April 2, 2008

Mark Snyder, President
Lorraine South Water District, Montana
8045 Springtime Road
Missoula, MT 59474

RE: Lorraine South Water District Water System Improvements Project, Montana

Dear President Snyder:

Enclosed are copies of the Finding of No Significant Impact (FONSI) and of the Environmental Assessment (EA) for the Lorraine South Water District, Missoula, Montana Water Infrastructure Improvements project. Please print the Finding of No Significant Impact in at least one publication of your local newspaper under legal advertising and return a copy of the proof of advertisement to this office. You do not have to print this letter or the EA. We recommend that you advertise this as soon as possible and allow for a 30-day comment period. Please have the FONSI, EA and Preliminary Environmental Report (PER) available to the public during the comment period. We have distributed the FONSI to the enclosed list of agencies. If you have any questions regarding this process or the project in general, you can call me at 444-5316.

Sincerely,

Robert Ashton
State Revolving Fund Loan Program
Technical and Financial Assistance Bureau
rashton@mt.gov
406.444.5316

Encl

cc: Craig Caprara, HDR Engineering Inc, Missoula, MT
Anna Miller, DNRC (w/o EA)
Janice Yearry, DNRC (w/o EA)

FINDING OF NO SIGNIFICANT IMPACT
FOR THE LORRAINE SOUTH WATER DISTRICT, MISSOULA, MONTANA
WATER SYSTEM IMPROVEMENTS

TO: ALL INTERESTED PERSONS

Date: April 2, 2008
Action: Funding Drinking Water System Improvements
Location of Project: Lorraine South Water District, Missoula, Montana
DEQ SRF Loan: $142,000
Total Project Cost: $142,000

An environmental assessment (EA) has been prepared by the Montana Department of Environmental Quality (DEQ) for proposed funding for improvements to the Lorraine South Water District's (LSWD) water distribution and source water systems. The proposed improvements include the installation of approximately 1,050 feet of new 8-inch ductile iron water main, connection to the existing LSWD system, one new fire hydrant, service connections, and connection to the Mountain Water Company supply system with all associated valves, controls, and appurtenances. The work will be performed in the existing Springtime Road right-of-way with connection to the existing 10-inch Mountain Water supply line located in Lorraine Drive. This work will also require the abandonment of the existing water supply well and water storage tank. The purpose of the project is to make improvements to the community's water supply system needed to protect public health. The proposed project will have a 60-day construction period.

The affected environment will primarily be the Lorraine South Water District, Missoula, Montana, and the immediate vicinity. The human environment affected will include residents and visitors of the aforementioned areas. Based on the EA, the project is not expected to have any significant adverse impacts upon terrestrial and aquatic life or habitat, including endangered species, water quality or quantity, air quality, geological features, cultural or historical features, or social quality.

This project will be funded with a low interest loan through the Montana Drinking Water State Revolving Fund Program, administered by the Montana Department of Environmental Quality and the Montana Department of Natural Resources and Conservation. The loan will be repaid by a RSID organized with Missoula County.

The DEQ utilized the following references in completing its EA for this project: a Uniform Environmental Checklist for Montana Public Facility Projects and a Lorraine South Water District Preliminary Engineering Report (dated October 2007) both prepared by HDR Engineering Inc, the community's consulting engineer. In addition to these references, letters were sent to; Montana

Department of Environmental Quality (MDEQ), Montana Department of Fish, Wildlife & Parks (FWP), Montana Department of Natural Resources & Conservation (DNRC), United States Fish and Wildlife Service (USFWS), United States Army Corps of Engineers (USACE), and Montana State Historic Preservation Office (SHPO). Response letters have been received from SHPO, MDEQ and DNRC. These references are available for review upon request by contacting:

Robert Ashton
Montana DEQ
State Revolving Fund Program
P.O. Box 200901
Helena, MT 59620-0901
Phone (406) 444-5316
Email: rashton@mt.gov

or

Mark Snyder, President
Lorraine South Water District
8045 Springtime Road
Missoula, MT 59803
(406) 251-4070

Comments on this finding or on the EA may be submitted to DEQ at the above address. After evaluating substantive comments, DEQ may revise the EA or determine if an EIS is necessary. This finding will stand if no substantive comments are received during the 30-day comment period or if substantive comments are received and evaluated and the environmental impacts are still determined to be non-significant.

Signed,

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Todd Teegarden, Chief
Technical & Financial Assistance Bureau

LORRAINE SOUTH WATER DISTRICT
WATER SYSTEM IMPROVEMENTS

ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant:	Lorraine South Water District
Address:	8045 Springtime Road Missoula, MT 59803

B. CONTACT PERSON

Name:	Mark Snyder, President Lorraine South Water District
Address:	8045 Springtime Road Missoula, MT 59803
Telephone:	(406) 251-4070

C. ABSTRACT

The Lorraine South Water District, through a 2007 Water Preliminary Engineering Report (PER), prepared by HDR Engineering, has investigated the needs of their public water system. The PER examined all components of the system including supply, storage, and distribution. The PER identified deficiencies in the existing water supply system which includes only one well. The PER identified major deficiencies in the existing water supply system noting the static water level in the one community well has gone from 52 feet from ground level in 1979 to 223 feet from ground level in August of 2006. The well does not currently produce enough water for maximum day demand conditions. If the static water level of the well continues to drop, it will no longer meet the average day demand of the District. The PER determined additional water supply is needed to meet current and future demand conditions. Also noted was the lack of fire protection within the district.

The PER examined the viable alternatives to correct the water supply deficiencies. Two alternatives where examined and include:

- Installing a second water supply well.
- Connect to an adjacent water system - Mountain Water Supply.

Based on the alternatives analysis the PER recommended the district connect to Mountain Water. This connection would require replacing the existing 4-inch PVC distribution mains with 8-inch ductile iron mains and would install one fire hydrant for fire protection.

The project will be funded by a low interest loan from the Drinking Water State Revolving Loan (DWSRF) Program. This Environmental Assessment (EA) examines the proposed project as described in the water system PER. Based on this review, environmentally sensitive characteristics such as wetlands, floodplains and threatened or endangered species are not expected to be adversely impacted as a consequence of the proposed Phase I project. No significant long-term environmental impacts were identified.

Under Montana law (75-6-112, MCA), no person, including a municipality or county, may construct, extend, or use a public water system until the DEQ has reviewed and approved the plans and specifications for the project.

D. COMMENT PERIOD

Thirty (30) calendar days.

II. PURPOSE AND NEED FOR ACTION

The water system for the Lorraine South County Water District consists of a well, 15,000 gallon concrete tank, 1,720 lineal feet of 4-inch AWWA C-900 PVC water main, and numerous valves. The well was drilled in 1979 and the remainder of the water system was constructed in 1985. Water services are metered and there are currently 11 residences connected to the system. The existing system is in good physical condition with very little maintenance required. The District currently has no debt and charges only minor fees to the users to pay for operation and maintenance of the system which consists mainly of electricity to operate the well.

The well was drilled to a depth of 375 feet with slotted casing installed from 315 feet to 375 feet. Static water level was recorded to be at 52 feet below land surface which is at an elevation of 3,660 feet above sea level. The well was pump tested at 50 gallons per minute for two hours. Water level was recorded to be 150 feet below land surface at the conclusion of the test. A 25 gallon per minute pump was installed 154 feet below land surface. In 1990 the water level in the well was measured to be nearly at the pump level and the pump was lowered to 217 feet below land surface. In 2000 the pump failed. The static water level in the well was measured at 210 feet below land surface. It was suspected that the pump failed because it ran out of water. The pump was replaced and the new pump installed at 294 feet below land surface. Watering restrictions were put in place and have been instituted every summer since. The water level in the well continues to drop and the well will no longer meet the demand of the system in the summer months. A watering moratorium has been in place the last two years during the months of August and September. From the period between 1986 to the present demand has increased from one residential connection to 11.

A proper water supply system is important for public health and safety. Instigating the changes recommended by the Lorraine South PER will reduce the public health and safety risk to the residents and visitors of the Lorraine South Water District.

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION AND COSTS

Supply alternatives analyzed include the “do nothing” option, adding a second water supply well or connecting to the nearby public water supply system owned and operated by Mountain Water.

The “Do Nothing” alternative was not considered beyond the initial screening stage. This alternative will not remedy the problems associated with insufficient water supply nor would it address the lack of fire protection.

Two viable alternatives for increasing water supply to the Lorraine South County Water District were evaluated.

- Adding a second well
- Connecting to Mountain Water

Addition of a second well would require acquisition of an easement for placement and construction of the well. It is estimated that the well would need to be drilled 6-inches in diameter to a depth of 500 feet. The PER estimated the cost to construct the new well would be $134,000.

Current annual operation and maintenance costs for the existing well are approximately $800 and consist mainly of electricity to operate the well. It is estimated that these costs would increase by 150% with the addition of the second well (both wells would not run continuously). Well pumps must be replaced periodically. For the purposes of this report, it is estimated that each well would need to be replaced every 20-years. The cost of replacing a well pump is approximately $5,000. The estimated 20-year present worth of constructing a second well and maintaining the existing well is $154,583 (using a discount rate of 4%). The advantage of drilling a second well is the low cost of user charges in comparison with connecting to the private water system owned by Mountain Water Company. Current user charges are approximately $20 per household per month. Addition of a second well will increase the monthly household charge to approximately $99 per month per household (includes the cost of O&M and reserves for both wells, replacement of well pumps every 20-years and financing $134,000 @ 3.75% for 20 years). These costs and charges are compared to the monthly costs of connecting to the Mountain Water Company system below. The disadvantage associated with drilling a second well is the uncertainty of finding water of a suitable quantity and quality to serve the District's needs. The geology of the area has shown that strata are thin and variable proving to be inconsistent when it comes to providing reliable wells. The water level in the existing well has been dropping over the years and this could be indicating a trend for the area.

Connecting to the Mountain Water Company water system would require installation of approximately 1,050 lineal feet of eight inch water main, a fire hydrant, and connection of the existing services to the new water main. The PER estimated the cost of this alternative at $139,000.

There would be no operation and maintenance costs associated with this alternative. Ownership of the system and any associated operation and maintenance costs would be turned over to Mountain Water Company at the completion of construction and commissioning of the new water main. The estimated 20-year present worth of connecting to Mountain Water is $139,346. The advantages of connecting to the Mountain Water Company system include: Long term assurance of reliable, safe drinking water; no operation and maintenance responsibility for the residents of the District, and fire protection. The disadvantage of connecting to the Mountain Water Company system would be increased user charges. Current user charges are approximately $20 per household per month. Connection to the Mountain Water Company system will increase the monthly household charge to approximately $110 per month per household in the winter months and approximately $220 per month per household in the summer months (includes the cost of water main financing $139,346 @ 3.75% for 20 years and Mountain Water charges). Table 1 compares the cost of drilling a second well with the cost of connecting to Mountain Water Company.

Table 1 – Alternative Cost Comparison

	Construction Cost	**Total Estimated Debt Incurred[1]**	**Monthly Debt Payment**	**Monthly Water Use Fee[2]**	**Total Monthly Charge[2]**
Construction of Second Well	$134,000	$134,000	$67	$32	$99
Connection to Mountain Water Company	$113,000	$139,000	$70	$35 - $150	$110 - $225

[1]Costs include construction, engineering, legal and administration.
[2]Mountain Water Company charges include estimated summer and winter usage.

The PER concluded that due to the uncertainty of finding reliable water of the quality and in the quantity necessary to serve the Districts needs the installation of an additional well was not the best course of action. The PER recommended that the District connect to the Mountain Water Company water system. This alternative would provide quality water in the quantity desired, would provide fire protection, and would remove the responsibility of operating and maintaining a water system from the District.

The water main improvements are anticipated to be constructed within the existing right-of-way or in easements provided to the District. The total Mountain Water connection project budget is estimated at $142,000 all of which will be funded using a low interest loan from the State Revolving Fund Loan Program.

IV. AFFECTED ENVIRONMENT

A. STUDY AREA

The Lorraine South Water District is located in the foothills just south of the City of Missoula in the northwest ¼ of Section 18, Township 12 north, Range 19 west. The District is bounded by ranch land to the east and south, Lorraine Drive (a County Road) to the north, and residential property to the west. There are 12 residential lots in the District with 11 existing homes and one vacant lot. The owner of the vacant lot has requested service. The district can be seen in the lower right quadrant of Figure 1.

Figure 1. Lorraine South Location Map.

B. POPULATION AND FLOW PROJECTIONS

Eleven of the twelve building sites within the Lorraine South Subdivision are currently developed. The current population of the subdivision is estimated at 28 with a full build out population estimated at 31. Table 2 summarizes current water usage in the District.

Table 2 – Water Demand Summary

Annual Usage[1]	Average Month (gallons)	Average Day (gallons)	Max Day[2] (gallons)	Peak Hour[3] (gallons/day)	Per Capita Demand[4] (gpcd)
1,567,190	130,599	4,294	9,704	16,058	153

[1]Based on 2004 data
[2]Estimated using a peaking factor of 2.26
[3]Estimated using a peaking factor of 3.74
[4]Estimated using 2004 population of 28 residents

The 15,000 gallon water reservoir has capacity to serve the maximum day demand with the well out of service and a remaining volume of approximately 5,300 gallons. The system does not provide fire protection due to the lack of hydrants and the size of supply piping. If a hydrant existed, minimal fire protection could be provided.

To meet the requirements of MDEQ Circular DEQ 1 the supply must equal or exceed the maximum day demand with the largest producing well out of service. The existing well was designed to produce 25 gallons per minute which would be more than adequate to meet max day demand, however; it has become apparent over the last five years that the well cannot recharge if pumped at 25 gallons per minute over an extended period of time as is the case during periods of lawn watering. In addition, the static water level in the well has gone from 52 feet from ground level in 1979 to 223 feet from ground level in August of 2006. The existing well does not currently produce enough water for maximum day demand conditions and therefore a deviation from the DEQ standards would be required even if a second well was developed and provided the needed additional supply. If the static water level of the existing well continues to drop, it will no longer meet the average day demand of the District.

Additional water supply is needed to meet current and future demand conditions. Table 3 summarizes estimated water demand utilizing existing population and addition of a residential connection.

Table 3 – Future Water Demand Summary

Annual Usage	Average Month (gallons)	Average Day (gallons)[3]	Max Day[1] (gallons)	Peak Hour[2] (gallons/day)	Per Capita Demand (gpcd)
1,731,195	144,266	4,743	10,719	17,738	153

[1]Estimated using a peaking factor of 2.26
[2]Estimated using a peaking factor of 3.74
[3]Estimated using a population of 31 (current population plus an additional household of 3)

C. NATURAL FEATURES

<u>Topography and Soils</u>

The Study Area is located in the rolling foothills south of the City of Missoula. Slopes vary generally from 3:1 to 1:3 with steeper slopes adjacent to a dry gulch on the north edge of the district. Soils include shallow topsoil typically 1 to 6 inches in depth and brown sandy clay with flat and sharp gravels below.

Groundwater and Surface Water

There are no surface waters within the Study Area. A dry gulch skirts the north edge of the Water District as can be seen in Figure 1 above. This gulch may, at times of snow melt and heavy rain, carry storm runoff. This storm runoff dissipates into the ground and is not known to reach any perennial streams or waters of the State of Montana. There are some shallow ground water springs in the area as was witnessed during excavation for several homes in the water district. Groundwater in the area can be expected to be encountered between 175 and 375 feet below ground surface. The Lorraine South County Water District well was drilled in 1979 with water first encountered at approximately 178 feet. Static water level was recorded to be 52 feet below ground surface. The well was tested at 50 gallons per minute for two hours and the water level was recorded at 150 feet below ground surface at the end of the test.

Floodplains

The Lorraine South Water District is not located within or adjacent to any designated floodplain.

Land Use

The District is bounded by ranch land to the east and south, Lorraine Drive (a County Road) to the north, and residential property to the west. There are 12 residential lots in the District with 11 existing homes and one vacant lot.

Biological Resources

Fauna of the general area consists of typical mammalian species found in the intermountain west, including mule deer, whitetail deer, coyote, rabbit, skunk, rodents and others. Common bird species include the black-billed magpie, American robin, Canadian goose, osprey, blackbird, sparrow, warbler, common waterfowl, other raptors, game birds and others.

Vegetation

Vegetation types in immediate proximity to the Lorraine South Water District generally include agricultural, and range lands with developed subdivisions to the north and west. Ponderosa Pine are also found in the area.

V. DIRECT AND INDIRECT ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

No adverse impacts to the environment are anticipated by implementation of the proposed water system improvements. All of the distribution system improvements will be located within the existing limits of the District, either in existing streets or in platted street right-of-ways.

Soils Suitability, topographic and Geologic Constraints

No soil, topography or geological constraints are present for the proposed water project. Based on the existing conditions and soils types, the indirect impacts of the proposed water project will have no significant effect on the soils or topography.

Biological Resources

The construction of the recommended improvements is not expected to impact endangered or threatened species. The work will be accomplished on public rights-of-way or negotiated easements. Only minor construction related impacts are anticipated.

Water Resource Issues

There are no surface waters within the boundaries of the District. The proposed water project would replace the existing water supply well installing new distribution mains with a connection to the Mountain Water system and would abandon the existing well. No negative impacts to surface or groundwater will result from the proposed project.

Floodplains and Wetlands

The Lorraine South Water District is not within a floodplain and there are currently no officially delineated wetlands within the planning area, therefore there will be no impact to these resources.

Cultural Resources & Historical Sites

The State Historic Preservation Office indicated that there is a low likelihood that cultural properties in the area will be impacted by the type of work contemplated in this report, and a cultural resource inventory is therefore unwarranted.

Socio-Economic Issues

The population served by this water system is not considered to be disadvantaged either by minority or income status. The human health and environmental effects are not expected to be disproportionate to the benefits received by the project.

Air Quality

Short-term negative impacts on the air quality will occur from heavy equipment, dust and exhaust fumes during project construction. Proper construction practices and dust abatement measures will be implemented during construction to control dust, thus minimizing this problem.

Energy

During construction of the proposed project, additional energy will be consumed, resulting in a direct short-term increased demand on this resource.

Noise

Short-term impacts from increased noise levels will occur during construction of the proposed project improvements. Construction activities are anticipated to last two to four months and will occur only during daylight hours.

A. UNAVOIDABLE ADVERSE IMPACTS

All of the water lines will be constructed within the street right-of-way; therefore street surface restoration will be required. Also, access to and from homes during construction will take special consideration. Short-term construction related impacts, such as noise, dust and traffic disruption, will occur but should be minimized through proper construction management. Energy consumption during construction cannot be avoided.

B. CUMMULATIVE IMPACTS

This project addresses the existing water utility needs and will have no subsequent negative cumulative effects on resources, ecosystems or human communities. This project will facilitate the development of one lot within the District with an estimated population increase from 28 to 31 individuals. The projected growth over the next 20 years is not expected to cause cumulative

effects beyond the capacity of the resources. Future MEPA analysis would be required for any discussion of cumulative impacts beyond this scope and time frame.

VI. PUBLIC PARTICIPATION

An RSID has been established to secure the SRF Loan. The RSID was established by petition with 100% of the property owners in favor. A main extension contract will be required between Mountain Water and Missoula County. Individual households will be required to apply for service with Mountain Water through an individual service agreement. The ownership of the water system will be transferred to Mountain Water Company by action of the Missoula County Commissioners after it has been installed, inspected and commissioned. Mountain Water will rebate the Lorraine South Water District the cost of the infrastructure over a 40-year period of time. An engineering contract will be required between Mountain Water and the District's engineer. Loan application will be completed in April of 2008. Establishment of the RSID was completed in January of 2008. Final design and bid of the project will occur in April of 2008 and the new water main will be constructed and operational by July of 2008.

VII. AGENCY ACTION, APPLICABLE REGULATIONS, AND PERMITTING AUTHORITIES

All water system improvements will be designed to meet Montana DEQ requirements. Proper State regulatory review and approval of the project plans and specifications will be provided. All applicable local, federal and state permits will be required including, but not limited to, a stormwater discharge permit and a construction-dewatering permit if needed.

All appropriate easements and access will be addressed with regards to the water system infrastructure. If required, land acquisition or long term agreements will be established for the land requirements associated with the connection to Mountain Water.

VIII. REFERENCE DOCUMENTS

The following documents were utilized in the environmental review of this project and are considered to be part of the project file:

A. The Lorraine South Water District, Montana – Water Preliminary Engineering Report and Uniform Application for Funding, October 2007, prepared by HDR Engineering Inc, Missoula, Montana.

B. Uniform Environmental Checklist for Montana Public Facility Projects, October 2007, prepared by HDR Engineering Inc, Missoula, Montana.

IX. AGENCIES CONSULTED

The following agencies were contacted regarding the proposed construction of this project:

A. The U.S. Fish and Wildlife Service was asked in a letter by the project consultant for comments on the proposed project. The Service has not responded.

B. The U.S. Army Corps of Engineers was asked in a letter by the project consultant for comments on the proposed project. The U.S. Army Corps of Engineers has not responded, however the project will not include work within wetlands or waters of the U.S. and no USACE Section 404 permit will be needed.

C. The Montana Historical Society's Historic Preservation Office reviewed the project and a comment letter was received in May 2007. The letter states, "We feel that there is a low likelihood cultural properties will be impacted. We, therefore, feel that a recommendation for a cultural resource inventory is unwarranted at this time. However, should cultural materials be inadvertently discovered during this project we would ask that our office be contacted and the site investigated."

D. The Montana Department of Natural Resource and Conservation Service was asked in a letter by the project consultant for comments on the proposed project. The agency responded in a letter dated May 22, 2007. The letter addresses the existing water right of the Lorraine South Water District and noted "the LSWD is currently serving 11 homes and is exceeding their water right." The existing well will be abandoned as part of the proposed project.

E. The Montana Department of Environmental Quality – Drinking Water SRF Program reviewed the proposed project and concluded the project was eligible for funding and added the Lorraine South Water District to the loan priority list. The DEQ will also review plans and specifications and ensure compliance with State standards.

X. RECOMMENDATION FOR FURTURE ENVIRONMENTAL ANALYSIS

[ ] EIS [ ] More Detailed EA [X] No Further Analysis

Rationale for Recommendation: Through this EA, The Montana DEQ has verified that none of the adverse impacts of the Lorraine South Water District's Water System Improvements Project are significant. Therefore, an environmental impact statement is not required. The environmental review was conducted in accordance with the Administrative Rules of Montana (ARM) 17.4.607 thru 17.4.610.

EA Prepared By:

_____ _____

Robert Ashton Date

EA Reviewed By:

_____ _____

Marc Golz, P.E. Date