

# Summary of Discussions

Project: ODOT | K21178 US26 (Powell Blvd): SE 99<sup>th</sup> Ave – East City Limits

Subject: Summary of Discussions from 1:1 Sessions with Contractors

1:1 constructability focused sessions were conducted January 4<sup>th</sup>, 5<sup>th</sup>, and 27<sup>th</sup> 2022 with 3 potential prime contractors and select members of the design team. The following is a summary of the discussions from these sessions.

**Disclaimer:** The Summary of Discussions is a preliminary Project Document subject to the disclaimer included in the industry outreach flyer titled “Phase 2 Constructability Review and One-On-One Meetings Phase 2 project area includes SE 99<sup>th</sup> – SE 122<sup>nd</sup> Ave and SE 136<sup>th</sup> – Portland City Limits” See appendix A for full disclaimer language.

**Notice to Contractors:** If the project delivery method is changed to best value, members of the ODOT/Consultant design team who participated in the 1:1 constructability review sessions would not be an Evaluator responsible for scoping technical proposals for this project.

## Contracting Strategy

- 1. ODOT question to Contractors:** The current approach is to let the project as a single construction contract with approximately \$35 to \$45 million in biddable items. The design team is analyzing the advantages and disadvantages of letting the project in two or more separate construction contracts that may run concurrently. From your perspective, what are the biggest risks to letting the project in multiple contracts? How would you propose to mitigate those risks?

### Summary of Contractor Responses:

To respond to this question, Contractors asked how the project would be split into multiple construction contracts. ODOT responded that the most likely option would be constructing segment 1 in one contract and segment 3&4 in another contract. ODOT stated that landscaping and tree removal is already planned to be let as separate contracts.

If the project was split into multiple contracts, contractors expressed a preference for segment 3&4 to be constructed under a single contract, and not two or more.

Contractors stated that the project may receive lower pricing through increased competition and be completed sooner by splitting into multiple contracts running concurrently. However, these benefits may be negated by the following:

- Increased competition may not actually materialize given that the two projects would still likely be greater than \$15 million and that industry capacity is strained with an existing high volume of work;
- Splitting the project into multiple contracts would significantly increase the level of coordination (i.e. utility relocations, traffic control, construction activities) between contractors. This coordination would result in increased costs;
- Multiple contracts assumes that more contractor resources will be applied to the overall project. However, this may not be true given the high volume of work already in progress in the Portland metro area;
- Agency resources to administer multiple contracts would be significantly higher;
- Multiple contracts may result in schedule growth, as project sequencing and productivity would suffer; and,
- Staging sites will be required to complete the project given restrictions. Contractors will need to stockpile pipes, signal materials, and aggregate to reload during night work. There are not many staging sites available within the project footprint and if more contractors are working in the same area, then staging area will have to be located further from the project, slowing productivity and increasing cost.

Overall Contractor response was mixed; some insisted that there would be better pricing and schedule compression with two contracts, segment 1 and segment 3&4. The contractors with this perspective stated that while coordination will increase, the two projects are separated by a completed segment 2 so coordination will be manageable. Other contractors insisted that the increase in coordination would outweigh the benefits of better pricing and schedule compression, if they were even realized at all. It was stated that the same subcontractors would likely work on both contracts, increasing the risk of schedule delay due to limited resources, a compressed schedule, and that subcontractors will have to scale up to meet demands. This may not be possible in the industry environment today where labor, equipment, and material shortages are rampant in the Portland metro area.

All contractors consistently recommended constructing and completing the waterline relocation work under a separate contract ahead of the main contracts to modernize Powell Blvd.

A Contractor stated that DBE goals would likely be easier to meet with multiple contracts, as the DBE commitment would be lower per contract.

If the project is split into multiple contracts, Contractors advised that the two projects don't meet in the middle of an intersection. Have the projects meet east or west a intersection.

Contractors expressed concern with project timing. The project is currently scheduled to bid in December 2022 and most contractors are very busy already because of the high volume of work bid in 2021.

The following are contractor questions asked during the 1:1 session, and ODOT's official response, relating to this topic:

1. **Contractor question:** If we divided contracts in multiple contracts how would you divide them, by segments?

**ODOT Response:** If bid in multiple contracts, the project would likely be bid by segment. The groups are yet to be determined.

2. **Contractor question:** Can you let the waterline separately?

**ODOT Response:** ODOT decided early on during the design phase to include the waterline in the main ODOT contract for several reasons. To change that now would result in significant delay to the project.

3. **Contractor question:** Will there be future phases of the Outer Powell project?

**ODOT Response:** Construction of segment 1, 3, & 4 will complete the Outer Powell corridor projects in this section. No future phases are planned. The Outer Powell corridor from I-205 to SE 174<sup>th</sup> Avenue will jurisdictionally transfer to the City of Portland at the completion of construction.

2. **ODOT question to Contractors:** What do you see as the 3-4 biggest risks to letting the project as a single contract? How would you propose to mitigate those risks?

### Summary of Contractor Responses:

The primary risk identified was market conditions and contractor capacity. However, this risk applies to either scenario: one large contract or two or more contracts to deliver the modernization work. Several Contractors expressed that they may not be able to bid the project because they are resource constrained. Contractors expressed the following challenges that may prevent them from bidding project:

- Existing Contractor work load;
- Very large project that will require substantial resources and coordination of many subcontractors;

- Labor shortages;
- Material shortages and volatile pricing;
- High DBE goal and high DBE demand in the project area from other projects; and,
- Highly constrained work environment that increases contractor production risk.

One Contractor stated that “to some extent, there is more work out than there is contractors to do it”.

A Contractor stated a preference for one large contract to complete the modernization work with a separate contract to complete waterline relocation work ahead of the main contract. A preference for best value contracting approach was also stated.

The primary benefits of one contract were identified as less overall coordination, increased contractor control of the work and productivity, better traffic control coordination, and decreased owner contract administration cost.

A Contractor stated that the cost estimate range of \$35-\$45 million in biddable items appears low. This Contractor offered to provide budgetary numbers if ODOT was willing to provide an updated quantity estimate.

On 2/3/2022, ODOT provided a preliminary updated schedule of items and quantity estimate to the requesting Contractor and informed them that this updated schedule of items will be shared publically (See appendix B for 2/3/2022 preliminary schedule of items and quantities for one main contract to construct the Outer Powell modernization and waterline relocation) and that if the Contractor elected to share an Opinion of Cost that this also would be publically shared in the Summary of Discussions. On 2/9/2022, ODOT received budgetary unit cost estimates from the Contractor for a Contractor Opinion of Cost as of 2/9/2022. The Contractor Opinion of Cost was approximately \$46 to \$50 million.

The Contractor who developed the Contractor Opinion of Cost stated that the budgetary unit costs provided are intended to reflect the current market at this moment. However, the Contractor noted that unit costs for lump sum items in the schedule of values are approximate and that the cost for electrical items are highly volatile in the current market. The Contractor stated that the Opinion of Cost is most likely “a little light” in these areas and that the lump sum items may be bid considerably higher.

In addition, the Contractor noted that the Opinion of Cost may have missing cost related to TERO requirements as those are currently unknown.

ODOT intends to use the Contractor Opinion of Cost as a reference for a market analysis and the development of a probabilistic risk-based estimate that was planned prior to conducting the Contractor Constructability Review.

The following are contractor questions asked during the 1:1 session, and ODOT’s official response, relating to this topic:

1. **Contractor question:** How many signals are going in?

**ODOT Response:** 6 signals and 10 Rectangular Rapid Flashing Beacon systems (RRFB).

2. **Contractor question:** Will this project be delivered using low bid?

**ODOT Response:** Yes, ODOT is currently planning to deliver this project using the design-bid-build method.

3. **Contractor question:** What happens if the project is more like \$60 million instead of \$35 to \$45 million?

**ODOT Response:** We are not releasing this information at this time.

3. **ODOT question to Contractors:** The project may have a DBE goal of around 10% or greater. What should the design team consider to support the Contractor in meeting the DBE goal? What challenges would you foresee in meeting a DBE goal that is 10% or greater?

### Summary of Contractor Responses:

Contractors identified trucking, flagging, erosion control, signs, and landscaping as primary DBE scopes based on their experience. Contractors recommended a low DBE goal for this project for the following reasons:

- This is a large project in terms of contract value. A large DBE goal would result in large DBE scopes, which will put high financial risk on DBE firms which are, as required by the program, small businesses;
- Currently, the DBE sub-industry in the Portland area is experiencing high demand that will be escalated by large projects with high DBE goals that have just bid or are planned to bid in the near future. DBE firms may not be available to meet a DBE goal of 10%; and,
- Requiring a high DBE goal will increase the level of prime contractor coordination and risk. This may limit the projects “attractiveness” and deter bidders from bidding.

Contractors recommended that the project should conduct DBE outreach and let local firms know that the project is coming out to bid and what opportunities will be available to them. With this information, DBE’s will be able to plan in advance to compete for the project.

Contractors advised that the bid items that are typically DBE (trucking, traffic control, erosion control, signs and landscaping) should not be lump sum items. Measurable bid items clarify

scope and payment of work. It was inferred that ODOT should consider a DBE trucking bid item to improve DBE program administration.

Contractors stated that, from past experience, quantities are frequently inaccurate in the bid schedule and if they under-run, then it may be very challenging to meet DBE goals as committed. Contractors advised that quantities be “triple-checked” before bidding the project.

In the kick-off session ODOT stated that landscaping would be let as a separate contract. A contractor noted that this a disadvantage to meeting a DBE goal on the main contract as landscaping is commonly performed by DBE firms.

Contractors stated how they have relationships with DBE firms, but that it is not reasonable to expect smaller earthwork or electrical DBE firms to participate in larger projects with large subcontractor scope that will put them at financial risk.

The following are contractor questions asked during the 1:1 session, and ODOT’s official response, relating to this topic:

1. **Contractor question:** Will this project have a TERO requirement?

**ODOT Response:** We currently do not have a determination. However, we expect it to be similar to phase 1 of the project.

## Utility Relocation & Underground Work

1. **ODOT question to Contractors:** Currently, the design team is including \$6 to \$9 million in waterline relocation work within the main project construction contract. This will require extensive coordination with the utility owner, portions of the work will require a licensed plumber, and will be a critical path activity that is anticipated to be concurrent with other project work. There is also underground gas facilities that will need to be relocated under similar circumstances. From your perspective, what specific strategies should the design team consider to improve underground utility relocation efficiency and coordination?

### Summary of Contractor Responses:

All Contractors expressed that Portland Water Bureau (PWB) specifications are unique in the industry and that they are challenging. To provide clarity to the project specifications, Contractors recommended that the project adopt PWB specifications, specifically the backside (behind the water meter) plumbing specifications.

### Water main:

Contractors consistently expressed that the limited lane closure hours will be a significant impediment to the progression of the project work. Factoring in the time it takes to set up a lane closures, excavate and place bedding, lay pipe, backfill and compact, pave back at the end of the shift, and then remove the lane closures, Contractors relayed that the amount of productive hours in a limited lane closure window will be very low and, as a result, work within the limited lane closure allowances will be expensive and time consuming.

Contractors recommended that the traffic analysis be revisited with a goal of extending allowable lane closure times and/or detouring traffic to other facilities. Contractor's stated that if they are allowed longer work times and/or to detour traffic then there will be less overall impacts to the traveling public because the work will be completed much sooner. Contractors recommended directional closures with detours to shorten project work duration, arguing that this would be less impact overall, and reduce the project cost.

Contractors recommended avoiding night work as much as possible.

Contractors will want to minimize the amount of time they are working on the waterline and testing.

Additional risk to waterline relocation work was identified:

- Acquiring hot mixed asphalt pavement during night work to construct trench resurfacing;
- Encountering differing site conditions at night (a common risk in underground work in urban environments); and,
- The planned connections from old waterline to new not aligning.

To mitigate risk related to differing site conditions, Contractors recommended adding a bid item for every commercially available bend for every new waterline pipe diameter. This allows for field changes to realign the waterline around unanticipated obstructions. Contractors expressed that pot holing will not identify all subsurface obstructions and that a small quantity of bends in the bid schedule will prevent contractor change orders and delays to the work.

Additionally, Contractors advised that potholing be added as a bid item paid on the per Each basis.

Contractors request that ODOT provide design potholing information in the bidding or bid reference documents.

To mitigate risk at mainline connections, Contractors recommended that ODOT verify the elevation, diameter, and condition of planned tie-in locations.

### Services/laterals:

Contactors recommended that ODOT consider trenchless installation for water line laterals. This can be done with relatively small pneumatic machines. This may add cost to the project, but would simplify traffic control and reduce trench resurfacing. The biggest challenges to installing the laterals using trenchless methods is subsurface boulders and conflicting utilities. Contractor advised that utility as-builts should be provided.

If trenching is required to install laterals, Contractors advised that ODOT add a pay item for trench resurfacing at lateral locations as the existing specification does not provide separate payment for this item.

A Contractor noted that there is a fair amount of commercial businesses in the project area and that fire line work associated with that can have a unique set of rules.

Contractor recommended that a robust analysis be performed by the design team on how the waterline work will be staged with roadway work.

Again, Contractors stated that completing the waterline work through a separate contract before the main contract would be a “huge” benefit the project. A contractor stated that constructing the waterline concurrent with drainage and road work, will require the contractor to relocate around waterline work and disrupt the flow of drainage and road work, impeding productivity.

The following are contractor questions asked during the 1:1 session, and ODOT’s official response, relating to this topic:

1. **Contractor question:** Waterline work will be at night correct?

**ODOT Response:** ODOT is anticipating that most of the water line relocation work will be done at night. There will be an opportunity for daytime water line work on side streets.

2. **Contractor question:** What size is the water main?

**ODOT Response:** The water main running along Powell Blvd is 12” in diameter. Side streets have smaller diameter lines.

3. **Contractor question:** How many water services?

**ODOT Response:** There are just under 200 water meter assemblies in the current estimate.

4. **Contractor question:** What are the reaches based on?

**ODOT Response:** The reaches are based on maximum testing lengths of 1,200 ft.



5. **Contractor question:** Can the waterline be put in a closed lane and with traffic routed around?

**ODOT Response:** Where the new water has to be located, in most cases, the waterline cannot be constructed without lane closures.

6. **Contractor question:** Was the waterline relocated at night in the first phase?

**ODOT Response:** Yes, the majority of the waterline relocation work occurred at night on phase 1.

7. **Contractor question:** Did ODOT have issues with residents [related to the waterline relocation and water meter connections]?

**ODOT Response:** ODOT is not aware of any conflicts with local residents and waterline relocation work during phase 1 construction.

8. **Contractor question:** What other work had to occur at night during phase 1?

**ODOT Response:** A portion of the signal work and some drywells were also constructed at night during phase 1. The overlay and the top lift of the widening was paved at night on Powell Blvd. There were some driveways restricted to night work only.

9. **Contractor question:** does ODOT see any issues with keeping the water main open while constructing the new main?

**ODOT Response:** ODOT anticipates constructed the new line and turning the system over to the new system. ODOT does not plan to build temporary water mains.

10. **Contractor question:** Are most of the services residential?

**ODOT Response:** Yes, most are residential (1-2" typical). There are a few larger commercial and large residential service that will require up to an 8" service line.

11. **Contractor question:** Is PWB doing work on the water line?

**ODOT Response:** Yes, PWB will be performing tie-in's on the main line and installing the water meters,

12. **Contractor question:** What is happening to the existing mainline?

**ODOT Response:** The existing mainline will either be abandoned in place or removed to facilitate phase 2 construction.

2. **ODOT question to Contractors:** In addition to underground utilities, there is likely to be project work that will be constructed concurrently with overhead utility relocation work. What do you see as the 3-4 biggest risks to constructing the project concurrently with utility relocations and how would you mitigate those risks?

### **Summary of Contractor Responses:**

Contractors expressed that utility relocations will be the biggest risk to project schedule and cost when at the start of the project.

Contractors recommended that ODOT coordinate the relocation of as many utilities as possible before bidding the project. Contractors recommended ODOT prioritize relocating underground utilities over aerial utilities.

Contractors stated that if they will be responsible for waterline relocation, that it would be a benefit to have the overhead utilities realigned prior to the waterline. It was recommended that ODOT consider a bid item for standby time for the purposes of delaying notice to proceed to allow for the completion of utility relocation. It was noted that public entities, such as Willamette Water Supply, deploy this approach. The intent is to reduce delay claims that are due to utility relocation.

Additionally, Contractors recommended that ODOT develop a mechanism for holding utility owners accountable to participate in project coordination and meet obligations in a timely manner. Contractors expressed how, in the past, they have encountered delay by utility owners not completing work on-time even though they were given proper and reasonable notice.

The following are contractor questions asked during the 1:1 session, and ODOT's official response, relating to this topic:

1. **Contractor question:** Is it possible to bid this project after all of the utility relocation is completed?

**ODOT Response:** Bidding the project after all utilities are relocated, including the waterline, would delay the project and is not in consideration at this time.

2. **Contractor question:** Do you anticipate the utility relocations being a linear activity? We would not expect this.

**ODOT Response:** The PGE relocation is planned as 14 mini-projects. Although the plan is generally to proceed linearly from the east end to the west end, there is likely to be times when they break sequence either because of when property is available or because of operational constraints associated with the facility. The relocation plans have not been received, so it is not yet known if utility work outside the project area will be necessary. After PGE relocation, communications and other utilities on poles typically follow.

Gas utility adjustment and relocation, as needed to resolve conflicts, is not anticipated to be a linear activity.

3. **Contractor question:** Will the existing gas line be relocated as well?

**ODOT Response:** Yes, the gas line will be relocated and adjusted as needed to resolve conflicts as identified by the design team.

4. **Contractor question:** Who is the gas utility owner?

**ODOT Response:** Northwest Natural.

5. **Contractor question:** Are any of the overhead utilities planned to go underground?

**ODOT Response:** We anticipate that most overhead utilities will be relocated on the relocated power poles.

6. **ODOT question to Contractors:** The project is constructing storm drain facilities (i.e. drywells and sedimentation manholes) that are deep and will need to be installed in relatively close proximity to the traveling public. Please describe the challenges you would expect to encounter in constructing these deep facilities. What should the design team consider to reduce risk relative to the construction of these facilities? Are there innovative practices or products that the design team should be considering to improve constructability of these facilities?

### **Summary of Contractor Responses:**

#### Subsurface conditions:

Contractors highlighted subsurface conditions as high risk to drywell installation. Deep excavations in cobbles have a tendency to cave. With 30' deep drywells being installed near traffic, there is a risk that the excavation will cave and close the roadway and/or present safety issues. Groundwater may also be a concern. ODOT responded that groundwater was not an issue on phase 1. One contractor detailed experience around 89<sup>th</sup> Street and Powell Blvd where they encountered extensive caving and groundwater. Contractor stated that caving is difficult to mitigate and that trench shields only provide so much resistance.

A contractor recommended that the storm system be designed as far away from adjacent utilities as possible. ODOT responded that the design strategy has been to locate drywell's on side streets where viable.

Contractors advised ODOT to add a boulder excavation bid item. Prior experience in the area indicates that boulder excavation will occur. Carrying this bid item will reduce the risk of disputes and claims.

#### Drywell Construction:

Contractors recommended keeping the excavation limits of the drywell as tight to the drywell structure as possible.

Contractors asked if the backfill of the drywell will have to be placed with a tremie. It was stated that they have seen this on past projects and Contractors indicated that this requirement was in place to protect native soil from damage during backfill operations. Contractors recommended eliminating this requirement.

Contractors recommended specifying 1.5" drain rock, stating that it is commercially available and other projects specified larger drain rock that was specialty and difficult to acquire. Contractors recommended that backfill requirements and procedure be made very clear in the bidding documents.

Contractors advised that ODOT determine the flow rate of local hydrants and use that information to set drywell capacity testing requirements. This may require a lower flow rate for a longer amount of time.

The following are contractor questions asked during the 1:1 session, and ODOT's official response, relating to this topic:

1. **Contractor question:** Will the project have provisions for detours or road closures?

**ODOT Response:** As of now, it is not allowed to close Powell Blvd. Some side streets will be allowed to be closed.

2. **Contractor question:** Do you anticipate subsurface boulders?

**ODOT Response:** There was a very large boulder in an excavation for a drywell on the north side near SE 130<sup>th</sup>. Large boulders were not common in the first project. Cobbles were common and made the vacuum excavation for potholing more labor intensive. The expectation is that this project will generally have similar subsurface conditions.

3. **Contractor question:** Is there any sanitary sewer work on this project?

**ODOT Response:** Only adjustment of manholes and frames. The sanitary sewer laterals are deep and we are not anticipating relocating them.

## Construction Sequencing/Schedule

1. **ODOT question to Contractors:** Preliminary typical sections, Traffic Control Plan roll map, Traffic Management Plan, and a rough construction schedule was provided as a part of this constructability review. In reviewing these preliminary project documents, what do you see as the 3-4 biggest risks to constructing the project within the anticipated construction timeframe? How would you propose to mitigate these risks?

### Summary of Contractor Responses:

Contractors identified the following schedule risks:

- Labor shortage of skilled workers for Prime, Subcontractors, and DBE Subcontractors;
- The following materials are difficult to acquire at this time:

- Base aggregate in the Portland area.
- Ductile iron pipe
- PVC pipe, and other resin based products
- HDPE
- Limited staging areas within or near the project may restrict productivity and delay the project; and,
- Segmenting the project work. Limiting staged work will reduce the project schedule.

A Contractor recommended that ODOT carry an escalation clause for PVC, stating that this will mitigate force majeure claims.

Contractors noted theft and security as a risk in the project area. Phase 1 experienced around \$50 thousand in theft; which included contractor equipment and vehicles (some of which was recovered) and the removal of landscaping plants & plantings. A Contractor recommended that ODOT carry a relief pay item for theft and also requested that ODOT consider a security bid item.

- 2. ODOT question to Contractors:** Based on the preliminary project documents, would you propose alternative staging concepts or modifications to the current concept? If so, please outline why and how it would benefit the public.

### **Summary of Contractor Responses:**

Multiple contractors suggested temporary widening to maximize room to work and productivity. While the project work is straightforward, the constrained environment will be difficult to work in. As of now, the project is planning a work area of 15 feet in width. Contractors responded that a 15 feet work area would require a special approach.

#### Staging area:

Contractors inquired about available staging areas in the project footprint. ODOT response was that the staging area from phase 1 is no longer available due to new development, but that the contract will be demolishing two buildings whose lots could be used for staging. However, this area will be small. Contractor advised that ODOT determine if a building permit will be required to occupy the area of the demolished housing. According to Contractors, building permits for staging areas have been required in this area in the past.

Contractors noted that Tri-Met owns property in this area and advised ODOT to contact them on available staging area.

Mandatory disposal site:

Contractors recommended that ODOT determine if they can stage at the mandatory disposal site. It was explained that materials, such as base aggregate, will have to be staged and double handled night work, so staging area near the project is a benefit.

The following are contractor questions asked during the 1:1 session, and ODOT's official response, relating to this topic:

1. **Contractor question:** Is it allowed to dump all project spoils at the disposal site or is it for contaminated soils only?

**ODOT Response:** It will be acceptable to dispose excavated soils and aggregates at this disposal site. There will be a maximum material size restriction and asphalt material will not be allowed.

2. **Contractor question:** The quantity only estimate shows less contaminated soil than general excavation and the project will have spoils from pipe installation. Will the project need any fill?

**ODOT Response:** Excavation under the existing pavement and excavation deeper than 1.5 feet outside the pavement is not anticipated to be contaminated at the level requiring it to be disposed of at the mandatory disposal site. That said, the quantity of contaminated material in the schedule items shared during this constructability review is a placeholder value. The latest estimate does not assume that contaminated material will be separated out from clean excavation spoils and assumes all of the general excavation and pipe installation spoils, except for the ACP surfacing, will be disposed of at the mandatory disposal site.

3. **Contractor question:** Can ODOT expand on the mandatory disposal site?

**ODOT Response:** It is east of the project in Gresham, on the south side of US26 across from the disposal site from phase 1. It will be the required disposal site for all contaminated material.

- 3. ODOT question to Contractors:** A preliminary construction schedule was available for review prior to this session. Do you have any feedback on sequencing or activity duration? Do you see opportunities to reduce schedule duration?

**Summary of Contractor Responses:**

Contractors stated that the project schedule will be driven by night work, traffic control, and the working hours. More flexibility on lane closure hours would be a benefit.

Contractors advised that ODOT reduce the number of reaches and put together larger sections of project to reduce schedule.

Contractors recommended that ODOT allow detour and/or directional closures to provide more working room and longer working hours to increase productivity and reduce project schedule. It was stated that a 9 am to 3 pm shift for taking a lane will make for very slow progress. ODOT responded that it believes much of the widening and pedestrian & bicycle facility construction can be completed without lane closures. However, there is at least one constrained area of a few hundred feet where ODOT anticipates lane closures to widen Powell Blvd. The waterline relocation and some of the storm drainage work requires lane closures.

Additionally, Contractors reinforced that a mechanism to hold utilities accountable to participate in coordination and deliver on-time would greatly benefit the project.

The following are contractor questions asked during the 1:1 session, and ODOT's official response, relating to this topic:

1. **Contractor question:** Lane closures are limited to 9 am - 3pm during the day can these work hours be extended?

**ODOT Response:** ODOT will re-evaluate, but it is not likely.

2. **Contractor question:** Is doing the whole job at night feasible?

**ODOT Response:** ODOT will evaluate and provide clarity in the bidding documents.

3. **Contractor question:** Are detours out of the question?

**ODOT Response:** The availability of detour in this area is limited.



**4. ODOT question to Contractors:** Are there innovative materials or construction practices not in or allowed by the current preliminary project documents that you would be interested in sharing with the design team?

Contractors consistently identified allowing recycled aggregate as benefit to the project as virgin aggregate is difficult to source in the Portland area. Contractors recommended that ODOT allow:

- Crushed concrete as base aggregate/ pipe backfill;
- Reclaimed asphalt pavement (RAP) as base aggregate; and,
- Design the project to allow for precast inlets and drainage structures.

It was noted that the City of Portland allows crushed concrete as pipe backfill and road base.

# Appendix A: Industry Outreach Flyer for January 4-5 2022 Outer Powell Phase 2 Constructability Review and One-On-One Meetings

NOV. 2021

[tinyurl.com/OuterPowellPhase2](https://tinyurl.com/OuterPowellPhase2)



## PHASE 2 CONSTRUCTABILITY REVIEW AND ONE-ON-ONE MEETINGS

Phase 2 project area includes SE 99<sup>th</sup> – SE 122<sup>nd</sup> Ave and SE 136<sup>th</sup> – Portland city limits.

### January 4-5, 2022

**Constructability Review Meeting (virtual)**  
Tuesday, January 4, 8:30 a.m. – 10:30 a.m.

**Join Microsoft Teams (computer or mobile):**  
[Click here to join the meeting »](#)

**Or call in (audio only):**  
+1 971-277-1965, 669653299#  
United States, Portland | ID: 669 653 229#

**One-on-One Meetings (virtual):**

**January 4, 11:00 a.m.-4:00 p.m.**

**January 5, 8:30 a.m.-4:00 p.m.**

60-90 minute meeting links will be provided when meetings are scheduled.



## PURPOSE

The purpose of this meeting is to discuss the constructability of Phase 2 of the **Outer Powell Transportation Safety Project**.

Phase 2 includes SE 99<sup>th</sup> – SE 122<sup>nd</sup> Ave and SE 136<sup>th</sup> – Portland city limits near SE 174<sup>th</sup> Ave.

**We want your feedback on:** Optimizing efficiencies for the construction schedule and sequencing, traffic control plan, utility relocation/coordination, and project risks.

ODOT anticipates advertising the project in December 2022 with bid award in January 2023.

## WHO SHOULD ATTEND?

Prime and sub-contractors interested in learning more and providing feedback on the design. All Contractors are welcome to attend and participate.

## HOW TO PARTICIPATE

1. Review preliminary project documents, which will be available to all contractors on the project website beginning **November 29**: [tinyurl.com/OuterPowellPhase2](https://tinyurl.com/OuterPowellPhase2). Email **Zachary.DAVIS@odot.state.or.us** no later than **Wednesday, December 29** to submit questions.
2. Schedule a One-on-One meeting to provide input on Phase 2. Email **Zachary.DAVIS@odot.state.or.us** by **Wednesday, December 29** to request a 60-90 minute time slot.
3. Attend the Constructability Review Meeting **Tuesday, January 4** from **8:30 a.m. – 10:30 a.m.** for an overview of Outer Powell Phase 2.
4. Attend your scheduled One-on-One Meeting **January 4<sup>th</sup> or 5<sup>th</sup>** to provide input to the design team. A meeting link will be provided once your meeting is scheduled.

## HOW WILL FEEDBACK BE USED?\*

Feedback from contractors will be documented in a Summary of Discussion. This document will not include contractor information, but will summarize feedback and answer contractor questions. The Summary of Discussions will be posted on the project website and will be a bid reference document. The feedback from the constructability review will be used by the design team to inform decision making and risk analysis.

*\*See disclaimer on reverse*

## **Disclaimer:**

Participation in one-on-one constructability review meetings or providing comments or input will **not** disqualify the construction contractors from submitting bids for the Project (although the names of the participating contractors may be disclosed in the bidding documents for transparency purposes, but without attribution to specific comments or input). ODOT **cannot** compensate potential construction contractors for review of the preliminary Project Documents, the one-on-one meetings or comments provided. A summary of the constructability review meeting discussions and comments will be anonymized and posted on the project's website [www.I205CORRIDOR.ORG](http://www.I205CORRIDOR.ORG) and distributed through Association of General Contractors. Contractor's recommendations, including but not limited to, advice, or input regarding constructability, plan and specification suggestions or requested modifications, design alternatives or concepts are subject to review by ODOT. ODOT is under **no** obligation, express or implied, to make changes to the Project based on comments made or input provided.

## **By accessing preliminary Project Documents, potential construction contractors acknowledge and understand that:**

The Project is subject to change, delay and/or cancellation.

**All** preliminary Project Documents are draft and are provided for informational purposes only and are subject to change.

Preliminary Project Documents may represent preliminary, incomplete and imperfect data, and may contain errors, omissions, conflicts, inconsistencies and improper use of materials. ODOT disclaims all responsibility for the accuracy and completeness of all preliminary Project Documents. Contractor assumes all risks in relying on the preliminary Project Documents.

Preliminary Project Documents may contain presumptive information related to third party approvals, environmental or other permitting, and right-of-way that has not yet been acquired.

ODOT does **not** represent the constructability of the preliminary Reference Documents.

Contractor expressly waives **any and all** claims and causes of action against the State of Oregon and ODOT arising from the constructability of the preliminary Project Documents provided as part of the Project Constructability Review process.

Contractor's consultation with, and comments provided to ODOT on the Project and the preliminary Project Documents, including but not limited to comments and discussions regarding plans, specifications, equipment or materials, or any alternative solutions offered affecting construction feasibility, schedules, cost or quality, including suggestions that may be considered value engineering, are not to be construed as binding, nor are they subject to **any** compensation.

Contractor by participating in the Project Constructability Review or in providing comments or input is not assuming Project design responsibility.

*For ADA (Americans with Disabilities Act) or Civil Rights Title VI accommodations, translation/interpretation services, or more information call 503-731-4128, TTY 800-735-2900 or Oregon Relay Service 7-1-1.*

*Si desea obtener información sobre este proyecto traducida al español, sírvase llamar al 503-731-4128.*



Appendix B: ODOT K21178 US26 (Powell  
Blvd): SE 99<sup>th</sup> Ave – East City Limits  
2/3/2022 preliminary schedule of items and  
quantities

**ODOT K21178 US26 (Powell Blvd): SE 99th Ave - East City Limits Contractor Constructability Review  
Preliminary Schedule of Items and Quantities 2/3/2022**

**Description:** During a 1:1 session of the projects constructability review a Contractor offered to provide budgetary unit cost if ODOT provided an updated schedule of items. On 2/3/2022, ODOT provided the updated schedule of items to the requesting Contractor and informed them that an updated and preliminary not for construction schedule of items will be shared publically and that if the Contractor elected to share an Opinion of Cost that this also would be publically shared. On 2/9/2022 ODOT received budgetary unit cost estimates from the Contractor for a Contractor Opinion of Cost as of 2/9/2022. This document is a preliminary project document subject to the disclaimer included in the industry outreach flyer titled "Phase 2 Constructability Review and One-On-One Meetings Phase 2 project area includes SE 99th – SE 122nd Ave and SE 136th – Portland City Limits" See appendix A for full disclaimer language.

**SCHEDULE OF ITEMS AND QUANTITIES PRINTED  
2/3/2022  
PRELIMINARY - FOR INFORMATION ONLY  
NOT FOR CONSTRUCTION  
INFORMATION SUBJECT TO CHANGE**

| ITEM NO.  | ITEM   | UNIT | UNIT COST | QUANTITY | EXTENDED TOTAL |
|---|--|------|-----------|----------|----------------|
| <b>200 - TEMPORARY FEATURES AND APPURTENANCES</b> |  |      |           |          |                |
| 0010  | TRAINING   | HR   |           | 4,500    | \$ -           |
| 0020  | MOBILIZATION   | LS   |           | ALL      | \$ -           |
| 0030  | TEMPORARY PROTECTION AND DIRECTION OF TRAFFIC                  | LS   |           | ALL      | \$ -           |
| 0040  | TEMPORARY SIGNS  | SQFT |           | 3,550    | \$ -           |
| 0050  | SEQUENTIAL ARROW SIGNS   | EACH |           | 4        | \$ -           |
| 0060  | PORTABLE CHANGEABLE MESSAGE SIGNS                              | EACH |           | 6        | \$ -           |
| 0070  | RADAR SPEED TRAILER  | EACH |           | 2        | \$ -           |
| 0080  | FLAGGERS   | HR   |           | 54,400   | \$ -           |
| 0090  | TRAFFIC CONTROL SUPERVISOR                                     | EACH |           | 1,065    | \$ -           |
| 0100  | FLAGGER STATION LIGHTING                                       | EACH |           | 6        | \$ -           |
| 0110  | TEMPORARY PLASTIC DRUMS  | EACH |           | 277      | \$ -           |
| 0120  | TEMPORARY BARRICADES, TYPE II                                  | EACH |           | 44       | \$ -           |
| 0130  | TEMPORARY BARRICADES, TYPE III                                 | EACH |           | 45       | \$ -           |
| 0150  | TEMPORARY FLEXIBLE PAVEMENT MARKERS                            | EACH |           | 5,550    | \$ -           |
| 0160  | TEMPORARY STRIPING   | FOOT |           | 129,508  | \$ -           |
| 0170  | TEMPORARY PAVEMENT LEGENDS                                     | EACH |           | 50       | \$ -           |
| 0180  | TEMPORARY PAVEMENT BARS  | SQFT |           | 492      | \$ -           |
| 0190  | STRIPE REMOVAL   | FOOT |           | 244,208  | \$ -           |
| 0200  | BAR REMOVAL  | SQFT |           | 1,944    | \$ -           |
| 0210  | TEMPORARY TRAFFIC SIGNAL                                       | LS   |           | ALL      | \$ -           |
| 0220  | TEMPORARY RRFB   | LS   |           | ALL      | \$ -           |
| 0230  | PEDESTRIAN CHANNELIZING DEVICES                                | FOOT |           | 3,140    | \$ -           |
| 0240  | TEMPORARY CURB RAMP,   | EACH |           | 44       | \$ -           |
| 0250  | TEMPORARY WALKS  | SQFT |           | 1,600    | \$ -           |
| 0260  | TEMPORARY DRAINAGE FACILITIES                                  | LS   |           | ALL      | \$ -           |
| 0270  | TEMPORARY TYPE CL CHAIN LINK FENCE                             | FOOT |           | 750      | \$ -           |
| 0280  | EROSION CONTROL  | LS   |           | ALL      | \$ -           |
| 0290  | TEMPORARY MULCHING, STRAW                                      | ACRE |           | 4.00     | \$ -           |
| 0300  | MATTING, TYPE D  | SQYD |           | 9,022    | \$ -           |
| 0310  | COMPOST EROSION BLANKET  | SQYD |           | 18,265   | \$ -           |
| 0320  | CHECK DAM, TYPE 6  | EACH |           | 10       | \$ -           |
| 0330  | CONSTRUCTION ENTRANCE, TYPE 1                                  | EACH |           | 20       | \$ -           |
| 0340  | SEDIMENT FENCE   | FOOT |           | 1,900    | \$ -           |
| 0350  | INLET PROTECTION, TYPE 3                                       | EACH |           | 318      | \$ -           |
| 0360  | INLET PROTECTION, TYPE 4                                       | EACH |           | 2        | \$ -           |
| 0370  | INLET PROTECTION, TYPE 10                                      | EACH |           | 57       | \$ -           |
| 0380  | INLET PROTECTION, TYPE 11                                      | EACH |           | 2        | \$ -           |
| 0390  | SEDIMENT BARRIER, TYPE 3                                       | FOOT |           | 6,222    | \$ -           |
| 0400  | SEDIMENT BARRIER, TYPE 9                                       | FOOT |           | 1,800    | \$ -           |
| 0410  | POLLUTION CONTROL PLAN   | LS   |           | ALL      | \$ -           |
| 0420  | HEALTH AND SAFETY PLAN   | LS   |           | ALL      | \$ -           |
| 0430  | LEAD COMPLIANCE PLAN   | LS   |           | ALL      | \$ -           |
| 0440  | EXTRA FOR CONTAMINATED SOIL REMOVAL (REUSE)                    | CY   |           | 34,877   | \$ -           |
| 0450  | ABANDON WATER WELLS  | LS   |           | ALL      | \$ -           |
| 0460  | DECOMMISSION UNDERGROUND INJECTION CONTROL SYSTEMS             | EACH |           | 19       | \$ -           |
| <b>Subtotal</b>                                   |  |      |           |          | <b>\$ -</b>    |
| <b>300 - ROADWORK</b>                             |  |      |           |          |                |
| 0470  | CONSTRUCTION SURVEY WORK                                       | LS   |           | ALL      | \$ -           |
| 0480  | REMOVAL OF PIPES   | FOOT |           | 411      | \$ -           |
| 0490  | REMOVAL OF INLETS  | EACH |           | 40       | \$ -           |
| 0500  | REMOVAL OF MANHOLES  | EACH |           | 3        | \$ -           |
| 0510  | REMOVAL OF STRUCTURES AND OBSTRUCTIONS                         | LS   |           | ALL      | \$ -           |
| 0520  | REMOVAL OF BUILDINGS   | LS   |           | ALL      | \$ -           |
| 0530  | CLEARING AND GRUBBING  | LS   |           | ALL      | \$ -           |
| 0540  | ROOT PRUNING   | LS   |           | ALL      | \$ -           |
| 0550  | SEPARATE TREE REMOVAL CONTRACT (Incl Mobilization, TESC, & TC) | LS   |           | ALL      | \$ -           |
| 0560  | GENERAL EXCAVATION   | CY   |           | 22,517   | \$ -           |
| 0570  | 18 INCH SUBGRADE STABILIZATION                                 | SY   |           | 3,097    | \$ -           |
| 0580  | SUBGRADE GEOTEXTILE  | SY   |           | 30,968   | \$ -           |
| <b>Subtotal</b>                                   |  |      |           |          | <b>\$ -</b>    |
| <b>400 - DRAINAGE AND SEWERS</b>                  |  |      |           |          |                |
| 0590  | BOULDER EXCAVATION   | CY   |           | 50       | \$ -           |
| 0600  | MAINLINE VIDEO INSPECTION                                      | EACH |           | 18,448   | \$ -           |
| 0610  | 12 INCH STORM SEWER PIPE, 5 FT DEPTH                           | FOOT |           | 9,318    | \$ -           |
| 0620  | 12 INCH STORM SEWER PIPE, 10 FT DEPTH                          | FOOT |           | 7,212    | \$ -           |
| 0630  | 12 INCH DUCTILE IRON PIPE, 5 FT DEPTH                          | FOOT |           | 1,918    | \$ -           |
| 0640  | TRENCH DRAIN, TYPE 1   | FOOT |           | 38       | \$ -           |
| 0650  | CONCRETE STORM SEWER MANHOLES                                  | EACH |           | 36       | \$ -           |

|   |  |      |  |                 |           |          |
|---|--|------|--|-----------------|-----------|----------|
| 0660  | CONCRETE MANHOLES, WITH INLET                                  | EACH |  | 15              | \$        | -        |
| 0670  | CONCRETE MANHOLES, SEDIMENTATION                               | EACH |  | 55              | \$        | -        |
| 0680  | CONCRETE INLETS, TYPE CG-1                                     | EACH |  | 43              | \$        | -        |
| 0690  | CONCRETE INLETS, TYPE CG-1 (MODIFIED)                          | EACH |  | 2               | \$        | -        |
| 0700  | CONCRETE INLETS, TYPE CG-2                                     | EACH |  | 149             | \$        | -        |
| 0710  | CONCRETE INLETS, TYPE CG-2 (MODIFIED)                          | EACH |  | 1               | \$        | -        |
| 0720  | CONCRETE INLETS, TYPE CG-3                                     | EACH |  | 31              | \$        | -        |
| 0730  | CONCRETE INLETS, TYPE G-1                                      | EACH |  | 24              | \$        | -        |
| 0740  | CONCRETE INLETS, TYPE G-2                                      | EACH |  | 25              | \$        | -        |
| 0750  | CATCH BASINS, FIELD INLET                                      | EACH |  | 4               | \$        | -        |
| 0760  | DRYWELL  | EACH |  | 70              | \$        | -        |
| 0770  | DRYWELL CAPACITY TEST  | EACH |  | 70              | \$        | -        |
| 0780  | TEST HOLE  | EACH |  | 206             | \$        | -        |
| 0790  | DRAINAGE CURBS   | FOOT |  | 370             | \$        | -        |
| 0800  | ADJUSTING BOXES  | EACH |  | 212             | \$        | -        |
| 0810  | CONNECTION TO EXISTING STRUCTURES                              | EACH |  | 7               | \$        | -        |
| 0820  | ADJUSTING INLETS   | EACH |  | 29              | \$        | -        |
| 0830  | MINOR ADJUSTMENT OF MANHOLES                                   | EACH |  | 61              | \$        | -        |
| 0840  | MAJOR ADJUSTMENT OF MANHOLES                                   | EACH |  | 1               | \$        | -        |
| 0850  | EXTRA FOR MANHOLES OVER EXISTING SEWERS                        | EACH |  | 2               | \$        | -        |
| 0860  | PIPE CLEANING  | FOOT |  | 1,371           | \$        | -        |
| 0870  | STRUCTURE CLEANING   | EACH |  | 80              | \$        | -        |
| 0880  | TRENCH RESURFACING   | SY   |  | 9,389           | \$        | -        |
|   |  |      |  | <b>Subtotal</b> | <b>\$</b> | <b>-</b> |
| <b>500 - BRIDGES</b>  |  |      |  |                 |           |          |
| 0890  | SIDEWALK COPING  | SQFT |  | 125             | \$        | -        |
| 0900  | RETAINING WALL, PREFABRICATED MODULAR GRAVITY                  | SQFT |  | 1,016           | \$        | -        |
| 0910  | RETAINING WALL, CAST-IN-PLACE CONCRETE SEMI-GRAVITY CANTILEVER | SQFT |  | 2,040           | \$        | -        |
| 0920  | SOUND WALLS  | SQFT |  | 22,700          | \$        | -        |
|   |  |      |  | <b>Subtotal</b> | <b>\$</b> | <b>-</b> |
| <b>600 - BASES</b>  |  |      |  |                 |           |          |
| 0930  | COLD PLANE PAVEMENT REMOVAL, 0-3 INCHES DEEP                   | SY   |  | 39,960          | \$        | -        |
| 0940  | COLD PLANE PAVEMENT REMOVAL, 2 INCHES DEEP                     | SY   |  | 160             | \$        | -        |
| 0950  | COLD PLANE PAVEMENT REMOVAL, 3 INCHES DEEP                     | SY   |  | 26,000          | \$        | -        |
| 0960  | 3/4 INCH - 0 AGGREGATE BASE                                    | TON  |  | 35,730          | \$        | -        |
|   |  |      |  | <b>Subtotal</b> | <b>\$</b> | <b>-</b> |
| <b>700 - WEARING SURFACES</b>                                   |  |      |  |                 |           |          |
| 0970  | EMULSIFIED ASPHALT FOR TACK COAT                               | TON  |  | 30              | \$        | -        |
| 0980  | LEVEL 3, 1/2 INCH ACP  | TON  |  | 10,067          | \$        | -        |
| 0990  | LEVEL 3, 1/2 INCH ACP IN LEVELING AND TEMPORARY                | TON  |  | 4,643           | \$        | -        |
| 1000  | LEVEL 4, 1/2 INCH ACP  | TON  |  | 22,614          | \$        | -        |
| 1010  | PG 64-22 IN 1/2 ACP  | TON  |  | 618             | \$        | -        |
| 1020  | PG 70-22 ER IN 1/2 ACP   | TON  |  | 1,365           | \$        | -        |
| 1030  | PG 64-22 IN LEVELING AND TEMPORARY ACP                         | TON  |  | 279             | \$        | -        |
| 1040  | CRACK SEALING  | FOOT |  | 17,300          | \$        | -        |
| 1050  | 24 INCH ASPHALT CONCRETE PAVEMENT REPAIR                       | SQYD |  | 2,500           | \$        | -        |
| 1060  | EXTRA FOR ASPHALT APPROACHES                                   | EA   |  | 180             | \$        | -        |
| 1070  | EXTRA FOR SLOPE PAVING   | SQFT |  | 5,432           | \$        | -        |
| 1080  | REINFORCED CONCRETE PAVEMENT 10 INCH THICK                     | SY   |  | 2,500           | \$        | -        |
| 1090  | CONCRETE CURBS, CURB AND GUTTER                                | FT   |  | 17,900          | \$        | -        |
| 1100  | CONCRETE CURBS, LOW PROFILE MOUNTABLE                          | FT   |  | 100             | \$        | -        |
| 1110  | CONCRETE CURBS, STANDARD CURB                                  | FT   |  | 21,400          | \$        | -        |
| 1120  | CONCRETE CURBS, MOUNTABLE CURB AND GUTTER                      | FT   |  | 79              | \$        | -        |
| 1130  | CONCRETE ISLANDS   | SQFT |  | 11,310          | \$        | -        |
| 1140  | CONCRETE DRIVEWAYS   | SQFT |  | 107,700         | \$        | -        |
| 1150  | CONCRETE WALKS   | SQFT |  | 265,400         | \$        | -        |
| 1160  | PATTERNED CONCRETE SURFACING                                   | SQFT |  | 9,300           | \$        | -        |
| 1170  | CONCRETE STAIRS  | CUYD |  | 17              | \$        | -        |
| 1180  | EXTRA FOR NEW CURB RAMPS                                       | EA   |  | 203             | \$        | -        |
| 1190  | EXTRA FOR BIKE RAMPS   | EA   |  | 55              | \$        | -        |
| 1200  | CONCRETE BUS SHELTER PADS                                      | EA   |  | 5               | \$        | -        |
| 1210  | TRUNCATED DOMES ON NEW SURFACES                                | SQFT |  | 6,800           | \$        | -        |
|   |  |      |  | <b>Subtotal</b> | <b>\$</b> | <b>-</b> |
| <b>800 - PERMANENT TRAFFIC SAFETY AND GUIDANCE DEVICES</b>      |  |      |  |                 |           |          |
| 1220  | CABLE BARRIER, TEST LEVEL 3                                    | FT   |  | 443             | \$        | -        |
| 1230  | CABLE BARRIER TERMINALS  | EA   |  | 2               | \$        | -        |
| 1240  | BOLLARDS   | EA   |  | 21              | \$        | -        |
| 1250  | REMOVABLE BOLLARDS   | EA   |  | 6               | \$        | -        |
| 1260  | MONO-DIRECTIONAL WHITE TYPE I MARKERS                          | EA   |  | 50              | \$        | -        |
| 1270  | BI-DIRECTIONAL YELLOW TYPE I MARKERS                           | EA   |  | 530             | \$        | -        |
| 1280  | LONGITUDINAL PAVEMENT MARKINGS - PAINT                         | FOOT |  | 90,029          | \$        | -        |
| 1290  | THERMOPLASTIC, EXTRUDED, SURFACE, PROFILED                     | FOOT |  | 56,645          | \$        | -        |
| 1300  | THERMOPLASTIC, EXTRUDED, SURFACE, NON-PROFILED                 | FOOT |  | 32,203          | \$        | -        |
| 1310  | THERMOPLASTIC, EXTRUDED, SURFACE, NON-PROFILED, CONTRAST       | FOOT |  | 1,181           | \$        | -        |
| 1320  | TACTILE WALKING SURFACE INDICATOR                              | FOOT |  | 42,600          | \$        | -        |
| 1330  | PAVEMENT LEGEND, TYPE B-HS: ARROWS                             | EA   |  | 66              | \$        | -        |
| 1340  | PAVEMENT LEGEND, TYPE B-HS: BICYCLE LANE STENCIL               | EA   |  | 88              | \$        | -        |
| 1350  | PAVEMENT BAR, TYPE B-HS  | SQFT |  | 7,528           | \$        | -        |
| 1360  | PAVEMENT BAR, TYPE B-HS-CON                                    | SQFT |  | 492             | \$        | -        |
| 1370  | PAVEMENT LEGEND, TYPE B-HS-CON: BICYCLE LANE STENCIL           | EA   |  | 19              | \$        | -        |
| 1380  | PAVEMENT LEGEND, TYPE B-HS-CON: "ONLY"                         | EA   |  | 20              | \$        | -        |
| 1390  | PAVEMENT LEGEND, TYPE B-HS-CON: "BUS"                          | EA   |  | 20              | \$        | -        |
| 1400  | PAVEMENT LEGEND, TYPE B-HS-CON: OFF STREET BIKE SYMBOL         | EA   |  | 54              | \$        | -        |
| 1410  | PAVEMENT LEGEND, TYPE B-HS-CON: OFF STREET PED SYMBOL          | EA   |  | 43              | \$        | -        |
| 1420  | GREEN BICYCLE LANE, PREFORMED THERMOPLASTIC FILM               | SQFT |  | 8,166           | \$        | -        |
| 1430  | NON-TRAVERSABLE MEDIAN MARKINGS, PAINT                         | SQFT |  | 200             | \$        | -        |
|   |  |      |  | <b>Subtotal</b> | <b>\$</b> | <b>-</b> |
| <b>900 - PERMANENT TRAFFIC CONTROL AND ILLUMINATION SYSTEMS</b> |  |      |  |                 |           |          |

|  |   |      |  |        |           |          |
|--|---|------|--|--------|-----------|----------|
| 1440   | CROSSWALK CLOSURE SUPPORTS  | EA   |  | 18     | \$        | -        |
| 1450   | REMOVE EXISTING SIGNS   | LS   |  | ALL    | \$        | -        |
| 1460   | REMOVE AND REINSTALL EXISTING SIGNS                                   | LS   |  | ALL    | \$        | -        |
| 1470   | SIGN SUPPORT FOOTINGS   | LS   |  | ALL    | \$        | -        |
| 1480   | PIPE BREAKAWAY SIGN SUPPORTS  | LS   |  | ALL    | \$        | -        |
| 1490   | PIPE SIGN SUPPORTS  | LS   |  | ALL    | \$        | -        |
| 1500   | SIGNS, STANDARD SHEETING, SHEET ALUMINUM                              | SQFT |  | 1,535  | \$        | -        |
| 1510   | SIGNS, TYPE IX SHEETING, SHEET ALUMINUM                               | SQFT |  | 220    | \$        | -        |
| 1520   | 36 INCH DIAMETER SIGNAL SUPPORT DRILLED SHAFT                         | FT   |  | 0      | \$        | -        |
| 1530   | 42 INCH DIAMETER SIGNAL SUPPORT DRILLED SHAFT                         | FT   |  | 270    | \$        | -        |
| 1540   | POLE FOUNDATIONS  | LS   |  | ALL    | \$        | -        |
| 1550   | LUMINAIRES, LAMPS, AND BALLASTS                                       | LS   |  | ALL    | \$        | -        |
| 1560   | SWITCHING, CONDUIT, AND WIRING  | LS   |  | ALL    | \$        | -        |
| 1570   | REFURBISHING AND REINSTALLING EXISTING ILLUMINATION SYSTEMS           | LS   |  | ALL    | \$        | -        |
| 1580   | LIGHTING POLES AND ARMS   | LS   |  | ALL    | \$        | -        |
| 1590   | TELECOMMUNICATIONS, MATERIAL  | LS   |  | ALL    | \$        | -        |
| 1600   | TELECOMMUNICATIONS, INSTALLATION                                      | LS   |  | ALL    | \$        | -        |
| 1610   | TELECOMMUNICATIONS, SPlicing AND TESTING                              | LS   |  | ALL    | \$        | -        |
| 1620   | SIGNAL INSTALLATION - SE 104TH AVE                                    | LS   |  | ALL    | \$        | -        |
| 1630   | SIGNAL INSTALLATION - SE 112th AVE                                    | LS   |  | ALL    | \$        | -        |
| 1640   | SIGNAL INSTALLATION - SE 148TH AVE                                    | LS   |  | ALL    | \$        | -        |
| 1650   | SIGNAL INSTALLATION - SE 162ND AVE                                    | LS   |  | ALL    | \$        | -        |
| 1660   | SIGNAL INSTALLATION - MEADOWLAND SHOPPING CENTER                      | LS   |  | ALL    | \$        | -        |
| 1670   | SIGNAL INSTALLATION - SE 174TH AVE                                    | LS   |  | ALL    | \$        | -        |
| 1680   | INTERCONNECT SYSTEM   | LS   |  | ALL    | \$        | -        |
| 1690   | FLASHING BEACON INSTALLATION, SE 108TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1700   | FLASHING BEACON INSTALLATION, SE 116TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1710   | FLASHING BEACON INSTALLATION, SE 119TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1720   | FLASHING BEACON INSTALLATION, SE 141ST AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1730   | FLASHING BEACON INSTALLATION, SE 145TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1740   | FLASHING BEACON INSTALLATION, SE 151ST AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1750   | FLASHING BEACON INSTALLATION, SE 156TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1760   | FLASHING BEACON INSTALLATION, SE 158TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1770   | FLASHING BEACON INSTALLATION, SE 166TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| 1780   | FLASHING BEACON INSTALLATION, SE 168TH AVENUE                         | LS   |  | ALL    | \$        | -        |
| <b>Subtotal</b>                                    |   |      |  |        | <b>\$</b> | <b>-</b> |
| <b>1000 - RIGHT OF WAY DEVELOPMENT AND CONTROL</b> |   |      |  |        |           |          |
| 1790   | WEED CONTROL  | ACRE |  | 10.07  | \$        | -        |
| 1800   | TEMPORARY SEEDING   | ACRE |  | 10.07  | \$        | -        |
| 1810   | NATIVE PLANT SEEDING  | ACRE |  | 4.00   | \$        | -        |
| 1820   | LAWN SEEDING  | ACRE |  | 2.50   | \$        | -        |
| 1830   | FERTILIZING   | ACRE |  | 10.07  | \$        | -        |
| 1840   | SOIL TESTING  | EACH |  | 5      | \$        | -        |
| 1850   | TOPSOIL   | CUYD |  | 5,997  | \$        | -        |
| 1860   | BARK MULCH  | CUYD |  | 846    | \$        | -        |
| 1870   | ROOT BARRIER  | FOOT |  | 1,416  | \$        | -        |
| 1880   | PEDESTRIAN FENCE  | EACH |  | 83     | \$        | -        |
| 1890   | SINGLE MAILBOX SUPPORTS   | EACH |  | 3      | \$        | -        |
| 1900   | MULTIPLE MAILBOX SUPPORTS   | EACH |  | 1      | \$        | -        |
| 1910   | MAILBOX CONCRETE COLLARS  | EACH |  | 23     | \$        | -        |
| 1920   | MAILBOX CLUSTER BOX UNIT TYPE   | EACH |  | 31     | \$        | -        |
| 1930   | REMOVE AND REINSTALL MAILBOX CLUSTER BOX UNIT                         | EACH |  | 9      | \$        | -        |
| 1940   | SEPARATE PLANTINGS CONTRACT (Incl Mobilization, TESC, & TC)           | LS   |  | ALL    | \$        | -        |
| <b>Subtotal</b>                                    |   |      |  |        | <b>\$</b> | <b>-</b> |
| <b>1100 - WATER SUPPLY SYSTEMS</b>                 |   |      |  |        |           |          |
| 1950   | EXTRA TRENCH EXCAVATION WITH CLASS B BACKFILL                         | CUYD |  | 331    | \$        | -        |
| 1960   | 4 INCH DUCTILE IRON PIPE WITH RESTRAINED JOINTS AND CLASS B BACKFILL  | FOOT |  | 195    | \$        | -        |
| 1970   | 6 INCH DUCTILE IRON PIPE WITH RESTRAINED JOINTS AND CLASS B BACKFILL  | FOOT |  | 2,718  | \$        | -        |
| 1980   | 8 INCH DUCTILE IRON PIPE WITH RESTRAINED JOINTS AND CLASS B BACKFILL  | FOOT |  | 1,617  | \$        | -        |
| 1990   | 12 INCH DUCTILE IRON PIPE WITH RESTRAINED JOINTS AND CLASS B BACKFILL | FOOT |  | 15,609 | \$        | -        |
| 2000   | DUCTILE IRON PIPE TEES, 6 X 6 X 6 INCH                                | EACH |  | 1      | \$        | -        |
| 2010   | DUCTILE IRON PIPE TEES, 8 X 8 X 6 INCH                                | EACH |  | 3      | \$        | -        |
| 2020   | DUCTILE IRON PIPE TEES, 12 X 12 X 4 INCH                              | EACH |  | 6      | \$        | -        |
| 2030   | DUCTILE IRON PIPE TEES, 12 X 12 X 6 INCH                              | EACH |  | 48     | \$        | -        |
| 2040   | DUCTILE IRON PIPE TEES, 12 X 12 X 8 INCH                              | EACH |  | 19     | \$        | -        |
| 2050   | DUCTILE IRON PIPE TEES, 12 X 12 X 12 INCH                             | EACH |  | 2      | \$        | -        |
| 2060   | DUCTILE IRON PIPE CROSS, 12 X 12 X 12 X 12 INCH                       | EACH |  | 2      | \$        | -        |
| 2070   | DUCTILE IRON PIPE BEND, 4 INCH  | EACH |  | 2      | \$        | -        |
| 2080   | DUCTILE IRON PIPE BEND, 6 INCH  | EACH |  | 51     | \$        | -        |
| 2090   | DUCTILE IRON PIPE BEND, 8 INCH  | EACH |  | 40     | \$        | -        |
| 2100   | DUCTILE IRON PIPE BEND, 12 INCH                                       | EACH |  | 54     | \$        | -        |
| 2110   | DUCTILE IRON PIPE REDUCER, 12 X 8 INCH                                | EACH |  | 2      | \$        | -        |
| 2120   | DUCTILE IRON PIPE REDUCER, 12 X 24 INCH                               | EACH |  | 1      | \$        | -        |
| 2130   | 6 INCH GATE VALVE   | EACH |  | 17     | \$        | -        |
| 2140   | 8 INCH GATE VALVE   | EACH |  | 14     | \$        | -        |
| 2150   | 6 INCH HYDRANT GATE VALVE   | EACH |  | 26     | \$        | -        |
| 2160   | 6 INCH BUTTERFLY VALVE  | EACH |  | 2      | \$        | -        |
| 2170   | 12 INCH BUTTERFLY VALVE   | EACH |  | 75     | \$        | -        |
| 2180   | HYDRANT ASSEMBLIES  | EACH |  | 26     | \$        | -        |
| 2190   | MOVING EXISTING HYDRANTS  | EACH |  | 7      | \$        | -        |
| 2200   | 1 INCH CU WATER SERVICE LINE  | FOOT |  | 5,383  | \$        | -        |
| 2210   | 2 INCH CU WATER SERVICE LINE  | FOOT |  | 640    | \$        | -        |
| 2220   | 1 INCH WATER METER ASSEMBLY   | EACH |  | 176    | \$        | -        |
| 2230   | 2 INCH WATER METER ASSEMBLY   | EACH |  | 21     | \$        | -        |
| <b>Subtotal</b>                                    |   |      |  |        | <b>\$</b> | <b>-</b> |
| <b>TOTAL FOR CONSTRUCTION</b>                      |   |      |  |        | <b>\$</b> | <b>-</b> |