Addendum 1 to the Socioeconomics, Recreation, and Land Use Technical Report

for the

Halligan Water Supply Project Environmental Impact Statement

Prepared for

U.S. Army Corps of Engineers

Omaha District

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September 2018
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1 Introduction

This addendum to the Socioeconomics, Recreation, and Land Use Technical Report (Harvey Economics 2016) addresses revisions in the cost estimates for each Halligan Water Supply Project (Halligan Project) EIS alternative and changes in Fort Collins’ intended mechanism for payment of those costs. Halligan Dam rehabilitation activities, which could occur under all alternatives other than Fort Collins’ Proposed Action, are included in these cost estimates. These cost estimates include capital construction costs and annual operating costs.

2 Revised Cost Estimates and Rate Impacts

2.1 Updated Halligan EIS Alternative Cost Data

In June of 2018, Fort Collins Utilities (Fort Collins) provided Harvey Economics with updated cost estimates for each Halligan Project EIS alternative. The original cost estimates had been developed in October of 2015. Fort Collins’ contractor verified the revised cost data.1

2.1.1 Updated Construction Cost Data

Changes made to the cost estimates are summarized below. These revisions were applied to all alternatives:

- Materials and labor costs were escalated by 5 percent per year between 2015 and 2018, based on market value analyses conducted by Fort Collins’ third-party contractor.

- The construction contingency was increased to 40 percent, from 30 percent, based on Fort Collins recent project experience.

- Field exploration and design was increased from 8 percent to 13 percent of direct construction costs. Construction management costs and quality assurance costs were increased from 5 percent to 15 percent of direct construction costs.

- Pumping costs were increased by just under 10 percent, the same percentage as Fort Collins’ electrical rates for that power.

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Additionally, some cost data were escalated using methods specific to individual alternatives:

- The NISP cost analysis provided by Northern Water offered revised unit prices for components of the Expanded Glade Alternative.

- The acquisition costs for NPIC Reservoirs 5 & 6 were increased to reflect current Colorado – Big Thompson unit prices.

- Land acquisition costs for the Gravel Pits Alternative were increased by the percentage increase in the median home price in Fort Collins over the escalation period, based on input from Fort Collins’ real estate advisors.

Table 1 shows previous cost estimates, current cost estimates and the cost increase for each alternative.

### Table 1. Original and Updated Capital Construction Cost Data for the Halligan Water Supply Project Alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Cost Reported October 2015</th>
<th>Updated Costs (May 2018)</th>
<th>Cost Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort Collins’ Proposed Action</td>
<td>$21,127,000</td>
<td>$38,245,000</td>
<td>$17,118,000</td>
</tr>
<tr>
<td>Expanded Glade Alternative</td>
<td>$38,095,000</td>
<td>$60,938,000</td>
<td>$22,843,000</td>
</tr>
<tr>
<td>Gravel Pits Alternative</td>
<td>$99,439,000</td>
<td>$133,372,000</td>
<td>$33,933,000</td>
</tr>
<tr>
<td>Agricultural Reservoirs Alternative</td>
<td>$124,006,000</td>
<td>$170,760,000</td>
<td>$46,754,000</td>
</tr>
<tr>
<td>No-Action Alternative (1)</td>
<td>$21,127,000</td>
<td>$38,245,000</td>
<td>$17,118,000</td>
</tr>
</tbody>
</table>

Note: (1) The cost of the No-Action Alternative reflects the assumption that Fort Collins would invest roughly the same amount of money budgeted for the Fort Collins’ Proposed Action into water acquisitions.

Source: City of Fort Collins, 2018.

While the costs of alternatives increased by different amounts, the overall ranking of the alternatives by cost remains the same as under the original cost data.

Under all alternatives other than Fort Collins’ Proposed Action, certain rehabilitation activities would be required for Halligan Dam (Harvey Economics, 2018). NPIC would be responsible for the rehabilitation costs and is assumed to fund those costs via a one-time special assessment to all shareholders. As an NPIC shareholder, Fort Collins would be responsible for a portion of the rehabilitation costs. Under future conditions, Fort Collins anticipates owning 37.4 percent of NPIC shares under all the action alternatives and 44.0 percent of NPIC shares under the No-Action Alternative. Given a total estimated cost of $8.7 million (2018 dollars) for the dam rehabilitation activities, Fort Collins’ share would amount to about $3.25 million for the action alternatives and $3.8 million under the No-Action Alternative.
2.1.2 Updated Operating Cost Data

Fort Collins’ water system operating costs are paid for via customer water rates; therefore, any additional operating costs incurred under each alternative would result in rate increases. Operating costs were revised as part of Fort Collins’ effort to update alternative costs. In general, the operating costs were calculated as a constant percentage of the total capital costs of each alternative. Therefore, the operating costs increase proportionately to the capital costs. Additionally, the electricity costs for pumping water were increased by Fort Collins’ actual increase in electricity costs since October of 2015. Table 2 offers revised estimates of annual operations and maintenance costs for each alternative.

Table 2. Estimated Annual Operations and Maintenance Costs for the Halligan Water Supply Project Alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Cost Reported October 2017</th>
<th>Updated Costs (May 2018)</th>
<th>Cost Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort Collins’ Proposed Action</td>
<td>$46,460</td>
<td>$89,800</td>
<td>$43,340</td>
</tr>
<tr>
<td>Expanded Glade Alternative</td>
<td>$284,000</td>
<td>$369,300</td>
<td>$85,300</td>
</tr>
<tr>
<td>Gravel Pits Alternative</td>
<td>$440,000</td>
<td>$431,700</td>
<td>($8,300)</td>
</tr>
<tr>
<td>Agricultural Reservoirs Alternative</td>
<td>$456,000</td>
<td>$447,600</td>
<td>($8,400)</td>
</tr>
<tr>
<td>No-Action Alternative (1)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>

Note: (1) The No-Action Alternative would not result in any additional operations and maintenance costs to Fort Collins.
Source: City of Fort Collins, 2018.

The operating costs for Fort Collins’ Proposed Action and the Expanded Glade Alternative increase by about 90 percent and 30 percent respectively. The operating costs for the other two alternatives decrease, but by less than two percent each; these costs are essentially unchanged.

3 Impacts to Fort Collins’ Water Supply Requirements Rates and Monthly Water Rates

3.1 Water Supply Requirements Cash Rates

In the October 2015 draft, capital costs of each alternative were assumed to be recouped through increases in Plant Investment Fees (PIFs). Fort Collins has revised its financing strategy and now intends to recoup those costs through its Water Supply Requirements (WSR) cash rate. WSR charges are collected from developers seeking water taps from Fort Collins and are used to finance future water supply needs, including Fort Collins’ Proposed Action and other
alternatives.\textsuperscript{2} Effective January 1, 2018, the WSR may be satisfied with either specific water rights or cash, currently set at the rate of $17,300 per AF.\textsuperscript{3} The cash rate is based on the cost to Fort Collins of acquiring new water supplies, on a per acre-foot basis.

The range of WSR increases among alternatives is substantial. The alternatives would increase the WSR by between 23 percent (Fort Collins’ Proposed Action and No-Action Alternative) and 166 percent (Agricultural Reservoirs Alternative), as compared to the current rate. Those WSR increases constitute major impacts for that particular charge under all alternatives. Table 3 displays the projected WSR rate under each alternative.

Table 3. Estimated Annual Operations and Maintenance Costs for the Halligan Water Supply Project Alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Projected WSR Rate</th>
<th>WSR Increase</th>
<th>Percentage Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fort Collins’ Proposed Action</td>
<td>$21,200</td>
<td>$3,900</td>
<td>23%</td>
</tr>
<tr>
<td>Expanded Glade Alternative</td>
<td>$24,700</td>
<td>$7,400</td>
<td>43%</td>
</tr>
<tr>
<td>Gravel Pits Alternative</td>
<td>$38,500</td>
<td>$21,200</td>
<td>123%</td>
</tr>
<tr>
<td>Agricultural Reservoirs Alternative</td>
<td>$46,100</td>
<td>$28,800</td>
<td>166%</td>
</tr>
<tr>
<td>No-Action Alternative \textsuperscript{(1)}</td>
<td>$21,200</td>
<td>$3,900</td>
<td>23%</td>
</tr>
</tbody>
</table>

Note: (1) The cost of the No-Action Alternative reflects the assumption that Fort Collins would invest roughly the same amount of money budgeted for the Fort Collins’ Proposed Action into water acquisitions.

Sources: City of Fort Collins, 2018; Harvey Economics, 2018.

### 3.2 Water Rates

As discussed previously, the operating costs for each alternative drive the changes in water rates. As shown in Table 4, increases in volume-based water rates would range from 0 percent (No-Action Alternative) to 1.6 percent under each action alternative; base or fixed charges would be unaffected by increases in operating costs. Increases in water rates would be considered negligible under Fort Collins’ Proposed Action and the No-Action Alternative and minor under the Expanded Glade, Gravel Pits and Agricultural Reservoirs alternatives. Increases in customers’ average monthly water bills would be muted somewhat by the fact that the base

\textsuperscript{2} As opposed to the Plant Investment Fee, whose purpose is to fund specific facilities.

\textsuperscript{3} The City has restrictions on the types of water it will accept for WSR dedications.
charge would be unaffected. The impact to the average single-family customer’s monthly water bill is presented in Table 4.

Table 4. Estimated Annual Operations and Maintenance Costs for the Halligan Water Supply Project Alternatives

<table>
<thead>
<tr>
<th>Alternative</th>
<th>Increase in Volumetric Charges</th>
<th>Average Monthly Water Charge (1)</th>
<th>Percentage Change in Monthly Charges (2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current</td>
<td></td>
<td>$54.75</td>
<td></td>
</tr>
<tr>
<td>Fort Collins’ Proposed Action</td>
<td>0.3%</td>
<td>$54.87</td>
<td>0.2%</td>
</tr>
<tr>
<td>Expanded Glade Alternative</td>
<td>1.3%</td>
<td>$55.24</td>
<td>0.9%</td>
</tr>
<tr>
<td>Gravel Pits Alternative</td>
<td>1.6%</td>
<td>$55.32</td>
<td>1.0%</td>
</tr>
<tr>
<td>Agricultural Reservoirs Alternative</td>
<td>1.6%</td>
<td>$55.35</td>
<td>1.1%</td>
</tr>
<tr>
<td>No-Action Alternative (1)</td>
<td>0.0%</td>
<td>$54.75</td>
<td>0.0%</td>
</tr>
</tbody>
</table>

Notes: (1) Monthly water charges are based on the average single-family usage for July (the highest usage month) – 12,500 gallons.  
(2) The percentage increase in the monthly charge is less than the percentage increase in the volumetric charge since the base fee would not change.  
(3) The No-Action Alternative would not incur any additional operating costs, as compared to current costs.


Fort Collins’ assessments paid to irrigation companies are considered operational costs and are covered by operational funds. Operational funds are largely generated through water rates. Therefore, an increase in NPIC assessments would likely result in an increase in water rates.4 There are a number of ways that Fort Collins could implement the necessary water rate increases, including a larger one-time increase or smaller multi-year increases. If Fort Collins were to implement a one-time increase specifically to cover dam rehabilitation costs, water rates would increase by about 12 percent under the action alternatives and by about 14 percent under the No-Action Alternative.5 Such an increase would only be applicable in the year in which the additional NPIC assessments were charged. This scenario is likely a “worst-case” scenario, in terms of the magnitude of water rate impacts; more likely is the possibility of smaller rate increases over a multi-year period. If the cost was spread out over three years, the water rates

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4 Myriad factors are considered in any rate-making effort, including projected expenses, revenues, debt and other inputs. In general, no one project alone will drive water rates; a utility’s future financial needs are often addressed by a combination of revenues generated by water rates, use of reserves and by taking on additional debt.  
5 Dam rehabilitation would not occur under Fort Collins’ Proposed Action.

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would increase by a little less than four percent for the action alternatives or a little over 4.5 percent for the No-Action alternative.  

6 This would not apply to Fort Collins’ Proposed Action since dam rehabilitation would not occur as part of that alternative.