

## TECHNICAL MEMORANDUM

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From: Andrew Sandweiss  
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Date: November 21, 2022

Subject: 899 Maine Avenue PUD  
Potential Cut-Through Prevention Measures for Capitol Square Townhomes

### Introduction

This memo explores a series of measures to prevent cut-through traffic between 7<sup>th</sup> Street SW and G Street SW using the internal private street network of the Capitol Square Townhome Association, and was prepared at the request of the Applicant of the 899 Maine Avenue Planned Unit Development, located across the street from the Townhome Association, as a way to suggest options to address cut-through concerns expressed by residents of the townhomes. These measures aim to detour, discourage, and ultimately prevent outside traffic from using the townhome's internal network. The cut-through traffic

### Review of Potential Measures

This memo specifically explores measures to prevent cut-through traffic between 7<sup>th</sup> and G Streets SW using the existing curb cuts on 7<sup>th</sup> Street and G Street, as well as cut-through traffic between 7<sup>th</sup> and 9<sup>th</sup> Street SW. Benefits and drawbacks are discussed for each measure.

#### ***Option 1: Enhanced Signage and/or Markings***

Enhanced signage and pavement markings can be placed throughout the townhome's internal street network to dissuade cut-through traffic. Although signage stating "Private Road: Residents and Guests Only" exists at both the G Street SW and 7<sup>th</sup> Street curb cuts, these signs are relatively small and difficult to read from even a small distance. The "Do Not Enter" signs at G Street SW are more prominent, but there could be additional signage and pavement markings to further deter potential cut through traffic.

The following additional signage and pavement markings are recommended:

- A "Do Not Enter" sign at the 7<sup>th</sup> Street SW curb cut (such a sign already exists, but it is angled for northbound drivers to not enter the southbound lanes of 7<sup>th</sup> Street SW when turning left into the curb cut).
- Reinstallation of the more visible "Private Drive, No Thru Traffic" on both sides of the 7<sup>th</sup> Street SW curb cut (currently only the southern side of the curb cut has this sign, which is somewhat obscured by a tree).
- Installation of a "No Right Turn" sign for southbound 7<sup>th</sup> Street SW traffic, similar to the existing "No Left Turn, Local Traffic Only" sign at the left turn lane on northbound 7<sup>th</sup> Street SW.
- Installation of a "No Left Turn" sign for eastbound G Street SW traffic, similar to the existing "No Left Turn, Local Traffic Only" sign at the left turn lane on northbound 7<sup>th</sup> Street SW.
- Pavement markings at the 7<sup>th</sup> Street SW curb cut that state "Do Not Enter".
- Pavement markings at the G Street SW curb cut that state "Do Not Enter".

Some additional signage and pavement marking thoughts are illustrated on Figure 1. These signs would have to be carefully designed and located, since those located on public space would need to be approved by the District Department of Transportation (DDOT).

The benefits of enhanced signage and/or markings are that it is a relatively low-cost and non-invasive mitigation measure. The drawback is that vehicles are not physically prevented from accessing the internal private roadway network, and a few vehicles may still use it for cut through routing. Considering that residents have stated that the current signs are ineffective as a deterrent, there isn't a lot of evidence that enhanced signage and marking would improve conditions.

### ***Option 2: Exit-Controlled Gate Installation***

Gate installation, at either (or both) the G Street SW or the 7<sup>th</sup> Street SW curb cut, could be used to restrict access to the internal private roadway network to only residents and guests. There are several technologies for gates, but most often they are controlled via a transponder within the car that automatically opens the gates when approaching them. It is highly unlikely DDOT would approve of gates constructed on public space, thus the gates would be built on the townhome property site and would have to be setback from the street.

The benefit of this option is that the gate would serve as a physical barrier to cut through traffic. However, the location of the gates could create safety issues as vehicles enter the site from either G Street SW or 7<sup>th</sup> Street SW, as either vehicles delayed by the gates would spillback onto the streets, or unauthorized vehicles attempting to access the curb cuts would have to make complicated and disruptive turning movements to back out.

One potential solution would be to have the gate open for anyone (e.g. any approaching vehicle). Although any car could theoretically access the internal private roadway network, the physical gate would serve as a stronger deterrent than signage alone for anyone attempting to make a cut through route. Additionally, such gates could be used only during peak traffic periods, whether during AM or PM weekday peaks, or during special events (e.g. at The Wharf or Nationals Park).

An effective compromise between universal access gates and the issue of queuing is the installation of "exit-controlled" gates. In this case, gates open for all entering vehicles (like the previous solution) but require a resident to use a transponder to open the gates when exiting. Thus, this would make non-resident vehicles unable to cut-through the townhomes as they would not be able to exit at these gates. Such gates could not be installed at every curb cut, however, as this would effectively trap non-resident vehicles.

The suggested location for these gates would be at the 9<sup>th</sup> Street SW & at G Street SW curb cuts, so as to prevent all cut-through traffic coming from 7<sup>th</sup> Street SW.

The location of these potential gates can be seen in Figure 2.

### ***Option 3: One-way Conversion***

Converting some of the internal private network of streets to one-way circulation could make certain cut-through routes impossible. The existing circulation can be seen in Figure 3.

Two schemes were considered for one-way operations:

- Scheme 1: Converting Capitol Square Place to a one-way eastbound street
- Scheme 2: Converting the road connecting to the G Street SW curb cut a one-way northbound street (until reaching the next intersection northbound within the internal private roadway network)

Scheme 1 makes the typical cut through route from the 7<sup>th</sup> Street SW curb cut to the G Street SW curb cut impossible as the curb cut at 7<sup>th</sup> Street SW would become an exit-only curb cut (and thus no one can enter via that curb cut). The drawback for this scheme is that it makes the existing infrastructure for inbound vehicles at this curb cut obsolete (e.g. the left-turn lane and signal at intersection of 7<sup>th</sup> Street SW & the curb cut) and could cause inbound vehicles to be rerouted down to Maine Avenue

SW to reach the G Street SW curb cut. However, Scheme 1 also is one of the few options to prevent cut-through traffic between 7<sup>th</sup> Street and 9<sup>th</sup> Street SW, as the one-way eastbound routing goes against the potential cut-through traffic flow. Scheme 1 can be seen in Figure 4. Scheme 2 prevents cut throughs as it makes the typical cut-through route impossible as vehicles can now only enter via the G Street SW curb cut.

The benefits of both schemes are that these are a relatively low-cost option for preventing cut through traffic. However, in both cases the one-way conversion (which would need to be accompanied by a signage and marking plan) could be ignored, as there would be no physical barrier to accessing the internal network of private roadways.

#### ***Option 4: Curb Cut Closure (G Street SW or 7<sup>th</sup> Street SW)***

Closing either the G Street SW or 7<sup>th</sup> Street SW curb cut would provide a permanent barrier to cut-through traffic, preventing vehicles from entering the internal network of private roadways.

The closure of either curb cut could be accomplished with cones, jersey barriers (or similar devices), or a total relandscaping of the townhome frontage, depending on the desires of the Capitol Square Townhome Association. More temporary closures could be employed during peak events or time periods.

This would be one of the more effective mitigative measures for preventing cut through traffic. The lack of curb cut at either end of the typical cut-through route would make such actions impossible. There could be some initial issues when first installed. For instance, drivers used to taking the cut-through could get stuck on the internal roads since the exit they previously used is now closed.

However, a drawback for this option is the rerouting required of residents due to the curb cut closures. By closing the 7<sup>th</sup> Street SW curb cut, inbound vehicles from the north approaching via 7<sup>th</sup> Street SW would be required to go to Maine Avenue to make a right, make a right on 9<sup>th</sup> Street SW, and then make a right on G Street SW to access the curb cut. All vehicles, except those coming via 9<sup>th</sup> Street SW from the north, would be required to use the G Street SW curb cut. Outbound vehicles are less impacted, as they can use the G Street SW curb cut to use G Street SW to access 7<sup>th</sup> Street SW. These reroutes can be seen in Figure 6. Closing the 7<sup>th</sup> Street SW curb cut also makes the existing infrastructure for inbound vehicles at this curb cut obsolete (e.g. the left-turn lane and signal at intersection of 7<sup>th</sup> Street SW & the curb cut).

Closing the G Street SW curb cut, however, creates minimal rerouting. Vehicles originally destined for the G Street SW curb cut can continue along G Street SW to make a left onto 7<sup>th</sup> Street SW, where they can access the curb cut there. Outbound vehicles, rather than using the G Street SW curb cut, can use the 9<sup>th</sup> Street SW curb cut and can make a left onto G Street SW to continue. These reroutes can be seen in Figure 7.

#### ***Option 5: Curb Cut Closure & One-Way Combination***

While many of these options focus on addressing 7<sup>th</sup> Street to G Street SW cut-through traffic, they also make it difficult to address potential 7<sup>th</sup> Street to 9<sup>th</sup> Street SW cut-through traffic. Fortunately, this type of cut-through traffic is less likely given it requires more maneuvering to reach the 899 Maine Avenue curb cut on G Street SW. However, this option addresses this potential routing by closing the G Street SW curb cut and making the 9<sup>th</sup> Street SW curb cut one-way eastbound. This prevents both cut-through traffic exiting via the G Street SW curb cut and existing via the 9<sup>th</sup> Street SW curb cut. Option 5 can be seen in Figure 8.

## **Summary and Conclusions**

This memo explored a series of measures to prevent cut-through traffic between 9<sup>th</sup> Street SW, 7<sup>th</sup> Street SW, and G Street SW using the internal private street network of the Capitol Square Townhome Association.

The five (5) options presented each had their benefits and drawbacks, and each should be considered separately and potentially in combination with other options. A summary of these pros and cons is presented in Table 1.

It should also be noted that the recently proposed placement of the 899 Maine Avenue G Street SW curb cut further west from the townhomes' curb cut will make cut-through traffic more difficult.

**Table 1: Summary of Options**

|                  | Option 1: Enhanced Signage and/or Markings   | Option 2: Exit-Controlled Gate Installation  | Option 3: One-way Conversion   |   | Option 4: Curb Cut Closure   |   | Option 5: G Street Curb Cut Closure & 9 <sup>th</sup> Street One-Way Conversion  |
|------------------|--|--|--|---|--|---|--|
|                  |  |  | Capitol Square Pl. Eastbound   | G Street curb cut Northbound  | 7 <sup>th</sup> Street SW  | G Street SW   |  |
| <b>Benefits</b>  | <ul style="list-style-type: none"> <li>1. Low cost</li> <li>2. Easy to implement</li> </ul>                    | <ul style="list-style-type: none"> <li>1. Physical barrier</li> <li>2. Visual deterrent</li> </ul>   | <ul style="list-style-type: none"> <li>1. Low cost</li> <li>2. Easy to implement</li> <li>3. Prevents 7<sup>th</sup>-9<sup>th</sup> cut-through traffic</li> </ul> | <ul style="list-style-type: none"> <li>1. Low cost</li> <li>2. Easy to implement</li> </ul> | <ul style="list-style-type: none"> <li>1. Physical barrier</li> </ul>  | <ul style="list-style-type: none"> <li>1. Physical barrier</li> </ul> | <ul style="list-style-type: none"> <li>1. Physical barrier</li> <li>2. Prevents 7<sup>th</sup>-9<sup>th</sup> cut through traffic</li> </ul> |
| <b>Drawbacks</b> | <ul style="list-style-type: none"> <li>1. No physical barrier</li> <li>2. Vehicles can ignore signs</li> </ul> | <ul style="list-style-type: none"> <li>1. Normal gates could result in queuing on local roads.</li> <li>2. Exit-controlled gates cannot be installed everywhere as they would trap drivers/</li> </ul> | <ul style="list-style-type: none"> <li>1. No physical barrier</li> <li>2. Makes existing infrastructure obsolete</li> <li>3. Long reroutes</li> </ul>              | <ul style="list-style-type: none"> <li>1. No physical barrier</li> </ul>                    | <ul style="list-style-type: none"> <li>1. Long reroutes*</li> <li>2. Makes existing infrastructure obsolete</li> </ul> | <ul style="list-style-type: none"> <li>1. Reroutes*</li> </ul>        | <ul style="list-style-type: none"> <li>1. Long Reroutes*</li> <li>2. No physical barrier on 9<sup>th</sup> Street SW</li> </ul>              |

\* - Impact can be reduced by introducing closures only during certain time periods



Figure 1: Option #1: Enhanced Signage and/or Marking



Figure 2: Option #2: Gate Installation

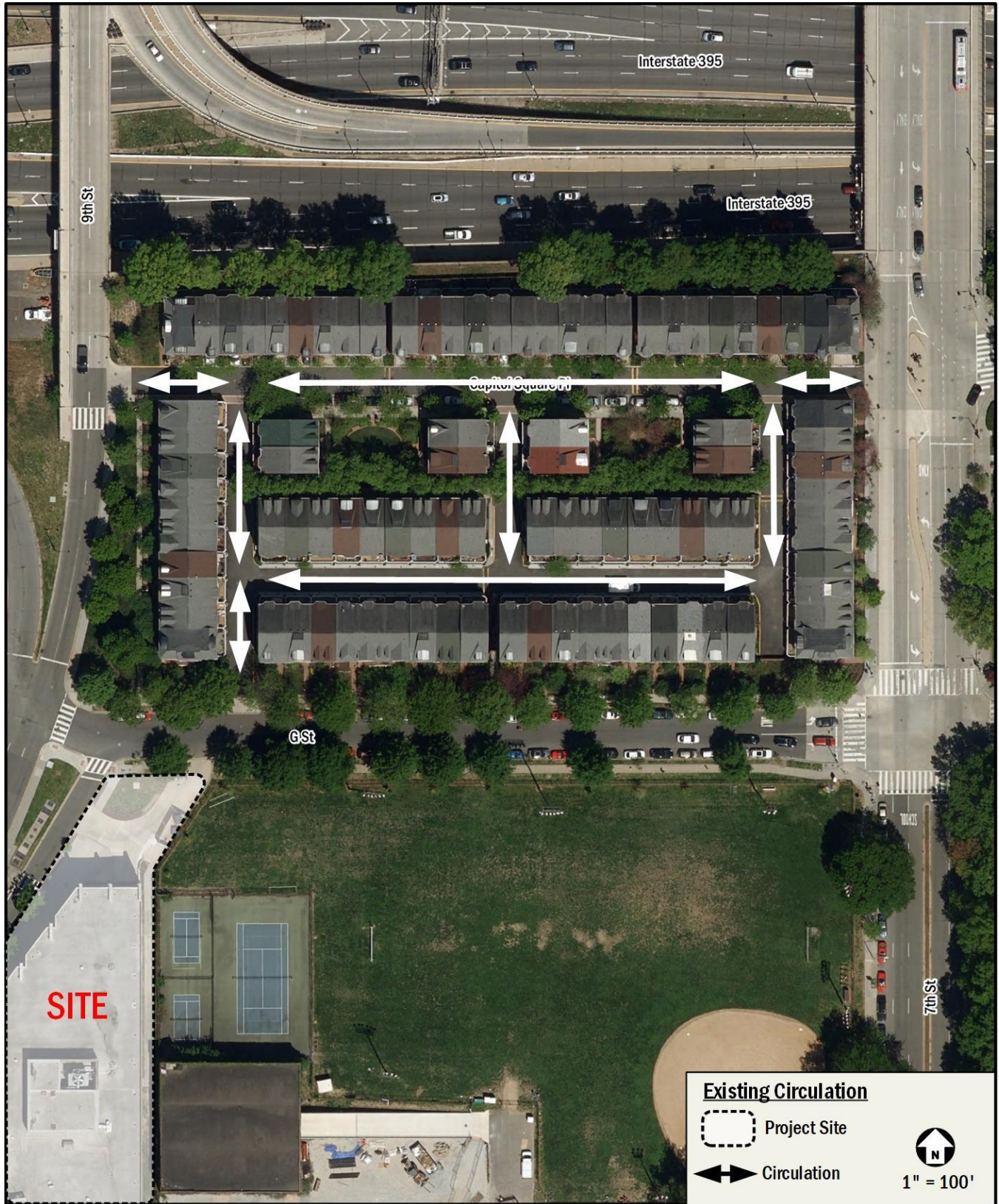


Figure 3: Existing Circulation



Figure 4: Option 3: One-way Conversion (Capitol Square Place EB)



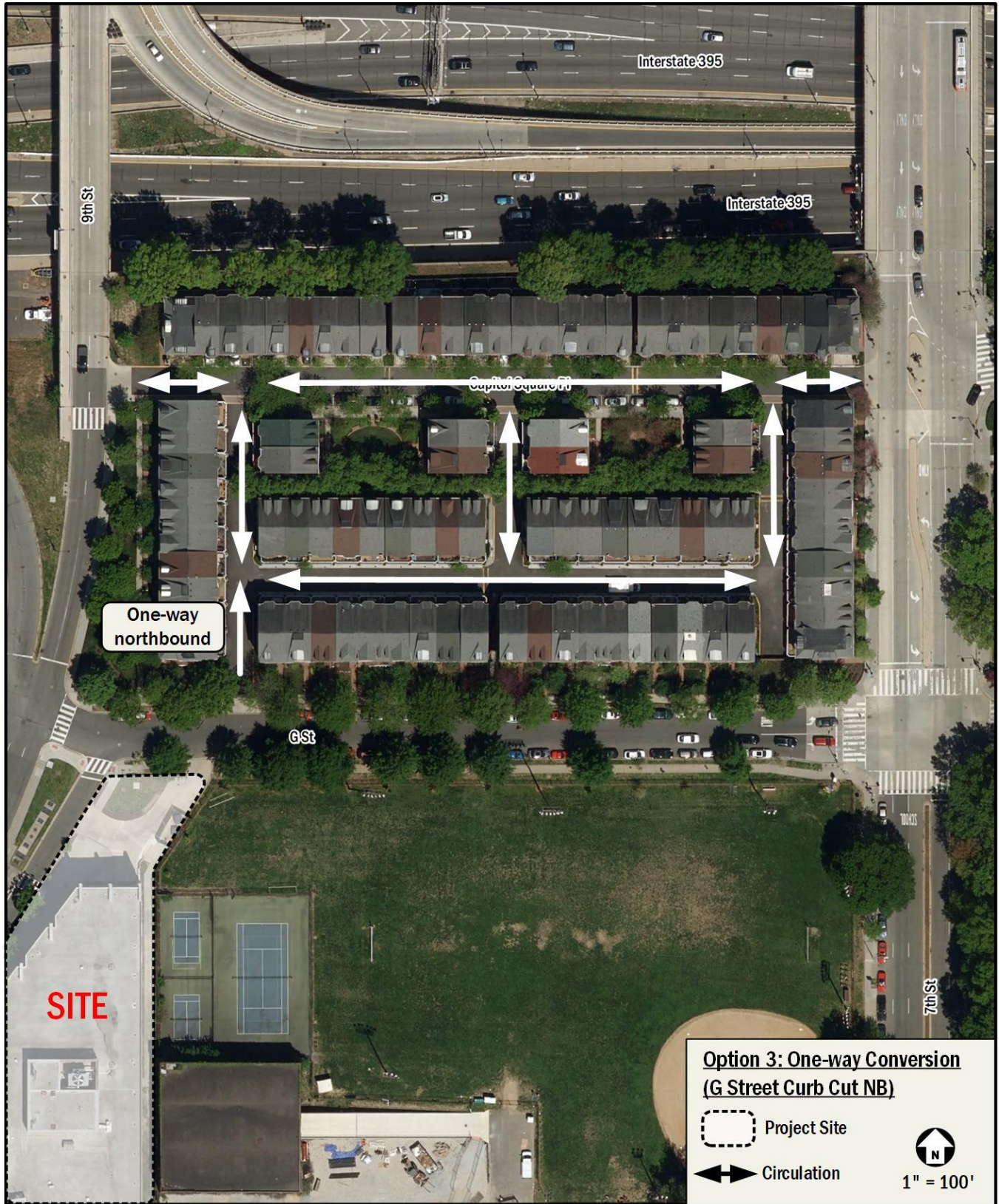


Figure 5: Option 3: One-way Conversion (G Street Curb Cut NB)



Figure 6: Option 4: 7<sup>th</sup> Street SW Curb Cut Closure Reroutes



Figure 7: Option 4: G Street SW Curb Cut Closure Reroutes

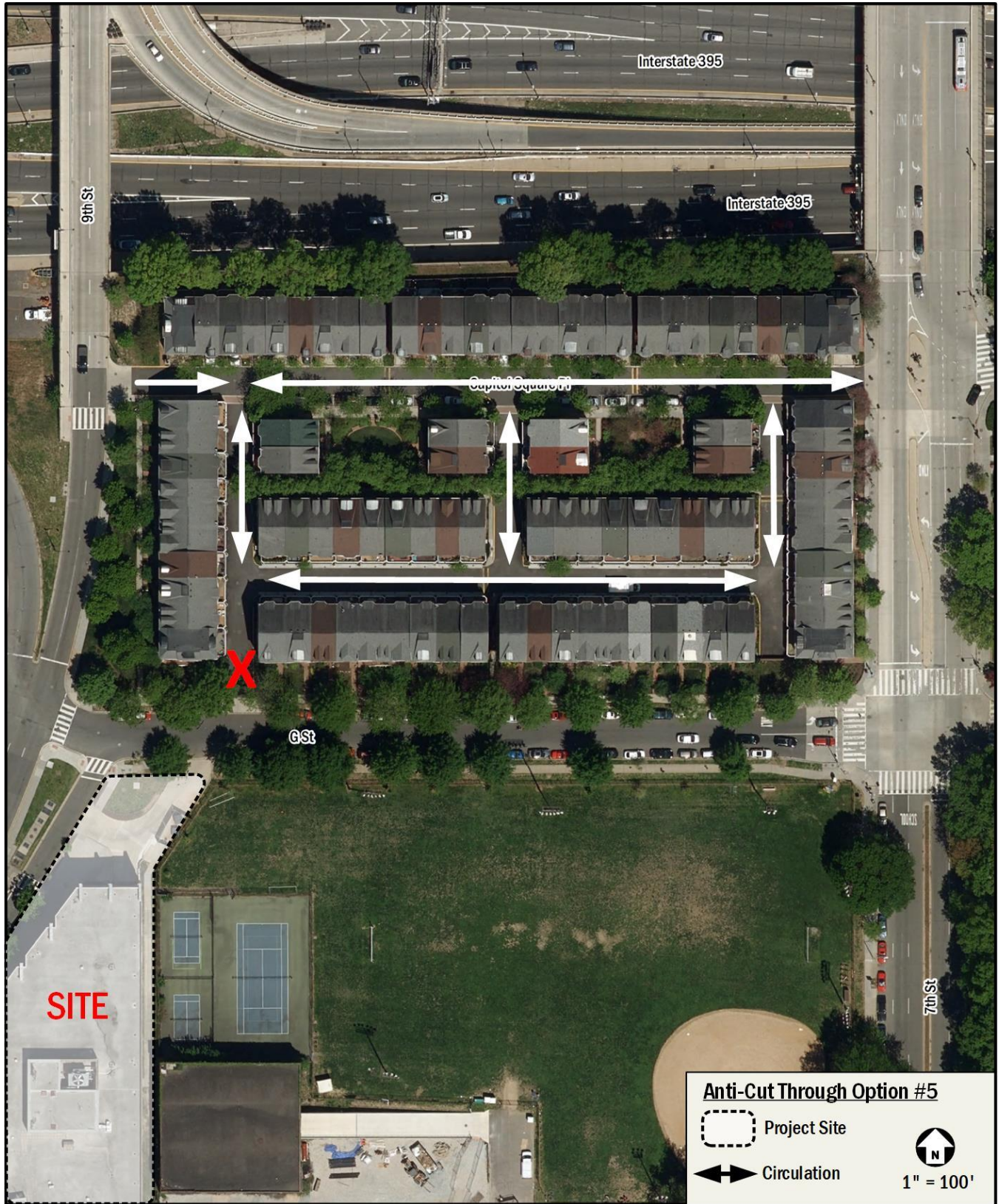


Figure 8: Option 5: G Street SW Curb Cut Closure and 9<sup>th</sup> Street Curb Cut One-way Conversion