

Memorandum

Date:	February 17, 2020
То:	Christie Coleman, Northern Colorado Water Conservancy District
From:	Scott Fanello/Bridget Mitchell – Pinyon Environmental, Inc.
Project:	Northern Integrated Supply Project (NISP)
Subject:	Drainage Narrative - Recommended Stormwater Control Measures for Conveyance System Construction to Satisfy 1041 Permit

Introduction

This memorandum (memo) presents the drainage narrative (narrative) developed for the Northern Integrated Supply Project's (NISP or the Project) use in the NISP Water Activity Enterprise's (WAE) 1041 Permit application. The purpose of this narrative is to document the Project's extensive coordination efforts and commitments to avoid, minimize, mitigate, and enhance construction related stormwater impacts by the Project in unincorporated Larimer County, Colorado in accordance with Larimer County Land Use Code (Larimer County, 2019). NISP WAE is the permittee and the entity that will implement the identified mitigation measures.

Pinyon Environmental, Inc. (Pinyon), has prepared this narrative to evaluate potential increased stormwater and water quality impacts associated with the proposed development and recommend control measures to mitigate these impacts.

Project Overview

Northern Colorado Water Conservancy District (Northern Water), acting by and through the NISP WAE, has contracted Pinyon to provide environmental compliance services during the pre-construction phase of the NISP. The Project will provide a new reliable water supply to Northern Colorado and consists of constructing the following in Larimer County:

- Glade Reservoir Complex and Appurtenances, which includes Poudre Valley Canal improvements, and construction of the forebay area, the dam structure (including intake and release structures), a pump station, and recreation areas located adjacent to the new reservoir
- A realigned portion of U.S. Highway 287
- New pipeline conveyance systems, which include the Northern Tier, Poudre Intake, Glade Release, and County Line Alignments

The purpose of the Project is to meet a portion of the NISP Participants' (15 towns and water districts in Larimer, Weld, Morgan, and Boulder counties) current and projected future water supply needs. The overall goal of the Project is to provide 40,000 acre-feet of new, annual water to the NISP Participants.

This narrative only covers the NISP conveyance system in unincorporated Larimer County (Figure 1). Work associated with the Glade Reservoir 1041 Permit Drainage Narrative is being developed by others under a separate cover. In addition, Larimer County 1041 Permit requirements do not apply to Colorado Department of Transportation (CDOT) highway relocations. As a result, the scope and effects of the realignment of U.S. Highway 287 will be evaluated per Larimer County requirements as a separate process.



Existing Water Resources

Pinyon mapped water resources data using a variety of methodologies: desktop analysis using readily available data, field verifications, and wetland delineation (Pinyon, 2020). As part of that process, the National Hydrography Dataset (NHD), United States Geological Survey (USGS) mapping, aerial photography, Natural Resources Conservation Service (NRCS) maps, and other data sources were reviewed.

The following is a brief overview of the major rivers, streams, named ditches, and reservoirs that the Project either crosses or passes adjacent to. A more comprehensive list of rivers and streams expected to be impacted can be found in *Larimer County 1041 Permit: Wetland Mitigation Plan* (Pinyon, 2020).

The pipeline conveyance system in Larimer County consists of four lines: Northern Tier Alignment, Poudre Intake Alignment, County Line Alignment, and Glade Release Alignment (Figures 1 - 5). The list below starts with water bodies at the northwestern-most side of the Project along Poudre Canyon Road northwest of Bellvue. It follows water bodies along the Project going east until County Road (CR) 13. Then it follows the Project south to East Prospect Road. At that point the Project has a western spur that stretches west to the intersection of Mulberry Street and South Lemay Avenue in Fort Collins. The list of water bodies then restarts back at the intersection of CR 13 and East Prospect Road where it continues south along CR 13 till the Project ends north of the intersection of CR 13 and CR 30.

- Cache La Poudre River
- Poudre Valley Canal
- Larimer County Ditch
- Dry Creek
- Annex Reservoir #8
- Elder Reservoir
- Boxelder Creek
- Larimer County Canal
- Deadman Lake
- Cache La Poudre Reservoir Canal
- Cache La Poudre Reservoir Inlet
- Larimer and Weld Canal
- Timnath Reservoir
- Lake Canal
- Greeley No 2 Canal
- Oklahoma Reservoir
- Farmers Ditch
- Big Thompson River
- Hill and Brush Ditch
- Hillsboro Ditch

No changes to groundwater, aquifers, or aquifer recharge areas are anticipated.

Regulatory Requirements

The U.S. Army Corps of Engineers (USACE) and Environmental Protection Agency (EPA) are responsible for regulating activities in waters of the U.S., including wetlands, under Section 404 (1)(b) of the Clean Water Act (CWA). NISP WAE is in the process of obtaining a Section 404 permit for unavoidable permanent impacts to waters of the U.S. This means the Project will take all appropriate and practicable steps to avoid and minimize adverse impacts to waters of the U.S. Unavoidable permanent impacts will be offset as described in the Project's *Larimer County 1041 Permit*: Wetland Mitigation Plan (Pinyon, 2020).



Construction activities would be regulated by a National Pollutant Discharge Elimination System (NPDES) general construction permit that would require Control Measures (CMs) to minimize possible impacts from erosion or other nonpoint source pollutants. Permanent erosion control measures will not be required since disturbed areas will be returned to mimic pre-existing vegetation patterns.

Prevention of erosion and sedimentation is an important part of the construction process. As a component of the Colorado Department of Public Health and Environment (CDPHE) General Permit, the applicant and its sub-contractors will draft a site-specific SWMP providing comprehensive information about stormwater pollution prevention practices during construction. The SWMP will identify potential sources of pollution associated with the proposed Project that may contribute pollutants to stormwater. Additionally, the SWMP will identify and describe control measures that will reduce or eliminate any possible water quality impacts when implemented.

The SWMP typically includes the following:

- A description of the site and the nature of the construction activity. The proposed sequence, estimates of disturbance areas, and names of receiving water(s) will also be included.
- A site map identifying items such as construction site boundaries and activities, locations of all best management practices (BMPs), and locations of springs, streams, wetlands or other surface waters.
- Identification of potential pollutant sources, and stormwater management controls to address pollutants including structural and non-structural BMPs. Information for BMP implementation, stabilization practices, as well as materials handling and spill prevention will also be included.
- Inspection schedules and BMP maintenance procedures.

A Spill Prevention, Control, and Countermeasure (SPCC) plan will also be prepared to provide measures for the prevention and mitigation of inadvertent releases of petroleum products. No petroleum products or hazardous materials will be stored within 50 horizontal feet of identified waters.

Potential Pollution Sources of Stormwater and Anticipated Control Measures

Pipeline construction will consist of the following steps:

- I) Remove and stockpile topsoil
- 2) Remove and stockpile subsoil separately from topsoil to depth needed for pipeline placement (typically 8-12 feet)
- 3) Place bedding material and pipeline in trench
- 4) Replace subsoil then topsoil
- 5) Reclaim area to pre-existing conditions

The conveyance system will be constructed to minimize temporary impacts. No permanent impacts to wetlands or open waters will occur in unincorporated Larimer County from construction of the conveyance system. The Poudre River Intake pump station will create a small area of impervious surface adjacent to an open water.

A collection of BMP details from Dewberry for wetland and stream crossings that will be used during construction is attached. In addition to those BMPs, the following includes a list of potential sources of pollution of stormwater that may occur during construction as well as suggested control measures that may be used by the contractor.

Refer to the construction BMP fact sheets in the Urban Drainage Stormwater Criteria Manual Volume 3 for more details on any of the BMPs below (UDSCM, 2019).

a. Disturbed and Stored Soils – Soils may be disturbed during removal of existing vegetation and excavation. Stockpiles of topsoil and other construction materials may be kept on-site during



construction. These materials may erode during precipitation events. Movement of disturbed soils or erosion of stockpiles off-site may be prevented using silt fence, erosion control logs, rock socks, and/or similar control measures.

- b. Water Body Crossings Soils may be disturbed during removal of existing vegetation and excavation for the pipe installation at crossings of rivers, streams, canals, and ditches as well as adjacent to reservoirs and lakes. As discussed above soils may erode. Excavation may impact environmental resources in these areas. These resources may be protected with the minimization of soil disturbance and the use of control measures including plastic fencing, silt fence, erosion control logs, and/or rock socks. Clean water diversions may be used at crossings with flowing water. Ditch and canal crossings may be coordinated with the appropriate ditch company to avoid and minimize impact.
- c. Vehicle Tracking of Sediments Vehicles traveling over disturbed soils on-site may track sediments off-site. Use of vehicle tracking controls may be required to prevent tracking of sediments off-site. Furthermore, dust suppression via spraying may be used on haul roads.
- **d.** Management of Contaminated Soils Contaminated soils are not anticipated to be encountered during construction. If contaminated soils are encountered a materials management plan may be needed.
- e. Loading and Unloading Operations Loading and unloading may consist of several erodible materials (e.g. topsoil, fill soils). Dust suppression via water spraying may be used on haul roads.
- f. Outdoor Storage Activities Outdoor storage of equipment and construction materials may occur throughout the Project. When a risk of contaminating soils exists, these materials may be stored under cover (e.g. within metal containment structures). Stockpiles may be controlled as discussed above.
- **g.** Vehicle and Equipment Maintenance and Fueling vehicle maintenance and fueling operations may be controlled through good housekeeping and by following the directions in the SPCC for any spills. Spill kits may be available in maintenance and fueling areas. On-site tanks may be managed via direction in the SPCC.
- h. Significant Dust or Particle Generating Processes (E.G. Saw Cutting) Dust and particle generating processes may be controlled via water sprays and/or by limiting cutting to low-wind days. Water used for dust suppression may not exceed State groundwater standards in Regulations 5 CCR 1002-41 and 42.
- i. Routine Maintenance Activities Involving Fertilizers, Pesticides, Herbicides, Detergents, Fuels, Solvents, Oils, Etc. – Vehicle and equipment maintenance controls are described above. Other chemicals, if used, may be used according to their printed instructions. All chemicals on-site may have Safety Data Sheets (SDS) on file in the Project office. SDSs may include instructions on handling accidental exposure. Spills of these materials may be immediately controlled via spill kits.
- j. On-Site Waste Management Practices (Waste Piles, Liquid Wastes, Dumpsters) Waste areas may be designated in the SWMP. Waste may be handled according to good housekeeping practices outlined in the SWMP.
- k. Concrete Truck/Equipment Washing, Including Washing of The Concrete Truck Chute and Associated Fixtures and Equipment – Concrete truck washing may be handled according to instructions in the SWMP. Vehicle and equipment washing may be minimized on-site. Washing areas may be contained so that contaminated wash-water cannot leave the site and is properly captured and treated prior to disposal.
- I. Dedicated Asphalt, Concrete Batch Plants and Masonry Mixing Stations Dedicated asphalt or concrete plants are not anticipated. If required, they may have separate stormwater permits and SWMPs to govern their pollution sources and control measures.
- m. Non-Industrial Waste Sources Such as Worker Trash and Portable Toilets Worker trash may be managed via good housekeeping practices as outlined in the SWMP. Portable toilets may be staked or held down by weights or trailers to prevent tipping. Additional details may be discussed as needed in the SWMP.
- n. Other Good Housekeeping Measures Adequate care may be taken by all contractors to prevent contamination of groundwater. Pouring of any wash water, solvent, or wastewater onto the ground



would be prohibited. All waste materials may be sent for off-site disposal. All spills shall be cleaned up immediately and placed in suitable containers. Any contaminated soil or other media may also be containerized for disposal.

Commitments to Match Pre-Existing Vegetation through Proper Re-Grading and Revegetation

As discussed above, post-construction vegetation of disturbed areas will be designed and installed to match pre-existing vegetation conditions. Post-construction grading of disturbed soils will be done to mimic preexisting topography. Permanent stormwater controls for flooding or water quality are not needed given that the Project site surface condition will be restored to pre-construction conditions. No increase in stormwater runoff is anticipated post construction.

References

Pinyon, 2020. Larimer County 1041 Permit: Wetland Mitigation Plan, Prepared by Pinyon Environmental, Inc., January 2020.

- Larimer County, 2019. Larimer County Code of Ordinances, Land Use Code, 14.9 1041 Permit Application and Review Process. Online content updated on October 15, 2019. Available at: https://library.municode.com/co/larimer_county/codes/code_of_ordinances?nodeld=PTIILAUSCO_I 4.0ARACSTIN_14.91041PEAPREPR. Accessed December 2019.
- UDSCM, 2019. Urban Drainage Stormwater Criteria Manual, Volume 3. Prepared by the Mile High Flood District. Online content updated October 2019. Available at: https://udfcd.org/volume-three.

Attachments

- Figure 1. Project Location
- Figure 2. Northern Tier Alignment
- Figure 3. Poudre Intake Alignment
- Figure 4. County Line Alignment
- Figure 5. Glade Release Alignment
- Dewberry Typical Wetland Crossing and Stream Crossing Details



Figure I. Project Location





Figure 2. Northern Tier Alignment















Pinyon Project Number: 11881402







Figure 3. Poudre Intake Alignment



Pinyon Project Number: 11881402





Project Number: 11881402



Figure 4. County Line Alignment







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NISP Environmental Compliance Support/Figures/ArcMapIMXDs/Wetlands/Larimer 1041 PermitErosion Control PlanINISP_Larimer1041_EC - CountyLine Map







Figure 5. Glade Release Alignment





Dewberry Typical Wetland Crossing and Stream Crossing Details



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TYPICAL PIPELINE INSTALLATION WETLAND CROSSING DETAIL	 SEVERENG WELLAWD LOFSOIL FROM SUBSOILS WITHIN THE AREA UNITORED OF TRENCHING WITHIN WELLAND AREAS. ADDITIONAL TRENCH PLUGS SHALL BE INSTALLED FOR LONG OPEN-CUT WELLAND CROSSINGS. ANY EXCESS SPOIL MATERIALS MUST BE REMOVED AND NOT SPREAD WITHIN THE WELLAND AREA. ANY EXCESS SPOIL MATERIALS MUST BE REMOVED AND NOT SPREAD WITHIN THE NETLAND AREA. ANY EXCESS SPOIL MATERIALS MUST BE REMOVED AND SURFACE FLOW. ANY EXCENT SUCH AS AGRICULTURAL LIME OR FERTILIZER WILL BE USED WITHIN WELLAND AREAS. CONTRACTOR SHALL PERMANENTLY STABILIZE UPLAND AREAS NEAR WETLANDS AS SOON AS POSSIBLE AFTER BACKFILLING.
5' MIN COVER	 LIMT GROUND DISTURBANCE TO THE AREAS DIRECTLY OVER THE TRENCH LINE, EXCEPT WHERE TOPOGRAPHY REQUIRES ADDITIONAL GRADING FOR SAFETY REASON. WHEN GRADING IS REQUIRED, TOPSOL WITH THE VEGETATIVE ROOT MASS WILL BE STRIPPED, SEGREGALT EMPORARY EQUIPMENT MATS ALONG CONSTRUCTION ACCESS ROAD (IF NEEDED) TO REDUCE RUTING. INSTALL TEMPORARY EQUIPMENT MATS ALONG CONSTRUCTION ACCESS ROAD (IF NEEDED) STAGE AND PREPARE PIPE FOR INSTALLATION IN UPLAND AREAS UNLESS WETLAND IS DRY LENDUGH TO ADEQUARELY SUPPORT SKIDS AND PIPE. TRENCHING THROUGH WETLANDS MAY PROCEED WHEN THE PIPE SECTION IS FABRICATED AND ON-SITE READY TO INSTALL. STAGE FAATE WETLAND TO INSTALL.
	 STABILIZE CONSTRUCTION ACCESS ROAD APPROACH TO WETLAND AREAS AS REQUIRED TO REDUCE RUTHING. HAZARDOUS OR POLLUTANT MATERIAL STORAGE AREAS SHALL BE LOCATED AT LEAST 100 FEET FROM WETLAND BOUNDARES. PRIOR TO COMMENCING WORK IN WETLAND AREAS, TOPOGRAPHIC ELEVATIONS SHALL BE SURVEYED SO THAT ORIGINAL CONTOURS CAN BE ACHIEVED DURING RESTORATION. INTRAMS ARE PRESENT, IMPLEMENT APPLICABLE GROSSING METHODS. INTRAMS ARE PRESENT, INPLEMENT APPLICABLE GROSSING METHODS. INTRAMS ARE PRESENT, INPLEMENT APPLICABLE GROSSING METHODS. MINIMIZE CLEARING TO ONLY WHAT IS NECESSARY TO SAFELY CONSTRUCT THE PIPELINE.
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