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WaterSMART Grants

Water and Energy Efficiency Grants for FY 2018
FOA No. BOR-DO-18-F006

Weber-Provo Diversion Bypass and Metering Project

Provo River Water Users Association

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TABLE OF CONTENTS

I. Technical Proposal and Evaluation Criteria
   1) Executive Summary 1
   2) Background 3
   3) Project Location 5
   4) Technical Project Description 5
   5) Evaluation Criteria 7

II. Project Budget 15
   1) Funding Plan and Letters of Commitment 15
   2) Budget Proposal 15
   3) Budget Narrative 17

III. Environmental and Cultural Resource Compliance 18

IV. Required Permits or Approvals 19

V. Letters of Support 19

VI. Official Resolution 21

Appendix A: Letters of Commitment and Support

Appendix B: Quantifiable Water Savings Computation Table

List of Figures

Figure 1 – Provo River Project Facilities Map 2
Figure 2 – Weber-Provo Diversion – Plan Drawing 6
Figure 3 – Picture of Weber-Provo Diversion (Winter Conditions) 7

List of Tables

Table 1 – Provo River Project Annual Diversions 4
Table 2 – Project Schedule 7
Table 3 – Summary of Water Savings to Association 8
Table 4 – Summary of Project Funding Sources 15
Table 5 – Construction Costs - Bypass to the Weber River (Feature 1) 16
Table 6 – Construction Cost - Meter Vault for Weber-Provo Canal Bypass (Feature 2) 17
Table 7 – Proposed Budget and Funding Plan 17

I. TECHNICAL PROPOSAL AND EVALUATION CRITERIA

(1) EXECUTIVE SUMMARY

Project Sponsor

Provo River Water Users Association
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Contributing Partners

Provo River Water Users Association (Association)
Weber Basin Water Conservancy District (WBWCD)
Weber River Water Users Association (WRWUA)
Central Utah Water Conservancy District (CUWCD)

Project Overview

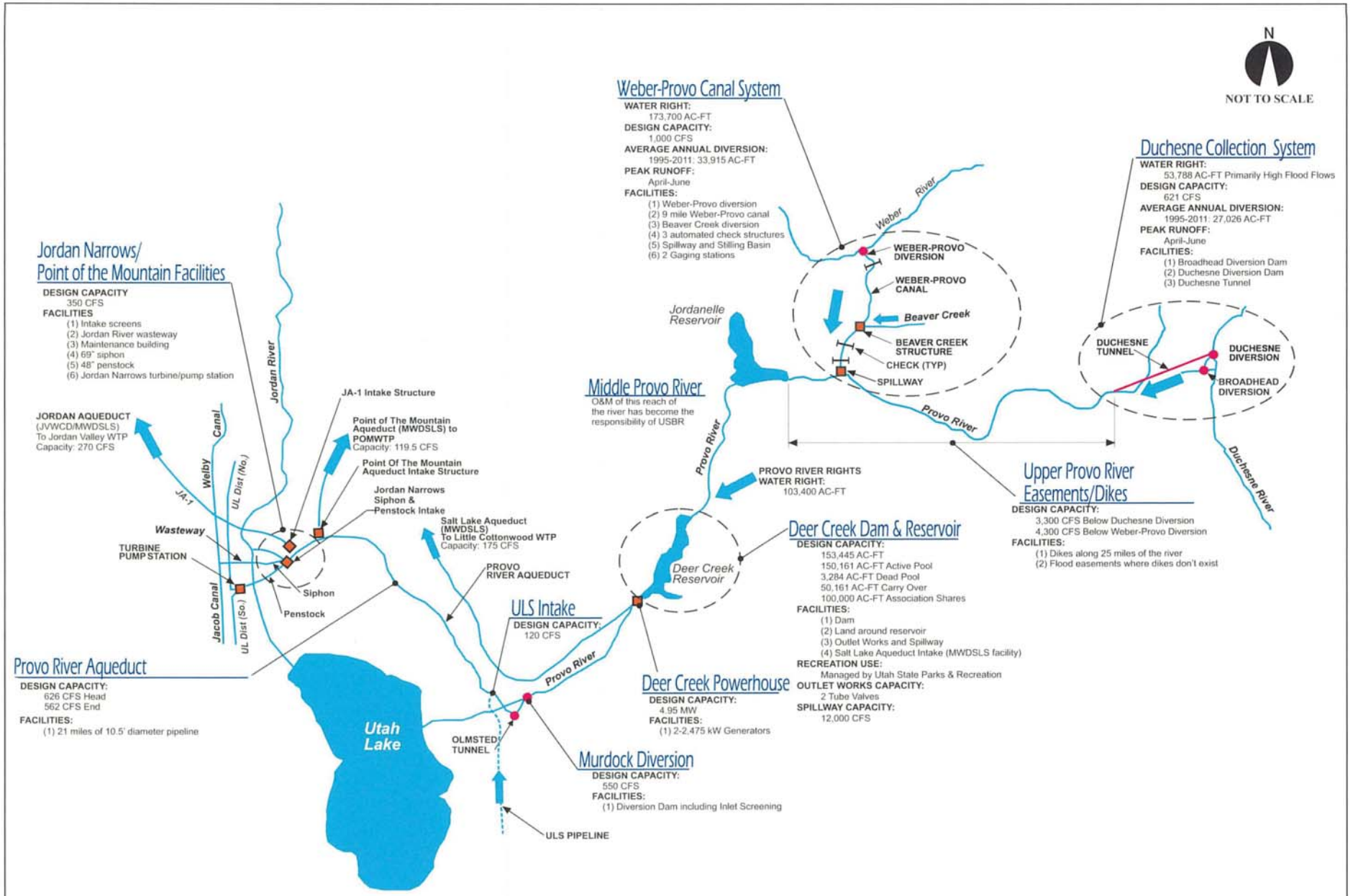
The Weber-Provo Diversion Dam and Canal divides the flow at headwaters of the Weber River and sends a significant portion of these flows to the Provo River system. Reclamation has four projects that rely heavily on the water available in the Weber and Provo Rivers and whose operations are greatly impacted by the diversions and water accounting that occurs at the Weber-Provo Diversion Dam.

The Weber-Provo Canal was initially constructed as a feature of the Weber River Project to deliver Weber River water to the Provo Reservoir Water Users Company, a Weber River Project shareholder in the Provo River watershed. Weber-Provo Canal was later transferred to the Provo River Project (PRP) and enlarged. A map showing the location of the Weber-Provo Canal and all other Provo River Project facilities is shown in Figure 1.

Weber-Provo Canal carries water from the Weber River to the Provo River for storage in Deer Creek Reservoir and for other uses by shareholders in the Provo River and Weber River Projects. The quantity of this imported Weber River water varies with the snowpack and runoff conditions and represents from 25% to 60% of the Provo River Project's water supply.

The proposed Weber-Provo Diversion Bypass and Metering Project (proposed project) would add a piped bypass from the diversion dam back to the Weber River that wouldn't be susceptible to ice and debris problems. This bypass would better control the division of the Upper Weber River's flows in the non-peak runoff and winter seasons. The proposed project will also install two metering vaults with Mag Meters that will provide accurately real-time accounting of the Upper Weber River water that is split between the Weber and Provo River systems.

The estimated cost of the project is $308,312 to be shared by the "contributing partners" listed above. It is noteworthy that all the sponsors are Reclamation Project partners over separate



Bowen Collins & Associates, Inc.
CONSULTING ENGINEERS

WRWUA

Figure 1
PROVO RIVER PROJECT MAP

Federal water projects. Construction is expected to be completed by March 31, 2019. Completing the project would save an estimated 2,571 ac-ft to the Provo River Project and could save up to 3,190 ac-ft between three Reclamation Projects. This project will also result in the better management and division of 158,000 ac-ft/yr to the benefit of water users on both the Weber and Provo Rivers. Data from the project would facilitate better communication and collaboration among water users, reduce conflict, and improve operational transparency at one of the most closely watched and monitored features on the Weber River.

(2) BACKGROUND

The Provo River Water Users Association (Association) is the sponsor and operator of the Provo River Project. Association staff includes a General Manager, Operations and Engineering Manager, Facilities and Lands Manager, and other office and field employees. The Association is governed by an eleven member Board of Directors representing the stockholders.

Provo River Project

Construction of the Provo River Project (PRP) began in 1938, with the first water becoming available in 1941 upon completion of Deer Creek Dam. Construction of all project facilities was completed in 1951. The Deer Creek Power Plant was constructed later and was completed in 1958. As shown on the PRP map (see Figure 1), PRP facilities consist of four primary systems; Deer Creek Dam and Reservoir, the Weber-Provo Canal System, the Duchesne Collection System and the Provo River Aqueduct Delivery System. Water from the Duchesne and Weber rivers are captured and comingled with natural waters of the Provo River which then flow downstream and are stored in the 152,564 acre-feet Deer Creek reservoir. Stored water is delivered to customers through the aqueduct delivery system which was enclosed in 2012.

The Weber-Provo Canal and Diversion Dam were constructed in 1929-1930 to a capacity of 210 cfs as part of the Weber River Project to carry Echo Reservoir storage water (by an upstream water right exchange) and surplus Weber River natural flow water to Weber River Project shareholders on the Provo River. In 1941-1947, the canal and diversion dam were enlarged to a capacity of 1,000 cfs under PRP to carry additional water to the Provo River for storage in Deer Creek Reservoir for other PRP purposes. By contract dated December 20, 1938, between WRWUA, the Association, and Reclamation the Weber-Provo Canal and diversion structure was transferred to the PRP to be managed by the Association.

Water diverted through the canal is governed by four State of Utah water rights, Federal contracts, and a 1938 Power Interference Agreement. The Power Interference Agreement increases the water available for diversion from about October 15 to April 15 of each year. The Weber River Commissioner (River Commissioner) has oversight for the flows diverted through the canal per the above mentioned water rights and contracts.

Water Supply

Water for PRP comes from three rivers; the Provo River by direct diversion, the Weber River through the Weber-Provo Canal, and the Duchesne River through the Duchesne Tunnel (see

Figure 1 map). Exchange water rights and agreements with the downstream Utah Lake increase the amount of Provo River water stored in Deer Creek Reservoir. The average amount of water from each source during the 1954 to 2011 period of record is summarized in Table 1.

Table 1
Provo River Project - Average Annual Diversions
(1954-2011)

Source of Water	Average Diversion (ac-ft)
Duchesne River	24,283
Weber River	32,334[1]
Provo River	57,656
Utah Lake Exchange	5,642
Total	**119,916**

[1]Water for PRP use only, does not include water delivered for the Weber River Project

As shown above, about 27 percent (32,334 ac-ft) of the Association's water comes from the Weber River through the Weber-Provo Canal. A full PRP water allocation is 100,000 ac-ft per year. Association water serves municipal, industrial, and irrigation users in northern Utah and Salt Lake Counties. Approximately 88 percent of the water is used for municipal and industrial purposes. It is estimated that over 800,000 people rely on the Association for culinary water.

Need

Accurate flow measurement at the Weber-Provo Diversion is crucial to the operation of the Weber River and the three Reclamation projects (PRP, Weber River and Weber Basin Projects) that divert water from the Weber River. These flow measurements are also critical to the Central Utah Project which exchanges water between Jordanelle and Deer Creek Reservoirs. Improving flow measurement at this critical location is a high priority for Reclamation, the State of Utah, and water users on both the Weber and Provo River systems. While progress has been made in recent years to better understand the water rights and contracts that control the division of the Upper Weber River waters, improvement is still needed particularly with measuring and bypassing the low Weber River flows.

At the current time, all Weber River water passing the Weber-Provo Diversion down river is either measured by a 150 foot long Ogee weir structure across the Weber River or by orifice calculations through the radial "bypass gate" located at the left end of the weir adjacent to the canal intake structure. Flows through this bypass gate and over the weir are at best reasonable approximations of the actual flow, especially low flow fall and winter flows. Historically, the radial bypass gate has been opened slightly in the fall with the downstream flow being estimated. The radial gate is then allowed to freeze in place during the winter and no further adjustments can be made until the following spring. This operation has resulted in higher than necessary bypasses downstream in order to ensure that downstream rights are met and that the river doesn't go dry as a result of the varying weather conditions while the gate is frozen in place.

With the proposed flow meters and river bypass in place, the river commissioner would be able

to immediately determine and accurately adjust flows as needed to ensure the proper distribution of water both into the canal and to the downstream water right holders on the Weber River. Benefits would be realized by all water users on both rivers. This real-time flow measurement would especially be helpful during the delivery and accounting of water during the winter season when the 1938 Power Interference Agreement enhances what can be diverted.

(3) PROJECT LOCATION

A map of all PRP facilities, including the Weber-Provo Diversion, is shown in Figure 1.

(4) TECHNICAL PROJECT DESCRIPTION

The project is described under the following three headings: Objective, Design, and Schedule.

Objective

The proposed project will install facilities and equipment needed to more accurately measure and manage the flows entering the Weber-Provo Diversion Structure during the fall and winter months when the demands downstream are low enough that it is impractical to measure them over the large Ogee weir or through the smaller radial gate opening. The proposed project will also reduce the potential loss of flow control when there is a downward fluctuation in the flow of the Weber River and the bypass gate is frozen in place. Currently if this happens, the forebay drains to the river and into the Weber-Provo Canal. Once the forebay is empty, all water flows down the Weber River including water belonging to the Association.

Design

The proposed project consists of: 1) a bypass pipeline and meter vault from the forebay of the Weber-Provo Diversion to the Weber River, and 2) a meter vault on the existing bypass pipeline from the forebay of the Weber-Provo Diversion to the Weber Provo Canal. These two features are shown in plan view on Figure 2. A picture of the Weber-Provo Diversion during winter freeze conditions is shown in Figure 3.

Bypass Pipeline to Weber River with Meter Vault: A 48-inch diameter HDPE pipeline will be installed from the existing diversion structure to the Weber River. A blockout in the concrete wall of the diversion structure has already been provided for the pipeline. HDPE fittings will be used as needed to direct the discharge of the pipeline toward the river just downstream of the diversion structure. A small concrete outlet structure with a screen will be constructed at the discharge end. A new 10' x 10' concrete vault will be constructed along the straight section of pipe to house the meter. The specified meter is a 36" magnetic flow meter (FLxFL) Siemens Mag 5100 W Model 7ME65800 – 7ML14-2AA2.

Meter Vault for existing 36" Bypass Pipeline to Weber-Provo Canal: A new 10' x 10' concrete vault will be constructed along the straight section of previously installed pipe to house the mag meter. The specified meter is a 36" magnetic flow meter (FLxFL) Siemens Mag 5100 W Model 7ME65800 – 7ML14-2AA2.

Figure 3 – Weber-Provo Diversion Dam (winter conditions)

Schedule

The anticipated schedule by task is shown in Table 2.

Table 2
Project Schedule

Description	Start	Complete
Environmental Compliance	July 1, 2018	August 15, 2018
Project Construction	August 15, 2018	March 31, 2019

(5) Evaluation Criteria

Each of the eight "evaluation criteria" (A through H) listed in Section E of the FOA are presented below.

Evaluation Criterion A: Quantifiable Water Savings

Two components of water savings would be realized through completion of the proposed project: 1) reduced water spilled past the Weber-Provo Diversion structure and lost to the Association and 2) reduced water spilled into the Great Salt Lake and lost to all water users. The first savings would come from better management by the Weber River commissioner of the daily and hourly flows at the diversion structure. The second would result from better management and

coordination among the water users (primarily the Association and WBWCD) in determining where water could best be utilized and/or most efficiently used. Having accurate, real-time flow data at the Weber-Provo Diversion is critical for both components. Water savings from both components is estimated at 2,856 ac-ft per year.

(1) Water Spilled past the Diversion Dam and lost to the Association – An estimated 2,571 af-ft per year of excess water is "spilled", or more accurately allowed to bypass, the diversion dam in order to ensure that all prior downstream rights are satisfied. The current practice is to estimate a flow bypass requirement that meets all downstream rights, then set the large bypass gate in the fall at a stage that at least meets this requirement, let the gate freeze in place, and then return in the spring to reset it for irrigation diversions. Also, in order to ensure that the river doesn't dry up under varying downstream diversions demands and upstream river flow conditions during the winter frozen gate condition, some excess water is also allowed to overtop the diversion dam. This outdated, inaccurate, and wasteful practice would be eliminated with completion of the proposed project.

With the river bypass pipeline and meter in place, all late fall to early spring water would now flow through the bypass pipeline. And due to accurate flow measurement, only the amount of water needed downstream would be bypassed and adjustments could be made throughout the winter as weather conditions change without fear of the gates being frozen in place.

Water Savings Computation - The Weber River commissioner computed the amount of water that would be saved with completion of the proposed project and utilization of the new bypass pipeline and flow meters. This computation uses historic daily data for the period of 2014 through present (May 3, 2018). Due to the large quantity of data in the study, only one year's record is included in this report (see Appendix B). All other records are available upon request.

The study uses one USGS gaging station (Weber River at Oakley) and the Parshall flume in the Weber-Provo Canal at Oakley, along with the actual diversions of upstream canals (between the Oakley river gage and the Weber-Provo Diversion gage) and downstream canals (below the Weber-Provo Diversion to Wanship Reservoir). From this data, the Weber River Commissioner computed the actual amount of water historically bypassed as compared to the bypass required by water rights. The savings was then computed by subtracting "required bypass" from the historical bypass. Table 3 below is a summary of water saved.

The Column titled "Water Savings to the Association" shows the annual amount the Provo River Project lost to excess diversion dam bypasses over the year. This annual loss ranged between 927 ac-ft to 3,794 ac-ft with the average annual saving being 2,571 ac-ft. The column titled "Calculated Metering Error" shows the absolute errors in the quantity of water that bypassed the Weber-Provo diversion. This is cumulative error in water delivery caused by not having a real-time flow meter and low-flow bypass at the Weber-Provo canal. The "Calculated Metering Error" shows the potential water right impacts to all water users on the Weber and Provo River systems from incorrect river bypasses. The reason the "Calculated Potential Metering Error" is larger than the "Water Savings to the Association" is there a few days when the metering errors resulted in too much water being delivered to the Weber-Provo Canal which lowered the net water savings.

The River Commissioner has attempted to reduce the water loss to the Provo River Project which may be why the 2017 and 2018 losses to the PRP are lower, however we can see that the total "Calculated Metering Error" remains fairly constant during the observed 5 year period.

Table 3
Summary of Water Savings to the Association

Hydrologic Year	Water Savings to the Association	Calculated Potential Metering Error
2014	3,652 ac-ft	4,049 ac-ft
2015	2,951 ac-ft	3,049 ac-ft
2016	3,794 ac-ft	3,801 ac-ft
2017	1,379 ac-ft	1,547 ac-ft
2018 (to date)	927 ac-ft	3,006 ac-ft
2018 (est. annual)	1,081 ac-ft	3,506 ac-ft
Average Annual Savings	**2,571 ac-ft**	**3,190 ac-ft**

(2) Water Spilled into the Great Salt Lake – An estimate of 250-500 ac-ft per year of water may be saved from flowing into the Great Salt Lake. The Weber-Provo Diversion Dam and Canal is an important facility to manage the surplus flows on both the Weber and Provo River systems that both terminate at the Great Salt Lake. A more aggressive approach to managing diversions through the Weber-Provo Canal would allow for more water to be used or captured in upstream reservoirs. As an example, in high-flow years when surplus Weber River water is expected to be wasted to the Great Salt Lake, the decision could be made to bring the water to the Provo River for storage in Utah Lake which could be exchanged to Deer Creek Reservoir later in the year. Or, depending on the levels of Utah Lake and other reservoirs, the decision could be made to leave these surplus flows on the Weber River system for storage in Echo and Wanship Reservoirs (or other Weber Basin Project reservoirs).

Water Savings Computation – The amount of water that flows into the Great Salt Lake varies greatly and depends on the condition of various downstream reservoirs of the Weber River system. However, during wet years when downstream reservoirs are likely to fill, it is likely that a significant portion of the "Calculated Loss to the PRP" water in Table 3 flows to the Great Salt Lake and is a loss to both the Weber and Provo river systems. Given that the downstream Wanship Reservoir, which has one of the most junior priority water right dates on the Weber River System, fills on average 53% of the time during the past 30 years it is reasonable to assume that half of the time a portion of the average annual 2,571 ac-ft loss to the Association could also be loss to evaporation at the Great Salt Lake. If we assumed that between 20-40% of the water loss to the association flowed to the Great Salt Lake it would equate to 250-500 ac-ft/yr loss on average.

Evaluation Criterion B: Water Supply Reliability

The proposed project will address three critical water supply reliability concerns in the project area; 1) need for improved communication and cooperation among water users to increase water

operation efficiency, 2) drought mitigation and meeting the growing demand for water, and 3) balancing water user needs with environmental needs. Efforts are already underway to address these concerns, as described in the sections below. The additional more reliable and more transparent data provided by the proposed project would benefit the ongoing efforts in each of these three areas.

Promote and encourage collaboration among users

Concern/Background – In an effort to address the operational and water supply reliability concerns of the water users on the Weber and Provo Rivers, Reclamation formed the Weber River Coordination Committee (WRCC) made up of members from government (several Federal and State agencies), water user entities (including the Association, WRWUA, and WBWCD), and other stakeholder entities. The team, led by Reclamation, meets on a regular basis to review past operations and discuss current and future operations. As stated in the team charter;

> *"The mission of the Project Management Team (a subset of WRCC) is to foster an environment of cooperation and partnership between Reclamation Projects Operators that rely on water from the Weber and Provo Rivers in order to increase the transparency of project operations and to fulfill the vision statement."*

Project Benefit - Having ready access by all parties to the real-time flow data provided by the proposed project would improve the transparency of operation of the Weber-Provo Diversion, ensure more accurate water deliveries, and reduce conflict. Beneficiaries would include managers of the three Reclamation projects receiving water from the Weber River, river commissioners on the Weber and Provo rivers, Reclamation, the State Divisions of Water Rights, and all other water users on the Weber River. In addition to the continuous flow measurements, the low flow bypass would allow year-round adjustments to diversions and bypasses of the Upper Weber River flows which would help ensure that water rights, contracts, and instream flow needs are met.

Drought mitigation and meeting the growing demand for water

Concern/Background - Over the past two to three decades, Utah has experienced some of the fastest population growth in the nation. Most of this growth has occurred along the Wasatch Front served by three of Reclamation's projects – Weber River, Weber Basin, and Provo River Projects. Population projections from the July 2017 Research Brief, Kem C. Gardner, University of Utah Policy Institute, projects Utah County populations to grow from the current about 0.6 million to over 1.6 million by 2016, Salt Lake county from about 1.1 million to 1.7 million, and Weber and Davis counties from about 0.6 million to over 0.9 million. Water managers, including Reclamation, have a big challenge ahead in trying to meet this growing demand for water.

In addition to the growth in population, Utah has experienced drought conditions in six of the last ten years. The severity of sustained drought has a significant impact on residents in these areas. Reclamation Project water rights on the Weber River have priority dates that range from 1924 to 1964. Since the normal irrigation season flows were all appropriated in a 1903 court

decree, Reclamation is only entitled to water during the winter Season and spring runoff peak. The PRP with typical Reclamation water rights, has a water supply that comes primarily from winter and high flow on three rivers (Provo River, Weber River, and Duchesne River). As a result of these "high flow/junior priority" water rights, when snowpack is below average the water available for diversion is disproportionately reduced and the yield of PRP can be disproportionately lower than average. This was evident during recent drought years wherein the Association was forced to reduce allocations to: 55% (2002), 75% (2003), 90% (2008), 77% (2012), 43.5% (2013), 82% (2014), 63.623% (2015), and 81% (2016).

All Weber River water users, particularly those managing the large Reclamation projects (the Association, WBWCD, and WRWUA) recognize the value of their water supply and the need to implement long term measures to improve water management and assist in future planning efforts, particularly in drought years. WBWCD recently established a "Drought Planning Task Force" to prepare a "*Weber River Basin Drought Contingency Plan*". The Association, WRWUA, and other water users on the Weber River are partners on the study. The Association also recently completed a major drought planning effort and preparation of a "Water Rights Management and Drought Mitigation Plan" (June 2013).

Project Benefit - Water saved and better managed by implementing the proposed project would be used to help alleviate water shortages that occur on a regular basis in the project area. The additional real-time data provided by the proposed project would be of significant value to ongoing drought planning efforts and to ensuring that only the legally entitled amount of water is diverted to the water users.

Balancing water user needs with environmental needs

Concern/Background - A significant "water supply reliability" concern for water users, Federal and State wildlife management agencies, and environmental groups, is the need to find balance between water development (meeting current and future municipal, industrial, and agricultural demands) and protecting and enhancing the environment. Water users want to protect their right to divert water under existing rights and contracts and to develop additional water as needed. Environmental laws and groups, on the other hand, are focused more on protecting the environment. While both share the other's concerns, there is often conflict between the two viewpoints on water management issues.

The "Weber River Partnership" was recently established to bring together the various entities and groups in order to enhance collaboration and address these important issues. The Utah Division of Wildlife Resources serves as the team lead with partners including Reclamation, U.S. Fish and Wildlife Service, WRWUA, WBWCD, the Association, Trout Unlimited, and several other Federal, State, local, and private entities. A current issue is the status of the bluehead sucker and the Bonneville cutthroat trout. Bluehead sucker are a native fish species found in portions of the Weber River. Both species are covered by conservation agreements between the State of Utah, the U.S. Fish and Wildlife Service, and other parties. Work by the group is currently focused on protecting these and other species to avoid listing under the Endangered Species Act (ESA) which could adversely affect water user interests. As stated on its web-page:

"Weber River Partnership works to improve the Weber River Watershed by creating a forum to develop meaningful partnerships focused on collaboration, organizing holistic projects that result in win-win situations, and cultivating leadership within the watershed. We welcome anyone interested in the collective quality of life in the watershed to join with our voice."

Project Benefit - Data from the proposed project would enlarge the database of information available to all water users on the Weber River and help them better manager their water rights. This also includes environmental water rights. It would also improve the ability of the River Commissioner and water users to consistently maintain the correct flows in the section of the Weber River between the Weber-Provo Diversion and Rockport Reservoir and reduce the likelihood of the flow being terminated completely due to winter freezing. Additionally, it would assist the Utah Division of Wildlife Resources in monitoring and managing water on both the Weber and Provo Rivers to ensure fishery and ESA agreements are honored.

Evaluation Criterion C: Implementing Hydropower

While the project would not directly implement hydropower, the additional real-time flow data provided by the project would help the River Commissioner better manage the power rights on both rivers, especially as they pertain to the 1938 Power Interference Agreement. Also, any additional water saved and diverted to the Provo River (see Evaluation Criterion A above) could flow through the Jordanelle, Deer Creek, and Olmstead power plants.

Utah Power and Light Company (UP&L) has one of the earliest water rights on the Weber River (WRN 35-8061, 1903 priority). UP&L entered into a contract with the United States, the Association, WRWUA, and Utah Light and Traction Company, for storage of the portion of this power water (Power Water) that is available during the winter at Echo Dam. Under this "1938 Power Contract", the Association and WRWUA may store all or any part of this "power water" in Echo Reservoir or divert it to the Provo River through the Weber-Provo Canal for storage in Deer Creek Reservoir. The Association and WRWUA have an equal share of the power water. The River Commissioner manages the river to ensure that all rights are met, including the rights under the 1938 Power Interference Agreement.

A significant portion of the UP&L 1903 water right cannot be utilized during the winter months for power generation and is therefore lost down river to the Great Salt Lake without generating power. By entering into the 1938 power agreement the Provo River and Weber River Projects are able to store water which would otherwise have been lost for power generation and lost to the Great Salt Lake, to be utilized later during the summer months to generate power at both Echo and Deer Creek Reservoirs when the power is needed and it can be distributed to meet water user needs during the summer rather than flow directly to the Great Salt Lake. Since a significant portion of the water available to meet Weber River power water rights occurs during the winter, accurate flow measurement and accounting of these flows at the Weber-Provo Diversion is very important. While it is difficult to quantify a benefit, more accurate real-time measurement of the flows at the Weber-Provo Diversion, especially the low flows that occur during the winter, would help the river commissioner better manage this power water.

Evaluation Criterion D: Complementing On-Farm Irrigation Improvements

Not applicable

Evaluation Criterion E – Department of Interior Priorities [New]

The proposed project would benefit two of the Department of Interior Priorities as follows:

DOI Priority 3 - Restoring Trust with Local Communities: As stated in the proposal, Reclamation has three projects that utilize water from the Weber River. As the demand for water grows, conflicts over water rights and how they are operated also increases. Four Reclamation projects are affected by operation of the Weber-Provo Diversion – three directly (Provo River, Weber River, and Weber Basin Projects) and one indirectly (Central Utah Project – Bonneville Unit). Many private canal companies on both rivers are also affected. In the past, the complicated operations at the diversion structure were viewed as a "black box" by most of the public, with only the river commissioners on both rivers fully understanding the details. In recent years, however, operations are more widely scrutinized. With Reclamation being in the middle of much of this controversy, improving the real-time accuracy and transparency of operations at the structure has been a high priority for Reclamation and the Utah Division of Water Rights. The proposed improvements would considerably improve the accuracy and transparency of operations, especially during the critical low-flow periods.

DOI Priority 5 – Modernizing our Infrastructure: As stated before, the Weber-Provo Diversion structure was constructed in the 1930's, almost 90 years ago. It has been upgraded several times since construction. However, control and measurement of low flows at the structure are still as limiting and inaccurate as when constructed. Current practice is to estimate winter flows needed downstream, set the gates in the fall, let the gate freeze in place, and then return in the spring to reset for irrigation flows. This method of operation worked fine when the structure was constructed, but is incapable of meeting the complex operational demands of today. The proposed improvements would utilize the latest technology to bring low-flow control and measurement capability into the modern era.

Evaluation Criterion F: Implementation and Results

Subcriterion F.1: Project Planning - The following three planning efforts identified "flow measurement improvement" at the Weber-Provo Diversion as a major issue needing remedy:

1. *Provo River Water Users Association Water Management and Conservation Plan (December 2014)*: This plan lists "Improve Flow Measurement (Weber River)" as its first of 26 conservation measures.

2. *Weber River Water Users Association Water Management and Conservation Plan (January 2017)*: This plan lists "Support Flow Measurement Improvements on the Weber River" as its second of 12 conservation measures.

3. *Weber River Management Plan (April 2014)*: This plan lists: "Install New Flow

Measurement Stations" on the Weber River as its number 1 of 14, and first priority, measure. The Weber-Provo Diversion was listed as one of 10 flow measurement stations to be installed.

Subcriterion F.2 – Performance Measures - The two categories of benefits that will result from the project are "water savings" and "improved water management" through more accurate flow control and flow data. Success of the proposed project will be evaluated by the following performance parameters:

Parameter 1: Install the meters and post the data on both the Association's and Utah Division of Water Rights' websites – Was it posted within a month after the meters were installed? Do all water users have access to the flow data? Was an effort made to notify water users and stakeholders when the data was available?

Parameter 2: Compare actual measured flows to estimated flows after the first year's operation, and compute the difference – Was the data collected and stored? Was a comparison of the data made on the first and second anniversary of completion of the project?

Parameter 3: Water savings – Did the additional data facilitate different operation scenario this year? How much water was saved?

Parameter 4: Maintain historic record of flow data for future use and comparisons – Are records of data being kept? Are historic records used to improve water management?

Parameter 5: Improved communication and collaboration among water users and stakeholders – Has the additional data caused any noticeable improvement in trust and collaboration among Weber River water users, Reclamation, and the public? Has the data been useful to the Weber River Partnership group efforts to improve understanding and appreciation of issues among its diverse partners? Has the data been useful to WBWCD's drought planning efforts?

Evaluation Criterion G: Nexus to Reclamation Project Activities

The Weber-Provo Diversion is a feature of Reclamation's Provo River Project. The water supply for three Reclamation projects – Provo River, Weber River, and Weber Basin Projects – are affected by operation of the diversion structure.

Evaluation Criterion H: Additional Non-Federal Funding

Non-Federal Funding/Total Project Cost = $154,156/308,312 = 0.50

II. PROJECT BUDGET

(1) Funding Plan and Letters of Commitment

The estimated cost of the project is $308,312.00. A summary of project funding sources is shown in Table 4. Contributions of all parties will be cash, with exception of the Central Utah Water Conservancy District which is contributing pipe valued at $20,000.

Table 4
Summary of Project Funding Sources

Funding Sources	Funding Amount
Non-Federal Entities	
Provo River Water Users Association	$67,078.00
Weber Basin Water Conservancy District	$33,539.00
Weber River Water Users Association	$33,539.00
Central Utah Water Conservancy District	$20,000.00
Requested Reclamation Funding	$154,156.00
Total Project Funding	**$308,312.00**

Copies of the following letters of commitment are included in Appendix A. Letters of support are discussed in Section V and are also included in Appendix A.

- Weber River Water Users Association
- Weber Basin Water Conservancy District
- Central Utah Water Conservancy District

(2) Budget Proposal

Project construction costs are shown in Tables 5 (Feature 1 – Bypass Pipeline and Meter) and Table 6 (Feature 2 – Meter Vault for Weber-Provo Canal Bypass). Included in these tables are estimates for engineering design, construction management and NEPA compliance. Association administrative costs associated with project oversight and management are not included in the budget because they will be paid directly by the Association.

Table 5
Construction Cost – Bypass to Weber River (Feature 1)

Feature 1 - Bypass Pipeline to Weber River with Meter Vault

BOWEN COLLINS & Associates, Inc. Consulting Engineers

Project: Weber Provo Diversion Structure Project *Date: 3-28-18*
Plans by: BC&A *Prepared by: MWC/JDB*

No.	Item	Quantity	Units	Unit Cost	Cost
1	Siemens Magmeter 36"	1	EA	$ 15,000.00	$ 15,000.00
2	Structural Concrete	30	CY	$ 1,000.00	$ 30,000.00
3	Excavation	150	CY	$ 50.00	$ 7,500.00
4	42-inch Slide Gate and Installation	1	LS	$ 7,500.00	$ 7,500.00
5	HDPE Pipe 42"	100	FT	$ 200.00	$ 20,000.00
6	HDPE Pipe Specials	1	LS	$ 15,000.00	$ 15,000.00
7	Steel Pipe, Supports, Dismantling Joint	1	LS	$ 13,000.00	$ 13,000.00
8	Backfill	150	CY	$ 18.00	$ 2,700.00
9	Dewatering	1	LS	$ 2,500.00	$ 2,500.00
10	Ladder	1	EA	$ 800.00	$ 800.00
11	Safety Hatch - Similar to PRCEP Hatches, H20	1	EA	$ 4,500.00	$ 4,500.00
12	Electrical	1	LS	$ 15,000.00	$ 15,000.00
13	Vent Piping	1	EA	$ 1,100.00	$ 1,100.00
	Subtotal				**$ 134,600.00**
14	**Contingency**	20%			**$ 26,920.00**
15	**Engineering Design**	5%			**$ 6,730.00**
16	**Construction Management**	10%			**$ 13,460.00**
17	**NEPA Compliance**				**$ 2,267.00**
					$ 183,977.00

Table 6
Construction Cost - Meter Vault for Weber-Provo Canal Bypass (Feature 2)

Feature 2 - Meter Vault for Existing 36" Bypass Pipeline to the Weber Provo Canal

Date: 3-28-18

Project: Weber Provo Diversion Structure Project *Prepared by: MWC/JDB*

Plans by: BC&A

No.	Item	Quantity	Units	Unit Cost	Cost
1	Siemens Magmeter 36"	1	EA	$ 15,000.00	$ 15,000.00
2	Structural Concrete	30	CY	$ 1,000.00	$ 30,000.00
3	Excavation	150	CY	$ 50.00	$ 7,500.00
4	HDPE Pipe 42"	0	FT	$ 200.00	$ -
5	HDPE Pipe Specials	0	LS	$ 15,000.00	$ -
6	Steel Pipe, Supports, Dismantling Joint	1	LS	$ 13,000.00	$ 13,000.00
7	Backfill	150	CY	$ 18.00	$ 2,700.00
8	Dewatering	1	LS	$ 2,500.00	$ 2,500.00
9	Ladder	1	EA	$ 800.00	$ 800.00
10	Safety Hatch - Similar to PRCEP Hatches, H20	1	EA	$ 4,500.00	$ 4,500.00
11	Electrical	1	LS	$ 15,000.00	$ 15,000.00
12	Vent Piping	1	EA	$ 1,100.00	$ 1,100.00
	Subtotal				**$ 92,100.00**
	Contingency	20%			**$ 18,420.00**
13	**Engineering Design**	5%			**$ 4,605.00**
14	**Construction Management**	10%			**$ 9,210.00**
					$ 124,335.00

Total project costs are summarized in Table 8 below. As shown, the total project cost of $342,317.00 would be shared equally by Reclamation and the cost share partners.

Table 7
Proposed Budget and Funding Plan

Budget Item Description	Computation		Recipient Cost Share	Reclamation Funding	Total Cost
	$/Unit	Quantity			
Project Construction					
Feature 1 (Table 5)			$ 91,988.50	$ 91,988.50	$ 183,977.00
Feature 2 (Table 6)			$ 62,167.50	$ 62,167.50	$ 124,335.00
Total Project Cost			**$ 154,156.00**	**$ 154,156.00**	**$ 308,312.00**

(3) Budget Narrative

Project costs associated with Association staff and resources needed to oversee the project will be covered by the Association outside the budget as additional contribution to the project. Cost estimates are described below.

Environmental Compliance: Environmental compliance costs associated with preparing the anticipated "Categorical Exclusion Checklist" (CEC) and other necessary work are estimated at about 1% of the total construction cost. This environmental compliance work would be done by Reclamation with technical input provided by the Association and BC&A. No issues are anticipated that would require an Environmental Assessment or greater than CEC compliance. The total estimated NEPA compliance cost of $2,267.00 is shown in Table 5.

Project Construction: The Association will solicit proposals from qualified contractors for the construction work. Selection of the contractor will be based on qualifications and fee. All work will be performed under contract with the selected contractor; i.e. none will be performed in-house. The engineer's estimate prepared by Bowen Collins and Associates for all construction work is itemized in Tables 5 and 6.

III. ENVIRONMENTAL AND CULTURAL RESOURCE COMPLIANCE

No ground-disturbing activity will be initiated on the proposed project until environmental compliance is complete and Reclamation explicitly authorizes work to proceed.

1. **Will the proposed project impact the surrounding environment?**

   Installing the pipeline and flow meters at an existing site is not expected to have any long-term effect on the surrounding environment. Minor temporary site disturbance would take place but care will be taken to keep earth material or other debris from entering the river or canal. Any ground disturbance will be restored as much as possible to pre-construction conditions.

2. **Are you aware of any species listed or proposed to be listed as a Federal threatened or endangered species, or designated critical habitat in the project area? If so, would they be affected by any activity associated with the Project?**

   No

3. **Are there wetlands or other surface waters inside the project boundaries that potentially could fall under Clean Water Act (CWA) jurisdiction of "Waters of the United States? If so, please describe and estimate any impacts the project might have.**

   No

4. **When was the water delivery system constructed?**

   The Weber-Provo Diversion was originally constructed as part of Reclamation's Weber River Project in the late 1930's. The diversion and canal were enlarged under the Provo River Project and the care, operation, and maintenance of the diversion and canal were conveyed to the Association on December 20, 1938. Extensive revisions to the diversion structure have taken place since that time.

5. **Will the proposed project result in any modifications of or effects to, individual features of an irrigation system (e.g., headgates, canals, or flumes)? If so, state when those features were constructed and describe the nature and timing of any extensive alterations or modifications to those features completed previously.**

   The Weber-Provo Diversion was originally constructed in the late 1930's and extensively modified since then, as stated above. The Project would modify the structure again by adding a bypass pipeline and meters.

6. **Are any buildings, structures, or features in the irrigation district listed or eligible for listing on the National Register of Historic Places? A cultural resources specialist at your local Reclamation office or the State Historic Preservation Office can assist in answering this question.**

   The Weber-Provo Diversion was constructed over 50 years ago and therefore may be eligible for listing as a historic site on the National Register of Historic Places. As stated under items 4 and 5 above, however, the structure has been extensively modified since its original construction.

7. **Are there any known archeological sites in the proposed project area?**

   No

8. **Will the proposed project have a disproportionately high and adverse effect on low income or minority populations?**

   No

9. **Will the proposed project limit access to and ceremonial use of Indian sacred sites or result in other impacts on tribal lands?**

   No

10. **Will the proposed project contribute to the introduction, continued existence, or spread of noxious weeds or non-native invasive species known to occur in the area?**

    No

IV. REQUIRED PERMITS AND APPROVALS

Compliance with the National Environmental Policy Act (NEPA) is required. No other permits or approvals are anticipated, however, the Association will work closely with Reclamation's Provo Area Office to ensure that additional permits, if necessary, are secured.

V. LETTERS OF SUPPORT

In addition to the three "letters of commitment" referenced in the Project Budget section, the following six "letters of support" are also included in Appendix A.

- Utah Division of Water Rights
- Weber River Water Rights Committee
- Weber River Commissioner
- Provo River Commissioner
- Bureau of Reclamation - Provo Area Office
- Trout Unlimited

VI. OFFICIAL RESOLUTION

Attached

RESOLUTION

Resolution No: **1-2018**

PROVO RIVER WATER USERS ASSOCIATION

APPROVING THE APPLICATION FOR BUREAU OF RECLAMATION WATERSMART GRANT FUNDS

FOR THE

WEBER PROVO DIVERSION METERING PROJECT

WHEREAS, the Bureau of Reclamation is requesting proposals for "WaterSMART: Water and Energy Efficiency Grants for FY 2018 under Funding Opportunity Announcement No. BOR-DO-18-F006 to assist Eligible Applicants with their water and energy management and conservation activities; and

WHEREAS, the Provo River Water Users Association (Association) is an Eligible Applicant by virtue of being the sponsoring entity for the Provo River Project, constructed by the Bureau of Reclamation; and

WHEREAS, the Association desires funding to assist in the completion of a significant project titled "Weber Provo Diversion Metering Project";

NOW, THEREFORE, BE IT RESOLVED that the Association Board of Directors:

1. Has reviewed and approves the filing of the grant proposal herein submitted; and

2. Certifies that the Association has sufficient funds as specified in the Funding Plan portion of the proposal to implement the project to complete the project, and has adequate financial and technical resources to operate and maintain the project when completed; and

3. Certifies that if selected for a WaterSMART grant, the Association will work with Reclamation to execute proper and acceptable agreements and meet the objectives and deadlines described in the proposal.

DATED: April 26, 2018

Tom Hodges
Authorized Signature

President
Title

ATTEST:

APPENDIX A – LETTERS OF COMMITMENT AND SUPPORT

Letters of Commitment

- Weber River Water Users Association
- Weber Basin Water Conservancy District
- Central Utah Water Conservancy District

Letters of Support

- Utah Division of Water Rights
- Weber River Water Rights Committee
- Weber River Commissioner
- Provo River Commissioner
- Bureau of Reclamation - Provo Area Office
- Trout Unlimited

Weber River Project
WEBER RIVER WATER USERS ASSOCIATION
Established 1926
CONSERVE

Weber River Water Users Association

138 West 1300 North • Sunset, Utah 84015-2918 • p (801) 774-6373 • f (801) 774-5424 • WRWUA.org

April 26, 2018

Mr. Keith Denos, P.E.
General Manager, Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

Re: Letter of Support/Commitment for Weber Provo Diversion Metering Project

Dear Keith,

The Weber River Water Users Association (WRWUA) is in support of the Provo River Water Users Association's WaterSMART grant application (FOA BOR-DO-18-F006) entitled "Weber Provo Diversion Metering Project". We will pay 50% of the application and project costs with Weber Basin Water Conservancy District reimbursing for half of our costs (25% each). Our participation would be on actual design and construction costs, and not include any environmental studies that may be required.

Metering the Weber-Provo Diversion will better measure the flows to both water basins during low flows. Such information will necessitate further discussions on water rights, necessary stream flows to meet senior rights and environmental interests. We appreciate the coordination and partnership with the Provo River Water Users Association.

Sincerely,
Weber River Water Users Association

Rick Smith

Richard (Rick) D. Smith, P.E.
General Manager

WEBER BASIN WATER CONSERVANCY DISTRICT

2837 East Highway 193 • Layton, Utah 84040 • Phone (801) 771-1677 • (SLC) 359-4494 • Fax (801) 544-0103

May 3, 2018

Tage I. Flint
General Manager/CEO

Board of Trustees:

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Weber County

Marlin K. Jensen
Weber County

P. Bret Millburn
Davis County

John Petroff Jr.
Davis County

Dave Ure
Summit County

Dee Alan Waldron
Morgan County

Mr. Keith Denos
General Manager
Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

RE: WaterSMART FOA BOR-DO-18-F006
"Weber Provo Diversion Metering Project"

Dear Colleagues:

Weber Basin Water Conservancy District (WBWCD) supports the "Weber Provo Diversion Metering Project" submitted by Provo River Water Users Association to WaterSMART's Water and Energy Efficiency Grants opportunity. We will reimburse the Weber River Water Users Association half of the 50% application and project costs for this project, which is estimated at $37,789.75.

This project will allow our watershed group to improve water management at this diversion by gathering good information to protect stream flows for water right holders and environmental interest.

WBWCD manages several large reservoirs, implementing water deliveries throughout, as well as being responsible for flood control measures along the river. More accurate water management at this diversion will allow the District to better perform its vital roles along the Weber River. We look forward to the success of this project.

Your support of our efforts to improve water management at this diversion and subsequently better protect the Weber River Watershed, as well as your consideration of this proposal are greatly appreciated. Please feel free to contact us if you have additional questions.

Sincerely,

Tage I. Flint, PE
General Manager/CEO

TIF/SWP/kc

CENTRAL UTAH WATER
CONSERVANCY DISTRICT

355 W. University Parkway
Orem, Utah 84058-7303
801.226.7100
www.cuwcd.com

OFFICERS
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Tom Dolan, Vice President
Gene Shawcroft, General Manager/CEO

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E. James (Jim) Bradley
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Michael K. Davis
Tom Dolan
Steve Frischknecht
Nathan Ivie
Al Mansell
Michael J. McKee
Greg McPhie
Aimee Winder Newton
Gawain Snow
Byron Woodland
Boyd Workman

April 24, 2018

Mr. Keith Denos, General Manager
Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

Subject: WaterSMART Grant Application BOR-DO-18-F006 for the Weber-Provo Diversion Metering Project

Dear Mr. Denos:

The Central Utah Water Conservancy District (District) is pleased to write in support of Provo River Water Users Association's (Association) application to the WaterSMART: Water and Energy Efficiency grant program for the Weber-Provo Diversion Metering Project located on the Weber River.

The District's understanding of the proposed project and request for WaterSMART grant monies include adding flow measurement and the necessary appurtenances at the Weber-Provo Diversion. This project will provide improved measurement capabilities for the Association for the water developed on the Weber River as part of the Provo River Project. This project will also assist with safeguarding the flows on the Weber River and will assist users of the Weber River with improved water diversion data.

The District will provide 48-inch (inside diameter) HDPE pipe to the Association to use for the diversion project. The 48-inch pipe will help to offset material costs of the project.

If you have any questions, please call me at (801) 226-7117.

Sincerely,

Daryl L. Devey
CUP Manager

DLD:dv

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah

DEPARTMENT OF NATURAL RESOURCES
Division of Water Rights

MICHAEL R. STYLER
Executive Director

KENT L. JONES
State Engineer/Division Director

April 20, 2018

Keith Denos
General Manager
Provo River Water Users Association
285 West 1100 North
Pleasant Grove, Utah 84062

Re: WaterSMART Grant Application (FOA BOR-DO-18-F006) "Weber Provo Diversion Metering Project"

Dear Keith,

I am writing in support of the proposed Weber Provo Diversion Metering Project. As State Engineer, my agency is responsible to distribute water from the Weber River in accordance with the water rights. Increased metering and improved reliability of those measurements will be a great benefit for us as we look to accurately and efficiently divide the water to those water users entitled to divert it.

We have been closely involved in recent efforts to improve accuracy and efficiency in distributing water on the Weber River including adding automated measurements to several diversions, increasing the number of measurement points on the river, and enhancing coordination amongst the water users and with our office. These efforts have significantly improved our ability to distribute Weber River water and the proposed metering project will enhance our ongoing efforts and be a critical element of our future work.

In addition, the data collected by the meters will become part of the public record and displayed on our website to help provide transparency to the distribution process. We will be able to incorporate this data into an existing accounting model we have recently developed and into others that will be developed in the future which will provide better information and more accuracy in the calculations.

We are eager to support this project and look forward to our continued work with PRWUA and the other agencies involved.

Sincerely,

Kent Jones, P.E.
Utah State Engineer

1594 West North Temple, Suite 220, PO Box 146300, Salt Lake City, UT 84114-6300
telephone (801) 538-7240 • facsimile (801) 538-7467 • *www.waterrights.utah.gov*

Weber River Water Rights Committee

2837 EAST HIGHWAY 193 • LAYTON, UTAH 84040 • (801) 771-1677

April 23, 2018

Mr. Keith Denos, General Manager
Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

RE: Letter of Support – Weber Provo Diversion Metering Project, WaterSMART Grant FOA No. BOR-DO-18-F006

Dear Mr. Denos:

The Weber River Water Rights Committee (WRWRC) would like to extend our support of the WaterSMART grant application entitled "Weber Provo Diversion Metering Project" sponsored by the Provo River Water Users Association. WRWRC feels the above referenced project would provide critical real-time flow data needed to more accurately measure and manage water diversions at the Weber Provo Canal. More accurate flow measurement at the Weber Provo Canal would help ensure more equitable distribution of water to all water users on the Weber River.

Should you have any questions on the above, feel free to contact us.

Sincerely,

Stephen A. Osguthorpe

Stephen A. Osguthorpe
Chairman

SAO:sm

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Water Rights
KENT L. JONES
State Engineer/Division Director

May 2nd, 2018

Mr. Keith Denos, P.E.
General Manager, Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

RE: Letter of Support for the Weber Provo Diversion Metering Project

Dear Keith,

As the Weber River Water Commissioner for the Utah Division of Water Rights, I am pleased to write in support of the Provo River Water Users Association's WaterSMART grant application (FOA BOR-DO-18-F006) entitled "Weber Provo Diversion Metering Project". I applaud the efforts of the partners of this proposed project to increase the efficiency and sustainability of the Weber River.

The proposed metering project will provide accurate measurements during low flows at the Weber-Provo Diversion assisting in distribution of the Weber River water rights. Along with accurate measurements, the proposed additional infrastructure would greatly improve mitigation of environmental impacts and water right impairment.

The proposed project will be an essential tool in addressing water right distribution and environmental concerns in the years to come.

Sincerely,

Cole Panter
Weber River Water Commissioner

1594 West North Temple, Suite 220, PO Box 146300, Salt Lake City, UT 84114-6300
telephone (801) 538-7240 • facsimile (801) 538-7467 • TTY (801) 538-7458 • *www.waterrights.utah.gov*

GARY R. HERBERT
Governor
SPENCER J. COX
Lieutenant Governor

State of Utah
DEPARTMENT OF NATURAL RESOURCES
MICHAEL R. STYLER
Executive Director
Division of Water Rights
KENT L. JONES
State Engineer/Division Director

May 4, 2018

Mr. Keith Denos, P.E.
General Manager, Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

RE: Letter of Support for the Weber Provo Diversion Metering Project

Dear Mr. Denos,

As the Provo River Water Commissioner for the Utah Division of Water Rights, I am pleased to write in support of the Provo River Water Users Associations' WaterSMART grant application (FOA No. BOR-DO-18-F006) entitled "Weber Provo Diversion Metering Project". I applaud the efforts of the partners of this proposed project to increase the efficiency and sustainability of the Water Rights shared on the Provo and Weber River.

The proposed metering project will provide accurate measurements during low flows at the Weber-Provo Diversion, assisting in distribution of the Provo River water rights. Along with accurate measurements, the proposed additional infrastructure will greatly improve mitigation of environmental impacts and water right impairment.

The proposed project will be an essential tool in addressing water right distribution and environmental concerns in the years to come.

Sincerely,

Scott Bergendorf
Provo River Water Commissioner

United States Department of the Interior

BUREAU OF RECLAMATION
Upper Colorado Region
Provo Area Office
302 East 1860 South
Provo, UT 84606-7317

IN REPLY REFER TO:

PRO-420
WTR-4.10/2.2.4.21

MAY 04 2018

G. Keith Denos, P.E.
General Manager, Provo River
Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

Subject: WaterSMART Grant Application (FOA BOR-DO-18-F006) – Weber Provo Diversion Metering Project – Provo River Project, Utah

Dear Mr. Denos:

The Provo Area Office of the Bureau of Reclamation is excited to support the Provo River Water Users Association's (Association) WaterSMART grant application for the Weber Provo Diversion Metering Project.

This application would facilitate accurate real-time measurement of the bypassed flows and transbasin diversions at the Weber-Provo Diversion Dam and will allow greater control of the bypassed flows during low stream flow periods. Since the Weber-Provo Canal moves water from the Weber River to the Provo River system, the ability to monitor and control the bypassed and diverted flows at this diversion dam are critical to the proper water accounting on both these river systems.

The Provo River Project, the Weber River Project, the Weber Basin Project and the Bonneville Unit of the Central Utah Project rely on the flows of the Weber and Provo Rivers. In 2015, the Provo Area Office teamed up with the operators of these four Reclamation Projects to examine ways to optimize future project operations and to reduce inter-project conflicts during times of drought. The subject application will assist Reclamation and our project operators in these efforts by:

- Providing reliable, accurate, real-time information about the Weber-Provo Diversion.
- Providing a better accounting of the flows in the upper Weber River.
- Improving the accounting of the Weber River water imported to the Provo River system.
- Proving a better understanding of the Weber-Provo Canal seepage losses.
- Improving the ability to make winter time bypass flow adjustments.
- Improving the ability to satisfy non-project water rights in the upper Weber River.

- Providing valuable information that could be used in modeling Reclamation Project operations on the Weber and Provo River systems.
- Helping prevent the accidental drying up of the upper Weber River due to mechanical failures at the Weber-Provo Diversion Dam or debris blocking the radial gates.
- Providing information about the potential impact of Reclamation projects to the stream environment.

In 2013, over 13,000 acre-feet was lost to the Provo River Project because of improper accounting of flows at the Weber-Provo Diversion and other water right issues. In resolving these issues, the importance of proper measurement and flow control at the Weber-Provo Diversion Dam became abundantly clear. The flow meters and river bypass structures from this proposal will help ensure that future water allocations between four Reclamation Projects and other non-project water users on the Weber and Provo river systems are accurate and match Utah State water rights and Reclamations contracts. We therefore, strongly support this project and encourage you to consider it for funding.

We look forward to assisting you with the Weber Provo Diversion Project. If you have any questions regarding this letter, please contact Mr. Justin Record at 801-379-1072.

Sincerely,

ACTING FOR

Kent Koford

Wayne G. Pullan
Area Manager

Trout Unlimited
1777 N Kent Street, Suite 100
Arlington, VA 22209
(703) 522-0200

May 7, 2018

Mr. Keith Denos, P.E.
General Manager, Provo River Water Users Association
285 West 1100 North
Pleasant Grove, UT 84062

Dear Keith:

Trout Unlimited is supportive of your WaterSMART proposal entitled "Weber Provo Diversion Metering Project" with the goals of improving the water measurement at this diversion structure. Increasing demands on our river systems necessitate improved measurement throughout both the Weber and Provo River Basins as the people of Utah continue to balance water demands, water distribution, and critical river flows. We are encouraged by your consideration of values within the Weber River basin by implementing measurement devices, and we understand the need for this project. We support your proposal and are committed to working with you on as the project develops.

With Kind Regards.

Paul Burnett - Weber River Project Coordinator
5279 South 150 East
Ogden, UT 84405
801-436-4062
pburnett@tu.org

APPENDIX B – QUANTIFIABLE WATER SAVINGS

The attached table is for water year 2014. The study covers years 2014 through 2018. Similar tables for the other years are available upon request. They were not attached due to length.

Weber-Provo Diversion Metering Project - Evaluation Criterion A: Quantifiable Water Savings
2014

			Above Canal Diversions							Below Canal Diversions							
Date	USGS @ Oakley	W-P Flume @ Oakley	BOULDERVILLE DITCHES	GIBBONS DITCH NEAR OAKLEY	LOWER MARION DITCH	NEW FIELD AND NORTH BENCH CANAL	PEOA SOUTH BENCH CANAL	RICHARDS DITCH NEAR OAKLEY	UPPER MARION DITCH	MARCHANT AND MILES	SAGE BOTTOM DITCH	YOUNG'S DITCHES	Assumed Flow at W-P Diversion	Bypass Required	Assumed Bypass	Project Savings	Absolute Potential Error
10/15/2013	71.3	7.1	0.0	0.0	0.0	5.0	0.0	0.0	0.0	4.0	0.0	0.0	66.3	24.0	59.2	35.2	35.2
10/16/2013	67.9	24.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	67.9	24.0	43.4	19.4	19.4
10/17/2013	68.3	25.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	68.3	24.0	43.1	19.1	19.1
10/18/2013	66.9	25.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	66.9	24.0	41.1	17.1	17.1
10/19/2013	63.8	25.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	63.8	24.0	38.3	14.3	14.3
10/20/2013	64.8	24.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	64.8	24.0	40.0	16.0	16.0
10/21/2013	62.6	24.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	62.6	24.0	37.7	13.7	13.7
10/22/2013	61.6	23.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	61.6	24.0	38.4	14.4	14.4
10/23/2013	61.2	19.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	61.2	24.0	41.7	17.7	17.7
10/24/2013	60.7	23.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	60.7	24.0	36.8	12.8	12.8
10/25/2013	60.5	25.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	60.5	24.0	35.1	11.1	11.1
10/26/2013	59.3	12.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	59.3	24.0	46.9	22.9	22.9
10/27/2013	58.5	12.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	58.5	24.0	46.4	22.4	22.4
10/28/2013	60.4	13.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	60.4	24.0	46.5	22.5	22.5
10/29/2013	62.1	19.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	62.1	24.0	43.2	19.2	19.2
10/30/2013	60.5	21.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	60.5	24.0	39.3	15.3	15.3
10/31/2013	60.0	21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	0.0	0.0	60.0	24.0	38.9	14.9	14.9
11/1/2013	60.3	21.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.3	20.0	38.9	18.9	18.9
11/2/2013	58.1	21.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	58.1	20.0	37.0	17.0	17.0
11/3/2013	60.3	25.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.3	20.0	34.9	14.9	14.9
11/4/2013	55.3	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.3	20.0	32.2	12.2	12.2
11/5/2013	60.6	25.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	60.6	20.0	34.8	14.8	14.8
11/6/2013	56.8	24.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.8	20.0	32.8	12.8	12.8
11/7/2013	56.4	20.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.4	20.0	35.8	15.8	15.8
11/8/2013	56.8	20.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.8	20.0	36.5	16.5	16.5
11/9/2013	55.5	20.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.5	20.0	34.9	14.9	14.9
11/10/2013	54.7	20.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.7	20.0	34.3	14.3	14.3
11/11/2013	53.9	19.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.9	20.0	34.3	14.3	14.3
11/12/2013	53.4	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.4	20.0	37.4	17.4	17.4
11/13/2013	53.0	16.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	20.0	37.0	17.0	17.0
11/14/2013	52.3	16.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.3	20.0	36.2	16.2	16.2
11/15/2013	53.1	14.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.1	20.0	38.4	18.4	18.4
11/16/2013	51.2	14.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.2	20.0	36.4	16.4	16.4
11/17/2013	54.2	14.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.2	20.0	40.1	20.1	20.1
11/18/2013	53.2	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.2	20.0	39.5	19.5	19.5
11/19/2013	53.5	13.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.5	20.0	39.9	19.9	19.9
11/20/2013	53.9	13.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.9	20.0	40.2	20.2	20.2
11/21/2013	54.3	13.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.3	20.0	41.2	21.2	21.2
11/22/2013	51.7	11.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.7	20.0	39.9	19.9	19.9
11/23/2013	48.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	36.9	16.9	16.9
11/24/2013	57.0	11.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.0	20.0	45.9	25.9	25.9
11/25/2013	53.0	11.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	20.0	41.8	21.8	21.8
11/26/2013	53.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.0	20.0	42.0	22.0	22.0
11/27/2013	53.8	10.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.8	20.0	43.3	23.3	23.3
11/28/2013	52.2	10.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.2	20.0	42.2	22.2	22.2
11/29/2013	49.2	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.2	20.0	39.3	19.3	19.3
11/30/2013	49.8	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.8	20.0	39.8	19.8	19.8
12/1/2013	48.0	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	38.0	18.0	18.0

12/2/2013	47.9	9.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.9	20.0	38.0	18.0	18.0
12/3/2013	49.8	10.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.8	20.0	39.8	19.8	19.8
12/4/2013	45.0	11.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	20.0	34.1	14.1	14.1
12/5/2013	36.0	5.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.0	20.0	30.7	10.7	10.7
12/6/2013	41.0	6.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	41.0	20.0	34.7	14.7	14.7
12/7/2013	46.0	9.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	36.3	16.3	16.3
12/8/2013	46.0	9.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	36.4	16.4	16.4
12/9/2013	43.0	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.0	20.0	35.1	15.1	15.1
12/10/2013	42.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	42.0	20.0	42.0	0.0	0.0
12/11/2013	43.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	43.0	20.0	43.0	0.0	0.0
12/12/2013	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	20.0	44.0	0.0	0.0
12/13/2013	45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	20.0	45.0	0.0	0.0
12/14/2013	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
12/15/2013	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
12/16/2013	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
12/17/2013	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
12/18/2013	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
12/19/2013	51.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	20.0	51.0	0.0	0.0
12/20/2013	52.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.0	20.0	52.0	0.0	0.0
12/21/2013	51.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.0	20.0	51.0	0.0	0.0
12/22/2013	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
12/23/2013	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
12/24/2013	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
12/25/2013	45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	20.0	45.0	0.0	0.0
12/26/2013	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
12/27/2013	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
12/28/2013	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
12/29/2013	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
12/30/2013	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
12/31/2013	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
1/1/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
1/2/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/3/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/4/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
1/5/2014	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	20.0	44.0	0.0	0.0
1/6/2014	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	20.0	44.0	0.0	0.0
1/7/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
1/8/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/9/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
1/10/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/11/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/12/2014	47.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.3	20.0	47.3	0.0	0.0
1/13/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/14/2014	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
1/15/2014	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
1/16/2014	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
1/17/2014	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
1/18/2014	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
1/19/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
1/20/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/21/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
1/22/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/23/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/24/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
1/25/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
1/26/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/27/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
1/28/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
1/29/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
1/30/2014	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
1/31/2014	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
2/1/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
2/2/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
2/3/2014	45.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	45.0	20.0	45.0	0.0	0.0

2/4/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
2/5/2014	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	20.0	44.0	0.0	0.0
2/6/2014	46.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.0	20.0	46.0	0.0	0.0
2/7/2014	47.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.0	20.0	47.0	0.0	0.0
2/8/2014	48.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.0	20.0	48.0	0.0	0.0
2/9/2014	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
2/10/2014	50.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.7	20.0	50.7	0.0	0.0
2/11/2014	46.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.4	20.0	46.4	0.0	0.0
2/12/2014	47.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.6	20.0	47.6	0.0	0.0
2/13/2014	49.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.8	20.0	49.8	0.0	0.0
2/14/2014	48.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.9	20.0	48.9	0.0	0.0
2/15/2014	49.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.1	20.0	49.1	0.0	0.0
2/16/2014	48.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	48.2	20.0	48.2	0.0	0.0
2/17/2014	46.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	46.4	20.0	46.4	0.0	0.0
2/18/2014	47.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	47.4	20.0	47.4	0.0	0.0
2/19/2014	44.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.8	20.0	44.8	0.0	0.0
2/20/2014	44.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	44.0	20.0	44.0	0.0	0.0
2/21/2014	49.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	49.0	20.0	49.0	0.0	0.0
2/22/2014	50.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	50.0	20.0	50.0	0.0	0.0
2/23/2014	51.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.8	20.0	51.8	0.0	0.0
2/24/2014	51.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.7	20.0	51.7	0.0	0.0
2/25/2014	52.3	2.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.3	20.0	49.7	29.7	29.7
2/26/2014	53.4	7.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.4	20.0	46.3	26.3	26.3
2/27/2014	54.8	7.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.8	20.0	46.9	26.9	26.9
2/28/2014	54.1	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.1	20.0	46.3	26.3	26.3
3/1/2014	57.0	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.0	20.0	49.3	29.3	29.3
3/2/2014	54.8	7.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.8	20.0	47.0	27.0	27.0
3/3/2014	55.3	7.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.3	20.0	47.6	27.6	27.6
3/4/2014	54.7	23.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.7	20.0	31.6	11.6	11.6
3/5/2014	54.3	33.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.3	20.0	20.9	0.9	0.9
3/6/2014	55.5	34.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.5	20.0	20.7	0.7	0.7
3/7/2014	56.5	36.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.5	20.0	19.7	-0.3	0.3
3/8/2014	55.9	35.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.9	20.0	20.7	0.7	0.7
3/9/2014	56.5	34.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.5	20.0	21.6	1.6	1.6
3/10/2014	57.9	35.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	57.9	20.0	22.4	2.4	2.4
3/11/2014	56.9	36.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.9	20.0	20.7	0.7	0.7
3/12/2014	52.7	31.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.7	20.0	21.0	1.0	1.0
3/13/2014	53.6	31.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.6	20.0	22.2	2.2	2.2
3/14/2014	53.4	30.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.4	20.0	23.2	3.2	3.2
3/15/2014	54.8	31.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.8	20.0	23.0	3.0	3.0
3/16/2014	53.7	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.7	20.0	25.1	5.1	5.1
3/17/2014	55.6	30.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.6	20.0	25.2	5.2	5.2
3/18/2014	52.9	29.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	52.9	20.0	23.7	3.7	3.7
3/19/2014	51.8	27.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	51.8	20.0	24.8	4.8	4.8
3/20/2014	53.9	27.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	53.9	20.0	26.1	6.1	6.1
3/21/2014	55.1	28.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.1	20.0	27.0	7.0	7.0
3/22/2014	55.4	28.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	55.4	20.0	26.8	6.8	6.8
3/23/2014	54.7	28.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	54.7	20.0	26.4	6.4	6.4
3/24/2014	56.9	29.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	56.9	20.0	27.6	7.6	7.6
3/25/2014	61.7	32.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.7	20.0	29.3	9.3	9.3
3/26/2014	66.1	36.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.1	20.0	29.2	9.2	9.2
3/27/2014	63.6	34.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.6	20.0	29.6	9.6	9.6
3/28/2014	62.1	31.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.1	20.0	31.1	11.1	11.1
3/29/2014	63.3	32.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.3	20.0	30.6	10.6	10.6
3/30/2014	66.7	36.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	66.7	20.0	30.6	10.6	10.6
3/31/2014	64.3	36.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.3	20.0	28.4	8.3	8.3
4/1/2014	64.0	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.0	20.0	28.3	8.3	8.3
4/2/2014	61.3	33.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.3	20.0	27.5	7.5	7.5
4/3/2014	59.5	32.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	59.5	20.0	27.4	7.4	7.4
4/4/2014	61.5	33.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	61.5	20.0	27.9	7.9	7.9
4/5/2014	63.3	35.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	63.3	20.0	27.8	7.8	7.8
4/6/2014	62.9	36.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	62.9	20.0	26.7	6.7	6.7
4/7/2014	64.4	35.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	64.4	20.0	28.7	8.7	8.7
4/8/2014	74.8	43.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	74.8	20.0	31.2	11.2	11.2

4/9/2014	90.1	56.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	90.1	20.0	33.5	13.5	13.5
4/10/2014	107.0	74.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	107.0	20.0	33.0	13.0	13.0
4/11/2014	123.0	90.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	123.0	20.0	32.7	12.7	12.7
4/12/2014	142.0	120.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	142.0	20.0	21.2	1.2	1.2
4/13/2014	141.0	117.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	141.0	20.0	23.6	3.6	3.6
4/14/2014	124.0	93.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	124.0	20.0	30.1	10.1	10.1
4/15/2014	122.0	85.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	122.0	20.0	36.6	16.6	16.6
4/16/2014	132.0	93.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	132.0	20.0	38.5	18.5	18.5
4/17/2014	153.0	120.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	153.0	20.0	32.1	12.1	12.1
4/18/2014	175.0	143.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	175.0	20.0	31.9	11.9	11.9
4/19/2014	190.0	159.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	190.0	20.0	30.7	10.7	10.7
4/20/2014	217.0	177.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	217.0	20.0	39.2	19.2	19.2
4/21/2014	256.0	200.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	256.0	20.0	55.6	35.6	35.6
4/22/2014	303.0	240.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	303.0	20.0	62.1	42.1	42.1
4/23/2014	312.0	271.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	312.0	20.0	40.9	20.9	20.9
4/24/2014	271.0	223.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	271.0	20.0	47.6	27.6	27.6
4/25/2014	272.0	228.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	272.0	20.0	43.7	23.7	23.7
4/26/2014	289.0	244.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	289.0	20.0	44.7	24.7	24.7
4/27/2014	259.0	178.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	259.0	20.0	80.5	60.5	60.5
4/28/2014	240.0	161.4	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	240.0	20.0	78.6	58.6	58.6
4/29/2014	228.0	147.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	228.0	20.0	80.3	60.3	60.3
4/30/2014	239.0	153.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	239.0	20.0	85.3	65.3	65.3
5/1/2014	243.0	154.6	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	233.0	20.0	78.4	58.4	58.4
5/2/2014	269.0	179.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	259.0	20.0	80.0	60.0	60.0
5/3/2014	314.0	212.5	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	304.0	20.0	91.5	71.5	71.5
5/4/2014	379.0	261.3	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	369.0	20.0	107.7	87.7	87.7
5/5/2014	425.0	299.4	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	415.0	20.0	115.6	95.6	95.6
5/6/2014	474.0	381.0	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	464.0	20.0	83.0	63.0	63.0
5/7/2014	439.0	355.2	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	429.0	20.0	73.8	53.8	53.8
5/8/2014	396.0	290.2	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	386.0	20.0	95.8	75.8	75.8
5/9/2014	380.0	252.2	0.0	0.0	0.0	0.0	0.0	10.0	0.0	0.0	0.0	0.0	370.0	20.0	117.8	97.8	97.8
5/10/2014	353.0	227.5	22.0	0.0	20.0	0.0	0.0	10.0	28.0	0.0	0.0	15.0	273.0	35.0	45.5	10.5	10.5
5/11/2014	328.0	204.3	22.0	0.0	20.0	0.0	0.0	10.0	28.0	0.0	0.0	15.0	248.0	35.0	43.7	8.7	8.7
5/12/2014	316.0	189.0	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	165.0	54.0	0.0	-54.0	54.0
5/13/2014	313.0	180.3	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	162.0	54.0	0.0	-54.0	54.0
5/14/2014	310.0	171.6	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	159.0	54.0	0.0	-54.0	54.0
5/15/2014	324.0	172.7	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	173.0	54.0	0.3	-53.7	53.7
5/16/2014	383.0	201.3	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	232.0	54.0	30.7	-23.3	23.3
5/17/2014	451.0	242.5	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	300.0	54.0	57.5	3.5	3.5
5/18/2014	608.0	371.3	22.0	21.0	20.0	32.0	18.0	10.0	28.0	13.0	6.0	15.0	457.0	54.0	85.7	31.7	31.7
5/19/2014	715.0	580.6	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	523.0	54.0	0.0	-54.0	54.0
5/20/2014	717.0	603.7	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	525.0	54.0	0.0	-54.0	54.0
5/21/2014	740.0	609.6	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	548.0	54.0	0.0	-54.0	54.0
5/22/2014	770.0	595.3	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	578.0	54.0	0.0	-54.0	54.0
5/23/2014	867.0	645.8	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	675.0	54.0	29.2	-24.8	24.8
5/24/2014	823.0	621.8	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	631.0	54.0	9.2	-44.8	44.8
5/25/2014	841.0	603.2	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	6.0	15.0	649.0	54.0	45.8	-8.2	8.2
5/26/2014	1070.0	690.1	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	15.0	15.0	878.0	63.0	187.9	124.9	124.9
5/27/2014	1440.0	609.6	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	15.0	15.0	1248.0	63.0	638.4	575.4	575.4
5/28/2014	1650.0	612.1	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	15.0	15.0	1458.0	63.0	845.9	782.9	782.9
5/29/2014	1650.0	766.8	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	15.0	15.0	1458.0	63.0	691.2	628.2	628.2
5/30/2014	1590.0	779.1	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	15.0	15.0	1398.0	63.0	618.9	555.9	555.9
5/31/2014	1450.0	807.0	36.0	21.0	20.0	45.0	32.0	10.0	28.0	13.0	15.0	15.0	1258.0	63.0	451.0	388.0	388.0
6/1/2014	1300.0	780.3	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	1121.0	63.0	340.7	277.7	277.7
6/2/2014	1210.0	783.0	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	1031.0	63.0	248.0	185.0	185.0
6/3/2014	1190.0	767.2	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	1011.0	63.0	243.8	180.8	180.8
6/4/2014	1160.0	705.5	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	981.0	63.0	275.5	212.5	212.5
6/5/2014	1020.0	521.3	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	841.0	63.0	319.7	256.7	256.7
6/6/2014	936.0	384.7	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	757.0	63.0	372.4	309.4	309.4
6/7/2014	827.0	247.9	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	648.0	63.0	400.1	337.1	337.1
6/8/2014	766.0	213.5	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	587.0	63.0	373.5	310.5	310.5
6/9/2014	616.0	89.3	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	437.0	63.0	347.7	284.7	284.7
6/10/2014	599.0	89.9	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	420.0	63.0	330.1	267.1	267.1
6/11/2014	575.0	99.3	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	396.0	63.0	296.8	233.8	233.8

6/12/2014	517.0	65.1	36.0	21.0	20.0	32.0	32.0	10.0	28.0	13.0	15.0	15.0	338.0	63.0	272.9	209.9	209.9
6/13/2014	492.0	98.2	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	386.0	43.0	287.8	244.8	244.8
6/14/2014	459.0	102.0	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	353.0	43.0	251.0	208.0	208.0
6/15/2014	408.0	77.4	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	302.0	43.0	224.6	181.6	181.6
6/16/2014	366.0	55.0	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	260.0	43.0	205.0	162.0	162.0
6/17/2014	344.0	84.1	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	238.0	43.0	153.9	110.9	110.9
6/18/2014	333.0	129.8	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	227.0	43.0	97.2	54.2	54.2
6/19/2014	302.0	109.1	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	196.0	43.0	86.9	43.9	43.9
6/20/2014	277.0	85.7	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	171.0	43.0	85.3	42.3	42.3
6/21/2014	263.0	64.6	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	157.0	43.0	92.5	49.5	49.5
6/22/2014	251.0	53.8	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	145.0	43.0	91.3	48.3	48.3
6/23/2014	244.0	43.4	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	138.0	43.0	94.6	51.6	51.6
6/24/2014	235.0	31.8	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	129.0	43.0	97.2	54.2	54.2
6/25/2014	226.0	28.3	22.0	10.0	14.0	18.0	18.0	8.0	16.0	7.0	8.0	8.0	120.0	43.0	91.8	48.8	48.8
6/26/2014	218.0	24.5	22.0	10.0	14.0	18.0	14.0	8.0	16.0	7.0	8.0	8.0	116.0	43.0	91.5	48.5	48.5
6/27/2014	223.0	32.8	22.0	10.0	14.0	18.0	14.0	8.0	16.0	7.0	8.0	8.0	121.0	43.0	88.2	45.2	45.2
6/28/2014	213.0	27.8	22.0	10.0	14.0	18.0	14.0	8.0	16.0	4.0	8.0	3.0	111.0	35.0	83.2	48.2	48.2
6/29/2014	197.0	15.6	22.0	10.0	14.0	18.0	14.0	8.0	16.0	4.0	8.0	3.0	95.0	35.0	79.4	44.4	44.4
6/30/2014	187.0	6.1	9.0	4.0	14.0	14.0	14.0	3.0	16.0	4.0	8.0	3.0	113.0	35.0	107.0	72.0	72.0
7/1/2014	176.0	0.0	9.0	4.0	10.0	28.0	14.0	3.0	16.0	4.0	8.0	3.0	92.0	35.0	92.0	0.0	0.0
7/2/2014	168.0	0.0	9.0	4.0	10.0	28.0	14.0	3.0	12.0	4.0	8.0	3.0	88.0	35.0	88.0	0.0	0.0
7/3/2014	162.0	0.0	9.0	4.0	10.0	28.0	14.0	3.0	12.0	4.0	8.0	3.0	82.0	35.0	82.0	0.0	0.0
7/4/2014	154.0	0.0	9.0	4.0	10.0	28.0	14.0	3.0	12.0	4.0	8.0	3.0	74.0	35.0	74.0	0.0	0.0
7/5/2014	147.0	0.0	9.0	4.0	10.0	28.0	14.0	3.0	12.0	4.0	8.0	3.0	67.0	35.0	67.0	0.0	0.0
7/6/2014	138.0	0.0	9.0	4.0	10.0	28.0	14.0	3.0	12.0	4.0	8.0	3.0	58.0	35.0	58.0	0.0	0.0
7/7/2014	133.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	8.0	1.0	64.0	33.0	64.0	0.0	0.0
7/8/2014	129.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	8.0	1.0	60.0	33.0	60.0	0.0	0.0
7/9/2014	126.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	8.0	1.0	57.0	33.0	57.0	0.0	0.0
7/10/2014	145.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	8.0	1.0	76.0	33.0	76.0	0.0	0.0
7/11/2014	174.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	4.0	1.0	105.0	29.0	105.0	0.0	0.0
7/12/2014	174.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	4.0	1.0	105.0	29.0	105.0	0.0	0.0
7/13/2014	146.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	12.0	4.0	4.0	1.0	77.0	29.0	77.0	0.0	0.0
7/14/2014	133.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	8.0	4.0	4.0	1.0	68.0	29.0	68.0	0.0	0.0
7/15/2014	124.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	8.0	4.0	4.0	1.0	59.0	29.0	59.0	0.0	0.0
7/16/2014	119.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	8.0	4.0	4.0	1.0	54.0	29.0	54.0	0.0	0.0
7/17/2014	114.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	46.0	29.0	46.0	0.0	0.0
7/18/2014	109.0	0.0	0.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	41.0	29.0	41.0	0.0	0.0
7/19/2014	107.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	35.0	29.0	35.0	0.0	0.0
7/20/2014	106.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	34.0	29.0	34.0	0.0	0.0
7/21/2014	119.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	47.0	29.0	47.0	0.0	0.0
7/22/2014	120.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	48.0	29.0	48.0	0.0	0.0
7/23/2014	122.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	50.0	29.0	50.0	0.0	0.0
7/24/2014	127.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	4.0	1.0	55.0	29.0	55.0	0.0	0.0
7/25/2014	120.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	6.0	1.0	48.0	31.0	48.0	0.0	0.0
7/26/2014	116.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	6.0	1.0	44.0	31.0	44.0	0.0	0.0
7/27/2014	121.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	6.0	1.0	49.0	31.0	49.0	0.0	0.0
7/28/2014	139.0	0.0	4.0	0.0	11.0	29.0	14.0	3.0	11.0	4.0	6.0	1.0	67.0	31.0	67.0	0.0	0.0
7/29/2014	159.0	0.0	4.0	0.0	9.0	29.0	14.0	5.0	5.0	4.0	6.0	1.0	93.0	31.0	93.0	0.0	0.0
7/30/2014	164.0	0.0	4.0	0.0	9.0	29.0	14.0	5.0	5.0	4.0	6.0	1.0	98.0	31.0	98.0	0.0	0.0
7/31/2014	154.0	0.0	4.0	0.0	9.0	29.0	14.0	5.0	5.0	4.0	6.0	1.0	88.0	31.0	88.0	0.0	0.0
8/1/2014	147.0	0.0	0.0	0.0	9.0	29.0	14.0	7.0	5.0	4.0	6.0	1.0	83.0	31.0	83.0	0.0	0.0
8/2/2014	141.0	0.0	0.0	0.0	9.0	29.0	14.0	7.0	5.0	4.0	6.0	1.0	77.0	31.0	77.0	0.0	0.0
8/3/2014	140.0	0.0	0.0	0.0	9.0	29.0	14.0	7.0	5.0	4.0	12.0	1.0	76.0	37.0	76.0	0.0	0.0
8/4/2014	143.0	0.0	0.0	7.0	9.0	29.0	14.0	7.0	0.0	6.0	12.0	1.0	77.0	39.0	77.0	0.0	0.0
8/5/2014	146.0	0.0	0.0	7.0	9.0	29.0	14.0	7.0	0.0	6.0	12.0	1.0	80.0	39.0	80.0	0.0	0.0
8/6/2014	151.0	0.0	0.0	7.0	9.0	29.0	14.0	7.0	0.0	6.0	12.0	1.0	85.0	39.0	85.0	0.0	0.0
8/7/2014	137.0	0.0	0.0	7.0	9.0	29.0	14.0	0.0	0.0	6.0	12.0	6.0	78.0	44.0	78.0	0.0	0.0
8/8/2014	131.0	0.0	0.0	7.0	9.0	29.0	14.0	0.0	0.0	6.0	12.0	6.0	72.0	44.0	72.0	0.0	0.0
8/9/2014	128.0	0.0	0.0	7.0	9.0	29.0	14.0	0.0	0.0	6.0	12.0	6.0	69.0	44.0	69.0	0.0	0.0
8/10/2014	124.0	0.0	0.0	7.0	9.0	29.0	14.0	0.0	0.0	6.0	12.0	6.0	65.0	44.0	65.0	0.0	0.0
8/11/2014	120.0	0.0	0.0	7.0	9.0	29.0	14.0	0.0	0.0	6.0	12.0	6.0	61.0	44.0	61.0	0.0	0.0
8/12/2014	119.0	0.0	0.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	12.0	6.0	74.0	42.0	74.0	0.0	0.0
8/13/2014	116.0	0.0	6.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	12.0	6.0	65.0	42.0	65.0	0.0	0.0
8/14/2014	115.0	0.0	6.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	64.0	38.0	64.0	0.0	0.0

8/15/2014	112.0	0.0	6.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	61.0	38.0	61.0	0.0	0.0
8/16/2014	108.0	0.0	6.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	57.0	38.0	57.0	0.0	0.0
8/17/2014	106.0	0.0	6.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	55.0	38.0	55.0	0.0	0.0
8/18/2014	102.0	0.0	6.0	7.0	9.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	51.0	38.0	51.0	0.0	0.0
8/19/2014	104.0	0.0	6.0	7.0	4.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	58.0	38.0	58.0	0.0	0.0
8/20/2014	133.0	0.0	6.0	7.0	4.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	87.0	38.0	87.0	0.0	0.0
8/21/2014	122.0	0.0	6.0	0.0	4.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	83.0	38.0	83.0	0.0	0.0
8/22/2014	117.0	0.0	6.0	0.0	4.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	78.0	38.0	78.0	0.0	0.0
8/23/2014	163.0	0.0	6.0	0.0	4.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	124.0	38.0	124.0	0.0	0.0
8/24/2014	157.0	0.0	6.0	0.0	4.0	29.0	0.0	0.0	0.0	4.0	8.0	6.0	118.0	38.0	118.0	0.0	0.0
8/25/2014	173.0	0.0	0.0	0.0	4.0	29.0	0.0	0.0	0.0	4.0	4.0	6.0	140.0	34.0	140.0	0.0	0.0
8/26/2014	184.0	0.0	0.0	0.0	4.0	5.0	0.0	0.0	0.0	4.0	4.0	6.0	175.0	34.0	175.0	0.0	0.0
8/27/2014	178.0	0.0	0.0	0.0	4.0	5.0	10.0	0.0	0.0	4.0	4.0	6.0	159.0	34.0	159.0	0.0	0.0
8/28/2014	182.0	0.0	0.0	0.0	4.0	5.0	10.0	0.0	0.0	4.0	4.0	6.0	163.0	34.0	163.0	0.0	0.0
8/29/2014	167.0	0.0	0.0	0.0	4.0	5.0	10.0	0.0	0.0	4.0	4.0	6.0	148.0	34.0	148.0	0.0	0.0
8/30/2014	159.0	0.0	0.0	0.0	4.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	140.0	31.0	140.0	0.0	0.0
8/31/2014	154.0	0.0	0.0	0.0	4.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	135.0	31.0	135.0	0.0	0.0
9/1/2014	148.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	130.0	31.0	130.0	0.0	0.0
9/2/2014	146.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	128.0	31.0	128.0	0.0	0.0
9/3/2014	143.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	125.0	31.0	125.0	0.0	0.0
9/4/2014	139.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	121.0	31.0	121.0	0.0	0.0
9/5/2014	134.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	116.0	31.0	116.0	0.0	0.0
9/6/2014	132.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	114.0	31.0	114.0	0.0	0.0
9/7/2014	131.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	113.0	31.0	113.0	0.0	0.0
9/8/2014	132.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	114.0	31.0	114.0	0.0	0.0
9/9/2014	176.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	158.0	31.0	158.0	0.0	0.0
9/10/2014	170.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	0.0	4.0	4.0	3.0	152.0	31.0	152.0	0.0	0.0
9/11/2014	139.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	131.0	31.0	131.0	0.0	0.0
9/12/2014	131.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	123.0	31.0	123.0	0.0	0.0
9/13/2014	127.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	119.0	31.0	119.0	0.0	0.0
9/14/2014	124.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	116.0	31.0	116.0	0.0	0.0
9/15/2014	121.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	113.0	31.0	113.0	0.0	0.0
9/16/2014	118.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	110.0	31.0	110.0	0.0	0.0
9/17/2014	115.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	107.0	31.0	107.0	0.0	0.0
9/18/2014	114.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	106.0	31.0	106.0	0.0	0.0
9/19/2014	113.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	105.0	31.0	105.0	0.0	0.0
9/20/2014	110.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	102.0	31.0	102.0	0.0	0.0
9/21/2014	109.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	101.0	31.0	101.0	0.0	0.0
9/22/2014	120.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	112.0	31.0	112.0	0.0	0.0
9/23/2014	114.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	106.0	31.0	106.0	0.0	0.0
9/24/2014	108.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	100.0	31.0	100.0	0.0	0.0
9/25/2014	105.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	97.0	31.0	97.0	0.0	0.0
9/26/2014	103.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	95.0	31.0	95.0	0.0	0.0
9/27/2014	130.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	122.0	31.0	122.0	0.0	0.0
9/28/2014	423.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	415.0	31.0	415.0	0.0	0.0
9/29/2014	325.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	317.0	31.0	317.0	0.0	0.0
9/30/2014	239.0	0.0	0.0	0.0	3.0	5.0	0.0	0.0	0.0	4.0	4.0	3.0	231.0	31.0	231.0	0.0	0.0
10/1/2014	212.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	189.0	31.0	189.0	0.0	0.0
10/2/2014	190.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	167.0	31.0	167.0	0.0	0.0
10/3/2014	174.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	151.0	31.0	151.0	0.0	0.0
10/4/2014	163.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	140.0	31.0	140.0	0.0	0.0
10/5/2014	151.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	128.0	31.0	128.0	0.0	0.0
10/6/2014	141.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	118.0	31.0	118.0	0.0	0.0
10/7/2014	133.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	110.0	31.0	110.0	0.0	0.0
10/8/2014	125.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	102.0	31.0	102.0	0.0	0.0
10/9/2014	120.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	97.0	31.0	97.0	0.0	0.0
10/10/2014	115.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	92.0	31.0	92.0	0.0	0.0
10/11/2014	111.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	88.0	31.0	88.0	0.0	0.0
10/12/2014	110.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	87.0	31.0	87.0	0.0	0.0
10/13/2014	110.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	87.0	31.0	87.0	0.0	0.0
10/14/2014	108.0	0.0	0.0	0.0	3.0	5.0	10.0	0.0	5.0	4.0	4.0	3.0	85.0	31.0	85.0	0.0	0.0
																Annual Sum of Project Savings (converted to acre-feet)	**3652.6**	**4048.9**