



**Montana Department of
ENVIRONMENTAL QUALITY**

"Healthy environment, healthy people"

Steve Bullock, Governor
Tracy Stone-Manning, Director

P. O. Box 200901 • Helena, MT 59620-0901 • (406) 444-2544 • Website: www.deq.mt.gov
February 11, 2014

FINDING OF NO SIGNIFICANT IMPACT

TO ALL INTERESTED GOVERNMENTAL AGENCIES AND PUBLIC GROUPS

As required by state and federal rules for determining whether an Environmental Impact Statement is necessary, an environmental review has been performed on the proposed action below:

Project:	City of Billings – Zone 3 Chapple Reservoir Expansion Project
Location:	Billings, Montana
DWSRF Project Number:	DWSRF number not assigned yet
Billings Project Number:	137413
Total Project Cost:	\$6,730,000

The city's 2006 Water and Wastewater Master Plan identified deficiencies with the storage volume and water pressures within Zone 3. This need was further studied and the alternatives were revised in the 2013 City of Billings Zone 3 Chapple Reservoir Expansion Design Report, prepared by Interstate Engineering. These documents indicate that Zone 3 is deficient in operating and emergency storage, in addition to fire flow storage.

Based on the documented needs, the city has proposed the installation of a 2 million gallon (2 MG) partially buried concrete water storage reservoir adjacent to the existing Chapple water storage reservoir (located north of Clearview Drive). The system improvements are selected to improve the city of Billings drinking water storage and distribution system and provide system capacity for existing residents of the city.

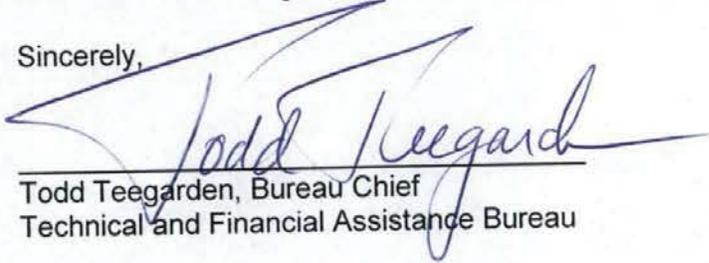
Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species and historical sites will not be adversely impacted as a result of the proposed project. No significant long-term environmental impacts were identified. An environmental assessment (EA), which describes the project and analyzes the impacts in more detail, is available for public review on the Department of Environmental Quality website: www.deq.mt.gov or at the following locations:

Department of Environmental Quality
1520 East Sixth Avenue
P.O. Box 200901
Helena, MT 59620-0901
rashton@mt.gov

City of Billings
Public Works Department
2224 Montana Avenue
Billings, MT 59101

Comments on the EA may be submitted to the Department of Environmental Quality at the above address. After evaluating substantive comments received, the department will revise the environmental assessment or determine if an environmental impact statement is necessary. If no substantive comments are received during the comment period, or if substantive comments are received and evaluated and the environmental impacts are still determined to be non-significant, the agency will make a final decision. No administrative action will be taken on the project for at least 30 calendar days after release of the Finding of No Significant Impact.

Sincerely,

A handwritten signature in blue ink, reading "Todd Teegarden", is written over a horizontal line. The signature is fluid and cursive, with a long horizontal stroke extending to the right.

Todd Teegarden, Bureau Chief
Technical and Financial Assistance Bureau

CITY OF BILLINGS – ZONE 3 CHAPPLE RESERVOIR EXPANSION PROJECT
ENVIRONMENTAL ASSESSMENT

I. COVER SHEET

A. PROJECT IDENTIFICATION

Applicant: City of Billings

Address: Public Works Engineering Division
2251 Belknap Avenue
Billings, MT 59101

Project Number: Drinking Water SRF No. not assigned yet
Billings Project No.: 137413

B. CONTACT PERSON

Name: Will Robbins, Project Manager

Address: Public Works Department
2224 Montana Avenue
Billings, MT 59101

Telephone: (406) 657-8237

C. ABSTRACT

The Billings 2006 Water and Wastewater Master Plan identified deficiencies with the storage volume and water pressures within Zone 3. This need was further studied and the alternatives were revised in the 2013 City of Billings Zone 3 Chapple Reservoir Expansion Design Report. The design report indicates that Zone 3 is deficient in storage and proposed the following improvements:

- Construct one 2 million gallon (MG), partially buried, concrete water storage reservoir adjacent to the existing Chapple water storage reservoir site.
- Install a tank aeration mixing system at the new Chapple reservoir.
- Piping necessary to connect the new tank to the existing distribution system.
- Construct a new tank access road and gate.

These improvements will address the immediate and some of the future needs for this portion of the city's water system. Additional Zone 3 water storage will be needed to meet long term design requirements. However, this need will not be discussed within this Environmental Assessment (EA).

The Zone 3 Chapple Reservoir Expansion Project has an estimated total project cost of \$6.73 million and is included in the city's Capital Improvement Plan (CIP). The proposed project funding includes a \$6,000,000 loan from the State Revolving Fund Loan Program with the remaining \$730,000 paid by the city.

Environmentally sensitive characteristics such as wetlands, floodplains, threatened or endangered species and historical sites are not expected to be adversely impacted as a result of the proposed projects. Additional environmental impacts related to land use, water quality, air quality, public health, energy, noise, and growth were also assessed. No significant long-term environmental impacts were identified.

Under the Montana Water Pollution Control State Revolving Fund Act and the Montana Drinking Water State Revolving Fund Act, the DEQ may loan money to municipalities for construction of public sewage and drinking water systems.

The project will be constructed using standard construction methods and to minimize or eliminate pollutants during construction, best management practices will be implemented. A Stormwater Discharge General Permit and a construction-dewatering permit from the DEQ may be required prior to construction. Plan and specification review and approval is required by the State Revolving Fund (SRF) section of the DEQ for this project.

The DEQ, Technical & Financial Assistance Bureau, has prepared this Environmental Assessment (EA) to satisfy the requirements of the National Environmental Policy Act (NEPA) and the Montana Environmental Policy Act (MEPA).

D. COMMENT PERIOD

Thirty (30) calendar days

II. PURPOSE OF AND NEED FOR ACTION

The City's 2006 Water and Wastewater Facility Master Plan identified the need to add storage within Zone 3 (see Figure 2.2). The 2006 report showed a Zone 3 water storage deficit of 3.21 million gallons and recommended the installation of 3.5 million gallon storage reservoir. The 2013 Chapple Reservoir Expansion Design Engineering Report included a hydraulic analysis to determine the size and location of the new Zone 3 storage tank. Given the restraints of the water main sizes on the west end of Billings, the size of the land parcel needed for the reservoir, and information from the hydraulic analysis, a 2.0 MG reservoir was proposed adjacent to the current Chapple Reservoir.

The city has also identified the need to reduce trihalomethanes (THM) at the Chapple reservoir site and the proposed project includes an in-tank treatment system meant to volatilize preformed THM compounds.

The City of Billings is located in South Central Montana along the Yellowstone River. The location of Billings can be seen on the enclosed map (see Figure 1A). The 2006 Water and Wastewater Facility Master Plan defined a service/planning area (see Figure 1B) which includes approximately 28 square miles and serves approximately 97,000 people.

A. WATER FACILITIES

The existing Zone 3 consist of residential, light commercial, agricultural and open range lands. The city provides both water and wastewater utilities to the developed

areas within Zone 3.

Zone 3 serves the majority of residential development in the central portion of the valley. The zone is roughly bounded by the Billings Bench Water Authority (BBWA) canal and Zone 2 to the east and south and the Hi-Line Ditch and Zone 4 to the north. As the west-end continues to develop, Zone 3 will expand beyond its current western bounds. It currently has the highest demand in the system, largely from residential demand, in addition to Montana State University – Billings and Rocky Mountain College, the Shiloh Road corridor, and development on King Avenue west of 32nd Street West. Projections indicate that Zone 3 will continue to grow and will continue to have the largest demand within the distribution system.

The proposed Zone 3 drinking water storage system improvements are necessary in order to address existing deficiencies and to continue to provide the City of Billings water users with a safe, reliable water supply. The main health issue, associated with the current Zone 3 water system, is the potential loss of water pressure during a fire event or power outage. In addition to increased fire risk, this condition could cause contamination of the distribution system due to backflow.

A sound water storage and supply system is important for public health and safety. Providing additional storage to Zone 3 will reduce the public health and safety risk to the residents and visitors of this part of the city.

III. ALTERNATIVES INCLUDING THE PROPOSED ACTION AND COSTS

A. ZONE 3 WATER STORAGE

1. NO ACTION

The “do nothing” alternative for water storage in Zone 3 is not a viable option if the city is going to meet requirements for operational, emergency, and fire storage. The growth of the city is increasing the demand for water on the west end of Billings and water storage is needed in that area. The 2006 Water and Wastewater Report showed a storage deficit of 3.21 million gallons (MG) in Zone 3. The proposed water storage reservoir is 2.0 MG to help meet the deficit. Based on these concerns, the no-action alternative was not recommended.

2. PROPOSED ACTION

The 2006 Water and Wastewater Master Plan and the 2013 Chapple Reservoir Expansion Design Engineering Report examined the Zone 3 storage needs and detailed several alternatives with varying tank size, location, access, and system hydraulics and land ownership. Based on this analysis the proposed project includes the following items:

- One 2 million gallon (MG), partially buried, concrete water storage reservoir adjacent to the existing Chapple water storage reservoir site.
- A tank aeration mixing system at the new Chapple reservoir.
- Piping necessary to connect the new tank to the existing distribution system.
- A tank access road and gate.

The project will also include all associated electrical and control system work. The proposed Zone 3 reservoir will be located in northwest Billings, adjacent to the current Chapple Reservoir (see Figure 3). The site will be accessed off of Rim Point Drive. The site is located north of the LDS Temple and Clearview Drive abuts the south portion of the tank location. The City currently owns and maintains approximately five acres at the Chapple Reservoir location but will need to acquire an additional 2.6 acres of private land to construct the new Chapple Reservoir. The additional acreage will be obtained through eminent domain. This process has been initiated and final purchase of the property is expected in February, 2014. Project construction will not move forward until the City obtains the final land titles and easements.

The site is located several miles from the 100-year floodplain. Based on borings completed as part of the project's geotechnical investigation groundwater should not be encountered during construction. The top of the new tank's dome roof will protrude approximately 7-8 feet above finished grade.

The total cost of these improvements is estimated at \$6.73 million. This project has been adopted as part of the Billings Capital Improvement Plan. The water user rates have been increased in anticipation of this project along with other planned improvements.

The addition of water storage capacity and stable water pressure for Zones 3 should enhance further development of this area and provide a portion of the storage shortfall identified in Zone 3.

IV. AFFECTED ENVIRONMENT

A. STUDY AREA

The City of Billings is located in South Central Montana along the Yellowstone River. The location of Billings can be seen on the enclosed map (see Figure 1A).

The Zone 3 Chapple Reservoir Expansion Project will occur entirely on land owned and maintained by the City of Billings. The site is located north of the LDS Temple and Clearview Drive abuts the south portion of the tank location (See Figure 3). Approximately 560 feet of new 30-inch welded steel transmission main will be installed from the new 2 million gallon concrete tank to the water distribution system adjacent to the existing Chapple Water Reservoir. The project is expected to take approximately one year with construction starting in the spring or summer of 2014.

B. POPULATION AND FLOW PROJECTIONS

The Chapple Reservoir Design Report states that the current population of the entire Billings service area is approximately 107,000 people. Only a portion of that entire population will be affected by the new Zone 3 water storage tank. Future demands were calculated for Zone 3 based on the City's population growth plan. The city estimated the population throughout the city for each of the neighborhood boundaries and is planning on a 1.5% per year growth through 2035. The projected 2025 population of Billings is 128,000 with an estimated average day demand of 28 million

gallons (MG). The Zone 3 Chapple Reservoir Expansion project is proposed to provide potable water storage for growth areas, maintain water distribution pressure and provide redundancy for water storage in Zone 3.

The city of Billings water treatment plant is a conventional surface water plant that is capable of treating 65 million gallons per day (MGD) with a delivered capacity of 60 MGD to the distribution system. The current average day demand for the city is approximately 25 MGD with a design year average day demand of 28 MGD.

The Standards for Water Works of MDEQ Circular DEQ 1 will be required to be met for both the design and construction of the water system improvements. The standards require that water mains be designed to maintain a minimum pressure of 20 pounds per square inch (psi) under all conditions of flow and 35 psi under normal conditions. The standards also govern pipe materials, storage tank sizing and design.

C. NATURAL FEATURES

The project site slopes generally downward to the south from the Rimrocks located directly to the north. The proposed construction site is situated on a locally-derived slope-wash colluvial deposit consisting mainly of silty/clayey sand soils with various clay lenses and intermixed large sandstone cobbles and boulders overlying shale bedrock of the Telegraph Creek and Niobrara Formations.

A geotechnical investigation of the site found no groundwater within the test borings ranging from 11 to 45 feet below existing grades. The report also provides an opinion that the proposed reservoir can be supported on a zone of structural fill bearing on at least 1-foot of flowable concrete fill over undisturbed native shale bedrock. A perimeter underdrain will be constructed to discharge any potential moisture infiltration beneath the tank. The elevation of project site ranges from 3,460 to 3,500 feet above sea level.

The average precipitation for the city of Billings is 14.6 inches per year.

D. MAPS

Figure 1A shows the general location of the City of Billings within the state of Montana. Figure 1B shows the City of Billings Planning area. Figures 2 show the city of Billings water pressure zones. Figure 3 shows the proposed Zone 3 Chapple Reservoir Expansion project location.

V. ENVIRONMENTAL IMPACTS OF PROPOSED PROJECT

A. DIRECT AND INDIRECT IMPACTS OF PROPOSED PROJECT

Land Use - All of the system improvements will be located on land owned and maintained by the City. The land use in the study area is residential and agricultural in nature. The proposed tank site is in open range lands located just south of the Rimrocks and just west of the existing Chapple Reservoir. The installation of additional storage capacity within the northwest portion of Billings may increase development in the area with the conversion of open lands to residential lands possible. This potential growth is consistent with the current Billings Growth Policy and no significant impact to land use is expected.

Soils Suitability, Topographic and Geologic Constraints – The proposed Zone 3 storage tank site is located below the Rims and will be constructed on bed rock. No soil, topography or geological constraints are present for the proposed project. Based on the existing conditions and soils types, the impacts of the proposed water project will have no significant effect on the soils or topography.

Fish and Wildlife and Biological Resources – Three threatened or endangered species are found in Yellowstone County: The Bald Eagle, Black-footed Ferret and the Whooping Crane. Considering the project location, its current use and future use, the proposed project is unlikely to have any significant adverse effects upon fish, wildlife, or habitat resources.

Water Resource Issues - No significant adverse impacts to surface or groundwater will result from the proposed project. Storm water runoff will be directed around the new water storage reservoir.

Floodplain – The proposed project is not located within a delineated floodplain and therefore this project does not require a floodplain development permit.

Wetlands – There are no wetlands within the project area and therefore no impact will result from this project.

Cultural Resources & Historical Sites – The State Historic Preservation Office (SHPO) reviewed the proposed project and conducted a cultural resource file search for the proposed project area. Based on this review, SHPO noted that a cultural resource inventory would not be warranted for the project site.

Socio-Economic Issues - The population served by this water system is not considered to be disadvantaged either by minority or income status. No adverse human health or socio-economic impacts are expected as a result of the new storage tank.

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 specified during construction to control dust, thus minimizing this problem. No long-term air quality problems will result from this project.

Energy - During construction of the proposed project, additional energy will be consumed, resulting in a direct short-term increased demand on this resource. The city completed a Water System Energy Management Plan in 2007. Recommendations of the plan include utilizing high efficiency pumps; variable frequency drives (VFDs) and premium efficiency pump motors, as well as adding storage to the system in order to reduce energy consumption. Sufficient storage is needed for adequate fire protection, ability to meet peak diurnal demands and emergency situations.

Public Health – Public health will be protected and improved due to this project. The new Zone 3 tank will improve the fire protection and system pressures within Zone 3.

Noise - Short-term impacts from excessive noise levels may occur during the construction activities. The construction period will be limited to normal daylight hours to avoid early morning or late evening construction related disturbances. In the long-term, no increase in noise levels associated with this project will occur.

Growth – This project helps address the needs for growth within the city of Billings. The expected growth within Zone 3 is planned for and included in the city's growth policy. The overall annual population growth rate of Billings is estimated at 1.5%.

Cumulative Effects – This project involves the construction of additional water storage capacity and will support growth within this part of Billings. However, the proposed 2 MG tank will only partially meet the hydraulic needs of the area and is not expected to have any significant cumulative adverse effects on resources, ecosystems or human communities.

B. UNAVOIDABLE ADVERSE IMPACTS

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. The associated impacts of development are unavoidable but are not expected to cause significant impact to area resources.

VI. AGENCY ACTION, APPLICABLE REGULATIONS, AND PERMITTING AUTHORITIES

All water storage and conveyance 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 improvements.

VII. PUBLIC PARTICIPATION

The Zone 3 Chapple Reservoir Expansion project is included in the FY09 – FY13 capital improvement program list (number PUD 104). A public hearing was provided for the CIP with no comments received. The city council approved the CIP February 25, 2008, during a regularly scheduled meeting.

VIII. REFERENCE DOCUMENTS

The following document has been utilized in the environmental review of this project and is considered to be part of the project file:

1. 2013 City of Billings Zone 3 Chapple Reservoir Expansion Design Engineering Report, prepared for the City of Billings, by Interstate Engineering, Billings, Montana, November, 2013.
2. 2006 Water and Wastewater Facilities Master Plan, prepared for the City of Billings, by HDR and HKM Engineering.
3. Uniform Application Form for Montana Public Facility Projects for the City of Billings Sewer and Water Replacement Projects, April 2009.

IX. AGENCIES CONSULTED

As part of this Environmental Assessment process, the following agencies have been contacted in regard to the proposed water project:

1. The Montana Department of Fish Wildlife and Parks (FWP) was asked in a letter by the project consultant for comments on the proposed project. No comments regarding the project have been received.
2. The U. S. Fish and Wildlife Service (FWS) was asked in a letter by the project consultant for comments on the proposed project. No comments regarding the project have been received.
3. The Montana State Historic Preservation Office (SHPO) considered the impacts of the proposed project on historical sites and in an email dated October 9, 2013 stated, "Based on previous disturbance in the area we feel that there is a low likelihood cultural properties will be impacted" and that a "cultural resource inventory is unwarranted at this time."
4. The U.S. Army Corps of Engineers (COE) was asked in a letter by the project consultant for comments on the proposed project. No comments regarding the project have been received. However, the Zone 3 Chapple Reservoir Expansion project will not require a Section 404 permit from the Corps as no waters of the U.S. will be impacted.
5. Department of Natural Resources and Conservation (DNRC) was asked in a letter by the project consultant for comments on the proposed project. No comments have been received. However, the DNRC regulates work within designated flood plains and the Zone 3 Chapple Reservoir Expansion project doesn't include work within these areas.

Recommendation for Further Environmental Analysis:

EIS More Detailed EA No Further Analysis

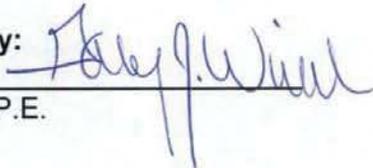
Rationale for Recommendation: Through the Design Engineering Report, prepared by Interstate Engineering, the 2006 Water and Wastewater Facilities Master Plan, and the public process involved, the City of Billings determined that the expansion of their Chapple Water Reservoir capacity will improve the operation and maintenance capabilities of their systems. Through this EA, the MDEQ has verified none of the adverse impacts of the proposed 2014 Chapple Reservoir Expansion 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, 17.4.608, 17.4.609 and 17.4.610. This EA is the appropriate level of analysis because none of the adverse effects of the impacts are significant. A Finding of No Significant Impact (FONSI) will be issued and legally advertised in the local newspaper and distributed to a list of interested agencies. Comments regarding the project will be received for 30 days before final approval is granted.

EA Prepared By:



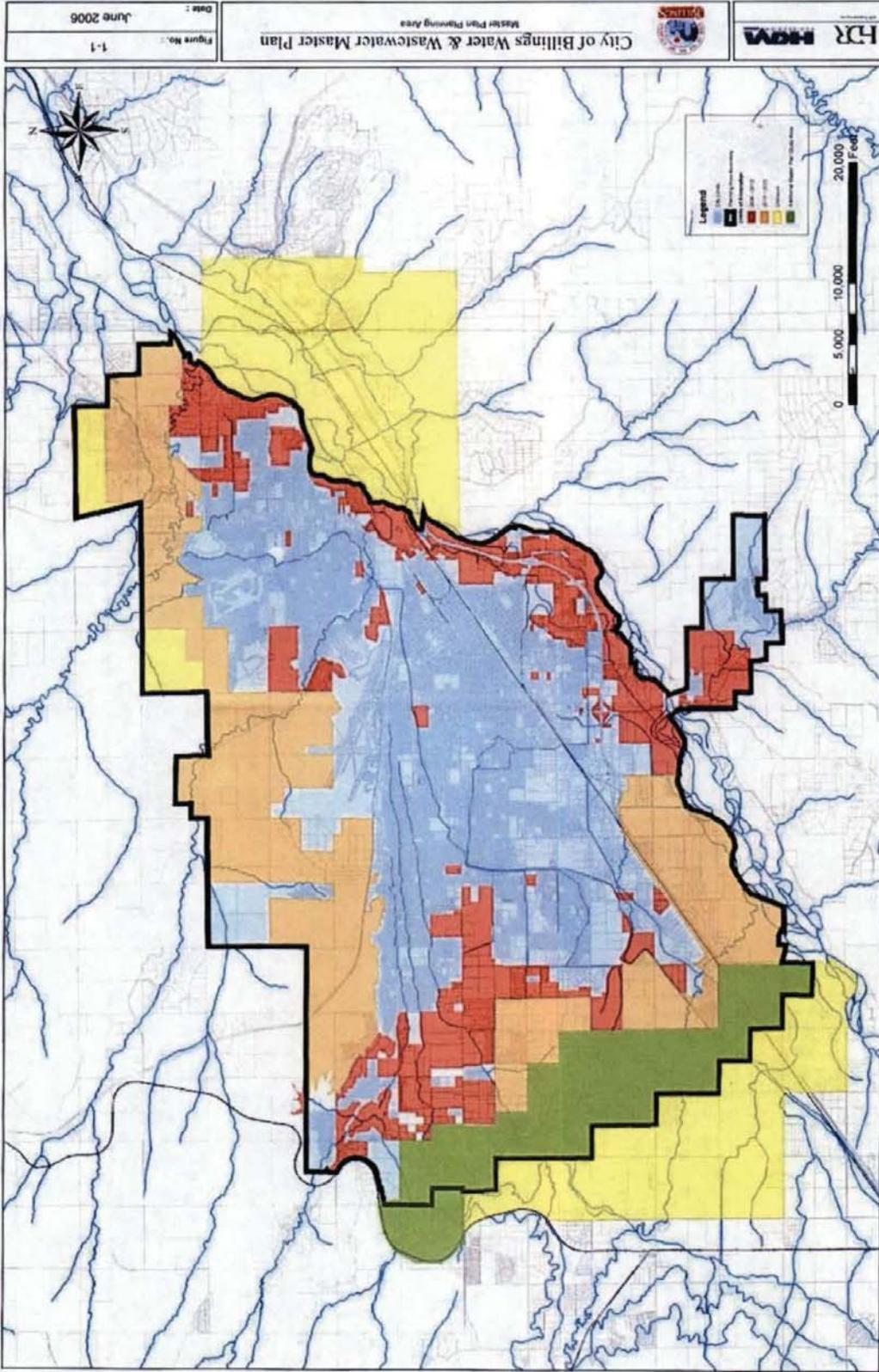
Robert Ashton

2/5/14
Date

Approved By: 

Gary Wiens P.E.

2/5/14
Date



**FIGURE 1B
 PLANNING AREA**

Figure 2. Zone 3 Chapple Reservoir Expansion Project Location.

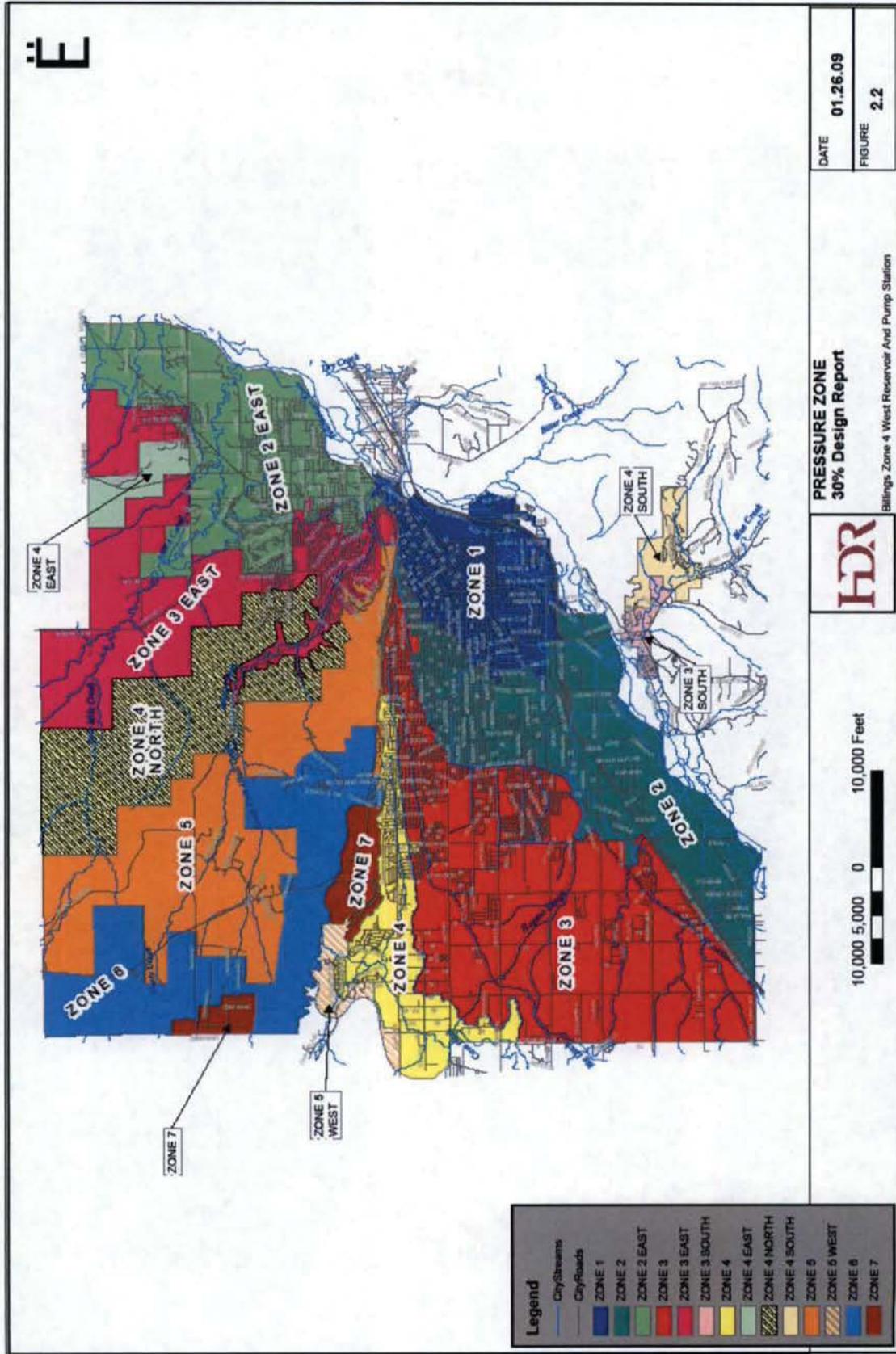


FIGURE 3. ZONE 3 Chapple Reservoir Expansion Project.



- Approximate Zone 3 Reservoir location
- Approximate Zone 3 Transmission main