

# Government of the District of Columbia

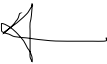
## Department of Transportation



### d. Planning and Sustainability Division

#### MEMORANDUM

**TO:** District of Columbia Board of Zoning Adjustment

**FROM:** Anna Chamberlin, AICP   
Associate Director

**DATE:** October 18, 2021

**SUBJECT:** BZA Case No. 20472 – The River School (4220 Nebraska Avenue NW)

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#### APPLICATION

The River School (the “Applicant”), pursuant to Title 11 (2016 Zoning Regulations) of the District of Columbia Municipal Regulations (DCMR), Subtitle X, Chapter 9, requests special exceptions to construct a child development center and private school campus with relief from the vehicle parking requirements of Subtitle C, 703.2. The Applicant proposes to relocate their existing 210 student with 72 faculty school from 4880 MacArthur Boulevard NW and accommodate an enrollment of 350 students with 90 faculty. The site is in the R-1-B Zone at 4220 Nebraska Avenue NW (Square 1727, Lots 4 and 5).

#### SUMMARY OF DDOT REVIEW

The District Department of Transportation (DDOT) is committed to achieving an exceptional quality of life in the nation’s capital by encouraging sustainable travel practices, safer streets, and outstanding access to goods and services. To achieve this vision, DDOT works through the zoning process to ensure that impacts from new developments are manageable within and take advantage of the District’s multi-modal transportation network.

The purpose of DDOT’s review is to assess the potential safety and capacity impacts of the proposed action on the District’s transportation network and, as necessary, propose mitigations that are commensurate with the action. After an extensive review of the case materials submitted by the Applicant, DDOT finds:

- The Applicant proposes to construct a new school with an enrollment of 350 students and 90 faculty. The site will contain a 48,678 square foot building and 65 parking spaces;
- Zoning requires 52 vehicle parking spaces. The Applicant proposes 55 garage spaces (12 of which will be tandem) and 10 surface spaces. Since the Applicant will ultimately provide more total

Board of Zoning Adjustment  
District of Columbia

spaces than the zoning requirement, DDOT has no objection to the requested parking relief for the non-compliant spaces;

- Access to the site will be provided by two (2) new curb cuts on Nebraska Avenue NW. These curb cuts will be right-in (northern) and right-out (southern) only. The current property has a curb cut on 42nd Street NW that the Applicant is not planning to use and will be required to close as part of its public space improvements;
- The pick-up/drop-off loop is designed with one-way circulation to accommodate 22 queued vehicles (31 including the by-pass lane and parking garage entrance) without impacting DDOT public space. Due to the staggering of pick-up/drop-off hours and other operations management measures proposed, the maximum projected queue (utilizing multiple methodologies) is 17 vehicles. DDOT concurs with the CTR findings that this is an adequate length and does not anticipate queuing will occur into Nebraska Avenue;
- The site layout and circulation are well-designed with buildings constructed up to the Building Restriction Line on Nebraska Avenue and the property line on 42nd Street. All pick-up/drop-off, vehicle parking, and loading berth access will occur from private property, consistent with DDOT standards and best practices;
- With a robust Transportation Demand Management (TDM) plan in place that includes shuttles, the project is anticipated to generate 112 entering and 112 exiting vehicle trips in the morning commuter peak hour, 74 enter/74 exit vehicle trips in the afternoon school peak hour, and 30 enter/62 exit vehicle trips in the evening commuter peak hour;
- The CTR analyzed traffic impacts at 19 intersections (see TIA review later in this report). The analysis showed impacts to 10 of these intersections, including three (3) signalized intersections that can be mitigated with a DDOT signal timing adjustment;
- To address impacted intersections, the Applicant proposes a substantial package of transportation improvements to offset impacts identified in the TIA. These include a 19-dock Capital Bikeshare station, a HAWK pedestrian signal, and \$30,000 toward future intersection modifications;
- The Applicant proposes a robust performance monitoring plan (PMP), which increases the level of certainty concerning expected impacts to future travel conditions and establishes potential remediating measures;
- The Applicant proposes to utilize the TIA vehicle trip generation projections as trip caps;
- The remaining seven (7) impacted intersections identified in the TIA should be reevaluated as required by the PMP with appropriate mitigations to be determined by DDOT. The Applicant should increase the mitigation contribution from \$30,000 to \$75,000 to capture potential needed improvements at impacted intersections; and
- With the requested DDOT revisions, DDOT finds the proposed package of transportation improvements in conjunction with the PMP, TDM Plan, and Operations Management Plan sufficient to support the reduced trip generation assumptions, manage demand for vehicle traffic traveling to and from the site, and mitigate the impacts of this development on the District's transportation network. The Applicant should include the follow-up monitoring of intersections in the final PMP.

## **RECOMMENDATION**

DDOT has no objection to the approval of this application with the following conditions:

- The Applicant shall implement the Transportation Demand Management (TDM) and Performance Monitoring Plan (PMP) listed as Conditions 5 through 12D in the Draft Conditions (Exhibit 51F) and the additional strategies in the Comprehensive Transportation Review (CTR)

study (Exhibit 46A). DDOT requests the following items be added to the transportation mitigation package to address identified traffic impacts:

- After the school has reached 80% enrollment, in the annual reporting to the ANC and DDOT, the Applicant will collect appropriate traffic data and evaluate the need for additional signage, restrictions, signal changes, removal of parking, or tactical safety improvements at the following intersections:
  - Two (2) site driveways on Nebraska Avenue NW;
  - Nebraska Avenue at Van Ness Street NW;
  - Nebraska Avenue at 42nd Street NW;
  - Nebraska Avenue at Warren Street NW;
  - Nebraska Avenue at 41st Street NW;
  - Van Ness Street at 41st Street NW/NP School Driveway;
  - Van Ness at 42nd Street NW; and
  - Wisconsin Avenue and Yuma Street NW (West) (Tenley Circle)

If DDOT determines remedies at any of the above intersections are necessary, the Applicant will fund and install them, subject to DDOT approval. This provision will sunset after the Applicant has either remedied any observed issues at these intersections OR after the school has hit 95% enrollment and DDOT determines based on the submitted data that remedies are not warranted.

- The Applicant shall commit to evaluate the intersections of Yuma Street at Tenley Circle (West) and 42nd Street at Van Ness Street during the first school year where enrollment is at 325 students (reduced from the Applicant proposal of 350 students, in case enrollment never hits 350); and
- The Applicant shall commit to spend up to \$75,000 toward signage, flex posts, pavement markings, and signal equipment to improve traffic flow at the impacted intersections above, subject to DDOT approval (increased from the Applicant's proposal of \$30,000 for only two intersections). The \$75,000 amount will be dedicated toward infrastructure only, excluding engineering and permitting fees. Any leftover funds will be contributed to DDOT's Transportation Mitigation Fund and will be repurposed toward other pedestrian, bicycle, and transit improvements in the vicinity of the site.
- The Applicant has proposed additional physical improvements to the transportation network in the October 8, 2021 CTR Addendum (Attachment 1) to help mitigate observed traffic impacts that should be included as conditions in the Order and all be completed prior to issuance of a Certificate of Occupancy:
  - The Applicant shall fund and construct the missing sidewalk along the east side of 42nd Street NW from Warren Street NW to Van Ness Street NW, subject to DDOT approval;
  - The Applicant shall fund and construct a High-Intensity Activated crossWalk (HAWK) pedestrian signal, or similar device, at the intersection of Nebraska Avenue and Warren Street NW, subject to DDOT approval. If DDOT determines none of these signal types are warranted or if DDOT is not ready for the installation, the Applicant will make a monetary contribution to DDOT in the amount of \$250,000. DDOT will use this money to either install the signal or make other pedestrian, bicycle, transit, and safety upgrades in the vicinity of the site;

- The Applicant shall fund and install a 19-dock Capital Bikeshare station in the vicinity of the site with one year cost of maintenance and operations, subject to DDOT approval;
- The Applicant shall remove the yield sign on the 41st Street approach to Nebraska Avenue and replace it with a stop sign, stop bar, high-visibility crosswalk, and any other striping to shorten the crossing distance for pedestrians, subject to DDOT approval.
- Prior to BZA approval, DDOT requests the Applicant submit to the record a ‘clean’ document pulling together the final comprehensive transportation mitigation package agreed to with DDOT that can be referenced in the Order. This will include the TDM Plan, Performance Monitoring Plan (inclusive of trip cap commitments), Operations Management Plan, and physical improvements noted above. These items are currently located across multiple documents (CTR, Draft Conditions, CTR Addendum, and DDOT Report). DDOT may have additional comments and items to include once the Applicant provides a draft for review.

## **TRANSPORTATION ANALYSIS**

### Site Access

The Applicant is proposing two (2) curb cuts to Nebraska Avenue that will serve the one-way loop. The northernmost driveway will be right-in only and the southernmost will be right-out only. The proposed site plan and circulation is shown below in Figure 1. DDOT finds the site and circulation are well designed with buildings constructed up to the Building Restriction Line (BRL) on Nebraska Avenue NW and property line on 42nd Street NW. The parking garage, surface spaces, pick-up/drop-off areas, and loading berth will all occur on private property accessed via the one-way loop. The Applicant should continue to coordinate with DDOT during public space permitting to refine the design and widths of the curb cuts to Nebraska Avenue NW.

Figure 1 | Site Plan



Source: Prehearing Statement Plan Set, 10/6/2021, Exhibit 51B1

### Vehicle Parking

The overall parking demand created by the development is primarily a function of land use, development square footage, price, and supply of parking spaces. However, in urban areas, other factors contribute to the demand for parking, such as the availability of high-quality transit, frequency of transit service, proximity to transit, connectivity of bicycle and pedestrian facilities within the vicinity of the development, and the demographic composition and other characteristics of the potential residents.

The Applicant is required by zoning to provide 52 off-street parking spaces. Per the CTR Addendum (Attachment 1), the Applicant is providing 65 total parking spaces. 55 spaces will be located in the parking garage and 10 will be surface spaces. Both garage and surface parking spaces are accessed from the internal loop road on private property which connects to the curb cuts to Nebraska Avenue NW. The Applicant is seeking special exception relief from the parking requirement to provide only 47 legally compliant spaces. DDOT has no objection to the parking relief since the Applicant will ultimately provide more parking spaces than required (combined compliant and non-compliant). The Applicant has also provided a TDM plan to meet the requirement of ZR16 Subtitle C, 707.3 that TDM plan be approved by DDOT.

### Bicycle Parking

The Applicant is providing nine (9) long-term and 34 short-term bicycle parking spaces, which DDOT estimates will meet or exceed the zoning requirements. The Applicant should work with DDOT during

public space permitting to determine a final location for short-term bicycle parking. Long-term bicycle parking must be internal to the building and meet the design requirements of ZR16 Subtitle C, 805. The Applicant can refer to the DDOT *Bike Parking Design Guide* for additional guidance on best practices for designing bike racks and bike storage rooms.

#### Loading

DDOT's practice is to accommodate vehicle loading in a safe and efficient manner, while at the same time preserving safety across non-vehicle mode areas and limiting any hindrance to traffic operations. For new developments, DDOT requires that loading take place in private space and that no back-up maneuvers occur in the public realm. Access to this building for loading and unloading, delivery and trash pick-up is an important consideration, and DDOT expects the Applicant to comply with DDOT's standards for loading. The Applicant is providing one (1) 30-foot loading berth and one (1) 20-foot service/delivery space, meeting both zoning requirements and DDOT standards for head-in/head-out movements through public space.

#### Trip Generation

Each trip a person makes is made by a certain means of travel, such as vehicle, bicycle, walking, and transit. The means of travel is referred to as a 'mode' of transportation. A variety of elements impact the mode of travel, including density of development, diversity of land use, design of the public realm, proximity to transit options, availability and cost of vehicle parking, among many others.

The typical methodology for determining vehicle trip generation for a school would be to collect traffic counts at a similar existing facility and then adjust the data proportionally to match the number of students at the proposed school. However, given the on-going COVID-19 pandemic and the disruptions to operations at the existing River School on MacArthur Boulevard, accurate traffic counts were not able to be collected in summer and fall of 2021. Accordingly, the Applicant and DDOT collaborated on an alternate methodology based on the number of students per grade, staggered arrival/departure times for students and faculty, anticipated mode split, average number of occupants per vehicle, and students being shuttled from Virginia and Maryland. DDOT concurs with this methodology.

Based on these assumptions the CTR determined there would be approximately 204 entering and 204 exiting vehicle trips in the morning commuter peak hour, 87 entering/87 exiting in the afternoon school peak hour, and 35 enter/73 exit during the evening commuter peak hour. The CTR then accounted for a proposal to implement a TDM Plan and Performance Monitoring Plan that would reduce vehicle trips by approximately 45% during the weekday morning peak hour and approximately 15% during the afternoon school and evening commuter peak hours. The projected multi-modal trip generation for the project assuming conditions of approval for TDM programming and performance monitoring are in place, are shown below in Figure 2. The traffic analysis was conducted using these reduced trip generation calculations since the Applicant has proposed a performance monitoring plan with vehicle trip generation caps.



Figure 2 | Multi-Modal Trip Generation Summary (With TDM and PMP Implementation)

COMPONENT	AM			PM SCHOOL			PM COMMUTER			NOTES
	IN	OUT	TOTAL	IN	OUT	TOTAL	IN	OUT	TOTAL	
<b>Student Trip Generation (350 students)</b>										
person-trips	338	338	676	138	138	276	60	60	120	①②
parents are faculty/staff	-15	-15	-30	0	0	0	-7	-7	-14	
absentees	-17	-17	-34	-7	-7	-14	-3	-3	-6	③
sub-total person-trips	306	306	612	131	131	262	50	50	100	
<i>bus person-trips (45%/0%)</i>	139	139	278	0	0	0	0	0	0	④
<i>auto person-trips (48%/81%)</i>	143	143	292	106	106	212	40	40	80	⑤⑥
<i>walk person-trips (8%/10%)</i>	24	24	48	13	13	26	5	5	10	⑦
<i>bike person-trips (0%/5%)</i>	0	0	0	7	7	14	3	3	6	⑦
<i>transit person-trips (0%/4%)</i>	0	0	0	5	5	10	2	2	4	⑧
auto trips	106	106	212	74	74	148	28	28	56	⑨
bus trips	6	6	12	0	0	0	0	0	0	⑩
<b>Faculty/Staff Trip Generation (90 Faculty/Staff)</b>										
person-trips	0	0	0	0	0	0	0	45	45	
<i>auto person-trips (70%)</i>	0	0	0	0	0	0	0	32	32	⑪
<i>walk person-trips (3%)</i>	0	0	0	0	0	0	0	1	1	⑫
<i>bike person-trips (2%)</i>	0	0	0	0	0	0	0	1	1	⑫
<i>transit person-trips (25%)</i>	0	0	0	0	0	0	0	11	11	⑫
vehicle trips	0	0	0	0	0	0	0	32	32	⑬
<b>Clinic Trip Generation</b>										
person-trips	0	0	0	0	0	0	2	2	4	⑭
<i>auto person-trips</i>	0	0	0	0	0	0	2	2	4	⑮
auto trips	0	0	0	0	0	0	2	2	4	⑯
<b>Total Trip Generation</b>										
person-trips	306	306	612	131	131	262	52	97	149	
<i>bus person-trips</i>	139	139	278	0	0	0	0	0	0	
<i>auto person-trips</i>	143	143	286	106	106	212	42	74	116	
<i>walk person-trips</i>	24	24	48	13	13	26	5	6	11	
<i>bike person-trips</i>	0	0	0	7	7	14	3	4	7	
<i>transit person-trips</i>	0	0	0	5	5	10	2	13	15	
auto trips	106	106	212	74	74	149	30	62	92	
bus trips	6	6	12	0	0	0	0	0	0	
<b>Total Vehicle Trips</b>	<b>112</b>	<b>112</b>	<b>224</b>	<b>74</b>	<b>74</b>	<b>148</b>	<b>30</b>	<b>62</b>	<b>92</b>	

Source: CTR Wells & Associates, Table 9B, September 2021 (Exhibit 46A1)

On-Site Pick-Up/Drop-Off Queuing

The Applicant performed detailed queuing analysis to determine if the site has sufficient capacity to accommodate the volume of pick-up/drop-off traffic projected for the site. The Applicant used two different queuing methodologies:

1. M/M/1 Queue Model – This model assumes that arrivals occur randomly and independent of each other. The model also assumes that a single server processes the arrivals. There is a bypass line included in the design of the pick-up/drop-off area, but this will only be used in special circumstances. The model was calibrated based on field observations at the existing school. The arrival volume was adjusted to match the projected trip generation for the proposed project.
2. Extrapolation Model – This model used queuing data collected at the Applicant’s existing site, and then extrapolated it based on the projected increase in traffic volumes at the proposed site. The Applicant currently uses a staggered arrival during the AM drop-off at their existing site, and they would extend this protocol to both AM drop-off and PM pick-up at the proposed site.

The results of the queuing analysis shown below in Figure 3, demonstrate that the maximum projected queue during the AM commuter peak hour for drop-off is 12 vehicles and the maximum projected queue during the PM school or commuter pick-up periods is 17 vehicles. The total capacity of the pick-up/drop-off loop is 22 vehicles and the total capacity on-site including the bypass lane and parking garage entrance is 31 vehicles. The Applicant’s analysis demonstrates that with spreading of pick-up/drop-off times throughout the day and implementation of an Operations Management Plan, the queuing would not exceed the 22 spaces in the loop and would not impact DDOT public space on Nebraska Avenue.

**Figure 3 | Pick-Up/Drop-Off Queuing Summary**

Time Period	M/M/1 Model	Extrapolation	Capacity <sup>†</sup>
AM Peak	12	11	31
PM Peak	11	17	31

<sup>†</sup> Capacity includes the loop capacity plus three spaces in the garage. It does not include “overflow” capacity of five vehicles.

Source: CTR Wells & Associates, Table 5, September 2021 (Exhibit 46A1)

Traffic Impact Analysis (TIA)

DDOT aims to provide a safe and efficient roadway network that provides for the timely movement of people, goods, and services. As part of the evaluation of travel demand generated by the site, DDOT requests analysis of traffic conditions for the agreed upon study intersections for the current year and after the facility opens both with and without the site development or any transportation changes.

To determine the project’s impacts on the transportation network, the Applicant completed a CTR, prepared by Wells + Associates, dated September 2021 (Exhibit 46A1) and a subsequent addendum, dated October 8, 2021 (Attachment 1), which includes an extensive multi-modal analysis of existing and future conditions with mitigation options. The study analyzed traffic conditions at 19 intersections including the southern (outbound) site driveway. The following is a summary of the TIA results and DDOT’s recommended mitigations:

**No Impacts / No Mitigation Needed** – This group of intersections studied in the CTR were not impacted by the proposed development and no mitigation is necessary.

- #2 – 42nd Street and Albermarle Road NW
- #3 – 42nd Street and Yuma Street NW
- #4 – 42nd Street and Warren Street NW (northern)
- #5 – 42nd Street and Warren Street NW (middle)
- #6 – 42nd Street and Warren Street NW (southern)
- #12-2 – Nebraska Avenue and Yuma Street NW (East) (Tenley Circle)
- #12-5 – Wisconsin Avenue and Nebraska Avenue NW (North) (Tenley Circle)
- #12-9 – Nebraska Avenue and Fort Drive NW (Tenley Circle)
- #15 – Nebraska Avenue and Outbound Site Exit

**Mitigated with Signal Timing Adjustment** – This group of signalized intersections were identified as having impacts from site-generated traffic but could be mitigated with the shifting of 1 or 2 seconds of green time to the impacted approaches. Since DDOT does not implement signal timing adjustments in



conjunction with a specific land development project, it is recommended that The River School implement additional non-automotive improvements, such as the proposed 19-dock Capital Bikeshare Station, HAWK signal, and ~400 feet of missing sidewalk, to offset these impacts. DDOT updates traffic signal timings for all corridors in the District every 4-5 years and will capture traffic related to The River School and other new developments the next time the signals are retimed in the vicinity of this site.

#1 – 42nd Street and River Road NW

#11 – Wisconsin Avenue and Van Ness Street NW

#12-1 – Wisconsin Avenue and Nebraska Avenue NW (South) (Tenley Circle)

**Impacted Intersections – Will Continue to Monitor** – In this group, the CTR demonstrated the intersections to be impacted by site-generated traffic. The following is a discussion of the Applicant’s proposed solutions and DDOT’s responses to those proposals. In some cases, DDOT recommends not taking preemptive action, but instead continuing to monitor the intersections as part of the Applicant’s monitoring plan and taking action when and if warranted.

#7 – 42nd Street and Van Ness Street NW

#8 – Nebraska Avenue and 42nd Street NW

#9 – Nebraska Avenue and Van Ness Street NW

#10 – Van Ness Street and 41st Street NW/NP School Driveway

These four (4) intersections are located in close proximity to each other. The CTR recommended modifying the traffic signal at Nebraska Avenue and Van Ness Street to include a westbound left-turn phase, removing parking on the north side of Van Ness Street (approximately 4 RPP spaces), and removal of 500 feet of parking from Nebraska Avenue to increase vehicle capacity at the intersection. The CTR demonstrated that these measures could improve traffic conditions almost back to Background (No School) conditions at intersections #8 and #9. At intersection #7, an eastbound left-turn lane would not be able to be installed due to the presence of curb extensions. At intersection #10, there are no impacts to the three legs of public street. The only observed LOS impact is to the outbound National Presbyterian School driveway approach to the intersection.

DDOT appreciates the Applicant exploring different options for improving traffic flow at the four (4) intersections above. However, the proposed solutions would effectively widen the streets and allow for faster traffic which are counter to DDOT’s goal of creating a more walkable and safer city for pedestrians. Additionally, making these improvements in conjunction with the development could induce demand for more driving. DDOT recommends including these intersections in the monitoring plan. Once the school has opened, the Applicant and DDOT can evaluate traffic data at that time and implement an appropriate solution, if an issue arises. DDOT supports the Applicant’s proposal in the CTR Addendum (Attachment 1) to contribute funds toward future modifications to the intersections of 42nd Street at Van Ness and Yuma Street at Tenley Circle (West). DDOT requests the \$30,000 amount be increased to \$75,000 to include additional intersections.

#13 – Nebraska Avenue and Warren Street NW

To address the intersection impacts, the CTR recommended left-turn restrictions to help reduce delay and the potential for “cut-through traffic.” The CTR also conducted a traffic signal warrant analysis to determine if this intersection would be a good candidate for signalization. In subsequent discussions between the Applicant and DDOT, it was determined that a signal is likely not warranted. Instead, the

Applicant and DDOT have discussed installation of High-Intensity Activated crossWalk (HAWK) pedestrian signal. In the CTR Addendum (Attachment 1), the Applicant has committed to installing that signal at this intersection, subject to DDOT approval. Regarding the turn restrictions, DDOT does not support preemptively installing those at this intersection. Instead, this intersection should be included in the performance monitoring plan and the need for turn restrictions evaluated based on traffic data once the school has opened.

#14 – Nebraska Avenue and 41st Street NW

This intersection had minor impacts from site-generated traffic, reducing from LOS F (54.8) to LOS F (58.2) on the 41st Street side street approach. DDOT does not recommend taking any preemptive action at this intersection given the impacts were minor. Instead, this intersection should be included in the performance monitoring plan and the need for a left-turn restriction reevaluated once the school has opened. The Applicant also evaluated the sight distances and potential change of signage from a Yield to Stop-control in the CTR Addendum. DDOT concurs that change in signage is appropriate and notes that the intersection should also include a stop bar and high-visibility crosswalk.

#12-6 – Wisconsin Avenue and Yuma Street NW (West) (Tenley Circle)

This intersection had minor impacts from site-generated traffic, reducing from LOS F (55.9) to LOS F (79.6) on the stop-controlled Yuma Street approach into Tenley Circle. The Applicant didn't not recommend any traffic improvements at this intersection due to the low amount of site volume projected to travel on the Yuma Street approach (between 6 and 31 vehicles depending on peak hour). DDOT concurs that preemptive action is not needed at this intersection and recommends this intersection be included in the performance monitoring plan for further evaluation after the school has opened. DDOT supports the Applicant's proposal in the CT Addendum (Attachment 1) to contribute funds toward future modifications to the intersections of Yuma Street at Tenley Circle (West) and 42nd Street at Van Ness. DDOT requests the \$30,000 amount be increased to \$75,000 to include additional intersections.

Performance Monitoring

The CTR provides a projection of a project's likely transportation impacts. However, in an urban environment that is rapidly developing and changing, the projections may not provide enough certainty to reveal an action's true future impacts. A Performance Monitoring Plan (PMP) provides the framework for increasing the level of certainty concerning expected impacts to future travel conditions. A PMP establishes thresholds for new trips an action can generate, defines post-completion evaluation criteria and methodology, and establishes potential remediating measures.

In order to take credit for the lower trip generation estimates discussed earlier in this report, the Applicant has proposed a PMP with trip caps and annual reporting criteria. DDOT concurs with the Applicant setting up a PMP program as a way to annually review the trip generation, effectiveness of TDM measures, travel conditions in the vicinity of the school, and on-site queuing. The Applicant's initial proposed PMP, Transportation Demand Management (TDM), and Operations Management Plan are attached as Attachments 2 and 3 to this report. If implemented in conjunction with DDOT's recommended revisions, these will be sufficient to support the reduced vehicle trip generation and manage demand from vehicles traveling to and from the site. Accordingly, the Applicant should revise

the plan to include intersections to be monitored and increased mitigation contribution, as proposed by DDOT above in the TIA section.

DDOT requests the Applicant submit to the record a ‘clean’ document, prior to BZA approval, pulling together the final comprehensive transportation mitigation package to be agreed to by DDOT. This will include the physical improvements, monetary contributions, TDM Plan, PMP, and Operations Management Plan proposed as mitigation. These items are currently scattered across multiple documents (CTR, Draft Conditions, CTR Addendum, and DDOT Report). DDOT may have additional comments on items to include once the Applicant provides a draft for review.

## **STREETScape AND PUBLIC REALM**

DDOT’s lack of objection to this application should not be viewed as an approval of the public realm design. All elements of this project proposed within District owned right-of-way require the Applicant to pursue a public space permit through DDOT’s permitting process. There is currently a 10-foot Building Restriction Line (BRL) along Nebraska Avenue NW. The Applicant should treat the BRL as public space and it should remain park-like in nature. The Applicant should be aware of the following public space comments:

- Close the currently unused curb cut on 42nd Street NW;
- Further refine the designs of the right-in and right-out driveways to Nebraska Avenue NW. The northern driveway should be narrowed to 18 feet or less per the DEM;
- Construct the sidewalk along the eastern side of 42nd Street from Warren Street to Van Ness Street NW;
- Widen the sidewalk on Nebraska Avenue NW to 10 feet;
- Identify a location in public space or on private property for the 19-dock CaBi station;
- Coordinate with DDOT TDD to upgrade the bus stops along Nebraska Avenue NW;
- Continue to coordinate with DDOT UFD regarding any Heritage Trees on site; and
- Determine final locations of short-term bicycle parking spaces.

DDOT expects the adjacent public realm to meet all District standards. The Applicant should refer to Titles 11, 12A, and 24 of the [DCMR](#), the most recent version of DDOT’s [Design and Engineering Manual \(DEM\)](#), and the [Public Realm Design Manual](#) for public space regulations and design guidance. A permit application can be filed through the DDOT [Transportation Online Permitting System \(TOPS\)](#) website.

## **ATTACHMENTS**

- 1) Wells & Associates, CTR Addendum, October 8, 2021
- 2) Applicant’s Initial TDM Plan, PMP, and Operations Plan from CTR (Exhibit 46A1)
- 3) Applicant’s Draft Performance Monitoring Conditions (Exhibit 51F)

AC:tvh

# WELLS + ASSOCIATES

## MEMORANDUM



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**TO:** Ted Van Houten, DDOT  
Aaron Zimmerman, DDOT  
Solena Ardekani, DDOT

**FROM:** Jami L. Milanovich, P.E.

**COPY:** Nancy Mellon, The River School  
Allison Prince, Goulston & Storrs  
Sherry Rutherford, Requity Real Estate  
Scott Kaufman, J.M. Zell

**RE:** The River School (BZA Case #20472)  
Comprehensive Transportation Review – Addendum #1

**DATE:** October 8, 2021

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As a follow-up to our meeting on October 6, 2021, the following information is provided herein:

- Analysis of timing adjustments at signalized intersections for which an impact was attributed to the River School,
- A proposal for pedestrian or bicycle improvements to offset the impact at two unsignalized intersections,
- An evaluation of the proposed HAWK signal on Nebraska Avenue at Warren Street using DDOT's HAWK Scoring Matrix,
- A graphic showing the rerouting of eastbound and westbound left turns at the Nebraska Avenue/Warren Street intersection,
- Further evaluation of the Stop sign and No Left Turn sign recommended on 41<sup>st</sup> Street at its intersection with Nebraska Avenue.

Additionally, updated vehicle and bicycle parking requirements are provided.

### EVALUATION OF TIMING ADJUSTMENTS

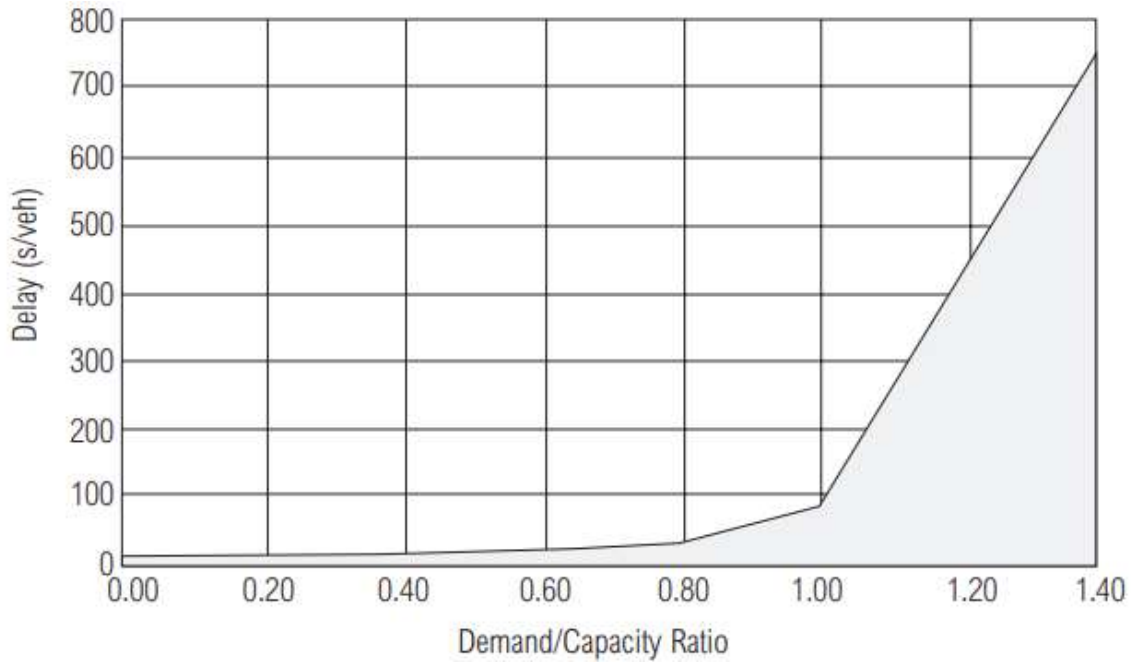
Under saturated conditions, such as the case with several intersections in the study area, the delay increases exponentially under the Highway Capacity Manual method, as shown on Exhibit 1. In other words, a proportionately small number of vehicles added to the intersection would result in disproportionate increases in delay when conditions approach saturation (i.e., a demand/capacity ratio of 1.0).

# WELLS + ASSOCIATES

## MEMORANDUM

### Exhibit 1

#### Average Delay vs. Saturation (Demand/Capacity Ratio)



Source: Highway Capacity Manual (2000)

Because of this phenomenon, traffic signal timing adjustments were evaluated to determine whether minor shifts in signal timings would offset the impact of the River School. DDOT updates traffic signal timings every five years to account for changes in traffic volumes and patterns. Therefore, any minor timing adjustments evaluated herein would be within the scope of DDOT's retiming efforts.

Timing adjustments were evaluated at the following intersections:

- Wisconsin Avenue/Van Ness Street,
- Wisconsin Avenue/Tenley Circle (south), and
- River Road/42<sup>nd</sup> Street.

Level of service and queue reports from Synchro are provided in Attachment A for all three intersections.

# WELLS + ASSOCIATES

## MEMORANDUM

### Wisconsin Avenue/Van Ness Street

As indicated in the CTR, the River School traffic would account for just 1.4 percent of the future traffic at the intersection. The school's impact would be limited to the westbound approach during the AM peak hour. An evaluation of signal timings at the intersection reveals that **shifting just two seconds of green time** from the Wisconsin Avenue mainline (Phase 2+6) to the Van Ness Street phase (Phase 4+8) in the AM peak would mitigate the school's impact. The results of the analysis are shown in Table 1. For comparative purposes, the background conditions and total future conditions without timing adjustment also are provided.

Table 1

AM Peak Hour Levels of Service

Wisconsin Avenue/Van Ness Street

Approach	Background	Total Future	Total Future with Timing Adjustments
EB	D	D	D
WB	E (57.3) [0.79]	E (62.3) [0.81]	D
NB	C	C	D
SB	A	A	A
<b>Overall</b>	<b>C (22.1)</b>	<b>C (24.3)</b>	<b>C (26.2)</b>

### Wisconsin Avenue/Tenley Circle (South)

As indicated in the CTR, the River School traffic would account for just 0.8 percent of the future traffic at the intersection. The school's impact would be limited to the northbound approach during the AM peak hour. The CTR evaluated the effectiveness of removing a few parking spaces on Wisconsin Avenue to provide a northbound right turn lane at the intersection. Although the addition of the right turn lane demonstrated that it would mitigate the impact of the school, a right turn lane ultimately was not recommended because the impact was very minor, and it would require the loss of parking on Wisconsin Avenue.

An evaluation of signal timings at the intersection reveals that **shifting just one second of green time** from the eastbound, Tenley Circle approach (Phase 3) to the Wisconsin Avenue mainline (Phase 1) during the AM peak would mitigate the impact of the school. The results of the analysis are shown in Table 2. For comparative purposes, the background conditions and total future conditions without timing adjustment also are provided.



# WELLS + ASSOCIATES

## MEMORANDUM

Table 2  
AM Peak Hour Levels of Service  
Wisconsin Avenue/Tenley Circle (South)

Approach	Background	Total Future	Total Future with Timing Adjustments
NB	D	E (57.2) [0.98]	D
SB	B	B	A
NEB	C	C	C (23.8)
<b>Overall</b>	<b>C (25.6)</b>	<b>C (27.1)</b>	<b>C (26.6)</b>

### River Road/42<sup>nd</sup> Street

As indicated in the CTR, the River School traffic would account for just 1.6 percent of the future traffic at the intersection. The school's impact would be limited to the northbound approach during the PM commuter peak hour. Given the proximity of the Brandywine Street intersection to the south of River Road, any improvements on the northbound approach of the River Road/42<sup>nd</sup> Street intersection are not feasible. Therefore, the CTR evaluated other approaches to determine whether turn pockets would mitigate the impact. Creation of a southeast-bound right turn lane on River Road was determined to mitigate the impact. However, due to the very minor impact and the loss of RPP parking required to accommodate the turn lane, the improvement ultimately was not recommended.

An evaluation of signal timings at the intersection reveals that **shifting just one second of green time** from the eastbound/westbound, River Road phase (Phase 2) to the northbound/southbound 42<sup>nd</sup> Street phase (Phase 4) during the PM Commuter peak would mitigate the impact of the school. The results of the analysis are shown in Table 3. For comparative purposes, the background conditions and total future conditions without timing adjustment also are provided.

Table 3  
PM Commuter Peak Hour Levels of Service  
River Road/42<sup>nd</sup> Street

Approach	Background	Total Future	Total Future with Timing Adjustments
SEB	A	A	B
NWB	B	B	B
NB	D	E (55.2) [0.82]	D
SB	D	D	D
<b>Overall</b>	<b>C (25.1)</b>	<b>C (27.1)</b>	<b>C (25.7)</b>

# WELLS + ASSOCIATES

## MEMORANDUM

### UNMITIGATED UNSIGNALIZED INTERSECTIONS

Only two intersections, both unsignalized, remain unmitigated within the study area. At the Van Ness Street/42<sup>nd</sup> Street intersection, the impact of the school is limited to the southbound approach during the PM school peak hour. The southbound approach is projected to operate at a LOS E under background conditions (without the River School) and would continue to operate at a LOS E with the additional of River School traffic. The average delay for the southbound approach would increase by just 6.9 seconds/vehicle. Physical improvements at the Van Ness Street/42<sup>nd</sup> Street intersection are not feasible because of the curb extensions in place at the intersection. The width of Van Ness Street is not wide enough to accommodate any additional turn lanes.

At the Yuma Street/Tenley Circle intersection, the impact of the school is limited to the eastbound approach during the PM school peak hour. The eastbound approach is projected to operate at a LOS F during the PM school peak hour under background conditions and would continue to operate at a LOS F under future conditions with the school, with an increased delay. Due to physical constraints at the intersection, no roadway improvements are feasible at this location.

To offset the school's impact at these two intersections and to further supplement the mitigation strategies for the three signalized intersections discussed above, the River School proposes to fund the installation of a new Capital Bikeshare station in the neighborhood and fund the first year's operating cost. DDOT has identified a planned station location just west of the River School near the Van Ness Street/45<sup>th</sup> Street intersection.

### HAWK Scoring Matrix

At DDOT's request, an evaluation of the proposed HAWK signal on Nebraska Avenue at Warren Street was performed using DDOT's HAWK Scoring Matrix. The HAWK Scoring Matrix is provided as Table 4.

# WELLS + ASSOCIATES

## MEMORANDUM

Table 4  
DDOT HAWK Matrix Summary

Criteria	Max Points Possible	Points Awarded	Points and Considerations	Notes
Pedestrian and Bicycle Crashes at intersection	20	5	Crashes over a recent 3-year period: 5 pts per crash	1
Vehicular crashes at intersection	10	14	Crashes over a recent 3-year period: 2 point per crash	2
Street Traffic Volume (ADT)	30	30	< 12,000=0 pts 12,000-15,000 w/median=10 pts >15,000-w/median=20 pts >15,000-w/o median=30 pts	3
Number of lanes at peak hour	30	0	2 lanes in each direction=10 pts Each additional lane=5 pts If one-way, 1 lane=5 pts Each additional lane=5 pts	4
Elderly/disabled population density (65+)	10	0	Preference to areas with elderly/disabled populations	
Proximity to school (pre-K-HS)	15	23	5 pts per school w/i ¼ mi 2 pts per school w/i ½ mi	5
Connection to parks, rec center, libraries, commercial zone, or other large ped generator	15	10	5 pts per facility or zone within ¼ mi; 2 pts per facility or zone within ½ mi	6
Metro Station/Bus Stop presence and use (each stop)	20	20	<50 daily boardings=5 pts 50-150 daily boardings=10 pts >150 daily boardings or Metro Station w/in 2 blocks=20 pts	7
Posted speed limit	15	15	25 mph= 5 pts, 30 mph= 10 pts, >30 mph= 15 pts	8
Distance to nearest signalized intersection	30	20	<300 ft=0 pts 300-500 ft=20 pts >500 ft=30 pts	9
Crossing part of designated bike route	5	0	Yes=5 pts	
<b>TOTAL LOCATION SCORE:</b>	<b>200</b>	<b>137</b>		

## MEMORANDUM

Table 4 (continue)

### DDOT HAWK Matrix Summary

Notes:

1. Crash data was taken from the American University 2021 Campus Plan CTR. One crash involving a pedestrian or bicycle occurred between 2016 and 2019.
2. Crash data in the AU CTR revealed that 10 crashes occurred over a 4-year period. Assuming an even distribution of crashes over the period, the pro-rated estimated number of crashes over a 3-year period is 7.
3. The 2018 ADT on Nebraska Avenue was 16,000 vpd.
4. During the AM and PM peak periods, three travel lanes operate on Nebraska Avenue.
5. Within ¼ mile: The River School, National Presbyterian School, and St. Alban's Early Childhood Center. Within ½ mile: Janney Elementary, Woodrow Wilson HS, Sidwell Friends School, Georgetown Day School.
6. Within ½ mile: Friendship Rec Center, Turtle Park, Tenley Friendship Neighborhood Library, City Ridge/Upton Place (Commercial), 4500 Wisconsin Avenue (Commercial).
7. There are 11 bus stops within 2 blocks. The Wisconsin Avenue/Tenley Circle stops alone have more than 150 daily boardings (based on Fall 2019 data provided by WMATA).
8. The speed limit on Nebraska Avenue is 30 mph.
9. The distance to the nearest traffic signal at Tenley Circle is 350'.

As requested, in addition to the HAWK Scoring Matrix, DDOT's Crossing Treatment Selection criteria was reviewed, as requested. The criteria are summarized in Table 5.

Nebraska Avenue operates with three travel lanes during the AM peak period (7:00 – 9:30 AM) and PM peak period (4:00 – 6:00 PM) and with four travel lanes the remainder of the day. The ADT on Nebraska Avenue is 16,000 vehicles per day (vpd). Using three lanes, an Activated Pedestrian Device, such a Rapid Flashing Beacon would be warranted. Using four lanes, a HAWK signal would be warranted.

The River School will defer to DDOT's judgement as to whether the HAWK signal or Rapid Flashing Beacon is most appropriate.

# WELLS + ASSOCIATES

## MEMORANDUM

Table 5

### Crossing Selection Criteria

(Source: *DDOT Design and Engineering Manual, Table 31-36*)

Roadway Configuration	1500–9000 vpd	9000–12,000 vpd	12,000–15,000 vpd	>15,000 vpd
2 Lanes <sup>1</sup>	A	A	A or B	B or C
2 Lanes with Channelized Turn Lanes <sup>1</sup>	A	A	B	B or C
2 Lanes One Way	B	B	C	C
4 Lanes w/Raised Median <sup>2</sup>	B	B	C	C
3 Lanes No Median <sup>3</sup>	B	B	C	C
5 Lanes w/Raised Median <sup>3</sup>	B	B	C	C
6 Lanes w/Raised Median <sup>4</sup>	B	B	C	D
4 Lanes No Median <sup>4</sup>	B	B or C	C	D
5 Lanes No Median <sup>3</sup>	B	B or C	D	D
6 Lanes No Median <sup>4</sup>	B	B or C	D	D

**Notes:**

1. This assumes a two-way road with 1 lane in each direction at the crossing location
2. The road may be one-way or two-way with unbalanced lanes at the crossing location
3. The road may be one-way or two-way at the crossing location
4. The relationship of traffic volume, number of lanes, and speed for "C" treatments require additional evaluation to determine their effectiveness, as these features are relatively new devices
5. Lane configurations should be determined at peak hour vehicular volume conditions

**Crossing Treatment Types:**

Treatment A – High-Visibility Crosswalk and Side of Street Pedestrian Law Sign

Treatment B – In-Street Stop for Pedestrians Sign and/or Traffic Calming (See **Chapter 40**). Advance Stop Sign should be used for all Multi-Lane Crossings.

Treatment C – Activated Pedestrian Device (Rapid Flash Beacon, Flashing Beacon, In-Roadway Lights)

Treatment D – Signal (Pedestrian Hybrid, Full Signal) or Grade Separation

## MEMORANDUM

### Rerouting of Eastbound and Westbound Left Turns at Warren Street/Nebraska Avenue

The CTR recommended left turn restrictions at the Nebraska Avenue/Warren Street intersection as a means to reduce delay and also reduce cut through traffic on Warren Street (a concern voiced by some members of the community). As requested, the rerouted left turn assignment is shown on Figure 1.

### Nebraska Avenue/41<sup>st</sup> Street Improvements

The CTR recommended the replacement of the YIELD sign on 41<sup>st</sup> at its intersection with Nebraska Avenue with a STOP sign and No Left Turn sign. According to the MUTCD, “vehicles controlled by a YIELD sign need to slow down to a speed that is reasonable for the existing conditions or stop when necessary to avoid interfering with conflicting traffic.” The MUTCD further states, “YIELD signs may be installed . . . on the approaches to a through street or highway where conditions are such that a full stop is not always required.” Given the volume of traffic on Nebraska Avenue and the sharp left turn required based on the acute intersecting angle, a STOP sign and a NO LEFT TURN sign were recommended in place of the YIELD sign.

The Design and Engineering Manual further states that “YIELD signs should be used for minor intersections only” (§44.13.2). Although 41<sup>st</sup> Street is a local street, Nebraska Avenue is classified as a Principal Arterial. As such, YIELD control is not appropriate at the intersection.

As requested by DDOT, a sight distance evaluation was undertaken. W+A personnel noted that sight distance varied depending on whether vehicles were parked on the east side of Nebraska Avenue (Nebraska Avenue currently has peak period parking restrictions). The sight distance for vehicles on 41<sup>st</sup> Street are summarized in Table 6.

Table 6  
Sight Distance Summary

Direction	Measured		Required
	With parked vehicles	No parked vehicles	
Looking to the Left	98'	263'	390'
Looking to the right	No cars were parked during observation period	250'	335'

The obstruction looking to the left under the “no parked vehicles” condition was noted as large trees along the east side of Nebraska Avenue. Looking to the right, the obstruction was noted as the northbound queue stemming from the traffic signal at Tenley Circle.



# WELLS + ASSOCIATES

## MEMORANDUM

Based on the sight distance evaluation, we believe that it is appropriate to restrict the left turn from 41<sup>st</sup> Street onto Nebraska Avenue.

Finally, as requested by DDOT, the crosswalk treatment for 41<sup>st</sup> Street was evaluated. The ADT on 41<sup>st</sup> Street was estimated to be 850 vpd (based on PM peak hour traffic volumes and a k factor of 10 percent). According to the Design and Engineering Manual, a parallel crosswalk, as is present today, is the most appropriate treatment for crossings with an ADT less than 1,500 vpd.

### UPDATED VEHICULAR AND BICYCLE PARKING REQUIREMENTS

The vehicular and bicycle parking requirements have been updated since the submission of the CTR and are summarized in Tables 7 and 8, respectively. The vehicle parking required calculated in the CTR incorrectly used the private education use for the entire school. Since part of the school will be a child development center, the parking requirements must be calculated based on both the private school use and the daytime care use. As shown in Table 7, The resulting vehicular parking requirement is 52 spaces (compared to 60 spaces cited in the CTR).

Table 7  
Vehicle Parking Summary

Required (per §701.5) <sup>†</sup>	DDOT Preferred Vehicle Parking	Proposed
Education, private (Elementary and Middle Schools) 2 per 3 teachers and other employees $2(63/3) = 42$ spaces	“Other Uses” $\leq 90\%$ of §701.5 $0.9(42) \leq 38$ spaces	55 garage spaces <sup>‡</sup> 10 surface spaces
Daytime Care (Child development Center) 0.5 spaces per 1,000 SF $0.5*(20,058/2) = 10$ spaces	“Other Uses” $\leq 90\%$ of §701.5 $0.9(10) \leq 9$ spaces	
Total = 52 spaces	47 spaces	
<sup>†</sup> Although the site is within ½ mile of Metro, since the site is in an R zone, it is not eligible for the 50% parking reduction per §702.1. <sup>‡</sup> Includes 12 tandem spaces.		

The bicycle parking requirements in the CTR were inadvertently calculated without the square footage of the existing mansion. As shown in Table 8, nine long-term spaces would be required (compared to six cited in the CTR) and 33 short-term spaces would be required (compared to 24 cited in the CTR). The proposed project will provide at least the minimum required bicycle parking.

# WELLS + ASSOCIATES

## MEMORANDUM

Table 8

### Bicycle Parking Summary

Long-Term Parking		Short-Term Parking	
Required	Proposed	Required	Proposed
Education, private school 1 per 7,500 SF of GFA $66,691^{\dagger} / 7,500 = 9$	9	Education, private school 1 per 2,000 SF of GFA $66,691 / 2,000 = 33$	34
<sup>†</sup> GFA calculated in accordance with §803.2			

### SUMMARY

The River School has prepared a multi-pronged approach to its transportation mitigation package that fully mitigates any adverse impacts created by the school. This multi-pronged approach provides improvements for vehicles, pedestrians, and bicycles and commits to implementing one of the most, if not the most, aggressive transportation management plans of any school in the District.

The following summarizes the school’s proposed transportation package as outlined in the CTR and this addendum:

1. Improvements at the Nebraska Avenue/Van Ness Street intersection, including the following:
  - Modification of the traffic signal to include a westbound left turn phase;
  - Removal of approximately four RPP parking spaces on the north side of Van Ness Street between Nebraska Avenue and 41<sup>st</sup> Street to improve access to the westbound left turn lane at the intersection;
  - Removal of parking on both sides of Nebraska Avenue from 7:00 AM to 7:00 PM from approximately 500 feet south of Van Ness Street to Warren Street to improve the capacity of the intersection;
2. Installation of a pedestrian hybrid signal or rapid flashing beacon on Nebraska Avenue south of Warren Street to facilitate pedestrian crossings across Nebraska Avenue;
3. Installation of a STOP sign and a NO LEFT TURN sign in place of the YIELD sign on 41<sup>st</sup> Street at its intersection with Nebraska Avenue;
4. Funding of a Capital Bikeshare Station and first year’s operating cost near the site;
5. Construction of approximately 400 feet of missing sidewalk along the school’s 42<sup>nd</sup> Street frontage; and

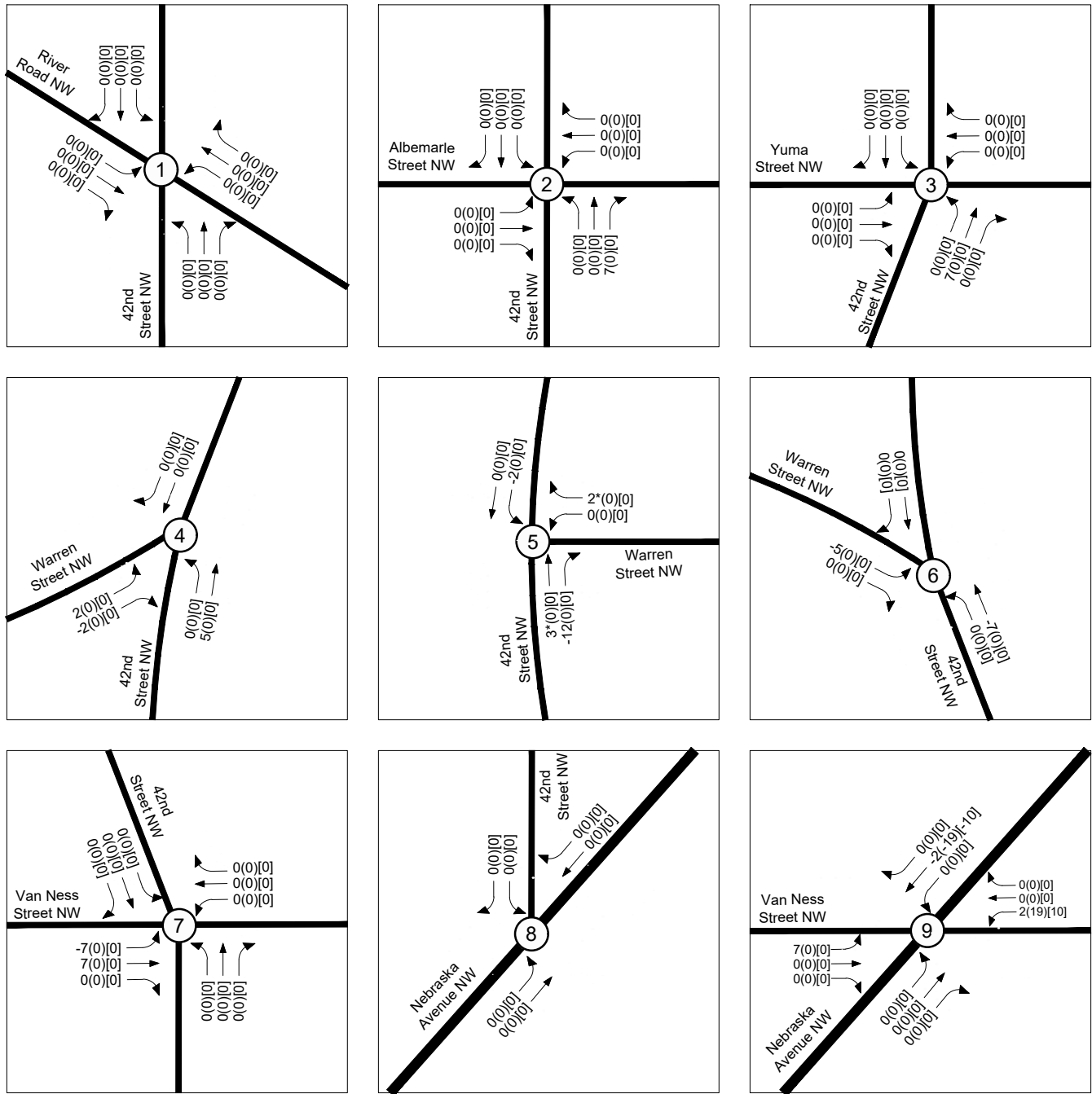
# WELLS + ASSOCIATES

## MEMORANDUM

6. Commitment to evaluate the Yuma Street/Tenley Circle (west) and 42<sup>nd</sup> Street/Van Ness Street intersections during the first school year that the school reaches its maximum enrollment of 350 students and, in the event that conditions warrant improvements, a commitment to fund signing, pavement marking, or flex post delineator improvements up to \$30,000.
7. Implementation of a comprehensive TMP, which includes the following components:
  - A Transportation Demand Management Plan that establishes trip caps equivalent to a 45 percent reduction during the AM peak hour and a 15 percent reduction during both the PM school and PM commuter peak hours;
  - An Operations Management Plan that outlines protocols for promoting safe and efficient traffic flow on site, including provisions for the pick-up/drop-off operations and loading management; and
  - An aggressive Monitoring Plan that requires four monitoring studies in the first year of operation followed by at least one annual study thereafter (with gradual phase out after continued compliance) and provides specific strategies that will be implemented should monitoring requirements not be met.

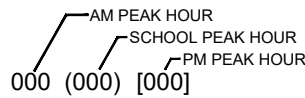
Please do not hesitate to contact me at [jmilanovich@wellsandassociate.com](mailto:jmilanovich@wellsandassociate.com) or 202.556.1113 should you have any questions.

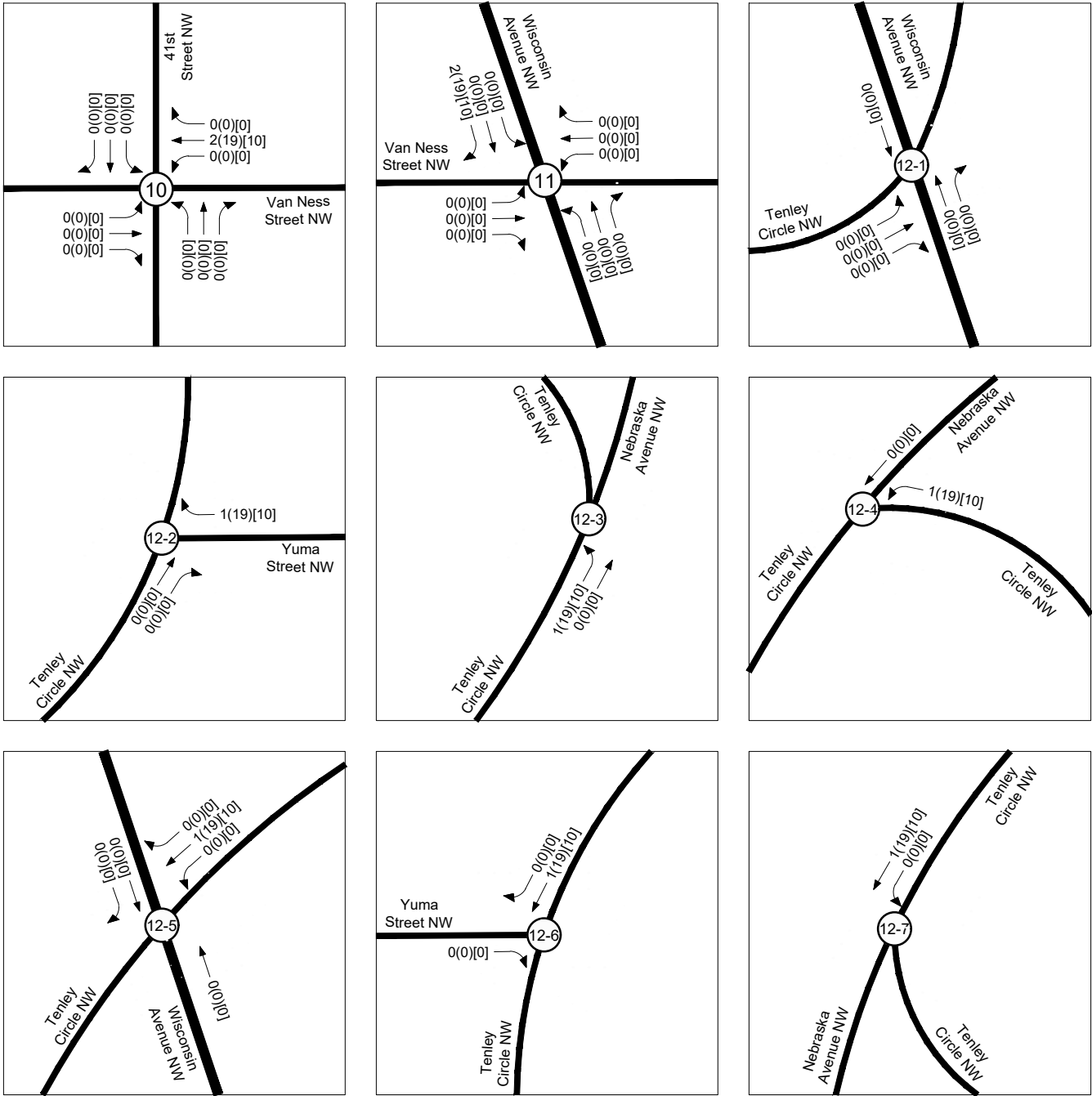
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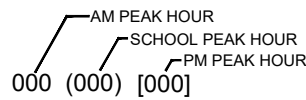
\*Localized Traffic Originating on Warren and 42nd Streets

**Figure 1**  
 Rerouted Left Turns Associated with "No Left Turn"  
 Restriction at Nebraska Avenue and Warren Street



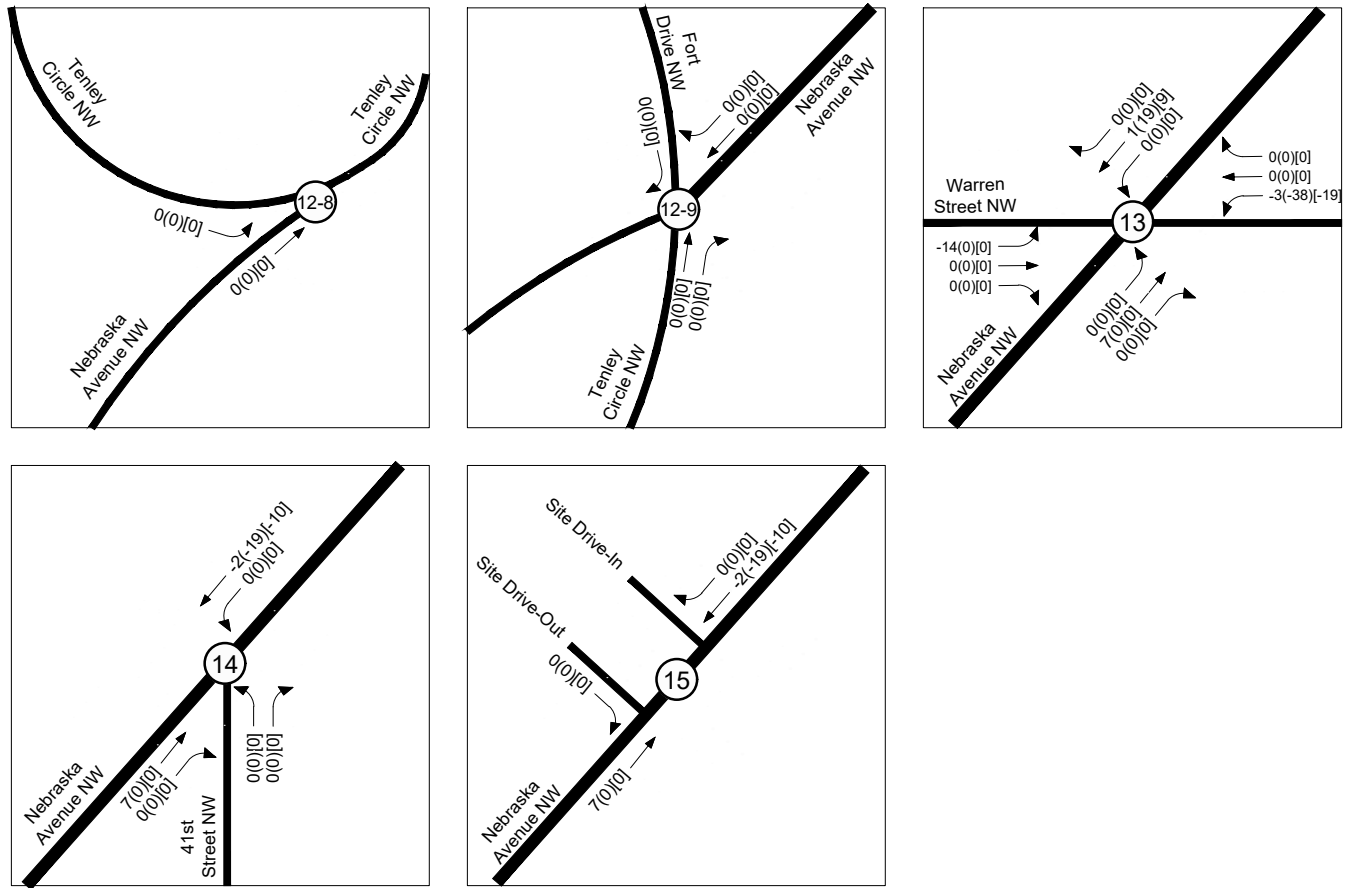


**Figure 1-Cont**  
 Routed Left Turns Associated with "No Left Turn"  
 Restriction at Nebraska Avenue and Warren Street



**NORTH**  
 River School  
 Washington, DC





**Figure 1-Cont**  
 Rerouted Left Turns Associated with "No Left Turn" Restriction at Nebraska Avenue and Warren Street

AM PEAK HOUR  
 SCHOOL PEAK HOUR  
 PM PEAK HOUR  
 000 (000) [000]

  
 NORTH  
 River School  
 Washington, DC





**ATTACHMENT A**  
**SYNCHRO REPORTS**  
**TOTAL FUTURE WITH TIMING ADJUSTMENTS**



Queues  
1: 42nd Street & River Road



















Lane Group	NBT	SBT	SET	NWT
Lane Group Flow (vph)	243	204	164	390
v/c Ratio	0.78	0.55	0.23	0.42
Control Delay	51.5	36.8	10.3	12.5
Queue Delay	0.0	0.0	0.0	0.0
Total Delay	51.5	36.8	10.3	12.5
Queue Length 50th (ft)	142	110	45	123
Queue Length 95th (ft)	#232	167	72	168
Internal Link Dist (ft)	689	132	177	285
Turn Bay Length (ft)				
Base Capacity (vph)	312	369	708	925
Starvation Cap Reductn	0	0	0	0
Spillback Cap Reductn	0	0	0	0
Storage Cap Reductn	0	0	0	0
Reduced v/c Ratio	0.78	0.55	0.23	0.42

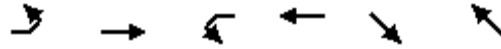
Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis  
1: 42nd Street & River Road

River School  
10/08/2021

														
Movement	NBL	NBT	NBR	SBL	SBT	SBR	SEL	SET	SER	NWL	NWT	NWR		
Lane Configurations														
Traffic Volume (vph)	89	112	1	10	156	3	8	64	64	34	260	30		
Future Volume (vph)	89	112	1	10	156	3	8	64	64	34	260	30		
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900		
Grade (%)		-4%			5%			7%			-7%			
Total Lost time (s)		4.0			4.0			4.0			4.0			
Lane Util. Factor		1.00			1.00			1.00			1.00			
Frbp, ped/bikes		1.00			1.00			0.99			1.00			
Flpb, ped/bikes		0.97			1.00			1.00			1.00			
Frt		1.00			1.00			0.94			0.99			
Flt Protected		0.98			1.00			1.00			0.99			
Satd. Flow (prot)		1538			1301			1207			1604			
Flt Permitted		0.69			0.98			0.98			0.96			
Satd. Flow (perm)		1080			1274			1180			1543			
Peak-hour factor, PHF	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83	0.83		
Adj. Flow (vph)	107	135	1	12	188	4	10	77	77	41	313	36		
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0		
Lane Group Flow (vph)	0	243	0	0	204	0	0	164	0	0	390	0		
Confl. Peds. (#/hr)	58		42	42		58	20		8	8		20		
Heavy Vehicles (%)	0%	0%	0%	9%	0%	0%	0%	0%	0%	0%	1%	0%		
Parking (#/hr)				10	10	10	10	10	10					
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA			
Protected Phases		4			4			2			2			
Permitted Phases	4			4			2			2				
Actuated Green, G (s)		27.0			27.0			58.0			58.0			
Effective Green, g (s)		29.0			29.0			60.0			60.0			
Actuated g/C Ratio		0.29			0.29			0.60			0.60			
Clearance Time (s)		6.0			6.0			6.0			6.0			
Lane Grp Cap (vph)		313			369			708			925			
v/s Ratio Prot														
v/s Ratio Perm		c0.23			0.16			0.14			c0.25			
v/c Ratio		0.78			0.55			0.23			0.42			
Uniform Delay, d1		32.5			30.0			9.3			10.7			
Progression Factor		1.00			1.00			1.00			1.00			
Incremental Delay, d2		17.1			5.9			0.8			1.4			
Delay (s)		49.6			35.9			10.1			12.1			
Level of Service		D			D			B			B			
Approach Delay (s)		49.6			35.9			10.1			12.1			
Approach LOS		D			D			B			B			
<b>Intersection Summary</b>														
HCM 2000 Control Delay			25.7									HCM 2000 Level of Service	C	
HCM 2000 Volume to Capacity ratio			0.53											
Actuated Cycle Length (s)			100.0								10.0			
Intersection Capacity Utilization			78.1%										ICU Level of Service	D
Analysis Period (min)			15											
c	Critical Lane Group													



Lane Group	EBL	EBT	WBL	WBT	SET	NWT
Lane Group Flow (vph)	70	392	63	329	1867	1247
v/c Ratio	0.51	0.92	0.64	0.77	0.77	0.94
Control Delay	40.0	56.5	68.0	52.2	5.9	38.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	40.0	56.5	68.0	52.2	5.9	38.9
Queue Length 50th (ft)	40	311	43	233	54	449
Queue Length 95th (ft)	m48	m#400	#116	#367	63	#630
Internal Link Dist (ft)		849		339	239	287
Turn Bay Length (ft)	70		110			
Base Capacity (vph)	137	424	99	430	2439	1333
Starvation Cap Reductn	0	0	0	0	19	0
Spillback Cap Reductn	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0
Reduced v/c Ratio	0.51	0.92	0.64	0.77	0.77	0.94

**Intersection Summary**

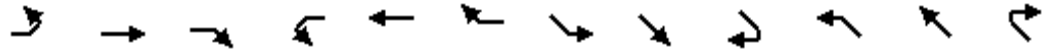
# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis  
 11: WISCONSIN AVE & Van Ness St

River School  
 10/08/2021



Movement	EBL	EBT	EBR	WBL	WBT	WBR	SEL	SET	SER	NWL	NWT	NWR	
Lane Configurations	↖	↗		↖	↗			↖↗↘			↖↗		
Traffic Volume (vph)	64	279	77	57	246	54	2	1625	72	3	1077	55	
Future Volume (vph)	64	279	77	57	246	54	2	1625	72	3	1077	55	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Grade (%)		5%			3%			1%				-1%	
Total Lost time (s)	4.0	4.0		4.0	4.0			3.5				3.5	
Lane Util. Factor	1.00	1.00		1.00	1.00			0.91				0.95	
Frbp, ped/bikes	1.00	1.00		1.00	0.99			0.98				0.99	
Flpb, ped/bikes	0.97	1.00		1.00	1.00			1.00				1.00	
Frt	1.00	0.97		1.00	0.97			0.99				0.99	
Flt Protected	0.95	1.00		0.95	1.00			1.00				1.00	
Satd. Flow (prot)	1439	1477		1460	1496			3966				2532	
Flt Permitted	0.32	1.00		0.23	1.00			0.94				0.95	
Satd. Flow (perm)	478	1477		347	1496			3726				2404	
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	
Adj. Flow (vph)	70	307	85	63	270	59	2	1786	79	3	1184	60	
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0	
Lane Group Flow (vph)	70	392	0	63	329	0	0	1867	0	0	1247	0	
Confl. Peds. (#/hr)	38		6	6		38	36		76	76		36	
Confl. Bikes (#/hr)						2			5			5	
Heavy Vehicles (%)	0%	1%	3%	2%	1%	0%	50%	4%	2%	0%	7%	0%	
Bus Blockages (#/hr)	0	0	0	0	0	0	0	20	20	0	0	0	
Parking (#/hr)												20	
Turn Type	Perm	NA		Perm	NA		pm+pt	NA		Perm	NA		
Protected Phases		8			4		1	6				2	
Permitted Phases	8			4			6			2			
Actuated Green, G (s)	32.5	32.5		32.5	32.5			76.0				64.5	
Effective Green, g (s)	34.5	34.5		34.5	34.5			78.0				66.5	
Actuated g/C Ratio	0.29	0.29		0.29	0.29			0.65				0.55	
Clearance Time (s)	6.0	6.0		6.0	6.0			5.5				5.5	
Lane Grp Cap (vph)	137	424		99	430			2437				1332	
v/s Ratio Prot		c0.27			0.22			c0.05					
v/s Ratio Perm	0.15			0.18				0.45				c0.52	
v/c Ratio	0.51	0.92		0.64	0.77			0.77				0.94	
Uniform Delay, d1	35.7	41.5		37.3	39.0			14.6				24.8	
Progression Factor	0.86	0.89		1.00	1.00			0.25				1.00	
Incremental Delay, d2	7.3	18.4		27.3	12.2			2.2				13.5	
Delay (s)	38.0	55.3		64.6	51.3			5.9				38.3	
Level of Service	D	E		E	D			A				D	
Approach Delay (s)		52.7			53.4			5.9				38.3	
Approach LOS		D			D			A				D	
<b>Intersection Summary</b>													
HCM 2000 Control Delay			26.2									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.93										
Actuated Cycle Length (s)			120.0									Sum of lost time (s)	11.0
Intersection Capacity Utilization			75.9%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													















Lane Group	NBT	SBT	NET
Lane Group Flow (vph)	1248	1919	924
v/c Ratio	0.87	0.79	1.04
Control Delay	36.5	6.3	63.5
Queue Delay	0.5	2.0	22.4
Total Delay	37.0	8.3	85.9
Queue Length 50th (ft)	503	87	~389
Queue Length 95th (ft)	576	m90	#524
Internal Link Dist (ft)	297	110	29
Turn Bay Length (ft)			
Base Capacity (vph)	1441	2424	885
Starvation Cap Reductn	28	343	143
Spillback Cap Reductn	34	0	0
Storage Cap Reductn	0	0	0
Reduced v/c Ratio	0.89	0.92	1.25

**Intersection Summary**

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis  
121: Tenley Cir & WISCONSIN AVE

River School  
10/08/2021

												
Movement	NBL	NBT	NBR	SBL	SBT	SBR	NEL	NET	NER	SWL	SWT	SWR
Lane Configurations		↑↑			↑↑↑			↑↑				
Traffic Volume (vph)	0	991	169	0	1785	0	242	545	73	0	0	0
Future Volume (vph)	0	991	169	0	1785	0	242	545	73	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Width	10	10	10	10	10	10	12	12	12	12	12	12
Grade (%)		1%			-1%			-3%			1%	
Total Lost time (s)		2.0			2.0			7.0				
Lane Util. Factor		0.95			0.91			0.95				
Frbp, ped/bikes		0.99			1.00			1.00				
Flpb, ped/bikes		1.00			1.00			1.00				
Frt		0.98			1.00			0.99				
Flt Protected		1.00			1.00			0.99				
Satd. Flow (prot)		2620			4098			3039				
Flt Permitted		1.00			1.00			0.99				
Satd. Flow (perm)		2620			4098			3039				
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	1066	182	0	1919	0	260	586	78	0	0	0
RTOR Reduction (vph)	0	0	0	0	0	0	0	0	0	0	0	0
Lane Group Flow (vph)	0	1248	0	0	1919	0	0	924	0	0	0	0
Confl. Peds. (#/hr)	61		68	68		61	5		23	23		5
Confl. Bikes (#/hr)			4			4			2			
Heavy Vehicles (%)	0%	5%	13%	0%	4%	0%	4%	6%	4%	0%	0%	0%
Bus Blockages (#/hr)	0	0	0	0	20	0	0	0	0	0	0	0
Parking (#/hr)		0	0									
Turn Type		NA			NA		Perm	NA				
Protected Phases		15 6 1			15 6 1 2			3 4				
Permitted Phases							3 4					
Actuated Green, G (s)		61.0			69.0			43.0				
Effective Green, g (s)		59.0			62.0			45.0				
Actuated g/C Ratio		0.49			0.52			0.38				
Clearance Time (s)												
Lane Grp Cap (vph)		1288			2117			1139				
v/s Ratio Prot		c0.48			c0.47							
v/s Ratio Perm								0.30				
v/c Ratio		0.97			0.91			0.81				
Uniform Delay, d1		29.6			26.4			33.7				
Progression Factor		1.24			0.27			0.50				
Incremental Delay, d2		18.0			3.0			5.4				
Delay (s)		54.9			10.2			22.3				
Level of Service		D			B			C				
Approach Delay (s)		54.9			10.2			22.3			0.0	
Approach LOS		D			B			C			A	
<b>Intersection Summary</b>												
HCM 2000 Control Delay			26.5				HCM 2000 Level of Service		C			
HCM 2000 Volume to Capacity ratio			1.02									
Actuated Cycle Length (s)			120.0				Sum of lost time (s)		26.0			
Intersection Capacity Utilization			84.4%				ICU Level of Service		E			
Analysis Period (min)			15									

c Critical Lane Group



### Site Trip Distribution and Assignment

The distribution of new peak hour site trips generated by the School was based on student zip code lists, the distribution of inbound and outbound trips to/from the site, general knowledge of commuter routes to/from the site, and recognition that some parents drop children off on their way to work. The AM, PM School, and PM Commuter peak hour distributions are shown in Figures 16A through 16F.

The trip distributions then were applied to the vehicle trip generation for the School. The resulting traffic assignments for the AM, PM School, and PM Commuter peak hours are as shown on Figures 17A through 17C, respectively.

### TRANSPORTATION MANAGEMENT PLAN

To help facilitate ingress to, egress from, and the flow of traffic on campus and to reduce the impact of the proposed development, the River School will implement a Transportation Management Plan that will consist of: 1) a Transportation Demand Management (TDM) Plan, 2) an Operations Management Plan, and 3) a Monitoring Plan. Each plan is summarized below:

#### Transportation Demand Management

##### Overview

Traffic and parking congestion can be solved in one of two ways: 1) increase supply or 2) decrease demand. Increasing supply requires building new roads, widening existing roads, building more parking spaces, or operating additional transit service. These solutions are often infeasible in constrained urban conditions and, where feasible, can be expensive, time consuming, and in many instances, unacceptable to businesses, government agencies, and/or the general public. The demand for travel and parking can be influenced by Transportation Demand Management (TDM) plans. Typical TDM measures include incentives to use transit or other non-auto modes of transportation, bicycle and pedestrian amenities, parking management, alternative work schedules, telecommuting, and better management of existing resources. TDM plans are most effective when tailored to a specific project or user group.

##### Proposed Components of TDM Plan

The TDM Plan is intended to be flexible in order to respond to changes in School demographics, technology, transportation services, and various mitigation options available. Accordingly, it is envisioned that over time, new approaches in addition to those listed below will be identified and programs developed to respond to these changes. The River School proposes the following strategies as part of their TDM “toolbox”:

## General Strategies

1. Designate a TDM coordinator who will be responsible for organizing, marketing, and accomplishing the tasks in the TDM plan and who will act as a liaison with DDOT and the community. The TDM coordinator position may be part of other duties assigned to the individual.
2. Create a transportation section on the School's website with up-to-date information regarding all transportation options available to students, parents/guardians, and employees, including but not limited to public transportation (Metrobus and Metrorail), biking facilities and amenities (including campus bicycle parking).
3. Hold quarterly meetings with ANCs 3E and 3D to garner feedback on traffic and parking related issues for the length of the performance monitoring program.
4. Provide a bike maintenance facility and bicycle parking in the garage or other easily accessible area for students and faculty/staff.
5. Make showers and lockers available to students and faculty/staff who walk, jog, or bike to school.
6. Provide one 200V electric vehicle charging station in the proposed parking garage.
7. The updated TDM plan will be incorporated into the student contract. The following procedure will be followed for multiple infractions:
  - 1<sup>st</sup> Infraction – Email from Principal
  - 2<sup>nd</sup> Infraction – Phone call from Principal
  - 3<sup>rd</sup> Infraction – Meeting with Principal
  - 4<sup>th</sup> Infraction – Meeting with Head of School
  - 5<sup>th</sup> Infraction – Probation from school for up to 10 days
  - 6<sup>th</sup> Infraction – Dismissal; contract revoked

## Strategies for Students

### *Rideshare:*

1. Establish a mandatory carpooling program that requires parents dropping off or picking up students by automobile to have at least two students per vehicle, with the following exceptions:
  - Parents of Pre-K and younger students are not required to carpool and

- On a case-by-case basis, students who demonstrate a hardship based on special transportation needs are not required to carpool with prior approval.
2. Provide carpool matching assistance for parents to increase the Average Vehicle Occupancy (AVO) for the School. Assistance programs could include:
    - Creation of an online, interactive map for parents to identify other River School families who live near them and are interested in carpooling, as well as provide contact information.
    - Register with and promote Commuter Connections School Pool Program to assist parents in finding other parents in their neighborhood to form carpools, walking groups, or biking groups.
  3. Actively promote carpooling by providing links to the carpool matching website on the School's website and by providing fliers, emails, and/or other informational pieces at least once per semester.

*Shuttle:*

1. Provide a shuttle(s) to transport students from an off-site location(s) during the morning drop-off period.

*Incentives:*

1. Provide transit/alternate commute incentives to encourage students to use non-auto modes of transportation to travel to school. Incentives would include:
  - Encourage District of Columbia students/families to take advantage of the WMATA's Kids Ride Free program, which allows students who live in DC to ride free on Metrorail and Metrobus;

*Outreach and Education:*

1. Provide outreach and education events to stress the importance of using non-auto modes of transportation and make information more readily available. Outreach and educational events could include:
  - Hold a "Transportation to School" event at the beginning of each school year, stressing the importance of public transportation, carpooling, biking, etc.;
  - Participate in DDOT's Safe Routes to School Program – The program encourages students and their parents to walk and bicycle to school by examining conditions around schools and conducting projects and activities to improve safety and accessibility. The program also provides pedestrian and bicycle safety training in the classroom;
  - Establish inter-class and inter-grade competitions with incentives and prizes for the classes that take transit, walk, and bike the most.
  - Host four Walk to School/Bike to School Days each year;

- Promote walking/biking in communications with parents.
2. Add bicycle education into the general physical education curriculum.

### Strategies for Faculty/Staff

#### *Rideshare:*

1. Provide carpool matching assistance for faculty/staff to increase the Average Vehicle Occupancy (AVO) for the School. Assistance programs could include:
  - Creation of an online, interactive map for faculty/staff to identify other River School employees who live near them and are interested in carpooling, as well as provide contact information.
  - Register with Commuter Connections and promote Commuter Connections' Ride-matching Service.
  - Parking passes for the proposed garage will be distributed first to faculty/staff who carpool, then to faculty/staff who live more than one mile from the school and more than one mile from a red-line Metro station.

#### *Incentives:*

1. Provide transit/alternate commute incentives to encourage faculty/staff to use non-auto modes of transportation to travel to school. Incentives would include:
  - a. Provide \$135 monthly SmarTrip cards for faculty/staff who take public transportation;
  - b. Allow employees to set aside \$255/month in pre-tax funds (or current amount allowed under federal law) through their paycheck for transit or vanpool expenses;
  - c. Enroll in Guaranteed Ride Home, which provides employees who regularly take transit, vanpool, carpool, walk, or bike to work with a reliable ride home when an unexpected emergency arises; and
  - d. For faculty/staff who do not drive or take public transit to school, provide \$20 in monthly subsidies to those who bike (or current amount allowed tax-free under Federal law) OR provide bikeshare memberships.

#### *Outreach and Education:*

1. Provide training for the faculty/staff at the beginning of each academic year to implement and enforce the TDM Plan.

## Operations Management Plan

In addition to the TDM plan, the River School will implement an Operations Management Plan to ensure that drop-off/pick-up procedures do not adversely impact the surrounding neighborhood. The following are the components of the plan:

1. Establish a clear drop-off/pick-up protocol for parents. The protocol will be as follows:
  - a. Prior to the beginning of the school year, parents/guardians who will be dropping off and picking up students via automobile will be assigned 15-minute drop-off and pick-up windows to ensure the PUDO area on campus does not exceed capacity (pick-up windows do not apply to students in after care).
  - b. Drop-off will occur between 8:00 and 9:00 AM. Pick-up will occur between 12:00 and 12:30 PM for half-day students, between 2:45 and 3:45 PM for full-day students, and between 4:00 and 6:00 PM for students in the after-school program.
  - c. Drop-off/pick-up traffic will enter the campus via the northern curb cut on Nebraska Avenue and will exit via the southern curb cut on Nebraska Avenue.
  - d. Under no circumstances will drop-off/pick-up be permitted on 42<sup>nd</sup> Street, Van Ness Street, Warren Street, or other neighborhood streets.
  - e. Families who walk their children to school will be given badges to identify them as “walkers.” School staff will be stationed at pedestrian entrances to campus to ensure that only “walkers” are entering campus on foot (and not families walking from a parked car on a neighborhood street).
  - f. All parents who must leave their vehicle to drop-off/pick up students during regular drop-off/pick-up times, must park in a designated, on-campus parking space (three spaces will be designated in the garage for drop-off/pick-up). Parents using the drop-off/pick-up lanes must remain in their vehicles and will drop-off/pick-up their student(s) when they stop in front of the school.
  - g. Up to 14 vehicles can load/unload students at a time. Staff members will direct traffic within the PUDO area to ensure queued vehicles backfill the loading/unloading area in a safe and efficient manner.
  - h. Parents/guardians will be given a tag with students’ names, which will be placed in the vehicle and visible through the windshield (PUDO Pass). A member of staff will radio the names back to the school as the vehicles enter campus. Staff at the School then will shepherd the appropriate students to the awaiting vehicles once they stop. This process may be replaced with an app-based system or other, similar system depending on available technology.
  - i. Students who have a yearlong exemption from mandatory carpooling will have a special tag to display in the windshield of their car.

- j. School staff members will be stationed at the PUDO location to assist students in getting from vehicles into the school in the morning and from the school into the appropriate vehicles in the afternoon.
2. Utilize two traffic control officers at the access to and egress from the site to help manage conflicts between pedestrians and bicycles and entering and exiting vehicles
  3. All faculty and staff will be required to arrive before 8:00 AM and will not be permitted to depart between 2:45 and 3:45 PM.
  4. Loading
    - Deliveries (except parcel deliveries via UPS/FedEx/Amazon and mail delivery) and trash/recycling pick-up will be scheduled such that they do not coincide with pick-up/drop-off activities.
    - All vendors will be notified that they must use the on-campus loading facilities for deliveries.
    - All vendors will be notified that deliveries must be made in box trucks (i.e., no tractor trailers will be permitted on-campus).

## Monitoring Plan

To ensure that the TDM and Operations Management plans are functioning as intended, the River School will conduct annual monitoring studies, which will be submitted to DDOT and ANC 3E.

### Elements of the Monitoring Study

1. The number of vehicle trips generated by the School during the AM peak hour, PM School peak hour, and PM Commuter peak hour will be determined.
2. Traffic counts shall be conducted when the River School, DC Public Schools, and Congress are in session.
3. Counts shall be conducted during the Fall Semester at the driveways to the School on a typical weekday from 7:30 AM to 9:30 AM and from 2:30 PM to 6:30 PM. Counts shall be conducted on days when no adverse weather impacts travel conditions.
4. The number of trips generated by the School shall be determined as follows:
  - a. AM peak hour shall be determined by selecting the single highest hourly inbound plus outbound volume (for all driveways combined) between 7:30 AM and 9:30 AM.
  - b. PM School peak hour shall be determined by selecting the single highest hourly inbound plus outbound volume (for all driveways combined) between 2:30 PM and 4:30 PM.

- c. PM Commuter peak hour shall be determined by selecting the single highest hourly inbound plus outbound volume (for all driveways combined) between 4:30 PM and 6:30 PM.
5. Vehicle occupancy counts (number of students per vehicle) will be conducted at the PUDO location to determine the average vehicle occupancy (AVO). The vehicle occupancy counts will be conducted during the same timeframes as the trip generation counts indicated above.
6. A queue study will be conducted at the PUDO location to determine the length of the queues and to ensure that the queues do not spillback onto Nebraska Avenue.
7. A mode split survey (conducted during the Fall Semester) will be conducted to determine the mode of transportation for students and faculty/staff.
8. A list of TDM measures in effect at the time the study was conducted.
9. The number of students enrolled, and faculty/staff employed at the time the study was conducted.
10. Notes from ANC 3E and/or other community meetings documenting traffic issues.

### Trip Generation Thresholds

The River School will establish a goal of reducing peak hour vehicular traffic generated by the School (from what would otherwise be generated without a TDM plan) by 45 percent during the AM peak hour and 15 percent during the PM School and PM Commuter peak hours through implementation of a TDM plan. The vehicular trip thresholds are provided in Table 10.

Table 10  
 The River School Trip Generation Thresholds

Trip Type	AM Peak Hour			PM School Peak Hour			PM Commuter Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Vehicle Trips without TDM Plan	204	204	408	87	87	174	35	73	108
Vehicle Trips with TDM Plan	112	112	224	74	74	148	30	62	92

### Sequencing of Monitoring Studies

1. During Year 1 (where “Year 1” is defined as the first school year commencing upon the initial opening of the School), the monitoring study shall be conducted two times per semester. The first monitoring study shall be completed no later than October 15.
2. Beginning Year 2, the monitoring study shall be conducted during the Fall Semester each year and completed no later than October 15. If the monitoring study reveals that Trip Thresholds are not met, or if PUDO queues are not contained on-site, the School shall

request a meeting with ANC 3E and DDOT within five days of completion of the study. The meeting with ANC 3E commissioners and DDOT shall be held within 30 days of completion of the study, subject to availability of the ANC 3E commissioners and DDOT. The purpose of the meeting shall be to work with DDOT and the ANC to identify remedial revisions to the TMP necessary to promote compliance. The School shall make diligent efforts to implement such measures within 30 days of the meeting. Such remedial strategies would include but not be limited to at least one of the following Enhanced Strategies:

- a. Enhanced Strategy #1 – Acquire off-site/off-street parking for PUDO spaces
    - i. Reduce the number of PUDO passes issued proportionally based on the percentage of trips in excess of the trip threshold or by the number of vehicles queued in excess of the on-site queuing capacity.
    - ii. Lease a number of off-street parking spaces in a garage within a ½-mile radius of the school (e.g., City Ridge, Upton Place, or 4200 Wisconsin Avenue), at the School’s expense, for use as short-term parking/PUDO spaces for use by parents who would otherwise drive to campus but would now park in the leased spaces and walk their children to the school. The number of leased spaces shall be at least equal to the number of revoked PUDO passes.
  - b. Enhanced Strategy #2 – Convert on-site garage to PUDO operation
    - i. Convert all spaces in the garage, with the exception of the tandem spaces and the ADA spaces, to short-term parking for PUDO operations and visitor spaces when PUDO is not in operation.
    - ii. Lease off-site parking within a ½-mile radius of the school (e.g., City Ridge, Upton Place, or 4200 Wisconsin Avenue), at the School’s expense, for River School faculty and staff. The number of off-site spaces required shall be equal to the number of spaces converted to PUDO in the garage.
    - iii. Modify the PUDO lane to utilize a single stacking lane with a bypass lane to allow garage PUDO lane to bypass the queue lane.
  - c. Enhanced Strategy #3 – Increased Carpooling Requirements
    - i. For any families still dropping off or picking up students on-campus, increase the mandatory carpooling requirement from two students per vehicle to three students per vehicle subject to the requirements described on page 40 under *Strategies for Students - Rideshare*.
3. Beginning in Year 2, if the Trip Thresholds and Queue Requirements are not met during the Fall Semester, a second study must be conducted during the Spring Semester of that year to determine whether the Enhanced Strategies resulted in compliance.
  4. Beginning in Year 5, if the River School has successfully shown compliance with the Trip Threshold and Queuing requirements for two consecutive years, the School shall monitor compliance with the Trip Thresholds triennially in the Fall Semester (with the monitoring



report being completed no later than October 15). Triennial studies shall continue through at least Year 17 (i.e., five times between Year 5 and Year 17). If the School fails to meet the Trip Thresholds and Queuing requirements during the Fall Semester, the School shall request a meeting with ANC 3E and DDOT within five days of completion of the study. The meeting with ANC 3E commissioners and DDOT shall be held within 30 days of completion of the study, subject to availability of the ANC 3E commissioners and DDOT, to identify additional Enhanced Strategies to be implemented by the School. The School shall implement such measures as soon as feasible but no later than the end of the Fall Semester. The School shall be required to monitor again in the Spring Semester of such year and shall, thereafter, resume annual monitoring studies until such time as the annual monitoring study demonstrates that the School has met the Trip Thresholds and Queuing Requirements for two consecutive years. At such time, triennial studies shall resume until Year 17 or until such time as two consecutive triennial studies demonstrate compliance, whichever is later.

### Proposed River School Conditions

#### Enrollment and Faculty/Staff Caps

1. This Order authorizes and shall apply to the use of the Campus for children from birth through 6<sup>th</sup> grade.
2. The Conditions of this Order shall become effective only upon the commencement of school operations on the Campus.
3. Upon the issuance of a Certificate of Occupancy for the Campus, the maximum enrollment shall be 350 full-time and part-time students in the aggregate.
4. Upon the issuance of a Certificate of Occupancy for the School, the maximum number of full-time equivalent faculty and staff shall be 90.

#### Reporting and Community Engagement

5. At the beginning of each school year, but in no event later than October 15 of any calendar year that the monitoring and reporting requirements herein are in effect, the School shall provide to ANC 3E and to the District Department of Transportation (“DDOT”) documentary evidence sufficient to demonstrate the total enrollment of students at the Campus and compliance with the terms of this Agreement, including the Transportation Management Plan (“TMP”) referenced herein.

#### Transportation, Access, and TMP

6. No passenger vehicle pick-up and drop-off of students shall occur on the streets immediately adjacent to the Campus (i.e., 42nd Street, NW, Van Ness Street, NW, Warren Street NW, or Nebraska Avenue NW). During drop-off and pick-up, caregivers shall not park on such neighborhood streets to wait or walk their student(s) to or from the Campus.
7. The parking garage will include three (3) short-term parking spaces reserved for parents to park and walk their student(s) to or from the school building.
8. The School shall abide by the Operations Management Plan described in the TMP and included in the CTR.
9. The School shall abide by the Transportation Demand Management Plan described in the TMP and included in the CTR. Specifically, the School has established a goal of reducing peak hour vehicular traffic generated by the school by 45% during the AM peak hour and 15% during the PM School and PM Commuter peak hours to the Trip Generation Thresholds as shown in the table below.

The River School Trip Generation Thresholds

Trip Type	AM Peak Hour			PM School Peak Hour			PM Commuter Peak Hour		
	In	Out	Total	In	Out	Total	In	Out	Total
Vehicle Trips with TDM Plan	112	112	224	74	74	148	30	62	92

10. The School agrees to monitor the following in accordance with the schedule outlined in Condition 12 (as detailed in the TMP included in the CTR):
  - The number of vehicle trips generated by the School during the AM peak hour, PM School peak hour, and PM Commuter peak hour.
  - The length of the pick-up/drop-off queues during the AM peak hour, PM School peak hour, and PM Commuter peak hour.
  - Vehicle occupancy counts (number of students per vehicle) will be conducted at the PUDO location to determine the average vehicle occupancy (AVO).
  - Mode splits for the students and faculty/staff.
  
11. If the total number of vehicle trips (inbound plus outbound) generated by the School during the AM, PM School, or PM Commuter peak hours exceeds the total number of vehicle trips established in Condition 9 for each respective peak hour, or if the pick-up/drop-off queue spills out onto Nebraska Avenue during the AM, PM School, or PM Commuter peak hours, the school shall meet with DDOT and ANC 3E and implement remedial strategies to reduce trips or reduce the queue, as applicable, as further detailed in Condition 12.
  
12. Monitoring Studies shall be conducted as follows:
  - A. During Year 1 (where “Year 1” is defined as the first school year commencing upon the initial opening of the school), the monitoring study shall be conducted two times per semester. The first monitoring study shall be completed no later than October 15.
  - B. Beginning Year 2, the monitoring study shall be conducted during the Fall Semester each year and completed no later than October 15. If the monitoring study reveals that Trip Thresholds are not met, or if PUDO queues are not contained on-site, the School shall request a meeting with ANC 3E and DDOT within five days of completion of the study. The meeting with ANC 3E commissioners and DDOT shall be held within 30 days of completion of the study, subject to availability of the ANC 3E commissioners and DDOT. The purpose of the meeting shall be to work with DDOT and the ANC to identify remedial revisions to the TMP necessary to promote compliance. The school shall make diligent efforts to implement such measures within 30 days of the

meeting. Such remedial strategies would include but not be limited to at least one of the following Enhanced Strategies:

- i. Enhanced Strategy #1 – Acquire off-site/off-street parking for PUDO spaces
    - a) Reduce the number of PUDO passes issued proportionally based on the percentage of trips in excess of the trip threshold or by the number of vehicles queued in excess of the on-site queuing capacity.
    - b) Lease a number of off-street parking spaces in a garage within a 1/3-mile radius of the school (e.g., City Ridge, Upton Place, or 4200 Wisconsin Avenue), at the School’s expense, for use as short-term parking/PUDO spaces for use by parents who would otherwise drive to campus but would now park in the leased spaces and walk their children to the school. The number of leased spaces shall be at least equal to the number of revoked PUDO passes.
  - ii. Enhanced Strategy #2 – Convert on-site garage to PUDO operation
    - a) Convert all spaces in the garage, with the exception of the tandem spaces and the ADA spaces, to short-term parking for PUDO operations and visitor spaces when PUDO is not in operation.
    - b) Lease off-site parking within a 1/3-mile radius of the school (e.g., City Ridge, Upton Place, or 4200 Wisconsin Avenue), at the School’s expense, for River School faculty and staff. The number of off-site spaces required shall be equal to the number of spaces converted to PUDO in the garage.
    - c) Modify the PUDO lane to utilize a single stacking lane with a bypass lane to allow garage PUDO lane to bypass the queue lane.
  - iii. Enhanced Strategy #3 – Increased Carpooling Requirements
    - a) For any families still dropping off or picking up students on-campus, increase the mandatory carpooling requirement from two students per vehicle to three students per vehicle subject to the requirements described on page 40 of the CTR under *Strategies for Students - Rideshare*.
- C. Beginning in Year 2, if the Trip Thresholds and Queue Requirements are not met during the Fall Semester, a second study must be conducted during the Spring Semester of that year to determine whether the Enhanced Strategies resulted in compliance.

- D. Beginning in Year 5, if the River School has successfully shown compliance with the Trip Threshold and Queuing requirements for two consecutive years, the School shall monitor compliance with the Trip Thresholds triennially in the Fall Semester (with the monitoring report being completed no later than October 15). Triennial studies shall continue through at least Year 17 (i.e., five times between Year 5 and Year 17). If the School fails to meet the Trip Thresholds and Queuing requirements during the Fall Semester, the School shall request a meeting with ANC 3E and DDOT within five days of completion of the study. The meeting with ANC 3E commissioners and DDOT shall be held within 30 days of completion of the study, subject to availability of the ANC 3E commissioners and DDOT, to identify additional Enhanced Strategies to be implemented by the School. The school shall implement such measures as soon as feasible but no later than the end of the Fall Semester. The School shall be required to monitor again in the Spring Semester of such year and shall, thereafter, resume annual monitoring studies until such time as the annual monitoring study demonstrates that the School has met the Trip Thresholds and Queuing Requirements for two consecutive years. At such time, triennial studies shall resume until Year 17 or until such time as two consecutive triennial studies demonstrate compliance, whichever is later.

#### Summer Usage of Campus Facilities

13. The School shall not be restricted from offering or authorizing use of the Campus for summer programs outside of the regular school year, provided that it meets the same Trip Thresholds that apply during the school year.
14. Any summer use of the Campus shall follow the pick-up/drop-off procedures prescribed in the Operations Plan.

#### Building Plans

15. The improvements constructed on the Campus shall be in conformance with the Final Plans, subject to any required subsequent District agencies approvals, including, but not limited to the Historic Preservation Review Board.
16. The School shall design the new construction to meet the certification requirements under the LEED v.4 rating system.

#### Campus Use, Noise and Lighting

17. All academic School activities held on Campus shall be concluded by 6:00 pm.
18. There shall be no artificial lighting of the playgrounds, outdoor recreation facilities, or green space that is directed at any of the nearby residences, provided such prohibition shall not be understood to preclude any code-required lighting (such as path lighting) from being installed.
19. No exterior building lights shall be directed toward the existing residences.

20. The loudspeaker (i.e., audio) and bell systems within the Campus shall not be audible in the neighborhood except for standard emergency alarm systems. There shall be no permanent outdoor audio system of any kind except those required by law or for safety.
21. Temporary outdoor audio systems (apart from a loudspeaker, bell system, and alarm system) at the Campus shall be allowed only during school hours for special school events, and not more than three times a year.

#### Additional Events and Activities

22. The School shall not be restricted from holding occasional private, non-School events at the Campus, including conferences and fundraisers, provided that the School shall (1) provide the ANC at least 30 days' notice prior to a non-School special event, and (2) in the event the attendance at such an event would exceed the School's normal population on Campus or have an expected impact on traffic greater than that of School operations, the School shall submit an event transportation management plan to the ANC at least seven (7) days prior to the event.
23. The School may partner with other public or private schools for use of the Campus, including outdoor playground space, provided that such partner use shall be subject to the same limitations of this Order.