



# **Larimer County Analysis – Technical Memorandum No. 2 Larimer County 1041 Evaluation Criteria**

Prepared for:  
**Larimer County in accordance with the  
Memorandum of Understanding between  
Larimer County and Northern Water**

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## 1.0 COUNTY EVALUATION CRITERIA

The Larimer County (County) Land Use Code Chapter 14 details the designation and regulation of areas and activities of State interest, including regulations for both 1041 Permits and Intergovernmental Agreements as well as detailed evaluation criteria for 1041 permitting. The County and Northern Water have entered into an MOU to facilitate joint discussions, which may result in the approval of an Intergovernmental Agreement (IGA) in lieu of 1041 permitting. As part of this process, Larimer County reviewed the Northern Integrated Supply Project (NISP or Project) components against the criteria within these codes to determine which components would be reviewed as part of the IGA. Through this analysis, it is Northern Waters' understanding that the following three topics were identified as areas of State interest and are the subject of the IGA:

1. Analysis of pipelines routes through Larimer County
2. Access to properties along the U.S. Highway 287 relocation
3. Recreational facilities at Glade Reservoir

As part of the Larimer County analysis to inform the IGA, each of the County 1041 evaluation criteria are assessed below for these three components. This evaluation includes an explanation if the criteria have already been addressed within a separate permitting process and summaries of what was required by the separate permitting entity.

### 1.1. Criterion 1 – Master Plan Consistency

*Criterion 1: The proposal is consistent with the master plan and applicable intergovernmental agreements affecting land use and development.*

The Larimer County Master Plan is a policy document that establishes goals, visions, and a long-range framework for decision making for the unincorporated area of the County, including specific plans for growth management, land use, public facilities and services, transportation, and environmental resources and hazards. The location proposed for Glade Reservoir is in open zoning, while the conveyance system will pass through a variety of zoning designations. Maps of the Project components are provided within the technical memoranda.

Northern Water understands that the protection of environmental resources, including protecting fish and wildlife, are intrinsic values to Larimer County. To provide those protections, a Fish and Wildlife Mitigation and Enhancement Plan has been developed, which outlines mitigation and enhancement measures for Project impacts to fish and wildlife. This plan commits over \$53 million dollars to mitigation and enhancement projects. This plan has been adopted by the State of Colorado (State) and represents the State's official position on the mitigation actions required for the project. Additionally, wetlands impacts are being addressed through the development of a U.S. Army Corps of Engineers approved wetland mitigation plan, and cultural resources will be protected through a Programmatic Agreement, which will spell out the project's Historic Preservation Act compliance measures and process. The project's Fish and Wildlife Mitigation and Enhancement Plan is included as Appendix A to TM No. 1.

NISP shares Larimer County’s commitment to maintaining irrigated agricultural lands and promoting agriculture. NISP utilizes Cache la Poudre River water rights that do not require dry-up of agricultural land. Northern Water is also engaging with willing shareholders in the New Cache and Larimer-Weld Irrigation Companies to preserve agriculture by perpetually supplying water to those farms from the Project’s South Platte Water Conservation Project.

## **1.2. Criterion 2 – Alternatives**

*Criterion 2: The applicant has presented reasonable siting and design alternatives or explained why no reasonable alternatives are available.*

For the Project components covered by the IGA, a pipeline routing study with multiple alternatives for the conveyance is included in TM No. 3.

For the Project as a whole, including Project components not covered by the IGA, a detailed evaluation of Project alternatives is available in the Environmental Impact Statement (EIS). Throughout the history of NISP, both big-picture alternatives and more detailed site-specific alternatives have been evaluated for the project. The Project Clean Water Act Section 404 Permit and associated National Environmental Policy Act (NEPA) regulations require that the project EIS evaluates a range of reasonable alternatives including a No-action Alternative with the goal of identifying the least environmentally damaging practicable alternative.

In 2004, a Phase 2 Alternative Evaluation Report was completed that assessed broad Project concepts and various Project elements, resulting in evaluation of over 35 NISP alternatives and a No-action Alternative. In 2007, an EIS Alternatives Evaluation was completed by the U.S. Army Corps of Engineers with screening criteria developed specifically for NISP to meet federal guidelines. As part of these alternatives analyses, hundreds of different Project concepts and elements were evaluated to meet the purpose and need for NISP. These concepts demonstrated a wide range of ideas including aquifer storage and recovery, cloud seeding, agricultural transfers, existing gravel pit storage, water conservation, temporary water transfers, and many more. Three action alternatives, as well as the No-action Alternative, were selected for detailed analysis in further EISs, resulting in the preferred alternative as detailed in TM No. 1.

## **1.3. Criterion 3 – Conformance with Standards**

*Criterion 3: The proposal conforms with adopted county standards, review criteria and mitigation requirements concerning environmental impacts, including but not limited to those contained in this Code.*

The Larimer County Land Use Code (and specifically [Section 8 – Standards for all Developments](#)) is written primarily for private developments. Generally, many of the County standards are not applicable to this public facilities project; however, NISP will follow County standards where applicable. Northern Water commits to the following:

8.1 Public Facilities – Standard public facilities will be provided for any public infrastructure developed for the project. Outdoor public recreation facilities will be provided and will be developed in coordination with the to-be-selected recreation facility manager at Glade Reservoir.

8.2 Wetland Areas – Wetland areas will be avoided where feasible, temporarily impacted where possible, and mitigated where permanent impacts cannot be avoided. Wetlands mitigation is being developed through a U.S. Army Corps of Engineers approved wetlands mitigation plan. More than 50 acres of wetlands mitigation credits including the development of approximately 40 acres of new wetlands areas are being envisioned as part of this plan.

8.3 Hazards– The design of the Project will conform with adopted County standards for hazard areas such as floodplains and geological hazards. For recreation areas, developed infrastructure will be restricted to areas outside of geologic hazard areas and designated floodplains. For pipelines, flood scour potential for floodplain crossings will be evaluated and appropriate protection measures incorporated into the crossings design.

8.4 Wildlife – Protection and enhancement measures for fish and wildlife are included in the Fish and Wildlife Mitigation and Enhancement Plan, which provides more than \$53 million dollars in funding for 54 identified improvements. Some of the most notable elements from this plan include:

- Development of Conveyance Refinement Flows in which 18 to 25 cubic feet per second (cfs) of NISP water deliveries will be run through the Cache la Poudre River for 13 miles from the mouth of the canyon until roughly the Mulberry Street and Lemay Avenue Intersection in Fort Collins (These flows will improve aquatic and terrestrial habitat and provide more base flow year-round.)
- Conservation of approximately 1,080 acres of land surrounding Glade Reservoir as wildlife habitat in general and to provide deer and elk habitat specifically
- Construction of approximately 2.4 miles of stream channel improvements including the development of cottonwood regeneration areas
- Development of fish passage features into the Poudre Valley Canal, Watson Lake Diversion, and three other diversion structures on the Cache la Poudre River to enlarge fish habitat by providing fish passage through these structures, which have historically been complete barriers to upstream fish movement (Construction of the fish passage at the Watson Lake Diversion was recently completed in Spring 2019 as part of this commitment.)



Figure 1: Watson Lake Fish Passage

Other commitments and details of the plan can be found in Appendix A to TM No. 1.

8.6 Private Local Access Roads and Parking Standards – Access along the new U.S. Highway 287 for all parcels adjacent to the highway will be coordinated with the property landowners, CDOT, and the highway designers as described in TM No. 4. The preliminary approach for the access road will be a frontage road that would provide a single point of access to the highway for multiple landowners. Larimer County standards for the local access roadway will be followed.

8.8 Irrigation Facilities – Existing ditch and irrigation facilities will be protected as part of the project. Northern Water has extensive experience in developing agreements with ditch companies to allow pipeline crossings that do not interrupt irrigation facilities.

8.11 Air Quality – Air Quality commitments are included in the Conceptual Mitigation Plan developed as part of the project's Clean Water Act Section 404 Permit and associated NEPA requirements. Northern Water will develop and implement a fugitive particulate emission control plan that identifies specific steps that would be taken to minimize fugitive dust generation as part of a Colorado Department of Public Health and Environment general construction permit. The fugitive dust plan will identify potential dust sources, such as imported backfill for the pipeline, and how the project will be designed and operated to minimize fugitive dust. Potential control measures include watering stockpiled materials, wheel washing trucks, utilizing gravel for potential access roads to decrease dust potential, and limiting working space in dusty areas.

8.12 Water Quality – Water Quality commitments are included in the Fish and Wildlife Mitigation and Enhancement Plan adopted by the State of Colorado. Some of the most notable commitments include:

- Construction of a multi-level outlet tower at Glade Reservoir to allow custom blending of the water quality leaving the reservoir
- Monitoring of stream flow water quality and temperature to ensure compliance with standards
- Construction of aeration features for water entering the Cache la Poudre River from Glade Reservoir to ensure healthy oxygen levels are maintained

Additional details of the plan are found in Appendix A to TM No. 1.

The Colorado Department of Health and Environment is addressing impacts to water quality through the project's 401 Water Quality Certification, and Northern Water is committed to meeting all stormwater requirements through the development and maintenance of Stormwater Management Plans and associated permits.

*8.5 Landscaping, and 8.7 Road Surfacing Requirements, 8.13 Mineral Deposits, 8.14 Land Division, 8.15 Lighting, 8.16 Fences, 8.17 Hazardous Waste Treatment, and 8.18 Large Retail Development are not applicable to the project. See TM No. 1 and its Appendix A for information on environmental mitigation and enhancement associated with the project.*

#### **1.4. Criterion 4 – Adverse Affects**

*Criterion 4: The proposal will not have a significant adverse affect on or will adequately mitigate significant adverse affects on the land or its natural resources, on which the proposal is situated and on lands adjacent to the proposal.*

The pipeline impacts on land and natural resources are generally temporary in nature. The land will be restored to its original condition or better to be used in its original capacity or other capacities as dictated by the easement language. Northern Water will work with each landowner to develop a property-specific restoration and reclamation plan for each parcel.

For the Project as a whole, including components not covered by the IGA, a Fish and Wildlife Mitigation and Enhancement Plan and a Conceptual Mitigation Plan have been developed to mitigate significant adverse effects from the Project as part of State and Federal permitting requirements. These mitigation plans include a variety of improvements including:

- Best management practices like using straw bales to minimize erosion and using vehicle tracking control pads to keep roads clean during construction
- Commitments to send additional water down the Cache la Poudre River
- Peak flow operations programs to maintain critical spring flushing flows
- Wetland construction projects
- Over 80 acres of Preble's Meadow Jumping Mouse habitat construction to protect this endangered species
- Fish habitat improvements in approximately 2.4 miles of stream
- Big game habitat conservation on 1,080 acres
- Recreation features as outlined in TM No. 5

Additional detail on these any many other commitments are included in Appendix A to TM No. 1 and in Appendix B of the Final EIS.

The Fish and Wildlife Mitigation and Enhancement Plan and Conceptual Mitigation Plan are approved by the State of Colorado and U.S. Army Corps of Engineers respectively, and they represent the State- and

Federal-Government's official position on the mitigation required to offset adverse impacts. Through these plans, any significant adverse effects from the Project on natural resources will be mitigated.

### **1.5. Criterion 5 – Historic Places**

*Criterion 5: The proposal will not adversely affect any sites and structures listed on the State or National Registers of Historic Places (NRHP).*

An evaluation of cultural, historical, and paleontological resources is required as part of the project's Clean Water Act Section 404 permit and associated NEPA requirements. Northern Water will enter into a Programmatic Agreement with the Corps, Colorado State Historic Preservation Office, and the Advisory Council on Historic Preservation to set forth how cultural resources will be addressed. A Class III level survey and evaluation will be conducted prior to any ground-breaking activities on the Project. This survey will include both reservoir sites and the conveyance system. This pedestrian survey will include an intensive inventory and systematic effort to identify all resources within the area of concern and will record information sufficient to permit their evaluation or to indicate what further work is necessary to accomplish their evaluation. After all structures or sites are identified and documented and evaluation of all resources is complete, any needed treatment plans will be developed as outlined in the project's Programmatic Agreement.

### **1.6. Criterion 6 – Public Health and Safety**

*Criterion 6: The proposal will not negatively impact public health and safety.*

NISP will have an overall positive impact on public health by providing a needed raw-water supply source to the Project participants, including the Fort Collins Loveland Water District and the City of Windsor, which serve Larimer County residents. Some participants face immediate water shortages; for others, shortages of firm-water supply are expected over the next 10 to 20 years. A review of water needs of the Project participants is included in the EIS documents.

Public safety during construction is of the utmost importance to Northern Water. During any work in or near a roadway, emergency services access will be maintained. Construction managers and inspectors will be present onsite during construction activities to monitor construction safety and ensure Contractors stay within the work areas.

The construction of Glade Reservoir recreation facilities including camping, trails, boating, fishing, and other recreation options will provide opportunities for the public to exercise, recreate, and maintain healthy lifestyles.

### **1.7. Criterion 7 – Natural Risks**

*Criterion 7: The proposal will not be subject to significant risk from natural hazards including floods, wildfire or geologic hazards.*



Pipelines, the U.S. Highway 287 relocation, and Glade Reservoir recreation facilities will be constructed to meet local, State, and Federal floodplain regulations, fire and wildfire standards, and to avoid or address geologic hazards as appropriate.

Design of dam, spillway, and associated infrastructure not covered by this IGA will be done in accordance with applicable Colorado dam safety criteria, including current seismic stability standards. A Dam Safety Permit from the Dam Safety Branch of Colorado Division of Water Resources will be required prior to construction and operation of the dam. The dam will be regularly inspected by the Dam Safety Branch as well as maintained and operated by Northern Water.

### **1.8. Criterion 8 – Public Facilities**

*Criterion 8: Adequate public facilities (APF) and services are available for the proposal or will be provided by the applicant, and the proposal will not have a significant adverse effect on the capability of local government to provide services or exceed the capacity of service delivery systems.*

NISP will not have a significant effect on the capability of local government to provide services or exceed the capacity of service delivery systems. Each APF section is discussed below.

- Sewage Disposal – On-site sewage treatment systems will be utilized for restrooms associated with the Project. Facilities may include a restroom(s) at the Glade pump station and sewer collection and treatment associated with the recreation plan.
- Domestic Water – The Glade pump station will likely utilize nonpotable raw water for pump cooling water and restroom facility water. Potable water may be considered for the recreation facilities and would either be from a public community water system or new drilled wells.
- Drainage – Dedicated stormwater design and facilities will be included as part of the Project. A drainage design will be completed as part of the final design of recreation facilities and will include the sizing and design of drainage features including swales, culverts, and stormwater detention ponds if needed. The pipeline and U.S. Highway 287 design and construction will include both temporary and permanent storm water facilities as required.
- Fire Protection – Recreation facilities will be designed to meet Larimer County Fire Prevention and Protection Standards including regulations regarding wildfires, open fires, and contained open fires.
- Road Capacity – The U.S. Highway 287 relocation will evaluate the required capacity for these roadways.

Public facilities and services will not be utilized for the Project, other than as discussed in Criterion 9 below. As described in TM No. 5, the to-be-selected recreation facility manager will manage recreation facilities and activities at and surrounding Glade Reservoir.

Northern Water has operated pipeline, pump station, and dam facilities in Colorado since its formation as the first Water Conservancy District in the State in 1937. Carter Lake and Horsetooth Reservoir are operated and maintained jointly by Northern Water and the Bureau of Reclamation while partnering

with Larimer County for recreation and security requirements. Through this long partnership, Northern Water possesses the knowledge, history, and skills to successfully construct and operate NISP.

### **1.9. Criterion 9 – County Facilities**

*Criterion 9: The applicant will mitigate any construction impacts to county roads, bridges and related facilities. Construction access will be re-graded and re-vegetated to minimize environmental impacts.*

NISP construction will temporarily impact County roadways and rights-of-way. Impact to public rights of way is included as an evaluation criterion for the pipeline routing analysis and more information can be found in TM No. 3. As part of the final design process, a pre-construction inventory will be completed to identify County roads to be utilized for construction traffic. During construction, periodic inspections and post-construction repairs/replacement will be completed if needed to ensure pre-construction conditions are met or exceeded. Construction and access areas will be re-graded and re-vegetated to minimize environmental impacts.

### **1.10. Criterion 10 – Benefits of Project**

*Criterion 10: The benefits of the proposed development outweigh the losses of any natural resources or reduction of productivity of agricultural lands as a result of the proposed development.*

The pipeline construction may involve temporary agricultural losses during construction. Northern Water will pay crop loss damages to easement holders for these temporary impacts and restore the agricultural lands to productivity after construction.

For the Project as a whole, including components not covered by the IGA, construction of Glade Reservoir and the Glade Forebay would result in the permanent loss of approximately 150 acres of farmland. However, this loss is outweighed by the potential loss of 69,200 acres of farmland if NISP were not constructed. As part of the Clean Water Act Section 404 Permit and associated NEPA processes, a No-action Alternative was evaluated. This alternative considers what the Project participants would do to meet their water supply needs without NISP. In the absence of NISP, obtaining new water supplies in the region likely would become more challenging because the demand for a finite supply of water would increase. It is not possible to determine the specific mix of future water development approaches that would be pursued by the individual participants because the process of acquiring water supplies would be driven by complex social, economic, environmental, and political factors. Therefore, a conceptual No-action Alternative is presented in the project's EIS and is intended to represent the possible water supplies that each participant could obtain. In this case, it is likely that participants would rely primarily on the conversion of agricultural water rights to municipal and industrial use (commonly referred to as buy and dry) to provide their water supply needs. It is estimated that the No-action Alternative would result in the removal of irrigation from up to 69,200 acres of agricultural lands and the conversion of the irrigated agricultural lands to dry-land uses. The reduction of productivity of agricultural land for the Project is minimal compared to what would happen if the Project isn't constructed.

The loss of natural resources is discussed in Criterion 4 above.

Water conservation is an important consideration and has been raised as a solution to the Participants' critical water shortages. All of the NISP Participants have ongoing water conservation programs to educate users about their water supply and discourage unnecessary use of water on a long-term basis. All of the Participants have conservation plans, which include the following:

- (1) Profile of existing water supply system
- (2) Profile of water demands and historical demand management
- (3) Integrated planning and water efficiency benefits and goals
- (4) Selection of water efficiency activities
- (5) Implementation and monitoring plans

Water efficiency measures have been factored into the amount of water that NISP needs by reducing Participants' water demands to reflect their conservation programs. Water conservation is an important part of each Participant's water management system. However, it is not enough, and new water, as supplied by NISP, is needed to meet Participants' future water needs.

### **1.11. Criterion 11 – Cost Benefit Balance of Mitigation**

*Criterion 11: The proposal demonstrates a reasonable balance between the costs to the applicant to mitigate significant adverse affects and the benefits achieved by such mitigation.*

The State of Colorado requires that Colorado Parks and Wildlife and the Colorado Water Conservation Board review and provide input on mitigation for fish and wildlife impacts resulting from a federally approved water project (C.R.S. 37-60-122.2). The rules at Section 1604B instruct the Wildlife Commission to ensure that "the mitigation plan is economically reasonable and reflects a balance between protecting the fish and wildlife resources and the need to develop the State's water resources." Northern Water coordinated with CPW to develop a mitigation and enhancement plan that addresses impacts to fish and wildlife resources and demonstrates a reasonable balance between the costs to the applicant to mitigate significant adverse effects and the benefits achieved by such mitigation. The mitigation plan was approved and adopted by CPW and the Colorado Water Conservation Board prior to being adopted by the State of Colorado as the official State position on the mitigation actions required.

The Fish and Wildlife Mitigation and Enhancement Plan commits over \$53 million dollars to the 54 mitigation and enhancement comments identified in the plan. 43 of those commitment, 80% of the identified improvements, will occur totally or partially in Larimer County. Those commitments are identified to cost more than \$49 million dollars indicating that approximately 90% of the plans funding will provide benefit to Larimer County. Please see Table A1 in the Fish and Wildlife Mitigation and Enhancement Plan (Appendix A to TM No. 1).

Additionally, Northern Water has prepared a Conceptual Mitigation Plan as part of the Clean Water Act Section 404 Permit and associated NEPA regulations, and water quality mitigation will be addressed through the Colorado Department of Public Health and Environment's 401 Water Quality Certification.

The costs of these mitigation activities will be factored into the approvals by both the agencies requiring mitigation and the applicants.

### **1.12. Criterion 12 – County Staff and Referral Agency**

*Criterion 12: The recommendations of staff and referral agencies have been addressed to the satisfaction of the county commissioners.*

Through the process of compiling the IGA, Northern Water will work with the County to address recommendations from staff and referral agencies, as well as utilize an online public engagement tool to gather input and address concerns from the public.

## **2.0 SUMMARY**

Each of the twelve (12) Larimer County 1041 evaluation criteria have different requirements that NISP must meet. Per Larimer County Land Use Code Chapter 14, the requirements of the code may be met by the approval of an intergovernmental agreement between the County and the applicant. One of the conditions of approval is that the purpose and intent of Chapter 14 must be satisfied. As outlined above, some of these evaluation criteria are addressed within separate State and Federal permitting processes, but all are addressed and explained as part of this proposal.