

**STATE  
FISCAL IMPACT**

<b>Drafting Number:</b> LLS 14-0867	<b>Date:</b> March 13, 2014
<b>Prime Sponsor(s):</b> Sen. Renfroe Rep. Fischer; Saine	<b>Bill Status:</b> Senate Agriculture <b>Fiscal Analyst:</b> Clare Pramuk (303-866-2677)

**SHORT TITLE:** INCREASED WELL PUMPING STUDY SOUTH PLATTE RIVER

Fiscal Impact Summary*	FY 2014-2015	FY 2015-2016
<b>State Revenue</b>		
<b>State Expenditures</b>		
Cash Funds	\$721,200 over 5 years.	
<b>FTE Position Change</b>		
<b>Appropriation Required:</b> \$721,200 - Department of Natural Resources (FY 2014-15)		

\* This summary shows changes from current law under the bill for each fiscal year.

**Summary of Legislation**

This bill requires the Colorado Water Conservation Board (CWCB) in consultation with the State Engineer in the Division of Water Resources (DWR), to conduct a five-year study to assess the impact of increased alluvial well pumping on surface stream flows in the South Platte River in District 2 of Water Division 1. The objective of the study is to identify the relationship between the withdrawal of water from the South Platte alluvial aquifer and the volume of surface stream flows in the South Platte River.

The CWCB is directed to use historical data where available and to collect new data through the installation of a network of dedicated monitoring wells. Beginning June 1, 2014, and continuing throughout the study, the State Engineer is required to authorize a twenty percent increase in well pumping by all wells located within the study area that are part of an adjudicated augmentation plan.

The State Engineer must report to the Water Resources Review Committee by November 1 of each year with a summary of any changes in stream flow and aquifer level attributable to the increased well withdrawals, and submit a final report to the committee by November 1, 2018.

**Background**

House Bill 12-1278 required the CWCB, in consultation with the State Engineer and the Colorado Water Institute (CWI) at Colorado State University, to conduct a comprehensive study to compile and evaluate available historic hydrologic data for the South Platte River Basin. The CWCB was required to contract with the CWI, which conducted the study independently. The study was funded from the CWCB Construction Fund. A final report was presented to the General Assembly on December 31, 2013.

District 2 of Water Division 1 runs along the main stem of the South Platte River from just above the confluence of the South Platte River and Clear Creek at the south end to just above the confluence of the South Platte River and the Cache La Poudre River at the north end. District 2 includes the watersheds on the west and east sides of the river that contain the tributaries that flow into the South Platte River along that reach, with the exception of the Boulder Creek, St. Vrain Creek, and Big Thompson River watersheds, which each have their own water districts.

**State Expenditures**

This bill is expected to increase expenditures from the CWCB Construction Fund by \$721,200 and increase workload for the DWR and CWCB beginning in FY 2014-15 and distributed over five years. The study identified in the bill can be broken down into eight components. Each component and the associated cost are shown in Table 1 and further explained below.

<b>Table 1. Cost of Study Under SB14-147</b>	
<b>Study Components Identified in the Bill</b>	<b>Cost</b>
1. Conduct an historical analysis of rates and amounts of stream flow occurring in the South Platte River in District 2.	Increased workload.
2. Conduct an historical analysis to determine the amount of gain occurring in reaches between gauging stations.	Increased workload.
3. Delineate the study area, including all areas containing wells that withdraw from the alluvium of the South Platte River that could potentially affect the rate of stream flow in the main stem of the South Platte River located in District 2.	Increased workload.
4. Determine the historical levels of the alluvial aquifer and the baseline aquifer levels in the study area against which to measure potential changes caused by alluvial well pumping.	Increased workload.
5. Notify subscribers to the Substitute Water Supply Plan Notification List for Water Division 1 about the proposed monitoring well locations and provide a 30-day comment period.	Increased workload.
6. Install a network of dedicated monitoring wells in the South Platte alluvial aquifer and monitor wells and river flow during study period.	\$721,200
7. Authorize a 20 percent increase in well pumping by all wells in study area.	Increased workload.
8. Present annual reports to the Water Resources Review Committee.	Increased workload.
<b>TOTAL</b>	<b>\$721,200</b>

**Assumptions.** The following assumptions are used to develop this fiscal note:

- DWR and CWCB staff on the project will be high-level professionals and managers;
- the hydrogeological team in DWR will serve as project manager for the study;
- the DWR and CWCB may delay other projects rather than increase staffing for the study;
- changes in water administration practices have led to higher groundwater levels leading to damage of some homes and property; and
- existing groundwater level monitoring network is inadequate for South Platte alluvial aquifer.

**Increased workload.** Both the DWR and the CWCB have access to the technology required to analyze historical stream flows and determine baseline aquifer levels to complete the first four study components. DWR staff will build upon the well information included in the report completed for HB 12-1278 to determine where additional monitoring wells need to be installed.

For study component 7 the DWR Augmentation Accounting group will review each well's diversion records to validate the pumping against the well's allowed pumping under the relevant augmentation plan. The well pumping increase in the study area may create legal implications for other parts of Water Division 1 if water users in other districts assert injury by the increase in well pumping allowed by this bill. Addressing such potential claims may require additional legal services from the Office of the Attorney General. If such an increase occurs, the fiscal note assumes that this will be addressed during the annual budget process.

DWR's modeling team will run the surface water and ground water models both with and without the increased pumping to develop conclusions about the effect of withdrawals from the alluvial aquifer. This team would then analyze and compile the information into a report for the State Engineer to deliver to the Water Resources Review Committee.

**Contractor Costs.** The fiscal note assumes that a contractor will be hired to install additional monitoring wells, perform technical outreach, collect data, monitor the wells, and update the surface and ground water models. Table 2 shows the detail of costs for the contractor to complete study component 6, explained below.

The cost estimate of \$540,000 for updating the DWR groundwater model is based on the CWCB's recent experience updating the current alluvial groundwater model to add additional data from years 2006 through 2013 and recalibrate the model based on the new data and new technology that has become available since the model was originally created. That update required approximately 3,000 contract hours to complete. To implement the study, the alluvial groundwater model will need more detail than exists in the current model, including the new wells and new data as it is collected. Hourly costs for the contractor to update the model are estimated at \$180.

While the number of wells will not be determined until the study is in progress, an estimated 40 new monitoring wells are assumed for this analysis. Installation is estimated at \$3,000 per well for a total of \$120,000. Each well requires a water level recording device and protective cover for a total device cost of \$24,000. The contractor will collect data from the wells twice per year over five years at a cost of \$30,000. Throughout the project the contractor will conduct 80 hours of outreach with the general and technical public on the implementation efforts, at a cost of \$7,200.

<b>Table 2. Contractor Costs Under SB14-147</b>			
<b>Task</b>	<b>Quantity</b>	<b>Cost</b>	<b>Total</b>
Update alluvial groundwater model	3,000 hours	\$180 per hour	\$540,000
Well installation	40 wells	3,000 per well	120,000
Recording device and protective cover	40 wells	600 per well	24,000
Data collection from all study wells	10 collections	3,000 per collection	30,000
Technical public outreach	40 hours	180 per hour	7,200
<b>TOTAL</b>			<b>\$721,200</b>

**Effective Date**

The bill takes effect upon signature of the Governor, or upon becoming law without his signature.

**State Appropriations**

For FY 2014-15, the CWCB in the Department of Natural Resources requires an appropriation of \$721,200 from the CWCB Construction Fund.

**State and Local Government Contacts**

Natural Resources                      Judicial                      Law