



**City of Greeley**  
**Water and Sewer Board**  
**Minutes of October 19, 2016**  
**Regular Board Meeting**

Chairman Harold Evans called the Water and Sewer Board meeting to order at 2:03 p.m. on Wednesday, October 19, 2016.

**1. Roll Call**

The Clerk called the roll and those present included:

Board Members:

Chairman Harold Evans, Vice Chairman Mick Todd, Bob Ruyle, Fred Otis, Tony Miller, Manual Sisneros, Joe Murphy, City Manager Roy Otto, and Finance Director Victoria Runkle

Water and Sewer Department staff:

Water and Sewer Director Burt Knight, Deputy Director of Water Resources Eric Reckentine, Budget Analyst Erik Dial, Operations Manager Bob Neal, Chief Engineer Adam Prior, Water Rights Coordinator Jennifer Petrzelka and Senior Administrative Specialist Shannon Metcalf

Legal Counsel:

Environmental and Water Resources Attorney Jerrae Swanson, Environmental and Water Resources Attorney Dan Biwer, Environmental and Water Resources Attorney Andy Nicewicz, and Water and Sewer Board Counsel Jim Witwer

Other Guests: Coalition for the Poudre Watershed Executive Director,  
Jennifer Kovecses

**2. Approval of Minutes**

Mr. Todd moved and Mr. Otis seconded to approve the September 21, 2016 Water and Sewer Board meeting minutes as presented. The motion carried 7-0.

**3. Approval of and/or Additions to Agenda**

Mr. Knight stated that Item 10 on the Agenda will be moved to Item 8A.

**4. Report: Coalition for the Poudre River Watershed Update on Department of Local Affairs' Disaster Recovery Resilience Planning Lower Poudre River Flood & Recovery Resilience Master Plan Grant**

Mr. Reckentine introduced Jennifer Kovecses from the Poudre River Watershed Coalition. The Coalition is a registered non-profit business founded with support from

the City of Greeley in the wake of the High Park Fires. Ms. Kovecses said that current projects and goals include identifying unmet flood recovery needs, plan and prioritize additional opportunities for increasing resiliency in the corridor, post-flood analysis of sediment conditions and community outreach and engagement around corridor issues.

Chairman Evans thanked Ms. Kovecses for the work the coalition has done and also complimented Eric Reckentine for his efforts.

Mayor Norton joined the meeting at 2:17 p.m.

**5. Action: Approve Cash-in-Lieu**

Mr. Reckentine stated that staff recommends that CIL be increased to \$33,000/acre foot.

A motion was made by Mr. Miller and seconded by Mr. Ruyle to approve cash-in-lieu at the rate of \$33,000.00 per acre foot. The motion carried 7-0.

**6. Report: Quarterly Water Court Update**

Ms. Petrzelka gave a summary of the current water court cases. She explained that since May, Greeley has stipulated to five cases and filed three Statements of Opposition. This is a 30% decrease since the end of 2015. She also updated the Board on the status of Greeley Case numbers:

- 15CW3099 (99CW234 diligence filed 8/15)
- 15CW3162 (Rockwell Reservoir change of place of storage/exchange)
- 15CW3163 (GIC change case filed 12/15)
- 16CW3047 (99CW231 diligence filed 3/16)
- Leprino (quantification of reusable RF's)

**7. Action: Recommend Approval of the Colorado Department of Public Health and Environment Milton Seaman Water Supply Project, Billing Agreement for the Section 401 of the Clean Water Act, State Water Quality and Certification and Recommend the Same to Council**

A motion was made by Mr. Otis and seconded by Mr. Ruyle to table the Approval of the Colorado Department of Public Health and Environment Milton Seaman Water Supply Project, Billing Agreement for the Section 401 of the Clean Act, State Water Quality and Certification until further information can be provided. The motion carried 7-0.

**8. Action: Recommend Approval of the Allocation of Cost and Reimbursement of Expense Agreement for the Larimer & Weld Irrigation Companies**

Mr. Reckentine explained that Greeley is in the process of securing additional water supplies sufficient to meet its 2060 projected population demands. To this end, Greeley has acquired stock in each of the Companies. Water rights decreed to the Companies were originally decreed for agricultural irrigation purposes. In order that the water represented by such water rights may be useful to Greeley, it is necessary for Greeley to obtain a decree from the Water Court changing the decreed use of such water from agricultural to municipal purposes, as well as seeking changes in points of diversion.

In order to proceed with its proposed Application, Greeley desires access to certain records of the Companies. Greeley acknowledges that this will require the Companies to dedicate legal, engineering, and staff time and, as a result, the Companies will incur certain costs. Greeley desires and intends to reimburse the Companies for such costs pursuant to the terms of this Agreement.

A motion was made by Mr. Ruyle, seconded by Mr. Otis to Recommend Approval of the Allocation of Cost and Reimbursement of Expense Agreement for the Larimer & Weld Irrigation Companies. The motion carried 7-0.

**8a. Legal Report**

Mr. Witwer stated that staff and counsel recommend filing no statements of opposition this month.

Mr. Witwer also gave an update on the Brinks Trust condemnation case.

**9. Executive Session:**

At 2:58 p.m. Chairman Evans made a motion to move into executive session to address the following matters:

1. Purchase, acquisition, lease, transfer, or sale of property under C.R.S. §24-6-402(4)(a) and Greeley Municipal Code 2.04.020(1).
2. Conferences with an attorney for the purposes of receiving legal advice on specific legal questions under C.R.S. §24-6-402(4)(b) and Greeley Municipal Code 2.04.020(2).

3. Determining positions relative to matters that may be subject to negotiations, developing strategy for negotiations, and instructing negotiators, as authorized by C.R.S. §24-6-402(4)(e) and Greeley Municipal Code 2.04.020(5).

Chairman Evans identified the following topics for discussion:

1. Matters related to the condemnation of the James S. Brinks Trust Property—Case No. 14CV30972.
2. Matters related to Future Water Account II acquisition strategy.

Mr. Miller seconded the motion. The motion carried 7-0.

Present during the executive session were:

Chairman Harold Evans, Vice Chairman Mick Todd, Bob Ruyle, Fred Otis, Tony Miller, Manual Sisneros, Joe Murphy, Mayor Tom Norton, City Manager Roy Otto, Director of Finance Victoria Runkle, Director of Water and Sewer Burt Knight, Deputy Director of Water Resources Eric Reckentine, Environmental and Water Resources Attorney Jerrae Swanson, Environmental and Water Resources Attorney Dan Biver, Environmental and Water Resources Attorney Andy Nicewicz and Water and Sewer Board Counsel Jim Witwer

A portion of this executive session was unrecorded because the discussion constituted attorney-client privileged communication.

The Executive Session ended at 3:49 p.m.

#### **10. Director's Report:**

Mr. Reckentine noted the following:

- Appointment of Northern Colorado Water Conservancy District Board of Directors
- 5 Shares Mountain and Plains Irrigation Company closing soon

Mr. Knight explained the following:

- Distributed Department Organizational Chart to Board
- State Land Board Milton Seaman Reservoir Caretaker Cabin Lease Agreement

There being no further business, Chairman Evans adjourned the meeting at 4:02 p.m.

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Harold Evans, Chairman

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Shannon Metcalf, Administrative Specialist



**CONTRACT TO BUY AND SELL WATER RIGHTS**  
**(Western Equipment & Truck, Inc.)**

Date: 11/3/16

1. **AGREEMENT.** Buyer agrees to buy and Seller agrees to sell the Property, defined below, on the terms and conditions set forth in this Contract.

2. **DEFINED TERMS.**

a. **Buyer.** The City of Greeley, Colorado, a Municipal Corporation, acting by and through its Water and Sewer Board.

b. **Seller.** Western Equipment & Truck, Inc., a Colorado Corporation.

c. **Water Rights.** The Water Rights are described as follows:

all water, water rights, ditches, ditch rights, water wells, water well rights, reservoirs and reservoir rights appurtenant to or used in connection with any of the real property described on Exhibit A attached hereto and made a part hereof, including particularly, but not by way of limitation, all of Seller's interest in the water and water rights, ditches and ditch rights, and reservoirs and reservoir rights represented by eight (8) shares of stock in The New Cache la Poudre Irrigating Company (represented by Share Certificate No. 4968), eight (8) shares of stock in The Cache la Poudre Reservoir Company (represented by Share Certificate No. 4174), and one (1) share of stock in The Windsor Reservoir and Canal Company (represented by Share Certificate No. 677); associated with the real property described on Exhibit A attached hereto. The Water Rights shall also include any and all lateral ditches, easements, rights of way and entitlements appurtenant to or used in connection with the Water Rights.

d. **Land.** The Seller shall retain the real property, including all minerals of whatsoever kind or character in, under, and upon or that might be produced therefrom, more particularly described on Exhibit A ("Land"). The parties agree that (i) within 10 days following the Title Objection Deadline, defined below, if the title documents reflect any discrepancy in the legal description set forth on Exhibit A and the legal description of the real property owned by Seller as disclosed by the Title Documents described in Section 4 hereof, and/or (ii) if Buyer, at its expense, obtains a survey of the Land, the parties will modify Exhibit A and amend this Contract to reflect the legal description of the Land owned by Seller, and use the amended legal description at the Closing. The Land shall include sufficient acreage historically irrigated by the Water Rights to enable Buyer to obtain judicial approval of a change of use of the Water Rights when the Land is subject to Restrictive Covenants (No Irrigation), described on Exhibit B attached hereto and to Restrictive Covenants (Revegetation), described on Exhibit C attached hereto.

**e. Property.** The Property consists of the Water Rights, together with the Restrictive Covenants (No Irrigation) and the Restrictive Covenants (Revegetation) on the Land, described on Exhibits B and C, respectively, attached hereto and incorporated by reference herein.

**f. Company.** The Company shall individually and/or collectively refer to The New Cache la Poudre Irrigating Company, The Cache la Poudre Reservoir Company, and The Windsor Reservoir and Canal Company.

**g. Dates and Deadlines.** The abbreviation “MEC” (mutual execution of contract) means the latest date upon which both parties have signed this Contract. The date of execution of the supplemental signature page herein shall not be used in calculating MEC.

Item No.	Reference	Event	Date or Deadline
1	§ 4a	Title Deadline	10 days after MEC
2	§ 5a	Title Objection Deadline	January 20, 2017
3	§ 5b	Off-Record Matters Deadline	15 days after MEC
4	§ 5b	Off-Record Matters Objection Deadline	January 20, 2017
5	§ 6c	Inspection Objection Deadline	January 20, 2017
6	§ 6d	Resolution Deadline	January 27, 2017
7	§ 8	Closing Date	February 3, 2017
8	§ 13	Possession Date	Closing Date
9	§ 13	Possession Time	Completion of Closing
10	§ 26	Acceptance Deadline Date	
11	§ 26	Acceptance Deadline Time	

**h. Attachments.** The following exhibits, attachments and addenda are a part of this Contract: Exhibit A, Legal Description of Land; Exhibit B, Restrictive Covenants (No Irrigation); Exhibit C, Restrictive Covenants (Revegetation); and Exhibit D, Special Warranty Deed.

**3. PURCHASE PRICE AND TERMS.** The total Purchase Price for the Property shall be \$900,000.00, payable by Buyer as follows:

**a.** A portion of the Purchase Price, which shall be considered earnest money, shall be paid by Buyer prior to Closing (“Earnest Money”). The Earnest Money, in the amount of \$25,000.00, shall be due and payable to and held by Unified Title Company, located at 1275 58th Avenue, Unit C, Greeley, CO 80634 (“Title Company”), in its trust account, five (5) days after the Contract is approved in accordance with Paragraph 25 and the supplemental signature page herein has been fully executed. The Earnest Money deposit shall be credited against the Purchase Price if the Closing occurs. The Earnest Money shall be refundable to Buyer at any time prior to the expiration of the Title Objection, Off-Record Matters Objection, and Inspection Objection Deadlines if Buyer is not satisfied with the Property and shall be subject to return to Buyer upon termination of this Contract by Buyer pursuant to Sections 5, 6, and 18 below.

Except as set forth in the preceding sentence, the Earnest Money shall be non-refundable to Buyer.

b. At Closing, Buyer shall pay to Seller the sum of \$900,000.00, less the Earnest Money, by cashier's check, wire transfer or other immediately available funds; plus any other amounts required to be paid by Buyer at Closing; plus or minus any prorations or credits.

c. All financial obligations of Buyer arising under this Contract that are payable after the current fiscal year are contingent upon funds for that purpose being annually appropriated, budgeted and otherwise made available by the City Council of the City of Greeley.

#### 4. EVIDENCE OF TITLE.

a. **Evidence of Title.** On or before the Title Deadline, Seller shall cause to be furnished to Buyer, at Buyer's expense, a current commitment for owner's title insurance policy covering the Land, in an amount equal to the Purchase Price, setting forth ownership, lienholders and any restrictions. The purpose of the title commitment is to enable Buyer to conduct the title review described in Section 5 hereof, and said commitment shall be updated as necessary up to the Closing; however, neither Seller nor Buyer shall have any obligation under this Contract to purchase the title insurance policy after Closing. Buyer may elect to acquire this insurance (limited to the covenants attached hereto as Exhibits B and C) at its expense.

b. **Copies of Exceptions.** On or before the Title Deadline, Seller, at Seller's expense, shall furnish to Buyer (i) a copy of any plats, declarations, covenants, conditions and restrictions burdening the Property, and (ii) copies of any other documents (or, if illegible, summaries of such documents) listed in the schedule of exceptions ("Exceptions"). The title insurance commitment and any copies or summaries of such documents furnished pursuant to this Section constitute the title documents ("Title Documents").

#### 5. TITLE.

a. **Title Review.** Buyer shall have the right to inspect the Title Documents. Written notice by Buyer of unmerchantability of title or of any other unsatisfactory title condition shown by the Title Documents which, in Buyer's opinion, may prevent Buyer from receiving the Water Rights and the covenants attached hereto as Exhibits B and C, shall be signed by or on behalf of Buyer and given to Seller on or before the Title Objection Deadline, or within five (5) calendar days after receipt by Buyer of any Title Document(s) or endorsement(s) adding new Exception(s) to the title commitment together with a copy of the Title Document adding new Exception(s) to title. If Seller does not receive Buyer's notice by the date(s) specified above, Buyer accepts the condition of title as disclosed by the Title Documents as satisfactory.

b. **Matters not Shown by the Public Records.** Seller shall deliver to Buyer, on or before the Off-Record Matters Deadline, true copies of all lease(s), survey(s) and other agreement(s) in Seller's possession pertaining to the Property and shall disclose to Buyer all easements, liens or other title matters not shown by the public records of which Seller has actual

knowledge. Buyer shall have the right to inspect the Property to determine if any third party(ies) has any right in the Property not shown by the public records (such as an unrecorded easement, unrecorded lease, or boundary line discrepancy). Written notice of any unsatisfactory condition(s) disclosed by Seller or revealed by such inspection shall be signed by or on behalf of Buyer and given to Seller on or before the Off-Record Matters Objection Deadline. If Seller does not receive Buyer's notice by said date, Buyer accepts title subject to such rights, if any, of third parties of which Buyer has actual knowledge.

**c. Right to Cure.** If Seller receives notice of unmerchantability of title or any other unsatisfactory title condition(s) or commitment terms as provided in Sections 5a or 5b above, Seller shall use reasonable effort to correct said items and bear any nominal expense to correct the same prior to the Resolution Deadline. If such unsatisfactory title condition(s) are not corrected on or before the Resolution Deadline, this Contract shall then terminate; provided, however, Buyer may, by written notice received by Seller, on or before 7 days following the Resolution Deadline, waive objection to such items.

## **6. PROPERTY DISCLOSURE AND INSPECTION.**

**a. Additional Documents to be Provided by Seller.** Supplementing the provisions of Section 5, Seller shall deliver the following items to Buyer on or before the Off-Record Matters Deadline, to the extent they exist and are in Seller's possession or control:

(i) Copies of any documents that relate to the title, use, quantity, quality and condition of the Water Rights, including, but not limited to, any deeds or other conveyances, assignments, permits, adjudications or court orders, any testing reports, and any records maintained by the Company concerning the Water Rights, including without limitation share certificate records, delivery records, and assessment records (or, in the alternative, Seller shall obtain for Buyer the right to inspect and copy such Company records); and

(ii) Copies of all contracts or other agreements relating to the operation, maintenance or leasing of the Property or any portion thereof.

### **b. Right to Inspect.**

(i) Buyer, at its sole cost and expense, shall have the right to enter upon the Property from time to time to perform such tests or inspections as Buyer deems desirable to allow Buyer to evaluate the Water Rights and the condition and use of the Property. Such inspections or testing shall be conducted in a manner to minimize or avoid any disruption to Seller's business or operation of the Property.

(ii) Buyer and its employees, contractors and attorneys shall have the opportunity from time to time to interview the managers, members, employees and agents of Seller to assist Buyer in determining the historical use of the Water Rights. Seller agrees to cooperate with Buyer to facilitate such interviews and to sign affidavits of use of the Water Rights. Buyer and its employees, contractors and attorneys may also meet with the officers, directors, attorneys, and shareholders of the Company to determine under what conditions the Company will approve a change in the place of delivery or use, or the point of diversion, of the

Water Rights and other Company shares obtained or to be obtained by Buyer, pursuant to the bylaws of the Company or other applicable law.

**c. Inspection Objection Deadline.** If Buyer is not satisfied with the results of its inspection of the Property and its review of the information described in this Section 6 for any reason whatsoever, including but not limited to Buyer's determination, in its subjective discretion, that the Land is not capable of supporting needed dry-up requirements, Buyer may, on or before the Inspection Objection Deadline, (i) notify Seller in writing that this Contract is terminated or (ii) provide Seller with a written description of any unsatisfactory condition which Buyer requires Seller to correct ("Notice to Correct"). If written notice is not received by Seller on or before Inspection Objection Deadline, the condition of the Property shall be deemed to be satisfactory to Buyer. If Seller fails to provide Buyer with copies of any of the documents or information set forth above in this Section, the Inspection Objection Deadline shall be extended by the number of days equal to the delay in delivery of such documents beyond the original deadline.

**d. Resolution Deadline.** If a Notice to Correct is received by Seller and if Buyer and Seller have not agreed in writing to a settlement thereof on or before Resolution Deadline, this Contract shall terminate 1 calendar day following the Resolution Deadline, unless before such termination Seller receives Buyer's written withdrawal of the Notice to Correct.

**e. Damage; Liens.** Buyer is responsible for payment for all inspections, surveys, and engineering reports or for any other work performed at Buyer's request and shall pay for any damage which occurs to the Property as a result of such activities. Buyer shall not permit claims or liens of any kind against the Property for inspections, surveys, engineering reports and for any other work performed on the Property at Buyer's request. The provisions of this Subsection shall survive the termination of this Contract.

**7. EXTENSION OF DEADLINES BY BUYER.** If Buyer, after exercising reasonable good faith efforts, is unable to complete the title review and/or inspections described in Sections 5 and 6 of this Contract by the Title Objection Deadline and/or the Off-Record Matters Objection Deadline and/or the Inspection Objection Deadline, respectively, Buyer shall have the right, prior to expiration of such deadline(s), to extend such deadline(s) for an additional period not to exceed 15 days, by sending Seller notice of such fact which describes such additional period. Upon the sending of such notice, (i) the Resolution Deadline and Closing Date shall be automatically extended by a similar period or by such other period as the parties may determine, and (ii) Seller shall be entitled to payment of the Earnest Money, regardless of whether Buyer closes upon the purchase described herein.

**8. CLOSING.** Delivery of deed(s) from Seller to Buyer shall be at Closing ("Closing" or "Closing Date"). Closing shall be on the date specified as the Closing Date or by mutual agreement at an earlier date. The hour and place of Closing shall be as designated by mutual agreement, or absent such agreement at 10:00AM at the offices of the Title Company.

**9. TRANSFER OF TITLE.** Subject to tender or payment at Closing as required herein and compliance by Buyer with the other terms and provisions hereof, Seller shall execute

and deliver a good and sufficient Special Warranty Deed to Buyer, at Closing, conveying the Water Rights free and clear of all encumbrances or restrictions, and an assignment of the portion of the Water Rights represented by shares in the Company in a form and manner acceptable to the Company. Seller shall also execute the Restrictive Covenants with respect to the Land. If there are lienholders or leaseholders in the Land, such parties shall acknowledge and approve the Restrictive Covenants (No Irrigation) as shown on Exhibit B and the Restrictive Covenants (Revegetation) as shown on Exhibit C.

**10. PAYMENT OF ENCUMBRANCES.** Any encumbrance against the Water Rights or against the Land, where the lienholder does not execute the restrictive covenants pursuant to Sections 14f and 14g hereof, shall be paid at or before Closing from the proceeds of this transaction or from any other source.

**11. CLOSING COSTS; DOCUMENTS AND SERVICES.** Buyer and Seller shall pay, in Good Funds, their respective Closing costs and all other items required to be paid at Closing, except as otherwise provided herein. Buyer and Seller shall sign and complete all customary or reasonably required documents at or before Closing. Fees for real estate closing services shall be paid at Closing by One-Half by Buyer and One-Half by Seller. Buyer shall pay the transfer fees for the portion of the Water Rights represented by shares in the Company.

**12. PRORATIONS.** The following shall be prorated to Closing Date, except as otherwise provided: None.

**13. POSSESSION.** Possession of the Water Rights shall be delivered to Buyer on Possession Date and Possession Time.

If Seller, after Closing, fails to deliver possession as specified, Seller shall be subject to eviction and shall be additionally liable to Buyer for payment of \$500 per day from the Possession Date until possession is delivered.

**14. OBLIGATIONS AT CLOSING.** The following shall occur at Closing, each being a condition precedent to the others and all being considered as occurring simultaneously:

**a.** Seller shall execute, have acknowledged, and deliver to Buyer a Special Warranty Deed, in the form of Exhibit D, attached hereto and incorporated by this reference herein, and all other documents necessary to transfer to Buyer the Water Rights, including an assignment of the portion of the Water Rights represented by shares in the Company in a form and manner acceptable to the Company.

**b.** Seller shall execute and deliver to Buyer an affidavit stating that Seller is not a foreign person, foreign corporation, foreign partnership, foreign trust, or foreign estate (as those terms are defined in the Internal Revenue Code and Income Tax Regulations).

**c.** Seller shall execute a Certificate as to Taxpayer Identification Number as required by law.

d. Seller shall have delivered to Buyer possession of the Water Rights.

e. Buyer shall execute a Real Property Transfer Declaration as required by Colorado law.

f. Seller and the holders of any deed of trust or other lien in the Land, which lien will not be released pursuant to Section 10 hereof, shall execute the Restrictive Covenants (No Irrigation) for the Land satisfactory to Buyer and substantially as shown on Exhibit B, attached hereto and incorporated by this reference herein, that will prohibit the irrigation or other use of water on the Land except as authorized by a valid decree of the District Court for Water Division No. 1, State of Colorado, or a successor court and in accordance with any future water rights applications filed by Buyer.

g. Seller and the holders of any deed of trust or other lien in the Land, which lien will not be released pursuant to Section 10 hereof, shall execute Restrictive Covenants (Revegetation) for the Land satisfactory to Buyer and substantially as shown on Exhibit C, attached hereto and incorporated by this reference herein, that will require revegetation of the Land upon written notice from Buyer to satisfy any applicable revegetation and noxious weed management provisions as may be required in a final decree obtained by Buyer from the District Court for Water Division No. 1, State of Colorado, or a successor court, changing certain water rights from agricultural irrigation purposes to other beneficial purposes.

h. Buyer and Seller shall enter into an agreement for lease of the Water Rights for irrigation of the Land as described in Section 15 below.

i. Seller and Buyer shall each execute and deliver Settlement Statements, showing adjustments and the payment of costs of the Closing.

j. Each party shall deliver to the other such other documents, certificates, and the like as may be required herein or as may be necessary or helpful to carry out its obligations under this Contract.

**15. LEASE OF IRRIGATION WATER.** Seller shall have the right to lease from Buyer the Water Rights for the continued irrigation of the Land only for a period of up to 15 years after Closing, subject to the City of Greeley, Colorado Charter Section 17-4(c). The annual lease amount to be paid by Seller to Buyer for any such lease of the Water Rights shall be equal to any ditch and reservoir company assessments and/or other charges and expenses attributable to the Water Rights paid each year of the lease by Buyer. Both parties agree to negotiate in good faith to enter into a water lease agreement for the use of irrigation water on the Land in satisfaction of this provision at or before Closing.

**16. NOT ASSIGNABLE.** This Contract shall not be assignable without prior written consent, which shall not be unreasonably withheld. Except as so restricted, this Contract shall inure to the benefit of and be binding upon the heirs, personal representatives, successors and assigns of the parties.

**17. RECOMMENDATION OF LEGAL AND TAX COUNSEL.** BY SIGNING THIS DOCUMENT, BUYER AND SELLER ACKNOWLEDGE THAT THIS DOCUMENT HAS IMPORTANT LEGAL CONSEQUENCES AND IT IS RECOMMENDED THAT THEY CONSULT WITH LEGAL AND TAX OR OTHER COUNSEL BEFORE SIGNING THIS CONTRACT.

**18. TIME OF ESSENCE AND REMEDIES.** Time is of the essence hereof. In the event any time period expires on a Saturday, Sunday, or legal holiday of the State of Colorado, the date of performance shall be the next day which is not a Saturday, Sunday, or legal holiday. If any note or check received as Earnest Money hereunder or any other payment due hereunder is not paid, honored or tendered when due, or if any other obligation hereunder is not performed or waived as herein provided, there shall be the following remedies:

**a. If Buyer is in Default:** All payments and things of value received hereunder shall be forfeited by Buyer and retained on behalf of Seller and both parties shall thereafter be released from all obligations hereunder. It is agreed that such payments and things of value are LIQUIDATED DAMAGES and (except as provided in Subsection c) are SELLER'S SOLE AND ONLY REMEDY for Buyer's failure to perform the obligations of this Contract. Seller expressly waives the remedies of specific performance and additional damages.

**b. If Seller is in Default:** Buyer may elect to treat this Contract as canceled, in which case all payments and things of value received hereunder shall be returned and Buyer may recover such damages as may be proper, or Buyer may elect to treat this Contract as being in full force and effect and Buyer shall have the right to specific performance or damages, or both.

**c. Costs and Expenses.** In the event of any arbitration or litigation relating to this Contract, the arbitrator or court shall award to the prevailing party all reasonable costs and expenses, including attorney fees.

**19. TERMINATION.** In the event this Contract is terminated, all payments and things of value received hereunder shall be returned and the parties shall be relieved of all obligations hereunder, subject to Sections 6e and 7.

**20. ENTIRE AGREEMENT; SUBSEQUENT MODIFICATION; SURVIVAL.** This Contract constitutes the entire Contract between the parties relating to the subject hereof, and any prior agreements pertaining thereto, whether oral or written, have been merged and integrated into this Contract. No subsequent modification of any of the terms of this Contract shall be valid, binding upon the parties, or enforceable unless made in writing and signed by the parties. Any obligation in this Contract which, by its terms, is intended to be performed after termination or Closing shall survive the same.

**21. SIGNATURES.** Signatures may be evidenced by copies transmitted via facsimile or electronic mail. Documents with original signatures shall be provided to the other party at Closing, or earlier upon request of any party.

**22. NOTICE.** Any notice or other communication given by any of the parties hereto to another relating to this Contract shall be in writing and shall be deemed to have been duly given (i) on the date and at the time of delivery if delivered personally to the party to whom notice is given at the address specified below; or (ii) on the date of delivery or attempted delivery shown on the return receipt if mailed to the party to whom notice is to be given by first class mail, sent by registered or certified mail, return receipt requested, postage prepaid and properly addressed as specified below; or (iii) on the date and at the time shown on the facsimile if telecopied to the number specified below and receipt of such telecopy is acknowledged; or (iv) on the date and at the time shown on the electronic mail (email) if emailed to the email address specified below and receipt of such email is acknowledged; or (v) on the date shown on the delivery acknowledgment provided by the courier if sent by a nationally-recognized overnight courier service (such as Federal Express) that provides evidence of delivery:

If to Seller to: Western Equipment & Truck, Inc.  
Attention: Craig Sparrow  
2055 1st Ave.  
Greeley, CO 80631  
Telephone: 970-353-6682  
Facsimile: 970-352-7315  
Email: sales@wetrucks.com

If to Buyer, to: City of Greeley Water and Sewer Department  
Attention: Eric Reckentine, Deputy Director of Water Resources  
1100 Tenth Street, 3rd Floor  
Greeley, CO 80631  
Telephone: 970-350-9815  
Facsimile: 970-350-9805  
Email: [Eric.Reckentine@greeleygov.com](mailto:Eric.Reckentine@greeleygov.com)

With a copy to: Greeley City Attorney's Office  
Attention: Andy Nicewicz, Environmental and Water Resources Attorney  
1100 Tenth Street, Suite 401  
Greeley, CO 80631  
Telephone: 970-350-9757  
Facsimile: 970-350-9763  
Email: [Andy.Nicewicz@greeleygov.com](mailto:Andy.Nicewicz@greeleygov.com)

**23. BROKERAGE COMMISSIONS.** No brokerage commissions shall be payable by Buyer for the closing of this purchase, and Buyer specifically disclaims any obligation to pay any such commission. Seller agrees to indemnify and hold Buyer harmless from and against any and all costs, expenses, claims, losses, or damages, including reasonable attorneys' fees, resulting from or arising out of any claim for brokerage commissions incurred or made through Seller.

**24. SELLER 1031 EXCHANGE.** At the request of Seller, Buyer shall cooperate with Seller in the achievement of a tax-deferred real estate exchange pursuant to Section 1031 of the Internal Revenue Code and the Treasury Regulations promulgated thereunder. Buyer shall not be required to incur any additional liability or expense in connection with Seller's tax-deferred exchange transaction nor shall Buyer be required to accept title to any real property other than the Property described hereinabove.

**25. WATER AND SEWER BOARD APPROVAL REQUIRED.** THE OBLIGATIONS OF BUYER ARE EXPRESSLY CONTINGENT UPON THE APPROVAL OF THIS CONTRACT BY THE CITY OF GREELEY WATER AND SEWER BOARD.

**26. NOTICE OF ACCEPTANCE; COUNTERPARTS.** This proposal shall expire unless accepted in writing, by Buyer and Seller, as evidenced by their signatures below, and the offering party receives notice of acceptance pursuant to Section 22 on or before the Acceptance Deadline Date and Acceptance Deadline Time. If accepted, this document shall become a Contract between Seller and Buyer. A copy of this document may be executed by each party, separately, and when each party has executed a copy thereof, such copies taken together shall be deemed to be a full and complete Contract between the parties.

**SELLER:**  
  
**WESTERN EQUIPMENT & TRUCK, INC., a Colorado Corporation.**

**BUYER:**  
  
**CITY OF GREELEY, COLORADO, a Municipal Corporation, acting by and through its Water and Sewer Board**

By: \_\_\_\_\_

By:  \_\_\_\_\_  
**Director of Water and Sewer**

Date: \_\_\_\_\_

Date: 11/3/16

**THE FOLLOWING SUPPLEMENTAL SIGNATURE PAGE SHALL BE EXECUTED BY BUYER SUBSEQUENT TO APPROVAL BY THE CITY OF GREELEY WATER AND SEWER BOARD PURSUANT TO SECTION 25 HEREINABOVE.**

24. **SELLER 1031 EXCHANGE.** At the request of Seller, Buyer shall cooperate with Seller in the achievement of a tax-deferred real estate exchange pursuant to Section 1031 of the Internal Revenue Code and the Treasury Regulations promulgated thereunder. Buyer shall not be required to incur any additional liability or expense in connection with Seller's tax-deferred exchange transaction nor shall Buyer be required to accept title to any real property other than the Property described hereinabove.

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**SELLER:**

**WESTERN EQUIPMENT & TRUCK,  
INC., a Colorado Corporation.**

By: \_\_\_\_\_

Date: \_\_\_\_\_

**BUYER:**

**CITY OF GREELEY, COLORADO, a  
Municipal Corporation, acting by and  
through its Water and Sewer Board**

By: \_\_\_\_\_

**Director of Water and Sewer**

Date: \_\_\_\_\_

**THE FOLLOWING SUPPLEMENTAL SIGNATURE PAGE SHALL BE EXECUTED BY BUYER SUBSEQUENT TO APPROVAL BY THE CITY OF GREELEY WATER AND SEWER BOARD PURSUANT TO SECTION 25 HEREINABOVE.**

By: \_\_\_\_\_  
Board Chairman

By: \_\_\_\_\_  
Mayor

**APPROVED AS TO SUBSTANCE:**

**ATTEST:**

By: \_\_\_\_\_  
City Manager

By: \_\_\_\_\_  
City Clerk

**APPROVED AS TO LEGAL FORM:**

**AS TO AVAILABILITY OF FUNDS:**

By: \_\_\_\_\_  
City Attorney

By: \_\_\_\_\_  
Director of Finance

**EXHIBIT A TO  
CONTRACT TO BUY AND SELL WATER RIGHTS**

The Land shall include the real property legally described as follows:

TRACT A, CLARK MINOR SUBDIVISION 1ST AMENDMENT RECORDED SEPTEMBER 27, 2011 AT RECEPTION NO. 3794918, OF PART OF THE EAST 1/2 OF THE SOUTHEAST ONE-QUARTER OF SECTION 21, TOWNSHIP 6 NORTH, RANGE 66 WEST, 6TH P.M., CITY OF GREELEY, COUNTY OF WELD, STATE OF COLORADO.

**EXHIBIT B TO  
CONTRACT TO BUY AND SELL WATER RIGHTS**

(See attached Restrictive Covenants (No Irrigation))

**EXHIBIT C TO  
CONTRACT TO BUY AND SELL WATER RIGHTS**

(See attached Restrictive Covenants (Revegetation))

**EXHIBIT D TO  
CONTRACT TO BUY AND SELL WATER RIGHTS**

(See attached Special Warranty Deed)

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE   X        NO ENCLOSURE     

ITEM NUMBER:            5

TITLE:                    REPORT: 3<sup>RD</sup> QUARTER FINANCIAL REPORT

RECOMMENDATION:      INFORMATION ONLY

ADDITIONAL INFORMATION:

Please see the attached memorandum and supporting materials.



# Water & Sewer Department MEMORANDUM

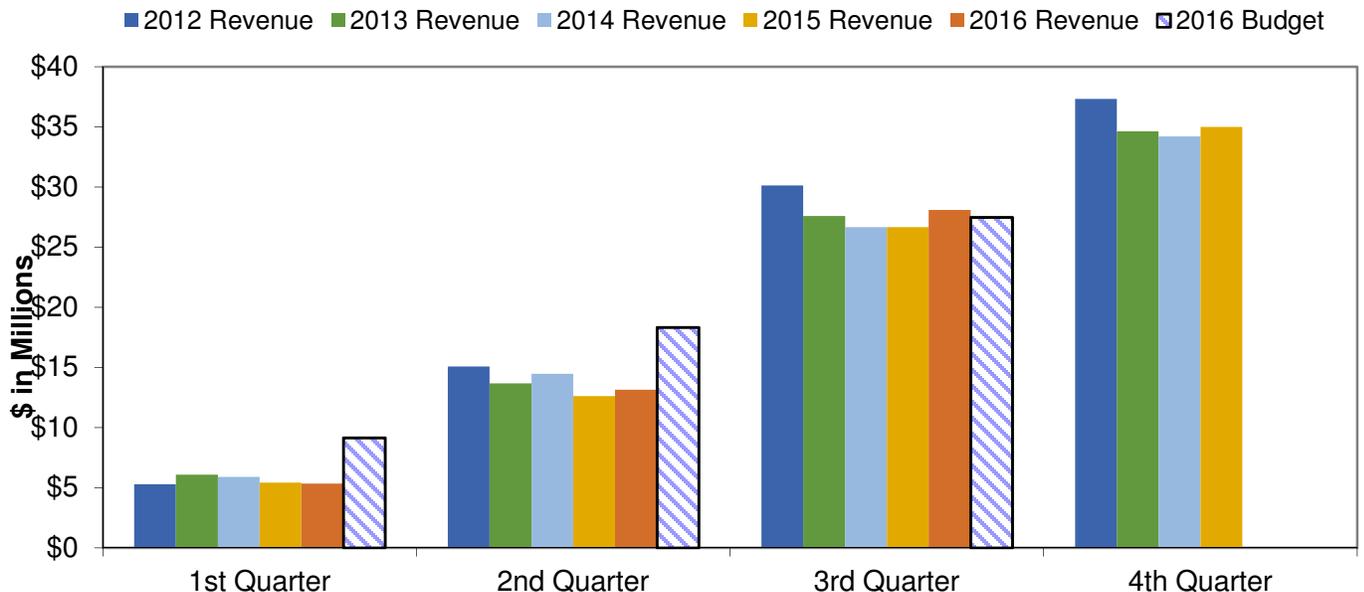
TO: Water & Sewer Board  
FROM: Erik Dial, Budget and Rates Analyst  
DATE: November 16, 2016  
RE: Financial Report 3<sup>rd</sup> Quarter 2016

## **Overview:**

The financial report for the water and sewer funds for the third quarter of 2016 is enclosed. Water and sewer revenues are near their year to date targets. Expenditures for both water and sewer are within budget.

## **Water Enterprise Revenue**

**Summary:** Revenue through the third quarter 2016 is about as expected and will likely meet the budgeted revenue for the year. The summer watering season was seasonably warm and fairly dry resulting in typical water usage. Refer to Appendix B for detailed information on water revenue.



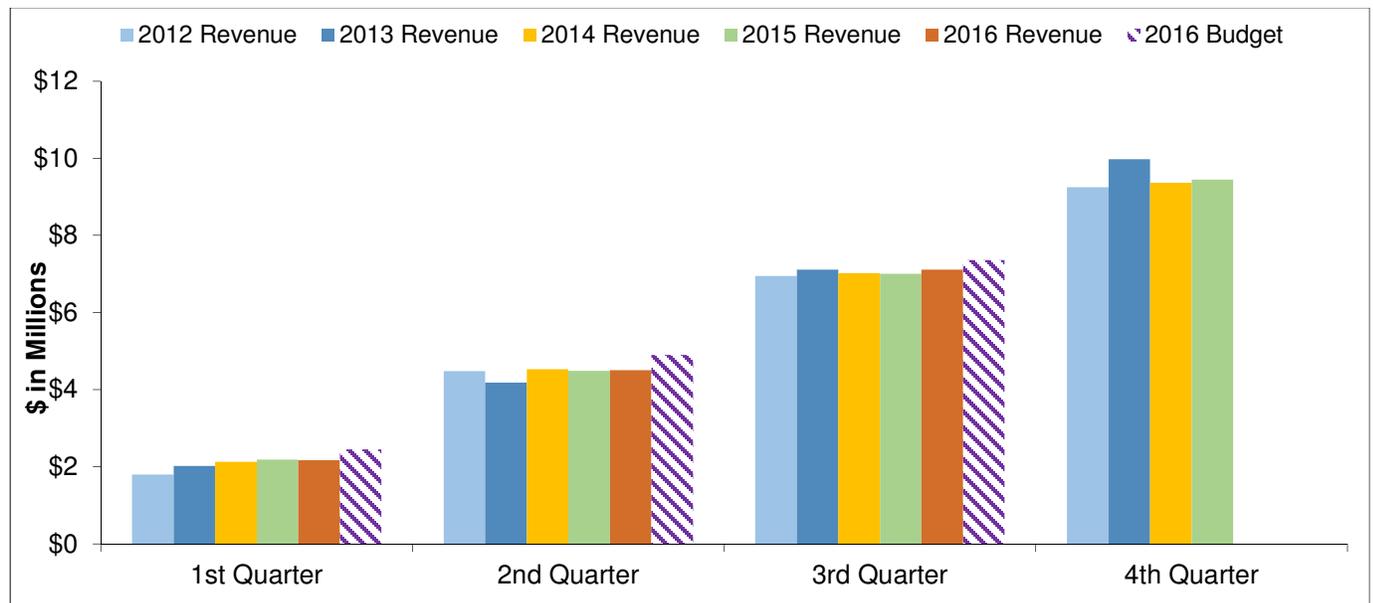
Residential: About 53% of the water revenue was from residential water use through the third quarter of the year. Residential revenue will likely be just shy of the budgeted revenue for the year. Revenue collected equaled 73.7% of the annual budget.

Commercial: Commercial revenue represents about 13% of the overall water revenue and will likely meet the budget for the year. Revenue collected equaled 83.5% of the annual budget.

Large Users: Revenue from the large industrial users, Windsor, Milliken, and Evans represented 25.5% of the water revenue through the third quarter. Third quarter revenues from these customers is higher than 2015.

**Sewer Enterprise Revenue**

Overall third quarter sewer revenue is near budget through the third quarter and will be near the year-end budget target. Refer to Appendix C for detailed information on sewer revenue.



**Plant Investment Fees**

Water plant investment fee (PIF) revenue totaled \$3,577,525 through the third quarter of 2016. This represents 47% of the annual budget of \$7,655,771.

Sewer PIF revenue totaled \$1,723,910 through the third quarter of 2016. This represents 45% of the annual budget of \$3,808,480.

**Water Operations Expenditures**

Water operations expenditures are below budget through the third quarter and will be below budget at year-end. See Appendix D for a summary of operating expenditures.

**Sewer Operations Expenditures**

Overall sewer operations expenditures are below budget through the third quarter and will be below budget at year-end. See Appendix E for a summary of operating expenditures.

**Conclusion:**

Both water and sewer revenue will likely meet their revenue budget targets for the year. Expenditures are below their budgets and will be below budget at the end of the year. PIF revenue for both water and sewer are lower than expected and will miss their year-end revenue budgets.

## 2016 3rd Quarter Water Demands

## Appendix A Water Demand

	2016							2015			
	% of Usage	Consumption (Kgal)	Taps	Usage per tap	Modeled Use per tap Annual (Kgal)	Modeled Consumption Annual (Kgals)	% Consumed vs. Modeled	Consumption (1,000s gal)	Taps	Usage per tap	% Change 2016 v 2015
<b>Consumption:</b>											
Inside Residential	36.13%	2,401,976	22,604	106	137	3,081,342	78%	2,310,572	22,253	104	2.3%
Multi-Family	11.56%	768,631	2,122	362	479	1,010,180	76%	752,914	2,082	362	0.2%
Inside Commercial	12.61%	838,496	1,802	465	628	1,171,598	72%	858,381	1,783	481	-3.3%
Industrial User	11.70%	777,981	3	259,327	274,400	823,200	95%	697,045	3	232,348	11.6%
Industrial User	6.41%	425,894	1	425,894	529,250	529,250	80%	399,697	1	399,697	6.6%
Parks	2.95%	195,951	233	841	1,445	322,842	61%	182,021	231	788	6.7%
<b>Total inside</b>		<b>5,408,929</b>				<b>6,938,412</b>		<b>5,200,630</b>			
Outside Residential	0.58%	38,546	494	78	106	53,563	72%	38,780	494	79	-0.6%
Outside Multi-Family	0.06%	4,189	18	233	288	5,218	80%	4,048	18	225	3.5%
Outside Commercial	0.13%	8,967	117	77	119	14,483	62%	9,627	118	82	-6.1%
Industrial User	2.50%	165,942	1	165,942	230,000	230,000	72%	171,291	1	171,291	-3.1%
Ag-Special Contract	0.38%	25,500	63	405	516	32,337	79%	25,028	63	397	1.9%
Evans	10.37%	689,146	14	49,225	61,732	814,672	85%	680,185	14	48,585	1.3%
Windsor	3.16%	209,737	3	69,912	69,026	206,229	102%	195,014	3	65,005	7.5%
Milliken	1.45%	96,527	1	96,527	80,103	104,000	93%	99,757	1	99,757	-3.2%
<b>Total outside</b>		<b>1,238,554</b>				<b>1,460,502</b>		<b>1,223,730</b>			
<b>Total water demand:</b>		<b>6,647,483</b>				<b>8,398,914</b>	<b>79%</b>	<b>6,424,360</b>			<b>3.5%</b>

2016 3rd Quarter Water Revenue

Appendix B.  
Water Revenue

Revenue:	2016 - 3rd Quarter				2015 - 3rd Quarter		2016 vs. 2015	
	% of Revenue	Revenue	Budget	% Budget Received	% of Revenue	Revenue	\$ Difference	% Increase
Inside Residential	52.6%	14,759,820	20,015,207	73.7%	51.8%	13,795,067	964,753	7.0%
Inside Commercial	12.8%	3,602,115	4,311,887	83.5%	13.8%	3,671,418	(69,303)	-1.9%
Inside Industrial	12.8%	3,600,119	4,291,743	83.9%	11.3%	2,997,585	602,534	20.1%
Evans	6.8%	1,914,224	2,494,222	76.7%	6.9%	1,849,558	64,667	3.5%
Windsor	2.6%	730,720	689,324	106.0%	2.0%	527,970	202,750	38.4%
Industrial User	1.9%	538,106	736,554	73.1%	2.0%	540,520	(2,414)	-0.4%
Outside Residential	1.6%	457,583	656,391	69.7%	1.7%	452,907	4,676	1.0%
Non-Potable	1.6%	455,897	425,000	107.3%	1.4%	382,802	73,095	19.1%
Milliken	1.4%	379,791	500,110	75.9%	1.5%	393,135	(13,344)	-3.4%
Rerent fr. Purchases	1.3%	378,094	175,000	216.1%	1.4%	381,411	(3,317)	-0.9%
Hydrant Water Sales	1.0%	273,749	750,000	36.5%	2.0%	541,628	(267,878)	-49.5%
Labor Reimbursement	0.8%	216,417	717,750	30.2%	1.2%	320,342	(103,925)	-32.4%
Royalties	0.6%	178,817	0		0.0%	0	178,817	
Sales to Departments	0.5%	137,968	205,000	67.3%	0.7%	182,300	(44,332)	-24.3%
Outside Commercial	0.3%	91,666	157,095	58.4%	0.4%	103,152	(11,486)	-11.1%
Ag-Special Contract	0.3%	73,182	142,630	51.3%	0.4%	94,076	(20,894)	-22.2%
Augmentation Sales	0.2%	53,897	175,000	30.8%	0.4%	104,907	(51,010)	-48.6%
Rents from Land	0.1%	40,455	65,000	62.2%	0.2%	49,237	(8,782)	-17.8%
Engineering Inspections	0.1%	34,332	40,000	85.8%	0.2%	63,572	(29,239)	-46.0%
Sales to Outside Agencies	0.1%	30,940	5,000	618.8%	0.3%	91,000	(60,060)	-66.0%
Other	0.1%	29,753	0		0.1%	14,256	15,496	108.7%
Turn On Charges	0.1%	26,910	50,000	53.8%	0.1%	28,375	(1,465)	-5.2%
Mountain Plains Rental	0.1%	19,478	19,900	97.9%	0.1%	19,478	0	0.0%
Sales of Assets	0.1%	19,080	0		0.0%	5,883	13,197	224.3%
Mtn View Meadows/Sharkstooth	0.0%	6,248	12,632	49.5%	0.0%	4,108	2,140	52.1%
Insurance Recoveries	0.0%	4,458	0		0.0%	5,232	(774)	-14.8%
Damages Recovered	0.0%	3,975	0		0.0%	2,986	989	33.1%
Labor & Materials	0.0%	1,534	0		0.0%	662	873	131.9%
<b>Total Revenues:</b>		<b>28,059,329</b>	<b>36,635,445</b>	<b>77%</b>		<b>26,623,565</b>	<b>1,435,764</b>	<b>5.4%</b>

## 2016 3rd Quarter Sewer Revenue

## Appendix C Sewer Revenue

Revenue:	2016 - 3rd Quarter				2015 3rd Quarter		2016 vs. 2015	
	% of Revenue	Revenue	Budget	% Budget Received	% of Revenue	Revenue	\$ Difference	% Actual Increase
Residential & Flat Rate	68.4%	4,865,365	6,863,572	70.9%	70.0%	4,899,667	(34,301)	-0.7%
Commercial I	8.7%	619,350	904,971	68.4%	8.9%	622,246	(2,896)	-0.5%
Commercial III (Restaurants)	7.5%	532,725	654,197	81.4%	7.2%	501,294	31,431	6.3%
Commercial II (Bars)	5.3%	379,353	533,069	71.2%	5.4%	380,399	(1,046)	-0.3%
SIC 2026	2.7%	191,819	312,605	61.4%	2.6%	182,215	9,604	5.3%
SIC 2013	2.5%	176,590	186,349	94.8%	1.9%	131,169	45,421	34.6%
Commercial IV (Markets)	1.4%	97,455	108,817	89.6%	1.2%	86,703	10,752	12.4%
Royalties	1.3%	93,090	71,000	131.1%	1.1%	73,570	19,520	26.5%
Labor Reimbursement	0.5%	35,133	41,500	84.7%	0.3%	21,035	14,098	67.0%
Rebates	0.4%	27,990	0		0.0%		27,990	
Engineering Inspections	0.4%	26,435	32,000	82.6%	0.7%	46,969	(20,534)	-43.7%
SIC 7218	0.3%	22,322	40,907	54.6%	0.5%	32,293	(9,971)	-30.9%
SIC 2034	0.2%	13,001	19,761	65.8%	0.2%	13,199	(198)	-1.5%
Private Liquid Haulers	0.1%	8,399	30,000	28.0%	0.1%	8,112	286	3.5%
Sale of Assets	0.1%	6,305	0		0.0%	413	5,892	1426.3%
Commercial V (Mfg)	0.1%	4,651	5,107	91.1%	0.0%	3,425	1,226	35.8%
Rents from Land	0.1%	3,900	4,000	97.5%	0.0%		3,900	
Damages Recovered	0.1%	3,586	0		0.0%		3,586	
Expense Reimbursement	0.0%	1,638	0		0.0%	471	1,167	247.8%
Other Sewer Charges	0.0%	1,099	1,000	109.9%	0.0%		1,099	
<b>Total Revenues</b>		<b>7,110,207</b>	<b>9,808,855</b>	<b>72.5%</b>		<b>7,003,182</b>	<b>107,025</b>	<b>1.5%</b>

Appendix D  
Water Expenditures

<u>Description</u>	<u>2016 Budget</u>	<u>Encumbrances Outstanding</u>	<u>YTD Exp</u>	<u>YTD Exp. + Enc.</u>	<u>Budget \$'s Remaining</u>	<u>Actual Budget Used</u>	<u>September Target %</u>
Administration	1,103,872	3,632	819,973	823,604	280,268	74.3%	
Engineering	396,259	18,722	295,531	314,253	82,006	74.6%	
Computer/Phone User Charge	401,171	0	300,878	300,878	100,293	75.0%	
Liability Insurance	152,708	0	114,531	114,531	38,177	75.0%	
Utility Construction Inspection	146,054	0	65,629	65,629	80,425	44.9%	
<b>G&amp;A</b>	<b>2,200,064</b>	<b>22,354</b>	<b>1,596,542</b>	<b>1,618,896</b>	<b>581,168</b>	<b>72.6%</b>	<b>75.0%</b>
Services & Meters	446,014	0	282,515	282,515	163,499	63.3%	
Transmission & Reservoirs	1,024,990	620	715,200	715,820	309,170	69.8%	
Distribution	1,699,746	0	1,043,907	1,043,907	655,839	61.4%	
Inventory	232,158	0	159,341	159,341	72,817	68.6%	
Non-Potable	804,670	8,000	395,222	403,222	401,448	49.1%	
<b>Transmission &amp; Distribution</b>	<b>4,207,578</b>	<b>8,620</b>	<b>2,596,185</b>	<b>2,604,805</b>	<b>1,602,773</b>	<b>61.7%</b>	<b>75.0%</b>
Water Resources	6,061,310	145,076	3,564,607	3,709,683	2,351,627	58.8%	
High Mountain Reservoirs	385,044	0	281,065	281,065	103,979	73.0%	
Water Conservation Program	563,791	19,510	373,188	392,698	171,093	66.2%	
<b>Water Resources</b>	<b>7,010,145</b>	<b>164,586</b>	<b>4,218,860</b>	<b>4,383,447</b>	<b>2,626,698</b>	<b>60.2%</b>	<b>75.0%</b>
Bellvue Filter Plant	2,035,640	294,629	1,274,797	1,569,427	466,213	62.6%	
Boyd Lake Filter Plant	2,274,692	33,448	1,333,087	1,366,534	908,158	58.6%	
Water Quality Program	244,616	55,510	45,939	101,449	143,167	18.8%	
<b>Treatment</b>	<b>4,554,948</b>	<b>383,587</b>	<b>2,653,823</b>	<b>3,037,410</b>	<b>1,517,538</b>	<b>58.3%</b>	<b>75.0%</b>
<b>Total Water:</b>	<b>17,972,735</b>	<b>579,147</b>	<b>11,065,411</b>	<b>11,644,557</b>	<b>6,328,178</b>	<b>61.6%</b>	<b>75.0%</b>

Appendix E  
Sewer Expenditures

<u>Description</u>	<u>2016 Budget</u>	<u>Encumbrances Outstanding</u>	<u>YTD Exp</u>	<u>YTD Exp. + Enc.</u>	<u>Budget \$'s Remaining</u>	<u>Actual Budget Used</u>	<u>September Target %</u>
Engineering	103,691	4,298	68,982	73,280	30,411	66.5%	
Administration	198,918	0	160,364	160,364	38,554	80.6%	
Computer/Phone User Charge	175,845	0	131,884	131,884	43,961	75.0%	
Liability Insurance	152,707	0	114,530	114,530	38,177	75.0%	
Utility Construction Inspection	135,371	0	63,482	63,482	71,889	46.9%	
<b>G&amp;A</b>	<b>766,532</b>	<b>4,298</b>	<b>539,243</b>	<b>543,540</b>	<b>222,992</b>	<b>70.3%</b>	<b>75.0%</b>
Administration	463,642	0	261,515	261,515	202,127	56.4%	
Laboratory	344,609	0	214,547	214,547	130,062	62.3%	
Maintenance	654,677	11,443	512,690	524,133	130,544	78.3%	
Operations	1,791,529	154,034	1,165,637	1,319,671	471,858	65.1%	
Industrial Pretreatment	321,841	0	232,985	232,985	88,856	72.4%	
<b>Wastewater Treatment</b>	<b>3,576,298</b>	<b>165,477</b>	<b>2,387,374</b>	<b>2,552,851</b>	<b>1,023,447</b>	<b>66.8%</b>	<b>75.0%</b>
Administration	163,925	0	41,010	41,010	122,915	25.0%	
Maintenance	823,648	0	581,961	581,961	241,687	70.7%	
Pumping Stations	288,059	0	110,049	110,049	178,010	38.2%	
<b>Wastewater Collection</b>	<b>1,275,632</b>	<b>0</b>	<b>733,020</b>	<b>733,020</b>	<b>542,612</b>	<b>57.5%</b>	<b>75.0%</b>
<b>Total Sewer:</b>	<b>5,618,462</b>	<b>169,775</b>	<b>3,659,637</b>	<b>3,829,412</b>	<b>1,789,050</b>	<b>65.1%</b>	<b>75.0%</b>

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE     

NO ENCLOSURE   X  

ITEM NUMBER:           6

TITLE:                   REPORT: WATER BUDGET MARKETING  
                              OUTREACH UPDATE

RECOMMENDATION:    INFORMATION ONLY

ADDITIONAL INFORMATION:

Staff will provide a short presentation on the Water Budget Marketing Campaign.

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE   X        NO ENCLOSURE     

ITEM NUMBER:            7

TITLE:                    REPORT: WATER SUPPLY UPDATE

RECOMMENDATION:      INFORMATION ONLY

**ADDITIONAL INFORMATION:**

Staff reports to the Water and Sewer Board in April, July, and November of each year on Greeley's water supply status. The projection for next April shows storage exceeding target storage levels even with conservative assumptions on supply yield.



# MEMORANDUM

---

TO: Burt Knight, Water and Sewer Director  
FROM: John Thornhill, Water Resources Operations Manager  
DATE: November 08, 2016  
RE: November 2016 Water Supply Update

---

## **ISSUE**

In accordance with the Drought Emergency Plan, staff will report the water supply status to the Greeley Water and Sewer Board (“Board”) in April, July and November of each year. Previous modeling analysis has shown that the amount of water needed in storage to supply the citizens of Greeley through an extreme drought is approximately 20,000 acre-feet. When this target storage level is met, the Board can declare an “adequate water year” with normal watering restrictions.

## **BACKGROUND**

The first half of 2016 saw average temperatures and above average precipitation until a significant warming trend and lack of precipitation began in September. Early drought monitoring is indicating the region may be entering into drier conditions after several years of excess supplies. Through October, production is 4% higher than 2015 and 8% higher than 2014. The Colorado SWSI<sup>1</sup> value in June was 1.9 showing the South Platte Basin at above normal supply levels. That value has increased to 2.8 in the October 2016 report showing good supply conditions going into the winter storage season although most of that above average supply is located in the Poudre Basin (3.2) and eastern sections of the South Platte Basin (2.9).

For Water Year (WY) 2016, the High Mountain Reservoir (HMR) system yielded over 6,300 acre-feet of supply with the majority of that being rented out to agriculture. The Greeley Loveland System (GLIC) yielded 25,800 acre-feet for municipal use supplies, with 15,500 acre-feet being carried over to WY 2017. The Northern Colorado Water Conservation District (NCWCD) continued to experience above average supplies with C-BT storage at 124% of average. Greeley rented out over 5,000 acre-feet of excess Colorado Big Thompson water (C-BT). Due to the main stem calls coming back on at the end of June and staying on, Greeley collateralize 1,670 acre-feet of C-BT for Windy Gap demands to meet return flow obligations. In total, Greeley leased approximately 20,600 acre-feet in agricultural leases and high mountain reservoir water.

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<sup>1</sup> The Surface Water Supply Index (SWSI) was developed by the Colorado Division of Water Resources and the U.S.D.A Natural Resources Conservation Service (NRCS). This is an indicator of mountain-based water supply conditions for the major river basins in Colorado. It is based on streamflow, reservoir storage, and precipitation. The SWSI scale goes from -4 (severe drought) to +4 (abundant supply) with 0 being near normal supply.

SERVING OUR COMMUNITY • IT'S A TRADITION

We promise to preserve and improve the quality of life for Greeley through timely, courteous and cost effective service.

The Greeley System Storage Analysis table for Water Year 2017 shows the April 2018 storage level will be approximately 20,000 acre-feet. This conservatively assumes high demands in Greeley, no Windy Gap or HMR yields, 60% quota issued for the C-BT project, and collateralizing 1,800 acre-feet of C-BT for Greeley's Windy Gap requirements. GLIC system yields are projected as dry year yields.

**RECOMMENDATION**

Initial projections show the target storage volume is greater than 20,000 acre-feet. A determination of adequate water year will be made at the April 2017 board meeting.

**Greeley System Storage Analysis**

**2017 Water Supply Update**

**C-BT=60% HMR\*= 0 AF  
 Yields GL/LL/7L = 6/31/4**

**Water Year 2017 Operations**

	Beginning Storage (1)	Estimated Yield (2)	Total Supplies (3)	Total WY 2017 Demands (4)	Early Season Spills and Collateralized (5)
NCWCD (C-BT)	6,291	17,182	23,473	(9,527)	(1,863)
WINDY GAP	0	0	0	(2,689)	1,863
POUDRE SYSTEM	7,172	9,050	16,222	(10,149)	0
GLIC SYSTEM	15,497	6,810	22,307	(15,717)	0
<b>TOTAL</b>	<b>28,960</b>	<b>33,042</b>	<b>62,002</b>	<b>(38,083)</b>	<b>0</b>

Balance 23,919

**Water Year 2017 Storage Volume**

	Ending WY '17 31-Oct-17 Storage (6)	1-Nov-17 Spills (7)	Beginning WY 2018 1-Nov-17 Storage (8)	Winter 2018 (Nov thru April) Demands on Storage and Shrink (9)	1-Apr-18 Carryover (10)
NCWCD (C-BT)	7,247	0	7,247	(725)	6,522
WINDY GAP	0	0	0	0	0
POUDRE SYSTEM	5,246	0	5,246	(1,895)	3,351
GLIC SYSTEM	11,426	0	11,426	(1,257)	10,169
<b>TOTAL</b>	<b>23,919</b>	<b>0</b>	<b>23,919</b>	<b>(3,876)</b>	<b>20,042</b>
<b>Target Storage Volume:</b>					<b>20,000</b>

**CONCLUSION:**

April 2018 storage will be greater than target storage, therefore no additional water restrictions.

\* HMR Yield = HMR + Seaman + Tunnel

All values in Acre-Feet

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE   X        NO ENCLOSURE     

ITEM NUMBER:            8

TITLE:                    REPORT: WATER CONSERVATION ANNUAL  
REPORT

RECOMMENDATION:      INFORMATION ONLY

ADDITIONAL INFORMATION:

Please see the attached report and supporting materials.



11/1/2016

**Measures Implemented  
 2013-2014**



Although it is 2016, please note that in order to accurately gather data on savings, significant time must be allocated to allow for the measures to be implemented. For example, an irrigation audit conducted in 2014 will have the consumption from 2013 (pre-audit) compared to 2015 (post-audit).

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# Greeley Water Conservation Report 2016

FOR MEASURES IMPLEMENTED IN 2013-2014

## EXECUTIVE SUMMARY

The purpose of this document is to inform and update the Greeley Water & Sewer Board regarding conservation measures that have been implemented and the results of those actions. An effective water conservation program is multifaceted with different types of programs to appeal to a wide variety of customers and needs. Some conservation measures can be easily quantified to gauge actual water savings attained as a direct result of the program by comparing pre- and post- water consumption. Other programs call for a more qualitative approach. Measures relating to irrigation must be evaluated based on improvements in efficiency rather than just consumption. Water savings from other measures such as education are more difficult to calculate.

The results of this report show that the Greeley water conservation program has been successful in many areas and is well on its way to meeting its long term conservation goals. This report is for programs that were implemented during 2013 and 2014. Two full years of consumption data (prior to and after an audit or rebate) is required to make an accurate assessment of changes in efficiency and water savings. The 2016 update will feature programs and information that is more current, but the numerical results will reflect 2013 and 2014 programs and use. Through water conservation measures, a total of 161 acre-feet of water were conserved in 2013 at an average cost of \$1,800 per acre-foot and 182 acre-feet of water were conserved in 2014 at an average cost of \$1,500 per acre-foot. This is well above the 144 acre-feet goal outlined in the 2009 Conservation Plan. Appendix A provides a summary of water savings of the various conservation measures during 2013 and 2014. Appendix B documents the anticipated water savings from the Water Conservation Plan. Appendix C shows an overall decline in gallons per capita per day (gpcd) between 1997 and 2014.



## BRIEF HISTORY OF THE PROGRAM

Water is an important part of Greeley's past, present, and future. In addition, Greeley has a long history of water conservation, from the first watering restrictions in 1907 to the recent Conservation Plan. Greeley is a leader in water conservation, and has a legacy of obtaining, managing and securing our precious water resources in a forward thinking manner. Greeley, in partnership with citizens should value the water we have by using it efficiently through a dynamic and diverse water conservation program. Greeley boasts one of the largest water conservation programs in the State of Colorado.

Greeley Water and Sewer Board adopted a Conservation Plan in 2008 that the State of Colorado approved in 2009. An updated water conservation plan was developed in 2014 and approved by the state in 2015. Part of the 2009 plan required that current conservation programs be continually and regularly evaluated as well as updating the plan every seven years per state requirements. As a result of the ongoing conservation program, Greeley Water and Sewer anticipate more than eight percent reduction in water demand over the next 20 years when compared to projected future demand without conservation. For each measure, Greeley will evaluate and monitor the program's progress toward the water savings goal.

The Conservation Plan addresses demand-side measures and programs including:

- Water efficient fixtures and appliances
- Landscape efficiency
- Industrial and commercial efficiency
- Distribution system efficiency
- Public outreach and marketing

Several measures were already being implemented prior to the completion of the Conservation Plan in 2009. A part-time seasonal employee was converted to full time in 2006 to assist with communication and education of the water conservation program. Two full time employees were hired in 2007 to concentrate on commercial and irrigation programs. In addition, the budget was doubled to nearly \$500,000. These measures were evaluated and this report details the status of water conservation projects during the years 2013 to 2014.

## 2013 and 2014 Weather and Production Summary

Snowpack in the South Platte Basin in April 2013 was at 69 percent of median, and Poudre snowpack climbed to 99 percent of average by May 1, 2013. Precipitation in Greeley was average for the summer until September 2013, when a major precipitation event delivered nearly 5 inches of rain in one week and increased the monthly precipitation to 610 percent of the mean. Total precipitation for 2013 was 150 percent of average at 18.4 inches. Total metered water use inside Greeley in 2013 was 19,619 acre-feet (97 percent



of the 2008-2012 average). Peak day demand of 46 MGD occurred on July 9, 2013. Residential use was 112 gallons per capita per day (GPCD) compared to 129 GPCD in 2012 and an average of 119 GPCD for 2008 and 2012.

The following 2014 snow accumulation season yielded an above-average (133 percent) snowpack in the South Platte basin by May 1, with storage at 110 percent of the median. Snowpack in the Poudre was even greater, with May 1 snowpack at 200 percent of average. Greeley precipitation was above-average in every month except April and August, bringing the 2014 cumulative precipitation to 17.62 inches (145 percent of average). In 2014, total metered water use inside Greeley dropped to 18,958 acre-feet (95 percent of the 2009 to 2013 average). Peak day demand of 42 MGD occurred on July 7, 2014. Residential use also dropped to 103 GPCD (88 percent of the 2009 to 2013 average), due to wetter and cooler than average weather conditions.

**MEASURE 1**

**LAWN WATERING RESTRICTIONS AND LAWN PLANTING ORDINANCE**

Greeley introduced lawn watering restrictions in 1907<sup>1</sup> and imposed fines for violations. At that time restrictions were alternate day watering: even addresses watered on even numbered days and odd addresses watered on odd numbered days. No watering was allowed in the middle of the day.

Greeley ordinance establishes lawn watering restrictions for residents. During the drought of 2002 to 2004 Greeley formed a committee of landscape and irrigation professionals and developed horticulturally-sound watering restrictions. These restrictions were then taken to a larger statewide meeting. Greeley’s watering restrictions were subsequently adopted by most cities and water utilities on the Front Range. Since 2005, Greeley has had the following watering restrictions:

	Single family residences & duplexes with <b>even</b> numbered addresses ending in:	Single family residences & duplexes with <b>odd</b> numbered addresses ending in:	<b>All others:</b> home owner association common areas, multi-family residences, apartments, businesses, government, non-profit, churches, commercial, industries, and institutions.
	0,2,4,6,8	1,3,5,7,9	
January 1 - April 14	No Lawn Watering		
April 15 - December 31	Sunday, Tuesday, Thursday	Monday, Wednesday, Saturday	Sunday, Tuesday, Friday
	No Watering 12 p.m. to 5 p.m.		

**Table 1:** Greeley watering restrictions that have been in effect are listed with modifications during droughts.

- Hand watering a lawn is allowed on any day. Greeley encourages customers not to hand water lawns between 10 a.m. and 6 p.m. Watering trees, shrubs, flower and vegetable

<sup>1</sup> Taken from Greeley Ordinance No. 172, Adopted December 10, 1907.

gardens may done at any time by hand, drip irrigation, low volume bubblers or by weeping-type soaker hoses.<sup>2</sup>

- Occasional washing/hosing off of paved surfaces, vinyl siding, and roof gutters is allowed with minimal runoff.
- Home car washing is allowed with a restrictive nozzle hose and bucket, and minimal runoff.
- New lawn watering variances are available with proper soil amendment (four cubic yards per 1,000 square feet of lawn).



When landscaping a new home or planting seed or sod in an established yard, residents must get a variance to water during restricted periods to provide adequate water for establishing a new lawn. Ordinance also requires residents to prepare the soil with compost (organic matter) before receiving a variance. Under the 2002 ordinance, new lawns require proof of adequate compost. The requirements to get a lawn watering variance are as follows:

- Sod and compost receipts must be provided to verify installation.
- Four cubic yards of compost must be applied for every 1,000 square feet of sod or seed installed.
- The compost must be rototilled and the property owner must provide photos or tiller rental receipts as proof.
- Greeley employees must verify the new lawn and compost installation.
- The property owner must post a variance notice when the off-hour irrigation is occurring.

<b>Watering Restrictions</b>	2007	2008	2009	2010	2011	2012	2013	2014
Warnings	326	359	173	162	127	150	213	159
Variances	226	258	235	183	194	222	491	278

**Table 2:** Variances are primarily for new lawns, but may include: large property permits, one day variances for fertilizer or pre-emergent applications, or variances for hardship, religious reasons, or over seeding an existing lawn.

### Why is this measure important?

This measure shows the long-term commitment that Greeley has shown to water conservation. Restricting lawn watering in the heat of the day saves water that would be lost to evaporation.

<sup>2</sup> In June 2011, an ordinance change included allowing hose-end sprinkler to water trees, shrubs, or flowerbeds at any time. Ordinance §14.08.290 Sprinkling restriction; drought levels; penalty.

Another purpose of watering restrictions is demand management to reduce peak use and defer water system upgrades. The requirement of using compost was added during the 2002 drought as a way of making sure that customers installed their lawns properly and added organic matter. Adding compost can reduce the amount of water needed to establish new lawns by as much as 30 percent.

## Conclusion

Watering restrictions have been an effective method to manage peak day demand and discourage midday watering. Customers are accustomed to the watering restrictions and savings from lawn watering variances. This also creates a community conservation ethic and reminds residents that water is an important resource that should not be wasted.

## MEASURE 2 WATER WASTE ORDINANCE

An ordinance enacted in 2002 prohibits water waste of any kind in Greeley. Staff is empowered to enforce this ordinance and issue tickets with inclining fines for repeat violations.

### Why is this measure important?

This measure was enacted during severe drought restrictions. Although a waste ordinance was on the books before 2002, it was never enforced because the term “waste” was too subjective. The ability to ticket waste is important because a customer could be following the watering restrictions and still waste water. Greeley wanted the customer to know that water running in the gutter is not allowed, even if the customer is in compliance with the watering schedule. When the customer is more aware of waste, they make more of an effort to improve water efficiency. The Plan estimates 10 acre-feet of savings per year for this measure.<sup>3</sup>

## MEASURE 3 TOILET, CLOTHES WASHER, AND IRRIGATION EFFICIENCY REBATES

Greeley has offered rebates for the purchase and installation of low-flow toilets, ultra-low flow toilets and high-efficiency front loading washers since mid-2006. In 2008, irrigation devices were added to the list of rebated products.

Previously, only ultra low flow toilets (ULFT) using 1.28 gallons per flush (gpf) were eligible for rebates in Greeley. The EPA WaterSense qualifying list ([www.epa.gov/watersense](http://www.epa.gov/watersense)) is used for approval of the ULFTs. The Stealth toilet using 0.8 gallons per flush made its way into big box stores marketed under the store brand and were also available in bulk purchases by Niagara Conservation. Greeley offered \$50.00 rebate for ULFT toilets and \$75.00 for the Stealth toilets.



<sup>3</sup> Per the 2009 Water Conservation Plan, program matrix seen in Appendix B

A recycling program was also implemented to get the old toilets out of service and keep them out of the landfill. Staff worked with Greeley Streets Division to recycle them into aggregate for road base.

During the 2013 and 2014 drought, Greeley continued to offer a rebate of \$100 for the purchase of a high-efficiency (HE) clothes washer. Only washers on the “qualifying list” are eligible for the rebate. The qualifying list is generated by the Consortium for Energy Efficiency ([www.cee1.org](http://www.cee1.org)) and lists both an energy factor and water factor for each qualifying washer. The water factor is based on how many gallons of water are needed to wash one cubic foot of laundry. The qualifying list is available on the Greeley’s web site ([www.greeleygov.com/rebates](http://www.greeleygov.com/rebates)).

The following sprinkler and irrigation devices that were rebated were Evapotranspiration (ET) controllers, rain sensors, pressure reducing valves and contractor grade medium and large rotors. The Irrigation Association’s (IA) qualifying controllers list ([www.irrigation.org](http://www.irrigation.org)) was used to approve the ET controllers.

Greeley’s rebate programs operate under the following rules:

- Rebates are subject to available funds.<sup>4</sup>
- For each year’s rebate, products must be purchased between January 1 and December 31 of the year the customer requests the rebate. Applications must be submitted within 90 days of purchase and those purchased after October 15<sup>th</sup> of any year must be submitted before January 15<sup>th</sup> of the following year.
- The original sales receipt must be attached to the application and include the date of purchase, price, brand name, and model number.
- Products must be for use at an address that receives a Greeley water bill.
- The owner bears responsibility for installation.
- Greeley reserves the right to inspect and verify the purchase and installation location of any appliance or device for which a rebate is provided.
- The rebate is for a maximum of two toilets per customer and one washer per household.
- Sprinkler rebates are only offered to customers after an irrigation audit.



A list of the Program rebate efforts from 2006 to 2014 is shown in Tables 3 and 4. Products have been offered and /or removed depending on the market availability, cost, and customer interest.

<sup>4</sup> The budget for 2013 and 2014 was \$85,000 per year for both commercial and residential customers. The actual total spent for rebate were \$88,810 and \$84,144 respectively.

<b>Residential Rebates</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
0.8 GPF toilet	0	0	0	0	0	0	0	0	6
1.28 GPF toilet	0	4	25	135	215	254	391	228	200
1.6 GPF toilet	224	142	223	96	0	0	0	0	0
Dual-flush toilet	0	2	1	17	24	26	61	56	28
HE clothes washer	458	456	451	458	406	372	304	401	345
Pressure Reducing Valve	0	0	0	0	0	4	6	14	19
ET controller	0	0	17	10	5	7	8	24	19
ET Sensor	0	0	0	0	0	0	0	8	20
Irrigation Controller	0	0	0	0	0	0	0	0	2
Rain Sensors	0	0	5	1	0	0	2	8	20
Large Rotors	0	0	62	79	0	57	0	0	0
Medium Rotors	0	0	63	130	0	60	133	0	0
PRV Heads	0	0	0	0	0	0	0	57	45
Rotary Nozzles	0	0	0	0	0	0	0	392	335
Dollars spent	\$57,000	\$54,150	\$60,045	\$69,338	\$68,150	\$59,671	\$63,796	\$60,572	\$51,749

**Table 3** Number of rebates given for each type of product in the residential sector, and total dollars spent.

Beginning in 2008, Greeley's rebate program expanded to include commercial properties and irrigation products such as rain sensors, irrigation heads, and ET controllers. Rebates were also available for toilets and urinals, air cooled ice machines, conductivity controllers (for cooling towers) and high-efficiency washers.

### Why is this measure important?

Indoor water use in Colorado presents a significant ongoing opportunity for water savings. High efficiency fixtures and appliances result in long-term demand reductions. Replacement and incentive programs speed the adoption of high efficiency devices.<sup>5</sup> The rebate program provides the customer a favorable connection to the Water Department and the Program. Retrofit and upgrades on the irrigation system are the greatest opportunity for savings because of the volume of water being applied to lawns. A large portion of water can be saved by installing ET clocks and sensors which can make seasonal adjustments for the customer.

<sup>5</sup> Colorado WaterWise and CWCB. 2010. Guidebook of Best Practices for Municipal Water Conservation in Colorado. Aquacraft, Inc., Boulder, Colorado.

## Conclusion

There is an overall savings for devices installed; however, in some cases water consumption has increased. For single family residential accounts, possible causes for this may be that the house has been sold and washer moved out, or the occupancy level has changed. Commercial accounts consumption correlates with business patterns which are difficult to measure since businesses are unique. For example, a restaurant may have installed a water saving air-cooled ice machine, but because their business has served more customers, consumption may still have increased.

<b>Commercial Rebates</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
Air cooled ice machine	4	1	1	0	0	0	0
Commercial clothes washer	4	2	4	26	9	9	4
Toilet or Urinal (1.6 GPF)	162	37	0	0	0	0	0
ULF Toilet (1.28 GPF)	0	6	15	450	11	16	35
Stealth (.8 GPF)	0	0	0	0	394	0	17
Dual Flush Toilet	0	0	0	0	0	140	8
ET Controller	3	3	0	17	43	29	13
ET Sensor	0	0	0	0	0	0	18
Irrigation Controller	4	0	0	0	4	2	0
Large Rotors	68	116	0	0	0	0	0
Wireless Rain Sensor	3	14	0	0	0	29	0
Pressure Reducing Valve	0	0	0	0	22	0	59
Cooling Tower Conductivity Controller	12	0	0	0	0	0	0
PRV Heads	0	0	0	0	0	0	2,535
Rotary Nozzles	0	0	0	2,032	1,900	817	3,787
Dollars spent	\$31,367	\$12,170	\$2,050	\$70,058	\$55,383	\$28,238	\$32,395

**Table 4:** Number of rebates given for each type of product for the commercial sector, and total dollars spent.

## MEASURE 4 WATER EFFICIENCY AUDITS AND REBATES

### ***Irrigation Audits***

Free irrigation efficiency audits are offered to customers interested in learning about ways to improve the efficiency and operation of their irrigation systems. Customers can call, sign up online or fill out forms sent to them in their bill to request an audit to evaluate sprinkler systems.

The irrigation audit program has been gradually modified each year since 2001 to meet the changing needs of customers applying lessons learned from previous seasons. More emphasis has been made toward auditing large commercial properties, HOAs and campus type office spaces. Because of the large acreages, there is more potential for water savings.

<b>Irrigation Audits</b>	Sector	Number of Audits Performed	Water Saved (acre-feet)	Cost per acre-foot (\$)
<b>2013</b>	Residential	185	27.0	\$ 700
	Commercial	36	9.5	\$ 1,600
<b>2014</b>	Residential	216	58.8	\$ 300
	Commercial	27	--	--

**Table 5:** Summary of irrigation audit savings. Please note that significant saving in acre-feet of water can be realized with only a small increase in efficiency. There was an average improvement in estimated irrigation efficiency by 8 percent for customers who received an audit in 2013, and by 11 percent for customers who received an audit in 2014. There were no water savings from commercial rebates in 2014.

One lesson learned has been with customers installing ET controllers. If they just replace the controller and don't adjust the schedule or fix problems, the ET controller will not save water. As a result, their water consumption potentially could go up and often did. The rebate is now contingent upon users getting an audit and following the recommendations.

### **Why is this measure important?**

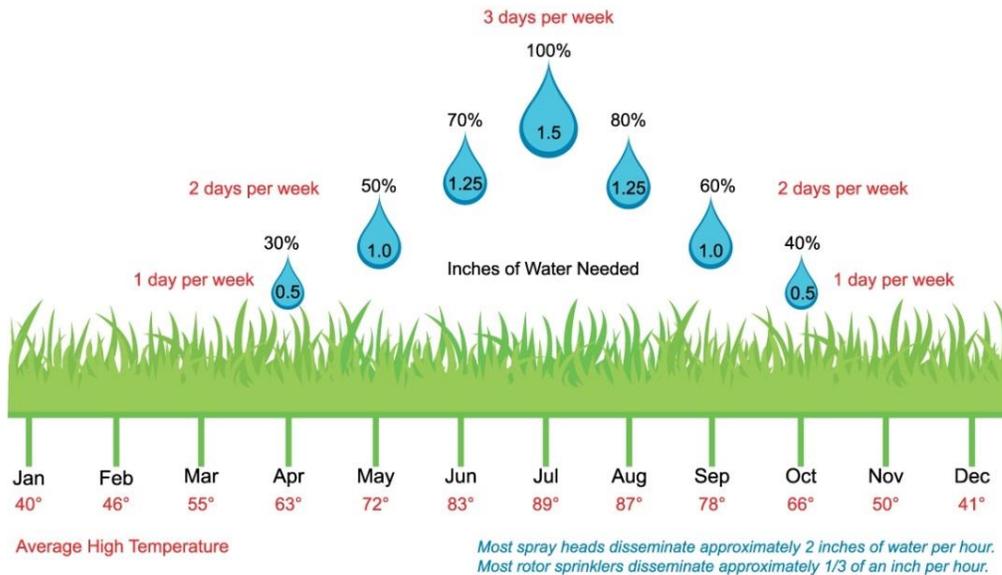
Historically, 55 percent of the water used by customers goes to watering lawns. Some customers watering with automatic irrigation systems overwater. By targeting the large water users, the potential for increasing water efficiency is greater.

The top areas for savings on sprinkler systems are:

- The best system in the world will decrease in efficiency after a couple of seasons without regular maintenance
- Correct pressure for the system, rotors require different pressure than sprays
- Adjusting the watering schedule based on precipitation rate, distribution uniformity and weather
- Retrofitting with low precipitation rotator nozzles to decrease runoff.
- Adjusting the clocks with the weather



**Figure 2:** This graphic was created to help customers with watering to the need of their lawn rather than a schedule. It is a sticker that can be placed directly onto the sprinkler clock.



## Data Sources

Pre and post consumption data were collected and compared to the annual irrigation water requirement (IWR) to determine whether the properties audited became more efficient.

## Conclusion

Irrigation audits are an effective tool to reduce water usage and more importantly increase efficiency in lawn watering. The greater potential for savings is in the commercial sector simply because the volume of water is greater. Irrigation audits along with ET controllers, proper maintenance, scheduling, correct pressure and rain sensors will increase efficiencies even more. The challenge is getting property owners to implement recommendations, take advantage of rebates and then maintain the systems in subsequent years.

The value of irrigation audits with residential customers is having the one on one time with the customer to explain the steps of the audit, why each step is important, and also to help them understand their system and controller better. Many customers do not realize their clocks have functions that are not being utilized. The audit not only serves as an educational tool, but also improves public perception about the Water Department and conservation in general.

A television commercial (<http://greeleygov.com/Water/audit.aspx>) was developed for GTV and YouTube to help the customer better understand what an audit is and what they can expect.

## Commercial Rebates

Commercial, industrial and institutional (CII) customers account for 37 percent of the total water consumption in Greeley. The irrigation auditor and commercial auditor work in tandem whenever possible to audit both the indoor and outdoor commercial property uses at the same time. Suggestions are made and rebates are offered for plumbing fixtures and appliances when applicable.

One sector of customers who are benefitting from the rebates is landlords. More landlords and property managers are retrofitting toilets and washing machines as properties are vacated and rented, or as they acquire new properties. The majority of commercial rebates go to these customers.

Commercial Rebates	Rebate Type	Number of accounts	Dollars Spent	Water Saved (acre-feet)	Cost per acre-foot
2013	Indoor	8	\$14,400	0.9	\$16,800
	Outdoor	17	\$13,839	8.4	\$1,700
2014	Indoor	6	\$4,000	4.2	\$1,000
	Outdoor	41	\$28,395	4.4	\$6,500

**Table 6:** Summary of commercial rebate savings. In 2013, the majority of commercial indoor rebates were for dual flush toilets, and the majority of commercial outdoor rebates were for rotary nozzles. In 2014, the majority of commercial indoor rebates were for 1.28 GPF toilets/urinals, and the majority of commercial outdoor rebates were for pressure reducing valves and PRV heads.

## MEASURE 5 PUBLIC INFORMATION AND EDUCATION

Public information and education is an essential element of a vibrant and well-rounded utility-based water conservation program. The program continues to provide proactive public information and marketing for all water conservation programs. Every program has a significant portion of time and resources dedicated to education and information. Each year a Water and Sewer Communications plan is developed to help focus, monitor and evaluate the department's outreach efforts. Conservation information and initiatives are an important part of Greeley Water and Sewer's overall public messaging.

A mix of media is important to any public outreach campaign. Different people rely on different information sources to get information.

In 2012, Greeley won the 1<sup>st</sup> annual Mayor's Water Conservation Challenge. This was a nationwide contest to see which cities could have the most people pledge to be water efficient and protect water quality. This placement as a winning city is due in large part to our public information and marketing programs. Greeley has placed in the top 10 in other years, 5<sup>th</sup> place in 2013, 2<sup>nd</sup> place in 2014, 5<sup>th</sup> place in 2015, and 6<sup>th</sup> place in 2016.

### ***Face to Face Marketing***

Communication research studies have shown that personal contact is often more persuasive in changing behaviors than advertising. Greeley is steadfast in the belief that personal contact is the most effective element of its education program. Staff strives to be visible in the community, meet with as many citizens as possible, and spend one-on-one time with customers explaining compost requirements for installation of a new lawn, covering the water saving potential of a sprinkler system audit and tune-up, and answering questions when customers complete paperwork for a rebate. These are valuable and positive education opportunities that often lead customers to participate in additional programs.

### ***Public Events***

Educational opportunities are provided to teach children and adults appreciation of water, practical water conservation techniques and facilitate a community conservation ethic. Greeley sponsors and participates in a broad array of events and educational activities to foster face-to-face interaction. Greeley participates in fairs, events sponsored by other organizations, and children's water festivals. These events offer ready-made outreach opportunities to a receptive audience. Added to those educational efforts are neighborhood meetings, speaking engagements, discussions with local civic groups, and classroom visits.

Greeley continues to co-sponsor the Children's Water Festival which hosts approximately 1,000 children and 200 adults at Island Grove Regional Park in a full day of hands-on activities. The Festival is held during the last week of April. Each year Council and Water Board are invited to tour the festival and have lunch with the committee.



### **Community Relations**

Staff members also are involved with professional organizations, such as Rocky Mountain Section American Water Works Association Conservation Committee, Colorado State University Cooperative Extension Master Gardeners, American Water Resources Association, Colorado WaterWise, EPA WaterSense Promotional Partner, Alliance for Water Efficiency, Green Plumbers, Irrigation Association, Greeley Garden Tour, and the Association of Landscape Contractors of Colorado (ALCC)

The Caring for Our Watersheds project is sponsored by the Poudre Learning Center and Agrium. Staff supports the project by judging projects and mentoring students through implementation. In this project, high school students must answer the question: "What can I do to improve my watershed?" They must research and develop a project that is implementable and solves a watershed issue.



### **Xeriscape Demonstration Garden**

Xeriscape Demonstration Garden at 23rd Avenue Reservoir is a public example of low water use landscaping.

In 2013, the Program hired a new seasonal to help with xeric maintenance and education. Water Conservation began a new xeric volunteer program at the garden, and re-landscaped the hill in front of the Oasis Art project. A new informational kiosk was installed. Greeley's xeric Garden was featured on the Garden Tour in June 2013 and over 200 people visited it.

In the fall of 2013, the Program worked with University of Northern Colorado Public Relations students to develop additional marketing strategies.

In 2014, bi-weekly tours took place in the spring and summer.

### **Media Relations**

Information is sent to the media in the form of news releases. Approximately twenty news releases are sent out each year in an effort to get positive news coverage and also answer media inquiries about water conservation projects.

### **Paid Advertising**

The Program has an advertising budget of \$15,000. Larger projects are promoted through paid advertising in print, radio and online. With the increased costs of advertising, this budget is used thoughtfully and strategically to target those who may be interested in water conservation programs in Greeley. All releases sent result in positive media coverage.



### **Promotional Items**

Promotional items are purchased to promote water conservation. These items are designed to keep water conservation in mind and are distributed at community events and in our office. This includes pens, water bottles, and stickers with lawn watering suggestions, refrigerator magnets

and more. In 2013, the program printed coffee sleeves for use at local coffee shops with water conservation tips and coasters to be used at restaurants. Magnets are also purchased for Greeley vehicles promoting irrigation audits. These items are frequently requested by other departments to be put in goodie bags at their events. For example at the City Manager’s city tours and orientation onboarding and appreciation events with in the city.

**Direct Mail**

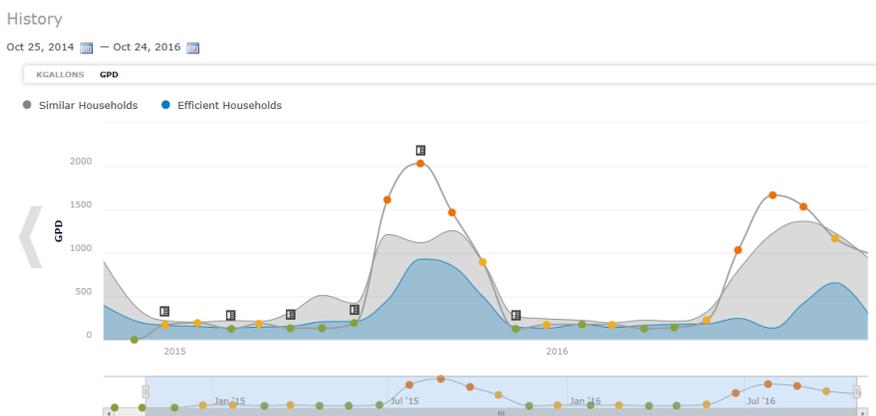
Water conservation information was inserted into customer’s water bills approximately 10 times in 2013 up from six times the previous year. The goal in 2014 was to insert bill stuffers into the bills every month and that was accomplished. Many of these flyers have forms that residents send back to sign up for conservation programs including irrigation audits. This continues to be one of conservation’s most cost effective ways to promote programs and events. These efforts have provided good results. Separate mailings are also targeted to groups to promote particular programs to a receptive audience and to those who are over their water budgets.

**Web and Social Media**

Digital communications is a relatively inexpensive and effective way to send messages to the public. The Water Conservation website is updated frequently to promote programs. Information is also posted on the Greeley’s home page to promote conservation. In addition, a water conservation e-newsletter is published each month and a water topic is included in every issue of the Greeley’s *City Scoop* e-newsletter.

Facebook has been a good tool to disperse timely information. For example during the flood of September 2013, it was a good way to get road closures and updates out to followers. It has also been used to update customers on construction and water emergencies. On average three messages per week are sent about conservation. Twitter is used to interact with the public and the larger water and environmental community. Currently, over 2,882 people “like” Water Conservation’s Facebook page. The Twitter account has over 2,413 followers. Additionally, water videos are also posted to YouTube. You can view the large selection of videos on Greeley’s YouTube channel.

In 2014, Greeley began offering WaterSmart to a select group of the Water Budget pilot project customers. They received home water use reports, both printed and electronic via email. This is a



great tool for the customer to review their usage compared to their allotment and compared to similar households. This program has been expanded each year and WaterSmart adds new features, reports and capabilities constantly. This year we have added in all customers to review their previous six year history of use. Property managers or

other customers who have several properties can now link their accounts and review them with one login and toggle between accounts.

**YouTube Videos**

As part of a Front Range collaborative project, the program acquired ten videos on various water

conservation topics. The collection of videos went online in the spring of 2013. Three of the videos address indoor topics: fixing leaks, replacing toilets and how to do a WaterSense mini-makeover. The remaining seven videos focus on outdoor watering: plant selection and placement, water run times, catch cups, the ET rate, new irrigation technologies, monthly sprinkler tune ups, and car washing. These videos are promoted on the Greeley's website, through social media, e-newsletters and Greeley's YouTube page. Watch the entire playlist at <http://ow.ly/yHYMV>.

### ***Why is this measure important?***

Public information, education and effective communication are the cornerstones of any conservation program. All measures need to have an element of education. Accurate information is essential to obtain customer buy-in, participation, and compliance of all other conservation initiatives. Savings from education are estimated at 23 acre-feet per year.<sup>6</sup>

## **MEASURE 6 WATER EFFICIENCY PRODUCT DISTRIBUTION AND RETROFITS**

### ***Water Conservation Kits***

The Program has distributed water conservation kits to residential customers for over 15 years. Greeley distributes approximately 350 conservation kits to homeowners per year. A bulk purchase is made every few years and the kits are distributed to Greeley water customers and event attendees for free. These kits include:

- Dye tablets to check toilets for leaks
- Kitchen aerator
- Bathroom aerator
- Teflon tape to assist with installation
- Showerhead

### ***Showerhead Exchange***

In lieu of the kits, the 2013 Program began offering a showerhead exchange program for residents. This program was a popular method of getting new WaterSense labeled fixtures in the hands of residents. The exchange is more effective than the kits since we know that people have to install the new showerheads because they turned in their old ones. At these events, faucet aerators, shower timers and other water conservation products are distributed. Several landlords/property managers have come to the office to exchange showerheads for their properties that they own in our service area. The savings for 2013 is about 1.7 AF and 1.5 AF for 2014. Estimates are conservative because customers can replace as many showerheads as they bring us the old ones and so they not only replace the most used head but also sometimes they replace guest bed rooms or basement bathrooms which rarely get used. Estimates also don't include aerators.



<sup>6</sup> Per the 2008 Conservation Plan, conservation program matrix seen in Appendix B

<b>Showerhead Exchange</b>	Showerheads	Aerators (Kitchen & Bath)
2013	266	270
2014	239	217

**Table 7:** Number of showerheads given to customers at several events in 2013 and 2014.

***Garden-In-A-Box Program***

In 2012, Greeley began a partnership with the Boulder based non-profit Center for ReSource Conservation (CRC) and the Garden-In-A-Box (GIAB) program. For many years, the CRC has partnered with professional landscape designers to create easy to plant xeric gardens that will flourish in Colorado. The GIAB kits include everything that residents need to plant a water saving garden that provides beautiful perennial plants that are attractive from spring to fall. GIAB covers a 70-100 square foot area with professional “plant-by-number” designs, a selection of 15-29 ready to plant perennials in 4” pots, and planting and care instructions. This program helps residents reduce turf areas with Xeriscape in a simple and cost effective way. In 2013, 66 gardens were sold and over 80 in 2014. GAIB program has increased steadily each year; many customers have come back to convert more of their yard to xeric plantings.



***Retrofits of Greeley Facilities***

Greeley also actively retrofits municipal facilities and parks. In 2012, the conservation program paid for 24 1.28 gpf flush valve toilets and 10 urinals to retrofit the UCCC facility. The toilets were installed in 2013 by facilities staff.



**Why is this measure important?**

These programs are both good public relations and provide water savings. This also provides Greeley an opportunity to educate the customer on conservation issues.

**MEASURE 7**

**PARK & GOLF COURSE LANDSCAPE WATER BUDGETS**

The plan also features efforts to improve irrigation efficiency. In 2001, the conservation program spent \$500,000 to purchase a central irrigation control system for the Greeley Parks department. A central irrigation control system computes the efficient water application rate for each park individually and greatly assists with irrigation management.

The Water Department installed water meters on all parks and golf courses. Water budgets based on evapotranspiration demands have been developed for all of these properties and the meters are read weekly during the irrigation season. The consumption data is put into a database and



provided to the park managers every week showing their park's consumption in relation to the water budget. The park managers are not billed for their water use but find the regular feedback on their water budget helpful in maximizing the efficiency of their irrigation system and recreation demands.

### **Why is this measure important?**

Greeley has significant acreage in irrigated park area and assuring water is used efficiently saves Greeley water. It is also important that Greeley lead by example. Because of their sizeable acreages, many

parks cannot water within the watering restrictions. It was important to show the citizens that parks were watering what the lawn needed and not wasting. Once this was explained to the citizens, they felt like this was a good approach.

## **MEASURE 8 WATER LOSS CONTROL**

Greeley has a regular leak detection and repair regime that is followed to maintain a tight distribution system. In 2013-2014, Greeley crews repaired 55 leaks. Greeley's system losses have averaged less than five percent since 2000. Many utilities consider 10 percent system losses to be acceptable.

Greeley also had an active Cement Mortar Lining (CML) program where older parts of the treated water system are rehabilitated to increase longevity and reduce unaccounted for water. In 2012, Greeley completed the CML project.

### **Leak Detection**

Leaks are an inevitable part of the water distribution system. Because of Greeley's proactive stance on seeking and repairing leaks, Greeley has averaged less than 10 leaks per 100 miles of pipe since 1997.

Leak detection is done on an on-going basis. The goal is to survey a portion of the pipelines every year with a priority placed on areas that have been prone to leaks. Crews use a Metrotech Correlator and Leak Logger with a LD12 Listening Device connected to the water main from a fire hydrant, valve or meter to identify leaks in the main. Any suspected leak sounds will be evaluated to authenticate the existence of a leak to be repaired.



### Greeley Leak History Summary

	SYSTEM MILES OF PIPE	ANNUAL # LEAKS	LEAKS/100 MILES PIPE	ANNUAL CHANGE IN MILES OF PIPE (MI)	ANNUAL CHANGE IN MILES OF PIPE (%)	LEAK DETECTION MILES
2014	617.00	55	8.9	4.00	0.65%	33.0
2013	613.00	55	9.0	-6.00	-0.97%	40.0
2012	619.00	58	9.4	2.50	0.41%	35.3
2011	616.50	53	8.6	5.80	0.95%	52.0
2010	610.70	55	9.0	1.80	0.30%	60.0
2009	608.90	42	6.9	-1.80	-0.29%	76.3
2008	610.70	51	8.4	-0.20	0.03%	51.0
2007	610.90	77	12.6	6.39	1.06%	36.6
2006	604.51	68	11.2	8.51	1.43%	29.0
2005	596.00	68	11.4	12.40	2.12%	23.5
2004	583.60	46	7.9	9.60	1.67%	18.0
2003	574.00	54	9.4	11.70	2.08%	31.0
2002	562.30	65	11.5	20.34	3.75%	12.0
2001	541.96	47	8.6	15.21	2.89%	20.0
2000	526.75	51	9.7	11.57	2.25%	37.0
1999	515.18	54	10.5	12.96	2.58%	61.0
1998	502.22	51	10.2	18.68	3.86%	104.0
1997	483.54	34	7.0	5.84	1.22%	32.0

**Table 8:** Shows the miles of pipe Greeley maintains and the number of leaks since 1997. Greeley began its active leak detection program in 1997 and on average actively searched for leaks on 35 miles or six percent of Greeley total pipeline infrastructure each year. The leak detection equipment also proves valuable information when a leak surfaces (often not immediately above the leak) as crews can pinpoint where the leak actually is so that crews don't unnecessarily tear up street.



#### **Cement Mortar Lining (CML) Project**

75 miles of Greeley's pipelines were installed before 1950 and had no lining for protection against corrosion and deterioration. When these pipes age, the rust on the inside causes restricted flow problems, rusty water, and make the pipes more susceptible to leaks. The technology exists to take these pre-1950 pipes out of service while maintaining water service to customers. The CML process scrapes the pipes on the inside and lines them with cement mortar to prevent future buildup of rust. The CML process can be done at half the cost of replacing the old pipe with very little inconvenience to customers.

The Water Department began pipe cleaning and CML in 1991 to improve water flow, water quality, and to minimize leaks. At the same time, all lead service lines were replaced with new copper fittings further reducing leak potential.

Greeley CML Projects			
	Footage	Pipe Size	Cost
1991	23,822	20"	\$364,908
1992	35,400	20"	\$413,843
1993	43,700	20"	\$448,820
1993	3,309	6-8"	\$59,377
1994	44,820	20"	\$416,880
1995	3,800	6-8"	\$94,438
1996	13,587	4-16"	\$355,413
1998	5,180	4-6"	\$220,915
1999	22,750	4-20"	\$559,884
2001	18,888	4-27"	\$552,766
2002	57,476	4-20"	\$1,207,736
2004	39,830	4-20"	\$1,137,876
2006	26,688	4-20"	\$955,324
2008	32,400	4-12"	\$1,023,798
2012	30,154	4-20"	\$1,008,085
<b>Total</b>	<b>401,805</b>		<b>\$8,820,063</b>
<b>Average</b>	<b>26,787</b>		<b>\$588,004</b>

**Table 9:** History of the cement mortar lining project costs and feet of rehabilitated pipeline since 1991. Data in charts is provided by the Operations Manager and Distribution Division. No CML project was done in 2009, 2010 or 2011. The final CML project was completed in 2012.

**Why is this measure important?**

By cleaning and lining the pipes, the pipes are less likely to burst, which wastes water and puts customers out of service. A tight and well maintained water system is cost-effective because lost water cannot be used by Greeley or sold to customers.

**Conclusion**

Both the leak detection and CML projects are considered by the Water Department as sound operational practices. The water conservation aspect is a bonus end product of the projects.



**MEASURE 9  
INFORMATIONAL WATER BUDGET**

The Informational Water Budget Program was designed to give customers better information about not only how much water they *are* using (metered consumption), but how much water they *should* be using based on the unique characteristics of their household. Each single-family residential water customer in Greeley receives an informational water budget on their bill, a calculation based on the number of persons in their household, the square footage that they could potentially irrigate (irrigable area), and daily irrigation water requirement values summed over their billing period. If a customer uses the same amount of water as their water budget, they are considered “efficient.” If a customer uses more water than their water budget, it informs them that some of their water use

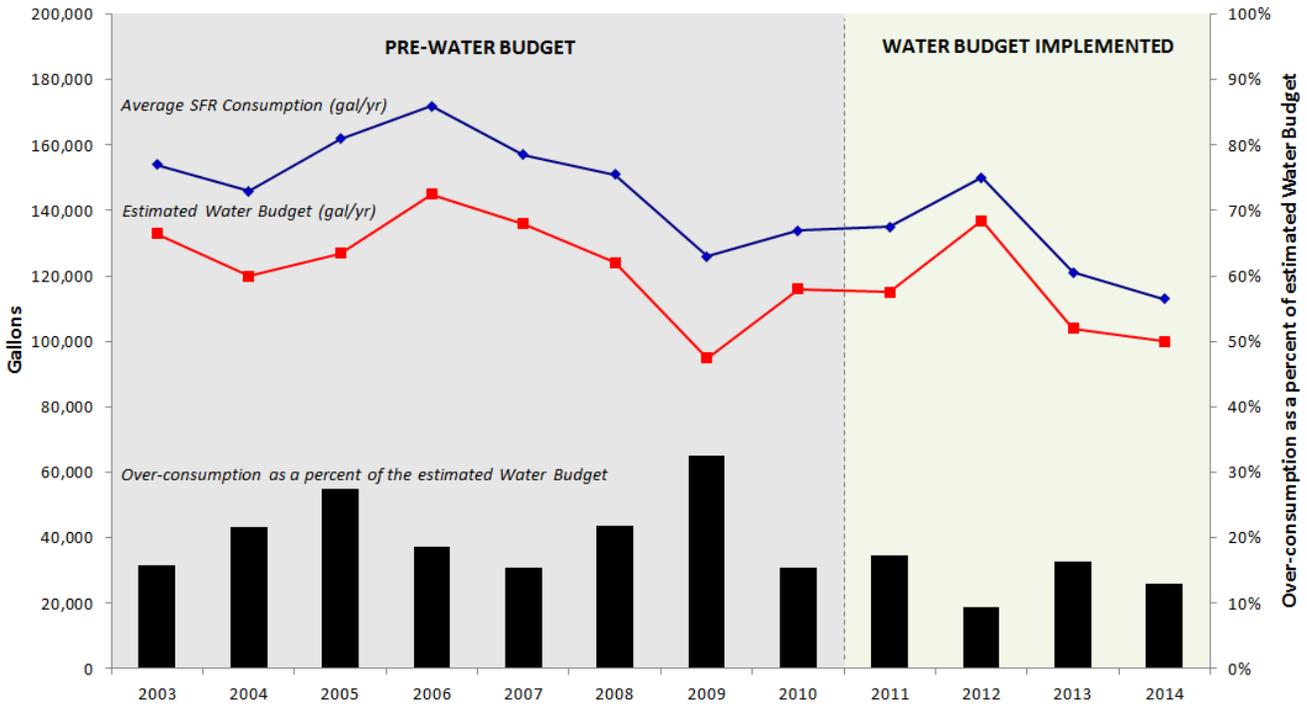
was "inefficient." The Water Budget study was a four-year process to evaluate the effectiveness of empowering customers with information to improve their water efficiency.

In 2010, plans were made to implement a water budget program over the next few years. The first year of the program was completed in 2011. An informational Water Budget pilot project was conducted with approximately 250 volunteers. Most of the participants who completed the survey (94.6 percent) found the Water Budget to be helpful and increased the understanding of household water needs. The water budget program was expanded in 2012 to include a random sample of up to 1,000 residential customers in addition to existing volunteers. Extensive outreach was made to this pilot group including a letter at the beginning of the growing season explaining how their budget was calculated and water budget graphs were placed on their bill each month. Surveys received at the end of the 2012 season yielded 129 responses and 62 comments, some of which included remarks that the city needed to do more to penalize excessive water users. Overall, customers found this information valuable and wanted to continue receiving it.

In 2013, the program was expanded to over 20,000 single-family residential customers. During this year, 21 percent of customers were over-budget during April-October. A large number of customers went "over-budget" in September 2013 due to the nature of the irrigation water requirement calculation (i.e. precipitation was deducted in arrears). A majority (91 percent) of respondents to the annual survey indicated that they wanted to continue to receive water budget information on their bill, with 68 percent indicating that they supported higher water rates for wasteful water use.

In 2014, the calculation was modified in two ways: (1) all accounts were defaulted at three persons per household rather than four, to improve the accuracy of that calculation (of course, the customer could still call in to change that to better reflect their household characteristics), and (2) the outdoor budget calculation was changed to sum daily irrigation water requirement values for the customer's billing period, rather than sum the irrigation water requirement over the course of the customer's billing period (so that precipitation could only be counted for the day of the rain event). In 2014, 16 percent of customers were over-budget from April-October. Again, a majority (93 percent) of respondents to the 2014 water budget survey indicated that they wanted to continue to receive water budget information on their bill, with 65 percent of customers indicating that they supported higher water rates for wasteful water use.

In 2015, an analysis was conducted to assess the impacts of program (Figure 2). Prior to the Informational Water Budget Program (2003 to 2010), the average single family residence in Greeley used approximately 17 percent more water than their estimated water budget. Once the Informational Water Budget Program was implemented (2011 to 2014), the average single family residence in Greeley used only 11 percent more water than their estimated water budget, showing that an informational program likely does have somewhat of an impact on customer water use behavior (particularly since this program was launched in conjunction with other water conservation programs).



**Figure 2:** Average Single Family Residential (SFR) water use efficiency for 2003-2014. The grey shaded area on the graph represents the pre-water budget period, and the green shaded area represents the post-water budget period up to 2014. The blue line represents SFR consumption and the red line represents the average estimated SFR water budget (gallons of consumption on the primary vertical axis to the left). Improvements in efficiency are represented by these two lines coming closer together. The black bars represent the over-budget consumption as a percent of the total water budget (percentage values on the secondary axis to the right), which has been steadily decreasing over time.

## APPENDIX A-1: 2013 ACTUAL BUDGET AND SAVINGS SUMMARY

Metered Conservation Measures	Measure	Number of Accounts	Dollars Spent	Total Savings (AF)	Cost per AF
Commercial Indoor Rebates	4	10	\$14,400	0.86	\$16,800
Commercial Outdoor Rebates	4	22	\$13,839	8.42	\$1,700
Residential Outdoor Rebates	3	67	\$60,573	7.03	\$8,700
Commercial Outdoor Audits	4	31	\$15,196	9.56	\$1,600
Residential Outdoor Audits	4	35	\$17,157	27.01	\$700
Front Loading Washers	3	404	\$40,100	4.58	\$8,800
Commercial Indoor Audits	4	8	\$3,922	0.00	-
Residential Indoor Audits	4	28	\$13,725	0.38	\$36,200
Dual Flush Toilet	3	44	\$2,650	0.43	\$6,200
Ultra Low Flow Toilet	3	203	\$11,200	4.38	\$2,600
Multiple rebates ( <i>excluded from total</i> )	-	56	-	7.77	-
<b>Total Savings and Cost from Metered Measures</b>			<b>\$164,523</b>	<b>62.64</b>	<b>\$2,700</b>
<b>Other Conservation Measures</b>					
Soil Amendment Ordinance	1	200	\$10,000	16.30	\$ 700
Water Waste Ordinance	2	ALL	\$10,000	10.00	\$ 1,000
Conservation Education Program	5	ALL	\$100,000	23.00	\$ 4,400
Showerhead Exchange Program	6	266	\$2,660	1.70	\$ 3,600
Water Loss Control	8	1	-	25.00	
Natural Replacement	See Appendix B	1090	-	23.00	
<b>Total Estimated Savings from Other Measures</b>			<b>\$122,660</b>	<b>99.00</b>	<b>\$ 1,300</b>
<b>Total Savings in 2013</b>			<b>\$287,183</b>	<b>161.64</b>	<b>\$ 1,800</b>

The numbers in Appendix A-1 may not match other rebate tables because they report the number of devices while the Appendix reflects the number of accounts. For example, several toilets may be installed at one account: 20 accounts -50 toilets.

## APPENDIX A-2: 2014 ACTUAL BUDGET AND SAVINGS SUMMARY

Metered Conservation Measures	Measure	Number of Accounts	Dollars Spent	Total Savings (AF)	Cost per AF
Commercial Indoor Rebates	4	6	\$4,000	4.17	\$1,000
Commercial Outdoor Rebates	4	41	\$28,395	4.40	\$6,500
Residential Outdoor Rebates	3	76	\$7,299	2.16	\$3,400
Commercial Outdoor Audits	4	25	\$12,136	0.00	-
Residential Outdoor Audits	4	34	\$16,505	58.77	\$300
Front Loading Washers	3	348	\$33,300	6.69	\$5,000
Commercial Indoor Audits	4	3	\$1,456	1.41	1,100
Residential Indoor Audits	4	41	\$19,903	0.96	\$20,800
Dual Flush Toilet	3	22	\$1,400	0.44	\$3,200
Ultra Low Flow Toilet	3	170	\$9,750	4.57	\$2,200
Multiple rebates ( <i>excluded from total</i> )	-	97	-	10.24	-
<b>Total Savings and Cost from Metered Measures</b>			<b>\$134,145</b>	<b>83.57</b>	<b>\$1,700</b>
<b>Other Conservation Measures</b>					
Soil Amendment Ordinance	1	200	\$10,000	16.30	\$ 700
Water Waste Ordinance	2	ALL	\$10,000	10.00	\$ 1,000
Conservation Education Program	5	ALL	\$100,000	23.00	\$ 4,400
Showerhead Exchange Program	6	239	\$2,390	1.50	\$ 1,600
Water Loss Control	8	1	-	25.00	
Natural Replacement	See Appendix B	1090	-	23.00	
<b>Total Estimated Savings from Other Measures</b>			<b>\$122,390</b>	<b>98.80</b>	<b>\$ 1,300</b>
<b>Total Savings in 2014</b>			<b>\$256,535</b>	<b>182.37</b>	<b>\$ 1,500</b>

The numbers in Appendix A-2 may not match other rebate tables because they report the number of devices while the Appendix reflects the number of accounts. For example, several toilets may be installed at one account: 20 accounts -50 toilets.

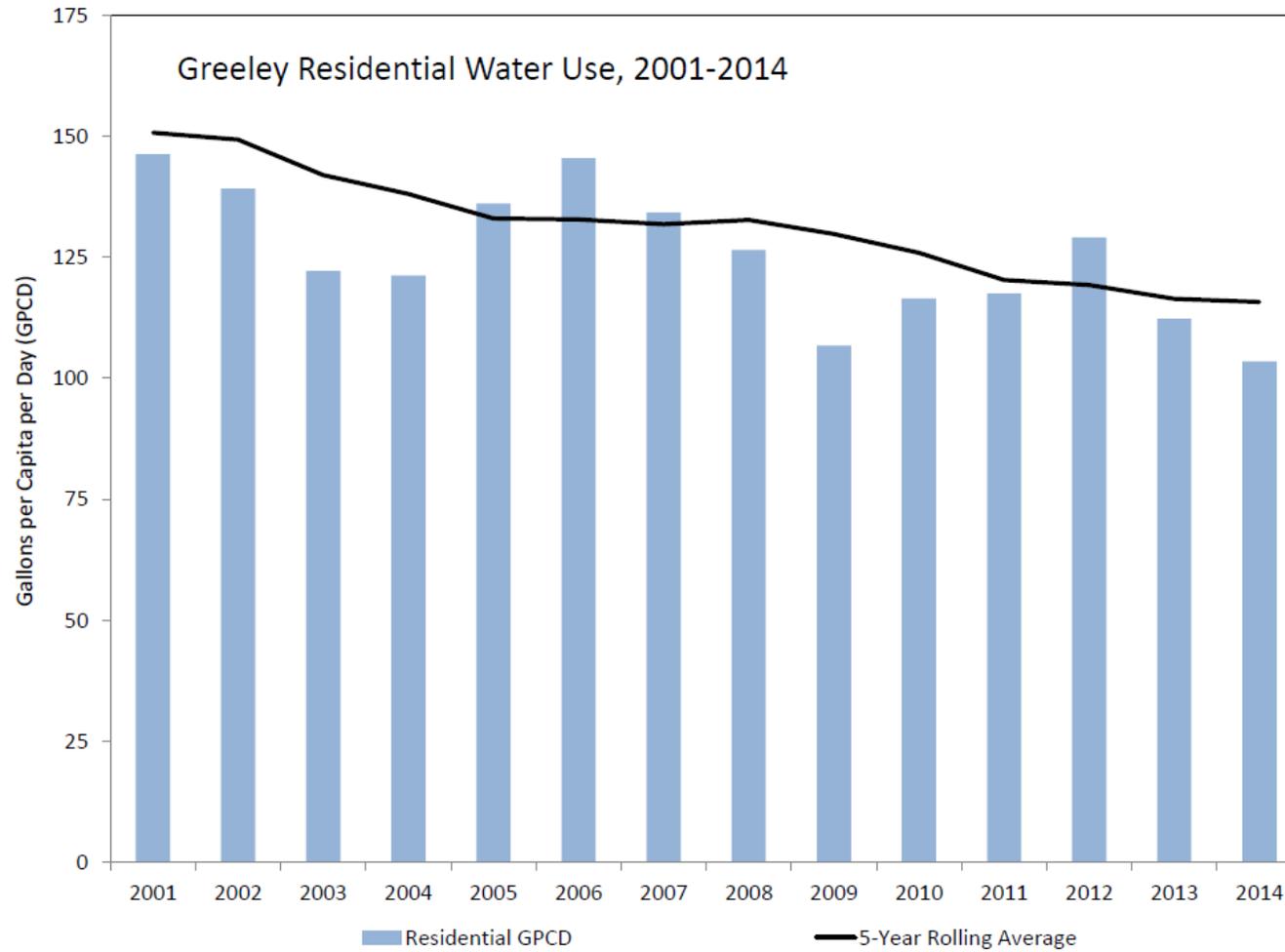
## APPENDIX B: CONSERVATION MEASURES AND PROJECTED SAVINGS

Current Program/Measures	# of Customers Impacted Per Year	Estimated Savings Per Account (kgal/year)	Estimated Total Savings Per Year (AF)	Comments	Citation
Mandatory watering restrictions (3 days per week)	All	0		Existing program for 100 years. Unprecedented. Key benefits include: reduced peak demand, more regularized demand patterns, useful education tool, keeps water use and efficiency in public eye.	
Soil amendment ordinance	200	16.3	10	Estimate based on discussions with Ruth Quade.	"30% less water is needed" - A1
Water waste ordinance	All		10		
ULF toilet rebate (\$50)	161	9	4.4	Based on average savings level determined at 95 % confidence level	<i>Residential End Uses of Water - AWWA, 1999; EPA Residential Retrofit Study - Aquacraft, 2004; Handbook of Water Use and Conservation, A. Vickers 2001.</i>
HET toilet rebate (\$100)	4	10	0.1	Based on average savings level determined at 95 % confidence level. Note: As more HET models become locally available, the numbers will increase.	
Clothes washer rebate (\$100)	456	5.5	7.7	Based on average savings level determined at 95 % confidence level and current clothes washer water use data	<i>EPA Residential Retrofit Study - Aquacraft, 2004; Handbook of Water Use and Conservation, A. Vickers 2001; Consortium for Energy Efficiency</i>
Indoor commercial efficiency audits	225	29.1	20.1	Calculation based on data from Ruth Quade (if they take advantage of retrofits)	
Conservation education program (indoor/outdoor)	Many/all	0.5	23.0	Estimate based historic demand patterns and education program implementation timeline. Assumes 50 % of customers save 500 gallons per year through educational efforts.	<i>"As We See It -- Education on Water Use Is Essential as Population, Demand Soar", Fender, Douglas H. Journal AWWA, Vol. 95 Iss. 2, February 2003; Handbook of Water Use and Conservation, A. Vickers 2001.</i>
Conservation kit distribution	450	2	2.8	Assumes not all kits are installed and only limited savings achieved.	<i>Handbook of Water Use and Conservation, A. Vickers 2001.</i>
Irrigation audits	300	20	18.4	Engineering estimate	

Water loss control	1	N/A	25	Based on a measured 1 % reduction in system loss between 97-01 and 02-07 (-6% vs. -5%) amounting to a 0.1% reduction per year. Reductions will likely taper off at the -3% to -4% level, but the program effort is probably worthwhile to maintain such a low level of system losses.	Greeley water use data
<b>Estimated Annual Savings From Current Programs/Measures</b>			<b>121.5</b>	Does not include significant peak usage reductions resulting from watering restrictions that could be reducing coincident peak day demand by 30 - 40%.	
<b>Natural Replacement</b>					
Residential toilet retrofit (1% per year)	140	9	3.9	Assumes 1% of residential customers per year replace toilets. Some apply for the available rebate and some do not.	<i>Residential End Uses of Water - AWWA, 1999; EPA Residential Retrofit Study - Aquacraft, 2004; Handbook of Water Use and Conservation, A. Vickers 2001.</i>
Residential CW replacement (3% per year)	450	5.5	7.6	Assumes 3% of residential customers per year replace their washer. Some apply for the available rebate and some do not.	
CII toilet replacement (1% per year)	250	10	7.7	Assumes 1% of CII customers will replace toilets each year. Water savings estimate is on the low side of scale. Savings are dependent upon usage frequency of the old and new fixture.	<i>Commercial and Institutional End Uses of Water - AWWA, 2000; A Practical Approach to Water Conservation for Commercial and Industrial Facilities, Mohan Seneviratne, 2007; Handbook of Water Use and Conservation, A. Vickers 2001.</i>
CII faucet replacement (1% per year)	250	5	3.8	Assumes 1% of CII customers will replace faucet aerators each year. Water savings estimate is on the low side of scale. Savings are dependent upon usage frequency of the old and new fixture.	
<b>Estimated Annual Savings From Natural Replacement</b>			<b>23.0</b>		
<b>Total Estimated Annual Savings From Current Programs and Natural Replacement<sup>7</sup></b>			<b>144.4</b>	50 AF = 0.1% of total annual demand. The amount represents approximately 0.28% of Greeley's total annual demand. The expected range of savings should be + or - 10% of the total (128 - 166 AF). When developing these savings into a long-term demand forecast changes in technology and program implementation rates must be considered.	

<sup>7</sup> Greeley water conservation program matrix, estimated water savings, and source citation

### APPENDIX C: RESIDENTIAL GALLONS PER CAPITA PER DAY AVERAGES



**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE \_\_\_\_\_

NO ENCLOSURE   X  

ITEM NUMBER:           9

TITLE:                   EXECUTIVE SESSION

RECOMMENDATION:    INFORMATION ONLY

ADDITIONAL INFORMATION:

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE   X        NO ENCLOSURE       

ITEM NUMBER:            10

TITLE:                    ACTION: RECOMMEND APPROVAL OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT MILTON SEAMAN WATER SUPPLY PROJECT, BILLING AGREEMENT FOR THE SECTION 401 OF THE CLEAN WATER ACT, STATE WATER QUALITY CERTIFICATION AND RECOMMEND THE SAME TO COUNCIL

RECOMMENDATION:      RECOMMEND APPROVAL OF THE COLORADO DEPARTMENT OF PUBLIC HEALTH AND ENVIRONMENT MILTON SEAMAN WATER SUPPLY PROJECT, BILLING AGREEMENT FOR THE SECTION 401 OF THE CLEAN WATER ACT, STATE WATER QUALITY CERTIFICATION AND RECOMMEND THE SAME TO COUNCIL

**ADDITIONAL INFORMATION:**

City Staff is requesting that the City of Greeley Water and Sewer Board approve and recommend the same to City Council a billing agreement with the Colorado Department of Public Health and Environment, Water Quality Control Division (division). The Division has been asked to review the water quality data analysis and modeling being used for the Milton Seaman Water Supply Project (MSWSP) Environmental Impact Statement (EIS) to ensure the information used in the analysis can also be used in pursuit of a 401 Water Quality Certification (401 certification).

For projects requiring 401- certification, the division is now required to categorize projects into a tier ranging from one through four based on project complexity pursuant to Colorado regulation 25-8-502 C.R.S. and House Bill 15-1249 (1.2). The division has determined that due to the high degree of complexity, the increased potential for water quality impacts and the significant level of public participation regarding this project, that the MSWSP 401 certification review is a Tier 4 project.

Due to these project challenges, the division will be entering into a contract with a consultant(s) to assist us in the analysis of the water quality data, models and technical reports. The MSWSP will require division staff and contractor time to review technical information and reports in support of the 401 water quality certification. For Tier 4 projects, the applicant is required to pay the actual review costs based on expended hours.

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE \_\_\_\_\_

NO ENCLOSURE   X  

ITEM NUMBER:           11

TITLE:                   LEGAL REPORT

POSSIBLE ACTION:       STATEMENTS OF OPPOSITION, IF ANY

RECOMMENDATION:      INFORMATION ONLY

ADDITIONAL INFORMATION:

**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE \_\_\_\_\_ NO ENCLOSURE   X  

ITEM NUMBER: 12

TITLE: DIRECTOR'S REPORT

RECOMMENDATION: INFORMATIONAL ONLY

ADDITIONAL INFORMATION:

- Agenda for Water Budget Outreach Public Meeting
- Termination of Fabrizio/Heinze Acquisition
- Closed 5 Shares of North Weld MPIC

# Water Budget OPEN HOUSE

Island Grove Event Center, Room C  
November 16th, 3:30 - 7:30 PM  
501 N. 14th Avenue, Greeley

3:30 Welcome to the open house

4:00 Water Budget Presentation

4:15 Q&A

Visit display, view Water Budget Map, sign up on WaterSmart

5:00 Water Budget Presentation

5:15 Q&A

Visit display, view Water Budget Map, sign up on WaterSmart

6:00 Water Budget Presentation

6:15 Q&A

Visit display, view Water Budget Map, sign up on WaterSmart

7:00 Water Budget Presentation

7:15 Q&A

Visit display, view Water Budget Map, sign up on WaterSmart

7:30 End of Open House



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**WATER & SEWER BOARD AGENDA** NOVEMBER 16, 2016

ENCLOSURE \_\_\_\_\_

NO ENCLOSURE \_\_X\_\_

ITEM NUMBER: 13

TITLE: SUCH OTHER BUSINESS THAT MAY BE  
BROUGHT BEFORE THE BOARD AND  
ADDED TO THIS AGENDA BY MOTION OF  
THE BOARD

RECOMMENDATION: TO BE DETERMINED

ADDITIONAL INFORMATION: