# PHILADELPHIA WATER DEPARTMENT

**GSI UNIT – Ecological Restoration**

#### In-Stream/Stormwater Substantially Complete

#### Design Submission (PWD 70%) Checklist

**This checklist outlines the requirements for each submission to PWD.**

All requirements will be checked by the PWD project manager prior to review. If a project is found to be incomplete, it will be returned to the provider and one week will be allotted for revision. Checklists can be modified based on project specific requirements.

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| **Substantially Complete Design Submission (PWD 70%)**  *Further develop designs for review by PWD with iterations as needed to provide an approved substantially complete design submission. Until approved, label plans “Preliminary Design”.* |  |
| * Materially complete plan set (.PDF) including:   + Drawings prepared in accordance with the *PWD Stream Restoration Drafting & Design Standards* and *GSI CAD Standards*   + All design features included and identified   + Layout complete with all necessary call-outs   + Profile complete with all necessary call-outs   + Sections complete with all necessary call-outs   + All needed inverts and dimensions specified   + All needed details included   + Landscape plans using species from PP&R perched floodplain plant list and PWD approved GSI plant list   + System and SMP numbering included   + Construction access, staging, storage areas defined |  |
| * Design calculations (.XLSX) including, at minimum   + Bankfull discharge, critical velocity, rock sizing, shear stresses, buoyancy   + Contributing drainage area for impervious and pervious (wetlands)   + Storm size, storage volume, and loading ratios (wetlands)   + Calculations of release rates (wetlands)   + Structures calculator and Mecklenburg sheets   + Scour analysis around bridge piers/abutments (if applicable)   + HEC-RAS modeling outputs files (.PDF and model original files)   + Modeling output files (.PDF and model original files for wetlands) |  |
| * Drainage area maps (.PDF and .DWG) including:   + Distinct polygons to each inlet   + System labels provided   + Areas labeled in square feet and summed for each system   + Areas labeled as pervious or impervious based on existing condition |  |
| * PADEP/USACE Joint Permit Application:   + General Information Form   + Request for Jurisdictional Determination Application   + Cultural Resource Notice   + Pennsylvania Natural Diversity Inventory (PNDI) receipt   + PA Fish & Boat Commission Drawdown Permit |  |
| * Philadelphia City Planning Commission Submission   + Floodplain Consistency Letter (<0.1 foot water surface elevation rise of 100 year flow) |  |
| * Engineer’s estimate of construction cost (.XLSX) |  |

SUBMITTED BY \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ DATE \_\_\_­\_\_\_\_\_\_\_\_