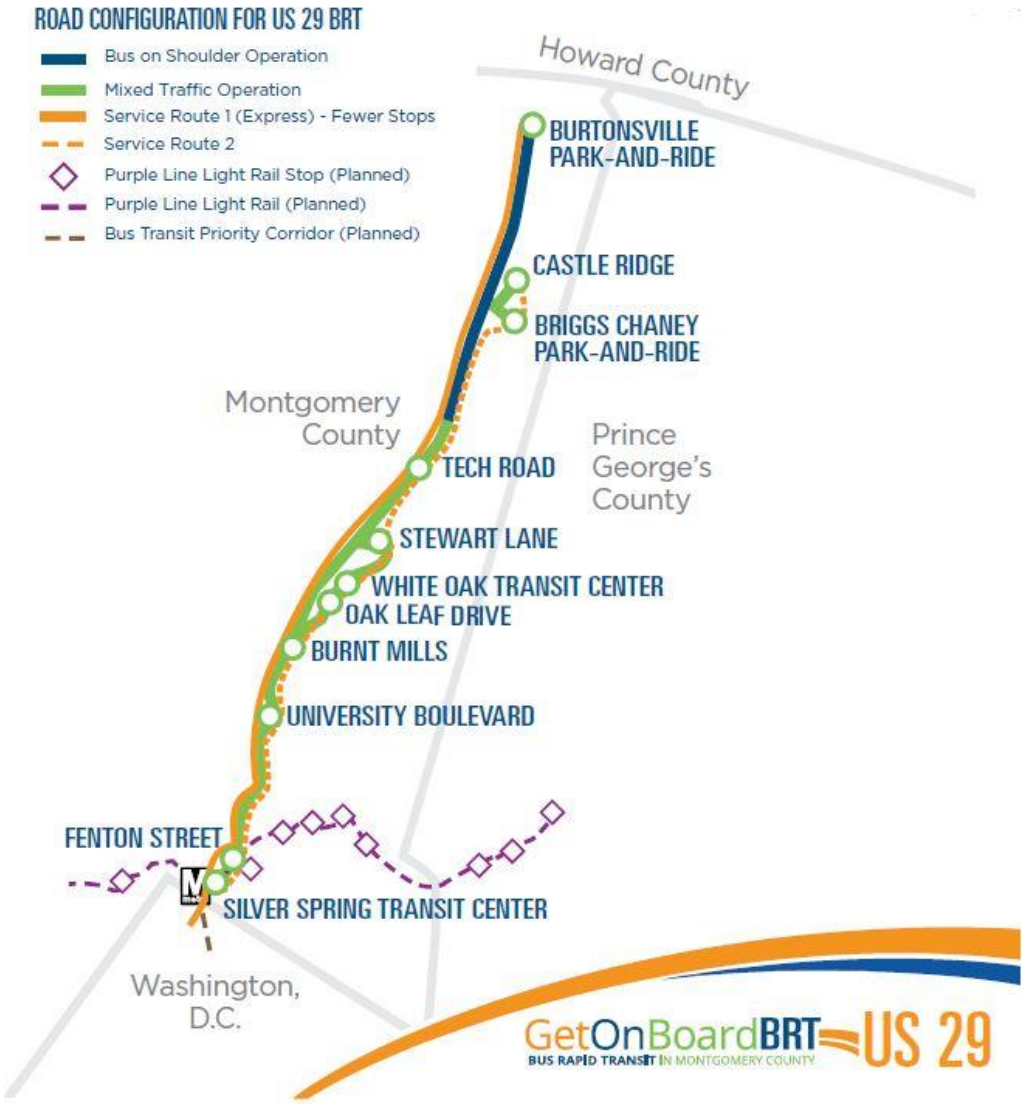


**Figure 2: US 29 BRT**

### 2.3.2.2 Purple Line

The Purple Line is a 16-mile light rail line that will connect Bethesda in Montgomery County to New Carrollton in Prince George's County, operating along a right-of-way that lies between the Beltway and the DC city line, and providing connections to the Red, Green, and Orange Metrorail lines (see Figure 3). The Purple Line will have 21 stations and will be operational in 2022. It is anticipated that it will carry approximately 69,000 daily riders by 2030. The closest stops to the White Oak Campus would be the Piney Branch Road station and the Takoma/Langley Transit Center, both of which are slightly over three miles from the Campus.

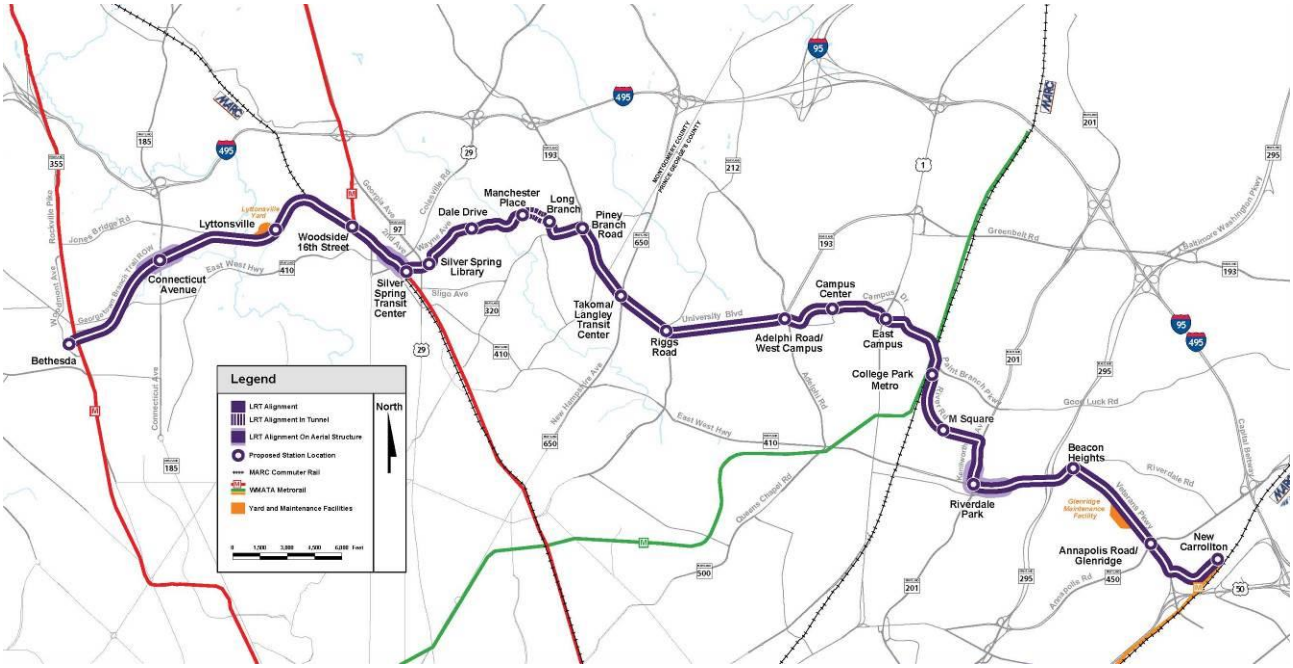


**Figure 3: Purple Line Route Map**

## 2.3.3 Potential Impacts of BRT and Purple Line on FDA Transit Mode Share

The proposed BRT routes and Purple Line have the potential to increase transit mode share on the White Oak Campus. However, this potential impact is not easily quantifiable, particularly given that there is no clear date for implementation of the Randolph Road or New Hampshire Avenue corridors. Therefore, a variety of opportunities and challenges that must be considered when evaluating the potential of these services on FDA transit mode share.

### 2.3.3.1 Potential Benefits

Potential benefits of the BRT and Purple Line include:

- Improved transit reliability on key suburban corridors, which traditionally have limited bus transit services. The BRT and Purple Line will provide shorter peak period headways, thus increasing the flexibility for employees to utilize transit.

- An enhanced level of service that is more comparable to rail with branding, attractive vehicles, off-board fare payment, etc. that is often seen as more attractive to "choice riders" than typical bus transit.

- Additional transit ridership that may be generated initially from employees that live near the BRT or Purple Line corridors that may have viewed the existing bus services as unattractive when compared to driving alone.

- Connections to additional park-and-ride facilities, such as the Burtonsville Park-and-Ride. For example, employees that arrive from points north on the US 29 corridor could park at this location, particularly those that arrive later to work and would have difficulty finding a parking space.

- Ability to reallocate existing shuttles to other areas that are currently underserved by transit.

- Connections to multiple Metrorail lines that will improve east-west travel between lines, as well as making DC-to-suburb trips easier.

- Transit-oriented development may provide attractive and desirable communities along the corridor that may attract FDA employees.

#### 2.3.3.2 Potential Challenges

The challenges and barriers to use of the BRT and Purple Line by FDA staff are similar for both types of services, and include:

- Cannibalization of existing transit riders. The US 29 BRT corridor, as well as several Metrorail stations served by the Purple Line, are currently connected to the White Oak campus via public bus as well as FDA shuttles. There may be resistance to utilize the BRT or Purple Line, particularly if they would incur an additional fare, if there is a free FDA shuttle to make the final connection.

- Reduced ridership potential due to multi-seat rides. The BRT and Purple Line services would be one additional seat in a multi-seat trip as most employees do not live directly along either corridor. For example, an employee that lives outside Purple Line corridor would likely need to drive or walk to a Metrorail station, transfer to the Purple Line, then transfer to another bus or FDA shuttle to complete the trip; a four-seat ride. Multi-seat rides can have a significant impact on potential ridership due to system reliability, multiple fare payment methods, transfer wait time, and transfer station facility amenities and security, among other factors.

- Service connectivity. Connectivity is an issue related to the impacts of multi-seat rides. For these services to be effective commute methods for FDA employees, they must connect efficiently considering multiple factors including time, attractiveness, and fare. Each seat change represents the potential for discomfort, whether it is waiting outside for the next service, a lower quality of service on a particular leg of the trip, or different fare payment and collection methods. Many of these factors are out of the control of FDA.

Furthermore, the two-pattern system on the US 29 BRT corridor will not directly connect the Burtonsville Park-and-Ride and potential future extension to Columbia with the White Oak Transit Center. Riders would have to transfer at Tech Road or FDA would have to provide shuttle service to the Tech Road station.

- Limited service area. While the proposed US 29 BRT corridor and Purple Line offer a significant connectivity benefit to general flow in Montgomery and Prince George's Counties, it does not offer significantly different connections than are already facilitated by the existing transit and shuttle service to the White Oak Campus. While it is acknowledged that the BRT and Purple Line will operate at greater frequencies, which may encourage some new ridership, FDA should be cautious in expecting significant increases in transit mode share initially, as most employees do not live along these corridors.

#### 2.3.3.3 Potential Strategies

Based on the assessment presented above, the proposed BRT corridors and Purple Line can be seen as assets to transit mode share on the FDA campus, but should be considered with caution when evaluating potential contributions to the non-auto driver mode share on campus. To maximize the potential benefits of these services on the overall FDA transit mode share, FDA should consider the following recommendations:

- Coordinate with Montgomery County to explore the possibility of providing an on-campus stop for BRT. If this cannot be provided, FDA should expand their internal circulator shuttle route to cover the White Oak Transit center and schedule shuttles such that they meet the 15- minute peak period headways. A pedestrian connection should also be explored so that employees would be able to walk to the campus efficiently.

- Coordinate with Montgomery County to advance the New Hampshire Avenue and Randolph Road corridors and ensure frequent shuttle connections to stations, as needed.

- Coordinate with WMATA to improve the frequency of Route K9 to enhance connections between the White Oak Campus and the Takoma/Langley Transit Center once the Purple Line is operational. If this is not possible, FDA should consider extending the Hillandale shuttle and ensure frequent shuttle service of no greater than 10-minute headways during peak periods.

- Promote the New Carrolton Purple Line station as a potential park-and-ride for employees that live to the south and east.

- Work with Montgomery County and MTA to install sheltered, secure, and attractive waiting areas where FDA employees will transfer from BRT or Purple Line to FDA shuttle.

- Encourage transit agencies to offer free transfers between services and/or utilize a common fare payment system.

# 2.4 PEDESTRIAN AND BICYCLE FACILITIES

## 2.4.1 Pedestrian Facilities

Four- to five-foot wide sidewalks are provided along most roadways within the study area, providing a network that connects the White Oak Campus to nearby residential and retail areas. Sidewalks are provided along northbound and southbound Cherry Hill Road and southbound New Hampshire Avenue (MD 650). An eight-foot wide multi-use pathway is provided along northbound New Hampshire Avenue (MD 650). The White Oak Campus is connected to the facilities on New Hampshire Avenue (MD 650) via sidewalks along Michelson Road and Mahan Road. A sidewalk and multi-use path are provided along FDA Boulevard and the multi-use path continues along Dahlgren Road to connect the White Oak Campus with the facilities on FDA Boulevard and Cherry Hill Road. However, the distance between Cherry Hill Road and the campus (1.6 miles) makes it unlikely that pedestrians access the existing campus via Cherry Hill Road.

Within the campus, pedestrian sidewalks and walkways are provided between parking areas and buildings, as well as along Northwest Loop Road and Southwest Loop Road.

## 2.4.2 Bicycle Facilities

Bicycle facilities are relatively limited within the study area. A narrow, five-foot wide bicycle lane is provided along northbound New Hampshire Avenue (MD 650) along the FDA site frontage that begins just south of the FDA site and continues to an area just north of Columbia Pike (US 29). Given the narrow width of the bicycle lane, its proximity to a heavily traveled roadway, and limited connections, it is not likely to encourage FDA employees to commute via bicycle. As discussed earlier, a multi-use path is provided along the northside of FDA Boulevard that extends to the campus along Dahlgren Road. However, there are limited facilities on Cherry Hill Road, which would not make the multi-use path an attractive bicycle route.

Sheltered bicycle parking is provided within parking garages and adjacent to building entrances. Tool and pump stations are also provided at most bike parking areas, and shower facilities and lockers are provided for bicycle commuters. However, bicycle lanes are not provided on the internal roadway network.

Figure 4 shows the planned bicycle facilities in the White Oak area based on the 2018 Draft Bicycle Master Plan. A mixture of bike lanes and shared-use paths are planned that would connect the White Oak Campus with nearby neighborhoods as well as regional bicycle facilities. In addition, a potential bicycle trail is shown along the north side of the White Oak campus, connecting New Hampshire Avenue to FDA Boulevard and Cherry Hill Road.

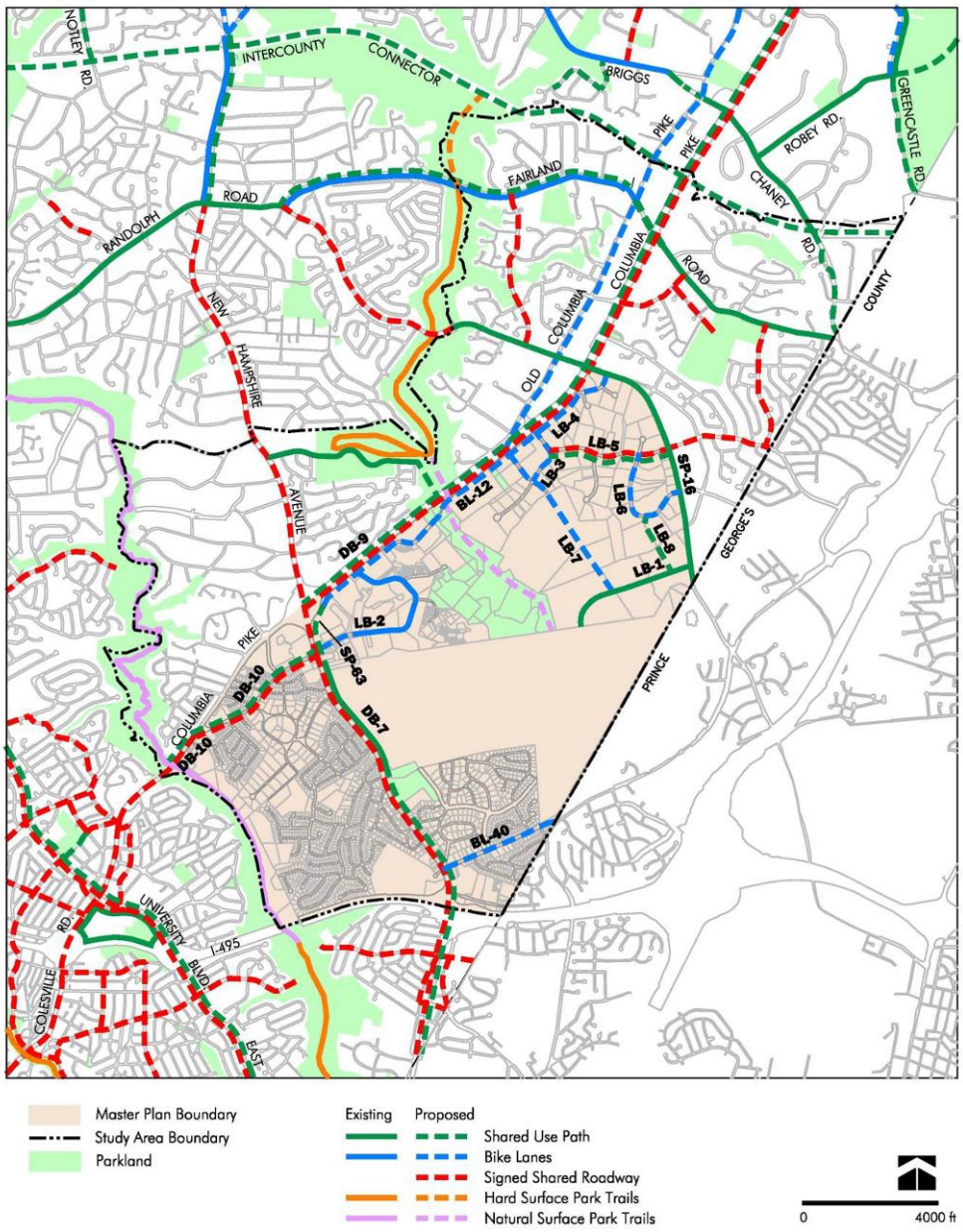


**Figure 4: Existing and Planned Bicycle Facilities in Study Area**

# 2.5 APPROVED PLANNED REGIONAL TRANSPORTATION INFRASTRUCTURE AND SERVICE IMPROVEMENTS

## 2.5.1 White Oak Master Plan

Montgomery County recently completed a LATR for the White Oak area to plan for the anticipated development within the White Oak area. Sabra, Wang & Associates (SWA) conducted a traffic analysis which was utilized to project future traffic volumes and identify and recommend improvements to the transportation network. The SWA volume projections as well as the recommended transportation network improvements were incorporated into this study in the No Action condition because they are assumed to be completed regardless of the status of the White Oak campus (see Appendix B for a description of the No Action condition and associated planned improvements). The anticipated increase in employees and support staff up to approximately 18,000 was not anticipated in the SWA analysis. Therefore, additional improvements are proposed as part of the Traffic Technical Report (see Appendix B).

# 3.0 EXISTING EMPLOYEE BEHAVIOR

## 3.1 TRANSPORTATION PROGRAMS

FDA currently offers the following transportation fringe benefits to its employees:

- Transit subsidies. FDA may pay part or total cost of a transit pass or voucher by either direct payment to the employees by check or voucher, or through a payroll deduction process in which the agency handles the administration of the program, including payments to transit operators.
- Carpool/Vanpool Programs and Subsidies
- Flex Hours/Flex Time/Compressed Work Week
- Commuter Connections/Guaranteed Ride Home
- Telework

## 3.2 EMPLOYEE SURVEY

An employee survey was conducted via the internet from June 20, 2017 to July 14, 2017 to evaluate the commuting patterns of existing employees that are assigned to the White Oak Campus to estimate how they currently commute to/from the campus and identify opportunities to enhance non-auto modes. A separate survey was also distributed to existing employees that currently work in off-campus leased buildings and that are anticipated to be consolidated to the White Oak Campus. The surveys investigated the modes by which employees travel to work, working hours, telecommuting, origin/destination, possible improvements to transit options, and reasons for mode choice. Copies of the surveys are in Appendix A.

## 3.3 ON-CAMPUS EMPLOYEE SURVEY RESULTS

An email containing a link to the on-line survey was distributed to 9,127 employees. For this population, a sample size of 1,538 responses would make the results statistically significant; 1,834 or approximately 20%, responded. Therefore, it was determined that the survey results would be statistically significant. Furthermore, FDA provided population per building in which to compare to the response rates from each building to validate the results. As can be seen in Table 3, below, the survey responses rates from each building are consistent with the overall population distribution.

The survey results for each question are summarized below.

**Table 3: Comparison of On-Site Population Distribution to the Distribution of Survey Results**

| Building | Percentage of Employee Population | Percentage of Survey Responses |
|---|---|---|
| White Oak Building 1 | 2.62% | 2.35% |
| White Oak Building 130 - Office/Machine Shop | 0.03% | 0.05% |
| White Oak Building 2 | 3.85% | 0.60% |
| White Oak Building 21 | 5.34% | 4.32% |
| White Oak Building 22 | 18.27% | 18.16% |
| White Oak Building 31 | 2.26% | 2.30% |
| White Oak Building 32 | 8.47% | 9.68% |
| White Oak Building 51 | 12.65% | 15.26% |
| White Oak Building 52/72 | 4.33% | 3.88% |
| White Oak Building 62 | 2.03% | 1.86% |
| White Oak Building 64 | 1.38% | 1.31% |
| White Oak Building 66 | 13.21% | 14.93% |
| White Oak Building 71 | 10.00% | 10.23% |
| White Oak Building 75 | 15.55% | 15.04% |

### Questions 1 through 3: Employee Demographics

Questions 1 through 3 asked employees about their role at FDA, the location of their current office, and the zip code of their residence. All but two respondents indicated they are employed by FDA. The two non-FDA respondents are employed by GSA.

Figure 5 shows where respondents work on-campus, while Figure 6 shows the location of campus buildings. The majority of respondents reported working in Buildings 22, 51, 66, and 75. The highest percentage of respondents (18.2%) reported working in Building 22, which is occupied by CDER.

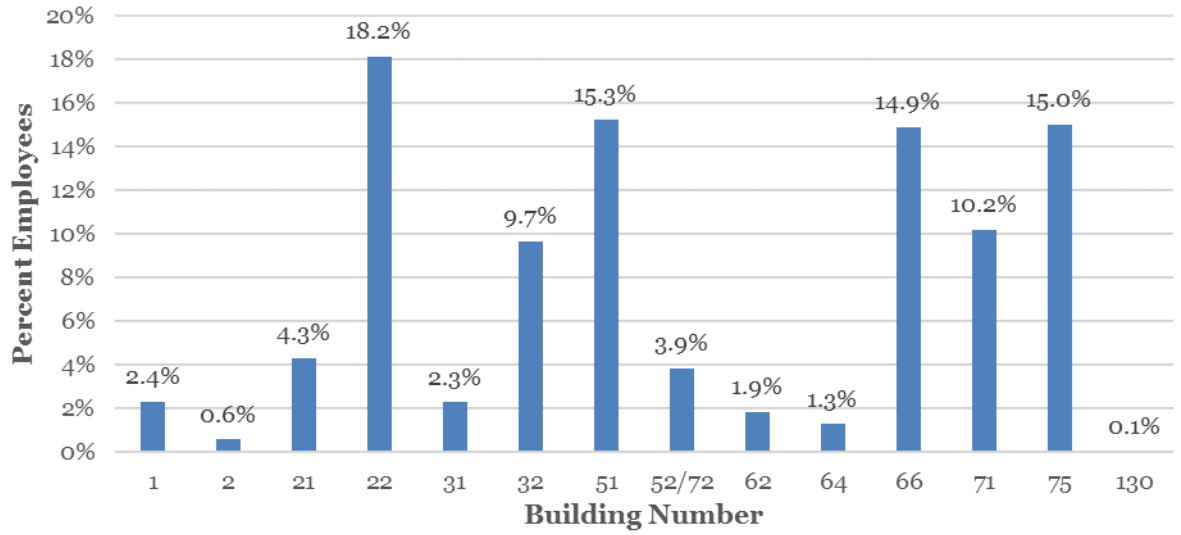


**Figure 5: Respondent's On-Campus Work Location**


**Figure 6: Campus Map**

Finally, Figure 7 illustrates the density of employee residences in each zip code, with a darker color indicating a greater density. The results show high concentrations of employees along the I-270 and I-95/US 29 corridors, as well as within the Silver Spring area

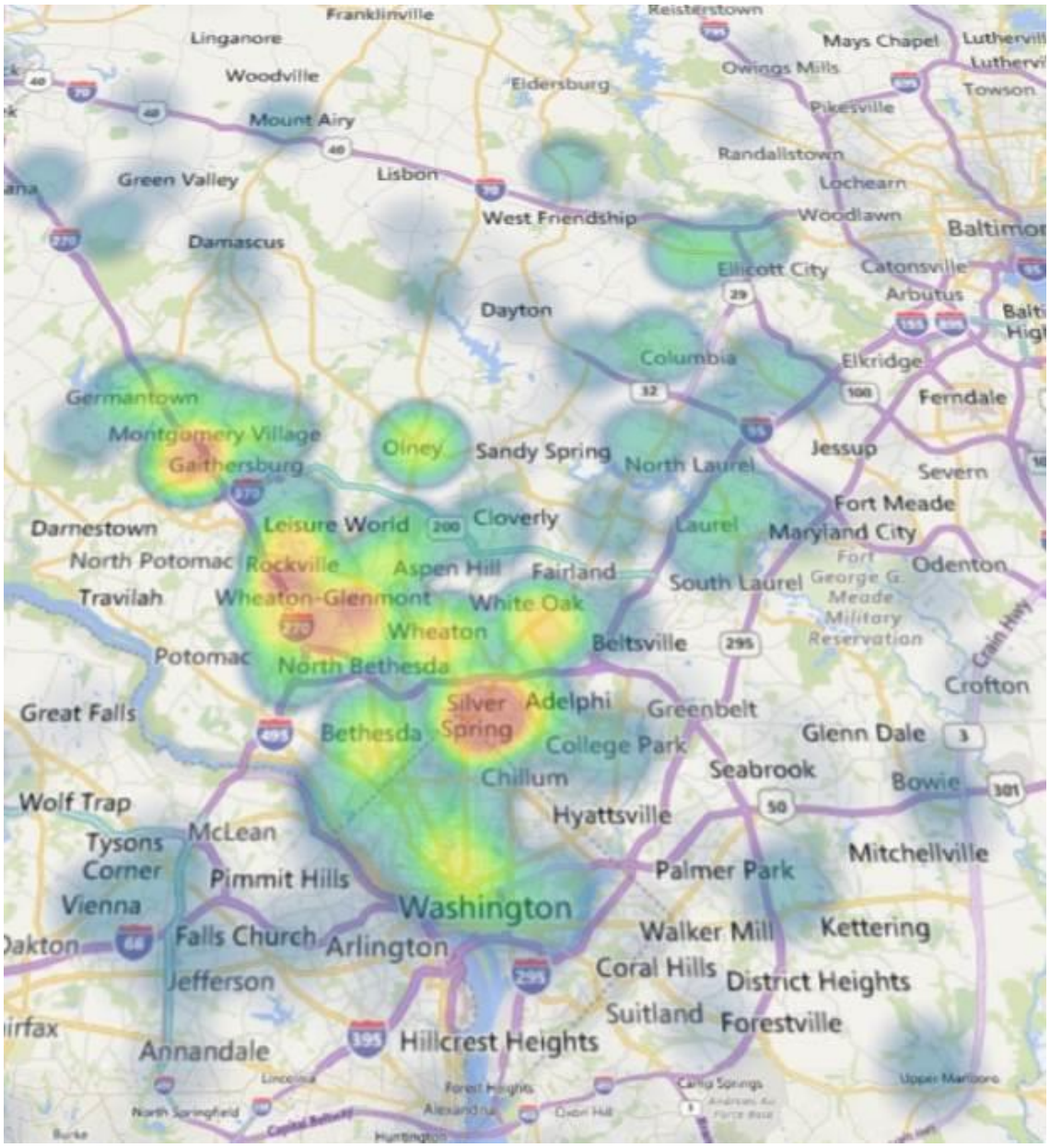


**Figure 7: On-Campus Respondent Residence Location (Employees Per Zip Code)**

**Questions 4 through 6: Work Habits**

Questions 4 through 6 asked employees about their work habits including work schedule, arrival and departure times, and days of week that they work in the office. Most (about 86.7%) respondents work a typical 5 day/40 hours per week work schedule. However, less than a third (about 31.1%) of respondents are on campus every work day, which reflects the telework and compressed work week programs offered to employees (Figure 8). In addition, a majority, 62.3%, of employees arrive between 7:00 AM and 9:00 AM and 61.2% depart between 3:30 PM and 5:30 PM.

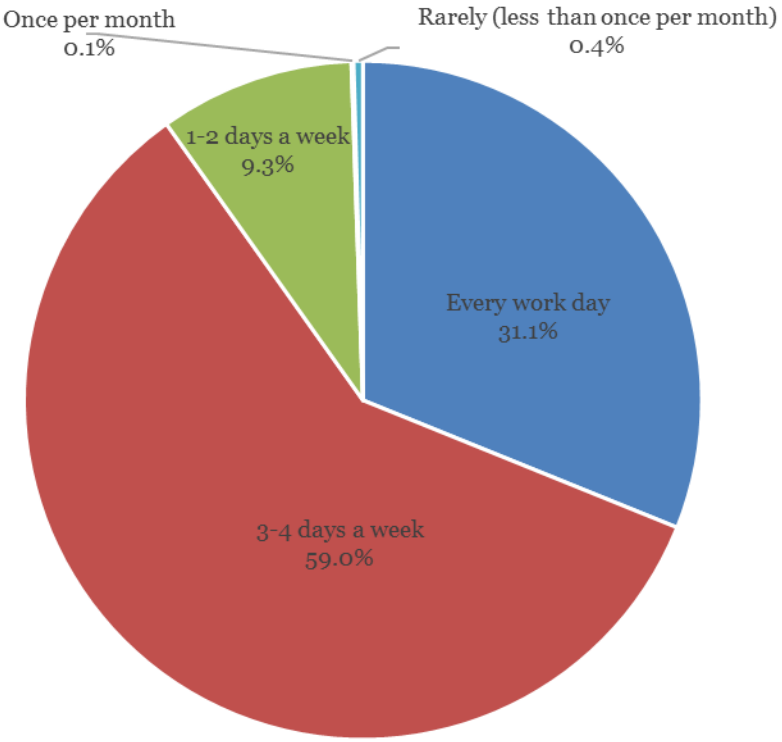


**Figure 8: Frequency of Respondent on Campus**

**Question 7: Primary Commute Mode**

Approximately 75% of respondents commute via personal vehicle. Of the remaining commute modes, almost 12% of respondents indicate that they carpool or vanpool to the office (Figure 9). This speaks to the robust carpool and vanpool program that has been implemented by FDA for the White Oak Campus. Other modes, including bus, rail, and shuttle make up the remaining 13%. Less than 1% of respondents commute via walking or biking.

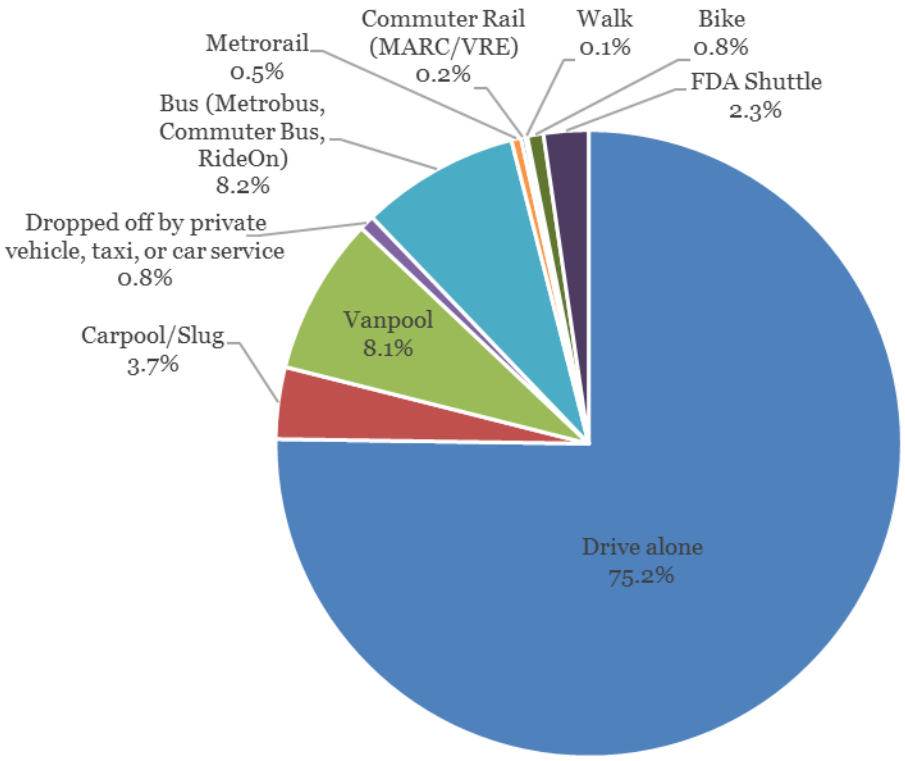


**Figure 9: Current Commute Mode Split for On-Campus Respondents**

**Questions 8 through 10: Probability of Changing Commute Mode**

Question 8 asked respondents that drive alone to work if they would be willing to consider alternatives mode of transportation. The results of the survey show that the majority of respondents (approximately 70%) would not be willing to consider any alternative mode of travel. Question 9 asks why these respondents would not consider an alternative mode of travel. One-third of respondents indicated that they had an unpredictable schedule. Other respondents (28.8%) need a car for childcare drop-off/pick-up and 25.9% like the comfort/convenience of their own vehicle (see Figure 10).

Question 10 asked employees if improvements to transit services would increase the likelihood that they would consider utilizing transit for commuting. It should be noted that this question allowed the selection of more than one answer. The results of the question are summarized in Figure 11. The results show that the largest percentage (approximately 37.5%) of respondents indicated that they would like more mass transit options from their home. Other significant responses included increasing the frequency, reliability, safety, and/or comfort of public transit (30%) and providing direct door-to-door service (29%). Some (30.4%) respondents were unwilling to consider mass transit.

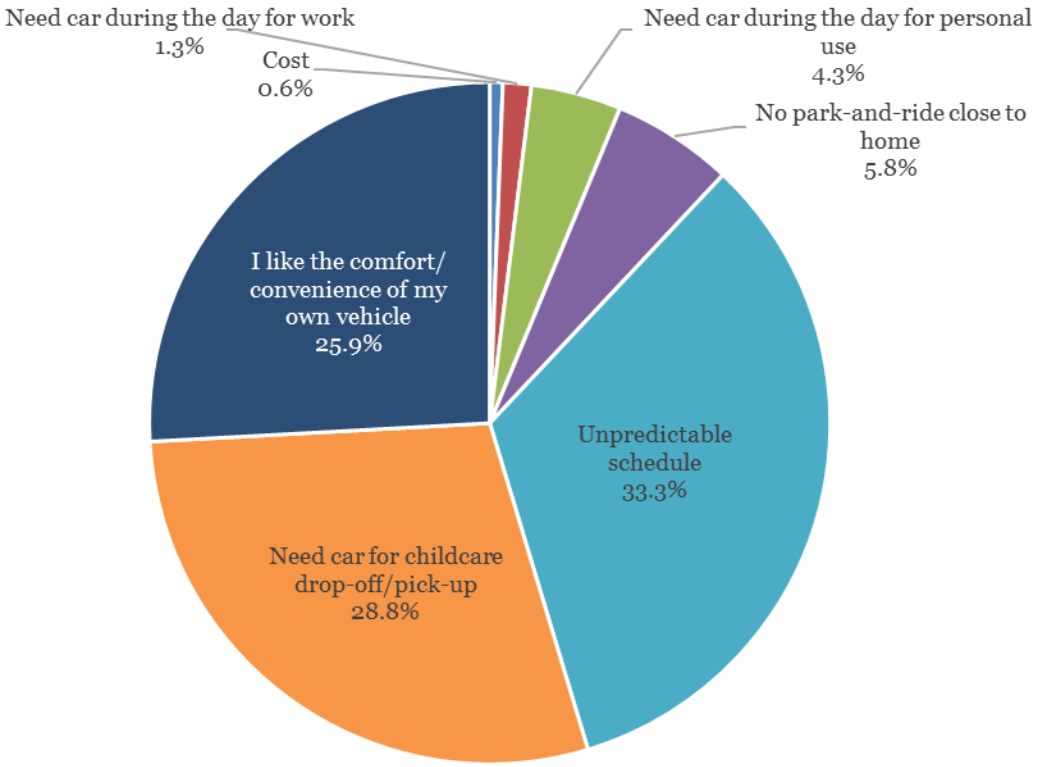


**Figure 10: Reasons Why On-Campus Drive Alone Commuters Would Not Consider Alternative Commute Modes**

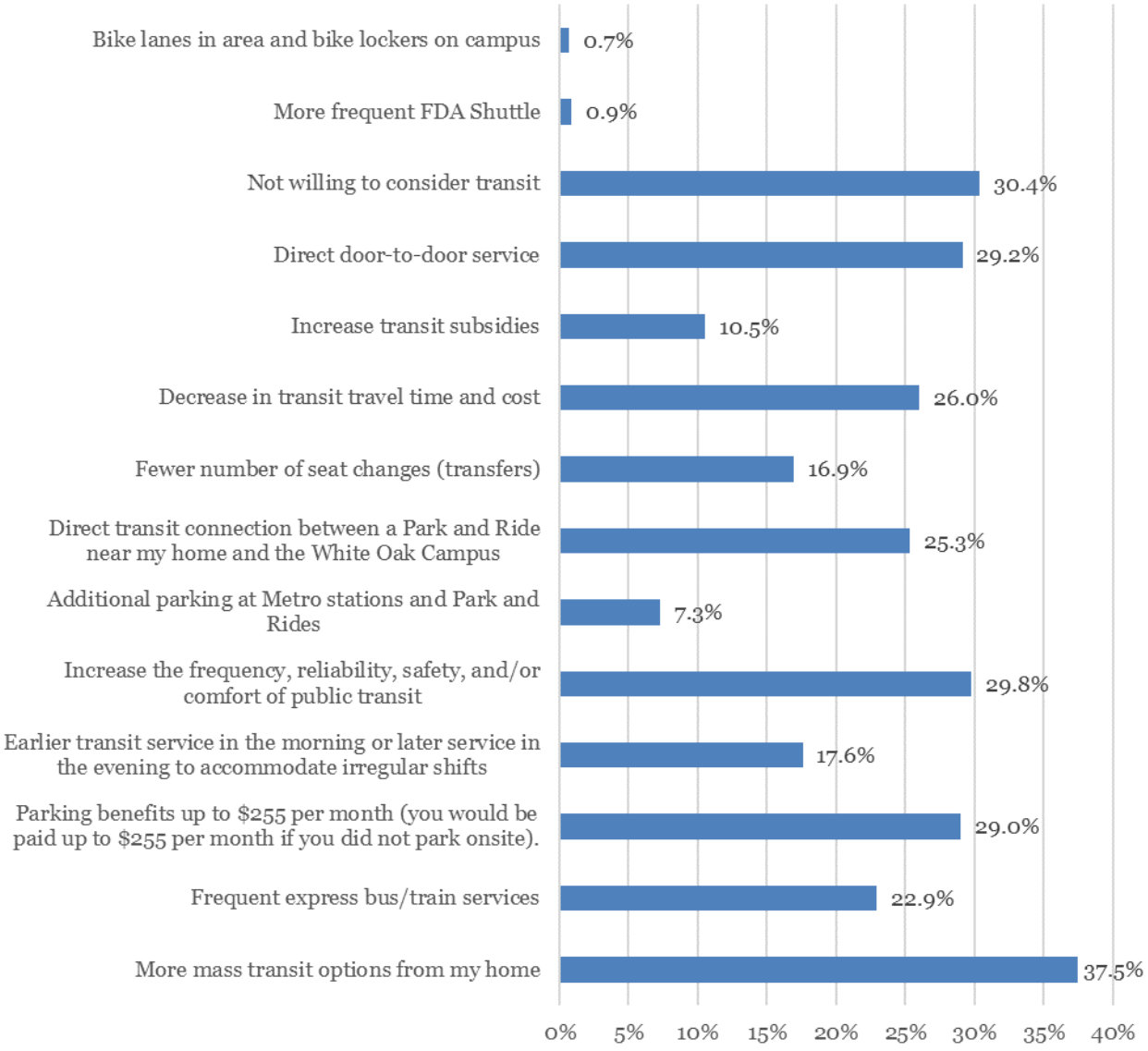


**Figure 11: Improvements to Transit Services that would Encourage Drive Alone On-Campus Commuters to Consider Alternative Modes**

### Questions 11 and 12: Number of Respondents in a Carpool or Vanpool

Questions 11 and 12 asked those on-campus employees who indicated that they primarily carpool or vanpool to work about the number of persons in their carpool or vanpool. No carpool exceeded six persons, and the majority (approximately 81%) were two persons. Vanpool size varied from two to 17 persons, but the most common response was seven persons (about 26%).

### Questions 13 through 15: On-Campus Parking for Drive Alone or Carpool/Vanpool Commuters

Questions 13 through 15 asked employees who drive alone or carpool/vanpool to work about parking on campus. Responses in Figure 12 reveal that the most popular parking facilities are the Northeast Parking Garage (18.6%), North Parking Garage (14.6%), Southwest Parking Garage (27.3%), and Southeast Surface Parking (14.6%). However, the results of Question 14 indicate that 75.9% of respondents feel that there is not enough parking available. A follow-up question (15) asked how an employee's commute would change if more on-campus parking were provided. Just over half (56.3%) of respondents would not change their commute while 25% would be able to leave later but arrive to work at the same time (Figure 13).

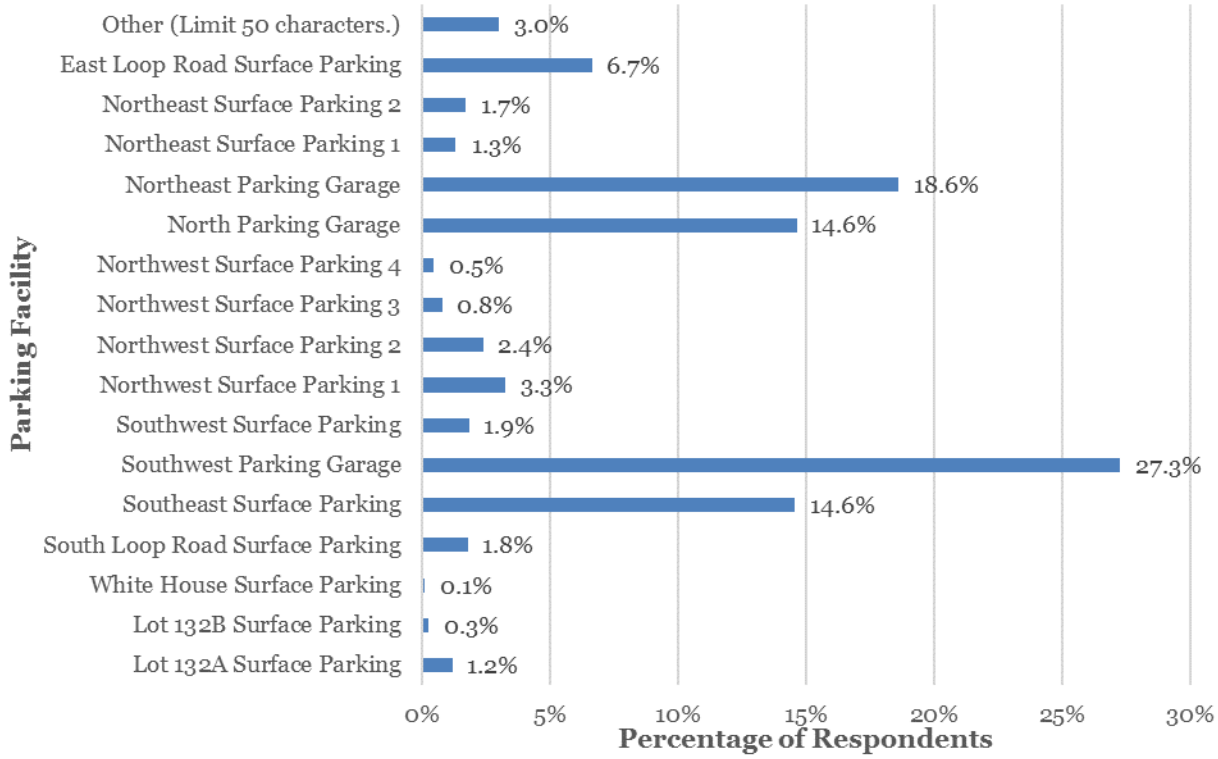


**Figure 12: On-Campus Employee Parking Location**

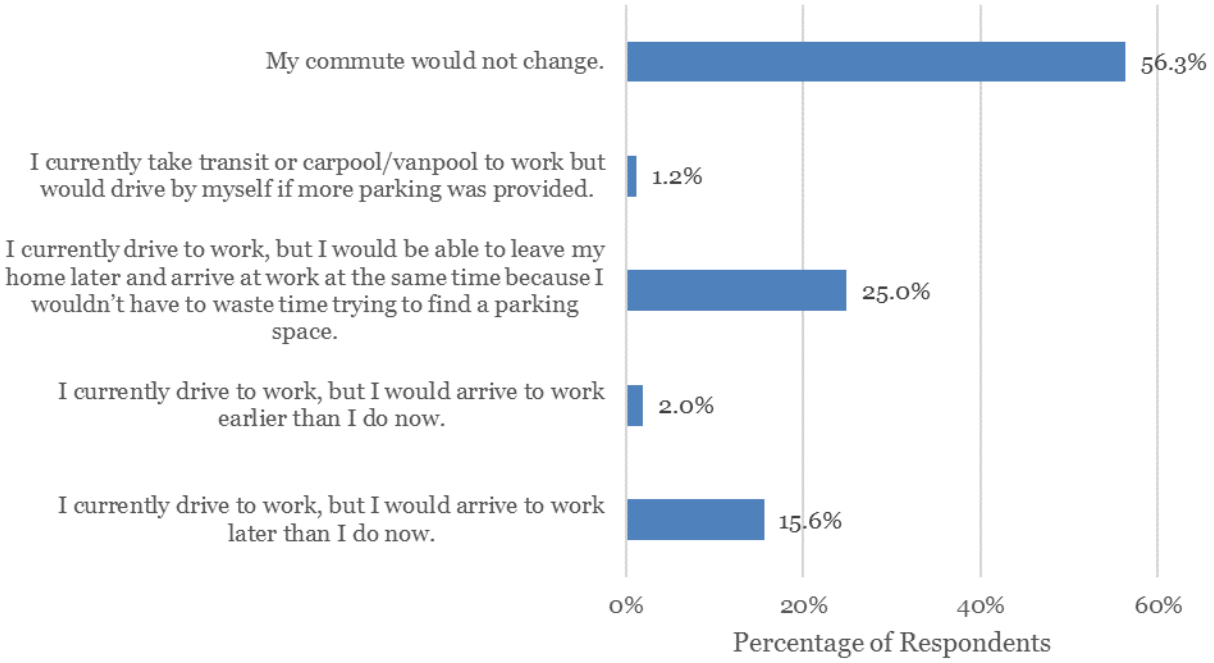


**Figure 13: On-Campus Respondent Commute Change Due to Additional Parking**

**Questions 16 through 18: On-Campus and Commuter Employee FDA Shuttle Use**

Questions 16 through 18 asked employees about their usage of the on-campus and commuter shuttles provided by FDA. The on-campus shuttle provides connection between buildings and parking areas on campus, while the commuter shuttle runs between the campus and six Metrorail stations on the Red and Green Lines from 6:00AM to 8:45PM. Based on the survey results, only 8.2% of respondents use shuttle as part of their commute. Figure 14 shows that of these riders, 16.3% of respondents use the FDA commuter shuttle on an everyday basis and 28.7% of respondents use it three to four times a week.

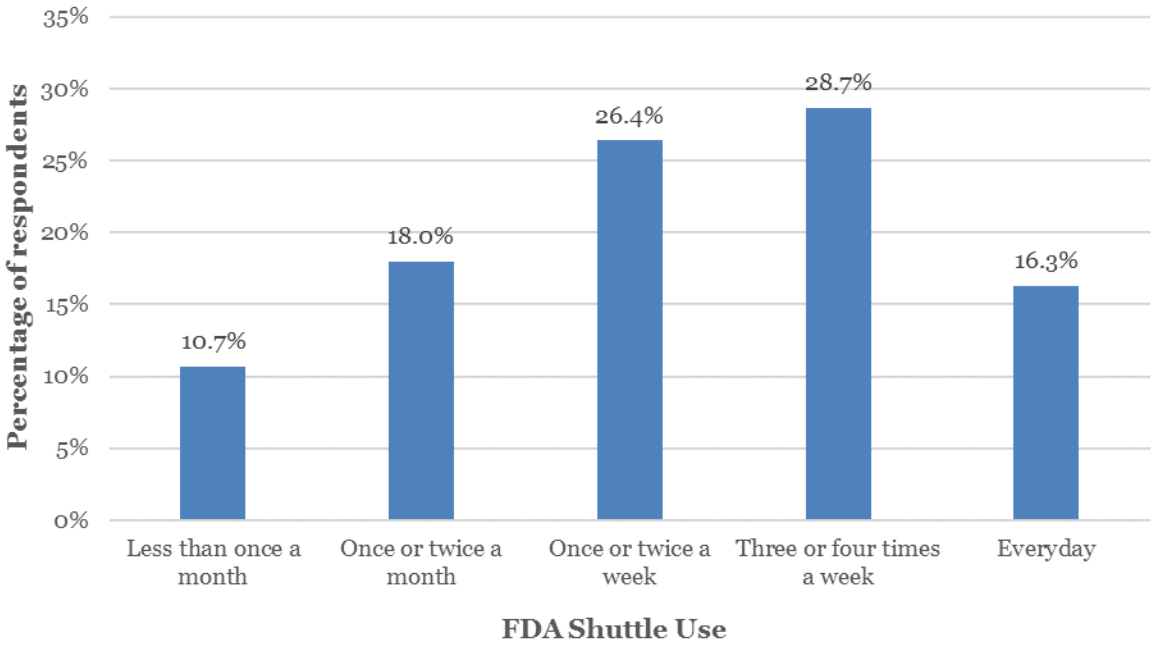


**Figure 14: On-Campus Respondent Shuttle Usage**

Of the respondents who indicated that they do not use the on-campus or commuter shuttles, 67.3% indicated that they do not need to travel between locations during the workday or walk to other campus buildings, and 12.1% indicated that the commuter shuttle is not frequent enough to meet their needs (Figure 15).

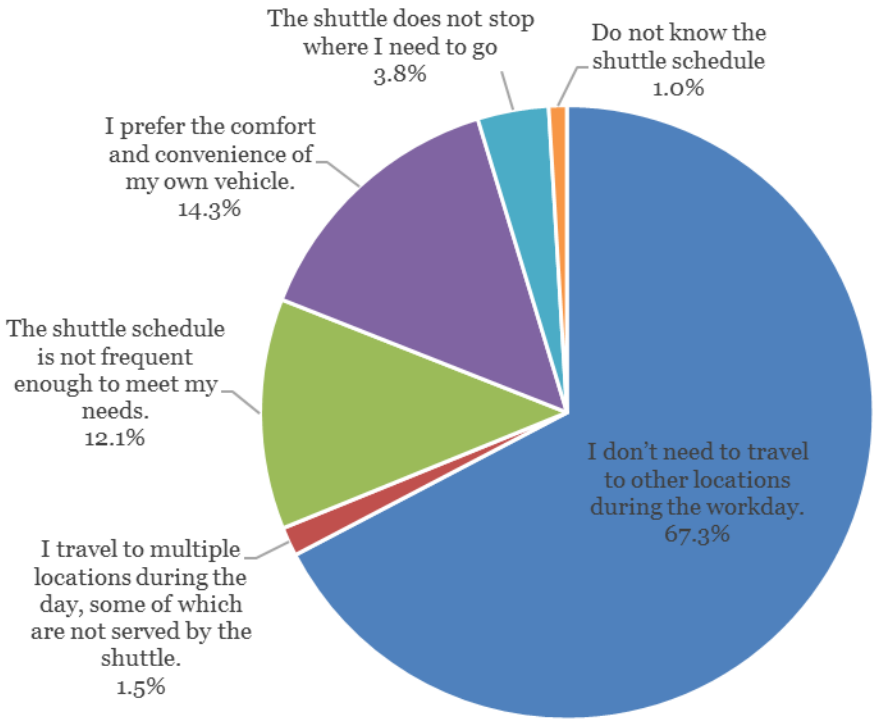


**Figure 15: On-Campus Respondent Reasons for Not Using the FDA Shuttle**

### Questions 19 through 24: On-Campus Employee Telework Trends

Questions 19 through 24 asked employees about their current teleworking activities. Approximately 50.5% of respondents telework one or two days per week, mostly on Thursdays and Fridays. Approximately 40% of respondents telework because they enjoy working out of their home or other off-campus location, while 40% telework because their commute to the White Oak Campus is too long and/or too stressful (Figure 16). Just over half of respondents, 53.4%, feel that they telework just the right amount while 45.4% feel that they don't telework enough.

For Question 23 and 24, employees were asked about the difficulties of telework, specifically if they ever felt that it was difficult to conduct their work when teleworking (Figure 17) and the reason they felt that way (Figure 18). Most (79.4%) respondents indicated that it is never or rarely difficult for them to conduct their work while teleworking, but 22.7% indicated that IT/AV/telecommunications/network issues are the main reasons for having trouble teleworking.

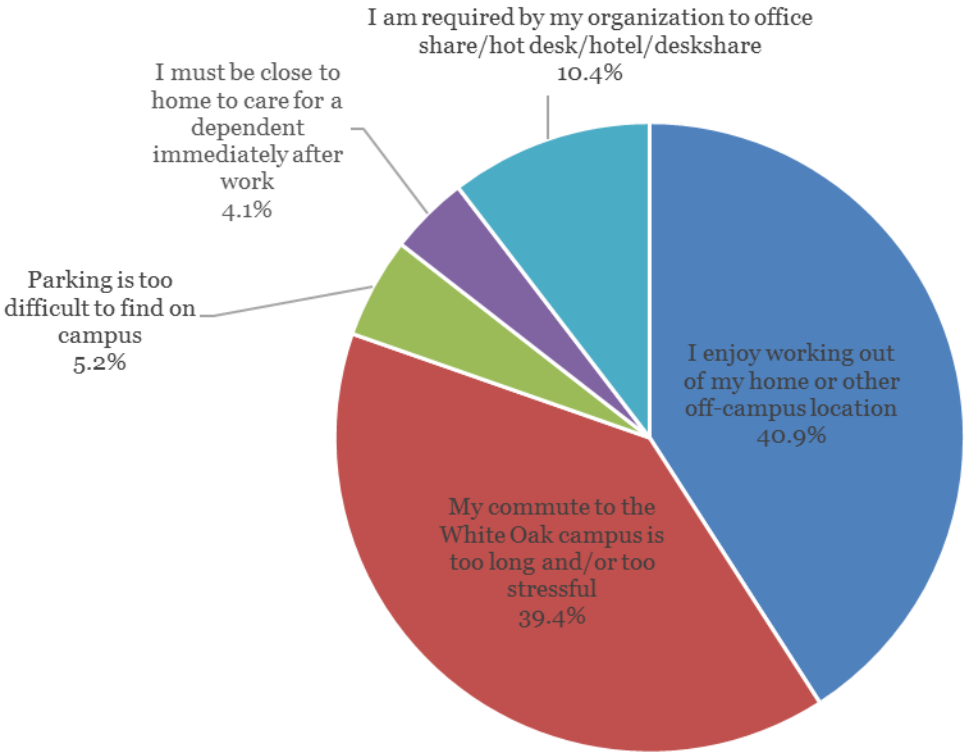


**Figure 16: On-Campus Respondent Reasons for Teleworking**

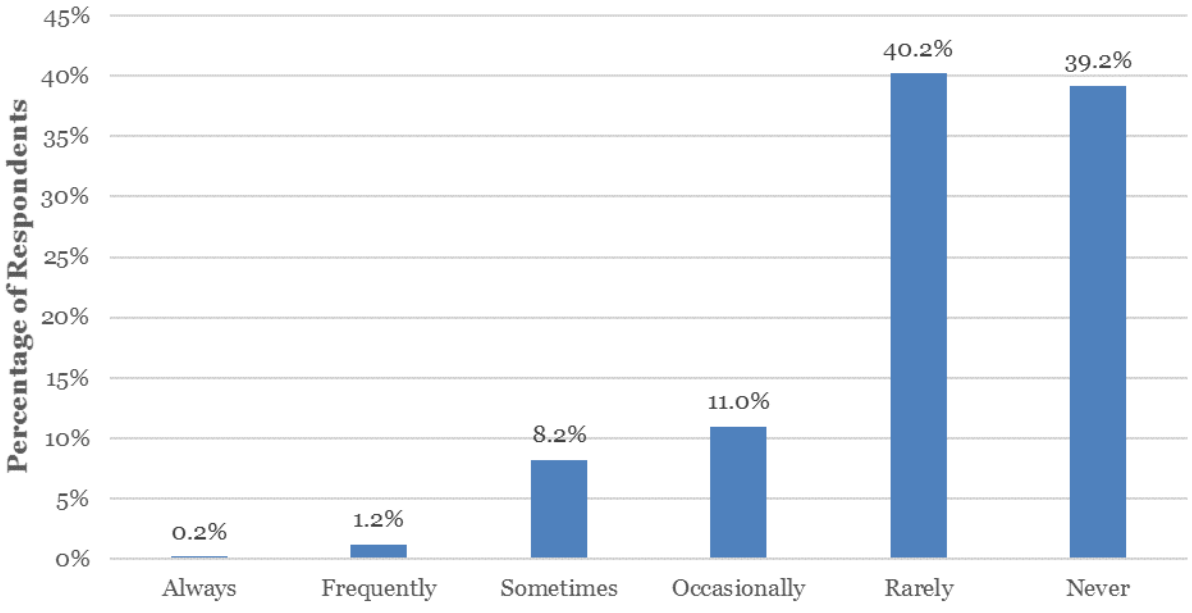


**Figure 17: How Often On-Campus Respondents Feel it is Difficult to Telework**

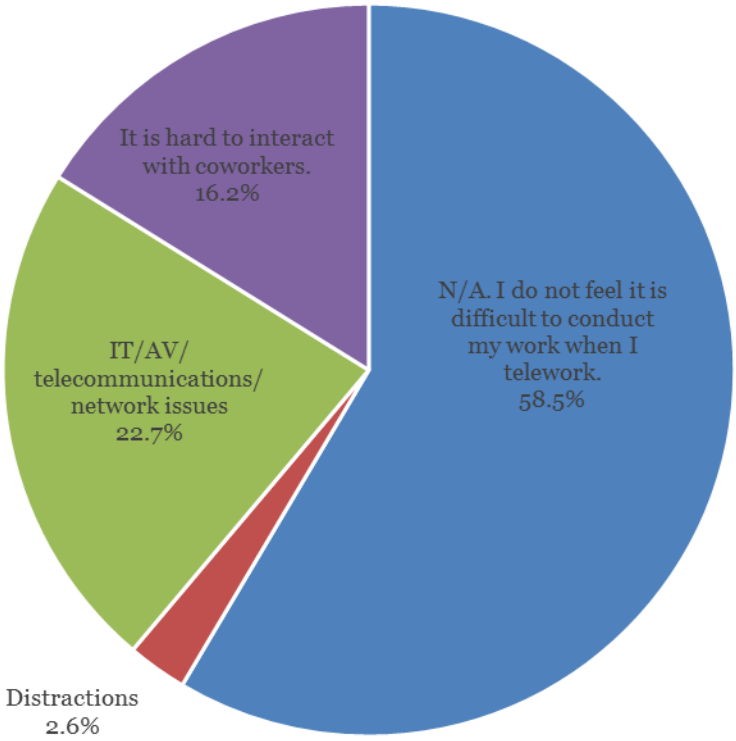


**Figure 18: Reasons Why On-Campus Respondents Feel that Teleworking is Difficult**

### Questions 25 through 27: Walking and Biking to Work

Question 25 through 27 discussed walking and/or biking to work. Approximately 4% of respondents walk or bike to work at least one time per year. Of the 4% of respondents who walk or bike, almost half walk or bike rarely or once per month (Figure 19).

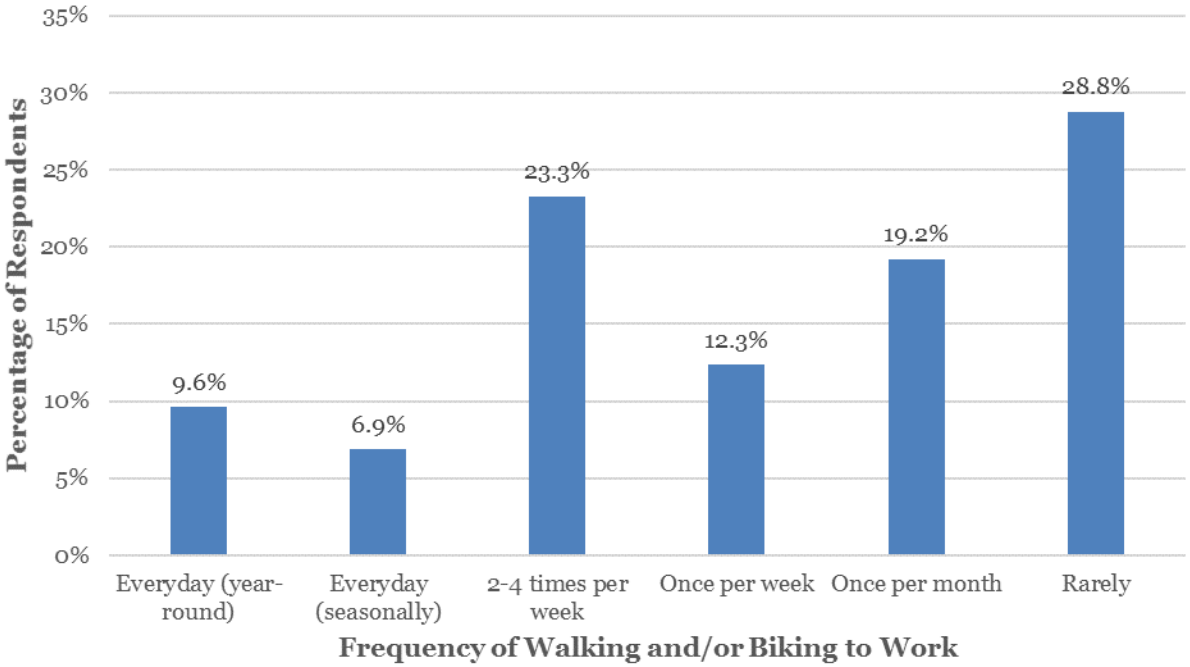


**Figure 19: Frequency at which On-Campus Respondents Walk and/or Bike to Work**

Question 27 asked employees if there are any on- or off-campus issues they encounter when walking and/or biking to work. This question was free response to allow respondents to be specific. Although 27.4% of respondents have no issues biking and/or walking to work, 46.6% of respondents expressed concern about the lack of bicycle lanes and poor sidewalk conditions on surrounding roadways, especially on Columbia Pike (US 29), Cherry Hill Road, and FDA Boulevard. Respondents also noted that they feel it is dangerous for them to enter vehicular traffic at a campus checkpoint to enter the White Oak Campus when biking to work. Furthermore, perceived aggressive driving on local and campus roadways makes respondents who walk and/or bike to work feel unsafe.

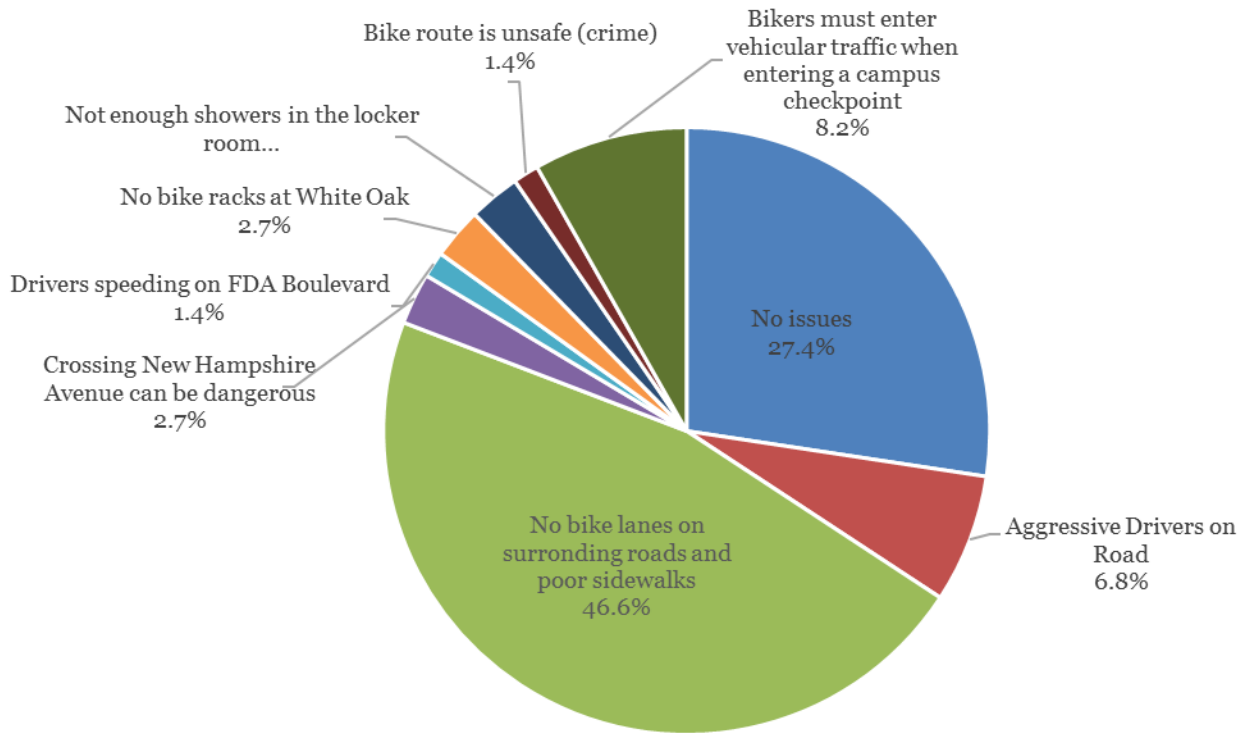


**Figure 20: Concerns of On-Campus Respondents Who Walk and/or Bike to Work**

**Questions 28 through 32: Miscellaneous Questions**

Questions 28 through 32 asked respondents to indicate their opinion on services, such as car sharing, direct shuttle service, guaranteed ride home services, and asked respondents to provide any general comments. The questions and their responses are indicated below:

- Question 28: If a Zip-Car (carsharing service) or an equivalent service was provided at your office location for a fee, would you use it?

  Only 12.8% of respondents said they would use a carsharing service if offered at the White Oak Campus.

- Question 29: Would you consider parking your car at a Park-and-Ride lot near your home if FDA shuttle service was provided to and from the White Oak Campus?

  About half (53.3%) of respondents said they would consider parking their car at a park-and-ride near home if a FDA shuttle was offered from there.

- Question 30: Are you currently registered with Commuter Connections Guaranteed Ride Home Service or any other commuter assistance program?

Approximately 83.5% of respondents said they are not registered with a commuter assistance program.

- Question 31: If you presently drive to work alone, would you be willing to carpool or vanpool if you were provided Guaranteed Ride Home service? A Guaranteed Ride Home service provides free rides to registered carpool or vanpool participants that must leave work early due to an emergency, such as personal illness or a sick child.

  Only 22.5% of respondents would be willing to carpool or vanpool if a guaranteed ride home service was offered to them.

- Question 32: Do you have any other comments, questions, or concerns?

  This question was free response to allow employees to be specific. Comments that were similar in content were summarized and categorized. The results, summarized in Figure 21, highlight similar concerns of two or more respondents. Most responses talked about more parking on campus, more shuttle routes, and more frequent shuttles. Others were concerned about the ability to telework more and constructing bike lanes on FDA Boulevard and Cherry Hill Road.

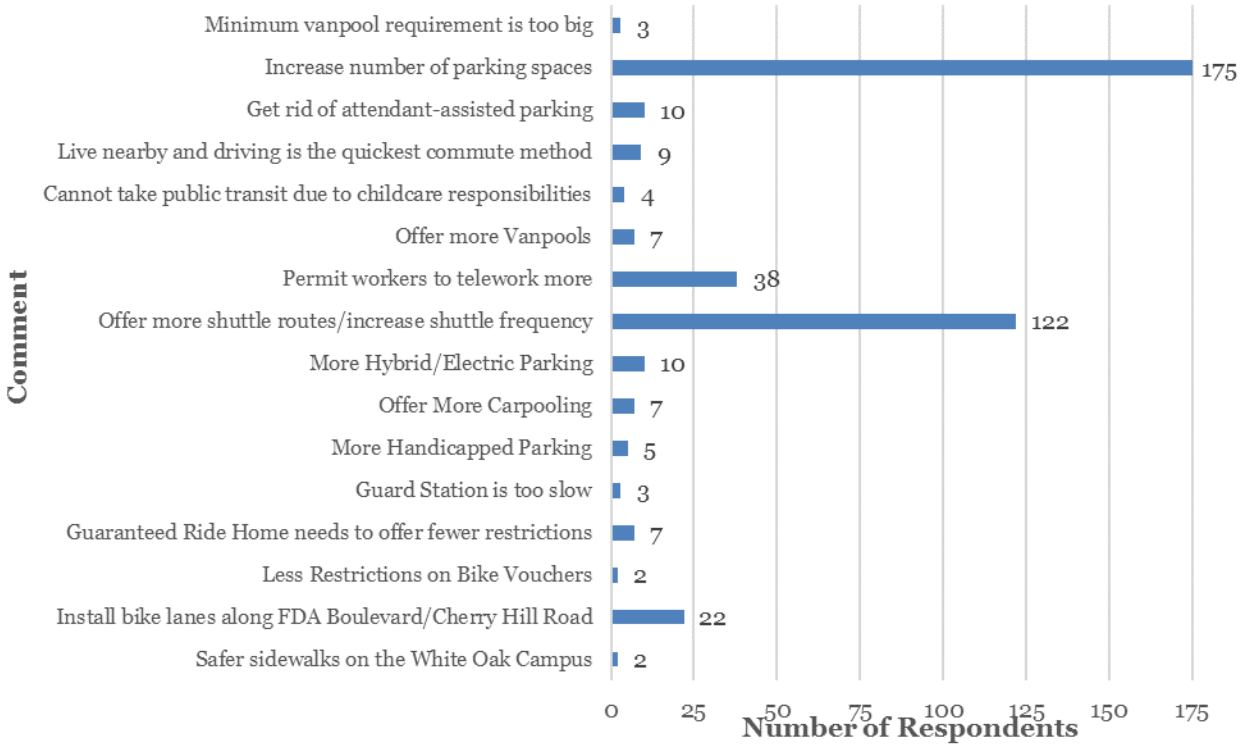


**Figure 21: FDA On-Campus Employees Open Ended Response**

## 3.4 OFF-CAMPUS EMPLOYEE SURVEY RESULTS

An email containing a link to the on-line survey was distributed to 2,297 off-campus employees and 547, approximately 24%, responded. Therefore, it was determined that the survey results would be statistically significant. Furthermore, FDA provided population per building in which to compare to the response rates from each building to validate the results. As can be seen in Table 4, below, the survey responses rates from each building are consistent with the overall population distribution.

**Table 4: Comparison of Off-Site Population Distribution to the Distribution of Survey Results**

| Building | Percentage of Employee Population | Percentage of Survey Responses |
|---|---|---|
| 11601 Landsdown Street | 32.56% | 23.90% |
| 8455 Colesville Road | 8.65% | 6.8% |
| 12420 Parklawn Drive | 19.39% | 13.24% |
| 5630 Fishers Lane | 6.57% | 6.43% |
| 10001 New Hampshire Ave | 7.73% | 12.50% |
| Montrose Metro II - 11919 Rockville Pike | 2.30% | 2.76% |
| 7500 Standish Place | 13.90% | 20.22% |
| 7519 Standish Place | 4.42% | 9.01% |
| 7620 Standish Place | 0.15% | 2.21% |
| 1451 Rockville Pike | 3.65% | 1.47% |
| 16071 Industrial Drive | 0.55% | 1.29% |
| 12100 Parklawn Drive | 0.12% | 0.18% |

The survey results for each question are summarized below.

**Questions 1 through 3: Employee Demographics**

Questions 1 through 3 asked employees about their role at FDA, the address of their current office, and the ZIP code of their residence. All respondents indicated that they are employed by FDA. Figure 22 indicates that around 68% of employees are located at one of the FDA's Rockville, Maryland offices. Forty-four percent of employees responded that they are assigned to either the office at 11601 Lansdown Street or the office at 7500 Standish Place. Figure 23 illustrates the density of employee residences, with a darker color indicating a greater density. The map indicates a high concentration of employees along the I-270 corridor.

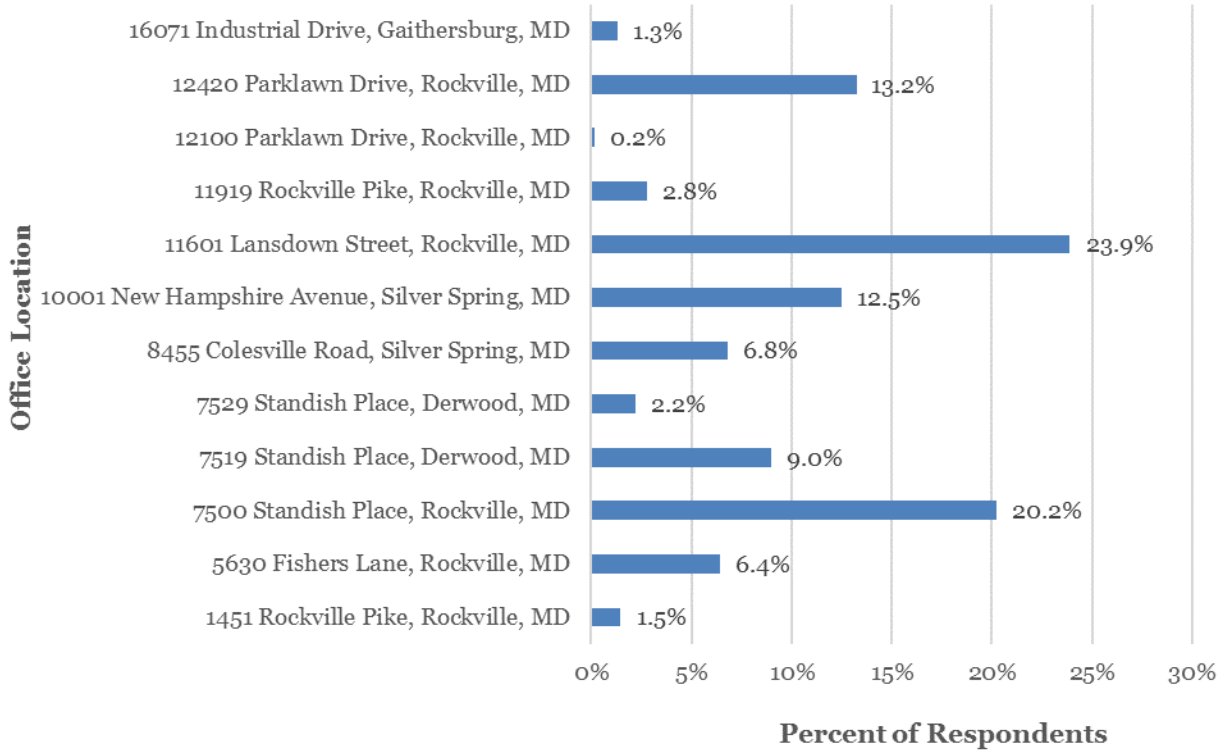


**Figure 22: Off-Campus Respondent Office Location**

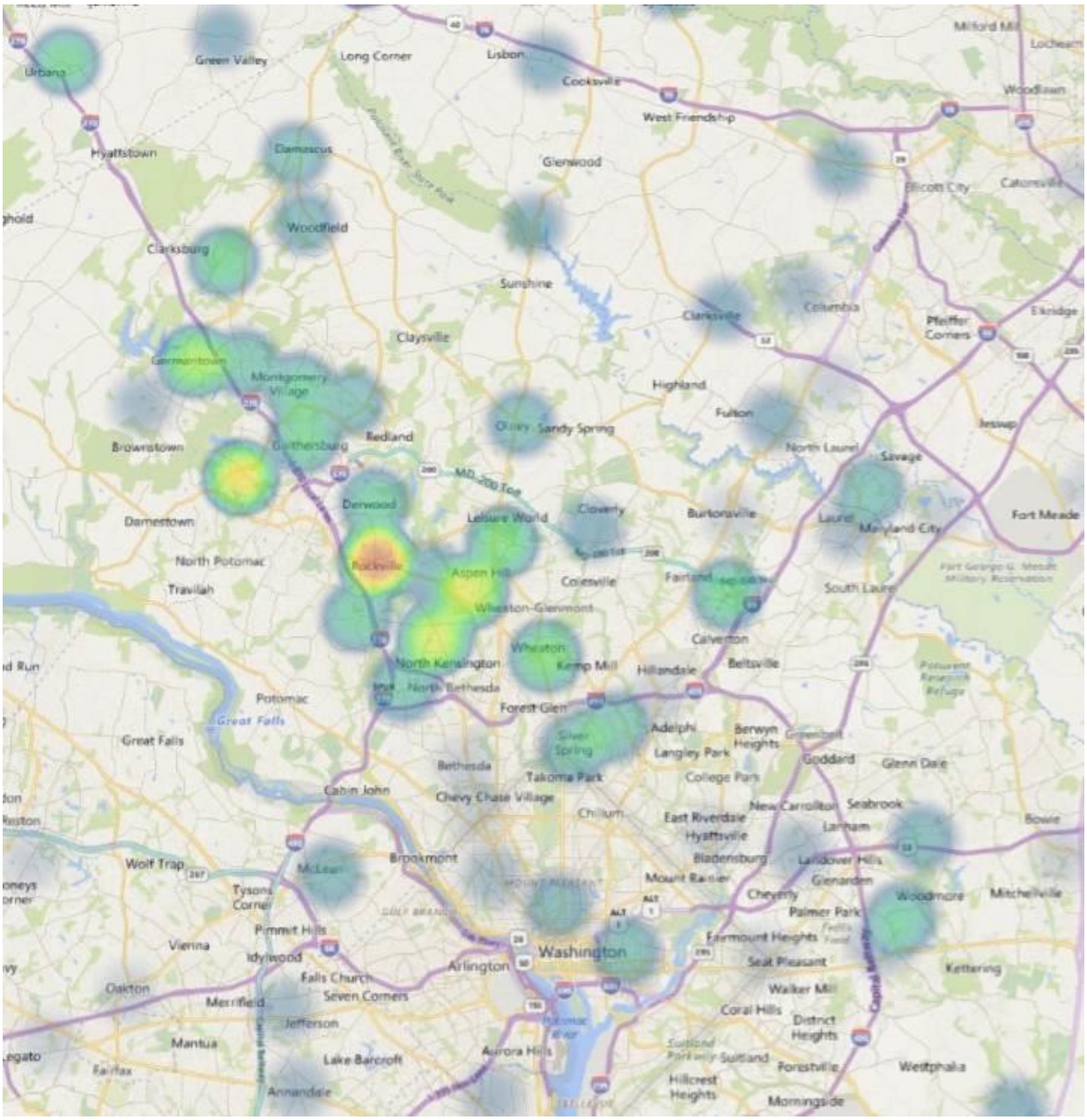


**Figure 23: Off-Campus Respondent Home Location**

### Questions 4 and 5: Work Schedule

Questions 4 and 5 asked employees about their typical work schedule. Approximately 86% of employees work a consistent schedule of 5 day/40 hours per week. Approximately 53% of employees typically arrive between 7:00 AM and 8:30 AM and about 50% depart between 3:30 PM and 5:00 PM. The peak arrival time is between 8:00 AM and 8:30 AM and the peak departure time is between 4:30 PM and 5:00 PM.

### Questions 6 through 9: Employee Commute Characteristics

Questions 6 through 9 asked employees about their typical daily commute. Approximately 68% of employees commute 60 minutes or less, while 11% of employees have a commute of more than 90 minutes (Figure 24). However, due to FDA's telework policy it is unlikely that employees that live more than 90 minutes from their place of work commute on a daily basis. According to the results of Question 7, shown in Figure 25, about 86% of employees drive alone to work. The percentage of off-campus carpool and vanpool riders is lower compared to the percentage of on-campus employees that carpool and vanpool. However, rail use is higher, likely due to the proximity of Metrorail stations to the leased office locations. Only 18 respondents indicated that they carpool to work and all 18 indicated that there are two passengers in their carpool, including themselves. Only one respondent indicated that they vanpool to work in a six-person vanpool, including themselves.

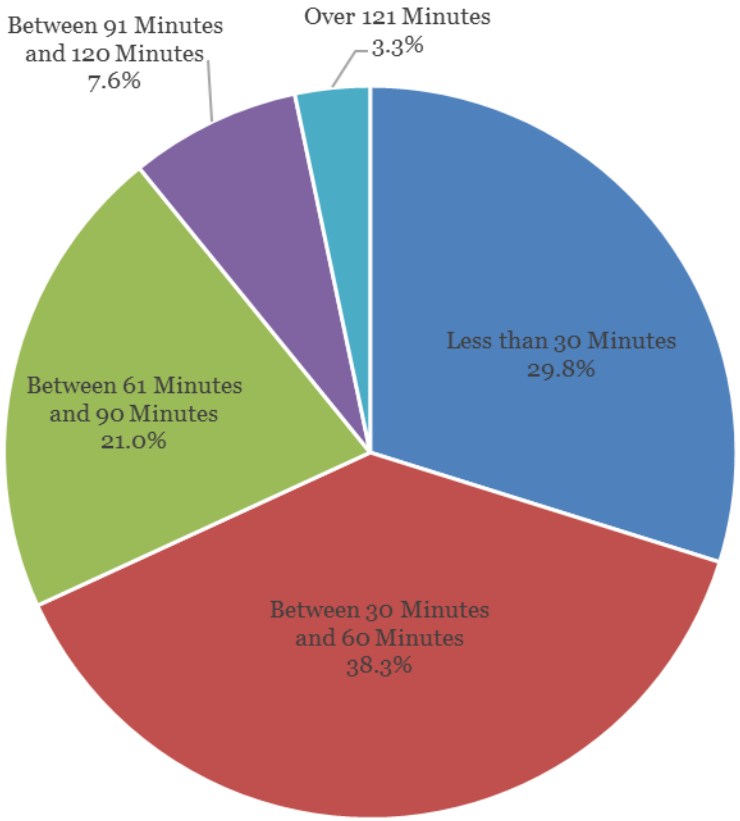


**Figure 24: Off-Campus Respondent Typical Commute Time**

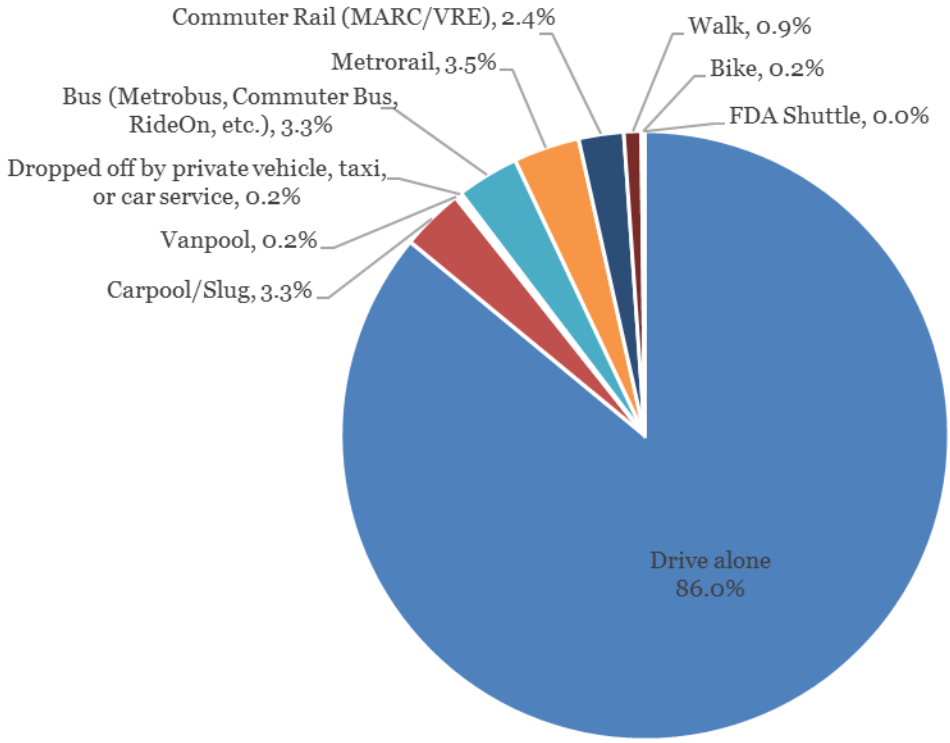


**Figure 25: Off-Campus Respondent Primary Mode of Travel**

**Questions 10 and 11: Transit Benefits/Programs**

Question 10 asked employees if they receive a transit subsidy, and only 50 employees, or 9.3%, indicated that they receive a transit subsidy. In addition, based on the responses to Question 11, only 35 respondents, or 6.5%, indicated that they are currently registered with Commuter Connections Guaranteed Ride Home service or any other commuter assistance program.

**Questions 12 through 15: Employee Teleworking Characteristics**

Questions 12 through 15 asked employees about their teleworking arrangements. An overwhelming majority of employees, approximately 84.7%, indicated that they currently telework from home or an offsite location at least one day per week. Figure 26 shows that approximately 43% of respondents indicated that they telework two days per week, and others indicated that they telework more. Monday and Friday are the two most popular days that respondents telework; Wednesday is the least popular day for teleworking. Figure 27 shows the results of Question 15, indicating that most employees telework because their commute is too long and/or stressful or that they enjoy working from home.

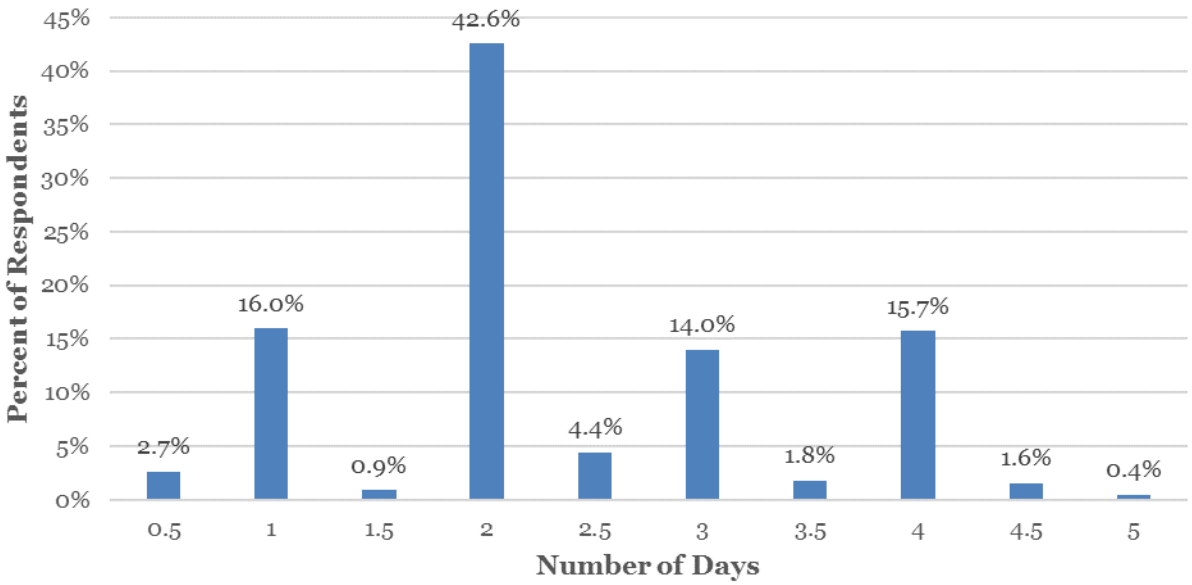


**Figure 26: Days per Week Off-Campus Respondents Telework**

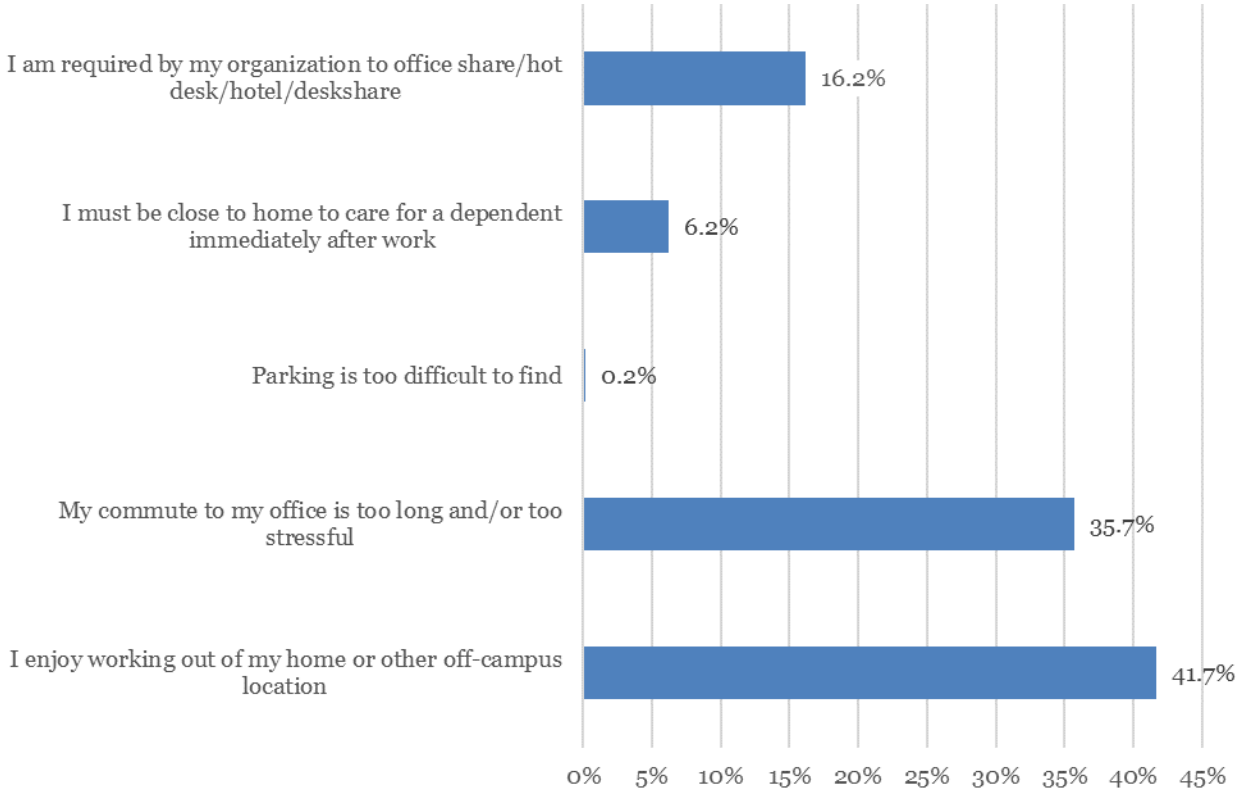


**Figure 27: Primary Reason Off-Campus Respondent Teleworks**

### Questions 16 through 19: Impacts of Relocation to the White Oak Campus

Questions 16 through 19 asked employees about how their commute would be impacted if their office was relocated to White Oak. About 62% of respondents indicated that their commute time would be longer than it is now, including 43% that indicated their commute time would increase by 21 minutes or more (Figure 28). Only 2.6% of respondents said that they would relocate their place of residence to a ZIP code that is about 30 minutes or less from the White Oak Campus.

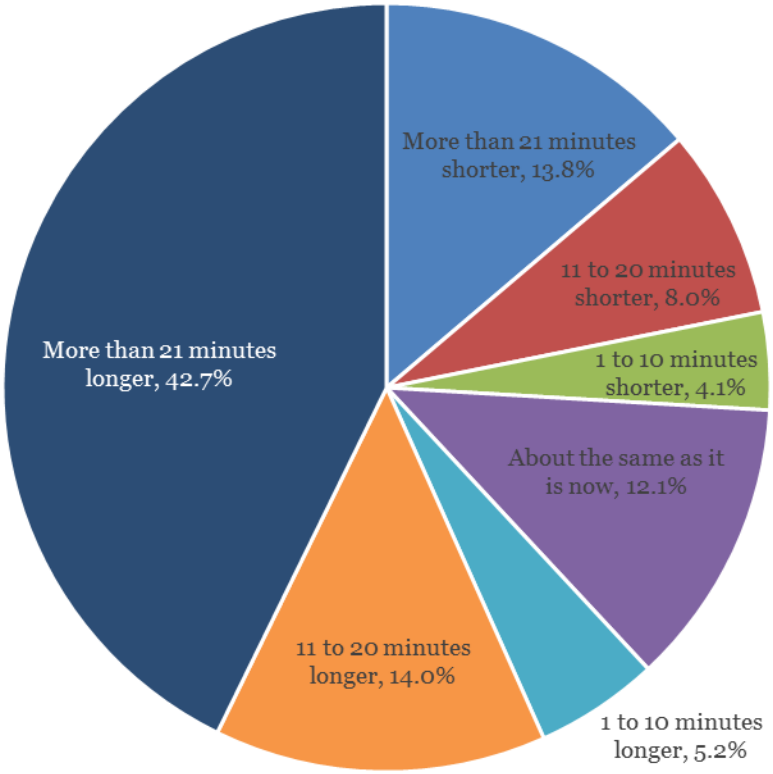


**Figure 28: Off-Campus Respondent Change in Commute Time**

Question 19 asked employees what they would anticipate being their primary mode of travel to work if their office is relocated to the White Oak Campus. The results are summarized in Figure 29. Approximately 79% of respondents indicated that they would drive alone. Ten percent would travel with at least one other person, whether carpooling, vanpooling, or being dropped off. About 9.4% would take public transit, including bus, Metrorail, MARC/VRE, and the FDA commuter shuttle. Only about 2% of respondents said they would walk or bike to work.

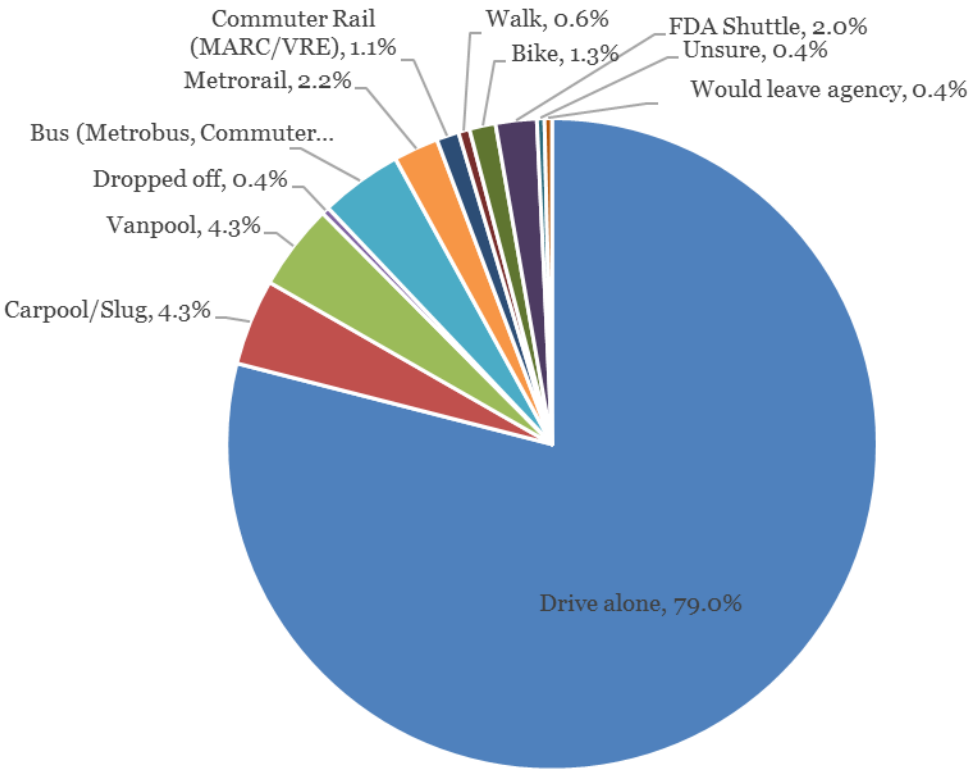


**Figure 29: Off-Campus Respondent Potential Mode of Transportation to White Oak Campus**

### Questions 20 through 22: Commuting by Alternative Mode Instead of Driving Alone

Question 20 asked employees that planned to drive alone to work if they would be willing to consider any alternative forms of travel. Approximately 68% of respondents indicated that they would not be willing to consider an alternative form of travel. Of the 68%, about 30% cited that they would not consider alternative modes because they had unpredictable schedules, 26% said that they needed their vehicle for childcare, and 23% liked the comfort of their own vehicle (Figure 30). Figure 31 shows what service improvements would encourage more people to commute via transit. It should be noted that respondents could select more than one improvement from the choices given.

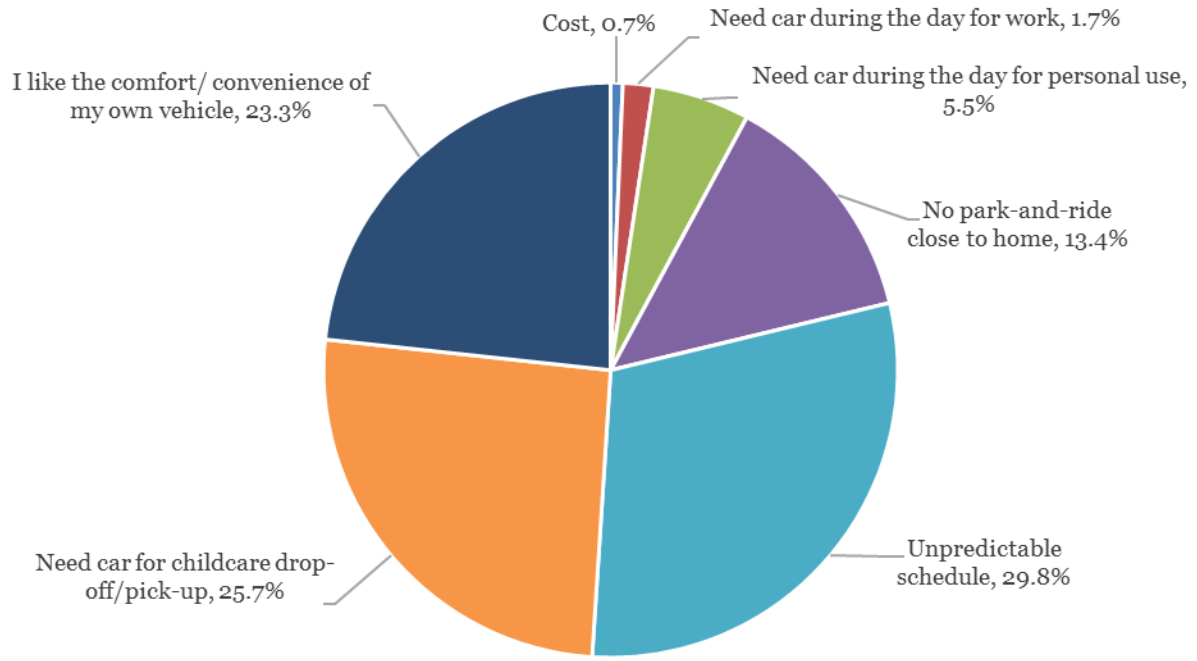


**Figure 30: Off-Campus Respondent Reasons for Not Considering an Alternative Form of Travel**

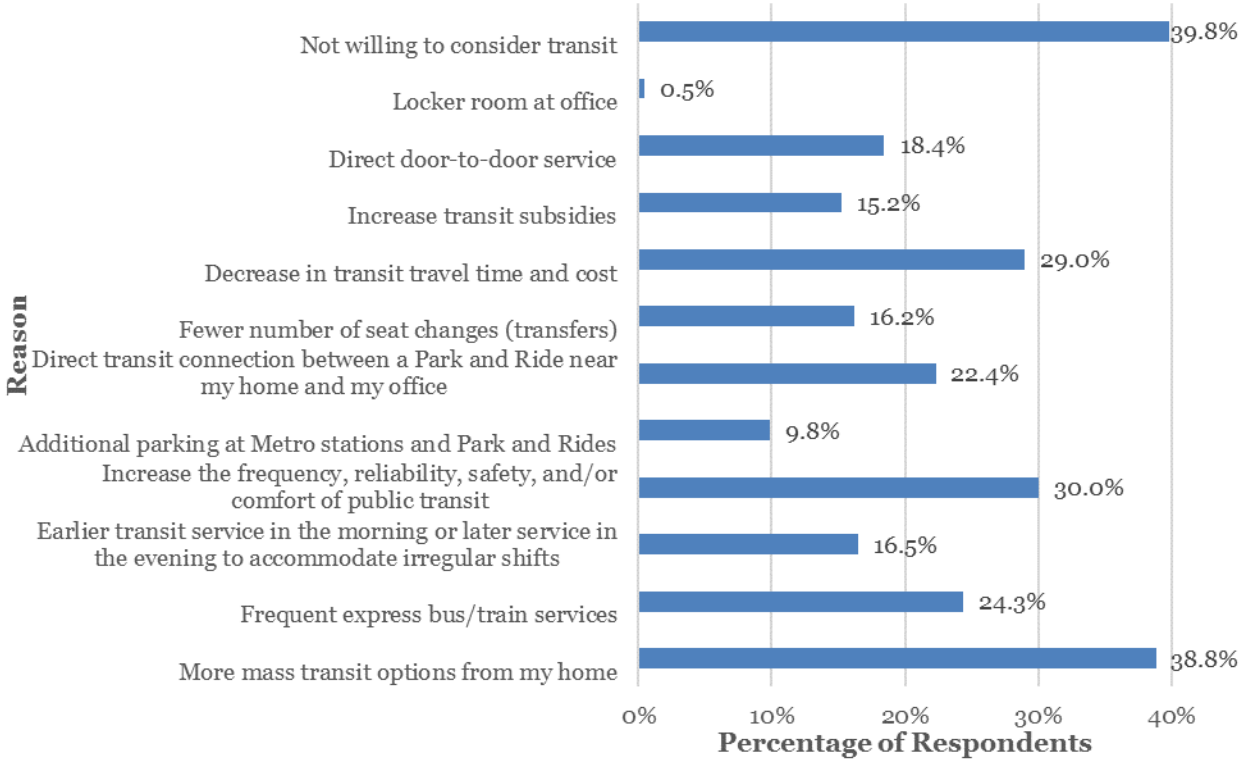


**Figure 31: Off-Campus Respondent Reasons that Would Encourage an Alternative Form of Travel**

### Questions 23 through 25: Respondents Who Would Use Other Options if Offered

Questions 23 through 25 asked employees if they would use Guaranteed Ride Home, Zip Car, or FDA commuter shuttle services if those options were offered as a convenient way to avoid driving alone. Most respondents (64.6%) indicated that they would not be willing to carpool even if provided a Guaranteed Ride Home. About 83% of respondents would not use a Zip-Car. However, 61% respondents would consider using the FDA shuttle if that service were offered from a Park-and-Ride lot near their home.

### Question 26: Do you have any other comments, questions, or concerns?

This question was free-response which allowed employees to be specific. Many employees had the same concerns and the results were summarized in Figure 32 to highlight concerns that received two or more responses. Most concerns were related to relocating, parking supply at the White Oak Campus, change in commuting mode, and telework.

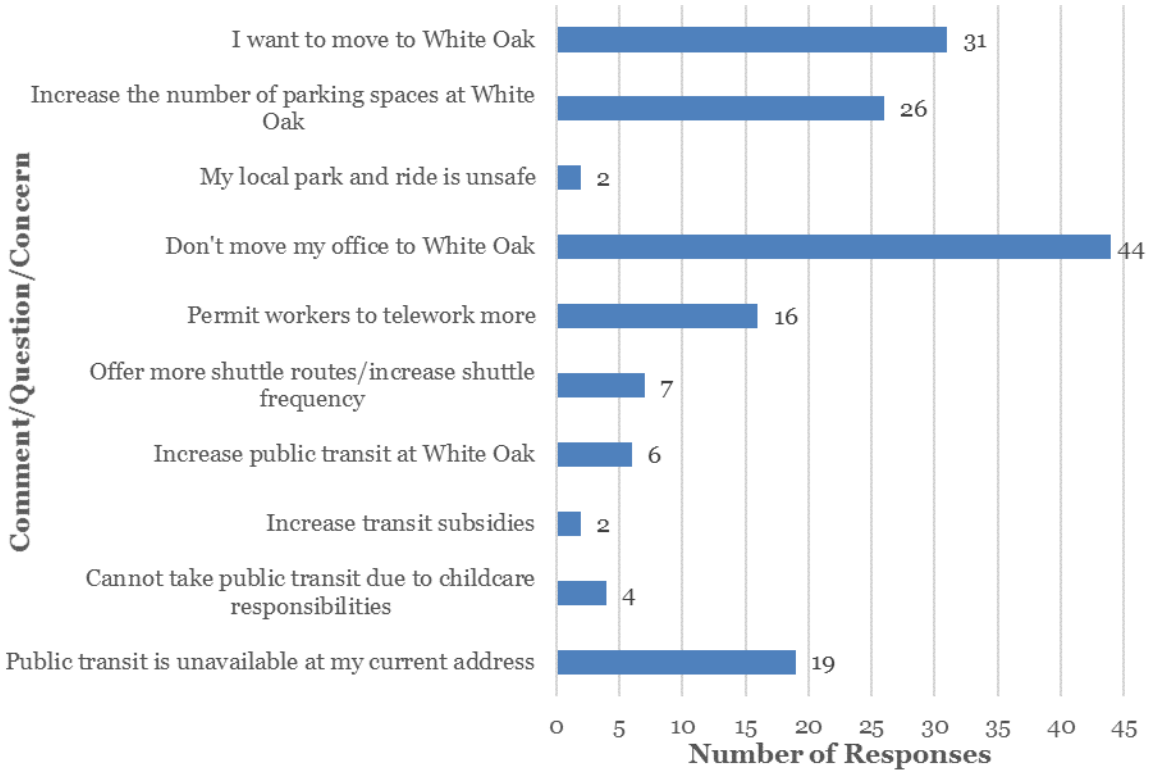


**Figure 32: Off-Campus Employees Open-Ended Responses**

## 3.5 SURVEY CONCLUSIONS

The results of the FDA employee commuter survey indicate a reliance on driving alone as a commuting mode for most employees. Approximately 75% of respondents who work on-campus currently drive alone to work. This is indicative of the lack of a high-frequency and high-capacity transit service in White Oak. The addition of the proposed BRT lines on New Hampshire Avenue and Columbia Pike may help to increase the attractiveness of transit. However, the impact of those services may be limited as they do not serve some of the areas along the I-270 corridor that have a higher concentration of employees. A shuttle service directed to park-and-ride facilities along the I-270 corridor may be more effective at reducing the number of employees that commute via driving alone.

However, despite the reliance on driving alone for most employees, the results of the on-campus employee survey demonstrate the relative success of the FDA's robust carpool and vanpool program. Approximately 12% of respondents participate in the carpool or vanpool program, and there is evidence that additional employees, including those at the leased locations, could be integrated into the program. While some respondents who drive alone indicated that they have difficulty finding other interested colleagues who live close and have similar working hours, it is evident through the survey that there is the ability to coordinate large numbers of employees along the I-270 and Columbia Pike (US 29) corridors.

There are also respondents who live relatively close to White Oak but who feel pressured to drive alone to work. Carpooling or taking public transportation would take significantly longer than their otherwise short commute. Some respondents said they were interested in biking and walking to work; however, poor biking facilities on area roads, primarily Columbia Pike (US 29), Cherry Hill Road, and FDA Boulevard, prevent them from doing so. Other respondents feel that more frequent shuttle service from more Metro and MARC stations will increase the likelihood of them utilizing public transit. Respondents who live close to the campus also expressed interest in a commuter shuttle transporting workers to and from work locally. Some workers even indicated that a FDA shuttle went by their house locally but does not stop there.

Some respondents indicated that they lived near a Metrorail or MARC station; however, connecting to a Metrobus to go to the White Oak Campus takes too long. Some respondents requested more bus pickups and a direct FDA shuttle from the Silver Spring Metro station. Respondents also requested more pickups from Metro stations on different lines, along with MARC stations. The completion of the proposed Purple Metro line was also seen as a potential supporter for drivers to commute via train to work.

# 4.0 TRAFFIC IMPACT ANALYSIS

Potential transportation impacts are discussed in Chapter 3: Transportation System of the report titled *2018 Master Plan for the Consolidation of the U.S. FDA Headquarters at the Federal Research Center at White Oak Located in Silver Spring, Maryland, Final Traffic Technical Report (TTR) (August 2018)* (Appendix G in the EIS), dated November 2017, and prepared by GSA with technical assistance from Stantec Consulting Services Inc, located in Appendix B. The document analyzes existing and future conditions, with and without consolidation, at the proposed FDA White Oak Campus, by evaluating levels of service (LOS) at 25 project area existing and proposed intersections, including the three site driveways, as determined from discussions with staff from the Maryland-National Capital Park and Planning Commission (M-NCPPC), Montgomery County Planning Department, Countywide Planning Division, Transportation Planning Section, and Prince George's County.

The White Oak campus is located in an already congested area. Planned improvements, as well as background traffic growth, are anticipated to exacerbate existing capacity deficiencies. Implementation of the 2018 FDA Master Plan, which would result in the collocation of up to 18,000 employees and support staff (Action Alternatives), would add an additional 1,494 AM peak hour and 1,233 PM peak hour vehicle trips to the study area roadway network. It should be noted that, while there are three action alternatives in the 2018 FDA Master Plan, all would result in a similar number of employees. Therefore, one overall Action Alternative is analyzed in the TTR.

The additional site-generated traffic would further degrade traffic operations at some intersections when compared to the No Action Alternative, and many would operate at LOS E or F in one or more peak hours. Thus, mitigation measures were recommended for the study area network as the Future Action Alternative with Mitigation in the TTR. The recommended mitigation measures to the study area network are as follows:

**Intelligent Transportation Technology**

- Evaluate the installation of traffic adaptive/demand responsive signal systems along Columbia Pike (US 29), New Hampshire Avenue (MD 650), and Cherry Hill Road.
- Install Dynamic Message Signs (DMS) along Columbia Pike (US 29) to provide travel time information that would allow drivers to assess the most efficient travel path through the study area.

**Transportation Demand Management**

- Enhance the existing transportation demand management (TDM) program to encourage more employees to commute via modes other than driving alone.
- Expand the commuter shuttle system to include direct shuttle service to and from Park and Ride facilities along the I-270 corridor.
- Work with Montgomery County, the Maryland Department of Transportation State Highway Administration (MDOT SHA), and other stakeholders to identify the potential for new park-

and-ride facilities near major interchanges and/or connections to existing park-and-ride facilities to reduce localize impacts.

### Additional Capacity

Several modifications to the future No Action transportation network are recommended (see Appendix B) to add additional capacity for critical movements in the study area roadway network. However, it should be noted that, due to existing and projected No Action Alternative congestion on the study area roadway network, not all increases in delay and queuing could be mitigated. Several intersections along Columbia Pike (US 29), as well as the intersection of New Hampshire Avenue (MD 650) and Powder Mill Road could not be fully improved given the existing geometry and ROW constraints. Improvements like grade separation, which was previously planned by MDOT SHA for signalized intersections along Columbia Pike (US 29), would need to be coordinated through MDOT SHA and Montgomery County. Conversion of the at-grade intersections to interchanges is a long-term project; therefore, the Action with Mitigation evaluates alternative enhancements only. It is assumed that delay and queuing at those intersections would be fully mitigated once they are converted to interchanges.

### Transit, Pedestrian, and Bicycle Facilities

Several enhancements are recommended to provide better connections for alternative modes, such as transit, pedestrians, and bicyclists. The recommendations for consideration by GSA and FDA include:

**On-Site**

- A 10-foot wide multi-use path and/or five-foot, protected, directional bike lanes along the campus loop roads that connect pedestrian and bicycle facilities on the external roadway network to the on-campus facilities (Figure 33).
- Bicycle lanes or sharrows on minor streets to connect the loop road facilities with bicycle parking near building entrances.
- Sidewalks that are a minimum of six feet. Wider sidewalks are recommended in areas with higher pedestrian volumes.
- A minimum five-foot buffer between the sidewalk/multi-use path and the travel lanes along loop roadways.
- Pedestrian/bicycle-accessible security gates.
- Pedestrian crosswalks at all intersections, as well as mid-block where needed to connect origins and destinations (i.e. parking garage to building). Rectangular rapid flashing beacons should be considered at all crosswalks.
- Enhancements to lighting for sidewalks and shared-use paths. Utilize attractive but security-conscious landscaping and provide emergency call boxes throughout campus, as well as along Dahlgren Drive.
- Secure, covered bicycle parking near building entrances and/or U-racks if such facilities are infeasible. FDA currently provides locker room and shower facilities as well as bicycle repair stations throughout the campus.

- Bikeshare docks adjacent to Building 1 as well as the transit center. Work with Montgomery County to determine how many bikeshare docks should be provided.
- A new transit hub as close to Building 1 as possible. Incorporate features including, but not limited to:
    - A climate-controlled waiting area with amenities, such as benches, wi-fi, and real-time transit information;
    - Defined boarding and alighting areas for bus, BRT, and shuttle services;
    - A taxi/ridesharing waiting area that could be converted for use by automated vehicles in the future; and,
    - Public bikeshare stations.
- Enhanced transit and shuttle services (see the Transportation Management Plan).
- A pedestrian and bicycle connection to Lockwood Drive and the White Oak Transit Center.

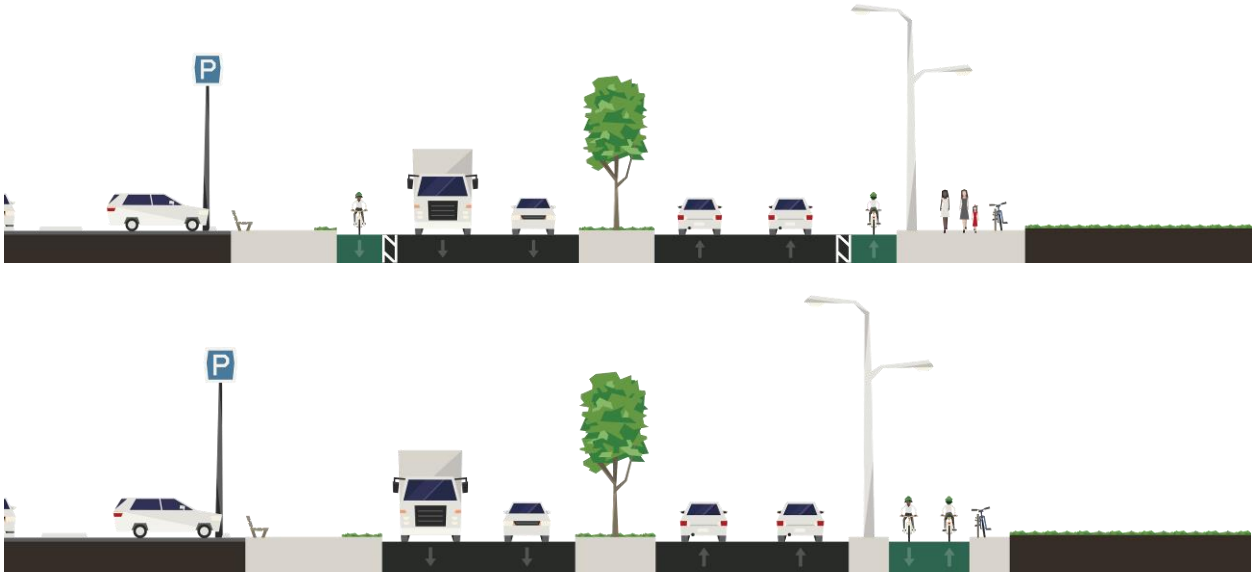

**Figure 33: Potential Loop Road Configurations**

**Off-Site**

- Work with Montgomery County to provide a connection from the new transit center to Lockwood Drive so that New Hampshire Avenue BRT vehicles can enter the site, utilize the FDA transit center and then connect directly to the White Oak transit center.
- Upgrade the bikeway on the FDA side of New Hampshire Avenue to a ten-foot-wide shared-use path with a minimum five-foot-wide buffer to the travel lanes.
- Work with Montgomery County, SHA, and Prince George's County to enhance pedestrian and bicycle connections to nearby residential and commercial centers, as well as to regional pedestrian/bicycle path networks, including:
    - Enhance existing pedestrian crossings at signalized intersections within ½ miles of the campus, including lead pedestrian intervals and countdown signal heads.
    - Improved/shorter connection to the Northwest Branch Trail.
    - Expand the shared-use path to the north and south along New Hampshire Avenue.

# 5.0 TRANSPORTATION DEMAND MANAGEMENT

The findings of the Traffic Impact Study indicate the need to reduce peak period vehicle trip generation through the use of TDM strategies. The following sections discuss strategies, some of which are already in place, that should be implemented or continued/expanded.

## 5.1 CHALLENGES AND OPPORTUNITIES

Once completed, the White Oak Campus will house one of the largest concentrations of Federal workers in the Washington, DC area on a campus that is not directly served by high-capacity transit, such as Metrorail. In addition to the lack of high-capacity transit access, the Campus' suburban location makes it less accessible to other existing forms of high-frequency transit that are oriented to transport passengers between the suburbs and urban centers, such as Bethesda, Silver Spring, and downtown Washington, DC.

Federal facilities with limited access to transit, such as NIST, Department of Energy (Germantown, MD), and Aberdeen Proving Grounds, commonly rely on non-transit strategies to achieve trip reduction goals, such as carpool/vanpool, teleworking, flexible work schedules, and shuttle connections to mass transit and/or other agency facilities. However, most of these suburban Federal campuses still rely on ample free parking for most employees. Typically, the transportation demand management strategies are only marginally effective, and heavily dependent on where employees live, and the average time and congestion experienced on their commute.

Although similar to other suburban facilities, the White Oak Campus is unique in that it is located closer to the urban center, and thus commuters experience urban-center congestion in the roadways and freeways around the Campus, but with a very suburban transit system. Future BRT service, as well as the Purple line, will help to improve transit options on or near the Campus and provide a higher level of service than many other suburban Federal facilities that are not directly on a Metrorail line. Therefore, FDA should employ a variety of strategies, building from what is currently being implemented and expanding to accommodate future transit connections, new strategies, and new technology.

## 5.2 PROPOSED STRATEGIES

People choose their mode of travel based on several factors, including convenience, cost, time, and habit/familiarity. An effective transportation demand management (TDM) program provides a variety of strategies that affect one or more of these factors. The following TDM strategies are expected to reduce single occupancy vehicle (SOV) trips and should be considered by FDA:

- Employee Transportation Coordinator
- Carpool/Vanpool Incentives and Subsidies

- Transit Incentives
- Telecommuting Program
- Flexible and Alternative Work Schedules
- Bike/Walk to Work (Live Near Your Work) Incentives
- Expanded Shuttle Service

### 5.2.1 Employee Transportation Coordinator

An Employee Transportation Coordinator (ETC) is an on-site "champion" of alternative commute modes. FDA currently has one full-time ETC and two parking contractors. However, the anticipated number of employees onsite is anticipated to almost double. Therefore, it is recommended that FDA double the amount of ETC staff. The additional staff can either be FDA employees or outside contractors. The responsibilities of the ETCs should be solely focused on TDM. ETC responsibilities include, but are not limited to:

- Educating employees through emails, mailings, and regular transportation fairs/brown bag lunches.
- Provide ride matching for carpool and vanpools.
- Assist employees in obtaining subsidies or registering for Guaranteed Ride Home programs.
- Maintain transportation information stations within all building lobbies that provides real-time traffic and transit information, as well as route schedules, and information on other commute modes.
- Encourage employee participation in events such as Car Free Day, Park(ing) Day, and Bike to Work Day.
- Coordinate directly with agencies such as MWCOG, WMATA, MTA, Montgomery County, Prince George's County, etc., to discuss methods to reduce SOV trips.
- Two representatives should coordinate with the White Oak Transportation Management District Advisory Committee. Ideally, one representative should be from the transportation management office and one should be an FDA employee.
- Monitor the performance of the TDM program by maintaining statistics on the number of employees utilizing each mode of transportation.
- Reach out to on-campus support staff and contractors to encourage them to utilize modes other than driving alone. At a minimum, consider including them in the carpool/vanpool and shuttle programs.
- Work with a carshare or fleet management firm to provide vehicles on-site for employees that commute by modes other than driving alone to use to get to meetings or other errands during the day, or establish an account with a rideshare company, such as Uber or Lyft.

In addition to the responsibilities listed above, ETC staff should be located in visible offices near building lobbies throughout campus. Spreading out ETC staff in this manner will allow them to engage in more outreach to employees, be a visible reminder of alternative commute options, and provide an easily accessible contact for employees to ask questions regarding commute modes. Providing ETC space within the proposed transit center should also be considered.

### 5.2.2 Carpool/Vanpool

FDA has a robust carpool and vanpool program that currently accounts for 12% of employee commutes. There are approximately 1,130 members in 164 vans and an additional 232 carpool

permits. Both carpools and vanpools receive preferential parking. Carpool vehicles can park in any carpool space on campus, while vanpools are provided an assigned space that they are required to park in when they are on campus. It should be noted that vehicles with at least six riders are considered vanpools and receive the Transhsare subsidy and commute in leased vehicles.

FDA should continue to promote the carpool program, particularly in areas where there are high concentrations of employees living in the same approximate area (Table 5). The majority of the listed zip codes are close to the Beltway and the I-270 corridor, and these employees would likely commute via a personal vehicle. Therefore, rather than focusing on zip codes, the FDA ETC could focus on corridors. Carpools and vanpools could be oriented around the park-and-ride facilities, rather than individual zip codes. The FDA should work with interested employees to ride match based on location relative to park-and-ride facilities.

**Table 5: Ten ZIP codes with Highest Concentration of FDA Employees**

| Zip Code | Number of Employees |
|---|---|
| **20878** | 86 |
| **20910** | 84 |
| **20850** | 82 |
| **20852** | 81 |
| **20904** | 64 |
| **20854** | 57 |
| **20902** | 55 |
| **20832** | 51 |
| **20853** | 45 |
| **20901** | 44 |

#### 5.2.2.1 Strategies

To encourage and strengthen carpooling/vanpooling mode share, several incentive strategies should be considered or continued:

- *Preferred Parking*:
  - Locate parking spaces for carpool and vanpool vehicles at locations which provide more convenient access to the building than would be provided for single occupant vehicle spaces.
  - Guarantee parking spots for carpool and vanpool vehicles. Special permits should be issued to monitor the use of these spaces.
  - Consider providing additional preferential parking for vanpools since they have a greater impact on trip reduction.

- *Employee Ride Matching*:
  - Create a database of employees interested in carpooling and vanpooling.
  - Pre-market carpool/vanpool services to employees that will move to the White Oak campus but linking them with potential existing carpools or vanpools and/or starting a new carpool/vanpool.
  - The ETC should match people according to their residential proximity and work schedule.
  - The ETC should facilitate the employees meeting each other by organizing the first meeting.
  - The ETC should follow up with employees to determine if the employees are a good fit and/or if new arrangements should be made. Furthermore, if the ETC takes an interest in the employees finding "good" pool partners, employee matching will most likely be self-promoting and may facilitate other employees taking this option under consideration.

- *Employee Leased Vehicles (Vanpooling)*:
  - The ETC should encourage employees to participate in vanpooling because it has a greater impact on SOV trip reductions. The ETC should help employees to secure a month-to-month lease of a van from a vanpool leasing company. The vanpool leasing company typically covers the insurance and regular upkeep of the van. Another option would be for the FDA to purchase vans in which it can provide to employees.
  - Provide transit subsidies to vanpool participants to help cover the cost of the van.
  - The ETC should try to locate 12 to 15 people located within close residential proximity or along a major corridor who will commit to using the van at least three to four days per week.

- *Guaranteed Ride Home Service*: A guaranteed ride home service provides free transportation to transit, carpool, and vanpool commuters when an emergency, like an illness, arises. The ETC should facilitate employee registration to the MWCOG Commuter Connections Program, which includes a Guaranteed Ride Home service. In addition, FDA should consider an enhanced GRH program to offer more than four emergency rides per year to attract more users.

- *Carsharing/Ridersharing*: One of the barriers to carpooling and vanpooling is the need for to have access to a car during the day for business. FDA should consider employing one of the below potential strategies to provide access to vehicles during the day for business:
  - FDA purchases cars that can be reserved by employees.
  - FDA and/or the lease offeror works with a carsharing company, such as ZipCar, to locate vehicles near the office building.
  - FDA provides shuttle services to typical destinations that employees travel to during the day.
  - FDA establishes an account with a ridersharing company, such as Uber or Lyft.

### 5.2.3 Transit

The White Oak Campus is not currently served by any high-capacity, high-frequency transit services. Six bus routes, operated by Metrobus, Montgomery County RideOn, and MTA, serve the campus, while three pass near the campus. Figure 34 shows the alignment of the six bus routes. Most of the routes overlap, most areas with higher concentrations of employee residences are

not served, and with the exception of Metrobus K9 and MTA 204, the bus routes are local with many stops and deviations that are relatively inefficient for FDA employees.

In addition to the existing bus routes, planned transit services, including three BRT corridors, and the Purple Line, may help to slightly enhance transit mode share on the White Oak Campus. However, initial benefits of these services may be limited. Refer to Section 2.3.2 for more details.

#### 5.2.3.1 Challenges

The White Oak Campus is a suburban office location without a high-capacity transit connection. These types of facilities experience challenges when it comes to encouraging employees to commute via transit, including:

- *Suburban End/Near-End of Route Metrorail Station Connections:* While the FDA commuter shuttles provide connections to multiple Metrorail stations, these stations are suburban and near the end of the various routes. End or near-end stations are traditionally difficult for commuters, particularly those that live in other suburbs, because transit services are oriented to bring people into the center of an urban area. A suburb-to-suburb transit trip can often double the commute time for an employee, requiring an employee to ride into the City center from the suburbs and then back out, and often requires additional fees, such as parking.

- *No Direct Connections to/from Areas Where Employees Live:* Figure 33 shows that there is overlap in the existing bus routes, thus leaving areas with higher concentrations of employees relatively underserved. In addition, the proposed BRT routes on US 29 and New Hampshire Avenue, while reducing transit travel time, would overlap existing routes. If an employee wishes to utilize one of the bus routes, they most likely would have to drive and park at a transit hub, such as a Metrorail station, or utilize a connecting bus route. Seat changes reduce potential ridership because they are often seen as confusing or challenging, particularly where delays on one bus route may mean that a rider misses the connecting bus, or where a rider must wait at a bus stop for a connecting bus.

- *Bus Transit Travel Time:* Without dedicated operating lanes, bus transit is at best seen as comparable to vehicles because buses are often in the same congestion as a passenger vehicle. At worst, bus transit is seen as slow and inefficient due to frequent stops. Local bus service with frequent stops can sometimes take up to four times longer than a personal vehicle, and thus is not feasible for longer-distance commuting. Express or commuter bus services, while more comparable to vehicle travel time, may have deviations to major transit hubs or other facilities that increase overall travel time.

- *Perceptions of Bus Transit:* Bus transit often suffers from stigmas, both real and perceived, and is often considered less-attractive than other types of rail-based transit. Buses are often seen as confusing for new riders, particularly when it comes to fares and transfers, and are often stigmatized as being utilized only by low income people and/or being unsafe. In addition, as

mentioned above, frequent stops can significantly increase travel time over a passenger vehicle; therefore, bus transit is often seen as slow and inefficient.

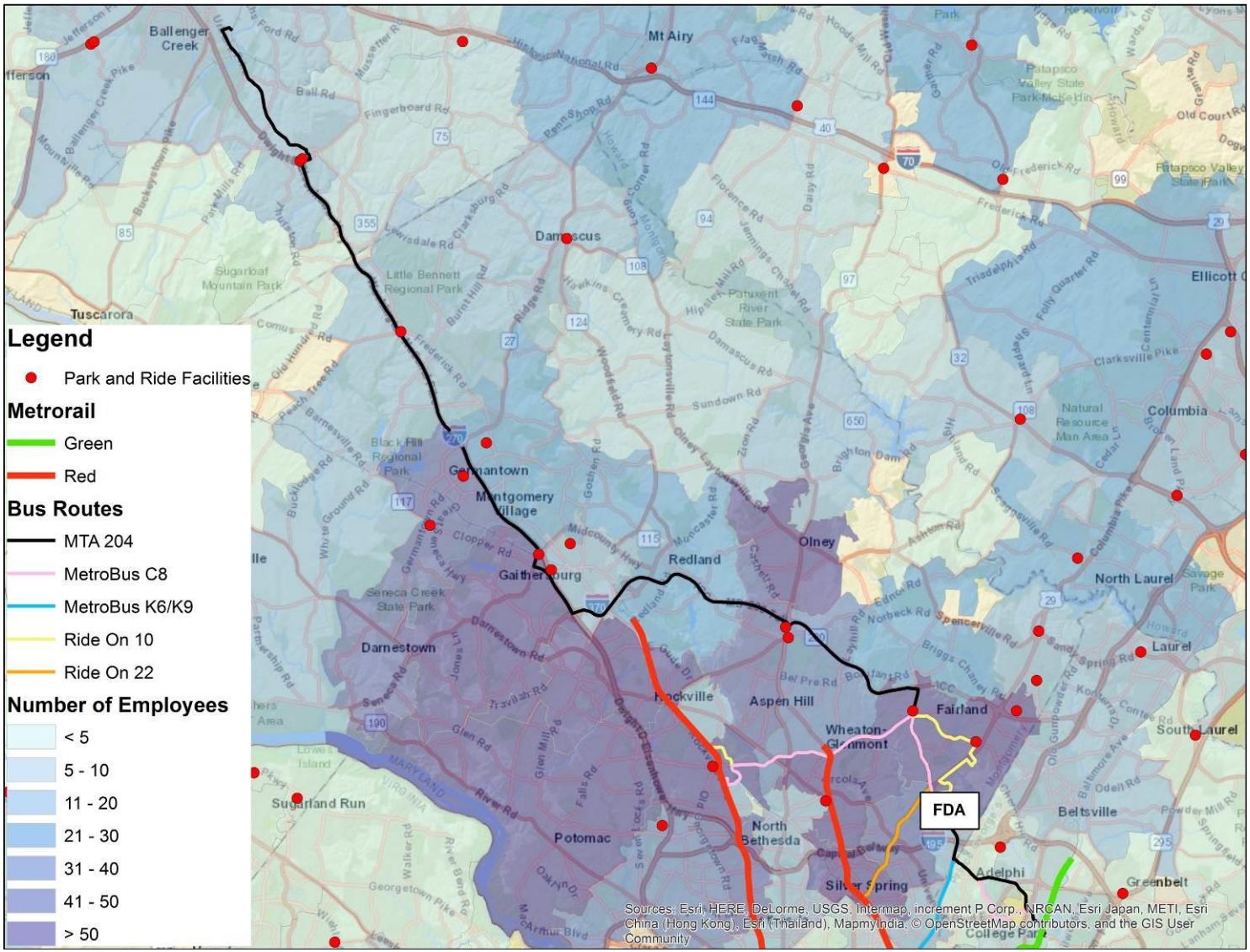


**Figure 34: Bus Routes Serving White Oak Campus**

- *Meetings and Personal Needs During the Day:* A common concern of employees who drive to work is that they need access to their vehicle for meetings, errands, or to get home if there is an emergency, like a sick child. Employees are often unaware of guaranteed ride home programs.

- *One Size Fits All Strategies:* Transit enhancement strategies often focus on a single approach that does not consider the different needs, perceptions, and experiences of commuters that live in the urban core when compared to commuters that live in the suburbs.

#### 5.2.3.2 Strategies

While there are challenges to increasing the utilization of transit for commuting purposes, there are opportunities that could be implemented to improve upon the current situation, and to accommodate the future BRT and Purple Line. Therefore, it is recommended that FDA consider a two-fold transit incentive program which focuses on the different needs of employees that live within the Beltway and employees that live outside the Beltway.

- *Inside the Beltway*: These employees live in the urban center, and therefore likely have easier access Metrorail and would have a shorter commute utilizing transit than those living outside of the Beltway. Therefore, the focus of the FDA strategy for these employees is encouraging commuting by Metro and working with the employees to identify the most appropriate stations to connect with a shuttle or other transit service.

- *Outside the Beltway*: FDA should advocate for additional direct transit or shuttle service to transit facilities in areas with higher concentrations of employees, such as the I-270, US 29, I-495, and I-95 corridors. FDA could expand the existing shuttle routes themselves or contract with a transit agency or private vendor (see Section 5.2.4).

- *Maximize Future Transit Services*: FDA should work with Montgomery County and WMATA to explore the feasibility of the following enhancements:
  - An on-campus stop for BRT. If this cannot be provided, FDA should expand their internal circulator shuttle route to cover the White Oak Transit center and schedule shuttles such that they meet the 15-minute peak period headways. A pedestrian connection should also be explored so that employees can walk to/from the campus efficiently.
  - Realignment of MTA Commuter Bus Routes 305, 315, and 325 to serve the White Oak Campus.
  - Advance the New Hampshire Avenue and Randolph Road corridors and ensure frequent shuttle connections to stations, as needed.
  - Improve the frequency of Route K9 to enhance connections between the White Oak Campus and the Takoma/Langley Transit Center once the Purple Line is operational. If this is not possible, FDA should consider extending the Hillandale shuttle and ensure frequent shuttle service of no greater than 10-minute headways during peak periods.
  - Install sheltered, secure, and attractive waiting areas where FDA employees will transfer from BRT or Purple Line to FDA shuttle or public bus.
  - Offer free transfers between services or utilize a common fare payment system.

- *Transit Incentives*: The following incentives should be considered for transit users, both inside and outside the Beltway:

  - Continue to assist employees in obtaining the maximum transit subsidy allowed by the Federal government.
  - Provide an onsite transit center which provides route information, displays real time arrival and departure information, and sells transit passes.
  - Continue to assist employees in registering for a guaranteed ride home service.

- *Change Perceptions:* Establish programs to de-stigmatize bus transit:
  - Conduct annual or semi-annual commute challenges which offers prizes for documented transit use.
  - Conduct transportation fairs on board buses to explain fare payment, transfers, and other aspects of bus transit to novice users.
  - Establish a transit ambassador program, where existing experienced riders promote transit use and will ride along with novice riders and help to navigate the system.

- *Public Transit User Group:* Evaluate the need for, and if warranted, establish a public transit users group that meets at least once per month to discuss public transit issues, advocate for improved services, and coordinate a transit ambassadors program (see *Change Perceptions* above).

- *Carsharing/Ridersharing*: One of the barriers to regular transit use is the need for to have access to a car during the day for business. FDA should consider employing one of the below potential strategies to provide access to vehicles during the day for business or personal errands:
  - FDA purchases cars that can be reserved by employees.
  - FDA and/or the lease offeror works with a carsharing company, such as ZipCar to locate vehicles near the office building.
  - FDA provides shuttle services to typical destinations that employees travel to during the day.
  - FDA establishes an account with a ridesharing company, such as Uber or Lyft.

### 5.2.4 Enhanced Shuttle Services

In addition to public transit, FDA also operates six shuttle routes to Metrorail stations including Twinbrook, Shady Grove, Medical Center, Glenmont, Silver Spring, and College Park which account for 11% of employee commutes. While this is a substantial mode share, there are opportunities to expand/enhance the shuttle services to provide additional coverage, particularly to suburban areas with limited direct transit connections. Table 6 lists potential service areas based on high concentration of employee residences. It should be noted that any potential new commuter shuttle service should be vetted further through additional employee outreach before implementation.

#### 5.2.4.1 Challenges

According to the US Code (34 USC 1344: Passenger Carrier Use) Federal agencies are permitted to provide shuttle services for employee commuting. However, the shuttles may only "transport an officer or employee of a Federal agency between the officer's or employee's place of

employment and a mass transit facility (whether or not publicly owned) …". Therefore, shuttle services to areas with higher concentrations of employee residences would still need to serve transit facilities, thus resulting in a two-seat ride for most employees.

However, it should be noted that the US Code does not provide a definition of a mass transit facility. Thus, FDA staff has expressed concern over being able to provide shuttle service to park-and-ride facilities or bus transfer facilities/hubs. Additional coordination with GSA should be conducted to verify what types of facilities could be served by an FDA shuttle.

**Table 6: Potential New Commuter Shuttle Services**

| Area | Potential Mass Transit Facilities | Comments |
|---|---|---|
| **Germantown/ Gaithersburg/ Rockville/ Darnestown** | Germantown Park-and-Ride (Germantown)<br>Quince Orchard Road Park-and-Ride (Gaithersburg)<br>Diamond Avenue Park-and-Ride (Gaithersburg)<br>Washingtonian Center Bus Stop: Rio Blvd and Fields Road (Gaithersburg/Rockville)<br>Kentlands Bus Stop: Kentlands Blvd and Main Street (Gaithersburg/Darnestown) | Consider extending the existing Shady Grove Metro shuttle to include stops at the Washingtonian Center and Kentlands/Lakelands.<br>Work with Montgomery County to identify the potential for a formalized park-and-ride facility near the Kentlands/Lakelands.<br>Survey employees in Germantown and Gaithersburg to determine if stops at park-and-rides along I-270 would generate ridership. |
| **Mt. Airy/ Sykesville** | Mt. Airy Park-and-Ride (Mt. Airy)<br>I-70 Park-and-Ride (Sykesville) | Travel time to Mt. Airy/Sykesville is likely too great for initial implementation but could potentially be implemented as an extension to a shuttle route that serves Columbia and Ellicott City. |
| **Columbia/ Ellicott City** | Long Gate Park-and-Ride (Ellicott City)<br>Broken Land Parkway Park-and-Ride (Columbia) | Could serve as a trial shuttle route with future expansion to Sykesville/Mt. Airy. |
| **Olney** | Colesville Park-and-Ride (Colesville)<br>Georgia Avenue ICC Park-and-Ride (Rockville)<br>Bus Stop near Olney Sandy Springs Road and Georgia Avenue (Olney) | Work with Montgomery County to identify potential locations for a park-and-ride facility in Olney. |
| **Bowie/Upper Marlboro** | Water Street Park-and-Ride (Upper Marlboro)<br>Northview Drive Park-and-Ride (Bowie) | Could consider implementing shuttle service to just one of the park-and-ride facilities listed with potential extensions to other park-and-rides as needed. |

In addition to the uncertainty regarding the types of facilities that can be served, cost is a significant factor when providing shuttle services. Cost-effectiveness should be considered when identifying a new potential service. Thus, FDA should conduct employee outreach to determine

the potential ridership of any new service. FDA could consider coordinating with a rideshare companies, such as Uber, Lyft, or Chariot, to provide regular service that can be scheduled by employees and that have greater flexibility as to where an employee could be picked up.

#### 5.2.4.2 Strategies

Additional service could be provided to fill gaps in the existing public transit services to provide a reliable and attractive commute option, particularly for areas in the suburbs with a high concentration of employee residences. FDA should consider the following strategies:

- Providing additional direct connections between transit centers in suburban areas with higher concentration of employee residences and the White Oak Campus. This could be achieved by providing additional shuttle service or coordinating with a ridesharing company, such as Uber, Lyft, or Chariot to provide a regular service.
- Improving the flexibility and efficiency of the shuttle services by:
  - Operating at least once every 30 minutes during the AM and PM peak periods.
  - Minimizing off-route time by selecting park-and-ride or other mass transit facilities that are along major travel corridors.
  - Developing an app with real-time shuttle information.
  - Providing comfortable seating with on-board wi-fi.
- Expand circulator shuttle service to connect to nearby future BRT and Purple Line stations.
- Work with transit agencies to install sheltered, secure, and attractive waiting areas where FDA employees will transfer from BRT or Purple Line to FDA shuttle.

### 5.2.5 Telecommuting

FDA currently allows some employees to telecommute one or more days per week. FDA should continue to determine if there are any positions that can be successfully completed from home or a teleworking center one or more days per week and provide eligible employees with laptops or other mobile work stations. However, telecommuting typically occurs on Mondays and Fridays. To reduce peak parking demand, telecommuting should be encouraged during peak commuting days, which are typically Tuesday, Wednesday, and Thursday. FDA should consider offering additional incentives, such as a designated, preferential parking space for use on days that the employee must be on-campus for employees that telecommute on these days. The designated preferential parking spaces could be signed to allow general employees to park in unoccupied spaces after a certain time (i.e. 9:00 AM). The preferential spaces could also overlap with those for flexible day off employees, and empty spaces could be utilized by those that agree to arrive off-peak, after 9:00 AM.

Preferential parking for telecommuting could be linked with alternative work schedule employees so that one reserved parking space could be used by multiple employees with off-set on-campus work days.

### 5.2.6 Flexible and Alternative Work Schedule

FDA currently has established core working hours, typically 10:00 AM – 3:00 PM, in which all employees are expected to be working. This allows employees greater flexibility in selecting a commute time. For example, one employee could work from 7:00 AM – 3:00 PM while another could work 10:00 AM – 6:00 PM.

However, the biggest hurdle to a successful flexible work schedule is the ability to find parking. Given the proposed parking ratio of 1:1.8, it may be difficult for employees arriving later in the morning to find parking, which could discourage off-peak commuting. Therefore, as part of the flexible work schedule policy, FDA should consider incentivizing off-peak commuting by providing guaranteed parking for those employees who register and commit to arriving after 9:00 AM. These parking spaces could overlap with those provided for teleworking employees.

In addition to a flexible work schedule, FDA should consider an alternative work schedule (i.e. four ten-hour days) that encourages employees to take their day off during peak commuting days, which are typically Tuesday, Wednesday, and Thursday. Similar to the recommendations for teleworking, incentives, such as a designated, preferential parking space for use on days that the employee must be on-campus should be considered. Preferential parking for alternative work schedule employees could be linked with telecommuting employees so that one reserved parking space could be used by multiple employees with off-set on-campus work days. Spaces that are unutilized by 9:00 AM could be made available to general employees.

### 5.2.7 Bicycling and Walking to Work/Live Near Your Work

FDA should encourage employees living near the proposed office location to walk or bicycle to work. The following incentives should be considered:

#### 5.2.7.1 On-Site

- Establish a bicycle and pedestrian commuter group to provide support, advice, and advocacy for commuters.
- Provide continuous 10-foot wide multi-use paths and/or five-foot, protected, directional bike lanes with six-foot sidewalks along the campus loop roads that connect pedestrian and bicycle facilities on the external network and transit stations to the on-campus facilities (Figure 33).
- Utilize bicycle lanes or sharrows on minor streets to connect the loop road facilities with bicycle parking near building entrances.
- Ensure that sidewalks are a minimum of six feet. Wider sidewalks are recommended in areas with higher pedestrian volumes.
- Provide a minimum five-foot buffer between the sidewalk/multi-use path and the travel lanes along loop roadways.
- Pedestrian/bicycle-accessible security gates.

- Provide pedestrian crosswalks at all intersections, as well as mid-block where needed to connect origins and destinations (i.e. parking garage to building). Rectangular rapid flashing beacons should be considered at all crosswalks.
- Enhance lighting for sidewalks and shared-use paths. Utilize attractive but security-conscious landscaping and provide emergency call boxes throughout campus, as well as along Dahlgren Drive.
- Provide secure, covered bicycle parking near building entrances and/or U-racks if such facilities are infeasible. FDA currently provides locker room and shower facilities as well as bicycle repair stations throughout the campus.
- Provide bikeshare docks adjacent to Building 1 as well as the transit center. Work with Montgomery County to determine how many bikeshare docks should be provided. Consider the potential for dockless bikes on campus.
- Construct a new transit hub as close to Building 1 as possible. Incorporate features including, but not limited to:
    - A climate-controlled waiting area with amenities, such as benches, wi-fi, and real-time transit information;
    - Defined boarding and alighting areas for bus, BRT, and shuttle services;
    - A taxi/ridesharing waiting area that could be converted for use by automated vehicles in the future; and,
    - Public bikeshare stations.
- Enhance transit and shuttle services (see the Transportation Management Plan).
- Consider a pedestrian and bicycle connection to Lockwood Drive and the White Oak Transit Center.

#### 5.2.7.2 Off-Site

- Work with Montgomery County to provide a connection from the new transit center to Lockwood Drive so that New Hampshire Avenue BRT vehicles can enter the site, utilize the FDA transit center and then connect directly to the White Oak transit center.
- Upgrade the bikeway on the FDA side of New Hampshire Avenue to a ten-foot-wide shared-use path with a minimum five-foot-wide buffer to the travel lanes.
- Work with Montgomery County, SHA, and Prince George's County to enhance pedestrian and bicycle connections to nearby residential and commercial centers, as well as to regional pedestrian/bicycle path networks, including:
    - Enhance existing pedestrian crossings at signalized intersections within ½ miles of the campus, including lead pedestrian intervals and countdown signal heads.
    - Improved/shorter connection to the Northwest Branch Trail.
    - Provide a 10-foot wide multi-use path along New Hampshire Avenue.
    - Provide bikeshare stations and/or dockless bikesharing in the nearby community.
    - Continue to support GSA's commitment to exploring ways to provide public access to government lands.
- Support employees that choose the live near the campus and utilize modes other than driving alone:

    - Coordinate with Montgomery and Prince George's Counties to ensure that any new development incorporates pedestrian and bicycle facilities that tie into the local and regional network and ultimately, the White Oak Campus facilities.
    - Expand shuttle services to serve transit stops near new developments within one mile of the campus.
- Expand circulator shuttle service to include bus stops and other mass transit facilities near major developments, such as Viva White Oak, and other large residential and retail complexes within one mile of the campus.

In addition to off-campus connections, the following on-campus improvements are also recommended to improve onsite circulation and safety:

- Traffic calming measures such as speed humps or tables, speed feedback displays, curb extensions, raised crosswalks, etc.;
- Speed enforcement;
- Rectangular rapid flashing beacons for midblock crossings of the circulating roadways;
- Improved lighting of pedestrian and bicycle facilities;
- Staff education; and,
- Improved wayfinding.

### 5.2.8 Smart Technology

#### 5.2.8.1 Connected and Autonomous Vehicles

Connected and autonomous vehicles are anticipated to have a significant impact on travel, from vehicle ownership, to congestion, to parking demand. While autonomous vehicle technology is still in development, planners and engineers have speculated on the potential advantages and disadvantages of this technology on commuting, including:

- *Safer Roadways with Higher Capacities*: Autonomous vehicles will be capable of split second reactions, and through communication with other vehicles, be able to anticipate hazards on the roadway. Not only will this improve safety, it will also allow vehicles to drive much closer together, thus increasing capacity on existing roadways.
- *Reduced Congestion*: Vehicles will have access to real-time traffic information to make decisions about the most efficient travel routes, and when combined with increased roadway capacity, it is expected to reduce peak period congestion.
- *Reduced Parking Demand/Off-Site Parking*: It is anticipated that vehicle sharing, along with the ability for a vehicle to drive to an off-site location by itself is anticipated to reduce and offset parking demand. This is critical in central business districts where property is often a premium and would eliminate the need for expensive parking facilities. Furthermore, if vehicles are permitted to operate without an occupant, and employee may send the vehicle home, or to another location, and avoid parking at their place of work altogether.
- *Increased Parking Capacity*: Autonomous vehicles will be capable of parking closer together because they do not require space for passengers to enter the vehicle in the parking space, thus increasing overall parking lot capacity.

- *Reduced Transit Mode Share*: Increased roadway efficiencies, as well as lower costs and improved access to vehicles through vehicle sharing, are anticipated to compete with transit, particularly local bus services.
- *Extension of Peak Periods*: If vehicles are permitted to operate without a person inside, and vehicle sharing is not as widespread as anticipated, it is possible that autonomous vehicles could lead to the extension of peak periods where vehicles are traveling from a place of residence to a destination, and back in one peak period. This may be particularly critical in central business districts where parking is more expensive. Passengers may elect to send their vehicle home or to a parking facility on the outskirts of an urban area to wait for the return trip.

Widespread, measurable impacts to the factors listed above are not likely to be felt for another 10 to 15 years as connected and autonomous vehicles slowly enter the market. Therefore, they cannot be considered as a TDM strategy currently. However, as time progresses, and this document is updated, the role of connected and autonomous vehicles may increase and could begin to impact commute modes. Furthermore, the implementation of the 2018 FDA Master Plan is likely to be more than ten years from now, thus FDA could begin to plan for some of the potential impacts in the design of its facilities, including:

- Designated pick-up and drop-off areas with queue storage for autonomous vehicles. These areas could be utilized by ridesharing services in the short-term.
- Design parking structures so that they could be reutilized as office or lab space in the future if autonomous vehicles result in a reduction in parking demand.

#### 5.2.8.2 Ridesharing

Ridesharing has revolutionized how people travel, particularly in urban areas. Being able to reserve a ride utilizing an application on a mobile phone, tracking where the vehicle is, and paying for the transportation has simplified movement without a personal vehicle and has expanded accessibility to those without a car or without a license. Furthermore, rideshare companies such as Uber and Lyft offer fares at a variable cost based on demand, thus ridesharing is often cheaper than traditional taxi service. As discussed in previous strategies, ridesharing can be used by FDA employees for commuting and traveling for business during the day. In addition to the strategies previously discussed, FDA should consider:

- Providing a designated pick-up and drop-off area on-campus. This could be utilized by autonomous vehicles in the future.
- Installing kiosks in building lobbies, or within the proposed transit center, that can be used by employees to schedule a pick-up.

#### 5.2.8.3 Carsharing

Many of the aforementioned strategies recommend coordination with a ridesharing company or providing fleet vehicles that employees can access during the day to run errands or attend meetings so that they do not have to drive to work. FDA should consider providing preferential parking spaces, closest to buildings, for these vehicles. Consideration could also be given to

providing parallel parking spaces along access roadways for these vehicles. Carsharing/fleet vehicles should be monitored for use and additional vehicles should be added as necessary.

#### 5.2.8.4 Electric Vehicle Charging Stations

Electric vehicle charging stations should be provided throughout the campus, within all major parking areas. FDA should work with interested employees to determine the number of charging stations that should be provided. Preferential locations for charging stations/parking should be considered.

### 5.2.9 Parking

The proposed expansion would consist of an increase in the number of employees and support staff assigned to the campus from 10,987 to up to approximately 18,000 through a combination of internal growth, as well as the consolidation of approximately 2,495 employees from other lease locations in Montgomery County and Prince George's County, Maryland. To accommodate the additional employees, an additional 1,550,000 gross square feet (GSF) of building space and approximately 7,463 additional parking spaces, for a total of 10,094 spaces (about 1 parking space for every 1.8 employees), is proposed. Furthermore, the current attendant-assisted parking program would be discontinued, thus there would only be enough parking onsite for 54% of employees.

#### 5.2.9.1 Parking Policies

Parking policies are often the best way to influence mode choice because it often leads to an increase in the real and/or perceived cost of drive-alone commuting. Strategies can include implementing or increasing parking fees, providing preferential parking for carpool/vanpool vehicles, or incentivizing employees for not using a parking space.

FDA has established its long-term commitment to reducing the traffic impact of its employees commute to work by offering commuting enhancements that make its White Oak Campus a more attractive place to work. However, based on the site conditions and the relatively aggressive non-auto driver mode share goal, consideration could be given to the following policies if additional trip reduction support is needed:

- Parking Fees: Future consideration may be given to implementing daily or monthly parking fees. This would require changes to GSA policies which currently do not support parking fees. Furthermore, the potential future implementation of parking fees must be considered carefully, balancing the need to reduce SOV trips with the impact to employees.

  Parking fees have been proven to have a significant impact on drive-alone commuting. Potential benefits include a reduction in SOV trips to the campus, decreased number of cars parking at the campus, potential for a reduction in the amount of required parking, greater operational funding for maintenance of parking facilities, as well as TDM programs, and the potential for assigned, reserved, or prioritized parking spots for those employees that pay for parking.

Furthermore, Montgomery County has begun to evaluate parking fees, as well as unbundling parking from lease agreements, in its transportation management districts, recognizing that parking fees have significant impact on driver behavior. For example, the County has established consistent parking fees across all garages, surface lots, and on-street parking in Bethesda. In White Flint, the County will be requiring unbundled parking and market-rate parking fees in developer TMP agreements.

- Parking Cash-Out: Assign a monetary value to each parking space, then employees are offered a per-month benefit to not use their parking space. This could be offered as an additional incentive for transit riders, carpool/vanpool participants, and walkers/bikers, and could be funded through the parking fees.

  While current policy does not permit an additional cash benefit for federal employees, a parking cash-out could be considered in the future if policies change. Parking cash-out programs have been proven successful in the private sector, particularly in California where a state-wide program was implemented that requires employers to offer the incentive. While there are no documented examples of parking cash-out at a federal level, it has been implemented at municipal governments, including the City of Los Angeles. Furthermore, the City of Baltimore council is expected to vote on a parking cash-out program from City employees in 2018.

#### 5.2.9.2 Smart Parking

As parking facilities approach capacity, there are often available parking spaces that go unused due to the difficulty of identifying available parking. Depending on the parking layout, number of facilities, and total number of parking spaces, up to 10% of available parking can go unutilized. Parking demand is likely to continue to be high during peak work days, thus making it difficult for employees arriving later in the peak period to find parking. This could negate the potential benefit of flexible work hours. However, smart parking technology can be used to maximize the utilization of parking by providing real-time information that can be used to help drivers find available parking and avoid unnecessary circulation. Therefore, FDA should consider:

- Installing individual parking space monitors throughout the campus, along with displays that indicate how many parking spaces are available in each surface lot, parking garage/garage level, and aisle.

## 5.3 ROLES AND RESPONSIBILITIES

Implementing a travel demand management program for the proposed consolidation of off-campus FDA offices will require coordination between the federal government and local jurisdictions, including FDA, GSA, MWCOG, Montgomery County, Prince George's County, MTA, and WMATA. The following lists recommended roles and responsibilities for each agency.

**FDA/GSA**

- Structure policies that affect mode choice, such as parking, teleworking, flexible work schedules, and alternative work schedules to improve the balance of demand onsite across the entire work week.
- Double the number of ETCs to manage the TDM program.
- Coordinate with local agencies to advocate for improved transit services and pedestrian and bicycle facilities.
- Evaluate and implement potential new or modified shuttle routes to park-and-ride and other transit facilities with higher concentrations of employee residences.
- Coordinate with developers of nearby sites, such as Viva White Oak, as well as existing apartment complexes to offer incentives to FDA employees that will encourage them to live close to the campus.
- Enhance the existing carpool and vanpool program.
- Work with a carshare/fleet management company or rideshare company to provide employees access to a vehicle during the day for meetings and errands.
- Develop separate strategies for commuters that are inside the Beltway and outside the Beltway.
- Establish bike, pedestrian, and transit user groups. Utilize the transit user group to establish a transit ambassador program.

**MWCOG**

- Provide TDM strategy guidance.
- Maintain the Commuter Connections program with Guaranteed Ride Home services.

**Montgomery and Prince George's County**

- Work with FDA to identify opportunities for improved transit services, additional park-and-ride facilities, and improved regional pedestrian and bicycle facilities.
- Work with FDA to provide bikeshare stations on campus, as well as at nearby apartments and condos, and retail areas.

**MTA/WMATA**

Work with FDA to identify opportunities for improved transit services.

# 6.0 IMPLEMENTATION

While the implementation of the 2018 FDA Master Plan is likely more than ten years out, many of the proposed strategies recommended in this TMP will require design considerations, planning, coordination with employees, and acquisition of funding, while others could be implemented relatively efficiently with the existing employees and expanded to consolidated/new employees once the 2018 FDA Master Plan has been implemented. The below implementation strategy provides a roadmap for FDA to ensure that resources and facilities are available as soon as they are needed, and is divided into four phases:

- ***Planning Phase (within the next 5 years):*** Begin to identify and secure funding for recommendations. Ensure that the design of onsite facilities, such as the transit center, incorporate specifications for transit vehicles, employee space, smart parking technology, etc. Continue coordination with agencies to identify methods to enhance access for transit, pedestrians, and bicyclists.

- ***Preliminary Implementation (within 5 years of full build-out):*** Continue planning, funding, and design process for larger-scale recommendations. Begin to implement strategies that do not require new facilities to existing employees, support staff, and contractors. Incorporate consolidated/new employees as they move into new on-campus facilities.

- ***Full Implementation (within 5 years after full build-out):*** All recommended TDM strategies should be implemented and available to all employees, support staff, and contractors. Monitoring should begin, and FDA/GSA should evaluate the need for additional measures that may be needed to achieve the 54% SOV requirement.

- ***Maintenance Phase (beyond 5 years after full build-out):*** Continue to monitor TMP needs. Track new technology and incorporate new strategies as needed.

Table 7 list the implementation steps for each strategy by phase. The percentages listed with each strategy should be considered as mode share goals to expand beyond what is currently being done to meet the 54% SOV requirement for peak periods. However, FDA has the flexibility achieve the overall goal utilizing any combination of strategies.

## Table 7: Implementation Plan by Phase

| Strategy | Planning Phase (within 5 Years) | Preliminary Implementation Phase (within 5 years of Full Build-Out) | Full Implementation Phase (within 5 Years after Full Build-Out) | Maintenance Phase (Beyond 5 Years after Full Build-Out) |
|---|---|---|---|---|
| **Employee Transportation Coordinator (ETC)** | • Secure funding and authorization for additional ETC staff.<br>• Ensure that ETC office space is incorporated into design of transit center and building lobbies. | • Expand ETC services to support staff and contractors.<br>• Hire additional ETC staff as campus population grows. | • At least eight ETCs are required.<br>• Begin TMP monitoring, adjust strategies as needed. | • Evaluate need for additional staff as needed. |
| **Carpool/ Vanpool (1% - 2%)** | • Increase marketing to employees that live in the densest zip codes.<br>• Enhance guaranteed ride home (GRH) programs to provide more than four emergency rides per year. | • Pre-market/pre-match employees that will be relocated to the White Oak Campus. | • Continue to incentivize and aggressively market program. | • Continue to incentivize and aggressively market the program. |
| **Transit and Shuttles (2% - 4%)** | • Clarify US Code guidelines for shuttle services and obtain definition of mass transit facility.<br>• Continue coordination with Montgomery and Prince George's Counites to improve and maximize connections to existing and proposed BRT at the White Oak Transit Center and the Takoma/Langley Purple Line station.<br>• Evaluate potential new shuttle/rideshare routes, develop service plan and secure funding for vehicles or rideshare service.<br>• Work with agencies to install sheltered, secure, and attractive waiting areas where transfers are needed.<br>• Encourage transit agencies to offer free transfers between services and/or utilize a common fare payment system.<br>• Coordinate with transit agencies to ensure that onsite transit center can accommodate future BRT vehicles, | • Establish transit user group and ambassador program.<br>• Evaluate potential vehicular and pedestrian connection to Lockwood Drive.<br>• Champion the implementation of the New Hampshire and Randolph Road BRT routes.<br>• Begin pilot shuttle/rideshare routes to areas with higher concentrations of employee residences that are underserved by transit. | • Complete transit center.<br>• Modify shuttle/rideshare routes as needed.<br>• Begin commute challenges/competitions. | • Continue coordination with agencies to maximize impact of new services, technologies, and commuting trends. |

| Strategy | Planning Phase (within 5 Years) | Preliminary Implementation Phase (within 5 years of Full Build-Out) | Full Implementation Phase (within 5 Years after Full Build-Out) | Maintenance Phase (Beyond 5 Years after Full Build-Out) |
|---|---|---|---|---|
| | standard buses, and rideshare queuing. | | | |
| **Tele-commuting (1% - 2%)**<br>**Flexible/ Alternative Work Schedules (0.5% - 1%)** | • Develop incentive program for telecommuting or utilizing a flexible day off on a Tuesday, Wednesday, or Thursday, as well as for late commuters.<br>• Outline preferential parking areas and ensure they are incorporated into existing and planned parking facilities. | • Develop spreadsheet or other software to manage preferential parking. | • Begin incentive program to balance parking demand across the entire week. | • Evaluate additional incentives for demand balancing of teleworking, flexible work schedule, and alternative work schedule employees, as needed. |
| **Bike/Walk to Work (0.5% - 1%)** | • Coordinate with agencies to provide pedestrian and bicycle facilities on the local roadway network that connect to local destinations as well as regional trails.<br>• Ensure that continuous sidwalks, bike lanes, and/or multi-use pathways that connect the entire campus, as well as off-site pathways and transit stations, are incorporated into the site design.<br>• Continue to support GSA's commitment to exploring ways to provide public access to government lands. | • Expand bicycle user group to include pedestrians.<br>• Expand the existing multi-use path along the New Hampshire Avenue frontage to a minimum of 10 feet.<br>• Coordinate with MDOT SHA, Montgomery County, and Prince George's County to plan for bikeshare stations and/or dockless bikes on campus. Ensure that bikeshare stations are also provided in the surrounding communities. | • Install bikeshare stations.<br>• Complete on-site pedestrian and bicycle infrastructure. | • Continue to monitor pedestrian and bicycle needs. |
| **Live Near Your Work (1% - 2%)** | • Establish guidance to developers as to what is needed to be served by an FDA shuttle and/or for the developer to provide a private shuttle connection to campus.<br>• Encourage Counties to require developers to provide pedestrian and bicycle facilities that could be used to connect to the White Oak campus. | • Develop circulator shuttle plan to incorporate stops at transit facilities/bus stops near major residential and commercial developments within one miles of the campus. | • Begin expanded shuttle service. Allow private shuttles to drop off/pick-up at the transit center. | • Monitor program and make adjustments as necessary.<br>• Maintain statistics on shifts in the location of employee residences. |

| Strategy | Planning Phase (within 5 Years) | Preliminary Implementation Phase (within 5 years of Full Build-Out) | Full Implementation Phase (within 5 Years after Full Build-Out) | Maintenance Phase (Beyond 5 Years after Full Build-Out) |
|---|---|---|---|---|
| **Smart Transportation Technology** | • Provide a queuing area with available wi-fi for rideshare vehicles.<br>• Coordinate with ridesharing company to offer transportation during the day for employees.<br>• Consider parking garage designs that would permit future re-use if autonomous vehicle technology results in lower parking demand. | • Secure funding for smart-parking technology.<br>• Provide rideshare kiosks for employees to schedule rides utilizing FDA account.<br>• Continue to evaluate accommodations for autonomous vehicles.<br>• Provide carsharing/fleet services and electric vehicle charging stations. | • Implement smart-parking technology that informs drivers of the location of available parking onsite.<br>• Continue to evaluate accommodations for autonomous vehicles. | • Continue to evaluate accommodations for autonomous vehicles. |

# 7.0 MONITORING AND EVALUATION

This Transportation Management Plan (TMP) is a flexible document that can be shaped and reshaped as commuting patterns and needs change. Each of the TDM strategies must be evaluated and changed as seen fit by the ETC as the program grows. The ETC will evaluate each strategy by setting the goals and then documenting the progress of each goal. It is expected that the TMP will be updated once every two years. During each evaluation period, the following steps must be performed:

- Determine the extent to which each program has achieved its objective.
- Plan the degree of consistency of program implementation.
- Detail the relationship of different strategies to the effectiveness of the overall program.

Several options are available to the ETC to gauge the success of these programs, including:

- Obtain annual commuter survey data to reevaluate the program. This would include determining whether the goals are being met and, based on the employee trends, identifying programs which are successful and need to be emphasized and those that are not working. Additional supplemental surveys may be required to obtain information about FDA-specific programs. ETCs will develop and distribute these surveys as needed. It should be noted that this type of data is primarily collected on a bi-annual basis by MCDOT/Commuter Services. With the expansion of the White Oak campus and the significant TDM effort required to achieve the commuting goals established, it would be appropriate for HHS and GSA to coordinate with FDA to collect this data on at least a bi-annual basis and provide it to MCDOT/CSS. This survey should be conducted in a way that provides the mode share, commuting times, residential location, and other key data obtained through the MCDOT/CSS survey so that it can be analyzed in a comparable manner. An example survey is contained in Appendix A.
- Perform traffic counts at all the access points at all entrances to employee and visitor parking at least once per year for a period of at least five days. This data will be used to provide a check to survey results and other personnel estimates of drive-alone vehicle trips.
- Provide program participation documentation (e.g. application of transit subsidies, van registration, preferential parking registration).
- Provide packages to existing and perspective employees that identify the transit services and the incentives being offered.

# APPENDIX A:
# SAMPLE ANNUAL EMPLOYEE SURVEY

# APPENDIX B:
# 2018 MASTER PLAN FOR THE CONSOLIDATION OF THE U.S. FDA HEADQUARTERS AT THE FEDERAL RESEARCH CENTER AT WHITE OAK LOCATED IN SILVER SPRING, MARYLAND, FINAL TRAFFIC TECHNICAL REPORT (AUGUST 2018)