Request for Proposal

Gross Reservoir Expansion – Design of Roadway Improvements and Traffic Control Plans

Denver Water is inviting Consultants to submit a proposal to provide Transportation Engineering Services for Roadway Improvements and Traffic Control Plans to support the Gross Reservoir Expansion Project (Project), also known as the Moffat Collection System Project. The Consultant's services will consist of surveying; detailed roadway design generally consisting of overall plan preparation, drainage evaluations, geotechnical investigations and report, specification preparation; environmental evaluation and permitting; local agency coordination; public outreach; and right-of-way services.

Background and History

The existing Gross Dam is an on-stream facility located on South Boulder Creek in Boulder County, Colorado, in the Arapahoe-Roosevelt National Forest. The dam is owned and operated by Denver Water and provides raw water storage from both west slope trans-continental diversions and from the South Boulder Creek watershed upstream of Gross Dam.

The 340-foot tall dam was constructed by Denver Water to provide municipal water storage for the City and County of Denver and surrounding communities. When the dam was originally constructed in the early 1950s the surrounding area was sparsely populated, which has since grown to over 2,400 people. The largest community near Gross Reservoir is known as Coal Creek Canyon, named after Coal Creek, and is located in Boulder, Jefferson, and Gilpin counties. Coal Creek Canyon's primary access and thoroughfare is Colorado State Highway 72 (SH72) which generally follows Coal Creek through the canyon. Although there are other access routes in and out of the canyon, SH72 is critical to the community and provides the only direct access to many businesses, residences, and neighborhoods in the canyon. SH72 is also the primary route to access Gross Dam and Reservoir.

Proposed Dam Raise

The current Project proposes to raise Gross Dam by 131 feet to a final height of 471 feet, increasing storage volume from 41,811 acre-feet to about 118,811 acre-feet. The raised dam and expanded Gross Reservoir will provide a reliable and dependable water supply for Denver Water customers.

The Project will need a large amount of concrete aggregate (sand and gravel), and the EIS assumed the aggregate would be obtained through a combination of onsite and offsite quarries. It is believed that all coarse (gravel) aggregate can be produced from an onsite quarry, and the fine (sand) aggregate material would be produced offsite. The Final EIS assumes the worst case, that all fine aggregate will be imported, specifically from several commercial sand and gravel quarries near Longmont, Colorado. In the event the fine aggregate must be hauled to site, an estimated 23,600 tractor trailer trucks will be required to deliver the sand.

SH72 is the main thoroughfare in and out of the community and Denver Water recognizes this type of new traffic will cause impacts to the existing traffic patterns in the canyon. As such Denver Water is currently evaluating the suitability of the onsite quarry to produce sand, which would result in a reduction of 23,600 aggregate truck deliveries. Regardless, Denver Water also wishes to improve the intersection at SH72 and Gross Dam Road, and develop traffic control plans for hauling and construction-related traffic traveling on Gross Dam Road and Gross Reservoir Access Road. Refer to Appendix A for an overall map of the haul route.

Project Schedule

Based upon the current schedule, it is anticipated that the Dam's final engineering design will occur between 2015 and 2017, roadway and traffic improvement construction in 2017 and 2018, and traffic control and dam construction from 2018 to 2022.

Transportation Engineering Consultant

Denver Water is seeking a Transportation Engineering Consultant to design an intersection improvement at SH72 and Gross Dam Road and design temporary traffic control plans along Gross Dam Road. The goal is to develop roadway improvements and traffic control plans along the haul route to facilitate safe traffic patterns throughout the canyon corridor. In addition to the designs, Denver Water is seeking support for engaging and collaborating with the public and local agencies.

Conceptual Plan

Denver Water and a Consultant completed a preliminary engineering study of SH72, Gross Dam Road, and Gross Reservoir Access Road in 2014. The study included an evaluation of roadway geometrics for truck turning movements, Level-of-Service (LOS) analysis of SH72 with predicted truck traffic, conceptual design for intersection improvements, and conceptual design of temporary traffic controls for Gross Dam Road and Gross Reservoir Access Road. The study assumed two scenarios for materials hauling. Scenario A: An increase in truck traffic of 88 trips per day (44 round trips), and Scenario B: An increase in truck traffic of 240 trips per day (120 round trips). The most significant findings from the study include:

1. The predicted truck traffic (for each scenario) on SH72 will not impact the existing LOS rating of SH72.
2. The intersection of SH72 and Gross Dam Road requires temporary traffic control or a permanent intersection improvement to accommodate tractor-trailer-type truck traffic.
3. Gross Dam Road requires temporary traffic controls and/or curve widening to accommodate truck traffic.

Required Experience and Expertise

The proposed Consultant team must have expert-level expertise and experience in Colorado Department of Transportation (CDOT) and Boulder County transportation projects. Additionally, Denver Water expects the Consultant team to have experience related to roadway projects with multiple interested stakeholders and significant public interest. The Consultant must propose Project personnel who demonstrate principal-level role involvement with heavy civil projects that required outreach to the public and interested stakeholders.

Contract Schedule

The contract is expected to be in effect starting in May 2015 with an estimated completion by June 2016. As previously noted, the construction of the intersection improvement is planned for 2017 and 2018. The construction schedule may be extended, dependent upon the permitting process, public outreach, and overall Project schedule. Denver Water may elect to amend the contract to include services during construction. This contractor shall be available to complete this work in 2017 and 2018.

Scope of Services

The Scope of Services includes the following major tasks:

Task 1 - SH72, Peer Review and Update to the Traffic Impact Study
Task 2 - SH72, Design of Intersection Improvement at Gross Dam Road
Task 3 - Gross Dam Road and Gross Reservoir Access Road, Design Temporary Traffic Control Plans
Task 4 - Gross Dam Road and Gross Reservoir Access Road, Evaluation and Recommendation of Dust Mitigation Techniques
Task 5 - Gross Dam Road, Noise and Vibration Report
Task 6 - Public Outreach

Since the 2014 study, Denver Water has reviewed the expected traffic volume based upon likely dam production curves. The traffic scenarios represented below are based on a five day per week haul schedule. These traffic volumes are preliminary and will be refined throughout the dam design process. For the purposes of this study, base the proposal on the following two estimated average-peak production hauling frequency.

Scenario 1: Offsite Quarry – Fine Aggregate Imported to Site		
Activity	**Vehicle Type**	**Frequency (Round-Trips/Day)**
Aggregate Delivery	Tractor-Trailer Truck	60
Fly Ash/Cement Delivery	Tractor-Trailer Truck	35
Work Force	Passenger Car	120
Fuel Delivery	Single-Unit Truck	2
Tools and Equipment Delivery	Single-Unit Truck	2
Construction Materials Delivery	Tractor-Trailer Truck	2
Miscellaneous Materials Delivery	Single-Unit Truck	2
Blaster	Single-Unit Truck	2
Scenario 2: Onsite Quarry – Fine Aggregate Produced Onsite		
Activity	**Vehicle Type**	**Frequency (Round-Trips/Day)**
Aggregate Delivery	Tractor-Trailer Truck	0
Fly Ash/Cement Delivery	Tractor-Trailer Truck	35
Work Force	Passenger Car	120
Fuel Delivery	Single-Unit Truck	2
Tools and Equipment Delivery	Single-Unit Truck	2
Construction Materials Delivery	Tractor-Trailer Truck	2
Miscellaneous Materials Delivery	Single-Unit Truck	2
Blaster	Single-Unit Truck	2

Task 1 – SH72, Peer Review and Update to the Traffic Impact Study
The evaluation corridor for this task is SH72 from Mile Marker 12.0 to Mile Marker 19.3. Refer to Appendix B for a vicinity map. A preliminary study determined the predicted truck traffic will not reduce the LOS rating of SH72. The study also found it is not feasible to construct a bike lane in either direction of SH72. This task includes the following items:

- Peer Review of Preliminary Engineering Study:
  - Review the findings of the truck traffic impact on the LOS of SH72.
  - Review the findings of the feasibility of constructing a bike lane on westbound SH72.
- Traffic Impact Study:
  - Complete a traffic impact study for each predicted traffic scenario.
  - Determine if the impact for either of the predicted traffic scenarios warrants paving the existing unpaved turnouts.

The deliverables for this task include a Peer Review Report Memorandum and a Traffic Impact Study Report suitable for submission to CDOT.

Task 2 – SH72, Design of Intersection Improvement at Gross Dam Road
The Consultant will design the intersection improvement at SH72 and Gross Dam Road. Refer to Appendix C for a vicinity map. This task includes preparation of construction documents, Project meetings, local agency coordination, preparation of right-of-way plans, and preparation of reports (geotechnical, drainage, utility investigation, and traffic). The design and submittals shall conform to the following criteria:

- CDOT Manuals, Standards, and generally accepted practices
- Boulder County Multi-Modal Transportation Design Standards
- Manual on Uniform Traffic Control Devices, latest edition
- American Association of State Highway and Transportation Officials Road and Intersection Design Manual
- Other criteria which may be necessary for this work

Task 3 – Gross Dam Road and Gross Reservoir Access Road, Design Temporary Traffic Control Plans
A preliminary study determined Gross Dam Road requires temporary traffic controls and/or the widening of numerous curves to accommodate truck traffic. This task includes the design of temporary traffic controls along the entire length of Gross Dam Road (i.e., from SH72 to the railroad tracks) and about 1.8 miles of Gross Reservoir Access Road. Refer to Appendix D for a vicinity map. The design of the temporary traffic controls must consider and mitigate the impact the controls have on private driveways. Also, the design may require shoulder widening at traffic queuing areas. The design and submittals shall conform to the following criteria:

- Boulder County Multi-Modal Transportation Design Standards
- Manual on Uniform Traffic Control Devices, latest edition

Task 4 – Gross Dam Road and Gross Reservoir Access Road, Evaluation and Recommendation of Dust Mitigation Techniques
Review the preliminary engineering study on techniques for mitigating dust from traffic and update to include additional detail and material about mitigation techniques for community input.

The task includes evaluating, developing Opinion of Probable Cost, and presenting these techniques to local agencies and interested stakeholders including the public. The goal is to review and collaborate with the public on the mitigation options and select a mitigation technique that best serves the interest of all parties involved. Refer to Appendix D for a vicinity map.

Task 5 – Gross Dam Road, Noise and Vibration Report
Review the section of the preliminary engineering study regarding noise and vibration impacts from predicted truck traffic. This task includes developing a new noise and vibration impact report based upon each scenario of traffic. Refer to Appendix E for a vicinity map. The analysis should consider residences in the canyon along Gross Dam Road. The report should also include mitigation techniques and associated Opinion of Probable Cost to reduce noise and from the predicted traffic.

Task 6 – Public Outreach
Provide support for planning activities, including assistance with public meetings and/or public information including handouts, website support or development, and public meeting presentations. The Consultant should assume at least three public meetings will be held requiring public presentations and development of support material. This task will include the following deliverables:

- Traffic Models
- Traffic Animations
- Visual Graphic Boards
- Public Presentations
- Recommendations on Noise, Vibration, and Dust Mitigation Techniques

Proposal Submittal

The proposal should outline the proposed Project team's or candidate's specific experience as related to the role and requirements of the Transportation Engineering Consultant and ability to provide staff with public outreach support.

At a minimum the proposal shall include:

1. Cover Letter.
2. A work breakdown structure for the proposed scope of work including major submittals, public meetings, all deliverables, staffing and proposed hours.
3. Consultant's proposed schedule with major milestone/submittal dates.
4. Consultant's approach to integrating with Denver Water Gross Reservoir Expansion Program Staff.
5. A list of critical issues that the Consultant considers to be of importance for the Project.
6. Project-related experience of your firm and all Project staff (including subconsultants). Include details of experience with roadway design, rights-of-way identification, drainage analysis, and public outreach.
7. A sample plan and profile sheet(s) of a similar project. Examples shall be attached as legible 11x17 documents.
8. A list of at least 5 similar projects (with references).
9. Statement of MWBE status (MWBE status is not a requirement, but is favorable).

Additional Information

Contact Denver Water staff for a copy of the Preliminary Engineering Study.

Selection Criteria

Denver Water will select the Traffic Engineering Consultant based on the written proposals. Final contract scope of services and costs will be negotiated with the selected Consultant. The following criteria will be the basis for evaluating the written proposals.

The scale of the criteria is from 1 to 10, with 1 being a poor rating, 5 being an average rating, and 10 being an outstanding rating. All criteria will be multiplied by the associated weight to give a weighted criteria score. The weighted criteria scores will be summed for a cumulative score. The maximum possible cumulative score is 100.

Weight	Criteria	Standard
4	Project Personnel	• Does the Transportation Engineering Consultant's proposed team have the skills and experience on CDOT and Boulder County projects to provide the function? • Do senior-level staff of the proposed team have specific experience designing roadway improvements with significant interest from the public and local communities? • Do senior-level staff or subconsultant have public outreach experience and experience with public stakeholders and local agencies?
3	Firm/Team Capability and Availability	• Does the firm and team have the appropriate support capabilities to meet the demands of the project? • Has the firm performed previous studies of this type and scope? • Is the proposed team available for the duration of the contract?
3	Design Schedule, Cost and Work Hours	• Does the work breakdown structure and design schedule meet Denver Water requirements, and portray an accurate and logical sequencing of activities (reference item 2 under "Proposal Submittal" section of this RFP)? • Do the deliverables follow Denver Water's Capital Project Procedures Manual, CDOT Standards, Boulder County Standards, and other applicable standards? • Do the work hours presented accurately reflect the level of effort to complete each task? • How do unit labor and overhead costs compare to other firms?

Proposal Schedule

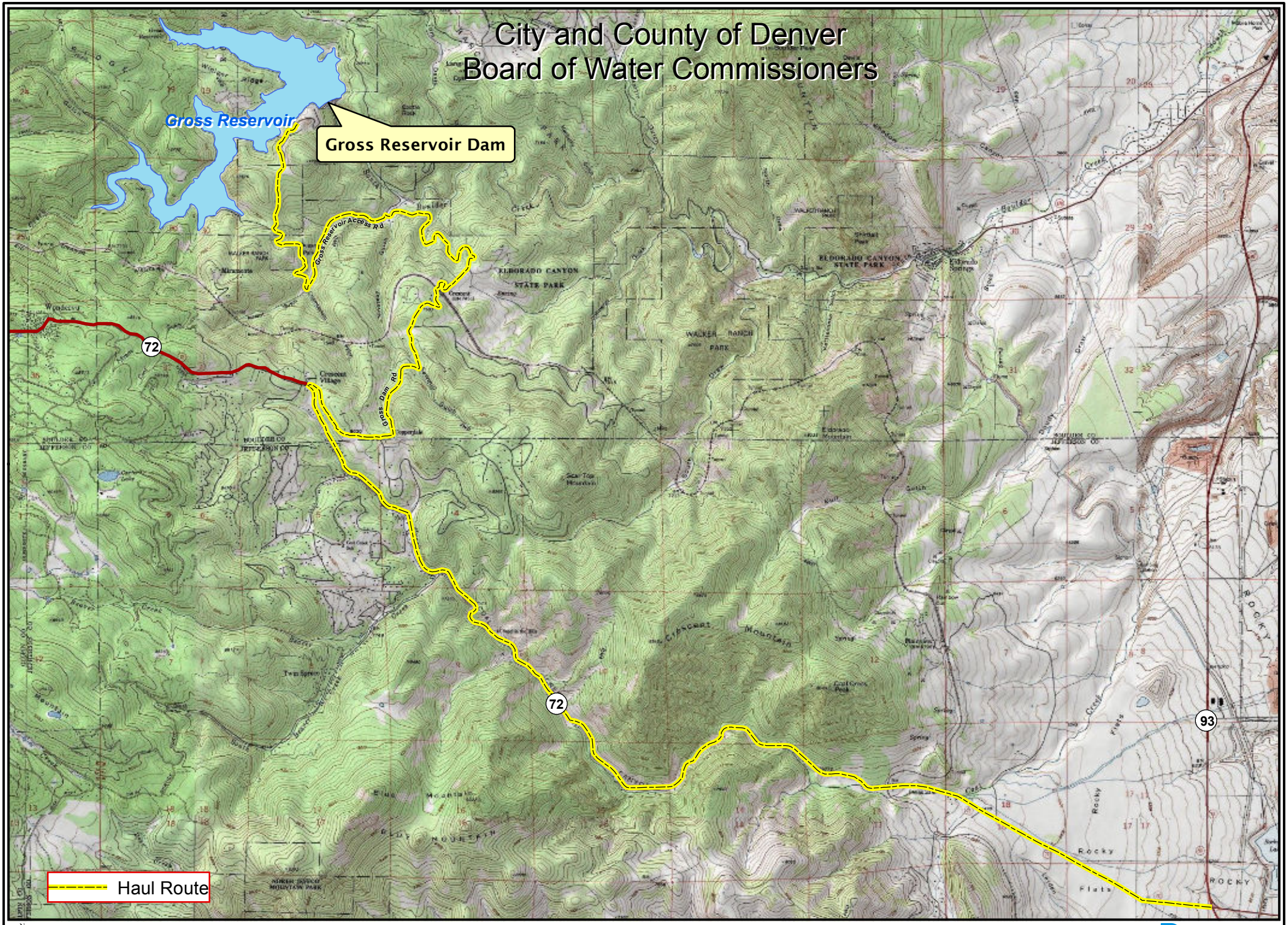
Proposals (three hard copies and an electronic copy) shall be submitted by 2:00 P.M. on Thursday, April 23, 2015. Denver Water may choose to interview select candidates prior to the contract award.

The Consultant is expected to enter into Denver Water's standard form of agreement. Please feel free to contact Devin Shable at (303) 628-6365.

Sincerely,

Devin Shable

Devin Shable, P.E.

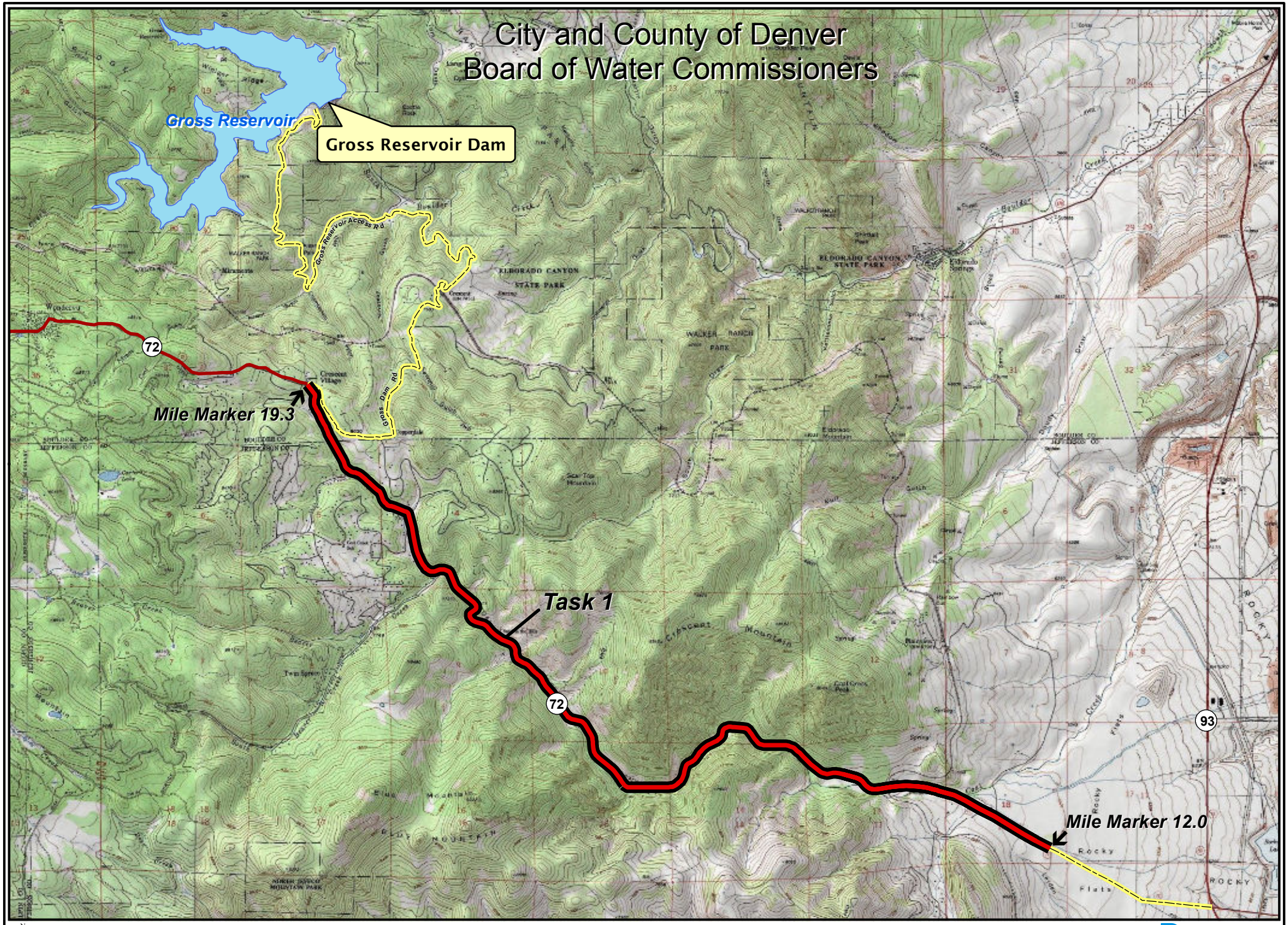


0 0.425 0.85 1.7 Miles

Appendix A

DENVER WATER

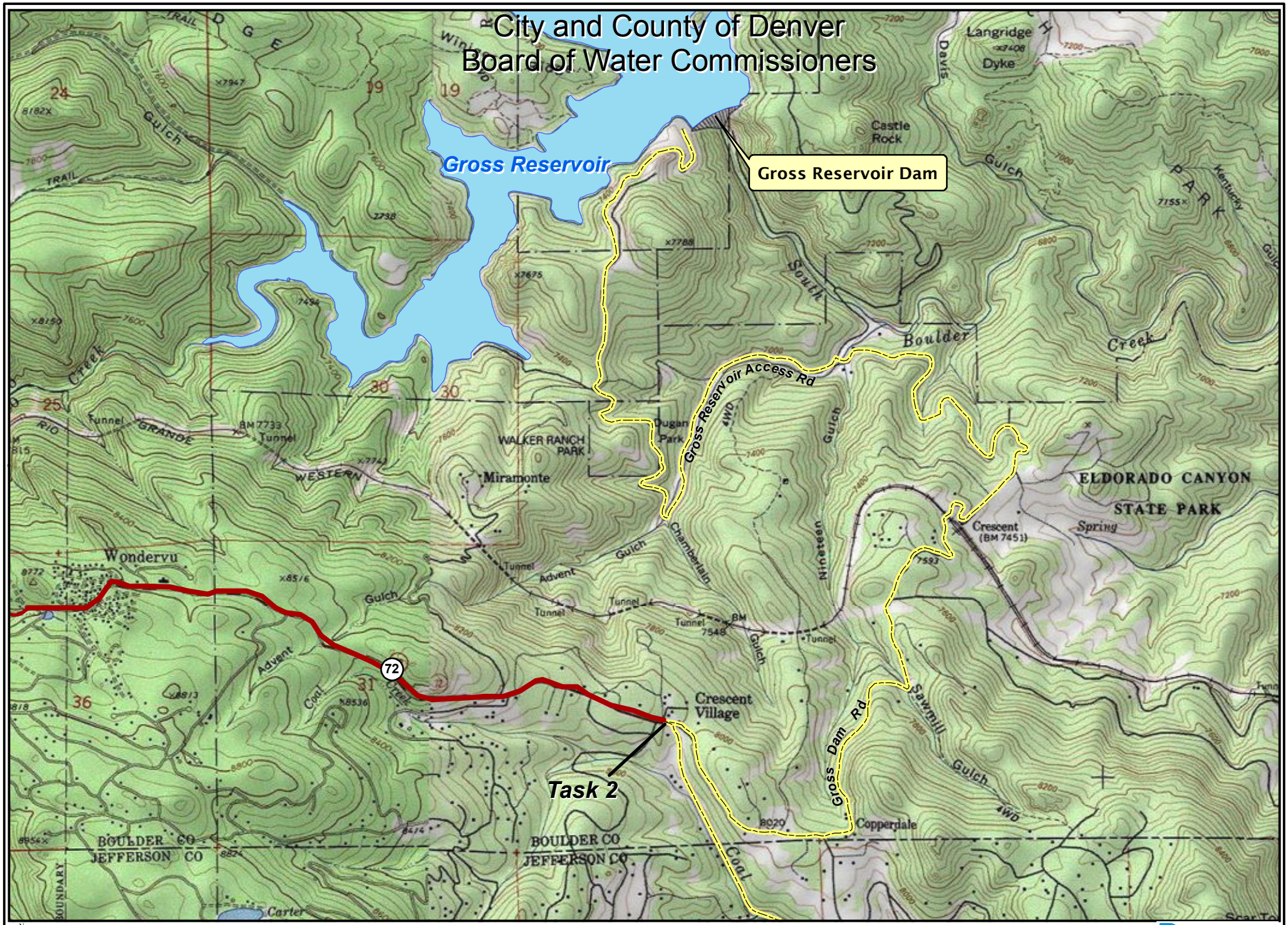
Map Date: 3/31/2015
Author: ARG - MLF
Source(s):



Appendix B

DENVER WATER

Map Date: 4/7/2015
Author: ARG - MLF
Source(s):



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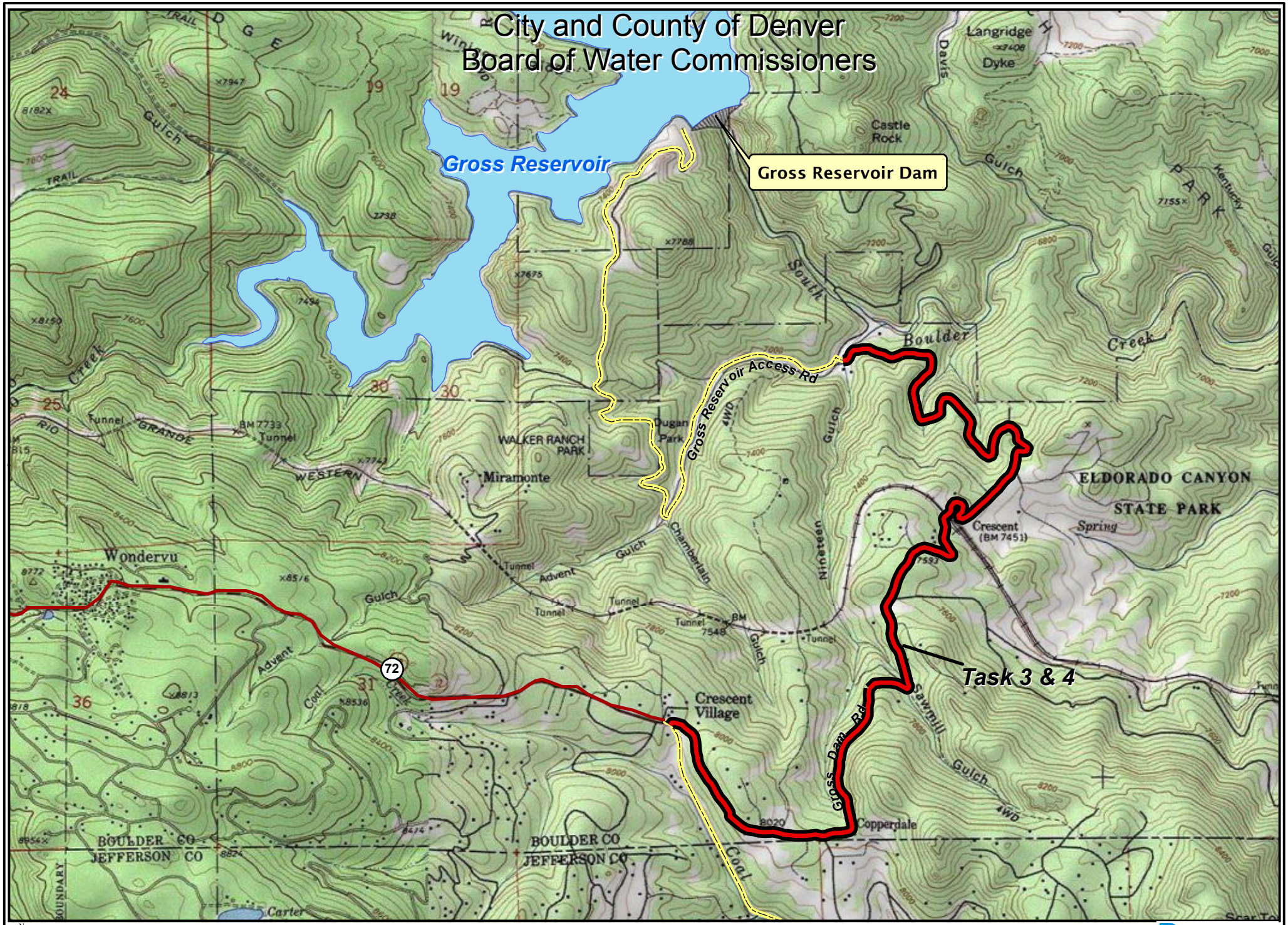
Appendix C

DENVER WATER

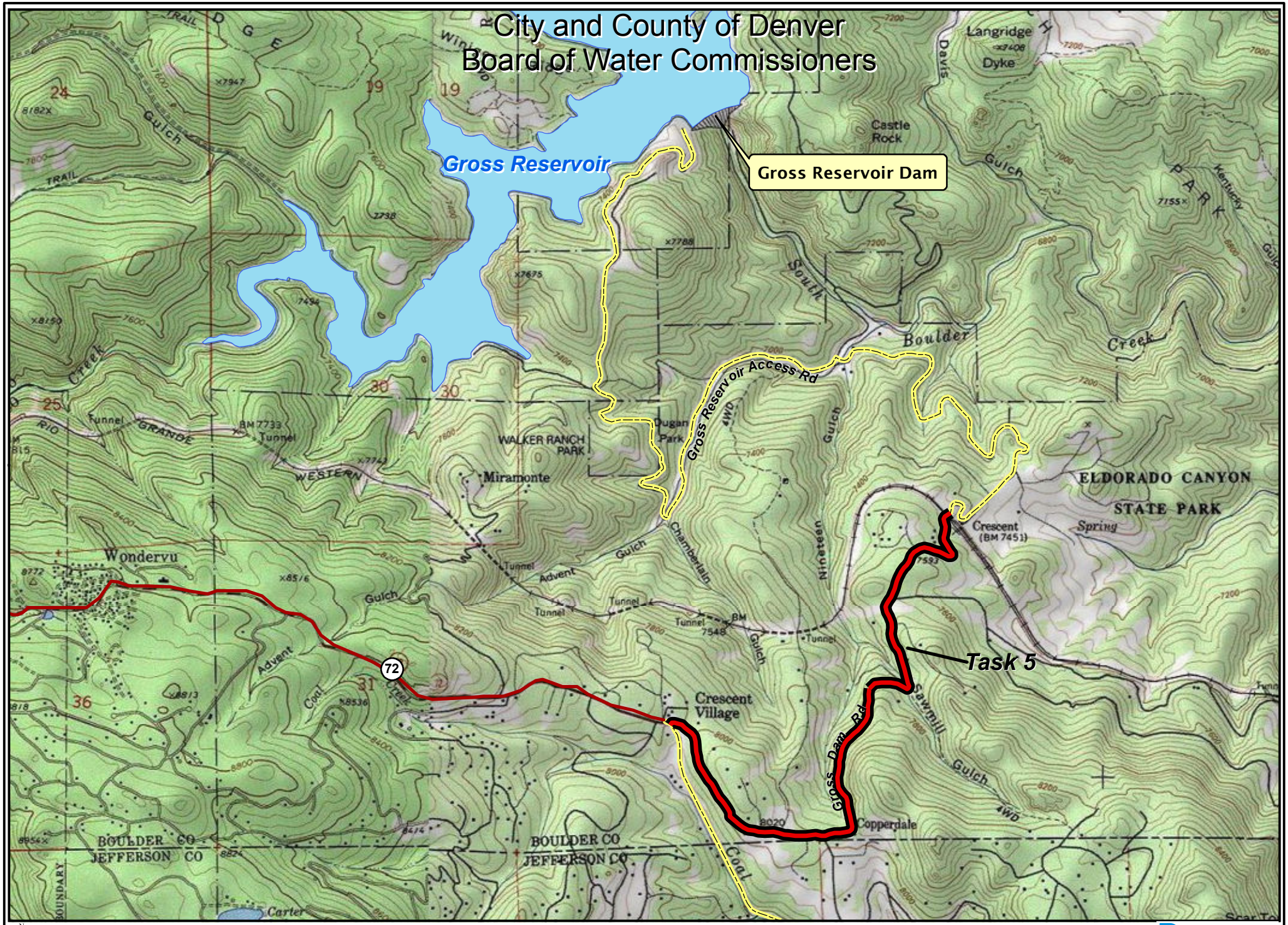
Map Date: 4/7/2015
Author: ARG - MLF
Source(s):



Appendix D

DENVER WATER

Map Date: 4/7/2015
Author: ARG - MLF
Source(s):


City and County of Denver
Board of Water Commissioners
Gross Reservoir
Gross Reservoir Dam
Gross Reservoir Access Rd
Task 5
Wondervu
Miramonte
WALKER RANCH PARK
Crescent Village
Copperdale
Crescent (BM 7451)
ELDORADO CANYON STATE PARK
Castle Rock
Langridge
Dyke
Dugan Park
Spring
Carter
BOULDER CO
JEFFERSON CO
Gross Dam Rd
Sawmill Gulch
Chamberlain Gulch
Advent Gulch
South Boulder Creek
Coal Creek
Rio Grande Western Trail
72
0 0.2 0.4 0.8 Miles
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Appendix E
DENVER WATER
Map Date: 4/7/2015
Author: ARG - MLF
Source(s):