Figure 4-39: RFDS 2 AM and PM Forecasted Turning Movement Volumes (continued)

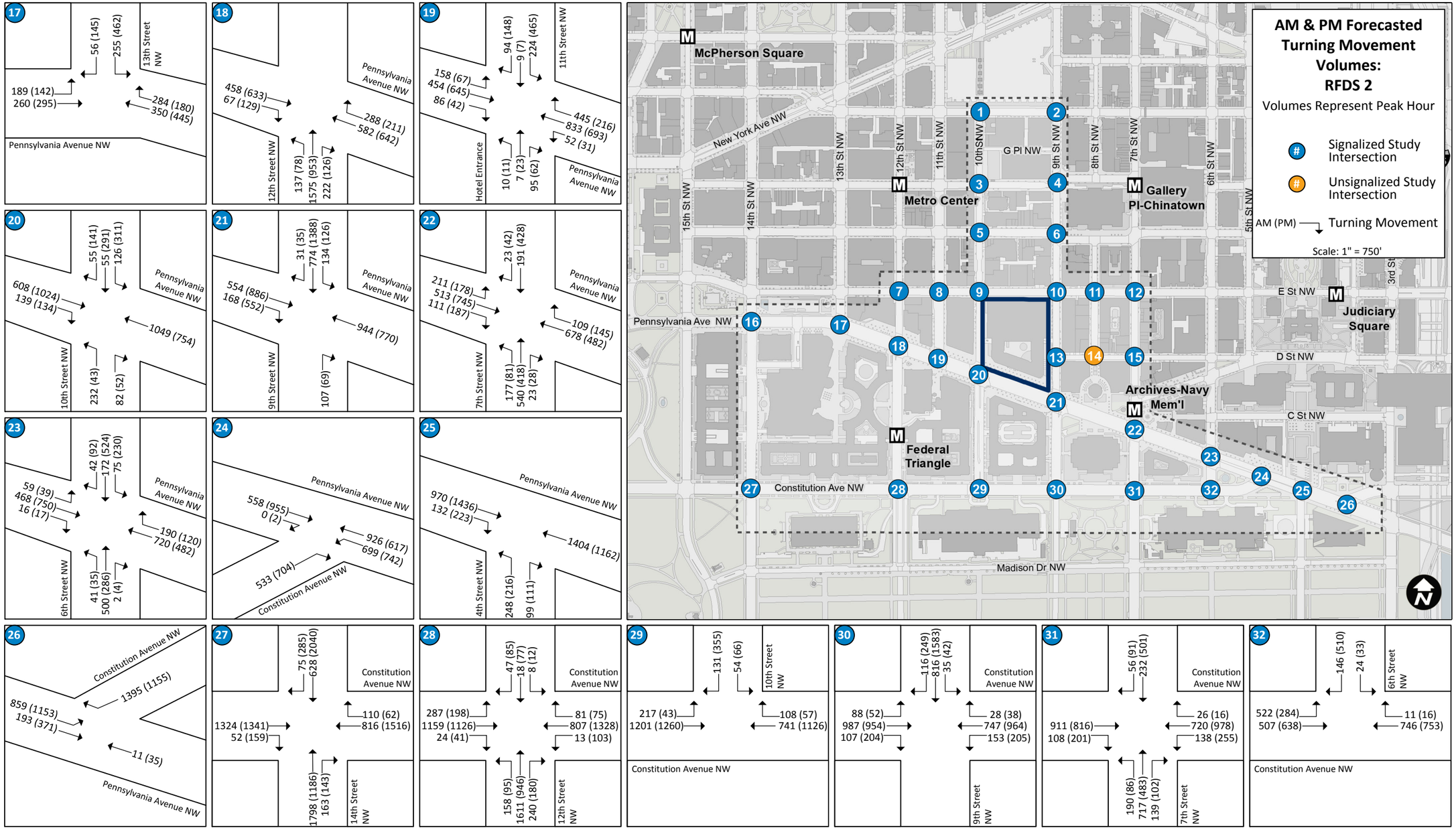
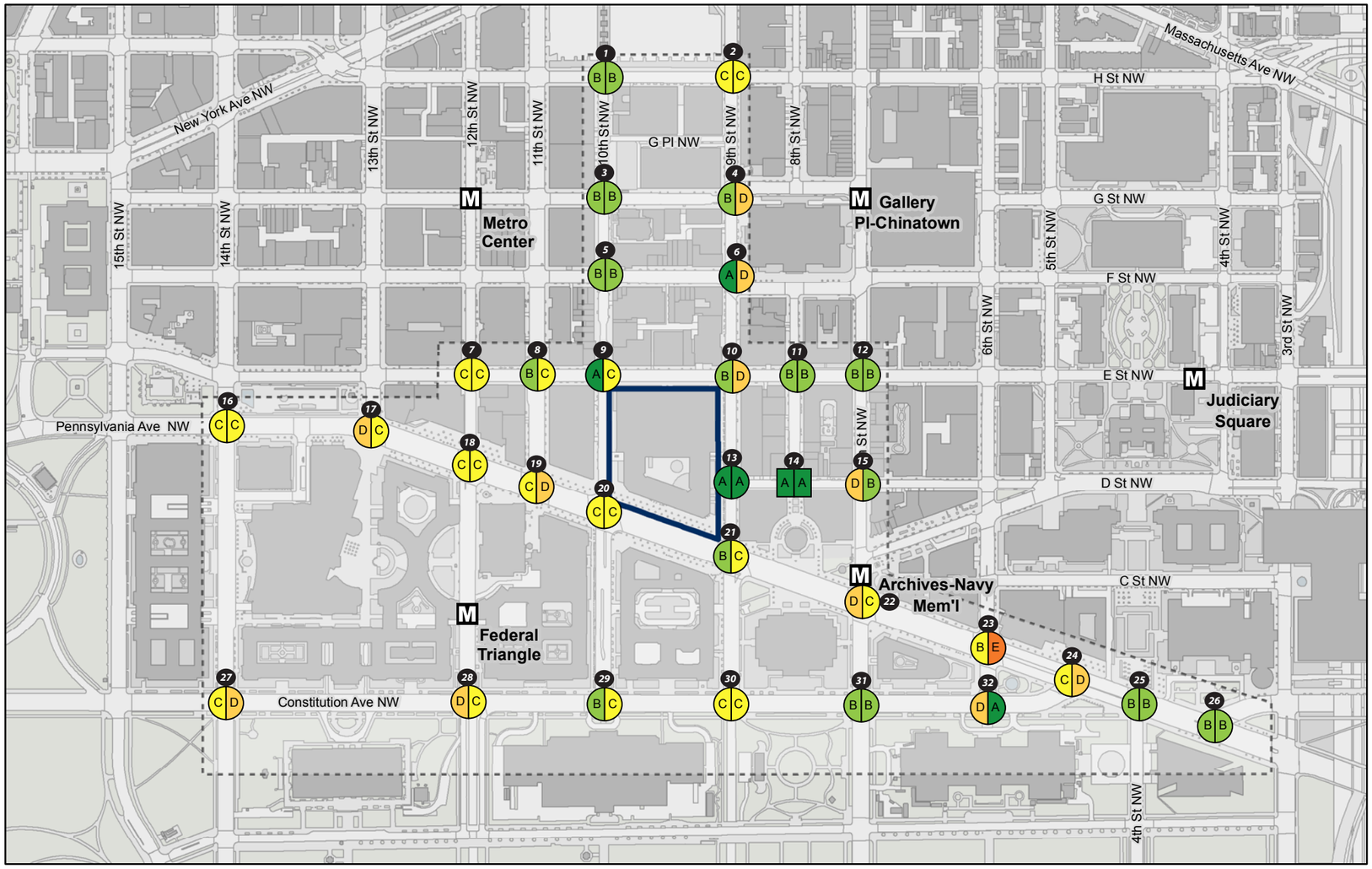


Figure 4-40: RFDS 2 Intersection LOS for AM and PM Peak Hours



Sources:
ESRI (2013), GSA (2013),DC GIS (2013)

RFDS 2 Operations Analysis

Based on the Synchro™ signalized intersection analysis, the majority of the study intersections would operate at acceptable conditions during the AM and PM peak hours in 2025. However, as in the No-action Alternative, the intersection of 6th Street NW and Pennsylvania Avenue NW would operate at LOS E during the PM peak hour. This is the only intersection within the study area that would operate under unacceptable conditions during a peak hour period in 2025. None of the study area intersections would operate at LOS F during a peak hour. A total of 14 signalized intersections would experience an unacceptable conditions for one or more turning movements. Compared to the No-action Alternative, RFDS 2 would have no change in the number of intersections failing during both the AM and PM peak hours. The JEH TIA (Appendix B) contains a more detailed traffic operations analysis for RFDS 2.

There would also be indirect, short-term, adverse impacts to traffic during construction. Temporary delays to local traffic from construction truck traffic and the possible need to stage construction equipment or materials in the roadway would occur at certain times of the day. There would also be impacts as a result of the demolition of the existing JEH building requiring dump trucks to haul the debris away on a continual basis until the parcel is clear of existing building materials

The overall intersection LOS grades under RFDS 2 are shown in figure 4-40 for the AM and PM peak hours. Table 4-72 shows the results of the LOS capacity analysis and the intersection projected delay under the RFDS 2 during the AM and PM peak hours.

RFDS 2 Queuing Analysis

Based on the Synchro™ and SimTraffic™ analysis, 29 signalized intersections would experience queuing lengths that would exceed the available storage capacity. The remaining intersections in the study area would provide sufficient storage for the anticipated demand. Compared to the No-action Alternative, RFDS 2 would have failing queues for two less intersections during the AM peak hour and two less intersections during the PM peak hour. The JEH TIA (Appendix B) contains a more detailed traffic queuing analysis for RFDS 2.

Summary of Traffic Analysis: RFDS 2

Under RFDS 2, there would be indirect, long-term, adverse impacts to traffic. The AM peak hour would experience isolated added delays at three intersections (7th and D Streets NW, 7th Street and Pennsylvania Avenue NW, and 12th Street and Constitution Avenue NW). During the PM peak hour, two intersections would have added delays (7th Street and Pennsylvania Avenue NW and 10th Street and Pennsylvania Avenue NW).

There would also be indirect, short-term, adverse impacts to traffic during construction. Temporary delays to local traffic from construction truck traffic and the possible need to stage construction equipment or materials in the roadway would occur at certain times of the day. There would also be impacts as a result of the demolition of the existing JEH building requiring dump trucks to haul the debris away on a continual basis until the parcel is clear of existing building materials.

TRANSPORTATION EVALUATION SUMMARY AND CONCLUSIONS

A total of 959 AM peak hour and 964 PM peak hour person trips under RDFS 1 and 876 AM peak hour and 1,777 PM peak hour person trips under RFDS 2 are projected to be added to all modes of transportation. Total Metrorail transit trips results in 525 AM peak hour and 537 PM peak hour trips under RFDS 1 and 308 AM peak hour and 694 PM peak hour trips under RFDS 2. Total vehicle trips results in 241 AM peak hour and 239 PM peak hour trips under RFDS 1 and 150 AM peak hour and 233 PM peak hour trips under RFDS 2 are projected to be transit trips. Most retail trips occur during the PM peak hour; thereby, reflecting the large increase between AM and PM peak hour trips under RFDS 2.

The pedestrian network would remain the same as the Existing Condition and would be reconstructed following JEH parcel construction. The pedestrian network would allow for the same connections as the existing network along Pennsylvania Avenue NW, E Street NW, and 9th and 10th Streets NW. It would be assumed that all sidewalk curb ramps located adjacent to the parcel would be brought up to ADA compliance during reconstruction if required by DDOT.

The bicycle network would not be affected under either RFDS, but would continue to serve bicycle trips serving the JEH parcel. It is assumed that an equal or greater number of bicyclists would access the parcel than present based on an equal or greater number forecasted in planning documents. Bicyclists would continue to use the existing bicycle facilities that surround the JEH parcel on all sides. Access to the Capital Bikeshare network would continue to encourage the use of bicycles as a daily commute option, especially with a station located within a tenth of a mile.

After accounting for background growth and planned developments, the transit network (Metrorail and Metrobus) would not be noticeably affected under either RFDS. While the background growth along the bus and rail network would cause facilities to operate at capacity, many of these facilities would operate at capacity without either RFDS (under the No-action Alternative). These overcapacity elements include the Metrorail fare vending machines at Archives-Navy Memorial, Gallery Place-Chinatown, and Metro Center Metro Stations. It also includes Metrobus Routes 11Y, 32, 36, 80, and G8. It is assumed that WMATA would implement recommendations from bus route studies and follow their long-term plan to address growth-related capacity issues for both bus and Metrorail operations.

Parking availability would not be affected under RFDS 1. For RFDS 2, parking availability would be improved along E, 9th, and 10th Streets NW surrounding the JEH parcel because it is assumed the new occupants would not require security setbacks. This new lane space would allow DDOT to create new on-street parking spaces. In addition, under RFDS 2 a new off-street parking facility would be constructed that could be larger than the existing facility and could offer more off-street public parking than the present conditions.

Truck access from 10th Street NW would need to be maintained for RFDS 1, but the site could require additional access points from E or 9th Streets NW to allow enough access to meet the demand. RFDS 2 truck access locations would be dependent on the design and future discussions with DDOT, but there would be a need for more truck access locations than RFDS 1 given RFDS 2's mixed-use development scenario. The exchange partner would have to work with DDOT to establish the best access points to handle the projected truck delivery demands.

All intersections currently operate at an acceptable LOS under the Existing Condition. Once the background growth and planned developments are added, one intersection would degrade from a passing LOS to a failing LOS (6th Street and Pennsylvania Avenue NW) under the No-action Alternative. There were no planned roadway improvements within the JEH study area to compensate for the added vehicle trips.

The traffic operation under the RDFS 1 would result in overall LOS degradation at intersections from a passing LOS to a failing LOS at one intersection (12th Street and Independence Avenue NW) during the AM peak hour. Under both RFDS 1 and RFDS 2, four other intersections would experience a LOS degradation from a passing LOS to a failing LOS for specific movements through the intersection (left, through, or right). The DDOT traffic signal optimization initiative should sufficiently address the traffic impacts caused by either scenario.

Table 4-72: Comparison of No-action Alternative and RFDS 2 Intersection Operations for AM and PM Peak Hours

#	Intersection	No-action Alternative						RFDS 2					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
1	10th Street NW & H Street NW (Signalized)												
		12.8	B	Pass	19.6	B	Pass	12.9	B	Pass	19.6	B	Pass
2	9th Street NW & H Street NW (Signalized)												
		20.3	C	Pass	24.7	C	Pass	20.3	C	Pass	24.6	C	Pass
3	10th Street NW & G Street NW (Signalized)												
		14.6	B	Pass	18.2	B	Pass	14.9	B	Pass	18.7	B	Pass
4	9th Street NW & G Street NW (Signalized)												
		13.0	B	Pass	45.7	D	Pass	13.0	B	Pass	45.7	D	Pass
5	10th Street NW & F Street NW (Signalized)												
		12.1	B	Pass	17.4	B	Pass	12.4	B	Pass	17.3	B	Pass
6	9th Street NW & F Street NW (Signalized)												
		9.8	A	Pass	41.5	D	Pass	9.8	A	Pass	42.0	D	Pass
7	12th Street NW & E Street NW (Signalized)												
		21.8	C	Pass	26.3	C	Pass	21.9	C	Pass	27.2	C	Pass
8	11th Street NW & E Street NW (Signalized)												
		14.7	B	Pass	26.4	C	Pass	14.9	B	Pass	27.1	C	Pass
9	10th Street NW & E Street NW (Signalized)												
		8.8	A	Pass	24.8	C	Pass	9.1	A	Pass	24.4	C	Pass
10	9th Street NW & E Street NW (Signalized)												
		13.0	B	Pass	46.2	D	Pass	13.4	B	Pass	46.0	D	Pass
11	8th Street NW & E Street NW (Signalized)												
		13.7	B	Pass	13.5	B	Pass	13.6	B	Pass	13.9	B	Pass
12	7th Street NW & E Street NW (Signalized)												
		19.4	B	Pass	18.7	B	Pass	19.4	B	Pass	18.9	B	Pass
13	9th Street NW & D Street NW (Signalized)												
		7.7	A	Pass	8.1	A	Pass	7.7	A	Pass	8.2	A	Pass
14	8th Street NW & D Street NW (AWSC)												
		8.2	A	Pass	8.4	A	Pass	8.2	A	Pass	8.4	A	Pass
15	7th Street NW & D Street NW (Signalized)												
		38.7	D	Pass	18.2	B	Pass	45.9	D	Pass	19.9	B	Pass
16	14th Street NW & Pennsylvania Avenue NW (Signalized)												
		27.3	C	Pass	21.3	C	Pass	27.3	C	Pass	21.2	C	Pass
17	13th Street NW & Pennsylvania Avenue NW (Signalized)												
		35.4	D	Pass	25.2	C	Pass	35.3	D	Pass	25.8	C	Pass

Table 4-72: Comparison of No-action Alternative and RFDS 2 Intersection Operations for AM and PM Peak Hours (continued)

#	Intersection	No-action Alternative						RFDS 2					
		AM Peak Hour			PM Peak Hour			AM Peak Hour			PM Peak Hour		
		Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check	Delay (sec/vehicle)	LOS	Check
18	**12th Street NW & Pennsylvania Avenue NW (Signalized)**												
		32.9	C	Pass	20.1	C	Pass	34.4	C	Pass	20.0	C	Pass
19	**11th Street NW/Hotel Entrance & Pennsylvania Avenue NW (Signalized)**												
		32.8	C	Pass	48.1	D	Pass	34.1	C	Pass	49.8	D	Pass
20	**10th Street NW & Pennsylvania Avenue NW (Signalized)**												
		19.2	B	Pass	16.1	B	Pass	20.1	C	Pass	23.0	C	Pass
21	**9th Street NW & Pennsylvania Avenue NW (Signalized)**												
		12.5	B	Pass	26.8	C	Pass	12.3	B	Pass	26.6	C	Pass
22	**7th Street NW & Pennsylvania Avenue NW (Signalized)**												
		41.8	D	Pass	25.2	C	Pass	46.4	D	Pass	33.1	C	Pass
23	**6th Street NW & Pennsylvania Avenue NW (Signalized)**												
		16.9	B	Pass	57.4	E	Fail	16.9	B	Pass	57.4	E	Fail
24	**Constitution (WB) Avenue NW & Pennsylvania Avenue NW (Signalized)**												
		20.2	C	Pass	36.8	D	Pass	20.3	C	Pass	36.9	D	Pass
25	**4th Street NW & Pennsylvania Avenue NW (Signalized)**												
		10.6	B	Pass	14.2	B	Pass	10.8	B	Pass	14.2	B	Pass
26	**Constitution (EB) Avenue NW & Pennsylvania Avenue NW (Signalized)**												
		18.6	B	Pass	18.5	B	Pass	18.7	B	Pass	18.6	B	Pass
27	**14th Street NW & Constitution Avenue NW (Signalized)**												
		24.4	C	Pass	54.5	D	Pass	24.5	C	Pass	54.4	D	Pass
28	**12th Street NW & Constitution Avenue NW (Signalized)**												
		53.7	D	Pass	31.7	C	Pass	54.0	D	Pass	34.3	C	Pass
29	**10th Street NW & Constitution Avenue NW (Signalized)**												
		14.8	B	Pass	24.7	C	Pass	14.9	B	Pass	24.5	C	Pass
30	**9th Street NW & Constitution Avenue NW (Signalized)**												
		27.3	C	Pass	32.8	C	Pass	27.4	C	Pass	32.7	C	Pass
31	**7th Street NW & Constitution Avenue NW (Signalized)**												
		17.1	B	Pass	19.1	B	Pass	17.1	B	Pass	19.1	B	Pass
32	**6th Street NW & Constitution Avenue NW (Signalized)**												
		42.6	D	Pass	6.1	A	Pass	42.6	D	Pass	6.1	A	Pass

Notes:

AWSC = All-Way STOP-Controlled unsignalized intersection

EB = Eastbound, WB = Westbound

LOS = Level of Service

Delay is Measured in Seconds Per Vehicle.

Red cells denote intersections operating at unacceptable conditions.

JEH GLOBAL GREENHOUSE GASES ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No new measurable impacts to GHG emissions.

RFDS 1: Insufficient information to asses impacts.

RFDS 2: Insufficient information to asses impacts.

Table 4-73: Existing/No-action JEH Building Emissions (Fiscal Year 2013)

Source	Annual Consumption	Annual Metric Tons CO_2e Emissions
Fuel Oil No. 2 backup generators	3,357 gallons	34.4
Purchased electricity	60,623,236 kwh	26,195.5
Purchased steam	61,333 thousand pounds	5,624.0
Building-related Total		31,853.9

Table 4-74: JEH No-action Alternative Employee Commute Vehicle Miles Traveled and Greenhouse Gas Emissions (2025)

	JEH No-action	Off-site No-action
Annual VMT (250 days)	8,584,133	31,476,680
No Action Total VMT		**40,060,813**
No Action Total CO_2e- Metric Tons		**10,191.2**

4.2.10 Greenhouse Gas Emissions and Air Quality

This section provides a summary of the analysis results for air quality and GHG emissions. Additional technical supporting data and tables for this section are provided in Appendix F.

GREENHOUSE GAS EMISSIONS AND AIR QUALITY ASSESSMENT OF SIGNIFICANCE

Impacts to air quality and GHG emissions would not result in significant impacts, as defined in section 3.11.3.

4.2.10.1 Global Climate Change and Greenhouse Gases

No-action Alternative

Stationary and Building Related Sources

Under the No-action Alternative, there would be no new measurable impacts to stationary source GHG emissions, as the current emissions would be expected to continue. Emission information for the existing JEH building was obtained from FBI's fiscal year 2013 GHG inventory, summarized in table 4-73. Approximately 82 percent of the building-related emissions are from purchased electricity.

Mobile Sources

Under the No-action Alternative, there would be no new measurable impacts to mobile source GHG emissions, as the current emissions would be expected to continue. Table 4-74 summarizes the vehicle miles traveled (VMT) and CO_2e estimate for the No-action Alternative, accounting for employee commutes to the JEH building and employee commutes to current off-site locations. Total commute-related CO_2e emissions would be approximately 10,191 metric tons per year based on the assumptions detailed in section 3.11.2.4.

RFDS 1

Given the uncertainties with regards to GHG emissions from both mobile and stationary sources, there is insufficient data to assess the level of impact to GHG emissions as described below.

Stationary and Building Related Sources

Under RFDS 1, JEH would no longer be allowed to use GSA's Central Heating Plant for building heating and cooling needs. As a result, new on-site heating and cooling equipment could be needed. This equipment would likely be powered by natural gas (for heating/hot water) and electricity (for cooling). Electricity and natural gas consumption could increase, but there could be a comparable decrease in energy use and emissions at GSA's Central Heating Plant due to reduced demand for steam and chilled water. Building-related emissions could be reduced if energy efficiency related rehabilitation measures are implemented.

Mobile Sources

Mobile source GHG emissions could be higher than the 2,183 metric tons CO_2e per year estimated for the No-action Alternative at JEH, based on the net increase in trip generation for the new office use compared to the existing FBI use as discussed in section 4.2.9.

RFDS 2

Given the uncertainties with regards to GHG emissions from both mobile and stationary sources, there is insufficient data to assess the level of impact to GHG emissions as described below.

Stationary and Building Related Sources

Greenhouse gas emissions for RFDS 2 would be different from the existing JEH building in a number of ways, including changes based on the type of land use (residential and commercial versus office); change in the size of the building; and changes in building methods and energy efficiency. It is likely that the new construction would be substantially more efficient.

Mobile Sources

Mobile source GHG emissions could be higher than the 2,183 metric tons CO_2e per year estimated for the No-action Alternative at JEH, based on the net increase in trip generation for the new office use compared to the existing FBI use as discussed in section 4.2.9.

Given the uncertainties with regards to GHG emissions from both mobile and stationary sources, there is insufficient data to assess the level of impact to GHG emissions.

4.2.10.2 Air Quality

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts relative to existing conditions. On-site stationary source emissions from the JEH parcel would be limited to diesel backup power generation, as discussed in section 4.1.10. Criteria pollutant emissions from backup generator use were estimated as shown table 4-75 based on 2013 backup generator fuel consumption data. The annual generator emissions are well below the General Conformity de minimis thresholds.

Mobile source emissions would continue similar to Existing Condition for employee commutes and deliveries. The traffic analysis results show that all intersections affected by the JEH No-action Alternative operate at LOS D or better in the AM peak hour. In the PM peak hour, all intersections would operate at LOS D or better with the exception of Intersection #23, 6th Street and Pennsylvania Avenue. This intersection was analyzed with FHWA's CO categorical hot-spot finding screening tool and the results showed there would be no exceedance of the NAAQS for CO. Although the angle of this intersection is not perpendicular (which was assumed in the categorical finding modeling and required for formal transportation conformity purposes[3]), this factor is outweighed by the fact that the PM peak hour approach volumes are 846 or less (compared to a maximum of 2,640 for each intersection approach in the modeling for the categorical finding). No construction emissions would occur under the No-action Alternative. Therefore, under the No-action Alternative, there would be no new impacts to air quality and CO would continue to not exceed hot spot and NAAQS thresholds.

RFDS 1

As discussed in section 4.2.10.1, the JEH building would no longer be allowed to use the GSA Central Steam Plant for heating and cooling under RFDS 1. This could increase on-site emissions of criteria pollutant such as NO_x from natural gas boilers that would be required to provide heat/hot water in the absence of steam. As a result, indirect, long-term, adverse impacts from stationary sources could occur in the vicinity of the JEH building, while off-site emissions from the Central Steam Plant could decrease. It is assumed that major adverse impacts in the form of off-site localized exceedances of the NAAQS from stationary sources could be avoided through the appropriate design of the new boiler system and associated exhaust stack(s).

In terms of mobile sources, all intersections affected by RFDS 1 would operate at LOS D or better in the AM peak hour, with the exception of Intersection #28, 12th Street and Constitution Avenue, which would operate at LOS E. In the PM peak hour, one intersection would operate at LOS E: Intersection #23, 6th Street and Pennsylvania Avenue. Because Intersection #28 has substantially higher total approach volumes in the AM peak hour (4,525 sum of all four approaches) than Intersection #23 in the PM peak hour (1,692), Intersection #28 was selected as the worst case location for consideration and screening. Intersection #28 includes one non-typical feature: the 12th Street northbound approach is emerging from a tunnel to at-grade. The grade of this approach is approximately 4 percent, which exceeds the 2 percent maximum grade that was assumed in the modeling for the FHWA CO categorical finding, as a steeper grade can result in higher emissions as engines work harder to move vehicles up hill. However, the northbound approach volumes (2,047) are below the maximum allowable and the background concentrations are substantially below the maximum allowable.[4] Therefore, despite the grade of the northbound approach, it can be concluded that an exceedance of the NAAQS for CO would not occur at Intersection #28. Overall mobile source impacts would be long-term and adverse.

Construction emissions would occur as a result of rehabilitation activities, but these emissions would be expected to be no measurable because the renovations would only occur to the interior of the building.

RFDS 2

As discussed in section 4.2.10.1, the RFDS 2 buildings would no longer be allowed to use the GSA Central Steam Plant for heating and cooling. This could increase on-site emissions of criteria pollutant such as NO_x from natural gas boilers that would be required to provide heat/hot water in the absence of steam. Off-site emissions from the Central Steam Plant could decrease. It is assumed that off-site localized air quality impacts from stationary sources could be avoided through the appropriate design of the new boiler system and associated exhaust stack(s). RFDS 2 development may include diesel-powered backup generators, also similar to the existing JEH building.

In the AM peak hour, all intersections affected by RFDS 2 would operate at LOS D or better. In the PM peak hour, Intersection #23, 6th Street and Pennsylvania Avenue, would operate at LOS E. This intersection was considered previously in the screening for the No-action Alternative. The maximum volume for one approach would be 910, well below the volume assumed in the FHWA CO categorical finding. Therefore, no exceedance of the NAAQS for CO would be anticipated, resulting in no new impacts to air quality.

Annual construction emissions would likely be below the General Conformity de minimis thresholds (although the quantity of emissions would depend on the construction schedule, which is not known).

Under RFDS 2, there would be indirect, long-term, adverse impacts to air quality from mobile source emissions. Indirect, short-term, adverse impacts would occur during the reconstruction period from construction activities including fugitive dust. There is insufficient data to assess the level of impact to climate change and GHG emissions from stationary sources, however it is assumed that off-site localized air quality impacts from stationary sources could be avoided through the appropriate design of the new boiler system and associated exhaust stack(s).

JEH AIR QUALITY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: Indirect, short- and long-term, adverse impacts

RFDS 2: Indirect, short- and long-term, adverse impacts

Table 4-75: JEH No-action Backup Generator Criteria Pollutant Emissions

Pollutant	Annual Emmisions (Tons)
CO	0.201960
NO_x	0.74379
PM	0.0231
SO_2	0.0003

[3] Transportation conformity does not apply to this alternative. The use of the categorical finding is for NEPA purposes.

[4] The maximum allowable 1-hour background concentration under the categorical finding is 29.5 parts per million (ppm). The actual 1-hour background concentration (at 2055 L ST. N.W., AQS Site ID: 11-001-0023) in 2014 was 2.1 ppm. The maximum allowable 8-hour background concentration is 5.1 ppm, the actual background concentration in 2014 was 1.6 ppm.

JEH NOISE ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, short- and long-term, adverse impacts.

4.2.11 Noise

NOISE ASSESSMENT OF SIGNIFICANCE

Impacts to noise would not result in significant impacts, as defined in section 3.11.3.

4.2.11.1 No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to noise. The FBI HQ would remain at the JEH building, and there would be no change to the existing noise conditions.

4.2.11.2 RFDS 1

Under RFDS 1, there would be no measurable impacts to noise. Although there would be some temporary impacts to noise relating to the interior renovation, these impacts would not be readily noticeable outside of the parcel. There could be indirect, long-term, adverse impacts to noise as a result of the increased traffic levels during peak periods, as described in section 4.2.9.2.

4.2.11.3 RFDS 2

Under RFDS 2, the demolition of the JEH building and construction associated with redevelopment of the parcel would result in short-term noise impacts. Noise from construction equipment would vary based on the equipment being used at any given time. All construction activities would need to be permitted by the District and therefore would be required to adhere to noise control regulations, including the District of Columbia Noise Control Act of 1977 and the DC Noise Ordinance. Compliance with these regulations would reduce the impact of construction activity noise on the overall soundscape in the vicinity of the parcel. Given these assumptions, there would be indirect, short-term, adverse impacts associated with the construction activities required to redevelop the parcel.

Long-term, adverse noise impacts would occur from the introduction of residential and commercial uses that do not currently exist on the parcel. However, the increased noise generated by these uses would be minor and consistent with other noise generation levels near the parcel, and would not change the overall ambient noise levels. Similarly, the increased intensity of use could introduce additional vehicular traffic to the area; however, the additional traffic noise would be consistent with the existing urban setting of the parcel and its vicinity and therefore there would be no noticeable increase in noise levels above ambient conditions.

Therefore, under RFDS 2, there would be indirect, long-term, adverse impacts to noise associated with increased noise generation from the redeveloped parcel, as well as indirect, short-term, adverse impacts associated with the construction activities required to redevelop the parcel. There could be indirect, long-term, adverse impacts to noise as a result of the increased traffic levels during peak periods, as described in section 4.2.9.2.

4.2.12 Infrastructure and Utilities

The following sections describe the environmental consequences for infrastructure and utilities under both the No-action Alternative at the JEH parcel and the two RFDSs.

INFRASTRUCTURE AND UTILITIES ASSESSMENT OF SIGNIFICANCE

Impacts to infrastructure and utilities would not result in significant impacts, as defined in section 3.11.3.

4.2.12.1 Water Supply

No-action Alternative

Under the No-action Alternative at JEH, there would be no measurable impacts to the water supply because the demand for water at JEH would continue at or near current levels, which is within the existing capacity.

RFDS 1

Under RFDS 1, there would be measurable impacts to the water supply, as the demand of the renovated building would be comparable to existing conditions.

RFDS 2

Under RFDS 2, there would be no measurable impacts to the water supply. The site lies within a highly developed urban environment with water mains adjacent on all sides, therefore, no off-site improvements would be anticipated associated with redevelopment. However, final determination of potential off-site improvements on the existing water distribution system would require coordination with DC Water during the design phase, and DC Water would be required to approve all connections to its utilities. The water demand associated with the proposed mixed-use redevelopment of the parcel would likely increase from the existing demand; however, it is not anticipated that this demand would exceed the existing system capacity.

4.2.12.2 Wastewater Collection and Treatment

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to wastewater collection and treatment because the JEH building would continue to produce the same amount of wastewater, which is within the existing capacity of nearby treatment facilities.

RFDS 1

Under RFDS 1, there would be no measurable impact to wastewater collection and treatment because the demand of the renovated building would be similar to the No-action Alternative.

RFDS 2

Under RFDS 2, there would be no measurable impacts to wastewater collection and treatment. The parcel lies within a highly developed urban environment and no off-site wastewater improvements would be anticipated as a result of redevelopment of the parcel. The sanitary sewer from the parcel would likely connect to the Low Area Trunk Sewer along Pennsylvania Avenue which is currently scheduled for upgrades at various locations. However, final determination of potential off-site improvements on the existing wastewater collection and conveyance systems would require coordination with DC Water during the design phase. It is anticipated that the inclusion of residential development on the parcel would increase the amount of wastewater produced; however, the Blue Plains AWTP has adequate excess capacity to accommodate the potential increase.

4.2.12.3 Electric Power

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to electric power because the JEH building would continue to use the same amount of electricity, which is within the existing capacity.

RFDS 1

Under RFDS 1, there would be measurable impacts to electric power because the demand of the renovated building would be similar to the No-action Alternative. There could be long-term, beneficial impacts as a result of decreased demand for electricity within this parcel due to the removal of high-energy intensity information technology equipment associated with FBI HQ operations.

RFDS 2

With the addition of residential and retail uses, the electrical demand of the parcel may increase under RFDS 2. This increase in demand may be offset by the removal of high energy intensity information technology equipment associated with current FBI HQ operations. The parcel is located within a spot network with multiple feeders for redundancy and reliability of service. There are currently four high voltage feeders entering the property. Additionally, there are several substations within proximity to the parcel capable of delivering upgraded capacity if required (Smolka 2015).

Assessment of Significance

Under RFDS 2, there could be indirect, long-term, adverse impacts to electric power, if the demand of the redeveloped parcel from future residences, offices, and retail establishments increases beyond the existing energy requirements of FBI HQ operations.

4.2.12.4 Natural Gas

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts because the JEH building would continue not to use natural gas.

RFDS 1

Under RFDS 1 there would be no measurable impacts to natural gas, because, while there may be new demand at the parcel, it is expected to be well within the existing capacity, and the infrastructure to supply the parcel currently exists.

JEH WATER SUPPLY ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH WASTEWATER COLLECTION & TREATMENT ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH ELECTRIC POWER ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH NATURAL GAS ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH TELECOMMUNICATIONS ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: No measurable impacts.

JEH STORMWATER MANAGEMENT ENVIRONMENTAL CONSEQUENCES SUMMARY

No-action Alternative: No measurable impacts.

RFDS 1: No measurable impacts.

RFDS 2: Indirect, long-term, beneficial impacts.

RFDS 2

With the addition of residential and retail uses, the natural gas demand of the parcel could potentially increase under RFDS 2. However, the JEH parcel lies within a highly developed urban environment with a number of natural gas mains adjacent to the parcel. Should it be determined that the capacity of the existing 2-inch gas main entering the parcel is not sufficient to support the demands associated with the redevelopment or if multiple service connections are required, indirect, short-term, adverse impacts could occur due to potential deficiencies in service, and disruptions to service while improvements are being performed (Washington Gas 2015b). Over the long-term, there would be no measurable impacts to natural gas service, as any deficiencies would likely be addressed during the planning and construction phase.

Under RFDS 2, there could be indirect, short-term, adverse impacts associated with disruptions in service while any necessary upgrades are performed. Over the long-term, there would be no measurable impacts.

4.2.12.5 Telecommunications

No-action Alternative

Under the No-action Alternative, no measurable impacts to telecommunications are expected because existing telecommunication requirements would remain the same.

RFDS 1

The impacts under RFDS 1 would be similar to the impacts under the No-action Alternative because the demand of the renovated building would be comparable to existing conditions, and the parcel has telecommunications infrastructure in place.

RFDS 2

Under RFDS 2, there would be no measurable impacts to telecommunications service. Providing telecommunications service to the redeveloped parcel would not adversely impact current or future customers of the region. While the redevelopment would require coordinating the telecommunications needs of the proposed development with the appropriate providers, it would not be expected to impact the availability or quality of telecommunication services to existing customers., and since the parcel has telecommunications infrastructure already in place, there would not be construction that would disrupt surrounding uses.

4.2.12.6 Stormwater Management

No-action Alternative

Under the No-action Alternative, there would be no measurable impacts to stormwater. With the exception of a few tree planters, the parcel is entirely impervious surface and the existing stormwater management controls would continue.

RFDS 1

Under RFDS 1, there would be no measurable impacts to stormwater management because the exterior conditions of the building would remain consistent with the conditions under the No-action Alternative.

RFDS 2

Under RFDS 2, there would be indirect, long-term, beneficial impacts to stormwater because of an anticipated decrease in stormwater at the parcel. Re-connecting to the Pennsylvania Avenue storm sewer under RFDS 2 would require upgrades that could potentially be disruptive and costly. While a stormwater connection would ideally be to 10th Street, DC Water has noted that the 10th Street storm sewer is at full capacity during a 15-year storm event. Therefore, in collaboration with the exchange partner, DC Water would likely require that on-site stormwater BMPs be incorporated into the design to reduce stormwater runoff from the parcel (Bilvardi 2015). It is anticipated that low-impact development measures and on-site stormwater management to curtail associated stormwater runoff would be incorporated into the site plan so as to not adversely affect downstream properties or facilities and remain within the existing capacity of the existing infrastructure.

4.2.13 Summary of Impacts

The exchange of the JEH parcel and the indirect impacts resulting from future redevelopment of the parcel, as analyzed via two RFDSs, is common to all action alternatives. Table 4-76 presents a summary of the impacts associated with each RFDS to the resource topics analyzed in this EIS, including the No-action Alternative at JEH.

Table 4-76: JEH Parcel Summary of Impacts

Resource Area	Impact Description	
Earth Resources		
Geology and Topography	N	Under the No-action Alternative, there would be no measurable impacts to geology or topography.
	N	Under RFDS 1, there would be no measurable impacts to geology or topography.
	N	Under RFDS 2, there would be no measurable impacts to geology or topography.
Soils	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Water Resources		
Surface Water	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Hydrology	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Groundwater	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Wetlands and Floodplains	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact

Table 4-76 JEH Parcel Summary of Impacts (continued)

Resource Area		Impact Description
Biological Resources		
Vegetation	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Aquatic Species	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Terrestrial Species	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would indirect, short-term, adverse impacts.
Special Status Species	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Land Use		
Regional Land Use, Planning Studies, and Zoning.	N	Under the No-action Alternative, there would be no measurable impacts.
	ADV	Under RFDS 1, there would be indirect, long-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Visual Resources		
Visual Resources	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Cultural Resources		
Archaeological	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Historic Resources	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.

Resource Area		Impact Description
Socioeconomics		
Population and Housing	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be indirect and long-term impacts to population; there is insufficient information to determine impacts to housing.
Employment and Income	N	Under the No-action Alternative, there would be no measurable impacts.
	BEN	Under RFDS 1, there would be indirect, short-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Taxes	N	Under the No-action Alternative, there would be no measurable impacts.
	BEN	Under RFDS 1, there would be indirect, short- and long-term, beneficial impacts.
	BEN	Under RFDS 2, there would be indirect, short- and long-term, beneficial impacts
Schools and Community Services	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there is insufficient information available to determine impacts to community services. No measurable impacts to schools.
	N	Under RFDS 2, there is insufficient information available to determine impacts to community services and no measurable impacts to schools in the short-term. Temporary impacts to community services in the long-term while these services adjust to a change in serviced population. Insufficient information available to determine long-term impacts to schools.
Recreation and Other Community Facilities	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there is insufficient information available to determine impacts to recreation and other community facilities
	N	Under RFDS 2, there is insufficient information available to determine impacts to recreation and other community facilities

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact

Table 4-76 JEH Parcel Summary of Impacts (continued)

Resource Area	Impact Description	
Environmental Justice	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no long-term adverse impacts to minority or low-income communities.
	N	Under RFDS 2, there would be no long-term adverse impacts to minority or low-income communities.
Protection of Children	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, no mitigation of disproportionate and adverse impacts to children is required under EO 13045
	N	Under RFDS 2, no mitigation of disproportionate and adverse impacts to children is required under EO 13045
Public Health and Safety/Hazardous Materials		
Public Health and Safety/ Hazardous Materials	ADV	Under the No-action Alternative, there would be indirect, long-term, adverse impacts.
	BEN	Under RFDS 1, there would be indirect, long-term, beneficial impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Hazardous Materials	N	Under the No-action Alternative, there would be no measurable impacts.
	ADV	Under RFDS 1, there would be indirect, short-term, adverse impacts.
	BEN	Under RFDS 1, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Transportation		
Pedestrian Network	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
Bicycle Network	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Public Transit	MAJ ADV	Under the No-action Alternative, there would be indirect, long-term, major adverse impacts.
	N	Under RFDS 1, there would be no measurable impacts; the long-term major adverse impacts under the No-action would continue.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts; the long-term major adverse impacts under the No-action would continue.
Parking	BEN	Under the No-action Alternative, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 1, there would be Indirect, short-term, adverse impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Truck Access	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
	N	Under RFDS 2, there is insufficient information to evaluate long-term impacts.
Traffic Analysis	ADV	Under the No-action Alternative, there would be indirect, long-term, adverse impacts.
	ADV	Under RFDS 1, there would be indirect, short- and long-term, adverse impacts.
	ADV	Under RFDS 2, there would be indirect, short- and long-term, adverse impacts.
Greenhouse Gas Emissions and Air Quality		
Global Climate Change/ Greenhouse Gases	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there is insufficient information.
	N	Under RFDS 2, there is insufficient information.

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact

Table 4-76 JEH Parcel Summary of Impacts (continued)

Resource Area	Impact Description	
Air Quality	N	Under the No-action Alternative, there would be no measurable impacts.
	ADV	Under RFDS 1, there would be indirect, short- and long-term adverse impacts.
	ADV	Under RFDS 2, there would be indirect, short- and long-term adverse impacts.
Noise		
Noise	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under the RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Infrastructure and Utilities		
Water Supply	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	ADV	Under RFDS 2, there would be indirect, short-term, adverse impacts.
Wastewater Collection and Treatment	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Electric Power	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Natural Gas	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Telecommunications	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	N	Under RFDS 2, there would be no measurable impacts.
Stormwater Management	N	Under the No-action Alternative, there would be no measurable impacts.
	N	Under RFDS 1, there would be no measurable impacts.
	BEN	Under RFDS 2, there would be indirect, long-term, beneficial impacts.

N	No Measurable Impact or Insufficient Information	ADV	Adverse Impact	ADV	Major Adverse (Significant) Impact	BEN	Beneficial Impact