

# BROADVIEW AVENUE SAFETY IMPROVEMENTS PROJECT

April 26, 2024



## Daytime Work Request Proposal

General Excavation, Inc.  
9757 Rider Road  
Warrenton, VA 20187

## **Summary**

In this proposal, General Excavation will summarize both the general and project specific advantages of daytime work on the Broadview Avenue Safety Improvements Project. Next, the intended work items that we would like to be performed using daytime traffic control operations will be listed. We will also address several of the crucial questions that we anticipate from businesses, pedestrians, and the travelling public. Finally, additional traffic control solutions are proposed that we believe would not only alleviate traffic congestion, but also shorten the construction schedule.

## **General Advantages to Daytime Construction**

### **1. Safety of Workers and the Travelling Public:**

- Daylight provides better visibility for construction workers to navigate the worksite, operate heavy machinery, and perform tasks safely. This visibility reduces the likelihood of accidents and injuries caused by obscured hazards.
- With clear visibility, workers can more easily spot potential dangers such as uneven surfaces, debris, or approaching vehicles, allowing them to take preventive measures promptly.
- Adequate lighting during the day enhances the effectiveness of safety protocols and signage, further mitigating risks to construction personnel and the travelling public.

### **2. Increased Efficiency:**

- Natural daylight enables workers to perform tasks more efficiently and accurately, resulting in faster project completion times.
- Tasks requiring detailed work can be completed with greater precision during the day.
- Access to Resources - Daytime construction provides improved access to necessary resources such as materials suppliers, equipment rental companies, and support services, which may have restricted availability or limited operating hours at night.

### **3. Reduced Disruption to Residents:**

- Noise levels associated with construction activities during the day may be more tolerable to nearby residents who expect daytime urban noise, compared to disruptive nighttime noise such as back-up alarms, dump truck tail tailgates, excavator rock-breaker attachments, etc.
- Daytime working hours decrease the likelihood of reoccurring complaints from residents regarding equipment noise and artificial lighting.

### **4. Minimization of Environmental Impact:**

- Daytime roadwork facilitates better monitoring and management of environmental risks. Workers can promptly respond to spills, leaks, or other environmental hazards, preventing potential contamination of soil and waterways.
- Better visibility during the day enhances the implementation of environmental best practices, such as dust control measures and proper waste management.

### **5. Improved Quality Control:**

- Daylight allows for thorough inspection and assessment of construction work, materials, and safety measures by supervisors and quality control personnel.
- Inspectors can identify and address issues such as defects and deviations from specifications, minimizing the likelihood of costly rework or delays.
- Enhanced quality control during daylight hours ensures that construction projects meet regulatory requirements and industry standards, enhancing the durability, safety, and longevity of infrastructure.
- Winter temperatures at night increase the occurrence of unfavorable conditions for pouring concrete and placing asphalt and may result in lost productivity if work must be postponed due to temperatures below allowable specifications.

The points listed above represent the major advantages of daytime construction. In the next section we will expand upon these benefits as they apply to the Broadview Avenue Safety Improvements Project.

## **Project Specific Advantages to Daytime Construction**

### **1. Safety of Pedestrians, Motorists and Project Team**

Pedestrian safety is a primary concern when approaching the safety of construction sites for all projects. GEI's specific plan for sidewalk detours is highlighted later in this proposal, but the general approach will be to divert pedestrians around active construction by utilizing temporary crosswalks. It is safe to assume that most sidewalk traffic will occur during the daytime, and that construction will affect the daily routines of pedestrians who frequent the Broadview Avenue corridor. Daytime work will allow members of the project team to be available to assist the public in diverting active construction, guiding pedestrians to the nearest crosswalk and answering any questions about current or future detours.

It was mentioned in the previous section that the likelihood of accidents is reduced relative to the visibility of construction signage. Given the number of businesses on Broadview Avenue, we anticipate many vehicles turning off the roadway during work shifts. Turning from the road not only reduces visibility for the driver when operating in the vicinity of a work zone, but also increases the likelihood of another vehicle colliding with the turning vehicle. We believe working at night will result in reduced visibility on Broadview Avenue and an increased risk of accidents involving construction crews, motorists, and pedestrians.

### **2. Productivity**

As stated previously, GEI understands the importance of returning Broadview Avenue to an unimpeded travel way as quickly and efficiently as possible. Below we will discuss the primary constraints of nightwork activities on productivity and the time savings we expect should daytime work be approved.

Much of the work on this project will be focused on concrete flatwork (sidewalk, curb, entrances, etc.). One of the central considerations when completing concrete flatwork items is the availability of concrete from local suppliers. Concrete manufacturers must make special considerations for night work. GEI's subcontractor has indicated concrete will not be available until approximately 4:00 AM most nights due to restrictions on working hours for commercial drivers. Typically, flatwork crews can pour two truckloads of concrete during a daytime work shift. If trucks are not available until late into each shift, this will be reduced to one truck per shift. The corresponding reduction in productivity will effectively cut the progress of this portion of the work in half. In addition, reduced visibility during night shifts, paired with the expediency in which work must be completed to re-open travel lanes could potentially increase the amount of work that does not meet specifications and must be replaced.

Material availability issues are not constrained to concrete flatwork items. In most cases aggregate materials, asphalt, miscellaneous concrete, erosion control materials and other necessary work items are not available after normal business hours. In some instances, these items can be mitigated through proper planning. However, given the uncertain nature of construction materials must sometimes be ordered on an as-needed basis. Nighttime work leaves little room for flexibility in unexpected situations and enhances the possibility of construction delays. For example, should one of our crews strike a waterline that is not marked by locators – materials would not be readily available to fix the waterline quickly and efficiently to restore service to affected businesses and residents.

Material availability, working hours, visibility, and traffic control set up/removal are all primary factors to consider in the productivity of construction crews for a project of this scale. Combining these variables, it is the opinion of GEI that daytime work would result in a 10 to 20% increase in productivity over the 22-month construction schedule, significantly reducing unavoidable disruptions to businesses and residents on Broadview Avenue.

### 3. **Reduced Disruptions to Residents**

Although Broadview Avenue primarily consists of commercial properties, the adjacent residential properties within sight of the project limits will be affected by construction. Some nighttime construction is unavoidable, however disruptions to these residents could be drastically reduced with the allowance of work during the day.

Complaints from residents in nightwork scenarios are understandable and sometimes unavoidable. However, the number of complaints would be significantly reduced with the implementation of daytime working hours where applicable. Our goal is and always will be to complete projects on time with as little disruption to the public as possible. Daytime work would benefit General Excavation and the Town by assisting us to achieve both goals simultaneously.

### **Work Items to be Performed Using Daytime Lane Closures**

It is the opinion of General Excavation that the following work activities could be performed using daytime operations without significantly affecting normal use on Broadview Avenue:

#### 1. **Concrete Flatwork**

Existing concrete islands at the intersection of Broadview Ave & Waterloo/Frost Ave. (where feasible), curb, sidewalk, medians, and entrances throughout the project can be safely removed & replaced using daytime lane closures.

#### 2. **Erosion Controls**

In general, erosion controls laid out in the approved plan set are outside of the travel way and can be installed without affecting traffic flow or pedestrians.

#### 3. **Storm Structures & Pipe Installation**

Many of the storm drainage improvements for this project involve rehabilitation to the existing system, and very few pipe crossings are in trafficked areas. Most of this work can be completed under daytime shoulder or lane closures.

#### 4. **Sign Installation**

Sign installation can generally be completed using minimal traffic control, given the smaller equipment used for this work item.

#### 5. **Traffic Signal Improvements**

A portion of the signal improvements can be performed during the day under minimal traffic control, including bored conduit and signal pole foundation work.

#### 6. **Waterline Installation**

Much of the waterline follows the existing curb along Broadview Avenue and could be completed using single daytime lane closures. Portions of the waterline that extend further into the roadway, along with crossings on Broadview Avenue will need to be completed at night during times of lower traffic volume.

### **Anticipated Questions from Businesses and the Public**

Below is the proposed plan of action General Excavation is intending to follow to alleviate the concerns of businesses and the public regarding access during construction. These scenarios will not be achievable in all areas – some instances will require coordination with business owners regardless of whether the work is performed during the day or at night.

**Access to Businesses** – Fortunately, many of the businesses along Broadview Avenue are accessible by two or more entrances. In locations with two or more entrances our intent is to give as much advance notice as is feasible to business owners about the timing/extent of work and to limit our work to one entrance at a time. In cases where there is only one entrance, or if two entrances are needed to avoid disruptions to a business's typical operating procedures, we will close only half of the entrance at a time, allowing enough space for vehicular traffic and deliveries. This will be the approach whether work is performed at night or during the day.

It is the opinion of General Excavation that completing entrances during the day would provide the added advantage of allowing for business owners to voice any concerns directly to our Superintendent as opposed to having no personnel on site during peak business hours.

**Pedestrian Traffic** – General Excavation intends to follow the pedestrian detour plan set forth in the project plan sheets. As stated with business access, we again feel that potential issues could be avoided if personnel are available during the day to assist pedestrians with directions to crossing locations, or concerns from citizens about business access.

The pedestrian detour plan divides the project into four segments:

- (1) Waterloo Street to Church Street
- (2) Church Street to Stuyvesant Street
- (3) Stuyvesant Street to Chappell Street
- (4) Chappell Street to End of Project (North of Roebling Street)

Access to pedestrian crosswalks will be maintained by utilizing the Virginia Work Area Protection Manual's Typical Traffic Control Operation for temporary pedestrian crosswalks.

### **Precedence for Daytime Lane Closures**

General Excavation would also like to mention that there is precedence for successful daytime lane closures. At the time of this proposal, there are utility relocation projects being completed on Shirley Avenue in the vicinity of the Broadview Avenue and Waterloo Avenue intersection. We have observed no impact to traffic flow during this operation.

Our project team has also observed concrete median work on Broadview Avenue being completed at midday by Warrenton Public Works crews on several occasions. These well executed lane & shoulder closures have had no major impact on traffic and given the opportunity, General Excavation would like to use the same traffic control operations to safely achieve our goal of finishing the project ahead of schedule.

### **Proposed Traffic Solutions**

Our intent in this proposal is to allow us to implement daily lane closures on a trial basis. Should this request be approved, we would like to periodically revisit the subject and potentially institute longer term lane closures.

Long-term lane closures would be limited to areas with two existing through lanes and lefthand turn lanes in both directions (from the Broadview/Frost Ave. intersection to 500' south of Roebling Street). This would allow General Excavation to avoid daily traffic control setup/removal and save a considerable amount of time, accelerating the project schedule. The options we have considered are below:

1. Maintain Two Lanes North & South- Close One Lefthand Turn Lane
2. Maintain One Lane North/South-Keep Lefthand Turn Lane Open
3. Close Center Turn Lanes for Median Reconstruction – Maintain Safe Areas for Left Turning Traffic
4. Temporary Segmental Lane Closures

Should the Council consider long-term lane closures following a trial period of daily closures, General Excavation will provide a more thorough work plan, including maintenance of traffic drawings and a schedule of anticipated closures.

### **Conclusion**

General Excavation thanks the members of Warrenton's Town Council for taking the time to read and consider this proposal. We would like to state again that we believe daytime work hours are in the best interest of all parties involved in the project and are happy to discuss further details should the Council find it necessary. Please do not hesitate to contact us should you have any questions, comments, or concerns.