Appendix A

SPU Design Checklist

This checklist shows the expected level of care and standard deliverables needed to produce a quality pipeline project. It may be useful for other types of SPU engineering design projects. The list is not exhaustive and is not intended to substitute for your engineering judgment. *Note: On many projects, deliverables listed during 30% design should have started earlier during preliminary engineering*.

The checklist is organized into six phases:

1. Scoping
2. 30% design
3. 60% design
4. 90% design
5. Bid documents
6. Construction

More detailed follow-up questions and lists are associated with most major checklist questions. Potentially useful contacts/links/documents are noted as Resource(s).

Minimum deliverables are shown in **red**.

Coordination points with physical security discipline are shown in **green**.

Coordination points with electrical design are shown in **brown**.

|  |  |  |  |
| --- | --- | --- | --- |
| 1 Scoping  | Yes | N/A | Comments |
| 1.1 Project History |  |  |  |
| Have you reviewed preliminary documents? | [ ]  | [ ]  |  |
|  Service requests | [ ]  | [ ]  | Click or tap here to enter text. |
|  PE Study | [ ]  | [ ]  | Click or tap here to enter text. |
|  Design criteria sheet (criteria for physical security, electrical and I&C) | [ ]  | [ ]  | Click or tap here to enter text. |
|  Business Case | [ ]  | [ ]  | Click or tap here to enter text. |
|  Existing service agreements | [ ]  | [ ]  | Click or tap here to enter text. |
|  Memorandums of Agreement | [ ]  | [ ]  | Click or tap here to enter text. |
|  Budget | [ ]  | [ ]  | Click or tap here to enter text. |
|  SEPA documentation | [ ]  | [ ]  | Click or tap here to enter text. |
|  Easement documentation | [ ]  | [ ]  | Click or tap here to enter text. |
|  Permit analysis and correspondence | [ ]  | [ ]  | Click or tap here to enter text. |
| 1.2 Objectives |  |  |  |
| Are project objectives clearly defined?  | [ ]  | [ ]  | Click or tap here to enter text. |
| Have you discussed project with: |  |  | Click or tap here to enter text. |
|  Your supervisor? | [ ]  | [ ]  | Click or tap here to enter text. |
|  PM? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Project team? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Operations? | [ ]  | [ ]  | Click or tap here to enter text. |
|  **Security Program?** | [ ]  | [ ]  | Click or tap here to enter text. |
|  USM? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Other staff with historical knowledge of the project area? | [ ]  | [ ]  | Click or tap here to enter text. |
| Does the preferred alternative meet the objectives? | [ ]  | [ ]  | Click or tap here to enter text. |
| Would you recommend value engineering for this project? | [ ]  | [ ]  | Click or tap here to enter text. |
| 1.3 Schedule |  |  |  |
| Do you agree to the overall project schedule and staffing plan? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Is project team established? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Working days estimate for your time? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Working days estimate for your team? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Have you identified schedule conflicts for your supervisor? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Have you arranged access to secured sites? |[ ] [ ]  Click or tap here to enter text. |
| 1.4 Site Visit |  |
| Have you made a site visit and photographic record checking for: |  |  |  |
|  ROW Conditions:  |  |
|  What are street conditions? Click or tap here to enter text. |  |
|  Is it arterial or residential? Click or tap here to enter text. |
|  What is pavement type and condition? Click or tap here to enter text. |
|  What is the general pattern of concrete panels? Click or tap here to enter text. |
|  Is there reflective cracking in asphalt? Click or tap here to enter text. |
|  What is the pavement condition around castings? Click or tap here to enter text. |
|  Are there curbs and how high?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Are there sidewalks? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Are there curb ramps to current standard? Click or tap here to enter text. |
|  What is the channelization? Click or tap here to enter text. |
|  Are there traffic signals and signal boxes? | [ ]  | [ ]  | Click or tap here to enter text. |
|  What are major street uses? |  |  |  |
|  Traffic? Click or tap here to enter text. |
|  Bicycles? Click or tap here to enter text. |
|  Bus routes, bus loading zones, trolley wires? Click or tap here to enter text.  |
|  What other miscellaneous uses are present: |
|  Overhead utilities? [ ]  [ ]  |
| 1 Scoping (cont.) | Yes | N/A | Comments |
|  Underground utility vaults and castings? [ ]  [ ]  |
|  Signs? [ ]  [ ]  |
|  Fire hydrants? | [ ]  |  [ ]  | Click or tap here to enter text. |
|  Survey monuments? [ ]  [ ]   |
|  Trees? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Planting strip improvements? [ ]  [ ]   |
|  Irrigation? [ ]  [ ]   |
|  Private structures or improvements within ROW? Click or tap here to enter text. |
|  Mailboxes? [ ]  [ ]   |
|  Other critical infrastructure? Click or tap here to enter text. |
|  Utilities: |  |  |  |
|  Have you identified castings? | [ ]  | [ ]  |  |
|  |  |  |  |
|  Condition? Click or tap here to enter text.  |  |  | Click or tap here to enter text. |
|  Sewer and drainage castings less than 24” diameter?  | [ ]  | [ ]  |  |
|  Type of drainage grates?  | Click or tap here to enter text. |
|  Do utility cuts in pavement match utility mapping?  | [ ]  | [ ]  |  |
|  Local Drainage Patterns: |  |  |  |
|  Is street crowned or thrown? Click or tap here to enter text. |
|  What is general topography, including street profile? Click or tap here to enter text. |
|  Are there inlets, CBs or ditches? Click or tap here to enter text. |
|  Is there evidence of ponding? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Is there evidence of erosion? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Construction Issues: |  |  |  |
|  Have you considered constructability issues, like: |  |  |  |
|  Access for construction equipment? | [ ]  | [ ]  | Click or tap here to enter text. |
|  |
| 1 Scoping (cont.) | Yes | N/A | Comments |
|  Private property excavations and possible tie-backs? Click or tap here to enter text.  |
|  Space for trailers, equipment and materials? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Overhead wire conflicts? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Poles that would need supporting? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Proximity to buildings/structures & type of foundations?  | Click or tap here to enter text. |
|  Tree and tree canopy conflicts? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Options for disposal of trench or pipe dewatering  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Have you considered neighborhood needs, like: |  |  |  |
|  Access to building entrances? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Driveways and access to parking lots? | [ ]  | [ ]  | Click or tap here to enter text. |
|  **Physical Security Issues?**  |  |  | Click or tap here to enter text. |
|  Environmental Issues: |  |  |  |
|  Are there steep slopes? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Are there vegetation issues?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Are wetlands present? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Is the project within 200 feet of a shoreline?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  How far is the project from a water body? Click or tap here to enter text.  |  |  | Click or tap here to enter text. |
| 1.5 Hydraulics |  |  |  |
| Have you gathered system and hydraulic information from resources? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Water Infrastructure |  |  |  |
|  Have you talked to USM Hydraulic Modeler?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Have you talked to Water Operations and Control? | [ ]  | [ ]  |  |
|  Checked Pressure Zone Mapping?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Checked Water Valve Mapping? | [ ]  | [ ]  | Click or tap here to enter text. |
| 1 Scoping (cont.) | Yes | N/A | Comments |
|  Drainage and Wastewater Infrastructure |  |  |  |
|  Have you talked to USM Modeling Group? | [ ]  | [ ]  |  |
| 1 Scoping (cont.) | Yes | N/A | Comments |
|  Is there an existing hydraulic model? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Have you checked system mapping to understand: |  |  |  |
|  Basic topography? Click or tap here to enter text. |  |  |  |
|  Surrounding system type?  | [ ]  | [ ]  |  |
|  Downstream surface waters and outfalls?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Backwater sources, such as: |  |  |  |
|  Downstream water body? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Tidal outfall? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Regulated King County sewer? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Known downstream pipe, ditch, or stream constraints? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Known flooding? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Critical drainage area listing? | [ ]  | [ ]  | Click or tap here to enter text. |
| 1.6 Environmental Review |  |  |  |
|  Geology and Soils |  |  |  |
|  Have you done a preliminary check for geological and soils information:: |  | Click or tap here to enter text. |
|  Typical local soil conditions?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Corrosive soils?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Records of contaminated soils?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  High groundwater?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Landfills?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Slopes and landslide prone areas? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Faults? | [ ]  | [ ]  | Click or tap here to enter text. |
| 1 Scoping (cont.) | Yes | N/A | Comments |
|  Resource: [Geomap](http://geomapnw.ess.washington.edu)  |  |  |  |
|  SPU Geotechnical Engineers  |  [ ]  |  [ ]  | Click or tap here to enter text. |
|  Stormwater |  |  |  |
|  Have you checked [stormwater code compliance](http://www.seattle.gov/dpd/news/20080730a.asp?%7d)?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Where would project stormwater drain to?  | Click or tap here to enter text. |
|  What are the general requirements for this project?  | Click or tap here to enter text. |
|  Resource: SPU Engineering Plan Reviewers |  |  |  |
|  **Electrical: Established the need for power supply sources?** Checked Electrical Design Checklist (see DSG Chapter 9)? |  |  |  |
| 1.7 Records Review |  |  |  |
| Have you reviewed records? |  |  |  |
|  Resource GIS |[ ] [ ]   |
|  Resources at SPU: | [ ]  | [ ]  |  |
|  PERC | [ ]  | [ ]  |  |
|  Record drawings  | [ ]  | [ ]  |  |
|  Existing base mapping | [ ]  | [ ]  |  |
|  Grading plans | [ ]  | [ ]  |  |
|  Utility maps and books | [ ]  | [ ]  |  |
|  Leak history | [ ]  | [ ]  |  |
|  Comprehensive Plans and Studies | [ ]  | [ ]  |  |
|  Science Library | [ ]  | [ ]  |  |
|  Operations/MAXIMO database | [ ]  | [ ]  |  |
|  Customer Service | [ ]  | [ ]  |  |
|  Resources at DPD: |  |  |  |
|  Sewer cards: Sewer plats | [ ]  | [ ]  |  |
|  Building plans | [ ]  | [ ]  |  |
|  Neighborhood Plans | [ ]  | [ ]  |  |
|  Land Use | [ ]  | [ ]  |  |
|  Private Construction | [ ]  | [ ]  |  |
|  Resources at Other Records Vaults: |  |  |  |
|  Seattle City Light | [ ]  | [ ]  |  |
|  King County | [ ]  | [ ]  |  |
| 1 Scoping (cont.) | Yes | N/A | Comments |
|  WSDOT | [ ]  | [ ]  |  |
|  Resources at SDOT: |  |  |  |
|  Franchise Utility Agreements | [ ]  | [ ]  |  |
|  Inspection Records on permits | [ ]  | [ ]  |  |
|  Resources at Department of Neighborhoods: |  |  |  |
|  Historic districts | [ ]  | [ ]  |  |
|  Resources at City Clerk’s Office: Municipal Codes and Ordinances | [ ]  | [ ]  |  |
|  Memorandums of Agreement |  |  |  |
|  Archived photographic records | [ ]  | [ ]  |  |
| 1.8 Coordination |  |  |  |
| Have you checked for other infrastructure needs and opportunities, such as: |  |  |  |
|  Has the condition of sewers and drains been assessed with CCTV? | [ ]  | [ ]  |  |
|  Are there work orders or CIP listings for sewer and drainage work in the project area? | [ ]  | [ ]  |  |
|  Are there spot drainage complaints in the project area?  | [ ]  | [ ]  |  |
|  Should SPU consider adding drainage & wastewater elements to project? | [ ]  | [ ]  |  |
|  Has the condition of water mains been assessed? | [ ]  | [ ]  |  |
|  Have or should water mains be potholed?  | [ ]  | [ ]  |  |
|  Are there work orders or CIP listings for water main work in project area? | [ ]  | [ ]  |  |
|  Should SPU consider adding a water main element to the project? | [ ]  | [ ]  |  |
|  Does this project overlap with SDOT’s transportation’s CIP list?  | [ ]  | [ ]  |  |
|  Is SDOT Utility Coordinator aware of private utility work planned for area? | [ ]  | [ ]  |  |
|  **Have electrical and I&C design issues been coordinated**? Does the project require coordination for electrical power utilities? |  |  |  |
|  **Has SPU Security Manager been consulted**? | [ ]  | [ ]  |  |
|  Is there potential for coordination of projects?  | [ ]  | [ ]  |  |
| 1.9 Signature |  |  |  |
| Have you signed the scope of work? | [ ]  | [ ]  |  |

|  |  |  |  |
| --- | --- | --- | --- |
| **2 30% Design** | **Yes** | **N/A** | **Comments** |
| **2.1 Base map** |  |  |  |
| Was the base map completed in preliminary engineering? | [ ]  | [ ]  |  |
| Have you determined the project’s standard and special base map needs, such as: |  |  |
|  Surface features and measure downs? | [ ]  | [ ]  |  |
|  CB outfall inverts? | [ ]  | [ ]  |  |
|  Topographic lines and additional topography for grade matching? | [ ]  | [ ]  |  |
|  Private property information? | [ ]  | [ ]  |  |
|  Easement delineation? | [ ]  | [ ]  |  |
| 2 30% Design (cont.) | Yes | No | Comments |
|  |  |  |  |
|  Lot lines? | [ ]  | [ ]  |  |
|  Local conversions to other vertical datums? | [ ]  | [ ]  |  |
|  Tie ins to other mapping? | [ ]  | [ ]  |  |
|  Search of vaults beyond SPU’s? | [ ]  | [ ]  |  |
|  Search of DPD’s private property records? | [ ]  | [ ]  |  |
|  Addresses? | [ ]  | [ ]  |  |
|  Meter numbers? | [ ]  | [ ]  |  |
|  Foundations of bridges and walls? | [ ]  | [ ]  |  |
|  Street channelization with paint records? | [ ]  | [ ]  |  |
| Have you requested the base map? | [ ]  | [ ]  |  |
| **Are there inconsistent or missing records?** | [ ]  | [ ]  |  |
| Have corrections been sent to GIS when records don’t match? | [ ]  | [ ]  |  |
| **2.2 Flow Analysis** |  |  |  |
| Is flow analysis complete and hydraulic grade line set? | [ ]  | [ ]  |  |
| Are calculations documented, stamped and archived? | [ ]  | [ ]  |  |
|  Who prepared the calculations?  |  |  |  |
|  Was a model developed? | [ ]  | [ ]  |  |
| **2.3 Pipe Layout** |  |  |  |
| Are pipe layout and preliminary profile shown? | [ ]  | [ ]  |  |
| Is pipe in [standard location](http://www.seattle.gov/util/Engineering/Standard_Plans_%26_Specs/index.asp)? See Standard Plan #030 | [ ]  | [ ]  |  |
| Are [standard clearances](http://www.seattle.gov/util/Engineering/Standard_Plans_%26_Specs/index.asp) maintained? | [ ]  | [ ]  |  |
| Are critical cross sections identified and drawn? | [ ]  | [ ]  |  |
| Other utility infrastructure improvements identified and design started? | [ ]  | [ ]  |  |
|  Resource: Drafting and plan presentation standards  | [ ]  | [ ]  |  |
| **2.4 Geotechnical Report** |  |  |  |
| Have you requested a geotechnical report? Report done during preliminary engineering? | [ ]  | [ ]  |  |
| Did the request identify: |  |  |  |
|  Pipeline location and depth? | [ ]  | [ ]  |  |
|  Location of any major structures? | [ ]  | [ ]  |  |
|  Geotechnical information needed by other designers? | [ ]  | [ ]  |  |
| Does the project need additional information, such as: |  |  |  |
|  Slope stability calculations and project seismic standards? | [ ]  | [ ]  |  |
|  Seismic risk evaluation? To what standard?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Soil or groundwater contamination testing? | [ ]  | [ ]  |  |
| 2 30% Design (cont.) | Yes | No | Comments |
|  |  |  |  |
| Have you requested soil resistivity testing? | [ ]  | [ ]  |  |
|  Resource: SPU Geotechnical Engineers |  |  |  |
| **2.5 Regulations and Permits** |  |  |  |
| Have you reviewed project -related regulations? Have you reviewed list of required permits from preliminary engineering? | [ ]  | [ ]  |  |
| Have you updated any permit requirements? | [ ]  | [ ]  |  |
| Are the permit applications started? |  |  |  |
|  Resource: [City codes, rules and guidelines](http://www.seattle.gov/leg/clerk/clerk.htm) |  |  |  |
|  Resource: WA [State Health Department codes and rules](http://www.doh.wa.gov/a-z_topics/w.htm) |  |  |  |
|  Resource: WA State [Department of Ecology codes and rules](http://www.ecy.wa.gov/laws-rules/ecyrcw.html)  | [ ]  | [ ]  |  |
| **2.6 Reviews** |  |  |  |
| **Electrical: Has 30% Electrical Design been developed?**Basis of Electrical Design document done? (see DSG Ch 9).  Preliminary service load determined?  One-line diagram developed?  |  |  |  |
| Real property issues and needs identified? | [ ]  | [ ]  |  |
| Customer impacts identified? | [ ]  | [ ]  |  |
| Operations review? | [ ]  | [ ]  |  |
| Constructability review? | [ ]  | [ ]  |  |
| **Physical Security review?** | [ ]  | [ ]  |  |
| **Electrical and I&C review?** | [ ]  | [ ]  |  |
| Are other agency impacts identified? | [ ]  | [ ]  |  |
| **2.7 Are we on the right track?** |  |  |  |
| Re-examine the alternative choice and 30% design and consider: |  |  |  |
|  Are there alternatives with fewer environmental impacts? | [ ]  | [ ]  | Click or tap here to enter text. |
|  **Are there alternatives with fewer security limts**?  |  |  | Click or tap here to enter text. |
|  Are there lower cost alternatives?  | [ ]  | [ ]  | Click or tap here to enter text. |
|  Are there easier to maintain alternatives?  | [ ]  | [ ]  | Click or tap here to enter text. |
| Is value engineering or further brainstorming warranted? | [ ]  | [ ]  | Click or tap here to enter text. |
|  30% Design (cont.) | Yes | No | Comments |
| Have you verified that Asset Management Committee (AMC) approved objectives are met? | [ ]  | [ ]  | Click or tap here to enter text. |
| **2.8 Completed 30% Design**  | [ ]  | [ ]  |  |
| **Completed Base map** | [ ]  | [ ]  |  |
| **Updated cost estimate** | [ ]  | [ ]  |  |
| **Updated schedule** | [ ]  | [ ]  |  |
| **30% Review Comments Log** | [ ]  | [ ]  |  |
| 3 60% Design |  |  |  |
| **3.1** **30% comments** |  |  |  |
| Have the 30% review comments all been addressed? | [ ]  | [ ]  |  |
| 3.2 60% plans with final sizes, layout, profile, structures & major details |  |  |  |
| On the plans, are: |  |  |  |
|  Major conflicts resolved? | [ ]  | [ ]  |  |
|  Is potholing and survey of critical conflicts needed? | [ ]  | [ ]  |  |
|  Conflicts discussed with other utility owners? | [ ]  | [ ]  |  |
|  Minor conflicts identified? | [ ]  | [ ]  | Click or tap here to enter text. |
|  All regulatory requirements incorporated? | [ ]  | [ ]  |  |
|  Materials called out? | [ ]  | [ ]  |  |
|  Shoring needs identified? | [ ]  | [ ]  |  |
|  Paving/restoration? | [ ]  | [ ]  |  |
|  **Access points secured w/ Integrated Security System (ISS)?** | [ ]  | [ ]  |  |
|  **Electrical and I&C?** | [ ]  | [ ]  |  |
| Has the design considered: |  |  |  |
|  |  |  |  |
|  Is trench or pipe [dewatering required](http://www.seattle.gov/dpd/publications/cam/cam506.pdf)? | [ ]  | [ ]  |  |
|  Is a dechlorination plan required? | [ ]  | [ ]  |  |
|  Construction pollution control? | [ ]  | [ ]  |  |
|  Need a [permit from Ecology](http://www.ecy.wa.gov/programs/wq/stormwater/construction) (storm drain discharge) ? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Need a [permit King Co. Industrial Waste](http://www.kingcounty.gov/environment/wastewater/IndustrialWaste/Forms/ApprovalForms.aspx) (sewer discharge)? | [ ]  | [ ]  | Click or tap here to enter text. |
|  Resource: SPU Plan Reviewers  | [ ]  | [ ]  | Click or tap here to enter text. |
| Sewer or Drainage Bypassing required? | [ ]  | [ ]  |  |
| **3.3 Is the geotechnical report complete?** | [ ]  | [ ]  |  |
| **3.4 Is SEPA DNS complete?** | [ ]  | [ ]  |  |
| **3.5 Are other permit applications submitted?** | [ ]  | [ ]  |  |
| 3 60% Design (cont.) | Yes | No | Comments |
|  Resource (See DSG Ch 2 Design for Permitting) |  |  |  |
| **3.6 Are easement acquisitions started?** | [ ]  | [ ]  |  |
|  Resource Real Property Services | [ ]  | [ ]  |  |
| **3.7 Is there a draft customer service plan, considering:** |  |  |  |
|  Critical water services? | [ ]  | [ ]  |  |
|  Water main construction/ shutdown sequence? | [ ]  | [ ]  |  |
|  Fire protection analysis? | [ ]  | [ ]  |  |
|  **Security Plan?** | [ ]  | [ ]  |  |
|  **Electrical?** | [ ]  | [ ]  |  |
| **3.8 Reviews** |  |  |  |
|  Real property issues and needs identified? | [ ]  | [ ]  |  |
|  Operations review and crew resources/scheduling identified? | [ ]  | [ ]  |  |
|  Preliminary order of work plan | [ ]  | [ ]  |  |
|  Constructability review? | [ ]  | [ ]  |  |
|  Internal and external plan circulation? | [ ]  | [ ]  |  |
|  **Security elements?** | [ ]  | [ ]  |  |
|  **Electrical and I&C elements?** | [ ]  | [ ]  |  |
| **3.9 Have preliminary technical specifications been prepared?** | [ ]  | [ ]  |  |
| **3.10 On track? Have you verified that AMC approved objectives are met?** | [ ]  | [ ]  |  |
| **3.11 Completed 60% Design** | [ ]  | [ ]  |  |
| **Construction cost estimate** | [ ]  | [ ]  |  |
| **Updated schedule** | [ ]  | [ ]  |  |
| **60% Review Comments Log** | [ ]  | [ ]  |  |
| 4 90% Design |  |  |  |
| **4.1 60% Comments** |  |  |  |
| Have all the 60% review comments been addressed? | [ ]  | [ ]  |  |
| **4.2 90% Plans substantially ready for bid** | [ ]  | [ ]  |  |
| Has drafting been checked, for: |  |  |  |
|  Standard layer control? | [ ]  | [ ]  |  |
|  Seattle standards? | [ ]  | [ ]  |  |
|  Spelling? | [ ]  | [ ]  |  |
|  Stationing?  | [ ]  | [ ]  |  |
|  Cross referencing? | [ ]  | [ ]  |  |
|  Views adequate for construction? | [ ]  | [ ]  |  |
|  Complete details? | [ ]  | [ ]  |  |
| Have all fittings and connections called out? | [ ]  | [ ]  |  |
| 4 90% Design (cont.) |  |  |  |
| Are design criteria notes on the plans? | [ ]  | [ ]  |  |
| Is the hydraulic grade line on the profiles? | [ ]  | [ ]  |  |
| Are notes clear and complete? | [ ]  | [ ]  |  |
| Are all materials specified? | [ ]  | [ ]  |  |
| Have easements been identified? | [ ]  | [ ]  |  |
| Are boring log locations shown? | [ ]  | [ ]  |  |
| Has surface restoration been identified for all disturbed areas?  | [ ]  | [ ]  |  |
| Are construction pollution control plans clear? | [ ]  | [ ]  |  |
| Has all grading information to be supplied by SPU survey or design identified? | [ ]  | [ ]  |  |
| Have easements been acquired and referenced? | [ ]  | [ ]  |  |
| **4.3 Design Calculations** |  |  |  |
| Are all structural calcs including pipe loading and blocking complete and stamped? | [ ]  | [ ]  |  |
| Are all hydraulic calculations complete and stamped? | [ ]  | [ ]  |  |
| **4.4 Draft Project Manual** |  |  |  |
| Do special provisions include: |  |  |  |
|  Non-standard submittals required? | [ ]  | [ ]  |  |
|  Permit conditions? | [ ]  | [ ]  |  |
|  Traffic Control Plan? | [ ]  | [ ]  |  |
|  Community commitments? | [ ]  | [ ]  |  |
|  Access control policies/procedures to secured site? |  |  |  |
|  Other Agency commitments? | [ ]  | [ ]  |  |
|  Construction Management requirements? | [ ]  | [ ]  |  |
|  Temporary erosion and sediment control plan? | [ ]  | [ ]  |  |
|  Pre-bid meeting required? | [ ]  | [ ]  |  |
| Have permits been acquired and incorporated into plans and specifications? | [ ]  | [ ]  |  |
|  **Site Security Plan for Construction** **complete**? | [ ]  | [ ]  |  |
|  **Electrical Design complete?** | [ ]  | [ ]  |  |
| **4.5 Customer service plan?** | [ ]  | [ ]  |  |
| **4.6 Reviews** |  |  |  |
|  Has operations reviewed and crew resources been scheduled? | [ ]  | [ ]  |  |
|  Constructability review comments been incorporated into plans & specs? | [ ]  | [ ]  |  |
|  **Security review comments?** | [ ]  | [ ]  |  |
|  **Electrical and I&C review comments?** | [ ]  | [ ]  |  |
|  Has the plan been circulated both internally and externally? | [ ]  | [ ]  |  |
| **4.7 On track? Have you verified that AMC approved objectives are met?** | [ ]  | [ ]  |  |
| **4.8 Completed 90% Design**  | [ ]  | [ ]  |  |
| 4 90% Design (cont.) | Yes | No | Comments |
| Engineer’s Estimate | [ ]  | [ ]  |  |
| Construction Schedule | [ ]  | [ ]  |  |
| **90% Review Comments Log** | [ ]  | [ ]  |  |
| 5 Bid Documents |  |  |  |
|  |  |  |  |
| **Finalize Plans**  | [ ]  | [ ]  |  |
|  Have all review comments been addressed? | [ ]  | [ ]  |  |
| **Has the Advertised Plan Set been Signed and Stamped?** | [ ]  | [ ]  |  |
| **Project Manual Support** | [ ]  | [ ]  |  |
| **Addendum Support** | [ ]  | [ ]  |  |
| 6 Construction |  |  |  |
| **Review submittals****Have all required Permits been issued?****Schedule any required Preconstruction Conferences with Permit Authority, contractors and city staff.** | [ ]  | [ ]  |  |
| **Response to RFIs and field design change proposals** | [ ]  | [ ]  |  |
| Support Construction Management in review change of condition claims | [ ]  | [ ]  |  |
| Support construction manager and resident engineer at progress meetings | [ ]  | [ ]  |  |
| **Final inspection and comments** | [ ]  | [ ]  |  |
| Are as-built drawings complete? | [ ]  | [ ]  |  |
| Have GIS records been updated? | [ ]  | [ ]  |  |