SOIL & WATER
CONSERVATION COMMISSION

Engineering Procedure Standards
September 12, 2018

The Idaho Soil and Water Conservation Commission (ISWCC) provides conservation practice design (engineering) to districts under our District Technical Assistance Allocation and Discretionary processes as resources permit. ISWCC engineers maintain licensure per Idaho Law. All engineering designs produced by ISWCC must be stamped and logged. Engineers can only undertake engineering tasks in which they have demonstrated competence.

Available engineering Technical Assistance (TA) time is limited. District TA requests must specify tasks (deliverables) requested and District staff should first check the attached table to see the current engineering tasks in which ISWCC engineers have demonstrated competence and may undertake (see attached list). Currently, potential assistance which can be provided includes site evaluations, producer meetings on design items, survey, design, 404 permitting drawings/computations, stamped design packets with support information, construction oversite (as necessary), and construction inspection. Please note: requests for TA must be fully planned: no engineering TA time is allocated to project scoping and/or planning requests.

Districts are advised to request assistance through the formal TA Allocation Process, or as early as possible if Discretionary time is to be requested. The engineering and permitting process can take significant time and ISWCC engineers are frequently juggling multiple projects.

Information for designs is gathered by ISWCC engineers during site evaluations, surveys, and research. Specific information may be needed from the landowner, District, funding sources, and planners to develop a satisfactory product. Designs often require consulting many sources of information regarding engineering standards, regulatory requirements, and funding source requirements. This may take days or weeks. Once a draft design is complete, it must be reviewed by all affected parties to see that it meets landowner and District goals. Many designs require permitting – often with federal and state regulatory agencies as well as city/county zoning. Federal 404 permits can take over 90 days, depending on design elements and consultations with other agencies. State and local permitting may require special investigations and permitting fees. In addition, permits may require specific construction times for endangered species and local conditions. Districts are encouraged to plan ample time for the process and unanticipated challenges along the way.

For example, a streambank protection project may take a few days or weeks to arrange a landowner meeting. During the site evaluation, a survey may occur or need to be scheduled for another day. Simple designs, or ones the engineer has extensive familiarity with, could take a few weeks. More extensive designs, new criteria or

techniques would require consultation and review, adding more weeks. Finally, the proposed design will be shown to the landowner and District for approval. The entire pre-permitting process can therefore take between a few days and a few months. Similarly, permitting can take as little as 30 days, or up to 120 if the agency is busy or specific consulting is required.

Finally, once permits are issued, there may be construction time windows (such as mid-November through February 1 for salmonids in some waters, or outside bird nesting seasons) that will affect when construction can occur. The end result is that if you wish to do construction in December, the original site evaluation may need to be undertaken no later than August of that year to fit all engineering and permitting windows. Simultaneously, other Districts may be competing for the engineers' time. Districts should be prepared in the event that construction may not occur until the following construction window.

If a District finds that the deliverables are completed, or determine that it does not wish to complete the TA request as approved by ISWCC (for reasons such as cooperators cancelling request for assistance, a grant is not funded, or District goals change), the District must follow ISWCC's established procedure to reallocate the deliverables/hours. ISWCC field staff including engineers will not facilitate or pursue reallocation of hours to another project – this is a task the District must undertake with the District Support Services (DSS) lead.

Problem Solving

If a District is dissatisfied with the timeliness or quality of ISWCC engineering or field staff work, the steps a District must follow to resolve issues are:

Step 1. Contact assigned Commission employee to resolve. If not satisfied, proceed to Step 2.

Step 2. Contact employee's supervisor to resolve. If not satisfied, proceed to Step 3.

Step 3. Contact district support services lead to resolve. If not satisfied, proceed to Step 4.

Step 4. Contact the Commission administrator to resolve.

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ISWCC Engineers Demonstrated Competency List

NRCS Practice	Includes:	Allan Johnson, PE	Bill Lillibridge, PE
Access Road (560)	Culvert, Bridge, concrete inlet/outlet	Yes	Yes
Aquatic Organism Passage (396)	Barrier Removal, Culvert, Bridge, Passage Design	Yes	Some, contact Bill
Channel Stabilization (584)	Gradient Control, Modify Sediment Transport/Deposition	Yes	Yes
Clearing and Snagging (326)	Channel Capacity Restoration, Reduce Debris Formation, Reduce Eddies and Scour	Yes	Yes
Dam (402)	Spillways, Water Storage	Yes	Yes
Diversion Dam (348)	Irrigation, Livestock Wastewater	Yes	Yes
Dike (456)	Flood Control, Property Protection	Yes	Yes
Diversion (362)	Runoff Control, Erosion Reduction	Yes	Yes
Grade Stabilization Structure (410)	Gully Erosion, Head Cuts, Sediment Storage	Yes	Yes
Grassed Waterway (412)	Runoff Conveyance, Gully Erosion	Yes	Yes
Heavy Use Area Protection (561)	Feeding pads, loading areas, concrete work	Yes	Yes
Hillside Ditch (423)	Runoff Control	Yes	Yes
Irrigation Canal (320)	Permanent Canal, Lateral. Turnouts, Checks, Crossings. Linings.	Yes	Yes
Irrigation Field Ditch (388)	25 cfs or less	Yes	Yes
Irrigation Pipeline (430)	Supports, Pressure Regulation, Valves	Yes	Some, contact Bill
Irrigation Reservoir (436)	Dam, Embankment, Pit, Tank. Foundations, Spillways.	Yes	Yes
Irrigation System (441, 443, 447, 448)	Microirrigation, Surface/Subsurface, Tailwater Recovery, Management	Yes	Some, contact Bill
Livestock Pipeline (516)	Capacity, Support, Pressure Regulation.	Yes	Yes
Open Channel (582)	Capacity	Yes	Yes
Pond (378)	Storage, Spillway	Yes	Yes
Pond Sealing (520, 522, 521A)	Compact Soil, Concrete, Flex. Membrane	Yes	Yes
Pumping Plant (533)	Regular, windmill, hydraulic ram, solar	Yes	Yes
Roof Runoff Structure (558)	Gutters, downspouts, trench drains	Yes	Yes
Sediment Basin (350)	Capacity, maintenance, outlet	Yes	Yes
Spring Development (574)	Collection lines, spring box	Yes	Yes
Sprinkler System (442)	Nozzle pattern, LEPA, Pivots, Big Gun	Yes	No
Stream Crossing (578)	Ford, culvert, bridge	Yes	Yes

Streambank and Shoreline Protection (580)	Riprap, bank barbs, bioengineering, breakwaters	Yes	Yes
Structure for Water Control (587)	Spillway, drop structure, riser	Yes	Yes
Surface drains (607, 608)	Collection, capacity	Yes	Yes
Waste Separation Facility (632)	Screen, settling basin/tank/channel	Yes	Yes
Waste Storage Facility (313)	Pond, Tank. Sizing, maintenance	Yes	Yes
Waste Treatment Lagoon (359)	Sizing, maintenance	Yes	Yes
Water/Sediment Control Basin (638)	Sediment Trap, Water Retention.	Yes	Yes
Watering Facility (614)	Trough, tank, frost resistance.	Yes	Yes