I. Introduction

This submittal is in support of a 1041 Permit Application under a minor permit review in accordance with Section 10200 B 2 of the Summit County Land Use and Development Code (SCLUDC) for the Old Dillon Reservoir (ODR) Enlargement Project.

In accordance with sections 10200 B 2 a, the necessary application form signed by the applicants' representative will be provided. The applicants are Summit County (53.5%), the Town of Dillon (38.1%), and the Town of Silverthorne (8.4%). The project is located entirely on National Forest System (NFS) lands managed by the White River National Forest (WRNF), Dillon Ranger District.

We have also included a 24"x36" map (Figure 1) of the project proposal to provide the required map at a readable scale (10200 B 2 b). The project elements are overlayed on the Summit County 2004 orthophotograph. Additional figures are included in the appendices related to the resources assessed for this project.

The pre-application fee of $1,000.00 will be provided by the applicants (10200 B 2 d).

As required by 10200 B 2 c, the following is the written summary of the proposed project including analysis of each approval standard contained in Section 10400 of the SCLUDC.

The Colorado River Water Conservation District is managing the project development process for the applicants. Claffey Ecological Consulting, Inc (CEC) is the primary consultant handling the permitting for this project for the Summit County 1041 Review, the US Forest Service National Environmental Protection Act (NEPA) compliance, and the US Army Corps of Engineers Section 404 of the Clean Water Act permit. CEC assembled an experienced multi-disciplinary team of resource specialists to assess impacts of the proposal including:

Lisa Sakata, Inc. – NEPA, Recreation, Air Quality, and Visuals Impacts
Resource Engineering, Inc – Water Resources
Miller Ecological Consultants, Inc. – Aquatic Biology/Fisheries
Zach Perdue – Visual Impacts
Metcalf Archaeological Consultants, Inc. – Cultural Resources
Nancy Redner – Botany

The US Forest Service (FS) used an Inter-Disciplinary Team (ID Team) of FS resource specialists to direct and review the work of the consultant team for the preparation of the required National Environmental Policy Act (NEPA) document.

In addition to Summit County Planning Department staff, we have coordinated with and conducted field visits with the Colorado Division of Wildlife, the US Army Corps of Engineers, and the US Environmental Protection Agency. Tetra Tech is providing the engineering design for the project and has submitted the applications to the State Engineers Office for Dam Safety review and approval.

II. Background

Old Dillon Reservoir is a 62 acre-foot (AF) raw water storage reservoir fed by the Dillon Ditch, which diverts from Salt Lick Gulch (SLG). Old Dillon Reservoir and a portion of the Dillon Ditch are claimed by the Town of Dillon as a potentially valid outstanding right (PVOR) on Federal lands, affecting approximately 14.5 acres within the WRNF. The reservoir was constructed prior to the establishment of the national forest. The Dillon Ditch is operated and maintained by the Town of Dillon under special use authorization DIL 199 issued on January 13, 2003 (copy attached).

Construction of ODR and the Dillon Ditch by the Town of Dillon began in 1936 to provide domestic water supply to the Town at its original location prior to construction of Denver's Dillon Reservoir. The reservoir was constructed with a north and south dam, and a diversion and ditch to convey water from SLG located north of ODR. An outlet pipe in the south dam conveyed water to the Town. After 1963 when the Town of Dillon was relocated for the construction of Denver's Dillon Reservoir, the Town has not been able deliver water from ODR directly into the Town's water supply system. The Town continued to maintain the reservoir and diversion to Dillon Ditch after 1963. The Dillon Ditch conveys water from SLG north of I-70, through an inverted siphon under I-70, and south of I-70 to ODR. Currently, an outlet pipe in the north dam and channel conveys water back to SLG approximately 0.9 mile downstream of the diversion. The outlet works in the south dam which conveyed water to the Town of Dillon is still visible in the reservoir but is not functional.

In the spring of 2008, the culvert conveying return flows from ODR back to SLG failed under the west bound lanes of I-70 creating a hole in the highway. The Colorado Department of Transportation replaced the culvert under the west bound lanes and lined in place the culvert under the east bound lanes. On July 17, 2008, the Colorado Division of Water Resources issued an order to the Town of Dillon to drain the reservoir due to concerns over safety of the north dam. The Town drained the reservoir shortly after, and it will remain drained until either the proposed enlargement is approved, or if the enlargement is not approved, the Town will reconstruct the north dam in accordance with current dam safety standards and continue to operate the reservoir at the current size.

III. Project Summary/ Purpose and Need

Summit County Government and the towns of Dillon and Silverthorne have identified the need for additional water supplies to meet future water demands within their service areas. Each entity requires the increased water storage capacity and water supply security. The purpose of this project is to provide additional water storage capacity and water supply security to meet existing and future domestic, municipal, exchange, augmentation, wetlands, and other water supply needs.

Additionally, the Town of Dillon's current water supply from Straight Creek is susceptible to contamination from several sources, and there is an identified need to maintain its alternative water supply. The purpose of this project is also to improve the utility of Old Dillon Reservoir as an alternative water supply for the Town of Dillon, thereby increasing the water supply security for the town.

The Old Dillon Reservoir Enlargement Project proposes to expand the existing reservoir from 62 AF to 286 AF of storage capacity by raising the north and south dams and improving the diversion and water delivery system to the reservoir. The project includes seven elements: 1) enlarging the existing reservoir from 62 to 286 AF of storage capacity by raising the north and south dams; 2) restoring the outlet from ODR to the south to the Blue River (now Dillon Reservoir); 3) reconstructing the headgate on SLG and piping the entire length of the Dillon Ditch to serve the enlarged reservoir; 4) rehabilitating the outlet to SLG; 5) temporary road access improvements; 6) burying overhead lines around ODR; and 7) wetland creation for project mitigation. A more detailed description of each of the project elements is provided below.

1) Reservoir Enlargement

The existing reservoir is approximately 8 acres and is impounded by two embankments of about 5 to 7 feet high. It has a capacity of approximately 62 AF. The enlarged reservoir would have a surface area of about 15.4 acres. The proposal would expand the existing reservoir to 286 AF capacity by reconstructing the north and south dams to 28 and 38 feet high. Construction of the reservoir enlargement would require about 120,000 cubic yards of excavation, 80,000 cubic yards of embankment fill, 10,000 cubic yards of imported riprap, and 1,000 feet of 24” pipe for the outlet to the Blue River (new Dillon Reservoir) to the south. Material for the dams would be excavated to the east and west of the current shorelines.

Implementation of the Old Dillon Reservoir Enlargement project would likely begin in calendar year 2010, and likely construction would be completed in one season. There would be a closure for public access during construction around the reservoir, the Salt Lick Gulch diversion, and along the Dillon Ditch in 2010, if the project is approved.

2) Restoring the outlet from Old Dillon Reservoir to the south to the Blue River (Dillon Reservoir)

A 24” diameter pipe would be installed through the south dam, down the slope separating Old Dillon Reservoir from Dillon Reservoir, under the Dillon Dam Road (Summit County Road 7), and into Dillon Reservoir. This pipe would deliver water to Dillon Reservoir to allow Summit County and the Town of Dillon to utilize stored water for augmentation or exchange purposes and to allow the Town of Dillon to utilize water from SLG for domestic water in the event the Straight Creek water supply becomes unavailable. A concrete wing wall would be constructed in Dillon Reservoir to protect the pipe, and rock riprap would be installed to dissipate energy.

3) Rehabilitation and modification of Dillon Ditch and its headgate on Salt Lick Gulch to serve the enlarged reservoir

The water transmission along the Dillon Ditch and diversion at SLG would be reconstructed. Approximately 6,100 feet of the Dillon Ditch would be converted to a buried 24” pipe placed within the alignment of the existing ditch. The pipe proposed is high density polyethylene (HDPE), which is flexible and would allow for placement of the pipe in the current ditch alignment. Placement within the ditch alignment allows for reduced construction impacts along the pipeline alignment as it would follow the existing disturbed prism of the Dillon Ditch. The headgate would be relocated slightly upstream in SLG.

The inverted siphon under I-70 would be slip lined with similar flexible pipe to allow for continuous pipeline. Installation of the slip liner would require a work site that would temporarily disturb approximately 0.10 acre of ground on the north edge of I-70 where the Dillon Ditch enters the inverted siphon. The temporary impact site would be re-graded to natural contours and seeded with a native seed mix. An access vault would be constructed on the south edge of I-70 to allow maintenance of the siphon.

4) Rehabilitating the outlet to Salt Lick Gulch

A pipe would be installed through the north dam to convey water back to the existing outlet channel that returns flow to SLG. The outlet of the pipe would be protected with concrete baffling, and riprap would be installed at the outlet of the pipe for approximately 15 feet downstream of the pipe. The remainder of the outlet channel would remain undisturbed. The outlet channel to SLG crosses I-70 in a concrete culvert constructed and maintained by the Colorado Department of Transportation (CDOT) (copy enclosed).

5) Temporary road access improvements

Construction access to the reservoir site at Lake Hill is via Lake Hill Communication Site Road (Forest Development Road 45.1) and Old Dillon Reservoir Road (Forest Development Road 45.1A) from the Dillon Dam Road. Both roads are existing Forest Development Roads open to administrative use only for operation and maintenance of the facilities located at Lake Hill. Minor improvements of the roads would be needed to accommodate construction vehicle traffic. The roads would remain open to administrative use at the completion of the project.

The project requires a temporary construction access road for construction of the new diversion structure in SLG and piping of the Dillon Ditch north of I-70. The access to the SLG diversion and Dillon Ditch north of I-70 is the existing Lower Salt Lick Gulch Road (Forest Development Road 1260W.2). Minor improvements would be needed on the road surface of 1260W.2 to accommodate construction vehicles. Upon completion of the project, the road prism would be reseeded and allowed to develop into a single-track trail, which is the preferred management use for 1260W.2 in the Forest Travel Management Plan. The road structure would remain allowing continued to administrative uses by the Forest Service as well as future operation and maintenance of the Dillon Ditch pipeline and SLG headgate.

6) Burying overhead power and cable lines

The White River National Forest Land and Resource Management Plan requires that overhead power lines less than 33kV in a project area must be buried as part of the project. The project would bury the overhead lines that carry Xcel power and Comcast cable through the project area. The lines would be buried in the crest of the south dam and along the existing alignment a short distance on either side of the dam to the tie in with the existing overhead lines.

7) Wetland creation

The project would cause a loss of wetlands around the existing reservoir shoreline; in SLG at the new diversion construction; and, in the Dillon Ditch from the pipeline installation. To replace the functions performed by those wetland habitats, the project proponents propose a compensatory mitigation plan at a 1:1 ratio that creates wetlands in the project area.
This replacement of wetland functions is required through the FS approval process, the

US Army Corps of Engineers Section 404 permit, and the Summit County 1041 approval.

Operations
The applicants would operate the reservoir as a joint enterprise to meet the water requirements of each government entity in accordance with their respective water rights. The **Operations Plan** is described in detail in the Hydrology Report by Resource Engineering (Appendix A). There are two types of operations of the reservoir described: **Normal Operations** and **Emergency Operations.**

Normal Operations are the typical operations of the reservoir. The reservoir is filled during spring runoff while maintaining a base flow of 0.5 cfs downstream of the diversion.
The reservoir fills by early June *most years* and then diversions terminate as the opportunity to use the applicant's water rights would be exhausted. This scenario of use was developed and modeled by the applicant's water engineer (Resource Engineering, Inc.) to utilize available flows, diversions, and storage space to serve proponent demands. In the myriad of scenarios possible under different water years and the various operations of the other water supply facilities in the Upper Colorado River Basin, the full use of available water rights may not be achieved in early June and diversions to refill reservoir capacity may continue later into the year. In all years, minor diversions will continue through the summer to maintain the created wetlands (0.25 to 0.33 cfs). Stored water is used by releasing water from ODR to Dillon Reservoir, for Summit County and Town of Dillon, and back to Salt Lick Gulch for the Town of Silverthorne. Silverthorne would use their directly or by exchange to augment depletions from there wells, or through their rights on the Valaer Ditch. The release of water from ODR would protect minimum stream flows in the Blue River through town. The Town of Dillon and Summit County may also release water to Salt Lick Gulch. The operations will divert more water, up to 450.12 AF annually, than the 286 AF of physical capacity of the enlarged reservoir, because water is released from storage during the reservoir fill period and water may be exchanged through the reservoir. There would be no diversions to ODR from Salt Lick Gulch during the winter under Normal Operations.

Emergency Operations would occur only when the Town of Dillon's domestic water supply, Straight Creek, is not available for diversion to the town's water treatment plant due to quality or quantity deficiencies. Straight Creek parallels Interstate 70 and the watershed has experienced mortality in the lodgepole pine forest due to the pine beetle epidemic. Straight Creek could be contaminated by a hazardous waste spill from an accident on I-70, or a catastrophic wildfire in the watershed could create such a high sediment load that the town's water treatment plant would not be able to treat the incoming water. Emergency Operations will go into effect when a water quality sample for turbidity at the Town's diversion indicates the treatment facilities threshold has been exceeded, when a chemical contamination occurs, or if the flow in Straight Creek is too low due to drought conditions to meet Dillon's existing demand. The Town's water treatment plant is capable of treating raw water up to 60 nephelometric turbidity units (NTUs).

The Town of Dillon would use their Dillon Ditch Direct Flow right to divert water from Salt Lick Gulch for municipal supply by routing it through ODR to the Blue River at Dillon Reservoir. Future Town of Dillon infrastructure improvements may include a pipe (siphon) under Dillon Reservoir from the ODR outlet pipe to the Town or a water intake on Denver's

Dillon Reservoir to utilize this water if Emergency Operations occur. Dillon understands a separate 1041 application may be needed for that future project.

IV. Analysis of Approval Standards of Section 10400

This section includes our analysis of the proposed project related to the approval criteria found in Sections 10400 A and B. Technical reports were written for and reviewed by FS resource specialists then consolidated in the EA. For this submittal, we provide a brief analysis of each criterion and refer to the detailed specialists' reports, where appropriate. The specialists' reports are included in the attached appendices. The appendices also include reports prepared independent of our work that address water supply needs and potential solutions in the Upper Colorado River Basin.

Pursuant to direction from the FS, the analysis considered an ongoing FS management action in the project area. In 2007, the FS approved the Dillon Reservoir Forest Health and Fuels project in the project area which seeks to mitigate the impacts of the mountain pine beetle epidemic. The contractor initiated portions of the timber removal in 2008. Lodgepole pine over five-inch diameter at breast height (dbh) will be removed to remove the potential for a catastrophic wildfire in the Wildland-Urban Interface. This will, and is, changing the habitat types in the project area prior to implementation of the ODR Enlargement Project.

A. General Approval Criteria

1. *Documentation that prior to site disturbance associated with the Proposed Project, the applicant can and will obtain all necessary property rights, permits and approvals. The BOCC may, at its discretion, defer making a final decision on the application until outstanding property rights, permits and approvals are obtained.*

We have been working with the FS since early 2007 in pursuit of the necessary Special Use Permit for the project. The FS completed public scoping on the project. We have completed a draft Environmental Assessment which has been reviewed by the FS project manager, NEPA specialist and the FS Interdisciplinary team. We have made their suggested revisions, including a second review of that document by the FS and review by the Regional Forest. The EA is now being reviewed by the FS project manager in the Dillon Ranger District prior to release to the public for comment.

We met with the US Army Corps of Engineers and the US Environmental Protection Agency for the Section 404 of the Clean Water Act permit. We submitted the Section 404 application to the Sacramento District's Western Colorado Regulatory Branch, and the Corps has released a Public Notice on the project to solicit public comments (http://www.spk.usace.army.mil/organizations/cespk-co/regulatory/PNs/index.html). The public comment period closed on October 15, 2009. We submitted an application to the Colorado Department of Public Health and Environment (CDPHE), and the CDPHE has included the project in their October newsletter for public comment. Those applications are included in Appendix D.

Tetra Tech has been meeting with the State Engineer's Office on the reservoir design and dam safety standards compliance. The water rights are in place or are pending in water court. No agency has indicated a fatal flaw in the project; thus, we believe the project will secure the necessary permits and approvals prior to site disturbance.

The following permits, approvals, and consultations are required prior to project construction:

- **USDA Forest Service**
  - Decision to issue special use authorization to construct, operate, and maintain the project on National Forest System lands.
- **U. S. Army Corps of Engineers 404 permit**
  - Required for dredge and fill activities within waters of the United States.
- **Water Rights - State of Colorado**
  - The point of diversion, location of use, and type of use of a water right would be reviewed via the appropriate water court.
- **Construction plan review**
  - USFS review for consistency with operating plan standards and with the terms of the decision notice.
- **State Engineer's Dam Safety Permit**
  - Review by the state to ensure dam and reservoir design meets safety standards.
- **Consultation with U.S. Fish and Wildlife Service – Endangered Species Act compliance**
  - For potential impacts to Threatened and Endangered species.
- **Consultation with State Historic Preservation Office – Section 106 compliance**
  - For protection of cultural resources
- **Summit County 1041 permit review**
  - Required to ensure that growth and development in Summit County are consistent with legitimate environmental concerns and occur in a safe and coordinated manner in areas or activities of State Interest.
- **Colorado Department of Public Health and Environment**
  - Storm Water Control Permit
  - Construction Dewatering Permit
  - 401 Water Quality Certification

2. The Proposed Project considers the relevant provisions of the regional water quality plans.

The Blue River Water Quality Management Plan is silent on Old Dillon Reservoir, or any possible enlargement. The Plan discusses diversions and their effect on water quality as the lower stream flows decrease a streams ability to dilute pollutants. There are no identified pollutants from mining waste or other sources in SLG. The proposed import of water from SLG could import naturally derived phosphorous to Dillon Reservoir. Those effects are discussed below under surface water quality (Item 12 c). Any phosphorous loading would be mitigated in accordance with Rule 71 of the Colorado Department of Public Health and Environment.
We have discussed the project with Mr. Lane Wyatt of the Northwest Colorado Council of Governments (NWCOG). Mr. Wyatt confirms that the proponents would be able to purchase phosphorous credits to mitigate the phosphorous addition to Dillon Reservoir; and, that furthermore that credit transfer would be administered locally within Summit County.

3. *Applicable to Major Review only*: *The applicant has the necessary expertise and financial capability to develop and operate the Proposed Project consistent with all requirements and conditions.*

The applicants are three government entities familiar with operating public facilities. The Towns of Silverthorne and Dillon both operate water supply facilities. Summit County operates a general augmentation plan serving unincorporated areas of the County. The applicants have the financial capability to develop and operate the facilities. Each entity's infrastructure funding mechanisms are available for the project construction and maintenance. The funding percentages will vary somewhat depending on total project cost. Based on one recent cost estimate, the approximate funding percentages are Summit County 64%; Dillon 26%; Silverthorne 10%. Summit County intends to rely on cash funding and/or a lease purchase financing; Dillon has applied for a loan from the Colorado Water Conservation Board (CWCB), and Silverthorne will cash fund its share of costs.

4. Applicable to Major Review only: The Proposed Project is technically and financially feasible.

The project is technically feasible. GEI Consultants (1998) evaluated the feasibility of construction for the project, and Resource Engineering evaluated water supply availability for the project in 2005. Tetra Tech has been working on design and completed 90% final design drawings in 2009. The State Engineer's Office (SEO) is currently reviewing dam design plans; and a permit is anticipated in the near future. Based on these plans and potential adjustments from the SEO, the consultants have found that the project is technically and financially feasible. The project is financially feasible as it satisfies an identified need for additional water storage at a locally comparable per acre-foot cost for construction.

5. The Proposed Project is not subject to significant risk from natural hazards.

Tetra Tech completed a geotechnical evaluation and dam safety hazard analysis of the proposed project. Risks from natural hazards are not an issue for the proposed enlargement. In addition, the Colorado State Engineers' Office of Dam Safety has been conducting an extensive review of the design plans during the Dam Safety Permit review, and risk from natural hazards is an important aspect of that review. Geologic conditions are discussed in Section 12 h below. Plans were submitted to the Office of Dam Safety in February 2009; detailed comments on dam design were received, revisions made, and a final decision is pending. Tetra Tech expects a permit decision by December 1, 2009.

6. The Proposed Project is in general conformity with applicable master plans.

The project is in general conformity with the Countywide Comprehensive Plan and the Lower Blue Master Plan. The master plans recognize the importance of the various resources discussed in the specialist reports attached. We believe the project design criteria, use of best management practices, and proposed mitigation for unavoidable impacts comply with the goals of the master plans. The Countywide Comprehensive Plan indentified the additional water supply as a key issue, including providing for water rights and storage capacity more resistant to drought conditions (page 71). Under Goal D - Policy/Action 9, the Comprehensive Plan recognized the need to continue to work with Northwest Colorado Council of Governments on water quality and quantity issues/needs.

Countywide Master Plan

The Countywide Master Plan (the plan) assists in the decision making process that accompany growth and development. It is comprised of numerous elements, and this section summarizes the ODR Enlargement project's consistency with the guidance in applicable elements of the plan. Under the **Land Use** Element, the plan encourages cooperative planning with the towns and Forest Service to minimize land use conflicts and impacts to users (p12). The joint applicants (Summit County and the Towns of Dillon and Silverthorne) as well as the concurrent environmental review process by the Forest Service are evidence of coordinated land use planning efforts for this project. The intergovernmental agreement among the applicants will comply with policy/action 1 of goal F under joint planning (p21).

The **Environmental Element** is a primary area of concern for the county and the Forest Service. The Environmental Assessment prepared by the Forest Service for this project details impacts to environmental resources, and this 1041 application addresses environmental issues important to the County. Technical reports were prepared by resource specialists and accompany this application as appendices. The draft EA will be provided when the FS releases that document for public comment. In this section, we demonstrate consistency with the countywide master plan and its vision to "protect, enhance, and promote our environmental resources" (p28).

The ODR Enlargement project is not located in an "environmentally sensitive" area, as identified by the plan (p35). The project includes compensatory mitigation at a 1:1 ratio for the loss of wetlands at the reservoir, along the Dillon Ditch, and within the Salt Lick Gulch area. The mitigation area will achieve better function and value than existing wetlands that will be impacted. There will be no net loss of wetlands or their functions and values as a result of this project (p36). There would be a miniscule (<0.1 acre) permanent loss of elk winter range habitat as a result of the proposed diversion structure, direct impacts to elk would be minimized by the timing of construction, which would construction occur during the snow free period. The project will help protect water quantity in the county (p39). The post-construction revegetation plan incorporates weed control and will comply with the county's weed control program.

Under **Community and Public Facilities**, the plan states that “The health and safety of the County’s residents and its environment depend considerably on the adequate and safe supply of water” (p90). The plan also identifies the physical availability of water as one of the largest factors in future county development. The purpose of and need for the ODR Enlargement project is to provide additional water storage capacity and water supply security to meet existing and future municipal, augmentation, and other water supply needs.

Goal B of the **Design/Visual Resources** Element identifies that new development should be designed in a visually sensitive manner, complementing the surrounding natural environment (p102). Goal E recommends avoiding or minimizing development impacts on steep hillsides and ridgelines. Section 12 b summarizes impacts to visual resources as analyzed for the Forest Service. The analysis included photo simulations of the project area from five observer locations required by the Forest Service. The exhibits include actual photos of existing conditions (2008), simulations of baseline conditions (with implementation of the Dillon Reservoir Forest Health and Fuels project, which requires removal of lodgepole pine trees five inches or greater diameter at breast height), and simulations of the proposed reservoir enlargement.

For this application process, the County identified five additional locations to be analyzed. These include Ruby Ranch, the intersection of Hwy 9 and 4th (Silverthorne Pavilion), Eagles Nest Court in Wildernest, Silverthorne town limits along Royal Buffalo Rd, and the entrance to Corinthian Hills along Highway 6 (see attached simulations, Appendix C).

The project has been designed in a visually sensitive manner, allowing for undulations in the dam surface without compromising the integrity of the dam. It also incorporates a revegetation plan to enable the project area to blend with the surrounding natural environment. The project does alter the ridgeline by raising the levels of the north and south dams; however, they blend into existing contours to reduce impacts to visual resources. We believe the project is consistent with the Plan for design/visual resources.

A cultural resources survey was conducted and, in accordance with goal A of the **Historic and Cultural Resource** Element, these resources were identified and will be avoided. The State Historic Preservation Officer has determined that a finding of no historic properties affected is appropriate for the project (Appendix J). Continued cooperation with the Forest Service will enable the applicants to maintain existing trailheads and associated trails at ODR and Salt Lick Gulch, with temporary closures for construction to promote public safety. This is consistent with guidance in the **Recreation** Element of the plan (p128). The recreational fishery at the reservoir would be maintained, but due to the nature of managing the enlarged reservoir for water supply, the fishery would not be as productive as current conditions. At certain times, a recreational fishery may not be available due to fluctuating water levels.

Lastly, the project has been identified by the applicants and the Forest Service as an appropriate way to meet water supply demands. Policy/action 2 under **Economic Sustainability** indicates that the county supports this type of infrastructure alternative.

Lower Blue Master Plan

The purpose and intent of the Lower Blue Master Plan (Lower Blue plan) is to establish direction and provide specific recommendations for the future physical development of the basin. It offers recommendations for future land uses and should be used in conjunction with the Countywide Comprehensive Plan, which provides policy direction for the physical development of the entire county. The Lower Blue plan is also comprised of numerous elements, and the following section summarizes the ODR Enlargement project's consistency with applicable policies/actions and goals of the Lower Blue plan.

The project is located on federal lands; in the Lower Blue plan, these areas have a focus on open space, natural resources, and recreation. The proposed project will maintain the character of the open space area and continue to allow for recreation activities. Man-made/Developed facilities are allowed (p16), and the project is an enlargement of an existing man-made facility. The project is not located in an "environmentally sensitive" area, and the proposal was designed to minimize impacts to the natural **environment** (p23). The enlargement of the existing reservoir will require some tree clearing and ground disturbance in an area heavily impacted by mountain pine beetle. This area is not "important" to wildlife. Impacts to 1.34 acres of wetlands will be mitigated at a 1:1 ratio on-site and in-kind. Impacts to fish habitat have been minimized by incorporating a fish passage structure at the new diversion on Salt Lick Gulch and by adhering to minimum flows described in the attached appendices (Appendix A and H), and discussed in the fishery section of this application. In addition, Normal Operations of the reservoir will improve the brook trout fishery in Salt Lick Gulch downstream of the diversion. Page 28 identifies the need for adequate public services and **infrastructure** to provide for the public health, safety, and welfare of residents. The project is intended to provide an alternative supply of water to Dillon residents if Straight Creek becomes contaminated. Additionally, the project will provide additional water storage capacity and water supply security to meet existing and future municipal, augmentation, and other water supply needs.

The project design has minimized **visual** impacts by using existing topography and landscape features and will rely on revegetation efforts to further reduce impacts to visual resources. Although it is located between I-70 and the Dillon Dam Road, the project is not highly visible from either public road (p30). Lastly, the project will maintain the ODR and Salt Lick Gulch trailheads and associated trails as well as the opportunity for **recreational** fishing, which helps to maintain the range of existing recreational activities in the Basin (p34). With a primary focus on municipal water supply at ODR, the recreational fishery at the reservoir would be affected by this project; water levels in the reservoir would fluctuate due to demand, and it may be empty for some periods of time.

7. The Proposed Project will not have a significant adverse effect on the capability of local government to provide services or exceed the capacity of service delivery systems.

The proposed project allows local governments to provide services. The intent of the project is to store water to meet existing and future water needs of the community. The project also allows the Town of Dillon to provide water services through its' direct flow right in the event Straight Creek is not available due to water quality/quantity issues. Each of the three entities has the financial resources to pay for its share of project costs. The investments in the project will be offset by future revenues from tap fees, water service charges, and/or lease payments; therefore, the project should not have a significant adverse effect on the capability of local government to provide services. The Town of Dillon would need to develop new infrastructure to utilize this emergency water supply, but the project does not exceed the capacity of the service delivery system.

8. Applicable to Major Review only: The Proposed Project will not create an undue financial burden on existing or future residents of the County.

The purpose of the project is to meet existing and future needs of the county residents. The applicants would realize a gain in water storage needed at a reasonable per acre-foot cost. This water is needed now, and in the future, and waiting to build storage in the future would put an undue financial burden on residents as the cost of constructing this or other water storage facilities in the future will be higher. Each of the three entities has the financial resources to pay for its share of project costs. This project is proposed to prevent an undue financial burden on existing and future residents. This additional water supply will help assure that we can legally deliver affordable water in the future. The investments in the project will be offset by future revenues from tap fees, water service charges, and/or lease payments.

9. Applicable to Major Review only: The Proposed Project will not significantly degrade any substantial sector of the local economy.

The project will not degrade any substantial sector of the local economy. In fact, the project’s water supply benefits will maintain, if not improve, sectors of the local economy. Local contractors and material suppliers may benefit from the project during construction.

10. Applicable to Major Review only: The Proposed Project will not unduly degrade the quality or quantity of recreational opportunities and experience.

The project will affect recreational opportunities and experience for hiking and fishing at ODR, but it will not unduly degrade the quality of recreational opportunities in the county. The public recreates at ODR and on the trail system at SLG. Appendix B provides a report on recreation and the impacts expected. In summary, there would be temporary trail closures around ODR, on lower Salt Lick Gulch trail, and on the trail along the Dillon Ditch to accommodate construction. Recreation opportunities at ODR would be temporarily lost during reservoir expansion. There would be a change in the recreational fishing opportunity and experience at ODR due to proposed reservoir operations. The Dillon Reservoir Forest Health and Fuels Project will affect the recreation experience in the project area by altering the scenic quality as the majority of the tree cover will be removed. Visitors and residents use the area around ODR during the summer for hiking and fishing for trout stocked by the CDOW. Residents in the Silverthorne area use the trail system in SLG extensively during the snow free periods. Cross-country skiing and snow shoeing occur during the winter in both areas.

All decisions on temporary trail closures and access restrictions are the decision of the US Forest Service. We propose an access closure to the construction site at the reservoir and on Dillon Ditch during construction for public safety reasons. Construction at the reservoir should be completed in one season, however, it could last two seasons. The Old Dillon Reservoir trail from the parking lot on the Dam Road would remain open to a point on the ridgeline. The SLG trail system would be kept open except for short closures when equipment and supplies are moved to the diversion and Dillon Ditch. The trail along the Dillon Ditch would be closed for one season. All trails around the reservoir and on the Dillon Ditch would be reconstructed during construction. The fishing opportunities at the reservoir would remain but the quality of the fishery would be degraded due to draw downs to satisfy water demands. As the reservoir is drawdown each year, there is less habitat available for fish and less productivity, thus food available. This would not unduly degrade fishing opportunities in the county. It is uncertain if CDOW would continue to restock ODR based on proposed operations.

11. The planning, design and operation of the Proposed Project will reflect principals of resource conservation, energy efficiency and recycling or reuse.

The project attempts to conserve water for municipal use. No aspect of the project would affect or preclude opportunities for alternative energy development in the project area; however, renewable energy is not an aspect of this proposal. A separate special use authorization would be required from the Forest Service for this type of activity on NFS lands. Excavated topsoil is stockpiled and reused for restoration of upland habitats and wetland mitigation. Material excavated is used to construct the dams. The system is energy efficient as water delivery to the expanded reservoir is gravity fed by the pipeline, and water delivered from ODR to Dillon Reservoir or back to Salt Lick Gulch is by gravity. The diversion structure on Salt Lick Gulch will be remotely operated with solar panels providing the energy source for the diversion.

12. The Proposed Project will not significantly degrade the environment. Appendix "A" includes the considerations that will be used to determine whether there will be significant degradation of the environment. For purposes of this section, the term environment shall include:

a. Air Quality

The geographic scope of analysis for air quality is the project area. The regulatory structure for air quality planning in Colorado includes federal, state, regional, and local agencies. These agencies either have actual regulatory authority or are responsible for the development and implementation of programs and plans designed to reduce air pollution levels, including emissions from transportation sources.

The Colorado Air Pollution Control Division (APCD) oversees Colorado air quality policies. Colorado also has established state ambient air quality standards. Those areas with recorded violations of the National Ambient Air Quality Standards (NAAQS) must be designated as non-attainment areas. A State Implementation Plan (SIP) is developed to identify control strategies for bringing non-attainment areas back into conformance with the NAAQS. Summit County is in attainment of the established NAAQS; therefore, no SIP has been developed. There is not an established air pollution control district that defines the air basin and there is very little specific monitoring data available.

The proposed construction would be localized and short-term. Thus, any impacts to individual air quality receptors would also be localized and short-term. The proposed project would cause minor impacts to air quality due to ground disturbance and the operation of construction equipment. These impacts would be limited to increases in fugitive dust and particulates from construction generated during construction activities. If a Special Use Permit is granted by the FS, the proponents will then entering into engineering and construction review by the FS during which BMP's for fugitive dust control will be addressed. At the least, we expect dust suppression would be completed with water trucks at the construction site and on the access road.

b. Visual Quality

The initial report on the effects of the project on visual resources was prepared by Lisa Sakata, Inc and visual simulations were prepared by Zach Perdue (Appendix C). The ODR project area is used throughout the year by the recreating public. Foreground and middleground views along travel routes and adjacent to the recreation site are important for users of travel corridors in the area (I-70 and Dillon Dam Road). The project is in an area of high visibility used primarily by recreationists.

The existing condition is that a large percentage of the lodgepole pine is infested with mountain pine beetle (MPB). The landscape character of the area has been changed due to the MPB epidemic, and it will be changed even more post-tree removal associated with the Dillon Reservoir Forest Health and Fuels Project. Initially, there will be minimal existing vegetation for screening.

A viewshed analysis was initially conducted from six viewpoints representing the foreground (IF-03), middleground (M-01, 03, 08, and 15), and background (B-01) to demonstrate the current condition, the baseline condition (post-tree removal), and the proposed condition with implementation of the ODR Enlargement Project. The figures are included in Appendix C.

The first photo in each of the viewshed analyses was take from the identified viewpoint and shows the current condition. The second has been modified using 3D Modeling software called Visual Nature Studio to demonstrate the baseline conditions post-tree removal.

Visual effects generated by tree removal and enlargement of the reservoir vary in intensity depending on the observer location. Tree removal associated with the project will be minimal compared to the baseline conditions, which include implementation of the Dillon Reservoir Forest Health and Fuels Project EA. Ground disturbance will be temporary and visible only in the immediate foreground (i.e. within the project area). The expansion of the reservoir may impact scenic resources by altering existing line, form, color, and texture in the affected viewsheds. The proposed dam design blends with the surrounding topography and terrain characteristics. The undulations and irregularity of the dam faces mimic surrounding topography, while the use of native vegetation and boulders along the toe and perimeter of the dam would aid in preventing the appearance of linear, man-made features typical with dams of this size. Alterations to the landscape resulting from the dams would impact the scenery resource in areas of high visibility for Middleground and Background views. The "desired character" of a landscape is its appearance, which would either be retained or created over time. Revegetation and other design elements have been incorporated into the project to further avoid and minimize impacts to visual resources.

For this 1041 application process, the County identified five additional locations to be analyzed. These include Ruby Ranch, the intersection of Hwy 9 and 4th (Silverthorne Pavilion), Eagles Nest Court in Wildernest, Silverthorne town limits along Royal Buffalo Rd, and the entrance to Corinthian Hills along Highway 6 (see attached simulations, Appendix C). From a private driveway off of Jade Road in Ruby Ranch (OBS-01), the Lake Hill communications site and the existing north dam of ODR are visible. The simulation of proposed conditions shows that the change in dam height would be almost imperceptible from this location. Additionally, there is no change to form line, or color from this viewpoint. Again, from the Silverthorne Pavilion (OBS-02), the Lake Hill communications site and the existing north dam of ODR are visible. The simulation of proposed conditions from this location shows the additional removal of trees required for the proposed expansion as well as a minor change in dam height. These contribute to a change in line, and the revegetation with grasses and forbs contributes to a change in color; however, the browns and greens would blend with the surrounding landscape. Woody vegetation (trees) is prohibited on the dam face to maintain the integrity of the dam.

From Silverthorne town limits, along Royal Buffalo Road (OBS-03), I-70 is dominant, but the north dam of ODR is visible. The simulation of proposed conditions from this location shows additional tree clearing required for the expansion; however, it is below the ridgeline. There is no change in form or line, but the revegetation of the north dam face would result in a change in color. Again, the browns and greens would blend with the surrounding landscape. From Eagles Nest Court in Wildernest (OBS-04), the existing ODR is visible after tree removal associated with the Dillon Reservoir Forest Health and Fuels project. The simulation of proposed conditions from this location shows the additional removal of trees along the south side required for the proposed expansion, changing the line. The expanded surface area of the reservoir changes the shape and color of the area; however, the proposed condition almost blends with "new" Dillon Reservoir in the background. From Corinthian Hills, what is visible of the project is similar to observer location M-15 from the analysis conducted for the Forest Service; however, the observer is approximately 50 feet higher in elevation on the road surface rather than on Lake Dillon.

The project has been designed in a visually sensitive manner, allowing for undulations in the dam surface without compromising the integrity of the dam. It also incorporates a revegetation plan to enable the project area to blend with the surrounding natural environment. The project does alter the ridgeline by raising the levels of the north and south dams; however, they blend into existing contours to reduce impacts to visual resources.

c. Surface Water Quality

The proposed project's effects on water quality were assessed by Resource Engineering (Appendix A). The primary effects relate to the importation of phosphorous to Dillon Reservoir. The majority of diversions of water from SLG will now be released to Dillon Reservoir as opposed to returned to SLG under current operations. Resource Engineering used four water quality samples obtained recently, and the analysis may be revised as additional data becomes available.

Under normal operations, the import of 399 AF into Dillon Reservoir may contain approximately 27.5 pounds of phosphorus. During emergency conditions, the proposed operations have potential to import a total of 69.6 pounds of phosphorus to Dillon Reservoir during average year conditions. However, the analysis indicates that any increase of phosphorus under emergency conditions would be avoided by approximately 65 percent if the Town of Dillon's diversions would be conveyed directly to the Town's water plant via a pipe on the floor of Denver's Dillon Reservoir rather than routed through Dillon Reservoir to the Town's intake.

All impacts to water quality in Dillon Reservoir must be mitigated according to Colorado Department of Public Health and Environment (CDPHE) Regulation No. 71. The applicant is exploring various mechanisms to mitigate these potential impacts which include purchasing phosphorus credits. The applicants would mitigate actual phosphorous loading to Dillon Reservoir. The applicants have coordinated with the Northwest Colorado Council of Governments and will escrow funds to be used for phosphorous mitigation when the appropriate levels of mitigation are determined. The current estimates in the Hydrology report are based on only four samples. Additional samples will be obtained and actual measurements taken if, and when, the reservoir is constructed.

There would be temporary impacts to surface water quality during construction of the new diversion in SLG; however, those impacts will be minimized by utilization of best management practices during construction. A clean water bypass will be used during construction to route flows through the construction area. This bypass complies with Summit County LUDC 7103.01 B for Streamside Setbacks. If a SUP is issued by the FS, the proponents would enter detailed engineering review by the FS engineers and resource specialist on measures to reduce sediment impacts from construction. Erosion control implemented at the site would comply with Summit County LUDC regulations at 7101.01.

We do not anticipate any impacts to water quality in SLG due to the proposed diversions. Stream diversion can affect water quality when stream energy or flushing flows are reduced. Bankfull flows will occur for sufficient duration during the spring in average and wet years to maintain stream health and channel morphology (Appendix A). Thus, there would be no aggradation of bedload (sediment drops out due to decrease flows forming mid-channel gravel bars which then cause lateral channel migration and bank erosion) and/or the subsequent bank erosion, which leads to decreased water quality due to sediment. There would be not be a *significant degradation of the environment related to surface water quality* as the identified impacts, an increase in phosphorous in Dillon Reservoir, must be mitigated under Rule 71 of the CDPHE.

d. Groundwater Quality

The project will not impact groundwater quality.

e. Wetlands and Riparian Areas

The project's impacts to wetland and riparian resources are provided in the Appendix D which is a copy of the Section 404 application. The project will impact 1.34 acres of jurisdictional wetlands and riparian areas. There are not any non-jurisdictional wetlands impacted by the project. Of this total, 1.21 acres are direct impacts related to the expansion of the reservoir, piping the Dillon Ditch, dam construction, construction access, and the new diversion in SLG. The change in releases of water will indirectly impact 0.13 acre of the outlet channel. The outlet channel from ODR currently receives year-round flows as diversions routed through the existing reservoir are returned to SLG. This flow supports an adjacent wetland community in SLG which will no longer receive sufficient flows, as the majority of the releases for the enlargement will be to Dillon Reservoir. Releases of the Town of Silverthorne's water of 22 acre-feet would not be sufficient to support the wetland community.

Groundwater in the vicinity of the reservoir was recorded during the borings conducted for Geotechnical report. Tetra Tech completed 8 borings and 10 test pits; they found groundwater in two borings. D5 was taken on the south dam and groundwater was found at 7 feet. D6 was taken near the south dam and groundwater was encountered at 27 feet. The reservoir was full during these tests which affected the groundwater levels at D5. Groundwater was not found at the other borings or test pits.

The wetland impacts due to expansion of the reservoir, the construction of dams and the outlet structure (0.48 acre) are unavoidable under any action alternative that seeks to expand ODR. The lacustrine wetlands on the shoreline cannot be avoided under any action alternative due to their location. We do not believe that a similar wetland community will develop and persist on the shoreline of the expanded reservoir due to reservoir operations which involve draw downs to meet the project purpose (water supply). The shoreline would be dewatered regularly each summer.

The impacts to wetlands on the Dillon Ditch (0.54 acre) cannot be avoided due to the need to locate the pipeline within the ditch alignment. An alternative alignment would have greater ecological impacts than using the ditch alignment as it would require a new pipeline swath through the forest as opposed to using the existing disturbed alignment of the ditch. The resulting cessation of diversions to Old Dillon Reservoir through the Dillon Ditch would also result in the loss of the wetlands now in the ditch. An alternative explored was to maintain an open ditch and not install the proposed pipeline. This would require a pump at the reservoir and is not a desirable alternative due to long term maintenance; the wetland impacts in the Dillon Ditch would not be avoided as the ditch capacity requires restoration and regular maintenance through excavation.

The 0.18 acre impact to the wetlands on SLG due to the new diversion are unavoidable due to the need to obtain additional hydraulic head to move water through the entire pipeline and siphon under I-70 and to fill the expanded reservoir. The diversion needs to be moved upstream to the proposed location (Figure 6 in the report) to obtain sufficient head. The fill and stream impacts proposed downstream of the diversion are required to create fish passage. The project would create a channel that facilitates fish moving through the change in gradient created by the diversion.

The project would change the structure and function, filtering and pollutant uptake, aerial extent, and species diversity of the wetlands impacted. The 1.34 acre of wetlands impacted would be completely removed, and the wetland functions and biological characteristics would be eliminated. However, this would not create a *significant degradation of the environment as it* *relates to wetlands and riparian resources,* as wetland impacts would be mitigated at the project area by the creation of 1.34 acres of wetlands. A wetland creation area is incorporated into the design of the expanded reservoir. This wetland would be supplied by a dedicated pipeline turn-out and water would flow through the wetland to ODR. This design will replace and improve on wetland functions, particularly filtering and pollutant uptake, because the water will flow through the entire wetland before reaching ODR. In the created wetland there will be longer retention time and thus more exposure to wetlands plants and soils than in the Dillon Ditch, where large portions of the wetland is not exposed to flows, or if so, only for a brief period.

Another potential effect to wetlands and riparian areas analyzed was the potential for the diversions in SLG to affect the wetland system downstream (Appendix D). The SLG wetland is primarily a slope wetland under the Hydrogeomorphic classification system although a stream flows though the center of the system. Groundwater from the slopes that form the valley supply the majority of water to the wetland system. This is very evident during field work in September. When stream flow is very low, the wetlands adjacent to the stream, and elevated well above the channel, are saturated to the surface. The proposed diversion would not affect the wetland as project diversions would not decrease the groundwater input to the system. During a dry year flow event (1 in 80 year recurrence interval), and with Emergency Operations in effect (Town of Dillon’s direct flow right utilized) there could be an effect to these SLG wetlands if the emergency operations occurred during the summer. However, the probability of these two events occurring at the same time is very low, and the effects would not occur frequently or last long enough to measurably affect plant communities.

SCLUDC 7105 Wetlands Regulations

County regulations prohibit impacts to wetlands or within 25 feet of the wetland unless the impacts are minimized using the criteria listed in Sections 7105.03, 7105.04, and 7105.05.

Section 7105.03: The project complies with 7105.03 A as there is no practicable alternative that avoids wetlands or the wetland setbacks. As explained above, expansion of the reservoir would impact the wetland adjacent to ODR under any development scenario. The wetlands are on the shoreline of the reservoir, and any planned expansion of the waterbody would inundate these wetlands regardless of the size proposed. During the planning process the proponents explored several smaller size reservoirs including 110, 140 and 190 AF alternatives; in each case the lacustrine wetlands at ODR would be impacted.

Wetlands within the Dillon Ditch cannot be avoided with the pipeline project. An attempt to avoid the wetlands and create a new alignment for the pipeline would not only be cost prohibitive; but, would create greater environmental impacts within the SLG watershed than the proposed use of the Dillon Ditch alignment. A new alignment would require construction of the pipeline across steep slopes that would leave a substantial visible scar on the hillside west of I-70, and create a relatively constant sediment and erosion problem in the watershed.

Wetland impacts within Salt Lick Gulch for the construction of the new diversion structure have been avoided to maximum extent practicable in accordance with Sections 7105.03 B and 7105.05. The diversion structure itself creates minimal impacts; however, the structure must be elevated to create head pressure to move water through the pipeline to ODR. This elevation change would create a barrier for the movement of fish unless the channel gradient is modified downstream of the structure. The majority of the 0.18 acre of impacts from the diversion is required to reconstruct the channel to allow for fish passage through the structure. The wetlands are filled downstream of the structure, and the area will be restored to a native riparian community.

The project complies with 7105.03 A 1 as the Countywide Comprehensive Plan indentified additional water supply as a key issue, including providing for water rights and storage capacity more resistant to drought conditions. The project also adheres to 7105.03 A 3 in that the expansion of ODR would allow for reasonable use of the proponents property. In this case, the property is the water rights held by Summit County, Dillon and Silverthorne, acquired and held to serve the communities water supply needs. The expansion of ODR as proposed allows each entity a reasonable use of those rights to meet an existing and future water supply need.

The project complies with 7105.03 B because impacts to wetlands and wetland setbacks have minimized to the greatest extent practicable using the measures outlined in 7105.05. Impacts to wetlands were discussed above. Wetland setbacks measured at the wetlands associated with the ODR project comprise approximately 7.75 acres. Much of that setback is trail along the Dillon Ditch and/or the embankments and associated trails along the reservoir. Other parts of the setback are relatively undisturbed mixed conifer forest of the subalpine ecosystem. The project would disturb 5.81 acres of wetland setbacks. The wetland setback adjacent to the reservoir could not be avoided for the same reasons described above. Any expansion of the reservoir would necessarily impact areas within 25 feet of the wetland boundary. West if I-70, for the setback adjacent to the Dillon Ditch the area north of the wetland boundary would be impacted. This area is the existing berm and trail along the ditch. The area south of the Dillon Ditch which is the slope cut of the ditch would be impacted, but the coniferous forest above the cut would not be impacted. East of I-70, the setback both north and south fo the Dillon Ditch would be disturbed.

Protection of the setback in the County code is primarily for the water quality buffering mechanisms. The enlargement of ODR occurs entirely on NFS system lands; and, there will be not be any development such as paved roads, parking lots and buildings, or the fertilizers and herbicides used on landscaping in residential or commercial developments. A reservoir is being expanded and new earthen dams will be constructed. The disturbed areas will be restored to native habitats. Compensatory wetland mitigation in the form of wetland creation will occur at the site and a natural wetland setback will develop around the created wetlands as native habitats will be restored on the perimeter of the created wetlands. Those native habitats will be restored by the replacement of topsoil, and seeding with a mixture of native grasses and forbs with subsequent weed control.

Preservation and maintenance of undisturbed wetlands in the project area will be followed during construction and throughout the operation of the facility in accordance with 7105.05 C.

Section 7105.05 D requires that the loss of a wetland area will be compensated for by replacing or substituting the wetland resource lost in terms of quantity and quality. The project replaces

the 1.34 acres of wetland loss by the creation of 1.34 acres of wetland at the project site. Details on the wetland creation are provided in Appendix D. The wetland creation uses water diverted from Salt Lick Gulch in the pipeline with its own separate supply line. The wetland will be adjacent to the reservoir, but independent of the reservoirs water surface elevations.
The dedicated water supply line allows maintenance of the wetlands water supply even if the reservoir is drawn down during operations to meet water supply needs. As explained in the mitigation plan, the wetland will be a mixture of sedges, wetland grasses and willow shrubs with a variable hydrologic regime throughout. We believe the wetland will provide water quality functions at a higher rate than the impacted wetlands. Water diverted through the wetland will have a long retention time in the wetland allowing the biogeochemical processes to occur, and the wetland is designed with microtopography and macrotopography features that promote those processes. The wetlands impacted will be replaced in terms of quantity and quality.
The applicants' water rights allow for the creation of wetlands as a beneficial use.

In accordance with 7105.03 E the project will not violate any applicable laws or regulations including Colorado water quality standards, the Endangered Species Act (ESA), NEPA, and it will not significantly degrade waters of the United States or any other wetland as defined in Chapter 15 of the SCLUDC. The 401 Water Quality Certification process with CDPHE will document adherence to state standards. The FS will consult with the US Fish and Wildlife Service on the ESA as described below, and we are completing an Environmental Assessment with the FS to satisfy NEPA requirements. The Corps and the US EPA will ensure that no significant degradation to waters of the US occurs; and, there are not any other wetlands affected by the project other than those considered waters of the US.

Section 7105.04: The information described herein, and the information provided in Appendix D satisfies the requirements of 7105.04.

Section 7105.05: This section is included in the criteria listed above. Project implementation would comply with parts A-O of this section. Although we cannot commit to as yet unknown measures contemplated in Part P, it is likely the project would comply with additional measures required.

The above discussion concerns wetland resources in the project area. **Section 7103 of the SCLUD** requires a 25 foot setback from a lake, stream or intermittent stream except when approved by the Engineering Department. The project would also require fill in 1.21 acres of what was former open water of the reservoir, and 0.28 acres of open water of the Dillon Ditch. The Dillon Ditch and the reservoir are now empty due to the order by the state, but under normal circumstances would be open water. The above discussion of alternatives and impacts to wetlands pertains to the open water present. Without the impacts proposed the project could not move forward.

f. Terrestrial and Aquatic Animal Life

The EA analyzes the effects of the project on Federally listed terrestrial and aquatic animals, FS Region 2 Sensitive species, and WRNF Management Indicator Species. It also includes a discussion of general wildlife and aquatic resources. The project's effects on terrestrial and aquatic animal life are disclosed in detail in the Biological Assessment, Biological Evaluation, Management Indicator Species, and Aquatic Resources reports (Appendices E, F, G and H). Note, the Forest Service has not submitted Biological Assessment (BA) to the US Fish and Wildlife Service. That document will be provided when the BA is released by the Forest Service. Findings of the BA are summarized below.

Project implementation would disturb approximately 28 acres of habitat for construction and construction access. Of that total, 18 acres would be restored after construction and 10 acres would be permanently removed from the system by the dams, and the enlarged reservoir.

Project impacts to habitat were broken down into three categories to better understand the effects of the project on habitat conditions.

> Category 1 – Permanent loss of terrestrial habiat due to the two dams, the expansion of the water surface elevation of the reservoir, and access roads - 10.1 acres;
>
> Category 2 – Impacts due to excavation and/or grading to construct the faciltties which include: the borrow area on the east side of the reservoir to obtain material for dam construction, the excavation on the west to create the wetland mitigation and obtain material fro dam constrcution, grading and fill to construct the pipelines, minor excavation to create a buffer at the toe of each dam to remove all woody vegetation, and excavation to install toe drains for the dams - 13.28 acres;
>
> Category 3 – Construction access only where tree and brush cutting only is required to allow for heavy equipment access to construct the various facilities, basically clear-cuts with regeneration – 4.00 acres.

In evaluating wildlife habitat values one must consider the value or functionality of the habitats present. The project is located in the Lake Hill area. Lake Hill is bordered by I-70 on the northwest, and Dillon Reservoir and the Dam Road on the southeast. Dense commercial and residential development of the towns of Frisco and Silverthorne border the area to the south and north. In addition, the Lake Hill area also has existing development for a water tank, and several transmission lines. The area also is used for recreation fairly heavily in the summer, and also in the winter. Habitat values are generally low in the project area for elk, mule deer, black bear and lynx due to these existing developments. Both Dillon Reservoir and I-70 create substantial impediments to movement in the project area. Finally, the Dillon Reservoir Forest Health and Fuels project is being implemented in the project area in an attempt to control the pine beetle epidemic. Clearcuts to remove dead and dying lodgepole pine will alter the wildlife habitat landscape in the project area prior to implementation of the ODR project.

We met in the field with Tom Kroening and Jon Ewert of the Colorado Division of Wildlife in 2007 to discuss the project. Mr. Kroening indicated that deer and elk moved through the project area for unknown reasons, and he felt that the project would not have substantial impacts on wildlife resources. Mr. Ewert commented that the Salt Lick Gulch watershed contains a brook trout fishery and that the existing reservoir was stocked by the CDOW and provided a productive recreational fishery. The CDOW will comment on the FS EA and on this 1041 application.

Summit County protects wildlife habitat through the Land Use Development Code at Section 4200 – Wildlife Habitat Overlay District. We offer the information below to disclose impacts to wildlife from the ODR project. The information was collected for the FS reports required, and those reports are included in the Appendices. We believe the information below satisfies the information requirements of 4204.02 B. In particular, projects must demonstrate that implementation would not cause *significant adverse impacts* as defined in 4204.05. We do not believe the project would cause a significant adverse impact to wildlife species, wildlife habitat, wildlife movement patterns/displacement and adaptation of wildlife populations, significance of habitat and species, and cumulative effects on wildlife. We make these statements based on extensive work in the project area, and review with FS wildlife biologists and the CDOW.
The habitats in the Lake Hill area are compromised by existing development and recreation as described above; the project occurs in a discrete area within the habitats present; and following completion, the end result is a reservoir with adjacent habitats not a residential or commercial development that creates secondary impacts to wildlife use of the project area.

Threatened and Endangered Species: The Biological Assessment (BA) (Appendix E) discusses the projects effects on species listed as threatened or endangered under the Federal Endangered Species Act. All species listed as possibly occurring, or affected by projects, on the Dillon Ranger District (Summit County) were considered. The only terrestrial species addressed in detail in the BA was the Canada lynx as this was the only listed species that occupies habitats in Summit County. *The determination for lynx was that the project may affect but would not likely adversely affect lynx.* The ODR Expansion would permanently convert approximately 10 acres of potential habitat to either open water or dams creating a potential affect on lynx as these habitats would no longer be available to prey species or lynx. The habitat impacted is termed other foraging habitat, and it is not the critical winter foraging habitat important to lynx. The timber removal associated with DRFHF project will make the habitat in the project area unsuitable for lynx in the short term, but the forest will regenerate. The ODR project is not likely to adversely affect lynx as ODR is within a pocket of habitat that is not available to lynx due to the level of development surrounding that habitat. Interstate 70 is within the project area just north of ODR, and the Towns of Silverthorne and Dillon bracket the east and west ends of the project area, respectively, and Dillon Reservoir borders the southern edge. It would be difficult for a lynx to reach the habitats around ODR due to the existing level of development.

The project's effects on aquatic species listed under Endangered Species Act (ESA) were also addressed in the BA. The depletion of water from the Upper Colorado River Basin will adversely affect the Colorado pikeminnow, the bonytail chub, the humpback chub and the razor back sucker. These four species occupy habitats downstream in the Colorado River near Grand Junction, and have been affected by upstream diversions including reservoir projects.
The applicants' participation in the Recovery Program for these species and the one-time payment of a fee based on the acre-feet of depletion will be considered the reasonable and prudent measure by the US Fish and Wildlife Service (FWS) for the project's depletion of water. The FWS uses the funds towards the recovery of these four fish species. This type of consultation occurs with all depletions of water in the Colorado River watershed when a Federal action is required to approve the depletion.

The greenback cutthroat trout (GBCT), listed as threatened under the ESA, occurs in Summit County within Frey Gulch and Spruce Creek. Extensive fish sampling of SLG and Ryan Gulch was completed as part of this project (Miller 2008, Appendix H), and cutthroat trout were not found in SLG. The Colorado Division of Wildlife also sampled ODR in 2007 and did not find any cutthroat trout. There would be no affect to GBCT from the ODR Expansion as this species is not found in SLG, nor is it found downstream of SLG.

Sensitive Species: The Biological Evaluation (BE) (Appendix F) assesses the projects effects on species listed by the FS as Sensitive. The sensitive species list includes mammals, birds, amphibians, insects and plants for which the FS is concerned about population levels. There are 8 mammals, 17 birds, 2 amphibians, 5 fish and 1 insect on the FS's Region 2 Sensitive species list that could occur on the White River National Forest. The BE discussed all species on the list and assessed in more detail species that could be affected by the project or that occur in Summit County. Sensitive species are an important factor under the County review, as although not listed as protected under the ESA, there is concern about populations of these species in the region.

Due to the loss of 10 acres of vegetation and potential changes in stream flow, the project may adversely impact individuals, but is not likely to result in a loss of viability of the County or region, nor cause a trend to Federal listing or a loss of species viability range wide for the American marten, pygmy shrew, northern goshawk, boreal owl, olive-sided flycatcher, three-toed woodpecker, and boreal toad. The project would not affect the river otter, North American wolverine, Rocky Mountain bighorn sheep, peregrine falcon, purple marten, northern leopard frog, Colorado River cutthroat trout, or the Great Basin silverspot. The project area does not contain very good habitat for these species, or surveys failed to reveal populations of the species; and in some cases, the species may be found in Summit County but habitats are not present on the project area. Finally, the project impacts to habitat, 10 acres, are not large enough to affect species distribution or population levels in Summit County.

For the boreal toad, surveys of the beaver ponds in SLG downstream of the diversion were conducted in 2008 and of the reservoir in 2007 and 2008. Due to the potential impacts of the diversion in Salt Lick Gulch, and the presence of beaver ponds in the wetland system, the wetland downstream of the diversion was surveyed for boreal toads. Random surveys of the beaver ponds for evidence of boreal toad use were also completed in August 2007. In 2008, the author surveyed the beaver ponds downstream of the diversion by walking the perimeter of the ponds, and through some of the ponds when possible looking for egg masses and/or tadpoles. The author has completed surveys for toads previously and observed boreal toad tadpoles and adults at breeding sites in Summit County. Surveys were conducted on June 12 and 26, and July 14. Each pond was surveyed twice. In addition, staff from Miller Ecological Consultants conducted fish and macroinvertebrate surveys in 2008, and they were looking for evidence of boreal toad occupation of the wetland/beaver pond system. No evidence of boreal toads was found in Salt Lick Gulch downstream of the diversion.

CEC also walked the perimeter of the existing shoreline of Old Dillon Reservoir in 2007 looking for boreal toad egg masses or tadpoles. The reservoir was also checked while delineating the wetlands on the shoreline in 2007. No boreal toad tadpoles or egg masses were observed.

Although boreal toad use was not documented, the beaver ponds in Salt Lick Gulch may provide suitable breeding habitat for boreal toads. The wetland system may be large enough to provide sufficient summer habitat for toads as well. Any colonization of the beaver ponds on Salt Lick Gulch would come from upstream as the development in Silverthorne, the culverts under I-70, and I-70 itself would be a significant impediment to toad movements. The large beaver pond complexes and wetlands on upper Salt Lick Gulch and Ryan Gulch have habitat conditions for boreal toads; however, the presence of beaver ponds alone does not indicate suitable breeding habitat as a number of characteristics must be present. Additional information on boreal toads is found in the Biological Evaluation (Appendix F).

Management Indicator Species: Appendix G is the Management Indicator Species report for the project. Management Indicator Species (MIS) are those whose response to management activities can be used to predict the likely response of a larger group of species with similar habitat requirements. In addition, selected MIS should be those whose change in population would be directly attributable to the management action. MIS species allow the assessment of project impacts on a suite of wildlife species that would use similar habitats as the MIS species selected. In this case, elk were selected.

The project impacts to elk populations would be minimal and immeasurable. The project area around ODR, southeast of I-70, is not elk winter range. Elk use the habitats around the reservoir to some degree, and during construction they would avoid these habitats; however, the long term effect of the loss of 10 acres of summer habitat to elk is not measurable. The project area north of I-70 is elk winter range and the loss of winter range or degradation of winter range habitat values can affect elk populations. However, the project does not affect habitats north of I-70. The conversion of the Dillon Ditch to a pipeline would not remove habitat as the pipeline would be reseeded with native grass species suitable for elk foraging. The diversion structure impacts would remove wetlands but the impact area would be restored to shrub riparian habitats which provide forage for elk. The diversion structure would remove a miniscule amount of winter range.

In summary, the proposed ODR Enlargement Project *would not degrade the environment to a significant degree for the terrestrial and aquatic species* discussed above as either: the habitat is marginal for the species within the project area, or project implementation and operation would not affect the species or the effects would be immeasurable, or habitat for the species is not found in the project area or affected by the project. In the case of the four big river fish species listed under the Federal Endangered Species Act, the applicants' participation in the Recovery Program and payment of a one-time fee towards implementation of the recovery program would mitigate the effects of the depletion.

Fishery: ODR and SLG provide habitat for fish species that are not listed as either threatened, endangered or sensitive species. The projects effects on the fishery in SLG and ODR were analyzed by Miller Ecological Consultants (Appendix H) with review by Christine Hirsch, White River National Forest aquatic biologist. Salt Lick Gulch contains a population of brook trout, as well as fathead minnow, and Miller's report concerned the potential effect of diversions from SLG to ODR on brook populations and the aquatic macroinvertebrates that support that fishery.

Miller conducted fish population estimates using electro-shocking to determine the type of fishery present in SLG and also sampled for macro-invertebrates. Miller also collected field data to conduct an Instream Flow Incremental Method (IFIM) analysis of the projects effects on the fishery using the PHABSIM program. Habitat in a stream is a function of the physical characteristics and the flow regime over a period of time. IFIM is used by natural resource managers to evaluate a range of flow conditions on fish species. The component of IFIM that simulates stream habitat is known as the Physical Habitat Simulation System (PHABSIM). PHABSIM consists of channel structure, hydraulic simulation and habitat suitability criteria. The channel structure is gathered at stream cross sections that represent different habitat types (e.g. pools, riffles, etc). The hydraulic simulation programs produce water depth and velocity predictions for a range of stream flow conditions. The habitat suitability criteria for the species being studied are then applied to determine how the usable habitat changes with each flow.

Normal Operations would result in either no change in the aquatic species, brook trout and macroinvertebrates, in SLG downstream of the diversion, or an improvement for these species. The potential improvement for these species derives from: the cessation of diversions during the winter months, December 1 to April 1 when diversion may commence to fill the reservoir, the 0.5 cfs minimum flow during the reservoir fill period, and a 1 cfs minimum flow from July 1 to November 30 if the applicants have not used their full water by the end of June.

Under Emergency Operations, the Town of Dillon would use their Dillon Ditch direct flow right to divert water from SLG for municipal supply by routing it through ODR to Dillon Reservoir. If available when Emergency Operations occur, the Town would use storage in ODR and other sources in conjunction with direct flow to meet the need. If Emergency Operations occur during the summer, the project’s effect on the fishery would be minimal as sufficient stream flow is present. In late summer, the Town would use conservation measures to reduce impacts to SLG when there is 1 cfs or less in the stream. The exact conservation measures would be determined by the project, and would likely involve utilization of other supplies and a reduction in lawn irrigation in the Town of Dillon.

If Emergency Operations were required during the winter, there may be times when stream flow would be reduced to zero below the diversion downstream to approximately the ODR return flow channel. The Town of Dillon would implement conservation measures whenever Emergency Operations would cause stream flow in SLG to drop below 0.5 cfs. In addition, during periods that the direct flow diversions cause SLG to drop below 0.5 CFS, the Town of Dillon would endeavor to utilize other sources of water to satisfy its demand to the extent such supplies are physically and legally available to the Town; and, the facilities needed to utilize those supplies are reasonably available to the Town.

According to Miller (pages 56-57), even a one day zero stream flow would result in a loss of the fish and macroinvertebrate populations downstream of the diversion to approximately the ODR return flow channel. This is a 0.9 mile reach of the stream. Miller uses the term approximate as groundwater flows enter the channel upstream of the ODR return flow channel. The brook trout populations and macro-invertebrates upstream of the diversion in SLG and Ryan Gulch would recolonize the affected reach after emergency operations cease. The applicants have agreed to monitor populations one year after diversions return from emergency to normal operations to document recovery of the populations.

The fishery in ODR is supported by CDOW stocking of catchable sized trout. Proposed reservoir operations will affect the fishery through draw downs to exercise the water rights. It is not known if CDOW will continue to stock the reservoir, and different management program may be required under the future reservoir operations.

The proposed impacts would *not significantly degrade the environment as related to the impacts to fisheries and aquatic macroinvertebrates.* Under Normal Operations, the aquatic resources in Salt Lick Gulch would actually benefit, primarily due to increased flows during the winter months. The project, under Emergency Operations, would result in the loss of oxygen for aquatic species, changes in aquatic species composition and density, and changes to habitat necessary for the propagation of aquatic species (Chapter 10, Appendix A of SCLUDC). Although the effects of Emergency Operations during the winter would dewater the stream, and impact fish and aquatic invertebrates in the reach below the diversion, those effects should be considered in context for a determination of significant degradation.

First, the probability of the need for Emergency Operations is low. Hazardous materials are not normally transported through Eisenhower Tunnel on I-70 unless Loveland Pass is closed. The watershed is a high elevation and the probability of a wildfire is generally considered to be lower at higher elevations due to moisture content even considering the pine beetle epidemic.

Secondly, the affected reach is actually less than a 0.9 mile reach of SLG from the diversion to the ODR return flow channel. The upper watershed above the diversion would not be affected, and population below the ODR return flow channel would be impacted but not eliminated due to groundwater input. In reality, the affected reach is less than 0.9 miles as groundwater contributions start higher in this reach than the ODR return flow channel. There is a large groundwater fed wetland system upstream of the return flow channel that supports stream flow. The channel would not be dry downstream of this wetland system.

We also know from winter field work and the diversion records that under current ODR operations, the majority of the flow in SLG during winter months is diverted to the reservoir. Table 8 of the Hydrology Report (Appendix A) shows the number of days of stream flow at zero below the diversion based on historic diversion records. Yet, despite these historic zero flow events in SLG downstream of the diversion, it still supports a brook trout population downstream of the diversion. Groundwater flow must provide enough stream flow to support the brook trout population and the aquatic macro-invertebrates on which the fish rely.

The effects would also not be considered significant because the upstream "seed population" of brook trout and aquatic invertebrates would colonize the habitats downstream of the diversion when normal operations return. The effect, albeit substantial according to Miller, is temporary in nature. Due to the high fecundity rate of fish and the fact that the impact is a temporary reduction in flow, not an alteration of physical habitat, fish and macroinvertebrates would recolonize habitats downstream of the diversion fairly quickly, and the applicant has agreed to monitor populations to document this recovery (Miller 2008, Appendix H).

Finally, the context of the affected reach of the stream as it relates to Summit County and the fisheries present in the county should be considered in a significant degradation determination related to Emergency Operations of the project. Summit County has miles of streams that support important recreational fisheries, and even more miles of small streams like SLG that support brook trout populations. Brook trout are a non-native species that out-compete the native Colorado River cutthroat trout, and in some locations the CDOW attempts to remove brook trout. It is not clear that the effects of the proposed Emergency Operations would significantly degrade the environment in Summit County as: the population is not an important fishery either ecologically or economically in the county, is of a type that is common and relatively abundant throughout the county, and those effects are temporary due to colonization from the upstream populations.

g. Terrestrial and Aquatic Plant Life

The plant life is described in the Vegetation report (Appendix I) prepared by Nancy Redner, a local botanist retained for the project. Additional descriptions of wetland plant communities are included for Wetlands (Appendix D).

The project will affect 10 acres of terrestrial vegetation from the construction of dams and inundation for the expanded reservoir. The plant communities affected are lodgepole pine forest, a few Engelmann spruce around the reservoir, a grassy meadow, a small stand of aspen, and the wetlands. According to Redner (Appendix I), no Threatened or Endangered plant species would be affected, nor would any FS Sensitive plant species. The project would affect structure and function of the 10 acres of vegetation but not adjacent habitats. The project would not promote the establishment of undesirable plant species or noxious weeds. Forest Service design criteria include weed control following construction administered by the proponents, and the FS will ensure the applicant implement revegetation with native species and adequate weed control. The changes in vegetation would not affect threatened or endangered animal species.

The project would not cause *significant degradation to the environment* as related to terrestrial and aquatic vegetation. The loss of 10 acres of vegetation in the project area would not affect plant communities throughout the county nor would it affect how those communities function. Species diversity in the county would not be affected as the plant species impacted are all relatively common in Summit County. A total of 1.34 acres of wetlands would be created to mitigate for the loss of wetlands associated with project implementation. These new wetlands would have higher function and value than those lost.

h. Soils and Geologic Conditions

The proposed enlargement will change topography and to some degree drainage patterns around the reservoir. Soil productivity of the inundated lands would be affected as they will no longer produce vegetation. Erosion is not expected to be a problem; in fact, existing erosion in the SLG watershed will be reduced by the installation of water bars and culverts in the access road/trail. Currently runoff runs down the road creating rill and gulley erosion. The project will rectify this by creating water bars in locations to direct runoff away from the road.

The project will not affect stream sedimentation, geomorphology or channel stability of SLG or the reservoirs outlet channel. The diversions will still maintain bankfull flows in SLG for long enough duration to maintain sediment transport, and excess deposition of sediments affecting channel stability would not occur (Hydrology report Appendix A). There will be changes to the reservoir but those changes would not degrade the safety of the reservoir. The State Engineers Office will be reviewing the proposed enlargement plans under the Dam Safety regulations which should ensure safety.

Tetra Tech has completed geotechnical evaluations for the project on behalf of the applicants as part of the design process for the enlargement. There were no geologic hazards identified. The project would not change avalanche areas, mudflows, debris fans or unstable slopes. Seismic activity has been evaluated. Geologic hazards will be part of the State Engineers Dam safety review.

The project would not cause *significant degradation of the environment* as related to soils and geologic conditions.

13. The Proposed Project will not cause a nuisance as defined within the Summit County Land Use and Development Code or as otherwise defined.

The County defines a nuisance under Section 11101 of the SCLUDC when consistent with Colorado State Statutes:

A. Any building, structure or land open to or used by the general public, the condition of which presents a substantial danger or hazard to public health or safety as determined by the Building Department.

B. Any dilapidated building, except for a building identified by the County as having historical value, which is unused by the owner or uninhabited because of deterioration or decay, which condition constitutes a fire hazard, or subjects adjoining property to danger of damage by storm, soil erosion or rodent infestation or which becomes a place frequented by trespassers and transients seeking a temporary hideout or shelter.

The ODR project would not create a nuisance as defined above or considering any other definition of nuisance. The applicants would maintain structures in good working order due to the importance of the water supply, and the state would regularly inspect the project for safety hazard review.

14. The Proposed Project will not significantly degrade areas of paleontological, historic or archaeological importance.

Metcalf Archaeological Consultants, Inc. addressed areas of paleontological, historic and archaeological importance (Appendix J). All projects on Federal lands must be reviewed for compliance with the Historic Preservation Act. The FS archaeologist must concur with the findings of the consulting archaeologist, and then the State Historic Preservation Officer (SHPO) must concur with those findings. In 2002, ODR and the Dillon Ditch were not considered to be eligible for listing on the National Register of Historic Sites, and the SHPO agreed with this determination. For this project, Metcalf recorded a new site associated with the ODR which was the old diversion structure for the Dillon Ditch. A series of logs embedded in the banks upstream of the current diversion is what remains of the old diversion. The diversion did not change the determination on ODR and the Dillon Ditch.

Metcalf also recorded a segment of the North Ten Mile Ditch, which is located just upslope of the Dillon Ditch in the project area north of I-70. This ditch was previously determined to be eligible for listing by the FS primarily due to the Buffalo Place Flume which is part of this ditch. The flume is not within the project area but is visible from I-70 east of North Ten Mile Creek. The ditch was constructed to carry flows from North Ten Mile for placer mining in the SLG watershed. This ditch would not be impacted by the project.

Metcalf also reports on the historic Blue River to Summit Transmission Line, built in 1939. This line crossed the project area on the west edge of I-70. The route of the proposed water pipeline intersects the transmission line corridor just upstream of (northwest of) the I-70 siphon. Only the alignment remains as the transmission line which provided the historical significance has been removed.

The project will not significantly degrade areas of paleontological, historic and archaeological importance. Metcalf recommended a finding of no historic properties affected for the ODR project. On March 6, 2009 in a letter to the Mary Morgan, Acting Forest Supervisor of the White River National Forest, the State Historic Preservation Officer agreed that a finding of no historic properties affected is appropriate for the ODR Enlargement project (Appendix J).
If paleontological resources, or cultural resources, are discovered during construction, the project would halt in the area until an archaeologist can be contacted for review of those resources.

15. The Proposed Project will not result in unreasonable risk of releases of hazardous materials. In making this determination as to such risk, the BOCC's consideration shall include:
a. Plans for compliance with federal and State handling, storage, disposal and transportation requirements.
b. Use of waste minimization techniques.
c. Adequacy of spill prevention and response plans.

The proposed project will not result in unreasonable releases of hazardous materials. The project involves water storage and will use earthen materials and rock for construction, as well as High Density Polyethylene (HDPE) pipe to replace the ditch. Hazardous materials are not associated with this type of project. As with any construction project, diesel fuel, hydraulic fluid and other chemicals typical of heavy equipment will be used on site. The contractor will be required to store fuels and chemicals with safe methods, and have a spill response plan in place.

16. Applicable to Major Review only: The benefits accruing to the County and its citizens from the proposed activity outweigh the losses of any resources within the County or the losses of opportunities to develop such resources.

The development of the ODR project provides water supply benefits that outweigh the loss of resources as the loss of resources are relatively minor and the benefit is substantial. The current and future citizens of the County need additional water supplies, and the ODR project satisfies some of that need. There are not any fully developed plans available to meet that need other than

ODR. The loss of wildlife habitat is minimal and would not affect species population levels or distribution in the County; the loss of wetland functions will be replaced by wetland creation at the project site; and the loss of aquatic resources in SLG is only relevant during Emergency Operations and would be temporary.

17. *The Proposed Project is the best alternative available based on consideration of need, existing technology, cost, impact and these regulations.*

There is a demonstrated need for additional water supply in Summit County as documented in the Upper Colorado River Basin Report, Phase II (UPCO) (Appendix K). Participants in the UPCO study were Grand and Summit Counties, Colorado River Water Conservation District (River District), Middle Park Water Conservancy District (Middle Park), Northwest Colorado Council of Government's Water Quality and Quantity Committee (QQ), Northern Colorado Water Conservancy District (Northern), Denver Water (Denver) and Colorado Springs.

The UPCO study identified a total future demand for an additional 9,900 AF for municipal supply and snowmaking in Summit County with 25% of that (2,475 AF) demand from areas upstream of Dillon Reservoir. A maximum annual shortage in existing supply of 1,900 AF was identified in the UPCO study; however, additional future demands in the unincorporated areas of Summit County was not modeled. A 1998 report by Bishop-Brogden Associates estimated future annual depletions of 125 AF from out-of-compliance wells in Summit County. These wells will require a source of augmentation water to continue operating. It is likely that more out-of-compliance wells exist, and that more wells have switched from septic systems to sanitary sewer, than were anticipated as of the date of that report. This would increase the net depletions to the affected stream reaches. Additional demands will also exist in the unincorporated areas of the County for other water uses, such as employee housing, wetland creation and maintenance, pond/water feature evaporation, and parks and open space irrigation. No specific estimate of these other demands has been prepared.

The ODR project satisfies only part of the identified need, but does so by enlarging an existing reservoir and delivering water into the Upper Blue River basin from below Dillon Reservoir, thereby creating a uniquely desirable project for the Summit County community. *Although we believe the ODR project provides the best alternative at this time, other water supply projects would be required to meet the additional future demand identified in the UPCO study.*

The diversions of water from SLG are downstream of Denver's Dillon Reservoir, thus not subject to the "call" on the river placed by the Denver when Dillon Reservoir is being filled during spring runoff. The applicants could divert to and through ODR for storage when Dillon Reservoir is filling, and release to Dillon Reservoir to augment withdrawals from the system upstream of Dillon Reservoir. Both the unique location of ODR adjacent to Dillon Reservoir and its water supply downstream of Dillon Reservoir make this project very effective at meeting the community's water needs.

There are a number of possible alternatives identified in the UPCO Study Phase II that would meet some of the needs of this proposed project, but which do not have the unique capability of ODR as described above. The alternatives for Summit County are found on pages 69 to 75 of the UPCO report. Many of these other alternatives are larger projects with greater environmental impacts, permitting requirements and costs; and, several require significant cooperation from Front Range water providers.

We believe that the ODR Enlargement Project is the best alternative as compared to the alternatives identified in the UPCO report and the Forest Service EA, and the additional replacement supply projects, considering existing technology, cost, impacts and the County regulations for a number of reasons. However, the ODR Enlargement Project would not replace the need for the other identified projects, or as yet unidentified projects, as ODR meets only part of the future water supply needs.

Due to the rigorous engineering evaluations completed for the ODR project, we know it is feasible considering existing technology. The other structural opportunities require “extensive subsequent study.” Considering cost, ODR provides the needed additional water supply at locally comparable per acre-foot cost for construction, again without the need for the additional replacement supply projects that incur additional costs.

An onsite alternative considered would expand the reservoir to 286 AF but accomplish that expansion by excavation only into the existing substrate, and into adjacent uplands. The general idea would be to deepen the existing reservoir, rather than use larger embankments to increase storage. This alternative would create approximately the same footprint as the proposal; but, the height of the existing dams would remain the same or relatively close to the existing height. This alternative was primarily driven by the desire to reduce the visual impacts of the enlarged dams from both near and far viewsheds. All other resource impacts would remain the same.

This alternative was not practical due to the geology in the area and the substantial increased costs of implementation. ODR lies on top of a glacial moraine and large boulders resulting in high permeability underlie the existing substrate. That substrate has sealed over time. An Excavation Only alternative would require massive excavation to achieve the required storage capacity, including removal of large boulders, and transport of that excavated material by truck from the site, to an as yet unknown receiving site. Excavation and trucking costs, assuming a receiving site could be located, would be prohibitive for the project proponents. The trucking would create substantial traffic impacts on County Road 7 (Dillon Dam Road) and for the Town of Frisco, assuming the trucks would not be permitted to cross the Dillon Dam. After excavation, due to the porous nature of the substrate, the reservoir would need to be lined with a synthetic liner, adding to the overall costs. The existing dams would still have to be reconstructed to meet current State mandated dam safety requirements.

Another alternative design involves expansion of the existing reservoir but with less storage capacity. The project proponents have design plans for expansion to a 190 AF reservoir. The proponents have considered a range of alternatives from over 110 AF up to the 286 AF expansion proposed. This alternative would result in potential reduction to impacts of the diversion on the Salt Lick Gulch fishery as less storage could lead to somewhat lower diversion rates. Smaller reservoir design ameliorates visual impacts to some degree as the height of the dams would be reduced. Wetland and wildlife impacts would remain the same as the proposed 286 AF project.

The smaller reservoir design does not meet the project purpose. Storage capacity of less than 286 AF reduces the effectiveness of the project as an alternative water source for the Town of Dillon in the event of contamination of Straight Creek due to a massive fire or spill from an accident on I-70. A smaller reservoir does not provide sufficient space for all of the proponents to meet their water needs and operate the reservoir to satisfy demand.

The UPCO participants involved in Summit County developed a UPCO Phase III study completed by Boyle Engineering (Appendix L). This report examined potential storage sites within Summit County and water rights exchanges that could meet the water supply needs of the community. This report is referenced as the "Boyle report". The report is discussed here, but rather than repeat the more detailed alternatives analysis we refer the reader to Pages 25-31 of the Section 404 permit (Appendix D).

The alternatives identified in the Boyle report and discussed in this section may be proposed in the future by one or more of the applicants and others as the ODR Enlargement does not satisfy the projected future water supply needs of an additional 9,900 AF in Summit County, nor does the ODR Enlargement satisfy the 1,900 AF maximum annual deficiency in the existing supply.

The Boyle report reviewed the viability of several alternatives for Summit County future water supply needs. It provided a reconnaissance level assessment of the engineering feasibility of four new storage opportunities upstream of Denver Dillon Reservoir. The Boyle report was not intended to disclose environmental impacts; however, some discussion of impacts to wetlands and other resources was included. The discussion below includes our familiarity of the sites, the terrain and wetland and wildlife resources in Summit County, and air photo interpretation.

The four opportunities for additional storage include:

- a new reservoir on the Middle Fork of the Swan,
- a new reservoir on the Swan River (below confluence of Middle and North Forks),
- a new reservoir on Indiana Creek, and
- Re-operation of the existing Clinton Gulch Reservoir.

Unlike ODR, these four storage opportunities would be subject to Denver's Dillon Reservoir and the Roberts Tunnel, thus they could not store water until such time as those water rights are satisfied in any given season, unless a replacement water supply could be provided to Dillon Reservoir. Therefore, the Boyle report also evaluated three new or reconfigured projects that could supply this replacement water to Dillon Reservoir including:

- the Straight Creek Project,
- the Everest Pumpback Project, and
- the Gore Range Collection System.

The Boyle report also referenced the ODR Enlargement project as a replacement supply but recognized that study participants were evaluating that alternative separately, and thus did not address ODR further. The ODR project provides additional storage to satisfy part of the identified need of water supply without the need for the three replacement supply alternatives to Dillon Reservoir listed above.

B. **Additional Criteria Applicable to New Major Water and Sewer Projects**
In addition to the general criteria set forth in section 10400.A, the following additional criteria apply to New Major Water and Sewer Projects:

1. To the extent practicable, Domestic Water and Wastewater Treatment Systems shall be consolidated with existing facilities within the area. The determination of whether consolidation is practicable shall include but not be limited to the following considerations:

a. Distance to and capacity of nearest Domestic Water or Wastewater Treatment System.

b. Technical, legal, managerial and financial feasibility of connecting to existing Domestic Water or Wastewater Treatment System.

c. Scope of the Service Area for existing Domestic Water or Wastewater Treatment System.

d. Projected growth and development in the Service Area of existing Domestic Water or Wastewater Treatment System.

This section is not applicable to the proposed project because no new domestic water or wastewater treatment systems are proposed.

2. The Proposed Project will not result in duplicative services within the County.

As explained above the community needs additional water supply and the ODR Enlargement Project satisfies part of that need. It would not result in duplicative services to the other water supply projects if, and when, they are constructed. Rather than duplicative services, the construction of the ODR Enlargement project would provide water supply security if yield or operation from another existing facility became compromised.

3. The Proposed Project will be constructed in areas that will result in the proper utilization of existing treatment plants and the orderly development of domestic water and sewage treatment systems of adjacent communities.

The project will be constructed in an area that allows the entities to utilize existing treatment plants.

4. If the Proposed Project is designed to serve areas within the County, the Proposed Project is necessary to meet community development and population demands in those areas.

The project is necessary to meet existing community development water supply needs and future population demands within Summit County and the Towns of Dillon and Silverthorne.

5. The Proposed Project shall emphasize the most efficient use of water, including the recycling, reuse and conservation of water.

The project proposes a pipeline to transport water to the reservoir from Dillon Ditch rather than the open ditch to conserve water losses.

6. Whether the Applicant can demonstrate sufficient managerial expertise and capacity to operate the facility.

The applicants are public entities that manage water treatment and supply projects for their communities. The applicants will form a joint entity to manage the reservoir and each of the applicants will provide sufficient managerial expertise and capacity to that joint entity.

V. Conclusion

This submittal seeks a 1041 minor permit from the Summit County Board of County Commissioners, and includes necessary information for a minor permit review for the ODR project. Attached is an addendum that provides additional information or clarification of information presented. This addendum was requested by County staff during their review for the Level of Permit Determination. We have addressed each of the criteria in 10400 using Appendix A as a guide to the types of concerns the County may have for each criteria. Our consultant team's analysis of impacts reveals the project does not create significant adverse impacts to the environment; however, based on County staff review, this application is being submitted for a minor permit review. Our work has been directed, reviewed and approved by Forest Service specialist in each of the resources evaluated. We believe that the Old Dillon Reservoir Enlargement would not have a significant adverse impact to the County; and in fact, provides a benefit for the County by satisfying an indentified water supply need, without significant adverse environmental impacts.