



February 24, 2026

Nevada Division of Environmental Protection
Bureau of Water Quality Planning
Attn: NDEP 401
901 South Stewart Street, Suite 4001
Carson City, NV 89701

Transmitted via electronic mail:
ndep401@ndep.nv.gov

Subject: Resubmittal of 401 Application Ref. the Somersett Golf Course Pond Maintenance Project

Dear NDEP:

Nevada Environmental Consulting, LLC (NVENV), on behalf of the Somersett Homeowners Association, is submitting this revised Clean Water Act Section 401 application package for the Somersett Golf Course Pond Maintenance Project. For background, NVENV and NDEP met for the customary pre-filing meeting on January 8, 2026, followed by a coordination meeting held February 20, 2026. During the February 20 meeting, Zack and NDEP provided feedback regarding clarification of project methodology and the appropriate level of detail necessary to support our application.

In response to that discussion, NVENV has updated the submittal package accordingly.

The project will remove accumulated sediment and vegetation debris from golf course water features (ponds). The proposed action consists of routine dredging and temporary construction activities authorized under a non-notifying Nationwide Permit 33 issued by the U.S. Army Corps of Engineers (USACE).

The work illustrated on the attached maps will re-establish each pond's original capacity, improve overall pond health, decrease foul odor, conform with mosquito abatement needs and enhance aquatic habitat. Final off-site disposal locations have not yet been selected and shall be determined by the Contractor in accordance with the approved Sediment Removal Methodologies document, consistent with the approach discussed and agreed upon during the February 20 coordination meeting with Zachary and NDEP. Likewise, disposal and decant locations shall be appropriately permitted the same, and shall not result in material being placed or discharged into Waters of the United States or Waters of the State. A buffer area shall be maintained at all stockpile and decant locations and sized to capture a minimum of five percent (5%) of the stored material volume, including provision for adequate catchment and infiltration capacity to prevent uncontrolled runoff. All transport and disposal activities shall comply with applicable regulatory requirements.

The project is anticipated to occur between January 15 and June 15. Active construction is expected to require approximately eight days, with a two-week pre-construction period to allow for pond drawdown prior to the start of work.

Other applicable authorizations include the previously submitted Working in Waterways Permit application and coverage under the Stormwater Construction General Permit, with a Stormwater Pollution Prevention Plan (SWPPP) to be maintained on-site throughout construction in addition to the aforementioned NWP 33.

- **Project name:** Somersett Golf Course Pond Maintenance

- **Type of project:** Maintenance
- **Location of the project, including the County:** 7650 Town Square Ln, Washoe County, Reno, Nevada 89523. Coordinates 39.43229, -119.91430
- **Approximate Acreage of Impacts to Waters of the U.S. or Waters of the State:** 0.272 acres (permanent) 0.0002 acres (temporary – sandbags)
- **Project Duration:** Anticipated for 8 days minimum from permitting approval reception(s).
- **Project Applicant Information:**
Ron Eckhardt
Board President of Somersett Homeowners Association
Ron@somersett.com
(775)787-4500

To ensure a clear regulatory record, the additional applicable permits are listed below:

- **401 Certification Request Application (Attached) (NDEP)**
- **Working in Waters Permit (NDEP) - #56192**
- **Stormwater Construction Permit - #56124**
- **Pre-Construction Notice (USACE)**
- **Non-Notifying Nationwide Permit 33**

Sincerely,

Devin Alston



Environmental Analyst

Cc: Zachary Carter zcarter@ndep.nv.gov
Matt Setty matt@nvenv.net
Garrison Weems garrison@nvenv.net



Clean Water Act Section 401 Water Quality Certification Application

Please refer to the “Clean Water Act Section 401 Water Quality Certification Application Guidance” document for assistance with completing this application.

A. Pre-Filing Meeting	
Please provide the date that a pre-filing meeting was requested from Nevada Division of Environmental Protection (NDEP) Bureau of Water Quality Planning (BWQP).	12.10.2025, Held 01.08.2026 Follow up discussion held: 2.21.2026
<i>Note: If a pre-filing meeting has not been requested, please schedule a pre-filing meeting with NDEP BWQP.</i>	

B. Contact Information	
Project Proponent Information	
Company Name: Somersett Homeowners Association	Address: 7650 Town Square Ln
Applicant Name: Ron Eckhardt	City: Reno
Phone: 757-787-4500 Fax: NA	State: NV
Email: Ron@somersett.com	Zip Code: 89523
Agent Information	
Company Name: Nevada Environmental Consulting, LLC.	Address: 5985 Home Gardens Dr. Suite B
Agent Name: Matthew Setty	City: Reno
Phone: 775-544-1149 Fax: NA	State: NV
Email: matt@nvenv.net	Zip Code: 89502

C. Project General Information			
Project Location			
Project/Site Name: Somersett Golf Course Pond Maintenance Project		Name of receiving waterbody): Brooklyn Creek	
Address: 7650 Town Square Ln		Type of waterbody present at project location (<i>select all that apply</i>): <input checked="" type="checkbox"/> Perennial River or Stream <input type="checkbox"/> Intermittent River or Stream <input type="checkbox"/> Ephemeral River or Stream <input type="checkbox"/> Lake/Pond/Reservoir <input type="checkbox"/> Wetland <input type="checkbox"/> Other: _____	
City: Reno			
County: Washoe			
State: Nevada			
Zip Code: 89523			
Latitude (UTM or Dec/Deg): 39.43229		Longitude (UTM or Dec/Deg): -119.91430	
Township: 19N	Range: 18E	Section: 12	¼ Section: NWNW

Project Details	
Project purpose:	The purpose of this project is to re-establish the three ponds' capacities to pre sedimentation. This will improve the pond's health, increase aquatic habitat, and decrease the foul odor from the ponds. The project will remove accumulated sediment and vegetation debris from within three on-site ponds that have experienced reduced storage capacity over the past several years.
Describe current site conditions: Attachments can include, but are not limited to, relevant site data, photographs that represent current site conditions, or other relevant documentation.	Brooklyn Creek is a perennial waterway that flows through a series of constructed ponds within the Somerset Golf Course. The ponds contain extensive cattail and Juncus growth, with areas of accumulated sediment and localized headcutting observed. Pondered water conditions are present, and flow continuity between ponds is limited, resulting in stagnant conditions in some reaches and associated foul odors. No recent precipitation events have occurred at the time of site observation; however, upcoming storm events are anticipated. Existing site conditions are documented in the attached maps and photographs included in the submittal package. SEE ATTACHED PHOTOS IN SUBMITTAL PACKAGE.
Describe the proposed activity including methodology of each project element:	Project will re-establish each pond's original capacity, improve overall pond health, decrease foul odor, conform with mosquito abatement needs and enhance aquatic habitat. Sediment will be removed, stockpiled within upland areas of the golf course, then hauled offsite once adequately drained. This project will require the diversion of water from each pond, which will use sandbags (Creating temporary fill discharge to WOTS), along with the draw down of remaining pond water to create a workable area to remove the sediment which will be the targeted dredge (see attached water management plan below). Once the pond has been sufficiently drained and work can be performed from within the pond, sediment will be scooped out and placed within an upland area to be hauled offsite.
Estimate the nature, specific location, and number of discharge(s) expected to be authorized by the proposed activity:	2 Points of "discharge" which consist of creek being diverted out and back in once surpassing ponds to allow for us to access ponds for work.
Provide the date(s) on which the proposed activity is planned to begin and end and the approximate date(s) when any discharge(s) may commence:	January 15 – June 15 th .
Provide a list of the federal permit(s) or license(s) required to conduct the activity which may result in a discharge into regulated waters (see mandatory attachments):	Non-Notifying NWP 33 401 Working in Waters Permit - #56192 Stormwater Construction Permit - #56214
Provide a list of all other federal, state, interstate, tribal, territorial, or local agency authorizations required for the proposed activity and the current status of each authorization:	USACE NDEP
Total area of impact to regulated waterbodies (acres):	Pond 1: 0.079 AC Pond 2: 0.193 AC Total: 0.272 AC
Total distance of impact to regulated waterbodies (linear feet):	Pond 1: 97.45 Pond 2: 257.12 Total: 354.57 Linear Feet

Amount excavation and/or fill discharged within regulated waters (acres, linear feet, and cubic yards):	Temporary: 0.0002AC / 12LF / 0.34CY (Sandbag)	Permanent: NA
Amount of dredge material discharged within regulated waters (acres, linear feet, and cubic yards):	Temporary: NA	Permanent: Pond 1: 0.079ac / 97.4 LF / 254 CY Pond 2: 0.193ac / 257.1 LF / 623 CY Total: 0.272 AC / 354.5 LF / 877 CY
Describe the reason(s) why avoidance of temporary fill in regulated waters is not practicable (if applicable):	Project is within ponds within Brooklyn Creek.	
Describe the Best Management Practices (BMPs) to be implemented to avoid and/or minimize impacts to regulated waters: Examples include sediment	No adverse environmental effects are anticipated, however, mitigation measures for this project will include several best management practices (BMPs) to prevent erosion, manage water, and protect water quality. Sandbags will be placed to divert creek flow around active work areas, and pumps and sumps equipped with filtration will be used to maintain dry conditions and control turbidity. Turbidity will be monitored throughout construction to ensure compliance with water quality standards. Disturbed soils will be stabilized with vegetative erosion control mats and fiber rolls, and all work areas will be restored with native vegetation upon completion.	

<p>and erosion control measures, habitat preservation, flow diversions, dewatering, hazardous materials management, water quality monitoring, equipment or plans to treat, control, or manage discharges, etc.</p>	
<p>Describe how the activity has been designed to avoid and/or minimize adverse effects, both temporary and permanent, to regulated waters:</p>	<p>In addition to the aforementioned BMPs, project will also utilize water diversion methods to minimize effects. See attached "Water Management Plan." and attached Contractor Methodologies Report.</p>
<p>Describe any compensatory mitigation planned for this project (if applicable):</p>	<p>NA</p>

D. Signature		
Name and Title (Print): Matthew Setty	Phone Number: 775-544-1149	Date: 2/24/2026
<div style="display: flex; align-items: center;"> <div style="font-size: 2em; margin-right: 10px;">X</div> </div> <hr style="width: 80%; margin-left: 0;"/> Signature of Responsible Official		

Mandatory Attachments:

- **Federal Permit or License Identification:**
 - Project proponents seeking a federal general permit or license must include a copy of the draft federal license or permit and any readily available water quality-related materials that informed the development of the draft federal license or permit, or;
 - Project proponents seeking a federal individual permit or license must include a copy of the federal permit or license application and any readily available water quality-related materials that informed the development of the federal license or permit application.
- **Site Map** - A map or diagram of the proposed project site including project boundaries in relation to regulated waters, local streets, roads, and highways.
- **Engineered Drawings** - Engineered drawings are preferred to be submitted at the 70% design level. If only conceptual designs are available at the time of application, plans for construction should be submitted prior to the start of the project. Specific locations of the proposed activities and details of specific work elements planned

for the project should be identified (e.g., staging areas, concrete washouts, perimeter controls, water diversions, or other BMPs).

Submit the completed application materials to NDEP (ndep401@ndep.nv.gov) with the appropriate U.S. Army Corps of Engineers Regulatory Office copied on the communication (<http://www.spk.usace.army.mil/Missions/Regulatory/Contacts/Contact-Your-Local-Office/>).

Nevada Environmental Consulting, LLC

5985 Home Gardens Drive, Ste. B, Reno, Nevada 89502 | www.nvenv.net



January 27, 2026 (Resubmitted February 23, 2026)

Transmitted via electronic mail:
zcarter@ndep.nv.gov

Zachary Carter
Nevada Division of Environmental Protection
9805 Double R Blvd., Ste 200
Reno, NV 89521

Transmittal Letter – Somerset Golf Course Pond Maintenance Project

Dear Zachary:

Nevada Environmental Consulting, LLC (NVENV) is providing this submittal package on behalf of Somerset Owners Association for the Somerset Golf Course Pond Maintenance Project. This project involves three ponds located within the Somerset Golf Course, in Washoe County, Nevada. Two of the ponds are in channel ponds within the Brooklyn Creek drainage and bypass piping during sediment removal will be required for a base flow of <20 gpm.

Site	WGS 84	PLSS, MDB&M	APN	Acres (Pond Physical Size)
Pond 1 Northeast	39.53229° N, -119.91430° W	T. 19 E., R. 18 E., Section 12 NW¼ NW ¼	232-060-28	0.13
Pond 2 South	39.53047° N, -119.91638° W	T. 19 E., R. 18 E., Section 12 NW¼ NW ¼	232-060-26	0.48
Pond 3 Northwest	39.53411° N, -119.92278° W	T. 19 E., R. 18 E., Section 11 NE¼ NE ¼	232-020-12	0.38
<i>Total =</i>				0.9

The project will remove accumulated sediment and vegetation debris from within three on-site golf course water features (ponds) that are Waters of the U.S. and Waters of the State. The proposed action consists of routine dredging and temporary construction activities authorized under a non-notifying Nationwide Permit 33 issued by the U.S. Army Corps of Engineers (USACE). The work illustrated on the attached maps will re-established each pond's original capacity, improve overall pond health, decrease foul odor, conform with mosquito abatement needs and enhance aquatic habitat. Final off-site disposal locations have not yet been selected and shall be determined by the contractor in accordance with the approved Sediment Removal Methodologies document, consistent with the approach discussed and agreed upon during the February 20th coordination meeting with Zachary and NDEP. Likewise, disposal and decant locations shall be appropriately permitted the same, and shall not result in material being placed or discharged into Waters of the United States, nor Waters of the State. A buffer area shall be maintained at all stockpile and decant locations and sized to capture a minimum of five percent (5%) of the stored material volume. All transport and disposal activities shall comply with applicable regulatory requirements.

Other applicable authorizations include the previously submitted Working in Waterways Permit application and coverage under the Stormwater Construction General Permit, with a Stormwater Pollution Prevention Plan (SWPPP) to be maintained on-site throughout construction in addition to the aforementioned NWP 33.

The project is anticipated to occur between January 15 and June 15. Active construction is expected to require approximately eight days, with a two-week pre-construction period to allow for pond drawdown prior to the start of work.

Sincerely,

Devin Alston
Environmental Scientist

- Site Map(s)
 - Water Management Plan with Map
 - Topographical Map
 - HUC Watershed Map
- Attachments (5):

- Photos with Photo Map



- ▲ Headcutting
- Brooklyn Creek
- Parcels
- Pond
- BMP

0 25 50 ft



Nevada Environmental Consulting, LLC

www.nvenv.net



Fig 1. Pond 1 Site Overview

Project:

Somersett Pond Maintenance

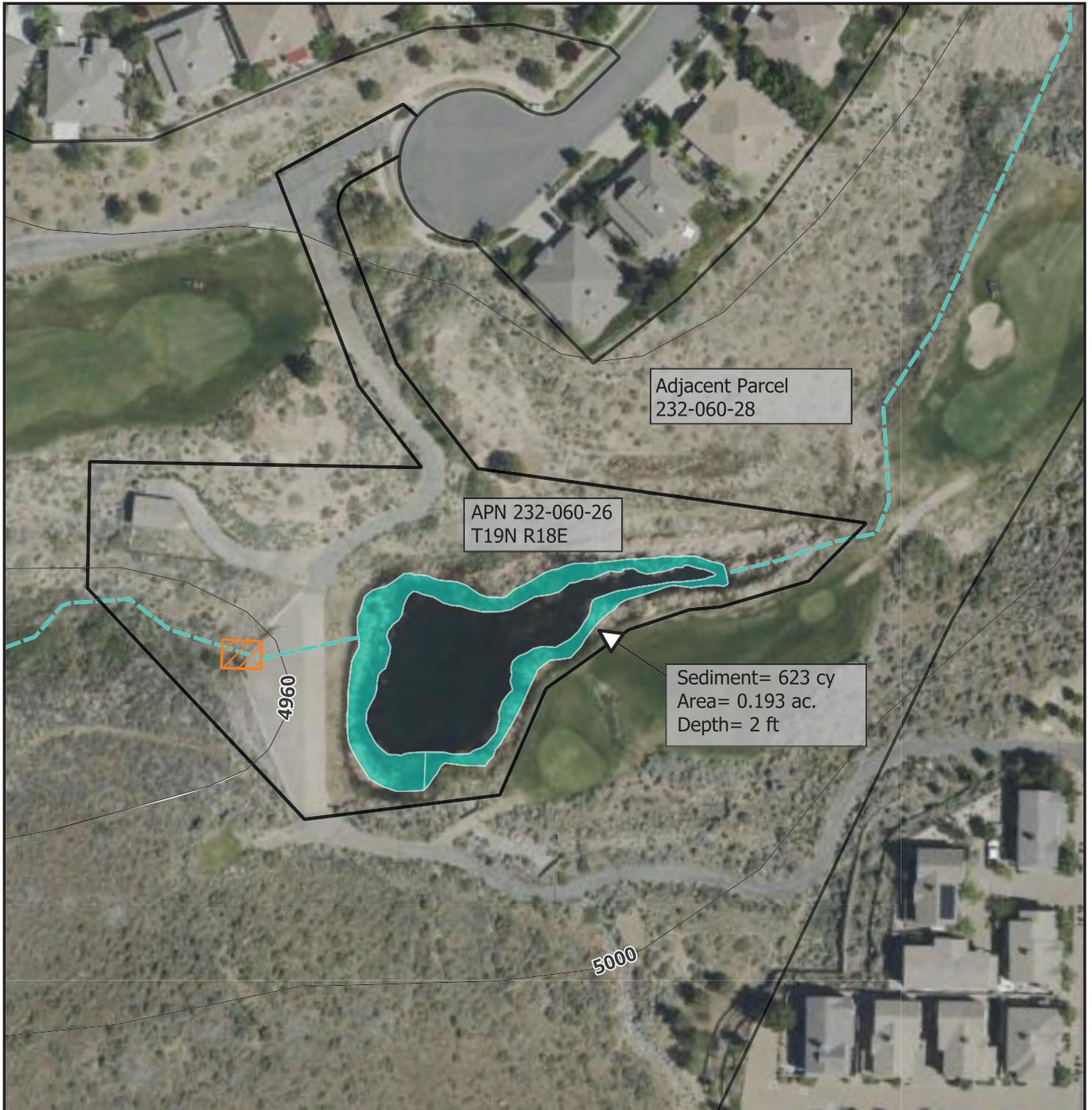
Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

Client:

Somersett Owners Association



Adjacent Parcel
232-060-28

APN 232-060-26
T19N R18E

Sediment= 623 cy
Area= 0.193 ac.
Depth= 2 ft



4960

5000

- Headcutting
- Brooklyn Creek
- BMP
- Parcels
- Pond



Nevada Environmental Consulting, LLC
www.nvenv.net



Fig 2. Pond 2 Site Overview

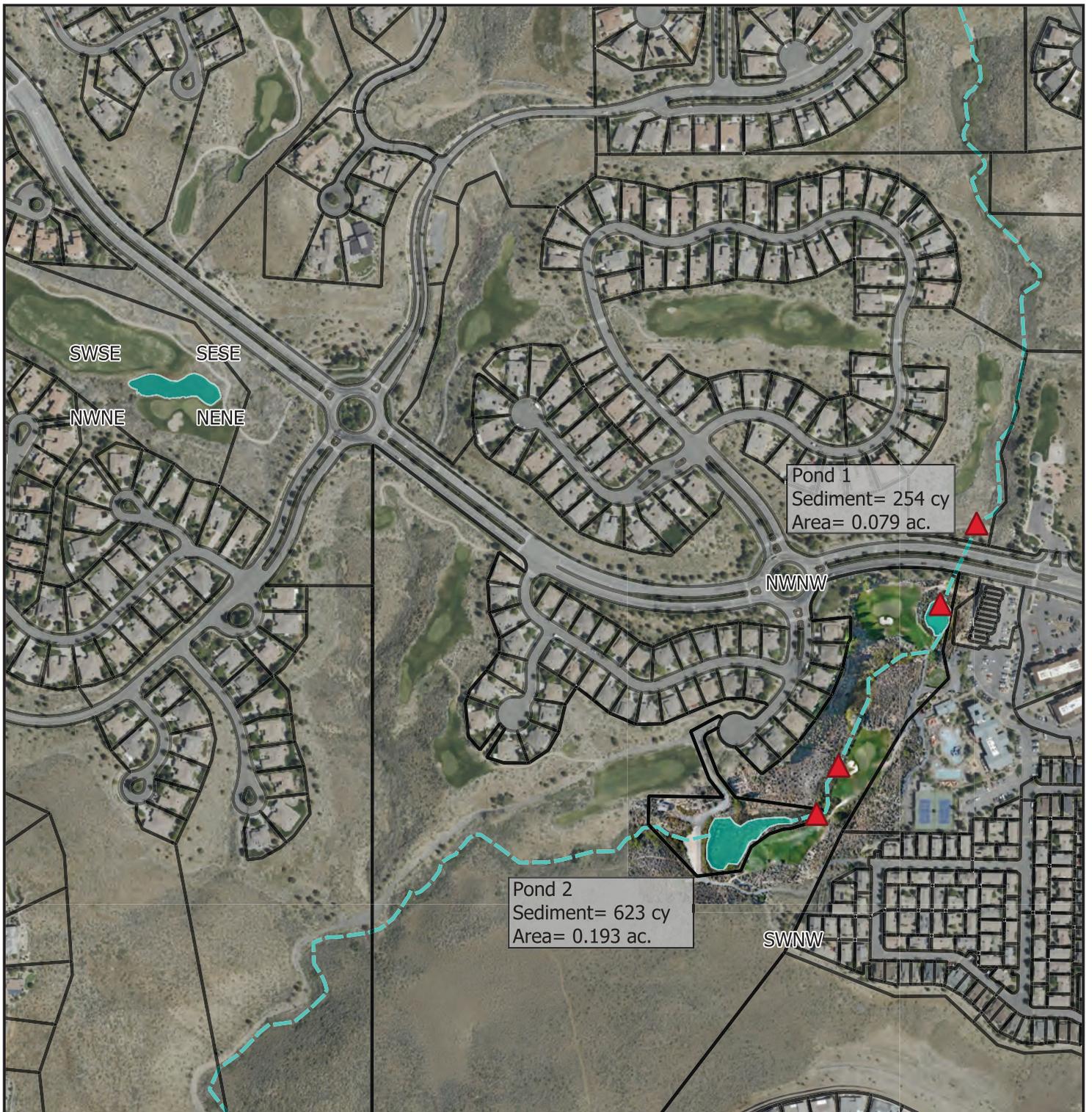
Project:
Somerset Pond Maintenance

Map Source: Bing Satellite/ NVENV Orthomosaic

October 13, 2025

Client: **Somerset Owners Association**

filename://SomersetPondMaintenance_with_Pics_GW



▲ Headcutting
 --- Brooklyn Creek
 Ponds Ephemeral drainage
 0 250 500 ft

Parcels
 10 foot buffer
 BMP

Nevada Environmental Consulting, LLC
www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

Fig 3. Ponds 1, 2, & 3 Site Overview

Project:
Somerset Pond Maintenance

Client: **Somerset Owners Association**



Somerset Golf Course Pond Maintenance Project – Water Management Plan

Nevada Environmental Consulting, LLC. (NVENV) is providing this water management plan for the Somerset Golf Course Maintenance Project.

Pond maintenance activities, including the dredging of sediment and debris from ponds, water diversions, and bypass piping, are required to manage perennial waters in Brooklyn Creek. To minimize water quality impacts, the work site will be dried up to the maximum extent possible.

This plan is organized into two main components: the Diversion Bypass Plan and the Pond Drain-Down Plan, which outline the methods for managing and controlling water during construction activities.

Site	WGS 84	PLSS, MDB&M	Bypass Volume	Drain Down Volume
Pond 1 Northeast	39.53229° N, -119.91430° W	T. 19 E., R. 18 E., Section 12 NW¼ NW ¼	20 – 100 gal/m	87,687 gal
Pond 2 South	39.53047° N, -119.91638° W	T. 19 E., R. 18 E., Section 12 NW¼ NW ¼	20 – 100 gal/m	310,487 gal
Pond 3 Northwest	39.53411° N, -119.92278° W	T. 19 E., R. 18 E., Section 11 NE¼ NE ¼	NA	245,361 gal

Diversion Bypass Plan

Ponds 1 and 2 will require a diversion system to temporarily reroute inflow from Brooklyn Creek around the work areas while construction is underway. Pond 3 does not require a diversion system. At Pond 1, sandbags will be placed in Brooklyn Creek immediately upstream of the existing box culvert at the pond inlet to direct flow into an HDPE (high-density polyethylene) pipe. Note that the sandbag placement is not an impoundment and will not exceed the size threshold that would require a DWR permit. The diversion pipe will run along the eastern side of the pond and reconnect with the creek near its natural outlet point. Additional sandbags will be used as needed along the diversion alignment to maintain stable flow and aid bypassing. Pipe sizing will be 6–12 inches to accommodate expected precipitation events and maintain consistent flow through the work area.

Native materials be used to minimize erosion at the diversion pipe discharges. Native materials include refer to existing riprap already present at the project site.

Approved Methods per Sediment Removal Methodologies Document from REPORT: Sediment Removal Methodologies for Flow-Through Golf Course Ponds After Bypass and Dewatering

Consistent with decisions held during the February 21 meeting between Zachary Charter/NDEP and NVENV, pond drain-down and dewatering will be governed by the approved Sediment Removal Methodologies Document.

Specific means and methods, including pump type, bypass configuration, discharge routing, and sequencing, shall be determined by the Contractor in accordance with that document and applicable regulatory requirements. All dewatering activities shall prevent uncontrolled discharge, protect downstream waters, and comply with applicable water quality standards.

Placement of Removed Sediment Water Management in Relation to Post-Project Conditions

Water management for this project will ensure the worksite remains as dry as conditions allow. Bypass pumping and management of drainage water will ensure appropriate water and site management during construction and provide infrastructure to address stormwater impacts.

Upon completion of the sediment removal, the chose construction method(s) will be removed, and the pond will be left to refill. Due to the volume required to fill the pond, this may take a few storm events.

To characterize potential refill timing, a residence time analysis was performed using a range of anticipated inflow conditions. A conservative low-flow rate of 20 gallons per minute and a higher-flow rate of 100 gallons per minute were applied to each pond’s estimated volume to establish minimum and maximum refill durations. The results of this analysis are summarized in the table and graph below.

Site	Pond Estimated Total Volume (gal)	Minimum Flow (20gpm) in Hours	Maximum Flow (100gpm) in Hours
Pond 1 Northeast	87,687	73.1	14.6
Pond 2 South	310,487	258.7	51.7
*Pond 3 Northwest	245,361	*NA	*NA

*Pond 3 does not receive controlled inflow and is not hydrologically connected to Brooklyn Creek. As a result, residence time could not be calculated using flow-based methods. While the pond may be drawn down during construction, refill will occur solely through direct precipitation and localized runoff. The timing of refill for Pond 3 will therefore be dependent on seasonal storm events and cannot be reliably estimated using gallons-per-minute assumptions.

The gradual refilling of the pond will aid in the compaction of sediment left over from the construction period. Any discharge over the spillway post-project is unlikely to show turbidity due to water management or sediment removal activities.

Sincerely,



Devin Alston
Environmental Scientist

- Attachments (1):
- Water Management Plan Map(s)



Brooklyn Creek	Pond	Pump	0 25 50 ft 	
Bypass pipe	BMP	Bypass Diversion		
10 foot buffer	Energy Dissipation	4x6 Box Culvert		

Nevada Environmental Consulting, LLC
www.nvenv.net



CRS: EPSG26911
Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

Fig 4. Water Management Plan Map

Project:
Somerset Pond Maintenance

Client: **Somerset Owners Association**



Nevada Environmental Consulting, LLC
www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

Fig 5. Water Management Plan P2

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association



Photo ID: P1.1
Subject: Vegetation surrounding Pond 1
Date: 9.16.2025
Lat/Long: 39.532333, -119.914702
Direction: E



Photo ID: P1.0
Subject: Overlook of Pond 1
Date: 9.16.2025
Lat/Long: 39.532333, -119.914703
Direction: SE



Photo ID: P1.SP1
Subject: Sprinkler head near Pond 1
Date: 9.16.2025
Lat/Long: 39.532519, -119.914663
Direction: SE



Photo ID: P1.SP2
Subject: Second Sprinkler head near Pond 1
Date: 9.16.2025
Lat/Long: 39.532183, -119.914513
Direction: NE



Photo ID: P1.VE
Subject: Potential vehicle entrance site
Date: 9.16.2025
Lat/Long: 39.532566, -119.914261
Direction: SW



Photo ID: HC.1
Subject: Headcutting before culvert
Date: 10.9.2025
Lat/Long: 39.532630, -119.912986
Direction: NE



Photo ID: P2.D
Subject: Dam SW of Pond 2
Date: 9.16.2025
Lat/Long: 39.530227, -119.916891
Direction: N



Photo ID: P2.O
Subject: Overview of Pond 2 with surrounding vegetation
Date: 9.16.2025
Lat/Long: 39.530480, -119.916275
Direction: NW



Photo ID: P2.VE
Subject: Potential Vehicle entrance near Pond 2
Date: 9.16.2025
Lat/Long: 39.530833, -119.916091
Direction: W



Photo ID: HC.2
Subject: Headcutting shortly after culvert, Sediment build up in culvert
Date: 10.9.2025
Lat/Long: 39.532386, -119.913811
Direction: N



Photo ID: HC.3
Subject: Headcutting 3 between Ponds 1 and 2
Date: 10.9.2025
Lat/Long: 39.531280, -119.915444
Direction: NW



Photo ID: HC.4
Subject: Headcutting 4 before Pond 2
Date: 8.28.2025
Lat/Long: 39.531033, -119.915419
Direction: NE



Photo ID: SWA.P1
Subject: Potential Sediment waste area for Pond 1
Date: 9.16.2025
Lat/Long: 39.532113, -119.914650
Direction: S



Photo ID: SWA.P1P2
Subject: Potential Sediment waste area for Pond 1 and
Pond 2
Date: 9.16.2025
Lat/Long: 39.530894, -119.916022
Direction: SE



▲ Headcutting
 --- Brooklyn Creek
 Ponds
■ Photo locations

0 75 150 ft



Nevada Environmental Consulting, LLC

www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

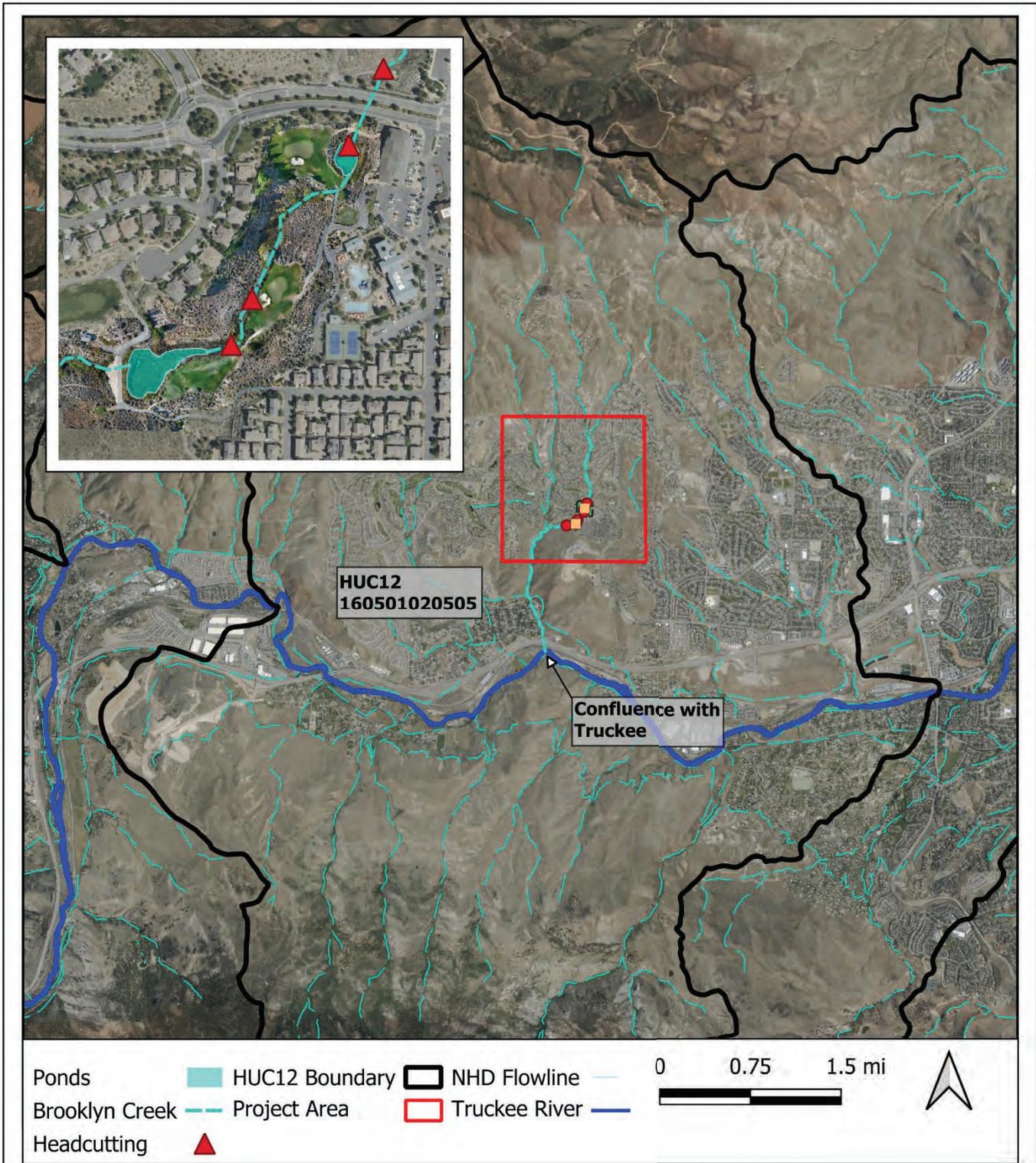
Fig 6. Photo locations

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association



Nevada Environmental Consulting, LLC
 www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

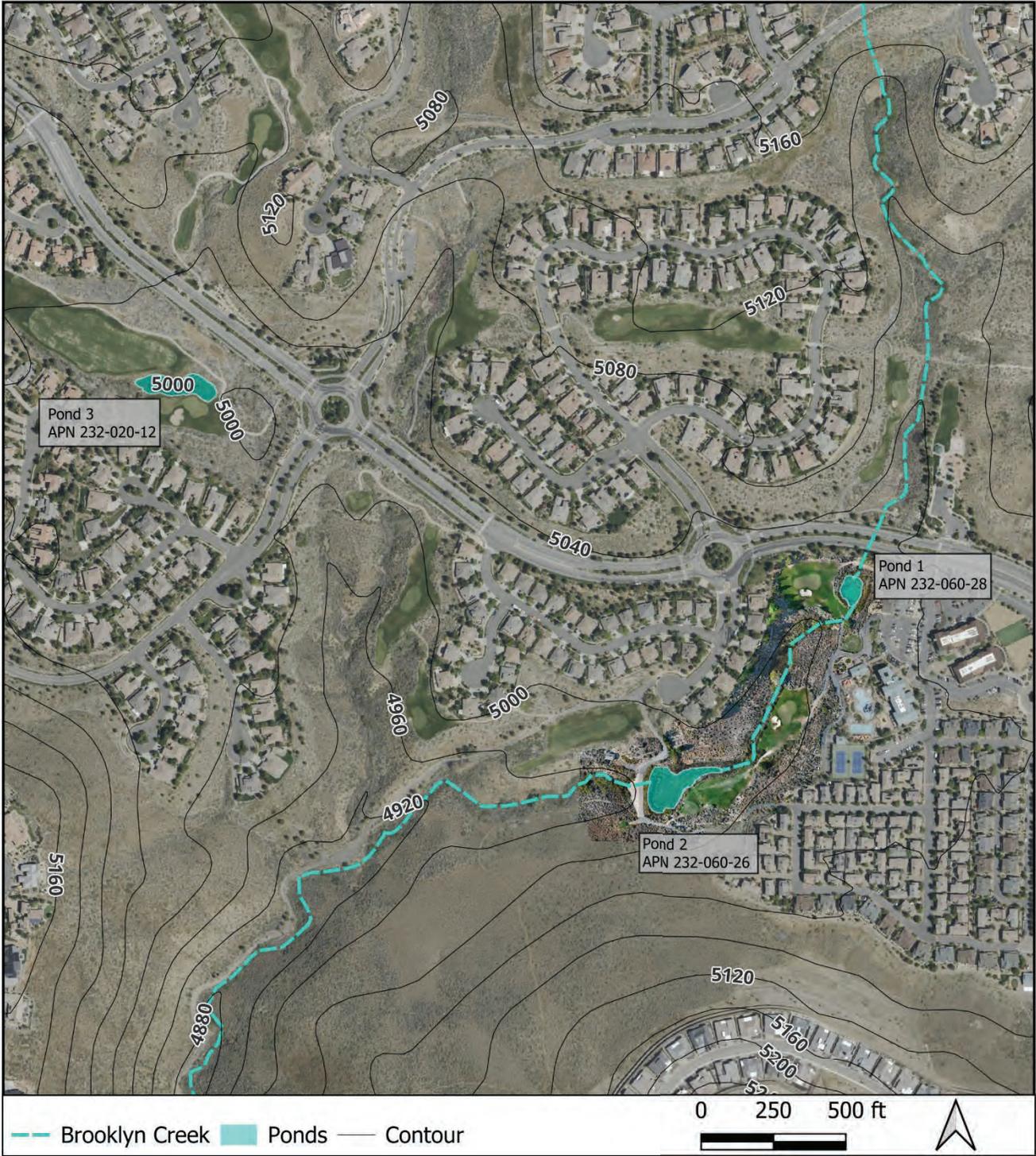
Fig 7. 12HUC Map

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association



Nevada Environmental Consulting, LLC
 www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

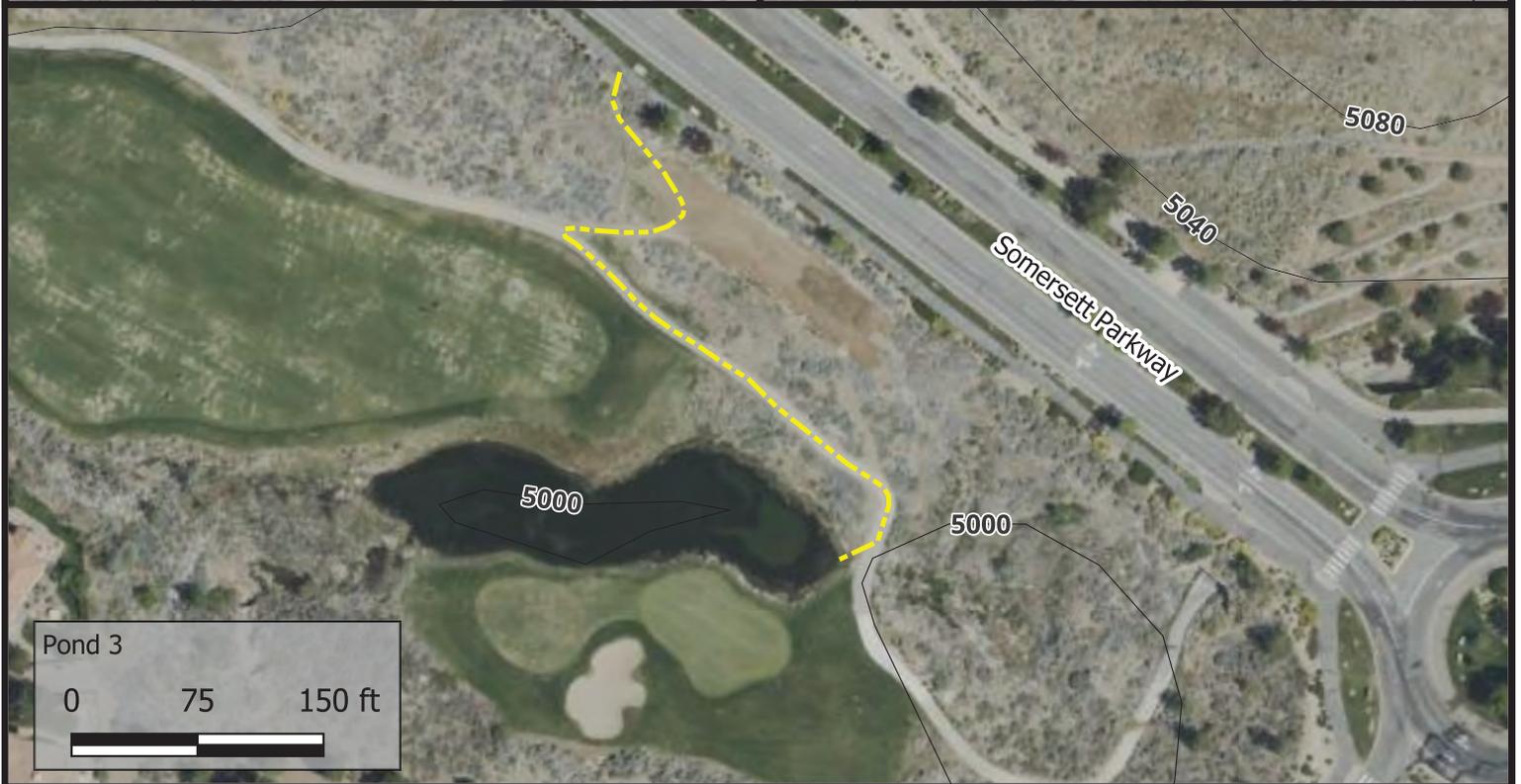
Fig 8. Topographic Map

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association



Parcels
 — Brooklyn Creek
 Ponds
 - - - Ingress and Egress Routes



Nevada Environmental Consulting, LLC

www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

Fig 9. Ingress / Egress Routes

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association



Adjacent Parcels w/APN Ponds Site Adjacent Parcels Brooklyn Creek

0 100 200 ft

Nevada Environmental Consulting, LLC

www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 13, 2025

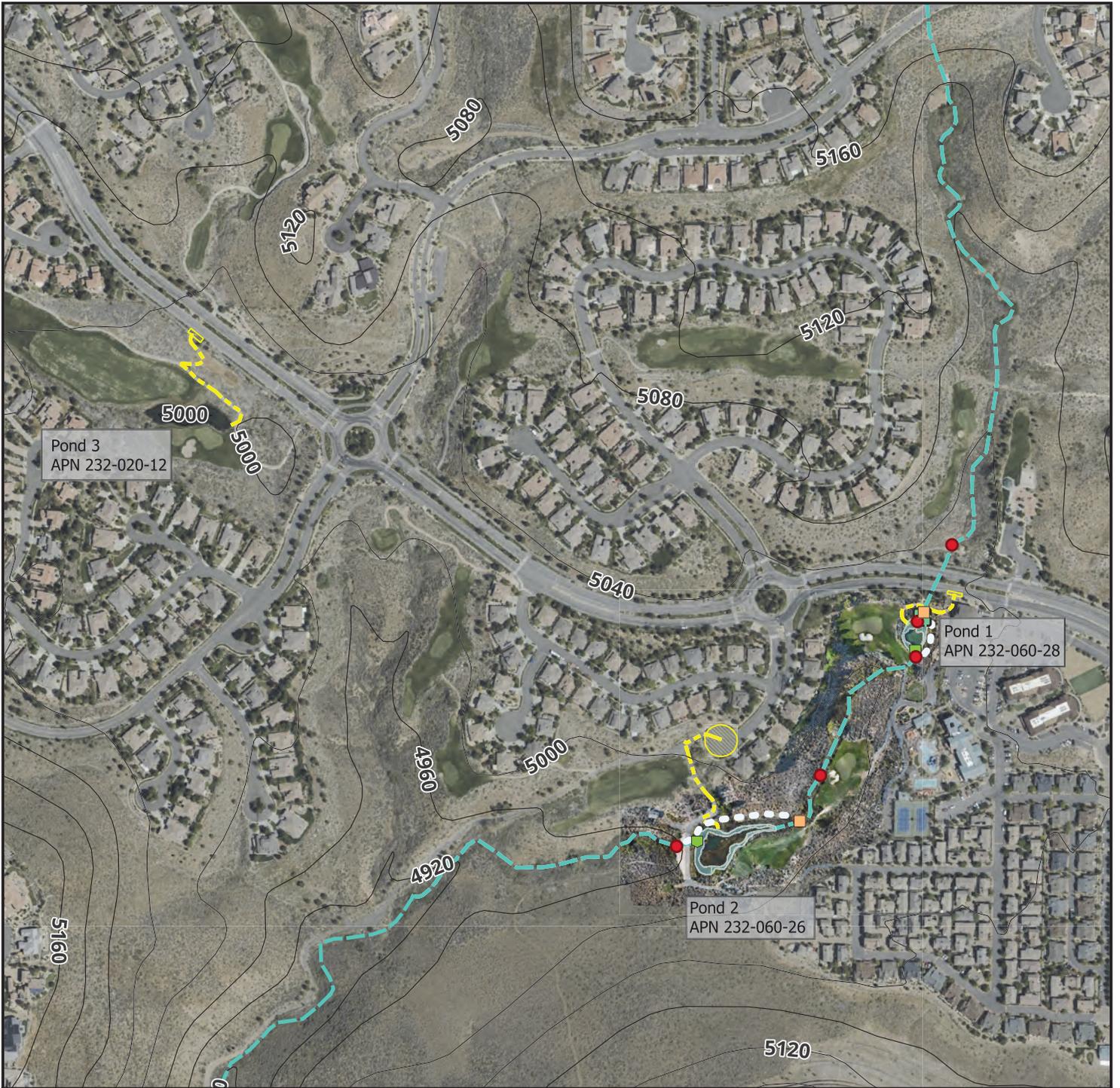
Fig 10. Site Adjacent Parcels

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association



- Brooklyn Creek
- Elevation Contours
- 4x6 Box Culvert
- Bypass pipe
- Sandbags
- Energy Dissipation
- Pump
- Best Measure Practice Locations
- Staging Area(s)
- Ingress and Egress Routes

0 250 500 ft



Nevada Environmental Consulting, LLC

www.nvenv.net



Map Source: Bing Satellite/ NVENV Orthomosaic

filename://SomersetPondMaintenance_with_Pics_GW

October 20, 2025

Fig 11. SWPPP

Project:

Somerset Pond Maintenance

Client:

Somerset Owners Association

Sediment Removal Methods for Flow-Through Golf Course Ponds After Bypass and Dewatering

Report

Prepared by Matthew Setty

matt@nvenv.net

February 13, 2026

Table of Contents

1	Introduction	5
1.1.1	Purpose.....	5
2	Summary of Sediment Removal Methodology Options	5
2.1.1	Overview	5
3	Operations Project Flow Context, Conditional Assumptions, and Baseline Dewatering + Bypass Sequencing	6
3.1.1	Project Flow Context	6
3.1.2	Baseline Dewatering + Bypass Sequencing	6
3.1.3	Conditional Assumptions	7
3.1.4	Productivity Variability Dependent on Flow	7
3.1.5	Engineering Calculations	7
4	Operations Project Flow Methodology.....	8
4.1.1	Overview	8
4.1.2	Method 1: Mechanical Excavation (excavator) with Upland Placement and Sump Pumping.....	9
4.1.3	Concept and Best-Fit Use	9
4.1.4	Equipment Basis and Capacity Factors.....	9
4.1.5	Step by Step Operational Procedure	10
4.1.6	Safety Standards, Special Parameters, and Miscellaneous	11
4.1.7	Mobilization and Demobilization	11
4.1.8	Method 2: Vacuum-truck Removal with Off-Site Disposal.....	11
4.1.9	Concept and Best-Fit Use	11
4.1.10	Equipment Basis and Capacity Factors.....	11
4.1.11	Step by Step Operational Procedure	11
4.1.12	Safety Standards, Special Parameters, and Miscellaneous	12
4.1.13	Mobilization and Demobilization	12
4.1.14	Method 3: Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water (“Baker-style”).....	12
4.1.15	Concept and Best-Fit Use	12
4.1.16	Equipment Basis and Capacity Factors.....	13

4.1.17	Step by Step Operational Procedure	13
4.1.18	Safety Standards, Special Parameters, and Miscellaneous	14
4.1.19	Mobilization and Demobilization	14
4.1.20	Solid Concentrations Note.....	14
4.1.21	Method 4: Slurry Pumping into Geotextile Dewatering Tubes/Tags (Geobags) on Golf Course	14
4.1.22	Concept and Best-Fit Use	14
4.1.23	Equipment Basis and Capacity Factors.....	14
4.1.24	Step by Step Operational Procedure	15
4.1.25	Safety Standards, Special Parameters, and Miscellaneous	15
4.1.26	Mobilization and Demobilization	15
5	Productivity and Solids Handling Calculations.....	16
5.1.1	Core Conversions and Mixture Relationships	16
5.1.2	Volume conversion: pump flow (gpm) to slurry throughput (yd ³ /hr)	16
5.1.3	Density of slurry from solids mass fraction Let w = mass fraction solids (0.40 baseline); densities:.....	16
5.1.4	Mass Rate (tons/hr).....	16
5.1.5	Pump throughput and solids-handling rates.....	16
5.1.6	Baseline: “wet sediment volume” equals pumped slurry volume at 40% solids by weight	17
5.1.7	Sensitivity: Removing the same dry solids if actual slurry is 15% solids by weight	18
5.1.8	Method-specific productivity implications	18
6	Environmental and Regulatory Considerations	19
6.1.1	Construction Stormwater Permitting and Dewatering Discharge Controls	19
6.1.2	Section 404 and Section 401	20
6.1.3	Filtrate and Effluent Quality Management	20
6.1.4	Off-Site Disposal Requirements and Characterization	21
7	Comparative Evaluation and Best-Use Scenarios	22
7.1.1	Comparison Across Key Factors.....	22
7.1.2	Recommended Best-Use Scenarios.....	23
8	Sources and References	24

1 Introduction

1.1.1 Purpose

This supplemental report provides a comparative evaluation of four potential sediment removal methodologies following bypass and dewatering, and includes detailed descriptions of sediment extraction procedures, upland stockpiling and dewatering practices, filtrate and decant water management approaches, equipment assumptions, productivity calculations, and construction best management practices associated with each method. The report also outlines baseline bypass and pump-down sequencing, regulatory considerations under Sections 404 and 401 of the Clean Water Act, and applicable dewatering discharge controls to support NDEP's evaluation of potential water quality impacts.

2 Summary of Sediment Removal Methodology Options

2.1.1 Overview

This supplemental report provides four contractor-ready sediment removal narratives:

- **Mechanical Excavation (excavator) with Upland Placement and Sump Pumping** –Typically the most straightforward for small-to-moderate ponds where heavy equipment access is feasible and sediment can be handled at or near in-situ density (bucket methods remove sediment at nearly its in-situ density per U.S. Army Corps of Engineers guidance).
- **Vacuum-truck Removal with Off-Site Disposal** – This method is highly controllable and minimizes in-pond disturbance, making it useful where access is limited or where open stockpiling is not acceptable; however, it is logistics- and disposal-driven, as truck cycles, disposal distance, and tipping/manifesting requirements govern overall production.
- **Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water (“Baker-style”)** – This method can provide continuous sediment removal while using on-site separation, with slurry pumped into roll-off tanks or boxes (e.g., 25 yd³ tanks with 150 micron filter cloth are commercially available) and decant water recycled or otherwise managed roll-off tanks/boxes with decant water recycle can provide continuous removal while using on-site separation (e.g., 25 yd³ tanks with 150 micron filter cloth are commercially available).
- **Slurry pumping into geotextile dewatering tubes/bags (geobags)** – This method involves pumping sediment slurry into geotextile tubes placed on the golf course to achieve large-volume dewatering using relatively simple equipment; product literature describes polymer conditioning, gravity drainage of clear filtrate, and high solids capture claims, though filtrate management must be treated as a regulated discharge or managed on-site with BMPs.

3 Operations Project Flow Context, Conditional Assumptions, and Baseline Dewatering + Bypass Sequencing

3.1.1 Project Flow Context

The proposed work sequence is governed by three primary constraints: (i) the continuous flow-through hydrology of the ponds, which requires bypass and isolation prior to sediment removal; (ii) erosion and sediment control requirements associated with regulated discharge of construction-affected water; and (iii) worker safety considerations associated with excavation in wet conditions.

3.1.2 Baseline Dewatering + Bypass Sequencing

A defensible baseline sequence aligns with construction dewatering guidance describing dewatering as removal of accumulated precipitation or non-stormwater (including cofferdam/diversion water) and emphasizing that discharges may require regulated management and sediment treatment.

Step A: Bypass Inflow and Isolate The Pond

- Install temporary inlet/outlet controls (e.g., sandbag/portable cofferdam, sheeted box, or earthen berms) and route inflow around the pond via pipe and/or temporary channel. OSHA excavation rules require that where work interrupts natural drainage, “diversion ditches, dikes, or other suitable means” be used to prevent water entry and provide adequate drainage.
- Include energy dissipation and stabilized outlets to prevent erosion at discharge points (consistent with dewatering BMP guidance).

Step B: Pump Residual Water

- Pump down remaining water to the lowest practicable level using a screened intake and discharge to an approved treatment/disposal path (e.g., on-site infiltration where allowable, sediment treatment train, sanitary sewer by permit, or NPDES-authorized discharge). Caltrans guidance emphasizes that discharge destination governs permitting and treatment needs and that storm drain/waterbody discharge often requires more sampling, time, and cost than on-site management.
- OSHA requires precautions where water accumulates, including water removal and monitoring of water removal operations by a “competent person.”

Step C: Sediment Removal by One of the Four Listed Methods

- Execute the selected sediment removal method with continuous management of turbid water, seepage, and filtrate so that discharges are adequately controlled (federal effluent limitation requirement).

3.1.3 Conditional Assumptions

3.1.4 Productivity Variability Dependent on Flow

Productivity (hydraulic pumping component) is governed by pump flow. Converting 300–700 gpm to volumetric throughput yields ~89–208 yd³/hr. of slurry. Under the user-specified 40% solids by weight pumping assumption, solids handling is on the order of ~40–93 tons/hr. of dry solids at 300–700 gpm (density and mixture calculations shown). If actual hydraulic dredging solids are closer to the ~10–20% by weight ranges cited in USACE dredging guidance (with ~15% typical average), substantially more slurry volume (and time) is required to remove the same dry solids mass.

3.1.5 Engineering Calculations

Because pond geometry, sediment properties, and logistical constraints unspecified calculations in this report use explicit assumptions:

- **Pump Flow:** 300-700gpm (assumed representative range for slurry pumping or equivalent removal throughout)
- **Slurry Solid Concentrations (Baseline for analysis):** 40% solids by weights (mass fraction $w = 0.40$).
- **Sensitivity Case:** 15% solids by weight (mass fraction $w = 0.15$), reflecting typical hydraulic dredging slurry ranges cited in USACE guidance (solids content variable up to ~40%, with ~15% often cited as a typical average; hydraulically placed slurry commonly ~0–20% and ~13% typical).
- **Solids Specific Gravity (Assumed):** $SG = 2.65$, representative of quartz mineral (USGS lists quartz specific gravity as 2.65).
- **Water Density (Reference for Unit Weight Conversions)** 62.4 lb./ft³ near 4°C (commonly used engineering reference value).
- **Sediment “Volume Removed”:** In the pumping calculations, “wet sediment volume” is treated as the volume of pumped slurry required to remove a specified dry sediment mass, with sensitivity showing how reduced solids concentration increases required pumped volume for a fixed dry solids target.

Additional missing parameters that materially affect design and cost:

- **Sediment Characteristics:** Grain size distribution, organic content, debris/trash fraction, and potential contamination status (metals/pesticides)
- **Pond Geometry and Access Constraints:** Pond depth, sediment thickness, side slopes, linear type (clay and geomembranes), and site access limitations (paths, bridges, turf load limits).
- **Bypass Hydrology:** Flow rate variability and storm contingency during constriction.
- **Disposal Logistics:** Disposal distance and receiving facility acceptance criteria (landfill versus strategic beneficial reuse)

-
- **Regulatory Jurisdiction:** Whether the pond qualifies as a “water of the U.S.” and whether dredge activities trigger Clean Water Act sections 404 and/or 401.

4 Operations Project Flow Methodology

4.1.1 Overview

The four methods below share the same bypass and residual dewatering front-end but diverge in sediment extraction, solids handling, and filtrate management. In each method, standard mobilization includes utility locate, access protection, SWPPP/BMP installation, delivery of pumps/hoses/containment, and setup of a designated treatment/discharge point, consistent with construction stormwater expectations that sediment is a key pollutant to control.

1. **Mobilize:** Access protection, BMPs, staging, utility locate.
2. **Divert/Bypass Inflow Around Pond.**
3. **Pump Residual Pond Water to Approved Treatment/Disposal**
4. **Sediment Removal Method of Choice:**
 - Method 1: Mechanical Excavation (excavator) with Upland Placement and Sump Pumping
 - Method 2: Vacuum-truck Removal with Off-Site Disposal
 - Method 3: Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water (“Baker-style”)
 - Method 4: Slurry Pumping into Geotextile Dewatering Tubes/Tags (Geobags) on Golf Course
5. **Restore Pond Bottom/Grades; Remove Bypass; Stabilize Disturbed Areas.**

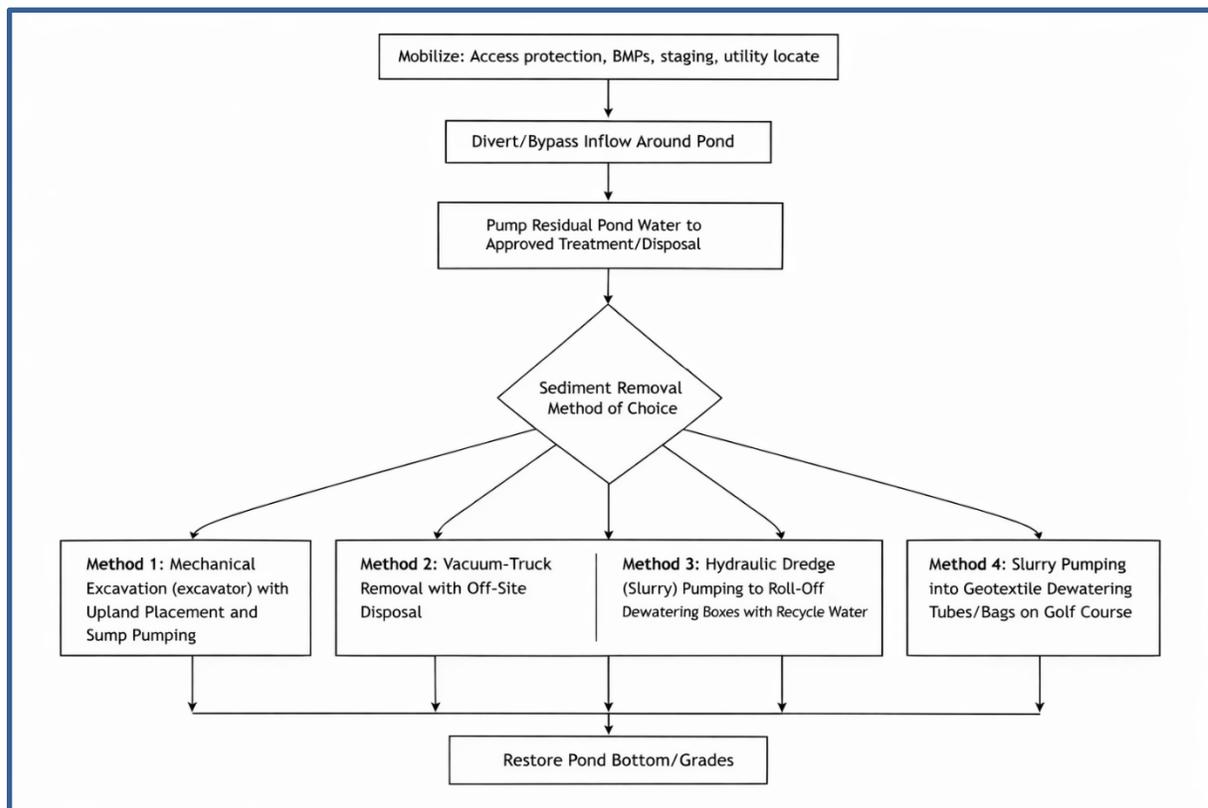


Chart: **Operations Project Flow Methodology Diagram**

4.1.2 Method 1: Mechanical Excavation (excavator) with Upland Placement and Sump Pumping

4.1.3 Concept and Best-Fit Use

This is “mechanical dredging” by excavation after dewatering, producing removable sediment at near in-situ density (analogous to bucket dredge behavior described by USACE: bucket dredges remove sediment at nearly in-situ density). It is generally best when equipment access is available and an upland drying/stockpile area can be established and controlled.

4.1.4 Equipment Basis and Capacity Factors

- Primary equipment: tracked excavator sized for reach and bearing (standard or long-reach); buckets suited for saturated fines; possible dozer/loader support; haul trucks or off-road dump if moving material beyond immediate upland placement.
- Dewatering: trash pump(s) for residual water and seepage; dedicated sump pump at the excavation low point; discharge hose to sediment treatment train or controlled infiltration area.

-
- Controls: perimeter BMPs (fiber rolls, silt fence, compost socks), stabilized construction access, and a contained upland stockpile pad with runoff controls consistent with construction-site erosional pollutant control emphasis.

4.1.5 Step by Step Operational Procedure

1. Mobilize and establish staging.

Place equipment on stabilized access; install equipment exclusion zones; locate a suitable upland drying pad outside the pond basin with perimeter berms and sediment controls to prevent uncontrolled runoff/track-out.

2. Bypass inflow and isolate pond.

Build inlet and outlet isolation berms/cofferdams and route flow around the work area. If the bypass resembles excavation interruption of surface drainage, OSHA requires diversion/dikes or other means to prevent water entering.

3. Pump residual pond water.

Use screened intakes to avoid pulling debris and to reduce pump damage; discharge to approved treatment/disposal. Dewatering BMP guidance highlights that untreated dewatering can carry high fine sediment loads; therefore pumping is typically paired with treatment devices (settling, tanks, bag filters) or on-site management where allowed.

4. Create and maintain a sump at the excavation low

Excavate a localized sump at the deepest point and place a sump pump to control water accumulation at the cut face and reduce water content in removed sediment. OSHA requires monitoring of water removal equipment by a competent person.

5. Excavate sediment and place in upland drying area

Excavate in controlled lifts to maintain bank stability; avoid undercutting pond berms or cart paths. Place sediment in thin lifts on the upland pad to accelerate drainage; shape grades to direct pore water to a controlled collection point (e.g., lined swale or temporary settling basin).

6. Manage decant and pore water.

Water draining from stockpiles is treated as sediment-laden water; route it back to a controlled settling zone/sump for pumping and treatment, not as uncontrolled runoff. The Caltrans dewatering guide emphasizes selecting management options based on water quality and that discharges must meet water quality requirements when leaving the site.

7. Stockpile processing, drying, and loadout.

After drainage, load dried material into haul trucks for off-haul or on-site use (subject to approvals). Confirm moisture content and bearing capacity before haul trucks enter turf areas.

8. Restore pond geometry and stabilize.

Grade pond bottom to design contours, repair liner if present, re-establish bank vegetation or erosion protection, remove bypass, and restore flow-through operations.

4.1.6 Safety Standards, Special Parameters, and Miscellaneous

- Maintain exclusion zones preventing workers from standing under suspended loads or near swing radius; OSHA prohibits employees under loads handled by lifting/digging equipment and requires a warning system if mobile equipment operates adjacent to excavations without clear edge visibility.
- Evaluate for hazardous atmospheres where reasonably expected (less common in stormwater ponds than in landfills, but OSHA excavation rules include atmospheric testing/controls when hazards could exist).
- Control water accumulation hazards and ensure competent person oversight of pumping operations.
- Primary equipment: tracked excavator sized for reach and bearing (standard or long-reach); buckets suited
- Install perimeter BMPs and treat the sump discharge through settling/tank/bag filtration as needed for erosion and sediment control measures; dewatering BMP frameworks (sediment basins/traps, weir tanks, dewatering tanks, bag filters) are standard options.

4.1.7 Mobilization and Demobilization

- Mobilization typically includes hauling excavator(s), pumps, hoses, spill kits, BMP materials, and establishing staging/stockpile zones.
- Demobilization includes removal of bypass and temporary berms, cleaning track-out, removing tanks/bags/liners, final stabilization, and documentation (water management logs), consistent with SWPPP/monitoring expectations for construction dewatering.

4.1.8 Method 2: Vacuum-truck Removal with Off-Site Disposal

4.1.9 Concept and Best-Fit Use

Vacuum trucks remove sediment as slurry/thick sludge into a debris tank, then haul off-site for disposal/treatment. It reduces on-site stockpiling and can be effective where excavators cannot access the pond bottom or where minimizing surface disturbance is critical.

4.1.10 Equipment Basis and Capacity Factors

- Modern industrial vacuum trucks commonly have debris tanks in the mid-teens to high-teens cubic yards: examples include an 18 yd³ standard tank with optional 12–21 yd³ configurations from Guzzler and a 14 yd³ debris body example from Vactor's TRUVAC line.
- Capacity governs number of loads and thus productivity and cost.

4.1.11 Step by Step Operational Procedure

1. Mobilize vacuum truck staging and traffic control.

Establish stabilized truck routes (cart path protection mats if needed) and a staging point for tank decant restrictions (typically no on-site decant unless permitted).

2. Bypass inflow and isolate pond; pump residual free water.

Perform bypass and initial dewatering as described earlier, because uncontrolled inflow undermines vacuum efficiency and increases turbidity. OSHA drainage diversion principles remain relevant if water would otherwise enter the work area.

3. Sediment removal by vacuum excavation.

Use suction hose and controlled agitation (wand, water jetting if equipped) to mobilize sediment into the debris tank. Work systematically (grid pattern) to avoid leaving ridges and to minimize unnecessary dilution (which increases haul volume)

4. Offload and haul.

Haul to an approved facility (landfill, treatment facility, or beneficial reuse site). Maintain waste profile documentation; if contamination is possible, characterize sediments before hauling to avoid rejected loads.

5. Repeat cycles and maintain BMPs.

Prevent track-out and manage any incidental spills.

6. Restore and demobilize.

Final grading (often still needed with small equipment), remove bypass, and restore flow.

4.1.12 Safety Standards, Special Parameters, and Miscellaneous

- Truck operations require strict spotter communication and backing controls; OSHA's excavation provisions emphasize warning systems where equipment approaches excavation edges without clear visibility.
- Because vacuum-truck removal can still generate turbid water (from jetting/agitation), manage residual pumpouts through sediment treatment or off-site handling consistent with dewatering BMP requirements.

4.1.13 Mobilization and Demobilization

- Mobilization is comparatively fast (truck arrives with integrated system), but demobilization may involve cleaning requirements and wash water management that must be controlled under pollution prevention requirements.

4.1.14 Method 3: Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water ("Baker-style")

4.1.15 Concept and Best-Fit Use

A dredge/slurry pump removes sediment hydraulically and discharges to a dewatering tank/roll-off box ("Baker-style"), separating solids from liquids; decant water is recycled back to the pond (or to treatment) to reduce make-up water demand and discharge volume. Dewatering BMP guidance

describes dewatering tanks and weir tanks as treatment devices that remove debris/sediment and can be deployed in parallel/series for higher flows.

4.1.16 Equipment Basis and Capacity Factors

- Dredge/slurry pump system sized to achieve 300–700 gpm at required head (accounting for pipeline friction, elevation, and solids). Some dredge pump systems claim operation at high solids by weight (e.g., 40–70% stated as typical operating range on a dredge pump product page), though real-world solids content depends strongly on sediment type, agitation, line velocity, and clogging tolerance.
- Dewatering roll-off box/tank with filter media: a commercial 25 yd³ vacuum-rated dewatering roll-off box is specified with ~152 ft² dewatering surface area and disposable filter cloth options including 150 micron cloth.
- Optional: polymer feed system (site- and permit-dependent), booster pumps, inline grinders/screens if debris is expected, and secondary polishing filters (bag/cartridge) if discharge/recycle quality requires it.

4.1.17 Step by Step Operational Procedure

1. Mobilize and build a treatment pad.

Place roll-off dewatering boxes on a lined/stabilized pad with perimeter berms and secondary containment so that filtrate is captured (not uncontrolled runoff).

2. Install dredge pump intake and agitation.

Depending on pond access, mount the pump on a skid, cable-deploy it with a crane/excavator, or use a small dredge platform. Maintain intake submergence and use agitation (jetting ring, mechanical rake) to keep solids moving.

3. Pump slurry to dewatering box(es).

Route discharge line to the roll-off box inlet; distribute flow to avoid short-circuiting and to prevent filter cloth blinding.

4. Capture filtrate and recycle (or treat).

Pipe filtrate/decant from the dewatering box to a recycle tank or direct return to the pond's sump/settling area, recognizing that recycled water remains construction-affected water. Dewatering BMP guidance treats tanks as part of a treatment "train," and additional polishing may be needed depending on turbidity limits and permit conditions.

5. Solids removal and off-haul.

Once solids accumulate and dewater, either (a) remove box and haul to disposal, or (b) open and excavate solids for loading, then reline and return the box to service. Box specs indicate vacuum rating and features intended for sludge dewatering and cleaning.

6. Restore pond bottom, remove bypass, stabilize.

Final grade and stabilization as above.

4.1.18 Safety Standards, Special Parameters, and Miscellaneous

- Keep personnel clear of pressurized hoses, couplings, and potential whip hazards; implement lockout/tagout for pump maintenance (site safety plan.).
- If working near excavation edges and water, manage soft ground bearing and equipment stability; OSHA requires warning systems for mobile equipment near excavation edges and prohibits workers under lifted loads

4.1.19 Mobilization and Demobilization

- Mobilization for this method includes delivery of the dredge/slurry pump system, discharge pipeline, dewatering roll-off boxes/tanks, liners, filter media, and any auxiliary equipment such as booster pumps, polymer feed systems, and filtration units. A lined and stabilized treatment pad with perimeter containment must be constructed prior to initiation of pumping operations. Utility locates, access protection measures, and installation of required BMPs (fiber rolls, silt fence, stabilized access) shall be completed prior to active work.

4.1.20 Solid Concentrations Note

USACE dredging guidance indicates hydraulic pipeline dredging slurry solids can vary widely (0–40% by weight), with ~15% typical average, and hydraulically placed slurry is often in the ~0–20% range with ~13% typical. This implies that the user’s 40% assumption is achievable only with favorable conditions and equipment; bidders should be asked to state expected average % solids and how it is verified (density meter, sampling).

4.1.21 Method 4: Slurry Pumping into Geotextile Dewatering Tubes/Tags (Geobags) on Golf Course

4.1.22 Concept and Best-Fit Use

This method pumps sediment slurry to geotextile containers (tubes/bags) placed on a prepared area of the golf course; water drains through geotextile while solids are retained. Product literature describes a three-stage concept: pumping/filling (often with polymer conditioning), gravity drainage of filtrate, and consolidation of solids for removal or potentially leaving in place.

4.1.23 Equipment Basis and Capacity Factors

- Slurry pump and discharge hose/pipeline to tubes/bags
- Geotextile tubes/bags sized to the volume and space available; tubes can be long and may be stacked for space efficiency (manufacturer literature notes that systems can be sized for volume/space requirements).
- Polymer dosing system (often recommended in manufacturer literature) and mixing manifold (static mixer) to improve flocculation and filtrate clarity; polymer selection is typically confirmed via bench tests per vendor practice.

-
- Filtrate collection swales/sumps and optional polishing filters if filtrate is discharged beyond the prepared pad. Dewatering BMP manuals also describe “gravity bag filters” (dewatering bags) of non-woven geotextile for sediment removal.

4.1.24 Step by Step Operational Procedure

1. Mobilize and build the geobag/tube pad.

Prepare a level, bermed, and lined or sacrificial turf area with perimeter controls so filtrate infiltrates on-site only where allowed and does not reach storm drains.

2. Bypass Inflow and Initial Pumpdown

As above; maintain bypass and isolate pond to prevent re-wetting during filling operations.

3. Set tubes/bags and connect manifolds.

Lay out tubes with adequate spacing for bulging and access; connect fill ports and provide pressure relief/valving.

4. Condition slurry and pump into tubes.

Manufacturer literature describes adding “environmentally safe polymers” to bind solids and separate water during filling.

5. Dewater and manage filtrate.

Product literature states clear filtrate drains out and can be collected/recirculated; however, in a golf course pond project, filtrate must be treated as construction-affected water and managed with BMPs/permits

6. Restore pad and pond.

Remove/restore pad liner, repair turf, and restore pond hydraulics.

4.1.25 Safety Standards, Special Parameters, and Miscellaneous

- Manage hose pressure and fitting integrity; maintain exclusion zones around fill ports.
- Filtrate management is the primary environmental risk: capture/contain filtrate and prevent erosion at discharge points, consistent with BMP guidance that dewatering discharges should not cause erosion and must comply with permits.

4.1.26 Mobilization and Demobilization

Mobilization includes delivery of slurry pumping equipment, discharge lines, geotextile tubes/bags, polymer system (if used), and construction of a bermed and stabilized placement pad with appropriate BMPs and access protection.

Demobilization includes removal of pumps, hoses, tubes/bags, liners, and containment controls; excavation or disposal of dewatered solids as directed; and restoration of the placement area to pre-project condition.

5 Productivity and Solids Handling Calculations

This section quantifies (a) slurry volume throughput, (b) solids mass throughput, and (c) example time estimates for removing 100, 500, and 1,000 yd³ of wet sediment.

5.1.1 Core Conversions and Mixture Relationships

5.1.2 Volume conversion: pump flow (gpm) to slurry throughput (yd³/hr)

[$Q_{\text{ft}^3/\text{min}} = Q_{\text{gpm}} \times 0.133681 \frac{\text{ft}^3}{\text{gal}}$] [$Q_{\text{yd}^3/\text{hr}} = Q_{\text{gpm}} \times 0.133681 \frac{\text{ft}^3}{\text{gal}} \times \frac{60 \text{ min}}{\text{hr}} \times \frac{1 \text{ yd}^3}{27 \text{ ft}^3}$] Numerically: [$Q_{\text{yd}^3/\text{hr}} \approx Q_{\text{gpm}} \times 0.2971$]

So:

- 300 gpm → 89.12 yd³/hr
- 700 gpm → 207.95 yd³/hr

5.1.3 Density of slurry from solids mass fraction

Let w = mass fraction solids (0.40 baseline); densities:

- Water density ($\rho_w = 62.4 \text{ lb/ft}^3$) (reference)
- Solids density ($\rho_s = SG \times \rho_w$), with $SG = 2.65$ (quartz reference)

Mixture density (assuming additive volumes): [$\rho_{\text{mix}} = \frac{1}{\frac{w}{\rho_s} + \frac{(1-w)}{\rho_w}}$]

Computed values used in this report:

- For $w = 0.40$: ($\rho_{\text{mix}} = 83.10 \text{ lb/ft}^3$)
- For $w = 0.15$: ($\rho_{\text{mix}} = 68.83 \text{ lb/ft}^3$)

5.1.4 Mass Rate (tons/hr)

[$\dot{m}_{\text{total}} = \rho_{\text{mix}} \times Q_{\text{ft}^3/\text{min}} \times \frac{60}{2000}$] [$\dot{m}_{\text{solids}} = w \times \dot{m}_{\text{total}}$]

5.1.5 Pump throughput and solids-handling rates

The table below gives theoretical mass rates for the specified pump flows and solids concentrations.

Pump flow (gpm)	Solids (wt fraction)	Slurry density (lb/ft ³)	Slurry flow (yd ³ /hr)	Total mass rate (ton/hr)	Solids mass rate (ton/hr)
300	0.40	83.10	89.12	99.97	39.99

Pump flow (gpm)	Solids (wt fraction)	Slurry density (lb/ft ³)	Slurry flow (yd ³ /hr)	Total mass rate (ton/hr)	Solids mass rate (ton/hr)
700	0.40	83.10	207.95	233.27	93.31
300	0.15	68.83	89.12	82.81	12.42
700	0.15	68.83	207.95	193.22	28.98

Interpretation of the sensitivity: volumetric removal time is governed by gpm, but **dry solids removed per hour scales strongly with wt% solids**, which is why realistic hydraulic dredging solids ranges (often ~10–20% by weight; ~15% typical average) materially increase project duration for a fixed dry solids target.

Example removal times for 100, 500, and 1,000 yd³ of wet sediment

5.1.6 Baseline: “wet sediment volume” equals pumped slurry volume at 40% solids by weight

Time is purely: $[t_{hr} = \frac{V_{yd^3}}{Q_{yd^3/hr}}]$

Mass per yd³ at 40% by weight (from mixture density) is:

- Total mass per yd³ = 1.1218 tons/yd³
- Dry solids per yd³ = 0.4487 tons/yd³
- Water mass per yd³ = 0.6731 tons/yd³

Wet sediment volume removed (yd ³)	Pump flow (gpm)	Slurry throughput (yd ³ /hr)	Pump time (hr)	Dry solids removed (tons)
100	300	89.12	1.12	44.87
100	700	207.95	0.48	44.87
500	300	89.12	5.61	224.36
500	700	207.95	2.40	224.36
1,000	300	89.12	11.22	448.72
1,000	700	207.95	4.81	448.72

These times are *theoretical continuous pumping times* and exclude operational losses (hose moves, clog clearing, truck swaps, tank changeouts, breaks). A typical contractor schedule often applies an

“uptime” factor (e.g., 0.6–0.8) to convert to field hours; this factor is project-specific and should be stated in bids as an assumption.

5.1.7 Sensitivity: Removing the same dry solids if actual slurry is 15% solids by weight

USACE guidance indicates hydraulic dredging slurry solids frequently average nearer 15% by weight (with wide variability). If the sediment requires dilution and the pump actually delivers 15% solids, the required slurry volume pumped to remove the *same dry solids* increases by the ratio of solids-per-volume.

Computed results (target dry solids equal to the dry solids contained in the 40% case above):

Target wet sediment in pond (yd ³ @40% wt solids)	Target dry solids (tons)	Actual pumped slurry (15% wt solids) required volume (yd ³)	Pump flow (gpm)	Pump time (hr)
100	44.87	321.94	300	3.61
100	44.87	321.94	700	1.55
500	224.36	1,609.72	300	18.06
500	224.36	1,609.72	700	7.74
1,000	448.72	3,219.43	300	36.12
1,000	448.72	3,219.43	700	15.48

5.1.8 Method-specific productivity implications

Mechanical Excavation (excavator) with Upland Placement and Sump Pumping

Mechanical excavation is typically constrained by bucket cycle/loading and haul/stockpile management rather than pump gpm. Government estimating tables for “Power Excavators Production” provide planning rates in **hours per bank cubic yard** for various bucket sizes (50-minute hour basis), and explicitly note these are planning averages that must be adjusted to expected conditions.

For example, a 1.0 yd³ bucket planning rate of 0.0182 hr/BCY implies: [Production $\approx \frac{1}{0.0182} = 54.9$ $\text{BCY per 50-minute hour}$] This is a starting point only; wet sediment, access constraints, and dewatering effectiveness can reduce production substantially.

Vacuum-truck Removal with Off-Site Disposal

Vacuum removal productivity is typically governed by **tank capacity (yd³ per load)** and **cycle time** (fill + travel + unload + return). With an 18 yd³ debris tank (example) and 300–700 gpm equivalent intake rate, theoretical fill time is:

- 300 gpm (89.12 yd³/hr = 1.485 yd³/min): (18/1.485 = 12.1) min

-
- 700 gpm (207.95 yd³/hr = 3.466 yd³/min): (18/3.466 = 5.2) min

But actual cycle time is usually dominated by haul/unload/queueing. Therefore, bids should state assumed haul distance, unload duration, and disposal queue time (and whether decanting is prohibited).

Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water (“Baker-style”) and Slurry pumping into geotextile dewatering tubes/bags (geobags)

For methods 3 and 4, **pumping time** may be short relative to **dewatering/consolidation time** if filtrate rate is slow or if solids fine/organic. A dewatering roll-off box example is specified at 25 yd³ capacity and uses filter media such as 150-micron cloth; this presents a finite filtration area and potential need for parallel boxes at high flows.

Geotextile tube literature describes adding polymers, draining filtrate, and consolidation with large volume reduction claims; however, time to reach haulable solids can range from hours to weeks+ depending on sludge type and polymer optimization.

6 Environmental and Regulatory Considerations

6.1.1 Construction Stormwater Permitting and Dewatering Discharge Controls

This section summarizes the common U.S. regulatory touchpoints and BMP expectations relevant to flow-through pond bypass, dewatering, and sediment removal. Final applicability is site- and state-specific.

Under the U.S. Environmental Protection Agency (EPA) construction stormwater framework, construction activities disturbing one acre or more (≥ 1 acre), or that are part of a larger common plan of development, generally require coverage under a National Pollutant Discharge Elimination System (NPDES) permit. Sediment is identified as one of the primary pollutants of concern in construction stormwater discharges.

Federal Construction and Development Effluent Limitation Guidelines (40 CFR Part 450) state that dewatering discharges are prohibited unless managed using appropriate control measures.

Practical implications for pond sediment removal projects include the following:

- Any pumped residual pond water, sump water, pore water from stockpiles, filtrate from dewatering tanks or geotextile tubes, and washdown water should be assumed to require BMP controls (e.g., settling, filtration, or equivalent treatment) prior to discharge off-site.
- Dewatering BMP guidance documents describe treatment devices such as sediment basins/traps, weir tanks, dewatering tanks, and bag filters, and emphasize discharge-point stabilization and erosion prevention.

-
- The Caltrans Dewatering Guide (widely used as an industry reference) emphasizes that the discharge destination governs permitting and treatment requirements, and provides example numeric limits (e.g., turbidity and pH) for certain discharge scenarios.

6.1.2 Section 404 and Section 401

If the pond, or waters hydraulically connected to the pond, are determined to be “waters of the United States,” sediment excavation/dredging and temporary fill activities (e.g., access berms, cofferdams, bypass structures) may implicate federal permitting requirements under the Clean Water Act.

Section 404 – Discharge of Dredged or Fill Material

Section 404 of the Clean Water Act regulates the discharge of dredged or fill material into waters of the United States. Activities that may trigger Section 404 review include:

- Excavation and removal of sediment from jurisdictional waters
- Placement of temporary fill material (e.g., berms, cofferdams, access pads)
- Discharge of dredged material back into jurisdictional areas

Unless exempt, such activities generally require authorization from the U.S. Army Corps of Engineers (USACE), either through a Nationwide Permit or an Individual Permit, depending on project scope and impacts.

Section 401 – Water Quality Certification

Section 401 requires that any activity requiring a federal permit or license that may result in a discharge to waters of the United States obtain state (or tribal) water quality certification, or waiver thereof. In practical terms, if Section 404 authorization is required, Section 401 water quality certification from the applicable state agency is also required prior to permit issuance.

For golf course ponds and similar constructed features, jurisdiction can be nuanced and fact-specific. Contractors should confirm with the project owner/engineer whether:

- The pond is considered jurisdictional
- Federal permits have been obtained or are required
- Any conditions associated with those permits affect construction sequencing or discharge management

6.1.3 Filtrate and Effluent Quality Management

Dewatering and sediment removal operations generate construction-affected water that must be managed to prevent uncontrolled discharge, erosion, and water quality violations. This includes residual pond water, sump water, pore water from stockpiles, filtrate from dewatering tanks or geotextile tubes, and equipment washdown water.

Filtrate and Effluent Quality Management

U.S. Army Corps of Engineers guidance on dredged material placement emphasizes that containment systems are intended to retain solids while allowing carrier water to be released under controlled conditions. Operational issues (e.g., excessive flow, poor solids capture, filter blinding, or inadequate detention time) can increase suspended solids in effluent and potentially result in non-compliant discharge.

Practical implications for each sediment removal method include:

Method 1 – Upland Stockpile Drainage

Upland stockpile drainage should be managed as sediment-laden water and treated/contained accordingly.

Method 3 – Dewatering Roll-Off Boxes/Tanks

Filtrate from dewatering boxes should be routed to recycle or treatment. Filter cloth selection (e.g., 150 micron) affects retained particle size but does not guarantee compliance with turbidity limits without additional treatment stages.

Method 4 – Geotextile Tubes/Bags

Manufacturer literature describes polymer conditioning, filtrate drainage, and high solids capture claims. Nonetheless, filtrate must be managed under the same dewatering control framework, especially if it can reach storm drains or surface waters.

6.1.4 Off-Site Disposal Requirements and Characterization

Off-site disposal (applicable to Methods 2–4 and, in some cases, Method 1) may require compliance with receiving facility acceptance criteria and waste characterization requirements.

Disposal facilities are commonly required:

- Waste profiling documentation prior to acceptance
- Confirmation of moisture content and compliance with “no free liquids” requirements
- Verification that contaminant concentrations (if present) are below applicable regulatory or facility thresholds

If contaminants are plausible (e.g., pesticides or herbicides from turf runoff, metals, hydrocarbons, or other anthropogenic inputs), pre-characterization sampling may reduce the risk of rejected loads, schedule delays, and regulatory exposure. USACE guidance notes that maintenance dredging material can contain contaminants contributed by human activities, reinforcing the importance of confirming material suitability prior to transport and disposal.

7 Comparative Evaluation and Best-Use Scenarios

7.1.1 Comparison Across Key Factors

The table below compares the methods in contractor terms (production drivers, environmental risk, and constraints). “Time ranges” refer to theoretical pump time for slurry-based methods, and planning rates with large variability for excavator/vacuum

Method	Primary production driver	Key equipment (typical)	Environmental risk drivers	Qualitative cost/logistics drivers	Estimated time for 100 / 500 / 1,000 yd ³ (pump-limited portion)
Mechanical Excavation (excavator) with Upland Placement and Sump Pumping	Excavator cycle + access + dewatering effectiveness	Excavator; sump/trash pumps; stockpile pad; haul trucks (as needed)	Stockpile runoff/pore water; track-out; residual turbid pumping	Equipment time + pad construction + potential hauling; site restoration	Not pump-limited; planning tables show ~0.0182 hr/BCY for 1 yd ³ bucket baseline (highly variable)
Vacuum-truck Removal with Off-Site Disposal	Tank capacity + Haul/unload cycle	Vacuum truck (e.g., 14–18+ yd ³ Debris tank)	Spills/track-out; disposal compliance; Potential dilution increases loads	High trucking + disposal fees; Fewer on-site BMP structures	If treating as 300–700 gpm intake: 1.12–0.48 hr / 5.61–2.40 hr / 11.22–4.81 hr (plus haul cycle dominates)
Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water (“Baker-	Pump gpm + box dewatering rate + box swaps	Slurry pump; pipeline; dewatering roll-off box (25 yd ³ , filter media options)	Filtrate quality/containment; filter blinding; overflow	Rental of boxes/tanks + liners; off-haul dewatered cake; possible polymer	1.12–0.48 hr / 5.61–2.40 hr / 11.22–4.81 hr pumping; dewatering may extend schedule

Method	Primary production driver	Key equipment (typical)	Environmental risk drivers	Qualitative cost/logistics drivers	Estimated time for 100 / 500 / 1,000 yd ³ (pump-limited portion)
style")					
Slurry pumping into geotextile dewatering tubes/bags (geobags)	Pump gpm + dewatering/consolidation time	Slurry pump; geotextile tubes/bags; polymer dosing/mixing; filtrate collection	Filtrate migration to drains/waters; polymer handling controls	Tube/bag purchase; pad build/restore; solids removal later	1.12–0.48 hr / 5.61–2.40 hr / 11.22–4.81 hr pumping; consolidation can take longer

7.1.2 Recommended Best-Use Scenarios

Mechanical Excavation (excavator) with Upland Placement and Sump Pumping

- Best when: pond can be effectively dewatered, stable access exists, and a controlled upland drying area is feasible.
- Avoid when: access is constrained (soft turf, bridges), pond is lined and excavation could damage liner, or runoff containment area is unavailable.

Vacuum-truck Removal with Off-Site Disposal

- Best when: small-to-moderate volumes, strict site cleanliness requirements, or limited room for stockpiles/tanks; disposal facility is nearby and acceptability confirmed.
- Avoid when: large volumes or long haul distances (cycle time dominates), or when sediment is very debris-laden causing frequent clogs.

Dredge (slurry) Pumping to Dewatering Roll-off Boxes/Tanks with Recycle Water (“Baker-style”)

- Best when: continuous slurry removal is desired with controlled on-site separation; there is space for roll-off boxes and filtrate capture; water recycle reduces demand and discharge.
- Avoid when: fine/organic sediment causes rapid filter blinding or slow dewatering without chemical treatment (which may trigger additional permitting/controls).

Slurry pumping into geotextile dewatering tubes/bags (geobags)

-
- Best when: larger volumes and sufficient on-course area exists for tubes and filtrate management; schedule tolerates dewatering time; desire to limit trucking of water.
 - Avoid when: no acceptable area for filtrate infiltration/collection, or where discharge constraints require high clarity without additional treatment; polymer selection/testing not feasible.

8 Sources and References

U.S. Environmental Protection Agency construction stormwater and C&D effluent limitation requirements (dewatering controls; 40 CFR 450.21).

Clean Water Act Section 404 and 401 program overviews (permitting and certification concepts).

Occupational Safety and Health Administration excavation safety requirements for water accumulation, drainage diversion, equipment hazards, and competent person oversight.

California Stormwater Quality Association dewatering BMP fact sheet (NS-2) describing treatment devices (weir tanks, dewatering tanks, bag filters) and discharge controls.

California Department of Transportation dewatering guide (via hosted copy) with management options, permitting considerations, and example discharge criteria.

U.S. Army Corps of Engineers guidance on hydraulic dredging slurry solids variability and typical averages; hydraulically placed slurry solids ranges; and effluent/solids retention concerns.

Manufacturer/industry specifications used for equipment capacity/behavior examples:

- United Rentals dewatering roll-off box specification (25 yd³ capacity; filter media options including 150-micron cloth).
- Guzzler and Vactor vacuum truck debris tank capacities (illustrative for load/cycle calculations).
- EDDY Pump dredge pump capability descriptions (flow range, solids handling statements).
- Solmax geotextile tube dewatering process description (polymer conditioning, filtrate drainage, solids capture claim, consolidation).



U S Army Corps of
Engineers
Sacramento District

2021 Nationwide Permit Summary

33 CFR Part 330; Issuance of Nationwide
Permits – February 25, 2022

33. Temporary Construction, Access, and Dewatering.

Temporary structures, work, and discharges of dredged or fill material, including cofferdams, necessary for construction activities or access fills or dewatering of construction sites, provided that the associated primary activity is authorized by the Corps of Engineers or the U.S. Coast Guard. This NWP also authorizes temporary structures, work, and discharges of dredged or fill material, including cofferdams, necessary for construction activities not otherwise subject to the Corps or U.S. Coast Guard permit requirements. Appropriate measures must be taken to maintain near normal downstream flows and to minimize flooding. Fill must consist of materials, and be placed in a manner, that will not be eroded by expected high flows. The use of dredged material may be allowed if the district engineer determines that it will not cause more than minimal adverse environmental effects. Following completion of construction, temporary fill must be entirely removed to an area that has no waters of the United States, dredged material must be returned to its original location, and the affected areas must be restored to pre-construction elevations. The affected areas must also be revegetated, as appropriate. This permit does not authorize the use of cofferdams to dewater wetlands or other aquatic areas to change their use. Structures left in place after construction is completed require a separate section 10 permit if located in navigable waters of the United States. (See 33 CFR part 322.)

Notification: The permittee must submit a pre-construction notification to the district engineer prior to commencing the activity if the activity is conducted in navigable waters of the United States (i.e., section 10 waters) (see general condition 32). The preconstruction notification must include a restoration plan showing how all temporary fills and structures will be removed and the area restored to preproject conditions. (Authorities: Sections 10 and 404).

A. Regional Conditions

1. [Regional Conditions for California](#)
2. [Regional Conditions for Nevada and Utah](#)

B. Nationwide Permit General Conditions

Note: To qualify for NWP authorization, the prospective permittee must comply with the following general conditions, as

applicable, in addition to any regional or case-specific conditions imposed by the division engineer or district engineer.

Prospective permittees should contact the appropriate Corps district office to determine if regional conditions have been imposed on an NWP. Prospective permittees should also contact the appropriate Corps district office to determine the status of Clean Water Act Section 401 water quality certification and/or Coastal Zone Management Act consistency for an NWP. Every person who may wish to obtain permit authorization under one or more NWPs, or who is currently relying on an existing or prior permit authorization under one or more NWPs, has been and is on notice that all of the provisions of 33 CFR 330.1 through 330.6 apply to every NWP authorization. Note especially 33 CFR 330.5 relating to the modification, suspension, or revocation of any NWP authorization.

1. Navigation.

- (a) No activity may cause more than a minimal adverse effect on navigation.
- (b) Any safety lights and signals prescribed by the U.S. Coast Guard, through regulations or otherwise, must be installed and maintained at the permittee's expense on authorized facilities in navigable waters of the United States.
- (c) The permittee understands and agrees that, if future operations by the United States require the removal, relocation, or other alteration, of the structure or work herein authorized, or if, in the opinion of the Secretary of the Army or his or her authorized representative, said structure or work shall cause unreasonable obstruction to the free navigation of the navigable waters, the permittee will be required, upon due notice from the Corps of Engineers, to remove, relocate, or alter the structural work or obstructions caused thereby, without expense to the United States. No claim shall be made against the United States on account of any such removal or alteration.

2. **Aquatic Life Movements.** No activity may substantially disrupt the necessary life cycle movements of those species of aquatic life indigenous to the waterbody, including those species that normally migrate through the area, unless the activity's primary purpose is to impound water. All permanent and temporary crossings of waterbodies shall be suitably culverted, bridged, or otherwise designed and constructed to maintain low flows to sustain the movement of those aquatic species. If a bottomless culvert cannot be used, then the crossing should be designed and constructed to minimize adverse effects to aquatic life movements.

3. **Spawning Areas.** Activities in spawning areas during spawning seasons must be avoided to the maximum extent practicable. Activities that result in the physical destruction (e.g., through excavation, fill, or downstream smothering by

BUILDING STRONG®

U.S. ARMY CORPS OF ENGINEERS – SACRAMENTO DISTRICT

1325 J ST. – SACRAMENTO, CA 95814

www.spk.usace.army.mil

www.facebook.com/sacramentodistrict

www.youtube.com/sacramentodistrict

www.twitter.com/USACE_Sacramento

www.flickr.com/photos/sacramentodistrict

substantial turbidity) of an important spawning area are not authorized.

4. **Migratory Bird Breeding Areas.** Activities in waters of the United States that serve as breeding areas for migratory birds must be avoided to the maximum extent practicable.

5. **Shellfish Beds.** No activity may occur in areas of concentrated shellfish populations, unless the activity is directly related to a shellfish harvesting activity authorized by NWP 4 and 48, or is a shellfish seeding or habitat restoration activity authorized by NWP 27.

6. **Suitable Material.** No activity may use unsuitable material (e.g., trash, debris, car bodies, asphalt, etc.). Material used for construction or discharged must be free from toxic pollutants in toxic amounts (see section 307 of the Clean Water Act).

7. **Water Supply Intakes.** No activity may occur in the proximity of a public water supply intake, except where the activity is for the repair or improvement of public water supply intake structures or adjacent bank stabilization.

8. **Adverse Effects From Impoundments.** If the activity creates an impoundment of water, adverse effects to the aquatic system due to accelerating the passage of water, and/or restricting its flow must be minimized to the maximum extent practicable.

9. **Management of Water Flows.** To the maximum extent practicable, the pre-construction course, condition, capacity, and location of open waters must be maintained for each activity, including stream channelization, storm water management activities, and temporary and permanent road crossings, except as provided below. The activity must be constructed to withstand expected high flows. The activity must not restrict or impede the passage of normal or high flows, unless the primary purpose of the activity is to impound water or manage high flows. The activity may alter the pre-construction course, condition, capacity, and location of open waters if it benefits the aquatic environment (e.g., stream restoration or relocation activities).

10. **Fills Within 100-Year Floodplains.** The activity must comply with applicable FEMA-approved state or local floodplain management requirements.

11. **Equipment.** Heavy equipment working in wetlands or mudflats must be placed on mats, or other measures must be taken to minimize soil disturbance.

12. **Soil Erosion and Sediment Controls.** Appropriate soil erosion and sediment controls must be used and maintained in effective operating condition during construction, and all exposed soil and other fills, as well as any work below the ordinary high water mark or high tide line, must be permanently stabilized at the earliest practicable date. Permittees are encouraged to perform work within waters of the United States during periods of low-flow or no-flow, or during low tides.

13. **Removal of Temporary Fills.** Temporary structures must be removed, to the maximum extent practicable, after their use has been discontinued. Temporary fills must be removed in their entirety and the affected areas returned to pre-construction elevations. The affected areas must be revegetated, as appropriate.

14. **Proper Maintenance.** Any authorized structure or fill shall be properly maintained, including maintenance to ensure public safety and compliance with applicable NWP general conditions, as well as any activity-specific conditions added by the district engineer to an NWP authorization.

15. **Single and Complete Project.** The activity must be a single and complete project. The same NWP cannot be used more than once for the same single and complete project.

16. **Wild and Scenic Rivers.**

(a) No NWP activity may occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, unless the appropriate Federal agency with direct management responsibility for such river, has determined in writing that the proposed activity will not adversely affect the Wild and Scenic River designation or study status.

(b) If a proposed NWP activity will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a “study river” for possible inclusion in the system while the river is in an official study status, the permittee must submit a pre-construction notification (see general condition 32). The district engineer will coordinate the PCN with the Federal agency with direct management responsibility for that river. Permittees shall not begin the NWP activity until notified by the district engineer that the Federal agency with direct management responsibility for that river has determined in writing that the proposed NWP activity will not adversely affect the Wild and Scenic River designation or study status.

(c) Information on Wild and Scenic Rivers may be obtained from the appropriate Federal land management agency responsible for the designated Wild and Scenic River or study river (e.g., National Park Service, U.S. Forest Service, Bureau of Land Management, U.S. Fish and Wildlife Service). Information on these rivers is also available at: <https://www.rivers.gov/>.

17. **Tribal Rights.** No activity or its operation may impair reserved tribal rights, including, but not limited to, reserved water rights and treaty fishing and hunting rights.

18. **Endangered Species.**

(a) No activity is authorized under any NWP which is likely to directly or indirectly jeopardize the continued existence of a threatened or endangered species or a species proposed for such designation, as identified under the Federal Endangered Species Act (ESA), or which will directly or indirectly destroy or adversely modify designated critical habitat or critical habitat proposed for such designation. No activity is authorized under any NWP which “may affect” a listed species or critical habitat, unless ESA section 7 consultation addressing the consequences of the proposed activity on listed species or critical habitat has been completed. See 50 CFR 402.02 for the definition of “effects of the action” for the purposes of ESA section 7 consultation, as well as 50 CFR 402.17, which provides further explanation under

ESA section 7 regarding “activities that are reasonably certain to occur” and “consequences caused by the proposed action.”

(b) Federal agencies should follow their own procedures for complying with the requirements of the ESA (see 33 CFR 330.4(f)(1)). If pre-construction notification is required for the proposed activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation has not been submitted, additional ESA section 7 consultation may be necessary for the activity and the respective federal agency would be responsible for fulfilling its obligation under section 7 of the ESA.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat or critical habitat proposed for such designation, and shall not begin work on the activity until notified by the district engineer that the requirements of the ESA have been satisfied and that the activity is authorized. For activities that might affect Federally-listed endangered or threatened species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation), the pre-construction notification must include the name(s) of the endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or that utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. The district engineer will determine whether the proposed activity “may affect” or will have “no effect” to listed species and designated critical habitat and will notify the non-Federal applicant of the Corps’ determination within 45 days of receipt of a complete pre-construction notification. For activities where the non-Federal applicant has identified listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) that might be affected or is in the vicinity of the activity, and has so notified the Corps, the applicant shall not begin work until the Corps has provided notification that the proposed activity will have “no effect” on listed species (or species proposed for listing or designated critical habitat (or critical habitat proposed for such designation), or until ESA section 7 consultation or conference has been completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(d) As a result of formal or informal consultation or conference with the FWS or NMFS the district engineer may add species-specific permit conditions to the NWP.

(e) Authorization of an activity by an NWP does not authorize the “take” of a threatened or endangered species

as defined under the ESA. In the absence of separate authorization (e.g., an ESA Section 10 Permit, a Biological Opinion with “incidental take” provisions, etc.) from the FWS or the NMFS, the Endangered Species Act prohibits any person subject to the jurisdiction of the United States to take a listed species, where “take” means to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct. The word “harm” in the definition of “take” means an act which actually kills or injures wildlife. Such an act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering.

(f) If the non-federal permittee has a valid ESA section 10(a)(1)(B) incidental take permit with an approved Habitat Conservation Plan for a project or a group of projects that includes the proposed NWP activity, the non-federal applicant should provide a copy of that ESA section 10(a)(1)(B) permit with the PCN required by paragraph (c) of this general condition. The district engineer will coordinate with the agency that issued the ESA section 10(a)(1)(B) permit to determine whether the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation conducted for the ESA section 10(a)(1)(B) permit. If that coordination results in concurrence from the agency that the proposed NWP activity and the associated incidental take were considered in the internal ESA section 7 consultation for the ESA section 10(a)(1)(B) permit, the district engineer does not need to conduct a separate ESA section 7 consultation for the proposed NWP activity. The district engineer will notify the non-federal applicant within 45 days of receipt of a complete pre-construction notification whether the ESA section 10(a)(1)(B) permit covers the proposed NWP activity or whether an additional ESA section 7 consultation is required.

(g) Information on the location of threatened and endangered species and their critical habitat can be obtained directly from the offices of the FWS and NMFS or their world wide web pages at <https://www.fws.gov/> or <https://www.fws.gov/ipac/> and <https://www.fisheries.noaa.gov/topic/endangered-species-conservation> respectively.

19. **Migratory Birds and Bald and Golden Eagles.** The permittee is responsible for ensuring that an action authorized by an NWP complies with the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act. The permittee is responsible for contacting the appropriate local office of the U.S. Fish and Wildlife Service to determine what measures, if any, are necessary or appropriate to reduce adverse effects to migratory birds or eagles, including whether “incidental take” permits are necessary and available under the Migratory Bird Treaty Act or Bald and Golden Eagle Protection Act for a particular activity.

20. **Historic Properties.**

(a) No activity is authorized under any NWP which may have the potential to cause effects to properties listed, or eligible for listing, in the National Register of Historic Places until the requirements of Section 106 of the National Historic Preservation Act (NHPA) have been satisfied.

(b) Federal permittees should follow their own procedures for complying with the requirements of section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)(1)). If pre-construction notification is required for the proposed NWP activity, the Federal permittee must provide the district engineer with the appropriate documentation to demonstrate compliance with those requirements. The district engineer will verify that the appropriate documentation has been submitted. If the appropriate documentation is not submitted, then additional consultation under section 106 may be necessary. The respective federal agency is responsible for fulfilling its obligation to comply with section 106.

(c) Non-federal permittees must submit a pre-construction notification to the district engineer if the NWP activity might have the potential to cause effects to any historic properties listed on, determined to be eligible for listing on, or potentially eligible for listing on the National Register of Historic Places, including previously unidentified properties. For such activities, the pre-construction notification must state which historic properties might have the potential to be affected by the proposed NWP activity or include a vicinity map indicating the location of the historic properties or the potential for the presence of historic properties. Assistance regarding information on the location of, or potential for, the presence of historic properties can be sought from the State Historic Preservation Officer, Tribal Historic Preservation Officer, or designated tribal representative, as appropriate, and the National Register of Historic Places (see 33 CFR 330.4(g)). When reviewing pre-construction notifications, district engineers will comply with the current procedures for addressing the requirements of section 106 of the National Historic Preservation Act. The district engineer shall make a reasonable and good faith effort to carry out appropriate identification efforts commensurate with potential impacts, which may include background research, consultation, oral history interviews, sample field investigation, and/or field survey. Based on the information submitted in the PCN and these identification efforts, the district engineer shall determine whether the proposed NWP activity has the potential to cause effects on the historic properties. Section 106 consultation is not required when the district engineer determines that the activity does not have the potential to cause effects on historic properties (see 36 CFR 800.3(a)). Section 106 consultation is required when the district engineer determines that the activity has the potential to cause effects on historic properties. The district engineer will conduct consultation with consulting parties identified under 36 CFR 800.2(c) when he or she makes any of the following effect determinations for the purposes of

section 106 of the NHPA: no historic properties affected, no adverse effect, or a diverse effect.

(d) Where the non-Federal applicant has identified historic properties on which the proposed NWP activity might have the potential to cause effects and has so notified the Corps, the non-Federal applicant shall not begin the activity until notified by the district engineer either that the activity has no potential to cause effects to historic properties or that NHPA section 106 consultation has been completed. For non-federal permittees, the district engineer will notify the prospective permittee within 45 days of receipt of a complete pre-construction notification whether NHPA section 106 consultation is required. If NHPA section 106 consultation is required, the district engineer will notify the non-Federal applicant that he or she cannot begin the activity until section 106 consultation is completed. If the non-Federal applicant has not heard back from the Corps within 45 days, the applicant must still wait for notification from the Corps.

(e) Prospective permittees should be aware that section 110(k) of the NHPA (54 U.S.C. 306113) prevents the Corps from granting a permit or other assistance to an applicant who, with intent to avoid the requirements of section 106 of the NHPA, has intentionally significantly adversely affected a historic property to which the permit would relate, or having legal power to prevent it, allowed such significant adverse effect to occur, unless the Corps, after consultation with the Advisory Council on Historic Preservation (ACHP), determines that circumstances justify granting such assistance despite the adverse effect created or permitted by the applicant. If circumstances justify granting the assistance, the Corps is required to notify the ACHP and provide documentation specifying the circumstances, the degree of damage to the integrity of any historic properties affected, and proposed mitigation. This documentation must include any views obtained from the applicant, SHPO/THPO, appropriate Indian tribes if the undertaking occurs on or affects historic properties on tribal lands or affects properties of interest to those tribes, and other parties known to have a legitimate interest in the impacts to the permitted activity on historic properties.

21. **Discovery of Previously Unknown Remains and Artifacts.** Permittees that discover any previously unknown historic, cultural or archeological remains and artifacts while accomplishing the activity authorized by an NWP, they must immediately notify the district engineer of what they have found, and to the maximum extent practicable, avoid construction activities that may affect the remains and artifacts until the required coordination has been completed. The district engineer will initiate the Federal, Tribal, and state coordination required to determine if the items or remains warrant a recovery effort or if the site is eligible for listing in the National Register of Historic Places.

22. **Designated Critical Resource Waters.** Critical resource waters include, NOAA-managed marine sanctuaries and marine monuments, and National Estuarine Research Reserves. The district engineer may designate, after notice and opportunity for public comment, additional waters officially

designated by a state as having particular environmental or ecological significance, such as outstanding national resource waters or state natural heritage sites. The district engineer may also designate additional critical resource waters after notice and opportunity for public comment.

(a) Discharges of dredged or fill material into waters of the United States are not authorized by NWPs 7, 12, 14, 16, 17, 21, 29, 31, 35, 39, 40, 42, 43, 44, 49, 50, 51, 52, 57 and 58 for any activity within, or directly affecting, critical resource waters, including wetlands adjacent to such waters.

(b) For NWPs 3, 8, 10, 13, 15, 18, 19, 22, 23, 25, 27, 28, 30, 33, 34, 36, 37, 38, and 54, notification is required in accordance with general condition 32, for any activity proposed by permittees in the designated critical resource waters including wetlands adjacent to those waters. The district engineer may authorize activities under these NWPs only after she or he determines that the impacts to the critical resource waters will be no more than minimal.

23. **Mitigation.** The district engineer will consider the following factors when determining appropriate and practicable mitigation necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal:

(a) The activity must be designed and constructed to avoid and minimize adverse effects, both temporary and permanent, to waters of the United States to the maximum extent practicable at the project site (i.e., on site).

(b) Mitigation in all its forms (avoiding, minimizing, rectifying, reducing, or compensating for resource losses) will be required to the extent necessary to ensure that the individual and cumulative adverse environmental effects are no more than minimal.

(c) Compensatory mitigation at a minimum one-for-one ratio will be required for all wetland losses that exceed 1/10-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. For wetland losses of 1/10-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

(d) Compensatory mitigation at a minimum one-for-one ratio will be required for all losses of stream bed that exceed 3/100-acre and require pre-construction notification, unless the district engineer determines in writing that either some other form of mitigation would be more environmentally appropriate or the adverse environmental effects of the proposed activity are no more than minimal, and provides an activity-specific waiver of this requirement. This compensatory mitigation requirement may be satisfied through the restoration or enhancement of riparian areas next to streams in

accordance with paragraph (e) of this general condition. For losses of stream bed of 3/100-acre or less that require pre-construction notification, the district engineer may determine on a case-by-case basis that compensatory mitigation is required to ensure that the activity results in only minimal adverse environmental effects.

Compensatory mitigation for losses of streams should be provided, if practicable, through stream rehabilitation, enhancement, or preservation, since streams are difficult-to-replace resources (see 33 CFR 332.3(e)(3)).

(e) Compensatory mitigation plans for NWP activities in or near streams or other open waters will normally include a requirement for the restoration or enhancement, maintenance, and legal protection (e.g., conservation easements) of riparian areas next to open waters. In some cases, the restoration or maintenance/protection of riparian areas may be the only compensatory mitigation required. If restoring riparian areas involves planting vegetation, only native species should be planted. The width of the required riparian area will address documented water quality or aquatic habitat loss concerns. Normally, the riparian area will be 25 to 50 feet wide on each side of the stream, but the district engineer may require slightly wider riparian areas to address documented water quality or habitat loss concerns. If it is not possible to restore or maintain/protect a riparian area on both sides of a stream, or if the waterbody is a lake or coastal waters, then restoring or maintaining/protecting a riparian area along a single bank or shoreline may be sufficient. Where both wetlands and open waters exist on the project site, the district engineer will determine the appropriate compensatory mitigation (e.g., riparian areas and/or wetlands compensation) based on what is best for the aquatic environment on a watershed basis. In cases where riparian areas are determined to be the most appropriate form of minimization or compensatory mitigation, the district engineer may waive or reduce the requirement to provide wetland compensatory mitigation for wetland losses.

(f) Compensatory mitigation projects provided to offset losses of aquatic resources must comply with the applicable provisions of 33 CFR part 332.

(1) The prospective permittee is responsible for proposing an appropriate compensatory mitigation option if compensatory mitigation is necessary to ensure that the activity results in no more than minimal adverse environmental effects. For the NWPs, the preferred mechanism for providing compensatory mitigation is mitigation bank credits or in-lieu fee program credits (see 33 CFR 332.3(b)(2) and (3)). However, if an appropriate number and type of mitigation bank or in-lieu credits are not available at the time the PCN is submitted to the district engineer, the district engineer may approve the use of permittee-responsible mitigation.

(2) The amount of compensatory mitigation required by the district engineer must be sufficient to ensure that the authorized activity results in no more than minimal individual and cumulative adverse

environmental effects (see 33 CFR 330.1(e)(3)). (See also 33 CFR 332.3(f).)

(3) Since the likelihood of success is greater and the impacts to potentially valuable uplands are reduced, aquatic resource restoration should be the first compensatory mitigation option considered for permittee-responsible mitigation.

(4) If permittee-responsible mitigation is the proposed option, the prospective permittee is responsible for submitting a mitigation plan. A conceptual or detailed mitigation plan may be used by the district engineer to make the decision on the NWP verification request, but a final mitigation plan that addresses the applicable requirements of 33 CFR 332.4(c)(2) through (14) must be approved by the district engineer before the permittee begins work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation (see 33 CFR 332.3(k)(3)). If permittee-responsible mitigation is the proposed option, and the proposed compensatory mitigation site is located on land in which another federal agency holds an easement, the district engineer will coordinate with that federal agency to determine if proposed compensatory mitigation project is compatible with the terms of the easement.

(5) If mitigation bank or in-lieu fee program credits are the proposed option, the mitigation plan needs to address only the baseline conditions at the impact site and the number of credits to be provided (see 33 CFR 332.4(c)(1)(ii)).

(6) Compensatory mitigation requirements (e.g., resource type and amount to be provided as compensatory mitigation, site protection, ecological performance standards, monitoring requirements) may be addressed through conditions added to the NWP authorization, instead of components of a compensatory mitigation plan (see 33 CFR 332.4(c)(1)(ii)).

(g) Compensatory mitigation will not be used to increase the acreage losses allowed by the acreage limits of the NWPs. For example, if an NWP has an acreage limit of 1/2-acre, it cannot be used to authorize any NWP activity resulting in the loss of greater than 1/2-acre of waters of the United States, even if compensatory mitigation is provided that replaces or restores some of the lost waters. However, compensatory mitigation can and should be used, as necessary, to ensure that an NWP activity already meeting the established acreage limits also satisfies the no more than minimal impact requirement for the NWPs.

(h) Permittees may propose the use of mitigation banks, in-lieu fee programs, or permittee-responsible mitigation. When developing a compensatory mitigation proposal, the permittee must consider appropriate and practicable options consistent with the framework at 33

CFR 332.3(b). For activities resulting in the loss of marine or estuarine resources, permittee-responsible mitigation may be environmentally preferable if there are no mitigation banks or in-lieu fee programs in the area that have marine or estuarine credits available for sale or transfer to the permittee. For permittee-responsible mitigation, the special conditions of the NWP verification must clearly indicate the party or parties responsible for the implementation and performance of the compensatory mitigation project, and, if required, its long-term management.

(i) Where certain functions and services of waters of the United States are permanently adversely affected by a regulated activity, such as discharges of dredged or fill material into waters of the United States that will convert a forested or scrub-shrub wetland to a herbaceous wetland in a permanently maintained utility line right-of-way, mitigation may be required to reduce the adverse environmental effects of the activity to the no more than minimal level.

24. **Safety of Impoundment Structures.** To ensure that all impoundment structures are safely designed, the district engineer may require non-Federal applicants to demonstrate that the structures comply with established state or federal, dam safety criteria or have been designed by qualified persons. The district engineer may also require documentation that the design has been independently reviewed by similarly qualified persons, and appropriate modifications made to ensure safety.

25. **Water Quality.**

(a) Where the certifying authority (state, authorized tribe, or EPA, as appropriate) has not previously certified compliance of an NWP with CWA section 401, a CWA section 401 water quality certification for the proposed discharge must be obtained or waived (see 33 CFR 330.4(c)). If the permittee cannot comply with all of the conditions of a water quality certification previously issued by certifying authority for the issuance of the NWP, then the permittee must obtain a water quality certification or waiver for the proposed discharge in order for the activity to be authorized by an NWP.

(b) If the NWP activity requires pre-construction notification and the certifying authority has not previously certified compliance of an NWP with CWA section 401, the proposed discharge is not authorized by an NWP until water quality certification is obtained or waived. If the certifying authority issues a water quality certification for the proposed discharge, the permittee must submit a copy of the certification to the district engineer. The discharge is not authorized by an NWP until the district engineer has notified the permittee that the water quality certification requirement has been satisfied by the issuance of a water quality certification or a waiver.

(c) The district engineer or certifying authority may require additional water quality management measures to ensure that the authorized activity does not result in more than minimal degradation of water quality.

26. **Coastal Zone Management.** In coastal states where an NWP has not previously received a state coastal zone management consistency concurrence, an individual state coastal

zone management consistency concurrence must be obtained, or a presumption of concurrence must occur (see 33 CFR 330.4(d)). If the permittee cannot comply with all of the conditions of a coastal zone management consistency concurrence previously issued by the state, then the permittee must obtain an individual coastal zone management consistency concurrence or presumption of concurrence in order for the activity to be authorized by an NWP. The district engineer or a state may require additional measures to ensure that the authorized activity is consistent with state coastal zone management requirements.

27. **Regional and Case-By-Case Conditions.** The activity must comply with any regional conditions that may have been added by the Division Engineer (see 33 CFR 330.4(e)) and with any case specific conditions added by the Corps or by the state, Indian Tribe, or U.S. EPA in its CWA section 401 Water Quality Certification, or by the state in its Coastal Zone Management Act consistency determination.

28. **Use of Multiple Nationwide Permits.** The use of more than one NWP for a single and complete project is authorized, subject to the following restrictions:

(a) If only one of the NWPs used to authorize the single and complete project has a specified acreage limit, the acreage loss of waters of the United States cannot exceed the acreage limit of the NWP with the highest specified acreage limit. For example, if a road crossing over tidal waters is constructed under NWP 14, with an associated bank stabilization authorized by NWP 13, the maximum acreage loss of waters of the United States for the total project cannot exceed 1/3-acre.

(b) If one or more of the NWPs used to authorize the single and complete project has specified acreage limits, the acreage loss of waters of the United States authorized by those NWPs cannot exceed their respective specified acreage limits. For example, if a commercial development is constructed under NWP 39, and the single and complete project includes the filling of an upland ditch authorized by NWP 46, the maximum acreage loss of waters of the United States for the commercial development under NWP 39 cannot exceed 1/2-acre, and the total acreage loss of waters of United States due to the NWP 39 and 46 activities cannot exceed 1 acre.

29. **Transfer of Nationwide Permit Verifications.** If the permittee sells the property associated with a nationwide permit verification, the permittee may transfer the nationwide permit verification to the new owner by submitting a letter to the appropriate Corps district office to validate the transfer. A copy of the nationwide permit verification must be attached to the letter, and the letter must contain the following statement and signature:

“When the structures or work authorized by this nationwide permit are still in existence at the time the property is transferred, the terms and conditions of this nationwide permit, including any special conditions, will continue to be binding on the new owner(s) of the property. To validate the transfer of this nationwide permit and the associated liabilities associated with compliance with its terms and conditions, have the transferee sign and date below.”

(Transferee)

(Date)

30. **Compliance Certification.** Each permittee who receives an NWP verification letter from the Corps must provide a signed certification documenting completion of the authorized activity and implementation of any required compensatory mitigation. The success of any required permittee-responsible mitigation, including the achievement of ecological performance standards, will be addressed separately by the district engineer. The Corps will provide the permittee the certification document with the NWP verification letter. The certification document will include:

(a) A statement that the authorized activity was done in accordance with the NWP authorization, including any general, regional, or activity-specific conditions;

(b) A statement that the implementation of any required compensatory mitigation was completed in accordance with the permit conditions. If credits from a mitigation bank or in-lieu fee program are used to satisfy the compensatory mitigation requirements, the certification must include the documentation required by 33 CFR 332.3(l)(3) to confirm that the permittee secured the appropriate number and resource type of credits; and

(c) The signature of the permittee certifying the completion of the activity and mitigation.

The completed certification document must be submitted to the district engineer within 30 days of completion of the authorized activity or the implementation of any required compensatory mitigation, whichever occurs later.

31. **Activities Affecting Structures or Works Built by the United States.** If an NWP activity also requires review by, or permission from, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers (USACE) federally authorized Civil Works project (a “USACE project”), the prospective permittee must submit a pre-construction notification. See paragraph (b)(10) of general condition 32. An activity that requires section 408 permission and/or review is not authorized by an NWP until the appropriate Corps office issues the section 408 permission or completes its review to alter, occupy, or use the USACE project, and the district engineer issues a written NWP verification.

32. **Pre-Construction Notification.**

(a) **Timing.** Where required by the terms of the NWP, the prospective permittee must notify the district engineer by submitting a pre-construction notification (PCN) as early as possible. The district engineer must determine if the PCN is complete within 30 calendar days of the date of receipt and, if the PCN is determined to be incomplete, notify the prospective permittee within that 30 day period to request the additional information necessary to make the PCN complete. The request must specify the information needed to make the PCN complete. As a general rule, district engineers will request additional information necessary to make the PCN complete only once. However, if the prospective permittee does not provide all of the requested

information, then the district engineer will notify the prospective permittee that the PCN is still incomplete and the PCN review process will not commence until all of the requested information has been received by the district engineer. The prospective permittee shall not begin the activity until either:

(1) He or she is notified in writing by the district engineer that the activity may proceed under the NWP with any special conditions imposed by the district or division engineer; or

(2) 45 calendar days have passed from the district engineer's receipt of the complete PCN and the prospective permittee has not received written notice from the district or division engineer. However, if the permittee was required to notify the Corps pursuant to general condition 18 that listed species or critical habitat might be affected or are in the vicinity of the activity, or to notify the Corps pursuant to general condition 20 that the activity might have the potential to cause effects to historic properties, the permittee cannot begin the activity until receiving written notification from the Corps that there is "no effect" on listed species or "no potential to cause effects" on historic properties, or that any consultation required under Section 7 of the Endangered Species Act (see 33 CFR 330.4(f)) and/or section 106 of the National Historic Preservation Act (see 33 CFR 330.4(g)) has been completed. If the proposed activity requires a written waiver to exceed specified limits of an NWP, the permittee may not begin the activity until the district engineer issues the waiver. If the district or division engineer notifies the permittee in writing that an individual permit is required within 45 calendar days of receipt of a complete PCN, the permittee cannot begin the activity until an individual permit has been obtained. Subsequently, the permittee's right to proceed under the NWP may be modified, suspended, or revoked only in accordance with the procedure set forth in 33 CFR 330.5(d)(2).

(b) Contents of Pre-Construction Notification: The PCN must be in writing and include the following information:

(1) Name, address and telephone numbers of the prospective permittee;

(2) Location of the proposed activity;

(3) Identify the specific NWP or NWP(s) the prospective permittee wants to use to authorize the proposed activity;

(4)

(i) A description of the proposed activity; the activity's purpose; direct and indirect adverse environmental effects the activity would cause, including the anticipated amount of loss of wetlands, other special aquatic sites, and other waters expected to result from the NWP activity, in acres, linear feet, or other appropriate unit of measure; a description of

any proposed mitigation measures intended to reduce the adverse environmental effects caused by the proposed activity; and any other NWP(s), regional general permit(s), or individual permit(s) used or intended to be used to authorize any part of the proposed project or any related activity, including other separate and distant crossings for linear projects that require Department of the Army authorization but do not require pre-construction notification. The description of the proposed activity and any proposed mitigation measures should be sufficiently detailed to allow the district engineer to determine that the adverse environmental effects of the activity will be no more than minimal and to determine the need for compensatory mitigation or other mitigation measures.

(ii) For linear projects where one or more single and complete crossings require pre-construction notification, the PCN must include the quantity of anticipated losses of wetlands, other special aquatic sites, and other waters for each single and complete crossing of those wetlands, other special aquatic sites, and other waters (including those single and complete crossings authorized by an NWP but do not require PCNs). This information will be used by the district engineer to evaluate the cumulative adverse environmental effects of the proposed linear project, and does not change those non-PCN NWP activities into NWP PCNs.

(iii) Sketches should be provided when necessary to show that the activity complies with the terms of the NWP. (Sketches usually clarify the activity and when provided results in a quicker decision. Sketches should contain sufficient detail to provide an illustrative description of the proposed activity (e.g., a conceptual plan), but do not need to be detailed engineering plans);

(5) The PCN must include a delineation of wetlands, other special aquatic sites, and other waters, such as lakes and ponds, and perennial and intermittent streams, on the project site. Wetland delineations must be prepared in accordance with the current method required by the Corps. The permittee may ask the Corps to delineate the special aquatic sites and other waters on the project site, but there may be a delay if the Corps does the delineation, especially if the project site is large or contains many wetlands, other special aquatic sites, and other waters. Furthermore, the 45-day period will not start until the delineation has been submitted to or completed by the Corps, as appropriate;

(6) If the proposed activity will result in the loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed and a PCN is required, the prospective permittee must submit a statement describing how the mitigation requirement will be satisfied, or explaining why the adverse environmental effects are no more than minimal and why compensatory mitigation should not be required.

As an alternative, the prospective permittee may submit a conceptual or detailed mitigation plan.

(7) For non-federal permittees, if any listed species (or species proposed for listing) or designated critical habitat (or critical habitat proposed for such designation) might be affected or is in the vicinity of the activity, or if the activity is located in designated critical habitat (or critical habitat proposed for such designation), the PCN must include the name(s) of those endangered or threatened species (or species proposed for listing) that might be affected by the proposed activity or utilize the designated critical habitat (or critical habitat proposed for such designation) that might be affected by the proposed activity. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with the Endangered Species Act;

(8) For non-federal permittees, if the NWP activity might have the potential to cause effects to a historic property listed on, determined to be eligible for listing on, or potentially eligible for listing on, the National Register of Historic Places, the PCN must state which historic property might have the potential to be affected by the proposed activity or include a vicinity map indicating the location of the historic property. For NWP activities that require pre-construction notification, Federal permittees must provide documentation demonstrating compliance with section 106 of the National Historic Preservation Act;

(9) For an activity that will occur in a component of the National Wild and Scenic River System, or in a river officially designated by Congress as a "study river" for possible inclusion in the system while the river is in an official study status, the PCN must identify the Wild and Scenic River or the "study river" (see general condition 16); and

(10) For an NWP activity that requires permission from, or review by, the Corps pursuant to 33 U.S.C. 408 because it will alter or temporarily or permanently occupy or use a U.S. Army Corps of Engineers federally authorized civil works project, the pre-construction notification must include a statement confirming that the project proponent has submitted a written request for section 408 permission from, or review by, the Corps office having jurisdiction over that USACE project.

(c) Form of Pre-Construction Notification: The nationwide permit pre-construction notification form (Form ENG 6082) should be used for NWP PCNs. A letter containing the required information may also be used. Applicants may provide electronic files of PCNs and supporting materials if the district engineer has established tools and procedures for electronic submittals.

(d) Agency Coordination:

(1) The district engineer will consider any comments from Federal and state agencies concerning the proposed activity's compliance with the terms and conditions of the NWPs and the need for mitigation to reduce the activity's adverse environmental effects so that they are no more than minimal.

(2) Agency coordination is required for: (i) all NWP activities that require pre-construction notification and result in the loss of greater than 1/2-acre of waters of the United States; (ii) NWP 13 activities in excess of 500 linear feet, fills greater than one cubic yard per running foot, or involve discharges of dredged or fill material into special aquatic sites; and (iii) NWP 54 activities in excess of 500 linear feet, or that extend into the waterbody more than 30 feet from the mean low water line in tidal waters or the ordinary high water mark in the Great Lakes.

(3) When a agency coordination is required, the district engineer will immediately provide (e.g., via e-mail, facsimile transmission, overnight mail, or other expeditious manner) a copy of the complete PCN to the appropriate Federal or state offices (FWS, state natural resource or water quality agency, EPA, and, if appropriate, the NMFS). With the exception of NWP 37, these agencies will have 10 calendar days from the date the material is transmitted to notify the district engineer via telephone, facsimile transmission, or e-mail that they intend to provide substantive, site-specific comments. The comments must explain why the agency believes the adverse environmental effects will be more than minimal. If so contacted by an agency, the district engineer will wait an additional 15 calendar days before making a decision on the pre-construction notification. The district engineer will fully consider a agency comments received within the specified time frame concerning the proposed activity's compliance with the terms and conditions of the NWPs, including the need for mitigation to ensure that the net adverse environmental effects of the proposed activity are no more than minimal. The district engineer will provide no response to the resource agency, except as provided below. The district engineer will indicate in the administrative record associated with each pre-construction notification that the resource agencies' concerns were considered. For NWP 37, the emergency watershed protection and rehabilitation activity may proceed immediately in cases where there is an unacceptable hazard to life or a significant loss of property or economic hardship will occur. The district engineer will consider any comments received to decide whether the NWP 37 authorization should be modified, suspended, or revoked in accordance with the procedures at 33 CFR 330.5.

(4) In cases of where the prospective permittee is not a Federal agency, the district engineer will provide a response to NMFS within 30 calendar days

of receipt of any Essential Fish Habitat conservation recommendations, as required by section 305(b)(4)(B) of the Magnuson-Stevens Fishery Conservation and Management Act.

(5) Applicants are encouraged to provide the Corps with either electronic files or multiple copies of pre-construction notifications to expedite agency coordination.

C. District Engineer's Decision

1. In reviewing the PCN for the proposed activity, the district engineer will determine whether the activity authorized by the NWP will result in more than minimal individual or cumulative adverse environmental effects or may be contrary to the public interest. If a project proponent requests authorization by a specific NWP, the district engineer should issue the NWP verification for that activity if it meets the terms and conditions of that NWP, unless he or she determines, after considering mitigation, that the proposed activity will result in more than minimal individual and cumulative adverse effects on the aquatic environment and other aspects of the public interest and exercises discretionary authority to require an individual permit for the proposed activity. For a linear project, this determination will include an evaluation of the single and complete crossings of waters of the United States that require PCNs to determine whether they individually satisfy the terms and conditions of the NWP(s), as well as the cumulative effects caused by all of the crossings of waters of the United States authorized by an NWP. If an applicant requests a waiver of an applicable limit, as provided for in NWPs 13, 36, or 54, the district engineer will only grant the waiver upon a written determination that the NWP activity will result in only minimal individual and cumulative adverse environmental effects.

2. When making minimal adverse environmental effects determinations the district engineer will consider the direct and indirect effects caused by the NWP activity. He or she will also consider the cumulative adverse environmental effects caused by activities authorized by an NWP and whether those cumulative adverse environmental effects are no more than minimal. The district engineer will also consider site specific factors, such as the environmental setting in the vicinity of the NWP activity, the type of resource that will be affected by the NWP activity, the functions provided by the aquatic resources that will be affected by the NWP activity, the degree or magnitude to which the aquatic resources perform those functions, the extent that aquatic resource functions will be lost as a result of the NWP activity (e.g., partial or complete loss), the duration of the adverse effects (temporary or permanent), the importance of the aquatic resource functions to the region (e.g., watershed or ecoregion), and mitigation required by the district engineer. If an appropriate functional or condition assessment method is available and practicable to use, that assessment method may be used by the district engineer to assist in the minimal adverse environmental effects determination. The district engineer may add case-specific special conditions to the NWP authorization to address site-specific environmental concerns.

3. If the proposed activity requires a PCN and will result in a loss of greater than 1/10-acre of wetlands or 3/100-acre of stream bed, the prospective permittee should submit a mitigation

proposal with the PCN. Applicants may also propose compensatory mitigation for NWP activities with smaller impacts, or for impacts to other types of waters. The district engineer will consider any proposed compensatory mitigation or other mitigation measures the applicant has included in the proposal in determining whether the net adverse environmental effects of the proposed activity are no more than minimal. The compensatory mitigation proposal may be either conceptual or detailed. If the district engineer determines that the activity complies with the terms and conditions of the NWP and that the adverse environmental effects are no more than minimal, after considering mitigation, the district engineer will notify the permittee and include any activity-specific conditions in the NWP verification the district engineer deems necessary. Conditions for compensatory mitigation requirements must comply with the appropriate provisions at 33 CFR 332.3(k). The district engineer must approve the final mitigation plan before the permittee commences work in waters of the United States, unless the district engineer determines that prior approval of the final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation. If the prospective permittee elects to submit a compensatory mitigation plan with the PCN, the district engineer will expeditiously review the proposed compensatory mitigation plan. The district engineer must review the proposed compensatory mitigation plan within 45 calendar days of receiving a complete PCN and determine whether the proposed mitigation would ensure that the NWP activity results in no more than minimal adverse environmental effects. If the net adverse environmental effects of the NWP activity (after consideration of the mitigation proposal) are determined by the district engineer to be no more than minimal, the district engineer will provide a timely written response to the applicant. The response will state that the NWP activity can proceed under the terms and conditions of the NWP, including any activity-specific conditions added to the NWP authorization by the district engineer.

4. If the district engineer determines that the adverse environmental effects of the proposed activity are more than minimal, then the district engineer will notify the applicant either: (a) that the activity does not qualify for authorization under the NWP and instruct the applicant on the procedures to seek authorization under an individual permit; (b) that the activity is authorized under the NWP subject to the applicant's submission of a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal; or (c) that the activity is authorized under the NWP with specific modifications or conditions. Where the district engineer determines that mitigation is required to ensure no more than minimal adverse environmental effects, the activity will be authorized within the 45-day PCN period (unless an additional time is required to comply with general conditions 18, 20, and/or 31), with activity-specific conditions that state the mitigation requirements. The authorization will include the necessary conceptual or detailed mitigation plan or a requirement that the applicant submit a mitigation plan that would reduce the adverse environmental effects so that they are no more than minimal. When compensatory mitigation is required, no work in waters of the United States may occur until the district engineer has approved a specific mitigation plan or has determined that prior

approval of a final mitigation plan is not practicable or not necessary to ensure timely completion of the required compensatory mitigation.

D. Further Information

1. District engineers have authority to determine if an activity complies with the terms and conditions of an NWP.
2. NWPs do not obviate the need to obtain other federal, state, or local permits, approvals, or authorizations required by law.
3. NWPs do not grant any property rights or exclusive privileges.
4. NWPs do not authorize any injury to the property or rights of others.
5. NWPs do not authorize interference with any existing or proposed Federal project (see general condition 31).

E. Nationwide Permit Definitions

Best management practices (BMPs): Policies, practices, procedures, or structures implemented to mitigate the adverse environmental effects on surface water quality resulting from development. BMPs are categorized as structural or non-structural.

Compensatory mitigation: The restoration (re-establishment or rehabilitation), establishment (creation), enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved.

Currently serviceable: Useable as is or with some maintenance, but not so degraded as to essentially require reconstruction.

Direct effects: Effects that are caused by the activity and occur at the same time and place.

Discharge: The term “discharge” means any discharge of dredged or fill material into waters of the United States.

Ecological reference: A model used to plan and design an aquatic habitat and riparian area restoration, enhancement, or establishment activity under NWP 27. An ecological reference may be based on the structure, functions, and dynamics of an aquatic habitat type or a riparian area type that currently exists in the region where the proposed NWP 27 activity is located. Alternatively, an ecological reference may be based on a conceptual model for the aquatic habitat type or riparian area type to be restored, enhanced, or established as a result of the proposed NWP 27 activity. An ecological reference takes into account the range of variation of the aquatic habitat type or riparian area type in the region.

Enhancement: The manipulation of the physical, chemical, or biological characteristics of an aquatic resource to heighten, intensify, or improve a specific aquatic resource function(s). Enhancement results in the gain of selected aquatic resource function(s) but may also lead to a decline in other aquatic resource function(s). Enhancement does not result in a gain in an aquatic resource area.

Establishment (creation): The manipulation of the physical, chemical, or biological characteristics present to develop an

aquatic resource that did not previously exist at an upland site. Establishment results in a gain in an aquatic resource area.

High Tide Line: The line of intersection of the land with the water's surface at the maximum height reached by a rising tide. The high tide line may be determined, in the absence of actual data, by a line of oil or scum along shore objects, a more or less continuous deposit of fine shell or debris on the foreshore or berm, other physical markings or characteristics, vegetation lines, tidal gauges, or other suitable means that delineate the general height reached by a rising tide. The line encompasses spring high tides and other high tides that occur with periodic frequency but does not include storm surges in which there is a departure from the normal or predicted reach of the tide due to the piling up of water against a coast by strong winds such as those accompanying a hurricane or other intense storm.

Historic Property: Any prehistoric or historic district, site (including archaeological site), building, structure, or other object included in, or eligible for inclusion in, the National Register of Historic Places maintained by the Secretary of the Interior. This term includes artifacts, records, and remains that are related to and located within such properties. The term includes properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization and that meet the National Register criteria (36 CFR part 60).

Independent utility: A test to determine what constitutes a single and complete non-linear project in the Corps Regulatory Program. A project is considered to have independent utility if it would be constructed absent the construction of other projects in the project area. Portions of a multi-phase project that depend upon other phases of the project do not have independent utility. Phases of a project that would be constructed even if the other phases were not built can be considered as separate single and complete projects with independent utility.

Indirect effects: Effects that are caused by the activity and are later in time or farther removed in distance but are still reasonably foreseeable.

Loss of waters of the United States: Waters of the United States that are permanently adversely affected by filling, flooding, excavation, or drainage because of the regulated activity. The loss of stream bed includes the acres of stream bed that are permanently adversely affected by filling or excavation because of the regulated activity. Permanent adverse effects include permanent discharges of dredged or fill material that change an aquatic area to dry land, increase the bottom elevation of a waterbody, or change the use of a waterbody. The acreage of loss of waters of the United States is a threshold measurement of the impact to jurisdictional waters or wetlands for determining whether a project may qualify for an NWP; it is not a net threshold that is calculated after considering compensatory mitigation that may be used to offset losses of aquatic functions and services. Waters of the United States temporarily filled, flooded, excavated, or drained, but restored to pre-construction contours and elevations after construction, are not included in the measurement of loss of waters of the United States. Impacts resulting from activities that do not require Department of the Army authorization, such as activities eligible for exemptions under section 404(f) of the Clean Water Act, are not considered when calculating the loss of waters of the United States.

Navigable waters: Waters subject to section 10 of the Rivers and Harbors Act of 1899. These waters are defined at 33 CFR part 329.

Non-tidal wetland: A non-tidal wetland is a wetland that is not subject to the ebb and flow of tidal waters. Non-tidal wetlands contiguous to tidal waters are located landward of the high tide line (i.e., spring high tide line).

Open water: For purposes of the NFPs, an open water is any area that in a year with normal patterns of precipitation has water flowing or standing above ground to the extent that an ordinary high-water mark can be determined. Aquatic vegetation within the area of flowing or standing water is either non-emergent, sparse, or absent. Vegetated shallows are considered to be open waters. Examples of “open waters” include rivers, streams, lakes, and ponds.

Ordinary High Water Mark: The term ordinary high water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

Perennial stream: A perennial stream has surface water flowing continuously year-round during a typical year.

Practicable: Available and capable of being done after taking into consideration cost, existing technology, and logistics in light of overall project purposes.

Pre-construction notification: A request submitted by the project proponent to the Corps for confirmation that a particular activity is authorized by nationwide permit. The request may be a permit application, letter, or similar document that includes information about the proposed work and its anticipated environmental effects. Pre-construction notification may be required by the terms and conditions of a nationwide permit, or by regional conditions. A pre-construction notification may be voluntarily submitted in cases where pre-construction notification is not required, and the project proponent wants confirmation that the activity is authorized by nationwide permit.

Preservation: The removal of a threat to, or preventing the decline of, aquatic resources by an action in or near those aquatic resources. This term includes activities commonly associated with the protection and maintenance of aquatic resources through the implementation of appropriate legal and physical mechanisms. Preservation does not result in a gain of aquatic resource area or functions.

Re-establishment: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former aquatic resource. Re-establishment results in rebuilding a former aquatic resource and results in a gain in aquatic resource area and functions.

Rehabilitation: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of repairing natural/historic functions to a degraded aquatic resource. Rehabilitation results in a gain in aquatic resource function but does not result in a gain in aquatic resource area.

Restoration: The manipulation of the physical, chemical, or biological characteristics of a site with the goal of returning natural/historic functions to a former or degraded aquatic resource. For the purpose of tracking net gains in a aquatic resource area, restoration is divided into two categories: re-establishment and rehabilitation.

Riffle and pool complex: Riffle and pool complexes are special aquatic sites under the 404(b)(1) Guidelines. Riffle and pool complexes sometimes characterize steep gradient sections of streams. Such stream sections are recognizable by their hydraulic characteristics. The rapid movement of water over a coarse substrate in riffles results in a rough flow, a turbulent surface, and high dissolved oxygen levels in the water. Pools are deeper areas associated with riffles. A slower stream velocity, a streaming flow, a smooth surface, and a finer substrate characterize pools.

Riparian areas: Riparian areas are lands next to streams, lakes, and estuarine-marine shorelines. Riparian areas are transitional between terrestrial and aquatic ecosystems, through which surface and subsurface hydrology connects riverine, lacustrine, estuarine, and marine waters with their adjacent wetlands, non-wetland waters, or uplands. Riparian areas provide a variety of ecological functions and services and help improve or maintain local water quality. (See general condition 23).

Shellfish seeding: The placement of shellfish seed and/or suitable substrate to increase shellfish production. Shellfish seed consists of immature individual shellfish or individual shellfish attached to shells or shell fragments (i.e., spat on shell). Suitable substrate may consist of shellfish shells, shell fragments, or other appropriate materials placed into waters for shellfish habitat.

Single and complete linear project: A linear project is a project constructed for the purpose of getting people, goods, or services from a point of origin to a terminal point, which often involves multiple crossings of one or more waterbodies at separate and distant locations. The term “single and complete project” is defined as that portion of the total linear project proposed or accomplished by one owner/developer or partnership or other association of owners/developers that includes all crossings of a single water of the United States (i.e., a single waterbody) at a specific location. For linear projects crossing a single or multiple waterbodies several times at separate and distant locations, each crossing is considered a single and complete project for purposes of NWP authorization. However, individual channels in a braided stream or river, or individual arms of a large, irregularly shaped wetland or lake, etc., are not separate waterbodies, and crossings of such features cannot be considered separately.

Single and complete non-linear project: For non-linear projects, the term “single and complete project” is defined at 33 CFR 330.2(i) as the total project proposed or accomplished by one owner/developer or partnership or other association of owners/developers. A single and complete non-linear project must have independent utility (see definition of “independent utility”). Single and complete non-linear projects may not be “piecemealed” to avoid the limits in an NWP authorization.

Stormwater management: Stormwater management is the mechanism for controlling stormwater runoff for the purposes of reducing downstream erosion, water quality degradation, and

flooding and mitigating the adverse effects of changes in land use on the aquatic environment.

Stormwater management facilities: Stormwater management facilities are those facilities, including but not limited to, stormwater retention and detention ponds and best management practices, which retain water for a period of time to control runoff and/or improve the quality (i.e., by reducing the concentration of nutrients, sediments, hazardous substances and other pollutants) of stormwater runoff.

Stream bed: The substrate of the stream channel between the ordinary high-water marks. The substrate may be bedrock or inorganic particles that range in size from clay to boulders. Wetlands contiguous to the stream bed, but outside of the ordinary high-water marks, are not considered part of the stream bed.

Stream channelization: The manipulation of a stream's course, condition, capacity, or location that causes more than minimal interruption of normal stream processes. A channelized jurisdictional stream remains a water of the United States.

Structure: An object that is arranged in a definite pattern of organization. Examples of structures include, without limitation, any pier, boat dock, boat ramp, wharf, dolphin, weir, boom, breakwater, bulkhead, revetment, riprap, jetty, artificial island, artificial reef, permanent mooring structure, power transmission line, permanently moored floating vessel, piling, aid to navigation, or any other manmade obstacle or obstruction.

Tidal wetland: A tidal wetland is a jurisdictional wetland that is inundated by tidal waters. Tidal waters rise and fall in a predictable and measurable rhythm or cycle due to the gravitational pulls of the moon and sun. Tidal waters end where the rise and fall of the water surface can no longer be practically measured in a predictable rhythm due to masking by other waters, wind, or other effects. Tidal wetlands are located landward of the high tide line.

Tribal lands: Any lands title to which is either: 1) held in trust by the United States for the benefit of any Indian tribe or individual; or 2) held by any Indian tribe or individual subject to restrictions by the United States against alienation.

Tribal rights: Those rights legally accruing to a tribe or tribes by virtue of inherent sovereign authority, unextinguished aboriginal title, treaty, statute, judicial decisions, executive order or agreement, and that give rise to legally enforceable remedies.

Vegetated shallows: Vegetated shallows are special aquatic sites under the 404(b)(1) Guidelines. They are areas that are permanently inundated and under normal circumstances have rooted aquatic vegetation, such as seagrasses in marine and estuarine systems and a variety of vascular rooted plants in freshwater systems.

Waterbody: For purposes of the NWP, a waterbody is a "water of the United States." If a wetland is adjacent to a waterbody determined to be a water of the United States, that waterbody and any adjacent wetlands are considered together as a single aquatic unit (see 33 CFR 328.4(c)(2)).