



OREGON WATER RESOURCE DEPARTMENT
WATER CONSERVATION, REUSE AND STORAGE
GRANT PROGRAM

WATER RESOURCES DEPT
SALEM, OREGON

I. Grant Information

Project Name: Laurance Lake Additional Reservoir Storage

Type of Grant Requested: Water Conservation Reuse Above Ground Storage
 Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]

Program Funding Dollars Requested: \$ 28,000 Total cost of planning study: \$ 56,000

Note: Request may not exceed \$500,000

II. Applicant Information

Applicant Name: <i>Middle Fork Irrigation District</i>	Co- Applicant Name:
Organization: <i>Irrigation District</i>	Organization:
Address <i>P.O. Box 291- 8235 Clear Creek Road</i>	Address:
<i>Parkdale, OR 97041</i>	
Phone <i>(541) 352-6468</i>	Phone:
Fax: <i>(541)352-7794</i>	Fax:
Email:	Email:

Fiscal Officer Name: <i>Mr. Craig DeHart</i>	Principle Contact:
Organization: <i>Middle Fork Irrigation District</i>	Organization:
Address: <i>P.O. Box 291 - 8235 Clear Creek Road</i>	Address:
<i>Parkdale, OR 97041</i>	
Phone: <i>(541) 352-6468</i>	Phone:
Fax: <i>(541)352-7794</i>	Fax:
Email: <i>mfidcraig@hoodriverelectric.net</i>	Email:

Certification:

I certify that this application is a true and accurate representation of the proposed work for a project planning study and that I am authorized to sign as the Applicant or Co-Applicant. By the following signature, the Applicant certifies that they are aware of the requirements of an Oregon Water Resources Department grant and are prepared to implement the project if awarded.

Applicant Signature: *Craig DeHart* Date: *2 Sept 2008*

Print Name: *Craig DeHart* Title: *District Manager*

III. Planning Study Summary

Please give a brief summary of the planning study using no more than 150 words.

Clear Branch Dam/ Laurance Lake Reservoir has temperature and supply issues during the typical summer months. This study is to assess the feasibility of raising reservoir to Elevation 2,981 msl or approximately three (3) feet above the current spill elevation of 2,978 msl. This elevation change allows for the storage of an additional 350 to 400 acre of water during the spring runoff. This new storage is an attenuation of the typical runoff flows and would help to improve water temperature and supply issues during mandatory discharge releases. The study must address storage reliability at this higher reservoir level; the technical aspects of dam safety due a slightly higher reservoir water level; impacts to the possible inundation of some of the USDA Forest Service Laurance Lake Campground; methods associated with development of a structure to raise the reservoir water elevation; and enhancement of the fishery habitat at and below Laurance Lake.

IV. Grant Specifics

Section A. Common Criteria

Instructions: Answer all questions in this section by typing the answer below the question. It is anticipated that completed applications will result in additional pages.

1. Describe how the planning study will be performed. Include:
 - a. A description of the planning schedule/timeline, which includes identifying all key tasks. (Section VI provides an opportunity for a “graphical” representation of the schedule.
 1. *Kick-off Meeting with USDA Forest Service(FS), Federal Energy Regulatory Commission (FERC), Oregon Department of Fish and Wildlife (ODFW), Oregon Department of Environmental Quality (DEQ), Middle Fork Irrigation District(MFID) and Engineer to discuss the study parameters and identify pertinent study issues. Two to three meetings over a 10 day period.*
 2. *Hydrology Basin Yield Analysis and Storage Reliability Assessment task includes review of updated precipitation information for the drainage basin to determine the runoff basin yield and statistically predict the storage reliability. This work task is anticipated to take place over 20 to 25 day period.*
 3. *PMP and PMF Flood Assessment Review task includes a review of the HMR 57 and confirming the probable maximum precipitation event and recheck the probable maximum flood and how the additional reservoir height could impact the flood routing through the Laurance Lake reservoir and spillway. This task work is expected to occur over a 15 to 20 day period.*
 4. *Water Quality Data Review tasks includes an assessment of the temperature and dissolved oxygen data for Laurance Lake and assess effects of additional water depth on stabilizing or improving water quality with respect to aquatic life and Bull Trout fishery. This task is expected to occur over a 30 to 35 day period.*
 5. *Embankment Seepage and Stability work includes review and estimation of possible changes in seepage and the stability of the dam embankment under both static and dynamic (seismic) conditions. This work is expected to take place over a 20 to 30 day period.*
 6. *Spillway Control and Evaluation work will evaluate applicable methods of providing spillway control to the current unregulated spillway structure to hold back an additional three (3) feet of water while maintaining un- regulated spill performance of the facilities. In addition, any revision must be capable of being opened for either extreme storm events or drought conditions. This task is expected to occur over a 40 to 50 day period.*
 7. *Structural Assessment and Analysis work includes a review of the structural integrity of the spillway and how it will behave by adding a new spillway control facility. This work is anticipated to take place over a 20 to 25 day period.*

8. *Environmental and Conservation Considerations and Expectations work will look at the issue associated with increasing the reservoir depth by three (3) feet. This task is expected to take place over a 20 to 25 day period.*
9. *Inundation determination will include determining the new limits of inundation (water coverage) and identifying issues and concerns associated with the proposed new water level. This work is expected to occur over a 15 to 20 day period and would include some physical field surveying to set stakes at the new reservoir level.*
10. *Cost Estimates work will include identifying cost associated with any impacts and development of new structures and facilities. This work is expected to occur throughout the study process with the final cost being developed for the report.*
11. *Conclusions and Recommendations is the final development of the study and will include the environment, conservation, physical, and cost issues and attributes associated with raising the reservoir three (3) feet. It is anticipated that this work would be assembled and ready for review and comment by the end of the third quarter.*
12. *Review and Comment by State, FERC, and USDA Forest Service is expected to take up to 130 days.*
13. *Response to review comments and questions will address the issues and concerns that may be present by reviewing agencies and the responses will be returned to those making comments and question for further review and concurrence. It is expected that this will take up to 45 days.*

b. When the planning study could begin.

The study can begin immediately upon release of funds.

2. Provide a description of the relevant professional qualifications and/or experience of the person(s) that will play key roles in performing the planning study. If the personnel have not been decided upon, include a description of the professional qualifications and/or experience of the person(s) you anticipate will play key roles in performing the planning study.

Gray & Osborne, Inc. will be headed up by Mr. Maurice E. Block, P.E., who has over thirty-plus years of experience in water resource development, working on the development of over 13 major earthen dams of medium to high hazard classification, as well as 15 low hazard earthen dams. Mr. Block has been working with the Middle Fork Irrigation District since 1992 with planning, project development, and FERC Part 12 Independent Inspections. Mr. Block, as the Principal in charge, will direct the efforts of several team members. These members include: Ms. Stacy Clear, P.E. who will assist in the hydrology and hydraulics; Mr. Ron Reiland, P.E. spillway hydraulics; Mr. Glenn Malubay, P.E. structural engineer, and Mr. Shayne Downing hydraulic modeling. In addition, Mr. Block will provide direction to HWA Geosciences who will assist in review of the seepage and dam embankment integrity.

3. What local, state or federal project permitting requirements/issues do you anticipate in order for the planning study to be conducted?

It is not anticipated that there are any local or state permitting requirement/issues. However, the project is regulated by the Federal Energy Regulatory Commission (FERC) and it will be necessary to address any engineering details with the agency, as well as submit the final study for their review and concurrence.

4. Are permits/governmental approvals required for the planning study? If yes, indicate whether you have obtained the necessary permits/governmental approval. If you have not obtained the necessary permits/governmental approval, describe the steps you have taken to obtain them.

No permits or governmental approvals are anticipated or required for the planning study.

5. Describe your goal (which must be based on evaluating the feasibility of developing a water conservation, reuse or storage project) and how this study helps to achieve the goal.

The goal is to determine feasibility of storing up to an additional three (3) feet of water in the reservoir by adding a control element to the existing spillway inlet structure. The additional water depth in turn will help to control temperature rise in the reservoir during the summer months and thus, improve the reservoir bull trout fishery.

6. Describe the technical aspects of the planning study and why your approaches are appropriate for accomplishing the goal of the planning study.

The planning study will step through three specific elements: 1) is to assess and determine the reliability of the basin yield analysis to assure statistically that the runoff is available 90% percent of time; 2) three feet of additional storage will help maintain a lower mean summer time temperature; and 3) that spillway control that allows the additional three feet of storage is feasible while not hindering the existing overflow spillway.

7. Describe the level of involvement, interest and/or commitment of different entities associated with the planning study (attach letters of support). Describe how these entities will benefit or be impacted by the planning study.

The State of Oregon Department of Environmental Quality (DEQ), Oregon Department of Fish and Wildlife (ODF&W), and the USDA Forest Service(FS) have a strong interest in improving aquatic and Bull Trout habit on the Clear Branch at Laurance Lake. Water quality issues such as temperature through water management and conservation is a major tool in helping to sustain and improve the environment.

Above-Ground Storage

Please answer the following three questions **BEFORE** proceeding:

- Will the project divert greater than 500 acre-feet of surface water annually? Yes No
- Will the project impound surface water on a perennial stream? Yes No
- Will the project divert water from a stream that supports sensitive, threatened or endangered species? Yes No

If you answered "Yes" to any one of these questions, by signature on this application, you are committing to include the following elements in your planning study:

- **Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows;**
- **Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives;**
- **Analyses of environmental harm or impacts from the proposed storage project;**
- **Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values; and**
- **For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.**

Proceed in answering the following questions:

1. Describe when and to what extent the project associated with the planning study includes provisions for using stored water to augment instream flows to conserve, maintain and enhance aquatic life, fish life or other ecological values.

The overall goal of this proposed project is to increase the depth of the reservoir by up to three (3) feet to stabilize temperature gain and maintain dissolved oxygen levels, and enhance aquatic life and Bull Trout habitat in Laurance Lake. Stabilizing the reservoir water temperature and having the additional stored water may enable MFID to bypass a portion of the reservoir inflow year around to improve downstream habitat for aquatic species below the reservoir. This project will also maintain and enhance the aquatic life and Bull Trout habitat in the reservoir.

2. Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.

The water supply needs are specifically related to maintaining and improving the aquatic life, fisheries and habitat, and other ecological value, while enabling the District to continue operations. In addition, the study will be assessing rerouting Pinnacle Creek to below the Dam to provide the mandatory flows and improve the temperature in Clear Branch below the reservoir.

3. Explain how the project associated with the planning study will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50% of your need will be met).

The District has a right to store up to 3,550 acre-feet with the excess runoff passing over the uncontrolled spillway. It is expected that a review of the basin yield analysis will conclude that up to an additional 3 feet of depth can be added to the reservoir amounting to approximately 300 to 400 acre-fee over ninety percent of time.

4. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

The compelling argument for this project is that it can be done with minimal disturbances to the Project area, within a short time line, and at a reasonable cost. Other proposed projects subject the Clear Branch Dam to issues with respect to large areas of disturbance, saturation of the right abutment, risking geological structural integrity of the dam abutment, very costly, and requiring a long time line.

5. Provide data and information on the associated project and the project's sources of water supply:
 - a. The location of the associated project. (Include the basin, county, township, range and section.)

*Clear Branch, Middle Fork of the Hood River, T. 1 N, R.9 E, Section 21, 22, 27, and 28.
(Latitude N 45°27.634, Longitude W 121°39.746)*

- b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.
Clear Creek and Pinnacle Creek, river mile 3.3, these are tributaries of the Middle Fork of the Hood River.

- c. Whether the project will be off-channel or on-channel.

The Project is On-channel

- d. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)

Based on the Middle Fork Watershed receiving an average precipitation of 130 inches per year the basin can yield an average of 15,450 acre-feet per year. Using the 50 % water availability and subtracting off the required stream flow it appears that the additional 300-400 acre-feet of water could be captured in 12.8 to 17.1 days.

- e. Proposed purposes and uses of stored water.

The purpose of the additional storage is to stabilize reservoir water temperature and maintain and enhance aquatic life and the Bull Trout habitat in Laurance lake, as well as

providing better late summer flows with better temperature to Clear Branch below the Dam.

f. Environmental flow needs and water quality requirements of supply source water bodies.

At present the reservoir starts filling sometime as early as March but more typically in April and May. Releases are made to Clear Branch below the dam through a diversion valve to meet minimum stream flow requirements. Once the reservoir reaches its current overflow elevation of 2978 the diversion gate is closed and the runoff is routed through the reservoir and spilled via the uncontrolled overflow spillway. Once the spill stops the valve is reopened. The detention of the additional storage is an attenuation of those waters and is anticipated to help stabilize the reservoir temperature and dissolved oxygen levels through the summer until September 1 when the diversion releases are increased from 3.0 cfs to inflow up to 15.0 cfs and then on September 15 the release is increased to inflow up to 30.0 cfs.

6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.

Because the Project sits on USDA Forest Service managed lands any modification to the existing facilities will require a NEPA review. In addition, the Project is a regulated FERC facility and changes in the reservoir levels will require technical reviews of the dam embankment, seepage potentials and overall dam integrity, creation of the new spillway control structure, and operational changes required because of the new spillway control.

V. Match Funding Information

Applicants must demonstrate a minimum dollar-for-dollar match based on the total funding request. The match may include a) secured resources, b) previously expended resources, and/or c) pending resources. For secured funding, you must attach a letter of support from the match funding source that specially mentions the dollar amount shown in the "Amount/Dollar Value" column. For pending resources, documentation showing a request for the matching funds must accompany the application. For resources that have been previously expended, the expenditure must have occurred on or after July 1, 2005. Resources expended prior to July 1, 2005 are not eligible for match purposes.

The Type of matching funds may include:	The Status of matching funds may include:
<ul style="list-style-type: none"> The value of in-kind labor, equipment rental and materials essential to the planning study provided by the applicant or partner*. 	<ul style="list-style-type: none"> Secured funding commitments from other sources.
<ul style="list-style-type: none"> Cash is direct expenditures made in support of the planning study by the applicant. 	<ul style="list-style-type: none"> Associated and documented expenditures for the planning study from non-program sources incurred on or before July 1, 2005.
	<ul style="list-style-type: none"> Pending commitments of funding from other sources. In such instances, Department funding will not be released prior to securing a commitment of the funds from other sources. Pending commitments of the funding must be secured within 12 months from the date of the award.

*"Partner" means a non-governmental or governmental person or entity that has committed funding, expertise, materials, labor, or other assistance to a proposed planning study. OAR 690-600-0010.

Match Funding Source (if in-kind, briefly describe the nature of the contribution)	Type (✓ One)	Status (✓ One)	Amount/ Dollar Value	Date Match Funds Available (Month/Year)
Middle Fork Irrigation District (Reserves)	<input checked="" type="checkbox"/> cash <input type="checkbox"/> in kind	<input checked="" type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending	28,000	Jan 2009
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		
	<input type="checkbox"/> cash <input type="checkbox"/> in kind	<input type="checkbox"/> secured <input type="checkbox"/> expended <input type="checkbox"/> pending		

VI. Project Planning Study Schedule

Estimated Project Duration: 2009 to 2010

Place an "X" in the appropriate column to indicate when each element (key task) of the project will take place.

Project Planning Study Element (Key Tasks)	2009				2010				2011 & Beyond
	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	1 st Qtr	2 nd Qtr	3 rd Qtr	4 th Qtr	
1. Kick-off Meeting w/USDA Forest Service, FERC, & Oregon Department of Fish and Wildlife	X								
2. Hydrology Basin Yield Analysis and Storage Reliability Assessment	X								
3. PMP & PMF Flood Assessment Review	X								
4. Water Quality Data Review (Temperature & Dissolved Oxygen)	X								
5. Embankment Seepage and Stability Analysis		X							
6. Spillway Control and Evaluation		X							
7. Structural Assessment and Analysis		X							
8. Environmental and Conservation Assessment			X						
9. Reservoir Inundation Assessment			X						
10. Cost Estimates			X						
11. Conclusions and Recommendations			X						
12. Review by State, FERC, and USDA Forest Service			X	X					
13. Response to Comments and Questions				X	X				

VII. Project Planning Study Budget

Section A

Please provide an estimated line item budget for the project planning study. An example would include: labor, materials, equipment, contractual services and administrative costs.

Line Items <i>Note: Administrative costs may not exceed 10% of the total funding requested by the Department.</i>	Unit Number <i>(e.g. # of hours)</i>	Unit Cost <i>(e.g. hourly rate)</i>	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost	
1) Meetings and Coordination	24.5 hrs	138.45		1,695.99	1,695.99	3,391.98	
2&3) Hydrology, Basin Yield, Flood Anal.	65.0 hrs	122.74		3,989.12	3,989.12	7,978.24	
4&8) Water Quality, Enviro, and Conserv.	78.5 hrs	108.46		4,257.14	4,257.14	8,514.28	
5,6,&7) Seepage, Stability, & Struc. Integrity	140 hrs	126.95		8,822.44	8,822.44	17,644.88	
9) Inundation Anal.	27.0 hrs	117.27		1,708.18	1,708.18	3,416.36	
10 & 11) Cost Est. and Concl. & Recomm.	79.0 hrs	120.17		4,746.72	4,746.72	9,493.44	
12 & 13) Gov Review and Response	45.0 hrs	123.57		2,780.26	2,780.26	5,560.52	
Administrative Costs							
Total for Section A					28,000.00	28,000.00	56,000.00
Percentage for Section A							100%

Section B

If Grant amount requested is \$50,000 or greater, you **MUST** complete Section B. Elements (key tasks) in Section B should be the same as the elements (key tasks) in Section VI (Project Planning Study Schedule).

Project Planning Study Element (Key Tasks)	In-Kind Match	Cash Match Funds	OWRD Grant Funds	Total Cost
Total for Section B				


Totals in Section B must match the totals in Section A

Middle Fork Irrigation District

P.O. Box 291
8235 Clear Creek Rd
Parkdale, OR 97041
Phone (541) 352-6468
Fax (541) 352-7794

August 29, 2008

On August 28, 2008 the Board of Directors of the Middle Fork Irrigation District made a motion and approved funding in the amount of \$28,000 for the Laurance Lake Additional Reservoir Storage Planning Study.



Cheryl Moore
Secretary to the Board of Directors
Middle Fork Irrigation District

Section B. Unique Criteria

Instructions: Answer the set of questions below that applies to the type of planning study that this grant will fund.

Water Conservation or **Reuse**

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application.
 I have filled out the application or I have not filled out the application.
2. Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.
3. Explain how the associated project will mitigate the need to develop new water supplies and/or use water more efficiently. Reference documentation and/or examples of the success of similar or comparable water conservation/reuse projects that would be available upon request.
4. Explain how the project associated with the planning study will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50% of your need will be met).
5. Provide data and information on the associated project and the project's sources of water supply:
 - a. The location of the associated project. (Include the basin, county, township, range and section.)
 - b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.
 - c. Environmental flow needs and water quality requirements of supply source water bodies and water bodies downstream of associated and/or affected return flows.
 - d. Reliance on return flows by downstream water right holders.

Storage Other Than Above-Ground [Including Aquifer Storage and Recovery (ASR)]

Please answer the following three questions **BEFORE** proceeding:

Will the project divert greater than 500 acre-feet of surface water annually? Yes No

Will the project impound surface water on a perennial stream? Yes No

Will the project divert water from a stream that supports sensitive, threatened or endangered species? Yes No

If you answered "Yes" to any one of these questions, by signature on this application, you are committing to include the following elements in your planning study:

- **Analyses of by-pass, optimum peak, flushing and other ecological flows of the affected stream and the impact of the storage project on those flows;**
- **Comparative analyses of alternative means of supplying water, including but not limited to the costs and benefits of water conservation and efficiency alternatives and the extent to which long-term water supply needs may be met using those alternatives;**
- **Analyses of environmental harm or impacts from the proposed storage project;**
- **Evaluation of the need for and feasibility of using stored water to augment in-stream flows to conserve, maintain and enhance aquatic life, fish life and any other ecological values; and**
- **For a proposed storage project that is for municipal use, analysis of local and regional water demand and the proposed storage project's relationship to existing and planned water supply projects.**

Proceed in answering the following questions:

1. Water Conservation or Reuse projects that may result from this planning study are requested to be included in the Water Resources Department's "Inventory of Potential Conservation Opportunities". Though you may have already submitted this information earlier in the year through a separate survey, we ask that all applicants complete the information on the form provided at the end of this application.
 I have filled out the application or I have not filled out the application.
2. Describe the water supply need(s) that the project associated with the planning study is intended to meet. Applicant should reference supporting documentation that would be available upon request.
3. Explain how the project associated with the planning study will meet the water supply need(s), and indicate what percentage of that need will be met. (For example: If your water supply need is 20,000 acre-feet of additional water and the project will supply 10,000 additional acre-feet, 50% of your need will be met).
4. Present convincing argument that there are no other reasonably achievable alternatives that would be able to meet the water supply need(s). Applicant may reference supporting documentation that would be available upon request.

5. Provide data and information on the associated project and the project's sources of water supply:
 - a. The location of the associated project. (Include the basin, county, township, range and section.)
 - b. The name(s) and river mile(s) of the source water and what they are tributary to, if applicable.
 - c. Water availability to meet project storage. (Typically, the Department evaluates new storage projects using a 50 percent water availability analysis.)
 - d. Proposed purposes and uses of stored water.
 - e. Environmental flow needs and water quality requirements of source water.
 - f. Water quality, storage capacity, and geologic aspects of the associated aquifer(s) and/or recharge zones.
6. Provide a review of the local, state, and/or federal permitting requirements and issues posed by the implementation of the project associated with the planning study.