BOXELDER STORMWATER AUTHORITY

Feasibility Study For
East Side Detention Facility

Sponsored by
Boxelder Basin Regional Stormwater Authority

For the
Colorado Water Conservation Board

April 1, 2013

FEASIBILITY STUDY APPROVAL
Pursuant to Colorado Revised Statutes 37-60-121 &122, and in accordance with policies adopted by the Board, the CWCB staff has determined this Feasibility Study meets all applicable requirements for approval.

Signed

5/14/13
Date

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Introduction and Background

Early in 2005, stormwater planners in northern Larimer County took a holistic approach to addressing flood hazard and stormwater drainage problems in the Boxelder Creek watershed. This watershed or basin encompasses over 265 square miles and extends from just north of the Wyoming border to the Poudre River on the south. Exhibit A shows the entire FEMA mapped Boxelder Creek floodplain from the Poudre River on the south to just below the existing NRCS dams to the north. Because the Boxelder Creek floodplain affects many property owners and several local governments, intensive efforts were made to develop a regional flood hazard mitigation plan. It should be noted that Coal Creek and Indian Creek both feed into Boxelder Creek near the Town of Wellington. The communities of Fort Collins, Wellington, Timnath, Windsor, and Larimer County all shared a common goal in mitigating the flood hazard posed by Boxelder Creek. The Alliance was formed in early 2005 to develop a "regional" solution that is more efficient, wide ranging and cost effective than the entities could develop independently.

The Alliance members included:

- Colorado Department of Transportation (CDOT)
- Larimer County
- City of Fort Collins
- Town of Wellington
- Town of Timnath
- Town of Windsor
- North Poudre Irrigation Company
- Boxelder Sanitation District
- New Cache La Poudre Irrigation Company
- A Private Property Owners' Group
- Colorado Water Conservation Board (CWCB)

Representatives of these entities met over a period of two years to consider ways to mitigate flood hazards within the area that is tributary to Boxelder Creek from County Road 70 north of Wellington south to where Boxelder Creek floodwaters join the Cache La Poudre River. It was determined that the best approach to basin wide flood hazard mitigation would be to prepare a common plan for flood mitigation improvements within the Basin. Members of the Alliance pooled funding to prepare a storm water Master Plan for the Boxelder Basin. The resulting Boxelder Creek Regional Stormwater Master Plan (Master Plan) was completed in October 2006. This Master Plan formed the basis for the formation of the Boxelder Basin Regional Stormwater Authority (Authority). The Authority was formed by an Intergovernmental Agreement in August of 2008 by its Member Entities; the City of Fort Collins, Larimer County and The Town of Wellington.

The central purpose of the Authority was to develop and construct three regional drainage improvement projects which are shown on Exhibit B. These projects were preliminarily identified in the 2006 Master Plan as:

1. The Coal Creek Flood Mitigation Project

2. Edson Reservoir

3. The Middle Boxelder Improvements

The first of these improvement projects, the Coal Creek Flood Mitigation Project, has recently been completed by the Authority in cooperation with Larimer County. The purpose of the project was to protect close to 200 homes, dozens of businesses, and two schools that were within the Coal Creek floodplain in the Town of Wellington. This $5.1M project diverts stormwater flows from Coal Creek (which is tributary to Boxelder Creek) into the Clark Reservoir Inlet Canal and ultimately into Clark Reservoir. North Poudre Irrigation Company (NPIC) owns these facilities, which are north of the Town of Wellington. The Inlet Canal was enlarged to accommodate the 1,700 cfs from Coal Creek, Clark Reservoir was dredged and the emergency spillway was raised to accommodate the decreed storage of NPIC along with the diverted Coal Creek flows. During construction, 186,000 cubic yards of sediment was removed from Clark Reservoir. The dredging combined with raising the emergency spillway provides the 540 acre-feet of flood storage along with the 871 acre-feet of decreed storage for NPIC. Funding for this project came from a FEMA Pre-Disaster Mitigation Grant (PDM), matching funds and Authority Service Fees.

The second improvement project identified in the Master Plan was originally called Edson Reservoir. This dry stormwater detention reservoir was only preliminarily sized (660 to 990 ac-ft) and sited (see Exhibit B) in the Master Plan. A detailed Siting Study was completed by Ayres Associates (May 2010) to determine the most advantageous location for Edson taking into account flood reduction, cost and constructability issues. The Siting Study will be discussed in further detail in the **Alternative Analysis** Section of this Feasibility Study. Eventually the selected project site emerged and is now referred to as the East Side Detention Facility (ESDF), which is the principal project of this Loan Application and Feasibility Study.

The third of the projects, the Middle Basin Improvements, went through a metamorphosis as well. Originally identified in the Master Plan as principally two storm drainage channels and a siphon structure at the crossing of Boxelder Creek and the Larimer and Weld Canal, the improvements were reduced in scope and refined in design. Most of this change in the scope of the improvements had to do with the eventual size and location of the ESDF, which will greatly reduce the Boxelder 100-year flows where they cross the Larimer and Weld Canal. As a result, these improvements have now been reduced to a

single side-flow spillway structure known as the Larimer and Weld Canal Crossing Structure (LWCCS) at the crossing of Boxelder Creek and the Larimer and Weld Canal.

Purpose

The purpose of this Loan Application and Feasibility Study is to seek funding for the first of two remaining regional improvement projects. The East Side Detention Facility (ESDF) is a large stormwater detention facility (1800 ac-ft) to be constructed adjacent to the Gray Lakes Reservoirs (existing irrigation storage reservoirs owned and operated by the Lake Canal Reservoir Company). ESDF is located on the east side of Interstate 25 across from the Budweiser Brewery, between County Road 50 and County Road 52 (see Exhibit C).

This project as proposed will greatly reduce the threat of flooding to homes and businesses downstream and remove large areas from the FEMA mapped floodplain of Boxelder Creek. Kevin Houck, Chief of Watershed and Flood Protection for the CWCB recently restated that, "The Boxelder watershed remains on the Top 10 list of high risk watersheds for the State of Colorado, due primarily to its enormous size of 265 square miles." This project is a key component of the Master Plan for the Authority.

Coordination with Other Projects

It should be noted that as this project, along with the Larimer Weld Canal Crossing Structure (LWCCS), moves forward into final design and construction the City of Fort Collins and the Town of Timnath have parallel plans to move forward with two projects which will further reduce floodplain boundaries downstream. The construction of ESDF reduces the downstream flows in Boxelder Creek drastically from over 7000cfs to less than 2400cfs. This flow reduction has allowed the City of Fort Collins and the Town of Timnath to consider "unplugging" two large box culverts at the crossing of I-25 and Boxelder Creek. Two of the four box culverts originally constructed at this location have been plugged since they were first built. When FEMA revised the floodplain mapping in this area, the resulting overflow from this blockage extended the floodplain south along the east side of I-25 flooding large sections of Timnath. Opening of the two box culverts will eliminate this overflow path. Projected flows on the west side of I-25 will be less than the current flood flow projections under existing conditions. This will allow the City of Fort Collins and Timnath to move forward with constructing conveyance improvements on west Prospect Road where Boxelder Creek flows under the roadway. The design of the Prospect Road improvements scheduled to coincide with the design of ESDF and LWCCS. Exhibit D depicts the existing and post-project flood flows in Boxelder Creek for comparison at critical locations. The Authority, the City of Fort Collins and the Town of Timnath are planning on joint submittals of the Conditional Letter of Map Revision (CLOMR) and the Physical Letter of Map Revision (PMR) to FEMA in order to expedite the review and approval of FEMA floodplain mapping revisions. Although the post project floodplain mapping has not been completed as yet, Exhibit E provides a general idea of the floodplain reduction that will occur after the construction of ESDF, LWCCS, opening the I-25 box culverts and the Prospect Road bridge improvements at Boxelder Creek.

Project Sponsor

General

The Authority was established as a drainage authority pursuant to C.R.S. § 29-1-204.2 (2). The Authority is operated as an enterprise within the guidelines of TABOR and the Water Activity Enterprise Law, Part 1 of Article 45.1, Title 37, C.R.S. As such, The Authority collects Service and System Development Fees annually from the unincorporated area of Larimer County, and the portions of Fort Collins and Wellington that lie within the Service Area.

The Authority is governed by a Board of Directors consisting of five (5) members (the "Directors"), consisting of one each selected by the City of Fort Collins, the Town of Wellington and Larimer County, and two unaffiliated members, representing the public at large, one selected by the City of Fort Collins and Larimer County upon mutual agreement and one by the Town of Wellington and Larimer County upon mutual agreement. The Authority has the power to condemn property for public use and has the authority to enter into contractual agreements.

The Original IGA and the By-Laws for the Authority as well as a map of the Service Area are included in Appendix A.

Service Area

The current Service Area includes over 56 square miles within the tributary area of Boxelder Creek within Larimer County (Exhibit F). The current service area stretches from County Road 70 to the confluence of Boxelder Creek and the Cache La Poudre River approximately one mile south of the Prospect Road / Interstate 25 Interchange. It encompasses all of the Town of Wellington and portions of Larimer County and the City of Fort Collins. This includes 5600 residences and 292 commercial and industrial properties.

Alternative Analysis for Edson (ESDF)

As noted previously, a Siting Study of the "Edson" Reservoir location was initiated early 2010. The need for this Siting Study precipitated out of the fact that the original site for Edson identified 7+ homes and structures that would have been inundated. The goal of the Siting Study was to identify the best location(s) for the proposed Edson Reservoir both from a flood reduction perspective and also from a cost and constructability perspective.

The locations of each Edson Reservoir site or the combination of several clustered sites govern the magnitude of downstream flow reduction and the necessary improvements to eliminate the overflow path along Boxelder Creek. Ayres evaluated numerous sites (shown on Exhibit G) by varying the location of Edson Reservoir between County Road 64 and County Road 50. Factors considered in evaluating each site included:

- Available floodwater storage
- Hydrologic benefit (i.e. reduction in flood flows)
- Impacts on existing structures

The following sites were evaluated:

Edson A-Located north of Nunn Road (County Road 64) between County Road 5 and County Road 3. A configuration to increase the size of the reservoir above an existing pond located on the site was evaluated. The added volume reduced the downstream residual flows to a range comparable to that of Edson B discussed below, however the footprint of the larger reservoir inundated 5+ homes or structures. The inundation of homes eliminated this alternate from further consideration.

Edson B-Located north of County Road 62 between Iris Hill Lane and The Windsor Ditch. An existing pond is located on this site. A 20-foot high embankment was proposed on the south face of the pond resulting in 615 ac-ft of storage. . Homes and structures would not be affected by this site.

Edson C-Located north of County Road 64 between County Road 3 and the Cowan Lateral. An existing pond is located on this site. The embankment would be positioned on the west face of the pond consisting of a 17-foot high, 4000-foot long embankment. The resulting storage, was700 ac-ft, however not all of this volume could be utilized because the contributing drainage area is not large enough. The footprint was situated off-line of Indian Creek, collecting and storing only local runoff, unsuccessfully mitigating downstream flood flows. Edson C falls outside of the existing 100-year floodplain limits and would not inundate any structures or homes

Edson D-Located at the existing Edson Reservoir location south of County Road 62. The 10-foot high, 1900-foot long embankment was proposed along the west face of the reservoir. The available storage was 426 ac-ft. The footprint was positioned in-line with Indian Creek and falls within the existing 100-year floodplain limits. Homes and structures would not be affected by this site

Edson E-Located north of County Road 60 just east of Davis Park Road. Edson E is located on the west side of the center ridge and situated off-line of Indian Creek. The proposed embankment was located on the south face of the reservoir. The 23-acre footprint would inundate 7+ structures or homes. The inundation of homes eliminated this alternate from further consideration.

Edson F&G- Located north of County Road 60 southwest of Dakota Court. Several existing ponds are located on this site. The 15-foot high, 1200-foot long embankment would be positioned on the west face of the reservoir. The available storage, without affecting homes or structures is 428 ac-ft, however not all of this volume can be utilized because the contributing drainage area is too small. The 53 acre footprint is located off-line of Indian Creek, collecting and storing only local runoff, unsuccessfully mitigating downstream flood flows. .

Edson H-Located at the existing Gray Lakes location between County Road 50 and 52. Floodwater storage was not accounted for below the normal water surface elevation. 2-foot contour data supplied the topography for this site. Edson H combines the function of South Gray Reservoir and Gray Reservoir No 3 while existing topography restricts the incorporation of North Gray Reservoir. The embankment would be located along the west face of the reservoir and include an 8-foot high, 1600-foot long embankment. The available storage, without affecting homes or structures is 626 ac-ft. The 90-acre footprint is situated in-line with Boxelder Creek and falls outside of the existing 100-year floodplain limits. Homes and structures would not be affected by this site.

Edson I-Located downstream of the existing Edson Reservoir location, north of County Road 60 on the east side of the center ridge and situated in-line with Indian Creek. The embankment would be located on the south face of the reservoir and include a 10-foot high, 600-foot long embankment. The available storage, without affecting homes or structures is 162 ac-ft. The 36-acre footprint falls within the limits of the existing 100-year floodplain and no homes or structures are inundated.

Edson J-Located north of County Road 56 within the Agriculture Research, Development and Education Center (ARDEC) property. The embankment would be located on the south face of the reservoir and include an 18-foot high, 2700-foot long embankment. The available storage, without affecting homes or structures is 1747 ac-ft and provides the largest amount of volume among the sites. Situated in-line with Boxelder Creek, the 100-year floodplain encompasses a majority of the reservoirs 250-acre footprint. Homes and structures would not be affected by this site, however the day to day operation of the ARDEC facility might be.

Edson D, F&G, I-This alternative evaluated a combination of Edson D, F&G and I. Independently, each site has the ability to store only average amounts of floodwater making them less effective in achieving the ultimate goal of flow reduction downstream. With all three locations combined, the total available volume is 1016 ac-ft. The embankment length is 3700 feet with an average height of 14.5 feet.

Each site was evaluated based on the available floodwater storage, hydrologic benefits to downstream flow rates, and impacts to existing homes/structures. A principal goal was to keep the 100 year flows within the main channel of Boxelder Creek which would eliminate the split flow or westerly floodplain of Boxelder Creek (shown on Exhibit A adjacent to I-25 between CR52 and Mulberry Street), which greatly reduces the flood damage risk to people and property. The main channel of Boxelder Creek can convey approximately 2,900 cfs. Using the 2,900 cfs as a target for downstream flows, six of the alternatives were eliminated from further consideration due to their inability to reduce flood flows to the target discharge within the Middle Basin (County Road 50 to Mulberry Street). Additional factors contributing to the elimination of these six alternatives included the inundation of homes, site constraints that limited potential storage volume, and/or the reservoirs location relative to Boxelder Creek. The six alternatives that were eliminated are discussed below:

Edson E would inundate homes and require the displacement of seven or more current residents. The size of this reservoir and the location relative to Boxelder Creek reduced peak residual flows within the Middle Basin to 6360 cfs, which is far greater than the target discharge of 2,900 cfs.

Edson C and F&G were situated within the basin such that the available flood storage for each particular site could not be optimized. Consequently reducing Middle Basin peak flows to only 5950 cfs and 6375 cfs respectively.

Edson A and I each provided limited amount of storage volume on-site, residual Middle Basin peak flows were 5675 cfs and 6550 cfs respectively. Edson A was located too far upstream in the basin to create enough hydrologic benefit downstream.

Site H was located low within the Boxelder Basin (just north of County Road 50). Based on the configuration of storing flood flows on top of South Gray Reservoir and Gray Lakes Reservoir No. 3, six hundred and sixty (660) ac-ft of volume was available at this location. However, the magnitude of flow at this location required much more volume to attenuate the peak inflow which was 6,700 cfs. At the time the required volume could not be obtained with this design approach at this location.

Edson J provided the greatest attenuation benefit to the downstream peak flows of the four (4) remaining sites. However, the proposed dam for Edson J was on the site of the existing CSU Agricultural Research and Development Center or ARDEC. After the publication of the 2010 Siting Study for Edson Reservoir, the Authority manager and Ayres engineers met with staff from ARDEC to determine their willingness to allow the construction of a flood mitigation dam just north of County Road 56 on their property. Ayres prepared a preliminary grading plan for the dam, along with several cross sections through the dam, so they could see the impact to their existing center pivot and grazing area for their cattle which they keep on-site. While the staff from ARDEC did not completely rule out the construction of the dam they did express concerns regarding impacts to their day to day operations both during construction of the dam and afterwards. During one of the meetings they requested that Ayres also investigate using the property immediately south of ARDEC between CR 54 and CR 56 which is currently owned by the City of Thornton.

Subseqently a meeting was scheduled with the City of Thornton and Ayres prepared a preliminary grading plan and cross sections for a dam which achieved the downstream residual flow targets for a dam just north of CR 56. The City of Thornton stated that they wanted to reserve the right to construct their own water storage facility on this piece of property and if a flood control dam was constructed that would eliminate their ability to do so.

The elimination of both Edson J and the land south of Edson J (owned by City of Thornton) required the Authority to begin to reevaluate locations for Edson. . At this time the name "Edson" was dropped because the final site was no longer going to be located where the original Master Plan had intended. From this time forward the proposed site has been referred to as the East Side Detention Facility or ESDF.

Selected Alternative for ESDF

Shortly after the unsuccessful meeting with the City of Thornton, the Authority contacted the Larimer and Weld Irrigation Company (the owners of the Gray Lakes Reservoirs) and looked again at using the Gray Lakes site for the proposed ESDF. This time a dam just north of CR 50 on the west side of the existing Gray Lakes dams was investigated. The difference between this alternative and previous alternative (Site H), at this location is there would be no storage of water in the existing Gray lakes on top of their normal pool elevation.

Prior to beginning the final design for the current ESDF option, Ayres Associates, met with Michael-Baker (as representatives of FEMA) to determine if the proposed portion of the dam which is located just south of CR 52 and runs parallel to CR 52 would be considered a "levee" by FEMA. The staff at Michael-Baker informed Ayres that as long as the dam is approved by the State Engineer and meets all of the State Engineer requirements in terms of stability, seepage etc., then FEMA would not define that portion of the dam as a levee nor require levee design criteria to be met. This was a significant cost

savings to the project. As part of the final design process Ayres has also completed a "fatal flaw" analysis of the proposed design. Some of the issues that were investigated during this process were:

- Perform sub-surface investigation to determine if suitable materials exist on-site to construct the dam
- Install groundwater monitoring wells to determine groundwater levels and impacts to design
- Delineate existing wetlands within the proposed site, determine if jurisdictional, discuss permitting requirements with Corps of Engineers
- Determine if State Engineer will allow storage of flood waters against the back side of the existing Gray lakes dams
- Develop detailed grading plan to determine if it is possible to obtain required storage volume of approximately 1,700 acre-feet within proposed site
- Discuss with State Engineer the requirements for Incremental Damage Assessment in order to reduce spillway length requirements
- Develop detailed grading of dam and storage area to determine if it is possible to balance the grading in order to minimize costs for import and export of material
- Complete an engineers estimate of probable cost, along with assistance from two contractors to determine the overall cost for the proposed ESDF
- Determine existence and location of any utilities that might be impacted by the proposed ESDF

In addition to the above "fatal flaw" analysis that Ayres performed, the Boxelder Stormwater Authority also hired Shannon and Associates to complete an appraisal for each of the properties that would need to be acquired to construct ESDF.

Exhibit H depicts the current grading plan for the proposed East Side Detention Facility (ESDF), along with the primary outlet location and size, and the emergency spillway location and size. One of the benefits of the current design is there will be no impact to the existing wetlands within the project area. After meeting with the Corps of Engineers during the preliminary investigation it was determined that the wetlands within the site were jurisdictional. The Corps stated that if the disturbance to the wetlands is less than 0.5 acres then the site could be permitted with a Nationwide permit which would take approximately 10 days to complete, as opposed to an Individual permit which could take up to 4 months to process and would require a public hearing. For this reason the site was regraded to avoid the jurisdictional wetlands in all locations except at the outlet structure which will be in Boxelder Creek, but this disturbance will be less than 0.5 acres. Another advantage of avoiding the wetlands particularly in the area of Gray Lakes #3 was a significant reduction in the quantity of muck excavation which reduced construction costs also.

The other benefit of the current design is that the earth quantities (cut and fill) are balanced with the proposed grading. There were a number of previous iterations where the earth quantities were not balanced which would have greatly increased the cost by necessitating the need to go off-site to obtain fill or off-site to waste material. Exhibit I provides several cross sections through the proposed dam for further clarification. The following is a summary of the general hydraulic design parameters:

Top of Dam Elevation = 5022.2
Height of Dam at Crest = 34.2 feet
Emergency Spillway Elevation = 5017.2
Volume of Storage at Spillway = 1763 acre-feet
Freeboard = 5 feet
Primary Outlet Structure = 12feet X 8 feet RCBC
100-year Q (inflow) = 6,977 cfs

100-year Q (outflow) = 2,443 cfs

Cut = 350,230 C.Y.
Fill = 350,200 C.Y.
Net = 30 C.Y.

Note the above data is based on the FEMA 100-year storm event which is the design storm for the facility. However, because ESDF will likely be classified as a High Hazard Dam (due to downstream residential structures) by the State Engineers Office we also have to provide an emergency spillway design which meets the design requirements for a Probable Maximum Flood. After meeting with the State Engineer on several occasions it was determined that an Incremental Damage Analysis (IDA) will be part of the final design. Because the overall drainage area of the Boxelder Basin is very large, it is highly likely that the effect of a dam failure at ESDF will be negligible during a PMF. If the analysis can prove this is the case then the emergency spillway will only need to be sized for either the 100-year storm event or some fraction of the PMF. In the interim the design has been kept as conservative as possible by providing 5 feet of freeboard above our 100-year storage requirements to allow for the requirements of the State Engineer to be met.

Alternative Analysis for Boxelder Crossing of Larimer and Weld Canal

As shown on Exhibit A, the Boxelder Creek floodplain currently crosses the Larimer and Weld (L&W) Canal just north of Vine Drive, in two locations. Because the existing Boxelder Creek is unable to contain the entire 100-year flood flows the floodplain actually splits into the main Boxelder floodplain and the westerly floodplain which is adjacent to I-25. Over the years the owners of the L&W Canal have expressed concern about the possibility of the canal bank failing because of the Boxelder Creek flood flows and also about the additional spills out of the canal that would occur both upstream and downstream of where the two cross during a flood event. The improvements identified in the Master Plan called for a siphon(s) to be constructed on Boxelder Creek to enable it to cross under the canal. According to the Master Plan the westerly floodplain of Boxelder Creek would have been eliminated with the construction of Edson along with some widening of the existing Boxelder Creek.

With the current location and design of ESDF it is no longer necessary to include any widening of Boxelder Creek because the proposed discharge from ESDF will be less than the existing 100-year flows in Boxelder Creek. Ayres Associates has looked at several options for controlling the flows at the crossing of Boxelder and the L&W Canal, starting with siphoning Boxelder Creek under the L&W as proposed in the Master Plan. The proposed discharge from ESDF reduces the flows in Boxelder Creek at the L&W to approximately 2,400 cfs. Even with the dramatic reduction in flows this would still require approximately 6 – 10feet wide * 5feet high boxes under the L&W. Our preliminary cost estimates for this project were approximately $2.5 million dollars. In addition, in order to convey the flows to the siphons and build up enough head for the flows to pass through the siphons, there was need to purchase additional property on the north side of the canal, which was not well received by the existing property owner.

Ayres then looked at siphoning the L&W irrigation flows under Boxelder Creek because the decreed flow for the canal is only 1,100 cfs at this location. To siphon the 1,100 cfs would have required 3-10feet wide * 5feet high boxes. This concept was presented to the owners of the L&W Canal and they were very

concerned about the daily operation and maintenance of the siphons because siphons have a tendency to clog and malfunction.

Selected Alternative for Boxelder Crossing of Larimer and Weld Canal

As stated earlier, one of the primary concerns of the owners of the L&W Canal was that the canal embankment (primarily the south side) would fail during a 100-year storm event where the Boxelder Creek overtops the canal. With that in mind, Ayres developed an alternative which would create a defined weir on the south side of the L&W Canal to facilitate the spilling of the Boxelder Creek flood flows back into the Boxelder floodplain on the south side of the canal. The south side of the canal embankment will be lowered approximately 2 feet for the length of the proposed weir which is 1200 feet. In addition, because the maintenance and access road for the canal is on the south side it will also be lowered approximately 2 feet to allow the flows that spill across the weir in the embankment to spill across the road as well. The canal embankment will be fortified for the entire length of the proposed weir with a concrete cut-off wall, to ensure that the embankment will not fail due to erosion or undercutting. The length of the weir matches the existing width of the Boxelder Creek floodplain in this location. The elevation of the weir was determined by developing a steady state HEC-RAS model of the canal with the normal irrigation flows of 1,100 cfs in the model. This was done to insure the owners of the canal that there will be no spills of their normal irrigation flows at the location of the proposed weir during normal canal operations. An unsteady HEC-RAS model was then created which included the proposed weir in the embankment. The unsteady model accounted for the normal canal flows along with the inflow flood hydrograph entering the canal from Boxelder Creek. The unsteady model determined how much of the Boxelder flood flows will spill out of the canal through the proposed weir. Exhibit J depicts the general components of the Larimer and Weld Canal Crossing Structure. In general, the design details are as follows:

Normal Irrigation Flows = 1,100 cfs
Boxelder Creek 100-year flows (with ESDF built) = 2,500 cfs
Length of proposed weir in south side of L&W Canal = 2,000 feet
Spill out of weir (unsteady HEC-RAS model) =

GEOLOGIC AND GEOTECHNICAL EVALUATION

Brierley Associates (Brierley) is the geologic and geotechnical engineer of record for the project. Brierley's staff has been part of the design team and involved in the project since the formation of the Authority. Since initial siting studies for ESDF began; Brierley, Ayres, and the Authority have coordinated with the State Engineers Office (SEO) on the proposed design elements and geologic/geotechnical considerations, resulting in greater efficiency working through the SEO review and approval process. The following sections outline geologic and geotechnical work completed to date, current work at the site, and ongoing design of the new dam and evaluation of the existing dams at the site.

Preliminary Geologic and Geotechnical Evaluation

Brierley conducted a preliminary geotechnical and geologic evaluation of the site in March, 2012 and issued a Preliminary Geological and Geotechnical Report for the project in August, 2012. As part of the preliminary evaluation of the site, Brierley conducted a subsurface investigation that included 12 auger

borings along the alignment of the proposed dam and within the planned borrow area and a laboratory investigation to determine the geotechnical engineering properties of the on-site soils and bedrock. As part of their preliminary analysis of the site, Brierley analyzed potential issues related to seepage and stability of the dam and foundation materials, the availability of suitable borrow materials for constructing the dam and identified construction considerations that included the effect of groundwater and excavation considerations at the site.

The information presented in Brierley's preliminary report was used by the Authority and Ayres in determining the feasibility of constructing the proposed stormwater detention dam and reservoir at the site. Brierley's preliminary report did not identify any significant geotechnical or geologic issues that would preclude construction of a dam at the site or significantly increase construction costs over any of the other candidate sites.

Design Level Geologic and Geotechnical Evaluation

In January, 2013 Brierley initiated a design-level geologic and geotechnical evaluation of the site. At the time of preparing this document, Brierley's subsurface investigation was in progress and their laboratory investigation and engineering analysis were underway. As part of the design-level evaluation, Brierley conducted 12 additional borings at the site along the proposed alignment of the dam and through the existing North and South Gray Lakes dams. The overburden soils were drilled using auger drilling and the bedrock was cored at select locations using wire-line coring. In addition, insitu permeability testing (packer or water pressure testing) were conducted to determine the permeability of the bedrock at the site.

Samples collected during the design-level subsurface investigation will be submitted to a geotechnical laboratory and tested to determine the engineering characteristics of the soils and bedrock encountered. Depending on the types of materials encountered during the subsurface investigation; laboratory testing may include: gradation, hydrometer, Atterberg limits, water soluble sulfates, dispersion, unconfined compressive strength, triaxial, direct shear, permeability, standard Proctor, and other tests deemed necessary.

Regional Geology

During Brierley's preliminary evaluation, the regional geology of the area was investigated through literature reviews and a site reconnaissance by a senior Brierley engineering geologist familiar with the local geologic conditions. During the design level evaluation of the site, the local geology will be mapped and further evaluated. A description of the regional geological conditions of the site based on Brierley's preliminary site evaluation is discussed below.

The site is located in the Colorado Piedmont section of the High Plains Physiographic Province. The Colorado Piedmont section is defined as an area of significant erosion by rivers east of the Front Range that has resulted in a landscape of broad hills and valleys between the Southern Rocky Mountain and High Plains Provinces. The surficial and subsurface geology of this area is fairly well understood and regional geologic mapping that includes the site is fairly accurate and representative of the local geologic conditions. A description of the geologic conditions as discerned form published maps is presented below along with a summary of existing geologic hazards and seismicity. A more detailed geologic evaluation of the site is planned during the design phase of this project.

Bedrock and Overburden Deposits

The geology of the site is mapped as the Transition Member of the Pierre Shale overlain by various alluvial (river and stream) and aeolian (wind-blown) deposits. The bedrock and overburden deposits are described below in ascending order (oldest to youngest).

Bedrock - Transition Member of the Pierre Shale

The almost 9,000 foot thick Pierre Shale is generally subdivided into six members based on lithology and stratigraphic position. The Transition Member of the Pierre Shale is the upper most member of the formation and is described as friable sandstone and soft shaly sandstone containing beds of thin-bedded shale and large calcareous sandstone concretions. Locally the Transition Member contains numerous claystone and siltstone units. The Transition Member is Upper Cretaceous in age (99 to 65 million years before present) and up to 2,000 feet thick. It is underlain by the Upper Shale Member of the Pierre Shale and where not eroded, is typically overlain by the Fox Hills Sandstone.

Alluvial Deposits

The area directly west of the Gray Lakes is mapped as Broadway Alluvium and the overlying Post-Piney Creek Alluvium. These alluvial deposits are Pleistocene and Holocene in age (1.8 million to 10,000 years before present), respectively. They are described as sandy and gravelly alluvium of variable thicknesses. Locally, the alluvial deposits form an unconfined aquifer with shallow groundwater perched atop the underlying Pierre Shale. Shallow water wells in the area have been reported to yield as much as 2,000 gallons per minute (gpm).

Aeolian Deposits

The area directly east of the western edges of the Gray Reservoirs is mapped as Aeolian (wind blown) deposits overlying the alluvial sands and gravels. These deposits are generally thought to be Holocene in age and are typically comprised of clay, silt, and fine sand that were deposited as small sand dunes or sheet like loess deposits.

Geologic Hazards

In Colorado, the following are recognized geologic hazards: abandoned mines, avalanches, collapsible soils, corrosive soils, debris flows and fans, earthquakes, erosion, fires, floods, heaving bedrock, swelling soils, landslides, mudslides, rockfall, and subsidence (natural and mining related). Based on the preliminary geologic evaluation of the site, flooding, swelling soils (clay soils), heaving bedrock (claystone bedrock), and collapsible soils (aeolian deposits) are the only geologic hazards present at the site. Brierley has judged the geologic hazards identified at the site can be economically mitigated and will not significantly impact the proposed construction.

Earthquakes and Active Faults

In general, there are no active faults mapped in the vicinity of the site. Although the majority of Colorado is considered to have a low risk of seismic activity, many geologists believe the risk of a significant earthquake occurring in Colorado is grossly underestimated. Seismic activity has been recorded in areas of Colorado with no “mapped faults”. The largest earthquake in Colorado occurred in 1882 and the epicenter is thought to be “west of Fort Collins”. This seismic event was estimated to be a magnitude 6.6 on the Richter scale and damage as far south as Denver was recorded.

In general, Brierley judges the risk of a significant seismic event occurring at the site within the design life of the proposed structure to be low. The design seismic event and related ground accelerations will be considered in final design of the proposed dam and evaluation of the existing dams.

Subsurface Conditions

During their preliminary subsurface investigation, Brierley drilled a total of 12 borings to depths ranging from 11 to 56 feet below the existing ground surface (bgs). In general, the materials encountered during their subsurface investigation included; interlayered coarse and fine alluvium, weathered bedrock, and comparatively fresh bedrock. Fill was encountered in one boring to a depth of 5 feet bgs. The coarse alluvium was comprised of sand with varying amounts of clay, silt, and gravel. The fine alluvium was comprised of clay with varying amounts of sand. The weathered bedrock was comprised of completely weathered bedrock that still maintained the recognizable structure of bedrock. The bedrock was comprised of interbedded shale, siltstone, and claystone of the Transition Member of the Pierre Shale. In general, Brierley's subsurface investigation confirmed their understanding of the regional and local geology discussed above. A general description of the predominant materials encountered in the borings is presented below.

Coarse Alluvium

Coarse alluvium encountered in the borings was composed of poorly-graded to well graded sand with silt and gravel (SP-SM to SW-SM), clayey sand (SC), poorly graded to well graded sand with clay (SP-SC to SW-SC), and well-graded sand with gravel (SW). Coarse alluvium was encountered in 10 of the 12 borings and was generally found interlayered with fine alluvium from ground surface to depths ranging from 5 to 15.5 feet bgs. The coarse alluvium was loose to very dense and dry to moist when above the water table and wet when encountered below the water table.

Fine Alluvium

Fine alluvium encountered in the borings was composed of lean clay (CL) and sandy lean clay to lean clay with sand (CL). Fine alluvium was encountered in 10 of the 12 borings, was generally found interlayered with coarse alluvium from ground surface to depths ranging from 2.5 to 15.5 feet bgs, and was found to extend up to 38.5 feet bgs in one boring. The fine alluvium was very soft to very stiff and dry to moist when encountered above the water table and wet when encountered below the water table.

Fill

Fill consisting of clayey sand (SC) was encountered in 1 of the 12 borings from the ground surface to a depth of 5 feet bgs. The fill was medium stiff and moist.

Weathered Bedrock and Bedrock

Weathered and comparatively fresh bedrock of the Transition Member of the Pierre Shale was found in 5 of the 12 borings at depths ranging from 5 to 15.5 feet bgs.

Weathered Bedrock

Weathered bedrock was encountered in 5 of the 12 borings at depths ranging from 5 to 15.5 feet bgs and extending to depths ranging from 7.5 to 20 feet bgs. The weathered bedrock was composed of highly to completely weathered shale, claystone, and siltstone that still maintained recognizable structure found in bedrock. The weathered bedrock was slightly moist to moist, very soft, and highly to completely weathered.

Bedrock

Comparatively fresh bedrock encountered in the borings was composed of interbedded shale, siltstone, and claystone of the Transition Member of the Pierre Shale. Bedrock was encountered in all 12 borings at depths ranging from the ground surface to 38.5 feet bgs and extended to the depths of exploration. The bedrock was very soft to soft, fresh to highly weathered, and dry to moist.

Groundwater
Groundwater was encountered in 9 of the 12 borings at depths ranging from 5.5 to 28 feet bgs. Fluctuations in the groundwater levels may occur due to variations in precipitation, nearby rivers and ditches, water levels in North and South Gray Reservoirs, temperature, site development, and other factors not evident at the time the measurements were taken. Seven of the 12 borings were converted to observation wells at the completion of drilling.

Preliminary Dam Design

From a geologic and geotechnical standpoint, the site is suitable for construction of the proposed dam. As the impoundment area associated with the new dam will cause stormwater to be in contact with the upstream faces of the two existing dams at North and South Gray Lakes, the SEO has required a geologic and geotechnical evaluation of those dams as well. Dam stability, seepage, borrow material availability, and construction considerations related to the proposed and existing dams are discussed below.
Dam Stability
The proposed dam will be designed based on the findings from Brierley's preliminary and current design-level evaluations. The geologic and geotechnical engineering required for final design of the dam and evaluation of the existing dams will completed in general conformance with the SEO's Rules and Regulations for Dam Safety and Dam Construction (January 1, 2007). Brierley will provide typical sections through the maximum section, spillway, and other critical sections of the dam to Ayres to incorporate into their design. At the time of writing this document, no geotechnical strength or permeability information was available; therefore no formal stability and seepage analysis had been conducted. During the final design phase of the project, the stability of the proposed dam and existing dams will be evaluated for all loading cases required by the SEO. The final design will incorporate minimum factors of safety for stability required by the SEO that include: Steady State, End of Construction, Rapid Draw-down, and Pseudostatic (seismic) load cases. If required, design and construction recommendations for improvements to the existing dams as determined by Brierley and discussions with the SEO will be provided.

Seepage
As the intention of the proposed dam and impoundment is for stormwater detention and not the long-term storage of water, seepage through the dam and into soils in the impoundment area are not a significant design consideration other than how it relates to stability of the new dam and existing dams. In typical dam design and water storage projects, partial or full cutoff structures under the dam are often required to control seepage to maintain stability of the dam. The dam, cutoff, and foundation design will be dependent upon seepage and stability modeling to be conducted during the final design phase of the project. Based on discussions with the SEO, we understand a cutoff structure can be designed to limit seepage and related exit velocities only with respect to maintaining stability of the dam for the period of time required to drain water from behind the dam after a design storm event occurs. Based on Brierley's preliminary findings, they anticipate only a minimal cutoff may be required.

Foundation
The alluvial soils and bedrock encountered along the proposed alignment are generally suitable for support of the proposed dam. Localized areas of loose or soft materials may be encountered during construction and will be further evaluated and mitigated if necessary.

Borrow Material

The on-site fine alluvium encountered in the preliminary evaluation borings is generally suitable for use as borrow material to construct the proposed dam. Claystone bedrock may also be used to construct the dam, but will require processing to break it down to a soil like consistency. The availability of on-site materials for construction of the dam will greatly reduce the overall construction cost compared to importing fill materials.

Construction Considerations

The proposed construction will require excavations below groundwater and excavation and construction adjacent to the existing North and South Gray Reservoirs dams. Considerations related to these items are discussed below.

Groundwater
Cuts up to 10 feet deep are planned in the impoundment area. Groundwater will be encountered during excavation in these areas and may be encountered during the comparatively shallow excavation of other borrow areas and during construction of a cutoff structure, if required. Based on Brierley's understanding of the local geologic conditions, excavations into the alluvium could produce groundwater inflow up to 2,000 gpm. In addition, seepage from the existing dams along North and South Gray Reservoirs may increase potential groundwater inflow into excavations, alluvium, and bedrock. Consideration will be given to dewatering efforts required during construction as well as exposing and ponding groundwater in portions of the excavated impoundment area. Construction dewatering and exposing groundwater will be addressed during the final design phase of the project.

Excavations
Based on Brierley's understanding of the subsurface conditions, the alluvial deposits and weathered bedrock can be excavated with conventional excavation methods, which could include scrapers, front-end loaders, and excavators. Excavations into more competent bedrock will likely require ripping. Any planned excavations within 200 feet of existing dams will be submitted to the SEO for approval. Brierley has already discussed potential excavation near the toes of the existing North and South Gray Lakes Dams with the SEO.

Mineral Resource Evaluation

Northern Colorado has numerous mineable mineral resources that include: Sand, Gravel, Crushed Rock Aggregate, Limestone, Oil and Gas, Coal, Uranium, Gold, Silver, and other metallic and non-metallic minerals. Based on Brierley's geologic evaluation of the site and experience with mineable minerals in the general area, they judge sand and gravel and oil and gas are the most likely mineral resources at the site.
Based on the Colorado Division of Reclamation, Mining, and Safety's GIS maps, there are no active or historic non-metallic or metallic mineral mining permits within a two mile radius of the site. Based on the Colorado Oil and Gas Conservation Commission's GIS maps, there are no active, historic, permitted or pending permitted oil and gas wells within a 1.4 mile radius of the site. Uranium has been mined from the Fox Hills Sandstone east of the site; however, due to ancient geologic uplift and erosion, the Fox Hills Sandstone is not present at the site.
Based on Brierley's understanding of the site geology, subsurface conditions found during their preliminary evaluation, and the mining and oil and gas data bases; they judge the probability of the economic extraction or removal of minerals at the site is remote and unlikely**.**

Permitting Requirements

Corps of Engineers

As stated previously the design team has had the existing wetlands delineated on the site and met with the Corps of Engineers to obtain direction in terms of permitting requirements. Because of the wetlands close proximity to Boxelder Creek which is considered "waters of the U.S." the Corps determined that the wetlands on the site would be deemed jurisdictional. With this knowledge, Ayres Associates re-graded the entire site to completely avoid all of the jurisdictional wetlands. The only exception is in the area of the proposed primary outlet structure which will be a 12.' * 8' RCBC through the dam at Boxelder Creek, but the disturbance will be less than 0.5 acres which will still allow us to apply for a Nationwide Permit which should only take approximately 10 days.

Because the dam height for ESDF is greater than 10 feet, the project must go through the approval process of the State Engineers Office (SEO). The project team has met several times with the State Engineer to discuss the logistics of the project and obtain direction from them. During the final design process Ayres Associates will be completing a hydrology study which will determine the Probable Maximum Flood (PMF) hydrology for the ESDF site. In addition, Ayres will be completing an Incremental Damage Analysis for the ESDF site to prove that the effect of the ESDF dam failing would be inconsequential in a PMF event. The final design for ESDF will need to meet all of the SEO criteria in terms of stability, seepage and seismic evaluation. Brierley Associates will be completing the geotechnical design of the ESDF.

Implementation Schedule

The Authority has already moved forward with the final design effort for the ESDF and will soon initiate design of the LWCCS. Our proposed Implementation Schedule appears in Table X below:

TABLE 1 - Implementation Schedule

Item	Targeted Schedule	
	Start Date	Completion Date
ESDF Site Analysis	February 10, 2012	August 1, 2012
ESDF Preliminary Design	February 10, 2012	December 15, 2012
ESDF 2D Modeling	December 15, 2012	February 15, 2013
LWCCS Preliminary Design	September 1, 2012	February 15, 2013
Application and Feasibility Study Submitted to CWCB	December 15, 2012	March 1, 2013
Application and Feasibility Study Review & Approval by CWCB	April 1, 2013	May 30, 2012
CWCB Funds Available to Authority	May 30, 2013	July 8, 2013
ESDF Final Design	December 15, 2012	August 30, 2013
LWCCS Final Design	July 1, 2013	August 30, 2013
ESDF Right of Way Negotiation	March 1, 2013	September 30, 2013
CLOMR Preparation and Submittal	July 1, 2013	September 1, 2013
ESDF Bidding and Construction	December 15, 2013	November 1, 2014
LWCCS Bidding and Construction	December 15, 2013	April 1, 2014
PMR Preparation and Submittal	November 1, 2014	January 30, 2015

Institutional Feasibility

As these projects move forward into final design and construction there are institutional considerations that need to be address. Table 2 delineates the required actions and entities involved to fully allow these projects to be implemented. A brief summary of these actions follows.

TABLE 2 - Required Institutional Actions and Considerations	
Required Actions	Entities Involved
Approval of Debt Load (CWCB Loan)	Member Entities (City of Fort Collins City Council, Town of Wellington Board of Trustees and Larimer County Commissioners)
Approval of CWCB Loan Application and Feasibility Study	CWCB Board
Acquisition of Right of Way (ESDF)	Property Owners and Larimer County Court (in event of condemnation)
Approval of Nationwide Permit	Corps of Engineers
Approval of Construction Drawings (ESDF)	State Engineer's Office; Lake Canal Reservoir Company; Larimer County; Larimer County Flood Review Board
Approval of Construction Drawings (LWCCS)	Larimer and Weld Reservoir Company; Larimer County; Larimer County Flood Review Board
Approval of Conditional Letter of Map Revision (CLOMR) and Physical Letter of Map Revission (PMR)	Federal Emergency Management Agency (FEMA)

- **Approval of Debt Load –** Section 2.05 (f) of the Original IGA between the Member Entiti**es** specifies that "Any borrowing, issuance of debt, or multiple fiscal year financial obligation may only be approved by unanimous vote of the Members." At this point in the process the Member Entities agree with the approach to apply for the CWCB Loan. Upon Loan Approval a targeted Sunset Date can be established for the Authority which will likely lead to the approval for the issuance of debt.
- **Approval of CWCB Loan Application and Feasibility Study** – Obvious approval of the CWCB Board is required.
- **Acquisition of Right of Way (ESDF)** – There are potentially five properties affected by the construction of ESDF. Two of these properties are likely to need only drainage easements while the remaining properties will likely be acquired. Although the Authority has the right of to condemn property based on Section 3.01 (f) of the Original IGA we are hoping to negotiate all easements and properties. No additional right of way is anticipated for the LWCCS.
- **Approval of a Nationwide Permit** – The design of ESDF has been modified in recent months to reduce the amount of affected wetlands to less than 0.5 acres, thereby reducing the Corps permit requirement to a Nationwide Permit. No significant issues are anticipated with approval by the Corps.
- **Approval of Environmental Assessment** – If this is required no significant issues are anticipated with approval by EPA.
- **Approval of Construction Drawings (ESDF) –** Coordination with the State Engineer's Office will be ongoing during the final design of ESDF to address all pertinent issues. The Lake Canal Reservoir Company (Owners of the Gray Lakes Reservoirs) will be kept informed as well. Review by their engineer and approval by the Board is anticipated in the design schedule. Plans will be required to be reviewed and approved by Larimer County as well as their Flood Review Board.

- **Approval of Construction Drawings (LWCCS) –** The Larimer and Weld Reservoir Company (Owners of the Larimer and Weld Canal) will be kept informed as well. Review by their engineer and approval by the Board is anticipated in the design schedule. Plans will be required to be reviewed and approved by Larimer County as well as their Flood Review Board.
- **Approval of the CLOMR and PMR -** The submittal of the CLOMR for ESDF and LWSSC will be coordinated with plans by the City of Fort Collins and Town of Timnath to open all the culverts under Interstate 25 at its crossing with Boxelder Creek and Prospect Road improvements west of Interstate 25. Construction of these projects is scheduled to coincide with the construction of ESDF and LWCCS. Costs are to be divided appropriately. A unified submittal to FEMA will expedite the approval process. The same approach will be taken with the PMR submittal after all const

Cost Estimate

Boxelder Basin Regional Stormwater Authority				
East Side Detention Facility (ESDF)				
Prepared by: Pinnacle Consulting Group, Inc				
				3/28/2013
Engineering				
Preliminary Investigation				
Preliminary Design East Side Storage			$ 88,768	
ESDF 2D Modeling for Flows Entering			$ 51,500	
ESDF Wetlands Delineation			$ 11,620	
			Preliminary Investigation	$ 151,888
Final Design of ESDF				
Meetings, Coordination and Data Collection			$ 66,465	
State Eng. Design Requirements			$ 143,510	
Final Design ESDF			$ 116,330	
Final Geotechnical				
Phase 2			$ 97,880	
Phase 3			$ 121,880	
Nationwide Permit			$ 31,100	
Groundwater Investigation			$ 54,800	
Quanitity Takeoffs			$ 8,360	
Final Construction Plans			$ 64,430	
Larimer County Flood Review Board Submittal & Comments			$ 14,440	
Specs & Bid Documents			$ 34,700	
Construction Coordination			$ 109,940	
As-Builts			$ 15,600	
			Final Design	$ 879,435
FEMA Coordination				
Prepare and Submitt CLOMR Gray Lakes (ESDF & Middle Basin)			$ 100,000	
LOMR Preparation & Submittal (ESDF & Middle Basin)			$ 150,000	
Stormwater Dischage Permit Administration			$ 12,000	
			FEMA Coordination	$ 262,000
			Total Engineering	**$ 1,293,323**
Other Expenses				
Right of Way Agreements for ESDF				
Initial Appraisals			$ 20,067	
Amended Appraisal Coordination			$ 7,946	
Legal			$ 125,000	
Survey			$ 9,000	
Purchase			$ 2,000,000	
			Subtotal	$ 2,162,013
Prepare Feasibility Study and Application for CWCB				
Technical Write Up			$ 20,067	
Mgmt & Accting			$ 18,700	
Legal Review			$ 35,000	
Contract Review			$ 35,000	
			Subtotal	$ 108,767
			Total Other Expenses	**$ 2,270,780**
Construction				
Indirect Costs				
Item	**Quantity**	**Unit**	**Unit Cost**	**Item Cost**
Constuction Surveying	1	LS	$ 62,000	$ 62,000
Construction Testing	1	LS	$ 55,400	$ 55,400
District Management	1	LS	$ 32,000	$ 32,000
Infrastructure Management	1	LS	$ 110,000	$ 110,000
Resident Engineering	1	LS	$ 110,000	$ 110,000
			Total Indirects	**$ 369,400**
Construction Costs				
Item	**Quantity**	**Unit**	**Unit Cost**	**Item Cost**
Diversion & Care of Irrigation Water	1	LS	$ 50,000	$ 50,000
Clearing & Grubbing	100	ACRE	$ 2,000	$ 200,000
Topsoil (Strip/Stockpile/Replace)	95,000	CY	$ 1.85	$ 175,750
Cut (Unclassified Excavation)	456,300	CY	$ 1.50	$ 684,450
Ripping Cut	20,000	CY	$ 3.00	$ 60,000
Fill (Embankment w/ Moisture Control)	456,300	CY	$ 1.05	$ 479,115
Export Excess Cut (8-Mile Haul)	200	CY	$ 14.00	$ 2,800
Spillway Structure (Abutments/Cut off Wall)	988	CY	$ 500.00	$ 494,000
Outlet Stucture (12'x8' RCBC)	200	LF	$ 690.00	$ 138,000
Rip Rap (D50-30")	7,000	CY	$ 85.00	$ 595,000
ACB 50T System w/ Geotextile & Drain Rock (400')	6,000	SF	$ 19.00	$ 114,000
Revegetation	94	ACRE	$ 1,600.00	$ 150,400
			Total Construction	**$ 3,143,515**
			Construction Contingency 20%	$ 628,703
			Pre-Bid Contingency 30%	$ 1,053,875
			Project Total	**$ 8,759,595**

Opinion of Feasibility

These projects (ESDF and LWCCS) are very practical and provided assorted benefits to the irrigation companies affected, Larimer County, City of Fort Collins, and the Town of Timnath as well as downstream property owners and CDOT. When the original Boxelder Creek Regional Stormwater Master Plan was done in 2006 an exhaustive benefit cost analysis was done of 6 different possible combinations of regional and local drainage improvements. A principal portion of this analysis focused on estimating the damages caused by flooding throughout the Boxelder Basin. The damage assessment considered cost impacts to:

- Structures and Contents
- Environmental
- Flood Insurance Premiums
- Agricultural Losses
- Infrastructure Damages
- Emergency Services
- Clean Up and Maintenance
- Injury and Potential Loss of Life

These impacts were developed for defined reaches of Boxelder Creek from County Road 68 to the Boxelder Creek's confluence to the Cache La Poudre River. Cost impacts were estimated for the 100, 50, 10, 5 and 2 year storm events. The results were then brought forward to a set of overall present worth loss figures for each reach of Boxelder Creek. These present worth loss figures were developed for the option of doing nothing (existing conditions) and 5 other combinations of regional and local drainage improvements. In order to develop a concise analysis of the benefits (damage reductions) from the two proposed projects this information has been utilized taking the existing condition estimates from the affected reaches of Boxelder Creek and comparing them to the present worth loss figures from the closest design option that duplicates the affects of the two proposed projects.

This approach appears to be a conservative approach to developing a benefit cost ratio for these projects based on these factors:

- Costs were developed in 2006 and even with minimal inflation, current actual costs would be higher
- Analysis is limited to reduction in damages and does not consider the increased value of lands taken out of the floodplain
- No benefits were included for portions of I-25 which will be taken out of the floodplain south of Prospect Road. These could be significant with the expansion plans currently under consideration by CDOT.

The results of this analysis appear below:

[1]Present Worth Damage Losses Estimated in 2006 Master Plan				2/8/2013
Boxelder Creek Reach	**Potential Damages at Existing Conditions**	**Potential Damages after construction of ESDF and LWCCS**	**Resulting Benefit (Damage Reduction)**	
Middle Boxelder Creek (CR54 to I25)	$ 9,990,993	$ 5,000,000	$ 4,990,993	
Boxelder Overflow	$ 9,007,028	$ -	$ 9,007,028	
Lower Boxelder Creek (I25 to Poudre)	$ 2,015,535	$ 811,806	$ 1,203,729	
Boxelder I 25 Split	$ 10,224,807	$ -	$ 10,224,807	
Cooper Slough	$ 27,344,409	$ 8,623,624	$ 18,720,785	
Cache La Poudre Overflow	$ 2,311,180	$ 220,493	$ 2,090,687	
Totals	**$ 60,893,952**	**$ 14,655,923**	**$ 46,238,029**	
Current Construction Cost Estimate (ESDF & LWCCS)	**$ 9,900,000**			
Estimated Benefit/Cost Ratio	**4.67**			

Financial Feasibility Analysis

Revenue Sources

Property owners within the Authority are assessed an annual Stormwater Service Fee (Stormwater Fee) based upon the square footage of impervious area on their properties. The Stormwater Fee is reviewed annually and in accordance with the IGA shall not on average exceed $0.04 per square foot of impervious area per year or be less than $0.03 per square foot of impervious area per year. Currently, the Stormwater Fees are set at the minimum $0.03 per square foot of impervious area.

Additional funding comes from new development in the form of System Development Fees (Development Fees) which are collected no later than at the time of issuance of a building permit. Development Fees are based upon the square footage of impervious area and on average shall not exceed $0.30 per square foot of new impervious area or be less than $0.20 per square foot of new impervious area. Current Development Fees are set at the minimum $0.20 per square foot of new impervious area.

The Authority also has an IGA with the Timnath Development Authority (TDA). The agreement acknowledges the benefit of the proposed improvements to the property owners within the Town of Timnath. The TDA provided $500,000 and agreed to pay 25% of the two regional drainage improvement projects (ESDF and LWCCS), whether through a matching construction contribution or repayment of construction related debt.

Project Financing

The projected East Side Detention Facility cost is $8,761,000. The Authority is requesting a loan amount of $7,100,000 with a repayment period of 15 years and an interest rate of 2.75%. The balance of $1,661,000 of the total project cost will be funded by Stormwater Fees, Development Fees and contributions from the TDA. As the Authority transitions from construction to debt repayment, the Stormwater Fees, Development Fees and contributions from the TDA will be utilized for debt repayment. In conjunction with the contributions from the TDA, the current Stormwater and Development Fees of $.03 and $0.20 per square foot of impervious area, respectively, are projected to fund more than the required 10% local contribution toward construction costs and fully repay the loan without any rate increase. The Authority would pledge the Stormwater and Development Fees backed by a rate covenant

to assure repayment of the CWCB loan. Exhibit XX contains a detailed schedule of the estimated annual revenues and expenditures for the duration of the construction and debt repayment periods.

Financial Forecast

Schedule of Sources and Uses – Feasibility Study for ESDF (Exhibit K), is a detailed schedule of the estimated annual sources and uses for the duration of the construction and debt repayment periods. The following is a description of the sources, uses and related assumptions supporting the amounts and calculations of Exhibit AA:

- **Stormwater Fees (a)** – The 2012 Stormwater Fees were assessed in the amount of $739,570. The Authority has experienced Stormwater Fee growth due to development and continued growth is expected. However, for purposes of Exhibit K, the inflation and growth factor was conservatively established at 0% showing no Stormwater Fee increases through the anticipated loan payoff. Additionally, the Development Fees were omitted from Exhibit K. The Development Fees are dependent on new development and construction and can fluctuate year to year. Rather than support loan repayment viability on changing and unreliable revenue, the Development Fees were not included.
- **TDA Contribution (b)** – As described in Revenue Sources, the TDA has agreed to pay 25% of the LWCCS improvement project. The TDA Contribution represents 25% of construction costs paid directly by Authority monies and 25% of the loan repayment amount.
- **CWCB #1 ESDF Loan Proceeds (c)** – Exhibit K begins in 2013 to demonstrate how construction costs will be paid. It is anticipated that the Authority will receive a loan from the Colorado Water Conservation Board to largely fund the ESDF project. Substantial completion of ESDF construction is expected in 2014 and loan proceeds would be drawn accordingly.
- **CWCB #2 LWCCS Loan Proceeds (d)** – Exhibit K begins in 2013 to demonstrate how construction costs will be paid. Contiguous to the timing of the ESDF project, the Authority will also be constructing the LWCCS improvements. It is anticipated that the Authority will receive a loan from the Colorado Water Conservation Board to largely fund the LWCCS project. Substantial completion of LWCCS construction is expected in 2014. The LWCCS capital expenses and loan proceeds and repayments are included as they directly relate to the feasibility of the ESDF loan repayment.
- **Total Sources (e)** – This column on Exhibit K is a sum of the Stormwater Fees, TDA Contributions and loan proceeds to illustrate the total annual sources available for capital expenses, Authority operations, loan repayment and funding of the loan reserve. The projected sources total $23,568,805. This is sufficient to fund the projected total uses of $22,737,936.
- **ESDF Project (f)** – The ESDF Project is forecasted to cost $8,761,000 and paid in 2013 and 2014.
- **LWCCS Project (g)** – The LWCCS Project is forecasted to cost $8,761,000 and paid in 2013 and 2014.
- **Authority Operations (h)** – The Authority projects total costs to manage, operate and maintain the Authority and its assets in 2013 to be $200,000. Authority Operations costs were increased annually by inflation of 3%. During the construction period of 2013 and 2014, the Authority expects management, operations and maintenance expenses to peak. Afterwards, the Authority anticipates a reduced level of operational need which is reflected in the substantial decrease in Authority Operations expense beginning in 2016.
- **Payments on CWCB #1 ESDF Loan (i)** – This column represents the loan principal and interest payments associated with the repayment of the $7.1MM loan expected from the CWCB for the ESDF project. The forecasted substantial completion of the ESDF project is 2014. It is expected that the "substantial completion letter" will be then be issued and the Authority will pay the Interest During Construction amount. Interest accrued during the construction is estimated at $169,676 payable in 2014. One year later in 2015, the Authority would begin repayment of the

CWCB loan. Loan repayment is based on a 15 year loan at 2.75%. The principal amount is $7,171,000 which is the $7,100,000 in loan proceeds with a 1% loan service fee to CWCB of $71,000. The annual loan repayment for the ESDF loan would be $589,881.

- **Payments on CWCB #2 LWSSC Loan (j)** – This column represents the loan principal and interest payments associated with the repayment of the $1.0MM loan expected from the CWCB for the LWCCS project. The forecasted substantial completion of the LWCCS project is 2014. It is expected that the "substantial completion letter" will be then be issued and the Authority will pay the Interest During Construction amount. Interest accrued during the construction is estimated at $20,349 payable in 2014. One year later in 2015, the Authority would begin repayment of the CWCB loan. Loan repayment is based on a 15 year loan at 2.75%. The principal amount is $1,139,000 which is the $1,000,000 in loan proceeds with a 1% loan service fee to CWCB of $10,000. The annual loan repayment for the LWCCS loan would be $83,082.
- **Total Uses (k**) – This column on Exhibit K is a sum of the capital expenses, Authority operations, and debt retirement to illustrate the total annual uses of available funds. The projected uses total $22,737,936. The total projected sources of $23,568,805 are sufficient to fund the projected total uses.
- **Sources in Excess of Uses (l)** – This column illustrates the sources in excess of uses as they accumulate year over year. The Authority ended 2012 with $594,326, most of which originated from the $500,000 receipt from the TDA. These funds carry forward into 2013 to partially fund construction costs resulting in a depletion of the sources in excess of uses in 2013 and 2014. After the improvements are completed in 2014, the sources in excess of uses increase annually through the repayment of the loan in 2029.
- **Portion of Fund Balance Allocated to CWCB Reserve (m)** – For the CWCB loans, the Authority is required to accumulate the equivalent of one annual loan payment in a loan reserve fund, over the first 10 years of the loan repayment. Based on the projected amount and terms of the loans, the reserve requirement each year for the first 10 years of the ESDF loan is $58,988 and of the LWCCS loan is $8,308. The loan reserve requirement will accumulate to $672,962. The accumulated reserve will be used to make the final loan payments in 2029.

TABOR (Taxpayer's Bill of Rights)

Colorado voters passed an amendment to the State Constitution, Article X, Section 20 which has several limitations, including revenue raising, spending abilities, and other specific requirements of state and local government. Due to the nature of its formation and enterprise status, the Authority does not believe it is subject to the restrictions of TABOR.

Conclusion and Recommendation

The Authority's financial forecast illustrates a strong financial position. The Authority projects an ability to meet the financial demands of capital expenses, operations and loan repayment. Overall, the current project budget allows for reasonable contingencies to deal with the unknown design and construction issues. The three founding entities are moving toward agreement on the issuance of debt by the Authority. Adequate time remains to complete final design, acquired the required land, and meet targeted schedules. Based on all these factors the Authority recommends approval of this CWCB Loan Application.

INTERGOVERNMENTAL AGREEMENT
FOR STORMWATER COOPERATION
AND MANAGEMENT

THIS INTERGOVERNMENTAL AGREEMENT FOR STORMWATER COOPERATION AND MANAGEMENT (this "Agreement"), entered into this 20TH day of August, 2008, by and among THE BOARD OF COMMISSIONERS OF LARIMER COUNTY, COLORADO (the "County"); THE CITY OF FORT COLLINS, COLORADO, a municipal corporation (the "City"); and THE TOWN OF WELLINGTON, COLORADO, a statutory municipality (the "Town").

W I T N E S S E T H:

WHEREAS, recent growth in the Fort Collins Urban Growth Area (the "City UGA") and the Wellington Urban Growth Area (the "Town UGA") suggests that increased coordination and cooperation between the City, the Town and the County may result in better management, problem resolution, design, construction, maintenance and joint financing of stormwater facilities; and

WHEREAS, the City has established and currently operates its own stormwater utility and its own stormwater utility enterprise (hereinafter referred to jointly as the "City Stormwater Utility Enterprise") to provide and finance stormwater services within the City; and

WHEREAS, the Town has not established a stormwater utility but intends to do so and further intends to operate such stormwater utility as a stormwater utility enterprise (the "Town Stormwater Utility Enterprise") to provide and finance stormwater services within the Town; and

WHEREAS, the County currently collects a stormwater impact fee at the time of development of properties within the Boxelder Creek Basin ("Boxelder Basin" or the "Basin") below County Road 70; and

WHEREAS, the Boxelder Creek Floodplain (the "Boxelder Floodplain") is designated in a Flood Insurance Study prepared by the Federal Emergency Management Agency and dated December 19, 2006; and

WHEREAS, the County is authorized to establish, expand and operate a stormwater utility or stormwater utility enterprise throughout all portions of the Boxelder Basin that are located solely within the boundaries of the County and outside any municipality, pursuant to C.R.S. Section 30-11-1-7(1)(w), Section 30-20-401, et seq., and Section 37-45.1-101, et seq.; and

WHEREAS, a basin master plan titled "Boxelder Creek Regional Stormwater Master Plan" dated October 2006 and prepared by PBS&J Consulting Engineers (the "Plan") has been adopted by the City, the Town and the County; and

WHEREAS, recent engineering studies indicate that constructing stormwater facilities

within the Boxelder Floodplain to store stormwater would reduce the threat of floods for approximately 4,900 acres in the Boxelder Floodplain, which acres are located in portions of the City, portions of the Town and in unincorporated Larimer County and would reduce damages to public and private properties, reduce the risk to citizens, increase protection for public roads, bridges and other facilities in the Boxelder Basin; and

WHEREAS, the parties anticipate that areas in the Basin and in the unincorporated areas of the County will be annexed into the City or the Town in the future, subject to the urban growth area boundaries and standards of the City and the Town; and

WHEREAS, the elimination of such flood hazards, as well as the resulting relaxation of associated land use restrictions, would alleviate some of the financial hardships associated with developing those properties that are now located within the Boxelder Basin; and

WHEREAS, the various risks and hazards existing or anticipated to exist in the Basin can be alleviated most efficiently and at the least cost through a regional effort; and

WHEREAS, it appears that financing the construction of the needed stormwater facilities for the Boxelder Basin on a regional basis is best accomplished by the County and the other Members hereto forming an Authority as provided herein, to include those properties located within the Boxelder Basin; and

WHEREAS, the City currently charges a City-wide stormwater impact fee as a condition of issuance of a building permit or, if no building permit is required, upon commencement of construction for new development on those properties located within the City, and further charges an ongoing monthly stormwater fee to all developed properties within the City's boundaries; and

WHEREAS, the Town intends to charge a stormwater basin fee as a condition of issuance of a building permit or, if no building permit is required, upon commencement of construction for new development on those properties located within the Town; and

WHEREAS, as noted above, the County currently charges a stormwater basin impact fee at the time building permits are issued for new development on those properties located in the unincorporated areas of the County within a portion of the Boxelder Basin; and

WHEREAS, it appears that the financing, construction, maintenance and operation of the needed stormwater facilities in the Boxelder Basin are best accomplished by the County expanding or establishing a stormwater utility enterprise (hereinafter referred to jointly as the "County Stormwater Utility Enterprise") to work cooperatively with the Town's Stormwater Utility Enterprise and the City's Stormwater Utility Enterprise; and

WHEREAS, construction, operation and maintenance of said additional stormwater facilities for the Boxelder Basin in accordance with Urban Storm Drainage Criteria Manual Best Management Practices is necessary and beneficial to the public health, safety and welfare; and

Management Practices is necessary and beneficial to the public health, safety and welfare; and

WHEREAS, each of the parties has materially relied on the participation of all parties to this agreement and on the inclusion of all of the property within the defined Service Area to accomplish the purposes set forth in this Agreement, and

WHEREAS, the City, the Town and the County desire to enter into this Agreement in order to delineate the duties and responsibilities of each Member with respect to the proposed stormwater improvements for the Boxelder Basin; and

WHEREAS, C.R.S. Section 29-1-203 authorizes the City, the Town and the County to cooperate and contract with one another to provide any function, service or facility lawfully authorized to each of them, which cooperation may include the sharing of costs and the incurring of debt; and

WHEREAS, C.R.S. Section 30-20-402(1)(h) authorizes the County to enter into and perform contracts with the City and the Town for or concerning the planning, construction, lease or other acquisition and the financing of stormwater facilities and the maintenance and operation thereof; and

WHEREAS, C.R.S. Section 29-1-204.2(1) provides that a combination of municipalities or other political subdivisions of this State may establish, by contract with each other, a separate governmental entity, to be known as a drainage authority, to be used by such contracting Members to effect the development of stormwater and drainage facilities for the benefit of the inhabitants of such contracting Members or others at the discretion of the Directors; and

WHEREAS, C.R.S. Section 29-1-204.2(4) and (5) provides that a drainage authority established by such contracting Members shall be a political subdivision and a public corporation of the State, separate from the members to the contract and that it shall have the duties, privileges, immunities, rights, liabilities, and disabilities of a public body politic and corporate; and

WHEREAS, the provisions of Articles 10.5 and 47 of Title 11, C.R.S., shall apply to moneys of the entity and the bonds, notes and other obligations of a water or drainage authority formed under the provisions of this Agreement shall not be the debts, liabilities or obligations of the original contracting Members or Members that may enter the establishing contract in the future; and

WHEREAS, C.R.S. Section 29-1-204.2(6) provides that the contracting members may provide in the contract for payment to the separate governmental entity of funds from proprietary revenues for services rendered by the entity, from proprietary revenues or other public funds as contributions to defray the cost of any purpose set forth in the contract, and from proprietary revenues or other public funds as advances for any purpose subject to repayment by the entity.

NOW, THEREFORE, in consideration of the mutual covenants contained herein and

other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Members hereto agree as follows:

ARTICLE I

DEFINITIONS AND CONSTRUCTION

Section 1.01. Definitions. In this Agreement, capitalized terms not otherwise defined shall have the meanings respectively assigned thereto in the Recitals to this Agreement or as provided in this Section 1.01, unless the context clearly requires a different meaning:

"Agreement" means this Intergovernmental Agreement for Stormwater Cooperation and Management and any amendments hereto.

"Authority" means the Boxelder Basin Regional Stormwater Authority.

"Boxelder Project" means acquisition and construction of the Project Improvements described in the Plan.

"City" means the City of Fort Collins, Colorado.

"County" means Larimer County, Colorado.

"Directors" means the members of the Authority's Board of Directors.

"Fiscal Year" means the calendar year.

"Flood Insurance Study" means the official report in which the Federal Emergency Management Agency ("FEMA") has provided flood profiles, as well as the Flood Boundary-Floodway Map and water surface elevation of the base flood, in all or a part of the Service Area.

"Member" means the City, the County, the Town and any additional member government added as a party to this Agreement by amendment after the date hereof.

"Operation and Maintenance" means the ongoing maintenance, operation, repair and replacement of the Project Improvements.

"Plan" means the Boxelder Creek Regional Stormwater Master Plan dated October 2006, together with any amendments thereto approved by a unanimous vote of the Members.

"Project Improvements" means, without limitation, detention areas or flood storage facilities; reservoirs; open channels; irrigation canal overflow or spill structures; diversion or confinement berms; utility relocations; road and railroad crossing structures; water quality enhancement features; and landscaping of disturbed areas, to the extent contemplated by the Plan.

"Service Area" means the area shown on Exhibit "A" hereto.

"State" means the State of Colorado.

"Stormwater Service Fee" means a recurring, monthly or quarterly fee charged to all customers of the Authority upon the basis of such customers' relative contributions to storm flows on a continuing basis, and applied to Operation and Maintenance and debt service requirements of the Authority.

"System Development Fee" means a one-time charge imposed upon rezoning of property or the issuance of a building permit with respect to property in the Service Area, for the purpose of recovering a reasonable portion of the Authority's existing or future capital investment in the Project Improvements.

"TABOR" means Article X, Section 20 of the Constitution of the State.

"Town" means the Town of Wellington, Colorado.

ARTICLE II

CREATION AND GOVERNANCE OF THE AUTHORITY

Section 2.01. Creation of Authority. The City, the Town and the County, by this Agreement, hereby establish the Authority as a drainage authority pursuant to C.R.S. § 29-1-204.2(2). The Authority shall exist until dissolved or terminated in accordance with this Agreement.

Section 2.02. Name and Service Area. The Authority shall be known as the Boxelder Basin Regional Stormwater Authority and the Authority shall carry out the Responsibilities set forth in this Article The initial Service Area of the Authority shall include those portions of the Service Area in the City, the Town or the unincorporated areas of the County as of the date of this Agreement, as shown and described on Exhibit "A", which is attached to and made of part of this Agreement.

Section 2.03. Board of Directors. The Authority shall be governed by a board of directors consisting of five (5) members (the "Directors"), consisting of one each selected by the City, the Town and the County, and two unaffiliated members, representing the public at large, one selected by the City and the County upon mutual agreement and one by the town and County upon mutual agreement. No more than one of such unaffiliated members shall be employed by or an elected official of any Member. Each director shall serve a three (3) year term, with terms staggered and expiring on the 1st day of April or as soon thereafter as the successor director is approved. The staggered terms of Directors shall expire each three (3) years with the first Directors' terms expiring as follows: The Town-appointed director – 2009; City-appointed director and County/Town-appointed director – 2010; County-appointed director and

County/City-appointed director -- 2011. Officers of the Authority shall consist of a president, secretary and treasurer, which shall be appointed by a majority of the board of Directors and shall be re-appointed on the 1st day of April of each year or as soon thereafter as successors may be qualified. Each board member shall have one (1) vote. The majority of the Directors shall constitute a quorum and a majority of the quorum shall be necessary to take any action by the board. The board shall comply with all obligations and may exercise all powers authorized by Title 29, Article 1, Part 2, C.R.S.

Section 2.04. Distribution of Property of the Authority Upon Dissolution. If the Authority is dissolved, property of the Authority shall pass jointly to the Members as tenants in common thereto, except as otherwise expressly agreed in writing.

Section 2.05. Actions of Board and Members. Generally, actions may be taken by the Authority upon majority approval the Directors; provided, however, that the following actions may only be taken with the following approvals:

(a) This Agreement may only be terminated or dissolved by unanimous vote of the Members, and only in the event that all bonds, notes and other financial obligations of the Authority and the obligation to operate, maintain, repair and replace any existing improvements of the Authority have been paid or duly provided for by escrow or otherwise;

(b) Fees, rates and other charges consistent with Article V of this Agreement may only be established by a majority vote of the Directors;

(c) Preliminary and final engineering studies for improvements to be constructed by the Authority in accordance with the Plan, including but not limited to the Boxelder Project, as hereinafter defined, may only be approved by a majority of the Directors;

(d) Any amendments to the Plan may only be approved by a unanimous vote of the Members;

(e) Any amendments to this Agreement may only be made on a unanimous vote of the Members; and

(f) Any borrowing, issuance of debt, or multiple fiscal year financial obligation may only be approved by a unanimous vote of the Members.

Section 2.06. Description of the Boxelder Project. The Boxelder Project may include, without limitation, any Project Improvements described in the Plan. The Members intend and acknowledge that implementation of the Plan will include the design of permanent natural habitat and other natural features as part of the stream stability and erosion control improvements to be constructed, and, to the extent practicable, as part of other improvements to be constructed by the Authority. All improvements of the Authority will be designed so as to minimize the

potential for introduction of human-caused pollutants in accordance with the Urban Storm Drainage Criteria Manual Volume III – Best Management Practices, or such other subsequently adopted standard as the Directors may approve. The Members further intend and acknowledge that the enhancement and restoration of native vegetation, wildlife habitat, naturally meandering stream channel topography, and other similar natural features are beneficial for the sustained maintenance of the Boxelder drainage.

Section 2.07. The Authority's Responsibilities. The Authority shall have the following responsibilities:

(a) Plan and establish a financial structure that equitably distributes among all properties within the Service Area the costs of the Boxelder Project. The financial structure will include both impact fees and service fees;

(b) Plan and arrange for the Operation and Maintenance of the Project Improvements;

(c) Plan and establish a financial structure that equitably distributes among all properties within the Service Area the costs of acquisition and construction of the Project Improvements, Operations and Maintenance of the Project Improvements and costs of administering and operating the Authority. The financial structure to fund said expenses will include service fees and such other sources of revenue as the Authority may determine to be appropriate and sufficient to support the acquisition and construction of the Project Improvements, the Operation and Maintenance of the Project Improvements and administration of the Authority, in a fiscally sustainable manner;

(d) Obtain any necessary Stormwater MS4 Permitting (stormwater quality) required for its undertakings within the Service Area;

(e) Comply with all local laws and requirements, including but not limited to land use and zoning laws and similarly applicable land use code provisions and floodplain and storm drainage regulatory requirements; and

(f) Cooperate and collaborate with the Members, other governmental entities and jurisdictions, nonprofit and private entities and persons and property owners, to incorporate into Authority project plans, to support, and to encourage the design of, development and use of Authority property and improvements, to provide for natural habitat preservation and restoration, preservation of viewsheds and aesthetic values, and transportation connections, and to advance other compatible public purposes and uses, insofar as the same are not in conflict with the primary stormwater objective of the Authority.

Section 2.08. Enterprise Status. To the extent practicable, the Authority shall be operated as an enterprise within the meaning of TABOR and the Water Activity Enterprise Law, Part 1 of Article 45.1, Title 37, C.R.S. For such purposes, payments to the Authority by

Members pursuant to Sections 5.03 or 6.03 hereof shall not constitute "grants."

Section 2.09. Particular Duties of the Board. The Board shall diligently pursue the implementation of the Plan, and shall comply with the applicable provisions of Article 1, Title 29, C.R.S.

ARTICLE III

POWERS OF THE AUTHORITY

Section 3.01. Powers. The Authority shall have and may exercise the following powers together with any additional powers conferred upon drainage authorities by C.R.S. Section 29-1-204.2 as it may be amended from time to time:

(a) Pursuant to the Plan to develop stormwater systems or facilities or drainage facilities in whole or in part for the benefit of the inhabitants of the contracting Members or others, at the discretion of the Directors, subject to fulfilling any conditions or requirements set forth in this Agreement or in any other contract concerning the Authority;

(b) To make and enter into contracts;

(c) To employ agents and employees;

(d) To acquire, construct, manage, maintain, fund, plan and operate drainage and flood control systems, facilities, works, or improvements, or any interest therein;

(e) To acquire, hold, lease (as lessor or lessee), sell, or otherwise dispose of any real or personal property utilized only for the purposes of providing drainage, flood control, or stormwater quality control or for related or accessory purposes;

(f) To condemn property for public use;

(g) To incur debts, liabilities, or obligations, including without limitation by the issuance of bonds, notes and other financial obligations;

(h) To sue and be sued in its own name;

(i) To have and use a corporate seal;

(j) To fix, maintain, and revise fees, rates, and charges for functions, services, or facilities provided by the Authority;

(k) To adopt, by resolution, regulations respecting the exercise of its powers and the carrying out of its purpose;

(l) To exercise any other powers which are essential to the provision of functions, services, or facilities by the Authority and which are specified in this Agreement or any other contract concerning the Authority;

(m) To do and perform any acts and things authorized by Section 29-1-204.2, C.R.S., and this Agreement under, through, or by means of an agent or by contracts with any person, firm, or corporation;

(n) To permit other municipalities, special districts, or political subdivisions of the State that are authorized to provide drainage facilities to become Members in the manner provided in this Agreement;

(o) To provide for the rehabilitation of any surfaces adversely affected by the construction of pipelines, facilities, or systems or of stormwater or other drainage facilities through the rehabilitation of plant cover, soil stability, and other measures appropriate to the subsequent beneficial use of such lands; and

(p) To the extent permitted by law, to justly indemnify property owners or others affected for any losses or damages incurred, including reasonable attorney fees, or that may subsequently be caused by or which result from actions of the Authority.

Section 3.02. Insurance. The Authority shall comply with all minimum insurance requirements of the Colorado Governmental Immunity Act, C.R.S. Section 24-10-101, et seq. Unless the Members vote unanimously to approve other insurance limits, the Authority shall maintain commercial general liability insurance with minimum limits of $1,000,000 combined limit for each occurrence and $2,000,000 general aggregate, including products/completed operations and personal injury. So long as any obligation is owed to the Colorado Water Conservation Board ("CWCB") the company providing the insurance coverage shall be acceptable to the CWCB.

Section 3.03. Authority Not a Taxing Entity. The Authority shall not have the power of taxation.

ARTICLE IV

REPRESENTATIONS AND COVENANTS OF MEMBERS

Section 4.01. The County's Representations and Covenants. The County makes the following representations and covenants:

(a) It will promptly transfer to the Authority all revenues, fund balances, improvements and responsibilities associated with the County's existing stormwater impact fee in the Service Area, and will transfer to the Authority any amounts representing fees applicable within its jurisdiction to the extent it elects to make payment

to the Authority in lieu of the collection of such fees pursuant to Section 5.04;

(b) It has adopted or will adopt the Plan;

(c) It will duly appoint initial and replacement Directors in accordance with Section 2.03 hereof;

(d) It will, to the extent it is necessary to locate certain stormwater improvements within the unincorporated areas of Larimer County and if requested by the Authority, cooperate with the Authority in any condemnation actions, including the County's use, with approval of the County Board of Commissioners in its sole discretion, of its powers of eminent domain to acquire property as requested by the Authority, so long as all costs of the County are reimbursed by the Authority, and the County is held harmless;

(e) It will allow the Authority, within the County's standards and specifications, to utilize easements and rights of way dedicated to the public for the Authority's purposes, subject to the primary use of the right of way and applicable police powers;

(f) It will cooperate in preparing all preliminary and final engineering services necessary for the design and construction of the Boxelder Project;

(g) It will establish and implement stormwater standards, to be applied in connection with subdivision, development and building review and approval, that are consistent with the analytical assumptions and objectives of the Plan; and

(h) It will cooperate with the Authority and other Members in seeking approval of changes to the Flood Insurance Study or underlying components, and consent to the Authority's submission of the same to FEMA.

Section 4.02. The City's Representations and Covenants. The City makes the following representations and covenants:

(a) To the extent permitted by any ordinances authorizing bonds and other obligations of the City Stormwater Utility Enterprise in effect or existing as of the effective date of this Agreement, it will transfer to the Authority any amounts representing fees applicable within its jurisdiction to the extent it elects to make payment to the Authority in lieu of the collection of such fees pursuant to Section 5.04;

(b) It has adopted or will adopt the Plan;

(c) It will duly appoint initial and replacement Directors in accordance with Section 2.03 hereof;

(d) It will, to the extent it is necessary to locate certain stormwater improvements within the City and if requested by the Authority, cooperate with the Authority in any condemnation actions, including the City's use, with approval of the City Council in its sole discretion, of its powers of eminent domain to acquire property as requested by the Authority, so long as all costs of the City are reimbursed by the Authority, and the City is held harmless;

(e) It will allow the Authority, within the City's standards and specifications, to utilize easements and rights of way dedicated to the public for the Authority's purposes, subject to the primary use of the right of way and applicable police powers;

(f) It will cooperate in preparing all preliminary and final engineering services necessary for the design and construction of the Boxelder Project;

(g) It will establish and implement stormwater standards, to be applied in connection with subdivision, development and building review and approval, that are consistent with the analytical assumptions and objectives of the Plan; and

(h) It will cooperate with the Authority and other Members in seeking approval of changes to the Flood Insurance Study or underlying components, and consent to the Authority's submission of the same to FEMA.

Section 4.03. The Town's Representations and Covenants. The Town makes the following representations and covenants:

(a) It will transfer to the Authority any amounts representing fees applicable within its jurisdiction to the extent it elects to make payment to the Authority in lieu of the collection of such fees pursuant to Section 5.04;

(b) It has adopted or will adopt the Plan;

(c) It will duly appoint initial and replacement Directors in accordance with Section 2.03 hereof;

(d) It will, to the extent it is necessary to locate certain stormwater improvements within the Town and if requested by the Authority, cooperate with the Authority in any condemnation actions, including the Town's use, with approval of the Town Board in its sole discretion, of its powers of eminent domain to acquire property as requested by the Authority, so long as all costs of the Town are reimbursed by the Authority, and the Town is held harmless;

(e) It will allow the Authority, within the Town's standards and specifications, to utilize easements and rights of way dedicated to the public for the Authority's purposes, subject to the primary use of the right of way and applicable police powers;

(f) It will cooperate in preparing all preliminary and final engineering services necessary for the design and construction of the Boxelder Project;

(g) It will establish and implement stormwater standards, to be applied in connection with subdivision, development and building review and approval, that are consistent with the analytical assumptions and objectives of the Plan; and

(h) It will cooperate with the Authority and other Members in seeking approval of changes to the Flood Insurance Study or underlying components, and consent to the Authority's submission of the same to FEMA.

ARTICLE V

RATES AND CHARGES; PROJECT PAYMENTS

Section 5.01. Power and Duty to Impose. The Authority shall be authorized and required to impose the following rates, fees and charges on property within the Service Area to fund regional improvements as described in the Plan: (a) a Stormwater Service Fee and (b) a System Development Fee.

Section 5.02. All rates, fees and charges shall be consistent with the terms of this Agreement. The Members have obtained a financial feasibility study report prepared by Alex Brown Consulting, identified as Boxelder Creek Alliance Financial Analysis, and dated May 22, 2008 (the "Feasibility Study").

(a) In order to fund the Authority's projects and operations in accordance with the Feasibility Study, the Members agree that the Authority shall no later than January 1, 2009, establish a Stormwater Service Fee to be collected on an ongoing, regular, basis from owners of property within the Service Area. The Stormwater Service Fee shall be set by the Authority generally based upon impervious area, and on average shall not exceed $ 0.04 per square foot of impervious area per year or be less than $ 0.03 per square foot of impervious area per year.

(b) To provide additional funding for the Authority's projects and operations, the Members agree that the Authority shall no later than January 1, 2009, establish a System Development Fee to be collected in connection with development of property within the Service Area no later than at the time of issuance of a building permit. The System Development Fee shall be generally based upon impervious area, and on average shall not exceed $ 0.30 per square foot of new impervious area or be less than $ 0.20 per square foot of new impervious area.

(c) The Authority shall review the Stormwater Service Fee and System Development Fee on a biennial basis, and shall adjust the System Development Fee to reflect the investment in the value of assets of the Authority and depreciation of those assets. Modifications of the permitted average range of Stormwater Service Fee and the System Development Fee parameters

may be made by adoption of an amendment to this Agreement.

Section 5.03 Uniformity and Rates and Charges. The rates, fees and charges collected by the Authority shall be uniform within the Service Area, and shall as nearly as practicable result in similar charges to similarly-situated properties. Such rates and charges shall be imposed in sufficient amounts to provide for the Operation and Maintenance expenses of the Authority, and to defray, or provide a reasonable reserve for the payment of, its capital requirements. The Authority is authorized to pledge all or any portion of the revenues derived from its rates, fees an charges, including amounts received from Members pursuant to Section 5.03 hereof in lieu of rates, fees and charges, to the payment of the principal of and interest on the obligations of the Authority issued pursuant to Section 3.01(g) hereof.

Section 5.04. Option of Members to Contribute in Lieu of Authority Collection of Rates and Charges. It is not intended that this Agreement shall deprive any Member of its inherent power to charge for stormwater services and facilities within its boundaries. As to any fiscal year a Member may at its discretion elect to pay directly to the Authority an amount equal to the total of the Authority's rates, fees and charges imposed on property within such Member's jurisdiction, in which case the Authority shall credit the account of each such property and refrain from billing and collection in the affected area. Direct payments of such amounts shall be made by a Member so electing no later than the dates upon which payments by property owners to the Authority would have been due if the Authority had billed such property owners directly. A Member electing to make such payments shall file a written notice with the Authority not later than November 1 of the year preceding the fiscal year as to which it makes such election, stating the fiscal year as to which such election is effective and the specific rates, fees or charges affected, together with evidence satisfactory to the board of the Authority of the appropriation and assignment of funds by such Member's governing body sufficient to fully provide for all payments due as the result of such election. In any case where a Member so elects, nothing shall prevent it from imposing and collecting rates, fees and charges to customers within its boundaries which differ from the Authority's prevailing rates, fees and charges, provided that the Authority does not thereby receive less revenue than it would if it were directly imposing and collecting its own prevailing rates.

Section 5.05. Enforcement/Unpaid Charges a Lien. Any charge due hereunder which shall not be paid when due may be recovered in an action at law by the Authority. All rates, fees and charges imposed pursuant to this Article shall be a lien upon the property to which such fee is associated from the date the fee becomes due until such fee is paid. The owner of every building, premises, lot or house shall be obligated to pay the fee for all service provided for the premises which obligation may be enforced by the Authority by action at law or suit to enforce the lien. In the case that a tenant in possession of any premises or buildings shall pay the charges, it shall relieve the landowner from such obligation and lien but the Authority shall not be required to look to any person whatsoever other than the owner for the payment of such charges. No changes of ownership or occupation shall affect the application of this Article and the failure of any owner to learn that he or she purchased property against which a lien for stormwater authority rates, fees or charges exists shall in no way affect the responsibility for such payment. Any delinquent amount may be enforced by assessment upon the property and premises served

and certification to the County Treasurer for collection under and pursuant to the authority and procedure provided in by applicable law.

Section 5.06. Initial FEMA Grant Funding. The Members have applied for, and received preliminary notice of award of, a FEMA Pre-Disaster Mitigation grant in the approximate amount of $3 million, for design and construction of certain improvements described in the Plan (the "PDM Grant"). The Members anticipate that the Authority will receive the PDM Grant and use the PDM Grant funds, together with local matching funds in the approximate amount of $1 million, to design and construct the grant-funded improvements and administer the PDM Grant. The Members agree to share the local match obligation among them, and cash funds or in-kind services in the following approximate proportions: the County – 50%; the Town – 30%; the City – 20%. Such Member contributions shall be made to carry out and complete the PDM Grant project in the specific manner mutually agreed by the Members.

Section 5.07. Repayment to Member Entities. The Authority shall be obligated to, and hereby covenants to repay in full, any amounts advanced or obligations incurred by Member entities on behalf of or under agreement with, the Authority, except as expressly waived in writing by the Member to which such repayment would otherwise be due.

ARTICLE VI

FINANCIAL RECORDS AND ACCOUNTING

Section 6.01. Annual Audit. The books and financial records of the Authority shall be examined annually by an independent auditor, whose report thereon shall be completed and filed for public inspection at the office of the Authority not later than July 1 of the calendar year following the close of the fiscal year for which such records are examined.

Section 6.02. Budget. The Authority shall propose and adopt an annual budget for each ensuing fiscal year, not later than September 1 of the year preceding the fiscal year for which such budget is prepared. The budget shall contain a complete plan for the financial operations of the Authority for such ensuing fiscal year, including an estimate of revenues based upon the then current or most recently adopted schedule of rates, fees and charges and including any other anticipated source of funds for operating or capital purposes, an estimate of the cost of Operation and Maintenance, an estimate of the cost of capital additions and the debt service requirements of bonds, notes or financial obligations issued in connection therewith and a five-year capital improvements plan.

Section 6.03. Payments to and Contributions by Members. Nothing in this Agreement shall prevent any one or more Members from acquiring or constructing all or any portion of the Boxelder Project by agreement with the Authority. Any such agreement may provide either for a cash payment by the Authority to such Member or Members or for a credit in kind against amounts owing by such Member or Members to the Authority, the amount thereof in either case being based upon the actual amounts expended by such Member or Members upon such acquisition or construction. The Authority shall not enter into agreements to extend credit in

kind to such an extent that its funds available for Operation and Maintenance and debt service requirements are impaired.

ARTICLE VII

ADMINISTRATION

Section 7.01. Authority Staff, Attorney, Auditor and Other Staff and Services. The Authority, through its board, shall hire or retain the following:

(a) Authority Manager. The Authority shall retain a manager on a full or part time basis to manage the Authority, or shall contract for management services. The manager shall be answerable to the Directors and may be an employee of any of the Members and, if an employee paid by a Member, the Authority shall enter into a separate contract with the Member which employs the manager, according to the separate agreement to be entered into between the Authority and the Member employing the manager.

(b) Attorney. The Authority shall retain an attorney or shall contract for legal services as needed. The attorney shall be answerable to the Directors.

(c) Auditor. The Authority shall retain an auditor or shall contract for auditing services as needed. The auditor shall be answerable to the Directors.

(d) Other Authority Administrative and Professional Staff and Staff. The Authority shall retain such additional administrative or professional staff on a full or part time basis, or shall contract for administrative or professional services as needed. Any such employees shall be answerable to the Directors and may be an employee of any of the Members and, if an employee paid by a Member, the Authority shall enter into a separate contract with the Member who employees the employee, according to the separate agreement to be entered into between the Authority and the Member employing the employee.

Section 7.02. Due Diligence. The Members agree to exercise due diligence in performing their duties under this Agreement.

ARTICLE VIII

MISCELLANEOUS

Section 8.01. Notice. Any notice or other communication given by any Member to the other Members relating to this Agreement shall be hand delivered or sent by certified mail, return receipt requested, addressed to the other Members, at their respective addresses as set forth below; and such notice or other communication shall be deemed given, when so hand delivered or three (3) days after so mailed:

If to the City:
Utilities Executive Director
City of Fort Collins
P. O. Box 580
Fort Collins, CO 80522

With a copy to:
City Attorney
City Attorney's Office
300 LaPorte Avenue
P. O. Box 580
Fort Collins, CO 80522

If to the County:
Public Works Director
Larimer County
Storm Drainage Engineer
P. O. Box 1190
Fort Collins, CO 80522

With a copy to:
George Haas
Larimer County Attorney's Office
224 Canyon Ave., Ste. 200
P. O. Box 1606
Fort Collins, CO 80522-1606

If to the Town
Town Administrator
Town of Wellington
P. O. Box 127
Wellington, CO 80549

With a copy to:
J. Brad March
Wellington Town Attorney
March, Olive & Pharris, LLC
110 E. Oak St., Ste. 200
Fort Collins, CO 80524

Section 8.02. Annexation. In the event that any parcel of real property currently located in unincorporated Larimer County and in the Service Area is annexed into the City or the Town, the Authority, County and annexing entity shall work cooperatively to ensure that the fees, rates and charges collected from or attributable to the annexed property are equitably apportioned. Upon completion of the construction of the Project Improvements, all such Improvements shall be owned by the Authority, except as otherwise expressly agreed and documented in writing by all Members. It is the intent of the Members that annexation of property within the Authority boundaries by a non-Member municipality will not alter the Authority's power or the rates, fees or other charges imposed by the Authority upon such property, except as expressly agreed in writing by the Authority and such annexing municipality.

Section 8.03. Financial Obligations of Members. At the option of any Member obligated to make any payment hereunder, such payment may, at such Member's discretion, constitute an obligation of such Member or its respective Stormwater Utility Enterprise. Obligations of the Members pursuant to this Agreement are hereby made expressly contingent upon the respective governing bodies of the County, Town or the City appropriating annually any funds necessary for the fulfillment of such obligations.

Section 8.04. Miscellaneous.

(a) This Agreement shall be binding upon and inure to the benefit of the Members hereto (including their respective Stormwater Utility Enterprises) and their respective successors and assigns.

(b) This Agreement is made in and shall be construed and interpreted in accordance with the laws of the State of Colorado.

(c) This Agreement shall not be assigned by any of the Members without the prior written consent of the other Members.

(d) The paragraph headings used herein are for convenience of reference and in no way shall define, limit or prescribe the scope or intent of any provision of this Agreement.

(e) This Agreement shall be construed according to its fair meaning and as if prepared by all Members and shall be deemed to be and contain the understanding and agreement among the Members with respect to the subject matter of this Agreement. There shall be deemed to be no other terms, conditions, promises, understandings, except as expressly agreed in writing by the Members.

(f) Statements or representations, either expressed or implied, concerning this Agreement shall not be binding on any Member except as set forth in any official action or subsequent writing signed by all of the Members. Amendment of this Agreement shall require unanimous consent of all Members.

(g) The Members agree to cooperate in good faith in fulfilling the terms of this Agreement. The Members agree that they will attempt to resolve, by good faith negotiations before reverting to litigation, any disputes concerning the interpretation of this Agreement and any unforeseen questions and difficulties which may arise in implementing this Agreement.

(h) Notwithstanding any other provision of this Agreement or any other incorporated provision, the Members recognize that there are legal constraints imposed upon each of the Members as governmental entities by the constitutions, statutes, and rules and regulations of the State of Colorado and of the United States, and by the respective charters and codes of such Members. Each Member agrees that, subject to such constraints, such Member expects to carry out the terms and conditions of this Agreement. Such constraints include, without limitation, the constraints of TABOR relating to governmental entities incurring multi-year fiscal obligations. Therefore, notwithstanding any other provision of this Agreement to the contrary, in no event shall any Member exercise any power or take any action that shall be prohibited by applicable law. Whenever possible, each provision of this Agreement shall be interpreted in such a manner so as to be effective and valid under applicable law.

IN WITNESS WHEREOF, the Members have executed this Agreement as of the date and year first above written.

BOARD OF COUNTY COMMISSIONERS,
LARIMER COUNTY, COLORADO

By: _____
Chair

ATTEST:

_____
Deputy Clerk

APPROVED AS TO FORM:

_____
Assistant County Attorney

THE CITY OF FORT COLLINS, COLORADO,
a Municipal Corporation

By: _____
Mayor

ATTEST:

_____
City Clerk

APPROVED AS TO FORM:

_____
Deputy City Attorney

THE TOWN OF WELLINGTON, COLORADO,
a Statutory Municipality

By: _____
Mayor

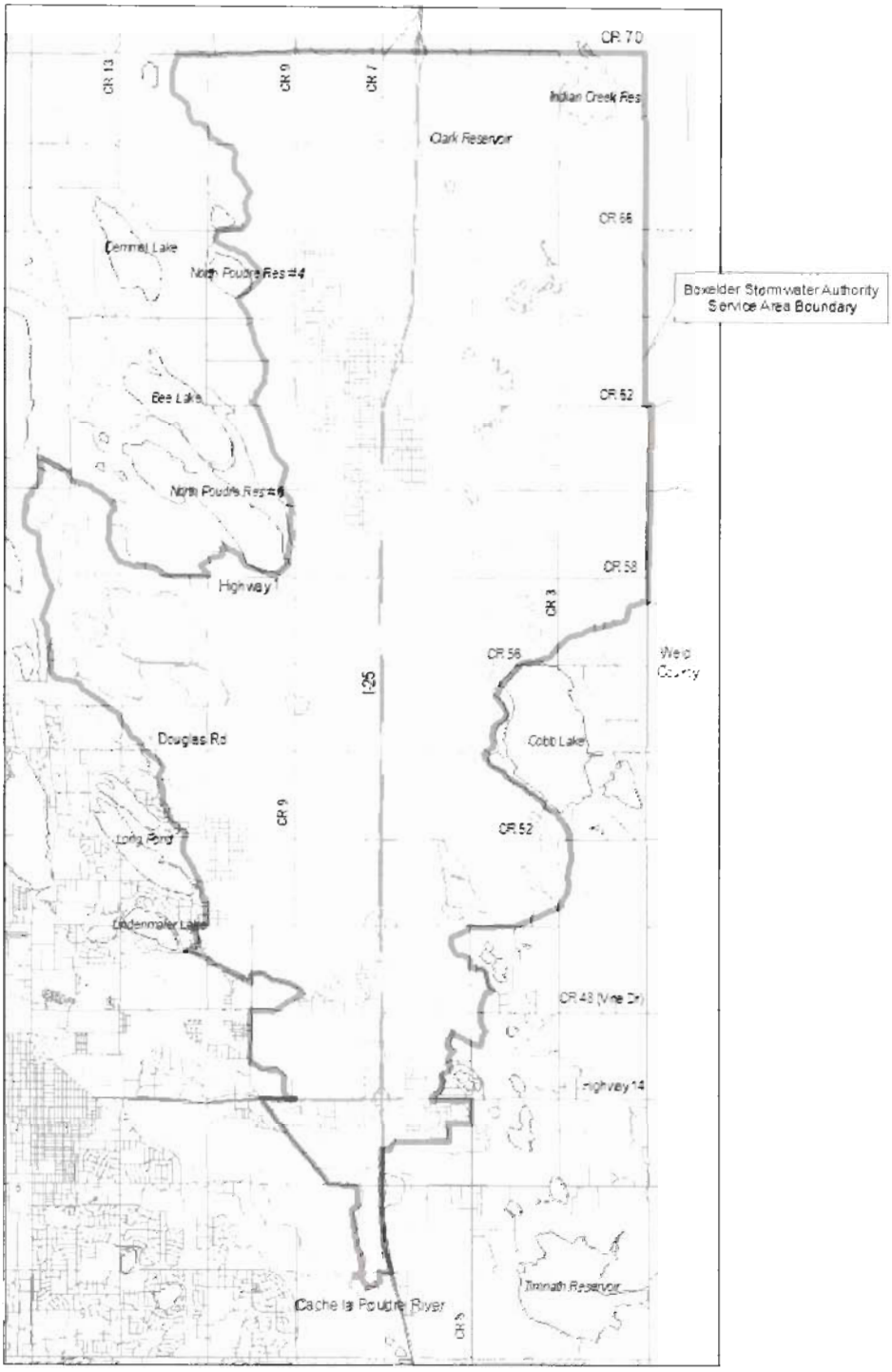
ATTEST:

_____
Town Clerk

APPROVED AS TO FORM:

_____
Town Attorney

Exhibit A


CR 70
CR 13
CR 9
CR 7
Indian Creek Res
Clark Reservoir
CR 66
Dennell Lake
North Poudre Res #4
Boxelder Stormwater Authority
Service Area Boundary
CR 62
Bee Lake
North Poudre Res #5
CR 58
Highway 1
CR 3
CR 56
Weld
County
I-25
Douglas Rd
Cobb Lake
CR 9
CR 52
Long Pond
Lindenmeier Lake
CR 48 (Vine Dr)
Highway 14
Timnath Reservoir
Cache la Poudre River
CR 5

BYLAWS

OF THE

BOXELDER BASIN REGIONAL STORMWATER AUTHORITY

ARTICLE I

THE AUTHORITY

Section 1. Name of Authority. The name of the Authority is the "Boxelder Basin Regional Stormwater Authority."

Section 2. Office of Authority. The office of the Authority shall be at such place in Larimer County as the Board may designate from time to time.

Section 3. Purpose of the Authority. The purpose of the Authority is to carry out the responsibilities set forth in Section 2.07 of the Intergovernmental Agreement for Stormwater Cooperation and Management dated the 20th day of August, 2008 by and among the Board of Commissioners of Larimer County, Colorado (the "County"), the City of Fort Collins, Colorado (the "City"), and the Town of Wellington, Colorado (the "Town") (the "Intergovernmental Agreement").

Section 4. Powers of the Authority. The Authority shall have and may exercise the powers set forth in Section 3.01 of the Intergovernmental Agreement including any additional powers of drainage authorities pursuant to Section 29-1-204.4 C.R.S. as amended from time to time.

Section 5. Board of Directors. The Authority shall be governed by its Board of Directors.

Section 6. Governing Document and Statute. The terms and conditions of the Intergovernmental Agreement effective the 20th day of August, 2008, for Stormwater Cooperation Management dated the 20th day of August, 2008 by and among the Board of Commissioners of Larimer County, Colorado (the "County"), the City of Fort Collins, Colorado (the "City"), and the Town of Wellington, Colorado (the "Town") and the terms and provisions of Section 29-1-204.2 C.R.S. as amended from time to time shall govern the operation and responsibilities of the Authority.

ARTICLE II

OFFICERS AND PERSONNEL

Section 1. Officers. The Board shall have a President, a Secretary and a Treasurer, who shall be Directors of the Authority.

Section 2. President. The President shall preside at all meetings of the Board. Except as otherwise authorized by resolution of the Board, the President shall execute all written instruments and documents of the Authority.

Section 3. Secretary. The Secretary shall keep the records of the Authority, shall act as secretary of the meetings of the Board and record all votes, and shall keep a record of the proceedings of the Board. The Board may appoint a Recording Secretary to assist in the recording of the minutes of the meetings of the Board.

Section 4. Treasurer. The Treasurer shall be responsible for all funds of the Authority and payment of Authority expenses. The Treasurer shall keep the financial records of the Authority. The Board may appoint an Assistant Treasurer to perform such duties involving financial affairs of the Authority as the Board determines.

Section 5. Executive Director. The Authority may employ an Executive Director, pursuant to such terms as the Board may establish. The Executive Director shall have general supervision over the administration of the affairs and business of the District and shall be charged with the management of the projects of the Authority.

Section 6. Additional Duties. The officers of the Authority shall perform such duties and functions as may from time to time be authorized by the Board.

Section 7. Election of Officers. The officers of the Authority shall be elected annually by the Board at the first regular meeting in April and shall assume their duties upon election.

Section 8. Vacancies. Should any office become vacant, the Board shall select a successor at the next regular meeting to serve for the unexpired term of said office.

ARTICLE III

MEETINGS

Section 1. Regular Meetings. Regular meetings shall be held at such time and place designated by the Board. In the event any day of a regular meeting shall be a legal holiday, said meeting shall be held on the next succeeding day or on the same day of the succeeding week, as determined by the President.

Section 2. Special Meetings. The President may call a special meeting of the Board for the purpose of transacting any business. Three Directors may call a special meeting of the Board by written notice delivered to the President and the Secretary stating the purpose, time and place of the special meeting. All Directors shall be notified no less than two days in advance of a special meeting. The notice shall designate the purpose, time and place of the special meeting.

Section 3. Quorum. A majority (3) of the Directors shall constitute a quorum for the purpose of conducting its business and exercising its powers and for all other purposes, but a smaller number may adjourn from time to time until a quorum is obtained. When a quorum is in attendance, action may be taken by the Board upon an affirmative vote of the majority of the Directors present; except that fees, rates and other charges consistent with Article V of the Intergovernmental Agreement may only be established by a majority vote of all the Directors.

Section 4. Open Meetings. All Board meetings shall be subject to Section 24-6-401 et seq. C.R.S.

Section 5. Agenda. The Agenda shall be set by the President. Any Board Member may request additional agenda items at the start of a Board meeting. If any agenda item requested by a Director is objected to by any other Director, said agenda item shall be included on the Agenda upon approval of a majority of the Directors present at the meeting.

ARTICLE IV

AMENDMENTS OF BYLAWS

Section 1. Amendment to Bylaws. The Bylaws of the Authority may be amended by the affirmative vote of four (4) Members of the Board at a regular or special meeting.

ARTICLE V

MISCELLANEOUS

Section 1. Committees. The President may appoint members of the Board with other persons to such committees as deemed necessary to perform any functions for the purpose of advising or providing other services to the Authority.

Section 2. Conflict of Interest. Each member of the Board is required to disclose any potential conflict of interest in any transaction of the Authority pursuant to Section 18-8-308 C.R.S. The Board Member with a potential conflict of interest in an Authority

transaction may not participate in the consideration of and the vote on the transaction, may not attempt to influence any of the contracting parties, and may not act directly or indirectly for the Board in the inspection, operation, administration, or performance of any contract related to the transaction. Ownership, in and of itself, by a Director of property within the Authority shall not be considered a potential conflict of interest.

Adopted the 16TH day of MARCH, 2009.

President

ATTEST:

Secretary

TIMNATH DEVELOPMENT AUTHORITY

RESOLUTION NO. TDA-6, SERIES 2012

A RESOLUTION APPROVING THE INTERGOVERNMENTAL AGREEMENT BEWTWEEN THE BOXELDER BASIN STORMWATER AUTHORITY AND THE TIMNATH DEVELOPMENT AUTHORITY

WHEREAS, the Town of Timnath ("Town") has established the Timnath Development Authority ("TDA") pursuant to a resolution dated November 10, 2004; and

WHEREAS, the Town and the TDA are governed by an identical governing body; and

WHEREAS, attached hereto as Exhibit A is the Intergovernmental Agreement with the Boxelder Basin Stormwater Authority ("Agreement"); and

NOW THEREFORE, be it hereby resolved by the Board of Commissioners of the TDA as follows:

WHEREAS, the Timnath Development Authority, has the power to pass resolutions; and

WHEREAS, the Authority is familiar with the Agreement and finds it to be in the best interest of the Town, its residents, and the general public.

NOW, THEREFORE, BE IT RESOLVED BY THE TOWN COUNCIL OF THE TOWN OF TIMNATH, COLORADO as follows:

Section 1. Approval

The Commission hereby approves the Agreement.

INTRODUCED, MOVED, AND ADOPTED BY THE TOWN COUNCIL OF THE TOWN OF TIMNATH, ON NOVEMBER 13, 2012,

TOWN OF TIMNATH, COLORADO

Jill Grossman-Belisle, Chair

ATTEST:

Milissa Peters, Secretary

INTERGOVERNMENTAL AGREEMENT
(REGARDING COST SHARING FOR BOXELDER BASIN STORMWATER MITIGATION IMPROVEMENTS)

THIS INTERGOVERNMENTAL AGREEMENT (the "Agreement") is made and entered into this 15th day of NOVEMBER 2012, by and between THE TIMNATH DEVELOPMENT AUTHORITY, COLORADO, an urban renewal authority established pursuant to Title 31, Article 25, Part 1 of the Colorado Revised Statutes (hereinafter referred to as the "**TDA**"), and THE BOXELDER BASIN REGIONAL STORMWATER AUTHORITY, a Colorado regional stormwater authority (hereinafter referred to as the "**Authority**") formed by an Intergovernmental Agreement dated August 20, 2008,among Larimer County, the City of Fort Collins, and the Town of Wellington (hereinafter each individually referred to as a "**Member**").

RECITALS

WHEREAS, the Members have previously adopted the Boxelder Creek Regional Stormwater Master Plan, effective as of October of 2006 (the "**Master Plan**"), pursuant to which the Authority will construct various project improvements, including but not limited to detention areas or flood storage facilities; reservoirs; open channels; irrigation canal overflow or spill structures; diversion or confinement berms; utility relocations; road and railroad crossing structures; water quality enhancement features; and landscaping of disturbed areas, all as identified in the Master Plan; and

WHEREAS, recent growth in the Timnath Growth Management Area, the Fort Collins Growth Management Area, and the Wellington Growth Management Area suggests that increased coordination and cooperation between the TDA and the Authority may result in better management, design, construction, maintenance, and joint financing of stormwater mitigation facilities; and

WHEREAS, the TDA and the Authority have identified mutually beneficial projects to address flood impacts in the Boxelder Creek Basin as it impacts the parties, which projects are conceptually described below and visually depicted on "**Exhibit A**", a copy of which is attached hereto and incorporated herein by reference; and

WHEREAS, the TDA and the City of Fort Collins have separately identified mutually beneficial projects to address flood impacts to the Boxelder Creek Basin generally located south and west of the crossing of Boxelder Creek under Interstate 25 and down to Boxelder Creek's confluence with the Cache La Poudre River; and

WHEREAS, the TDA and the Authority desire to move forward cooperatively in order to provide for the investigation, conceptual planning, preliminary design, and construction of the projects described herein; and

WHEREAS, accordingly, the parties enter into this Agreement to clarify and document their intentions and mutual rights and responsibilities with respect to funding, administration, planning, design, land acquisition, and construction of the projects.

NOW, THEREFORE, in consideration of the mutual promises of the parties and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties agree as follows:

ARTICLE I

DEFINITIONS

Definitions. In this Agreement, capitalized terms not otherwise defined shall have the meanings respectively assigned thereto in the Recitals to this Agreement or as provided in this Section 1, unless the context clearly requires a different meaning:

"Boxelder Basin Regional Stormwater Authority" or "Authority" shall mean the regional stormwater authority formed by agreement of the Board of Commissioners of Larimer County, Colorado, City of Fort Collins, Colorado, and the Town of Wellington, Colorado entitled Intergovernmental Agreement for Stormwater Cooperation and Management dated August 20, 2008.

"Boxelder Basin Regional Stormwater Authority Master Plan" or "Master Plan" shall mean the Boxelder Creek Regional Stormwater Master Plan adopted by the Authority's members in October of 2006, and as may be amended from time to time.

"Projects" shall mean the two projects for storm drainage improvements to significantly reduce the 100-Year stormwater runoff within the Boxelder Creek Drainage Basin that contribute to the flooding potential in Boxelder Creek as identified in Section 2.1 of this Agreement.

"East Side Detention Facility" shall mean that particular stormwater detention facility described in Subsection 2.1 (a) and the work required to design, engineer, and construct the same.

"Larimer and Weld Canal Crossing" shall mean that crossing of the Larimer and Weld Canal described in Subsection 2.1 (b), and the work required to design, engineer, and construct the same.

"Construction Costs" shall mean all costs incurred by the Authority for the Projects including, but not limited to, administration, legal fees, land acquisition, design, engineering, permit fees, and construction.

"Financing Costs" shall mean all financing costs incurred by the Authority for the Projects including, but not limited to, loan application fees, legal fees, interest, and loan fees.

ARTICLE 2

BOXELDER CREEK FLOOD MITIGATION PROJECTS

2.1 Projects. The parties agree and hereby acknowledge that it is in the best interest of both the Authority and the TDA to work cooperatively to design and construct the Projects along Boxelder Creek and its associated flow paths to mitigate the impacts of flooding for the mutual benefit of the parties as well as the region. Accordingly, the Authority has developed a plan for two storm drainage improvement facilities to significantly reduce the 100-year stormwater runoff within the Boxelder Creek Drainage Basin that contribute to the flooding potential in Boxelder Creek, which include the following conceptual elements, which are together referred to as the Projects and are to be constructed concurrently:

(a) East Side Detention Facility/Gray Lakes Reservoirs:

1. Construction of an earthen embankment (dam) and un-gated outlet to create detention storage upstream of County Road 50.

(b) Larimer and Weld Canal Crossing:

1. Construction of a side spill weir crossing of the Larimer and Weld canal to allow Boxelder Creek storm runoff to continue downstream (south).

2.2 Design Engineering. The Authority hereby acknowledges that the Projects are or will be included in the Boxelder Basin Regional Stormwater Authority Master Plan. The Authority has initiated preliminary design engineering for said Projects, but continuation of this design engineering is necessary in order to determine actual design and related costs and to allow the Projects to proceed.

(a) Funding. The TDA agrees to provide $500,000 immediately to the Authority for the design engineering services described in Subsection (b).

(b) Scope of Services. The Authority shall provide the following services:

1. Preparation of the Feasibility Study and Final Application for a Colorado Water Conservation Board loan to the Authority for the East Side Detention Facility and the Larimer and Weld Canal Crossing and accompanying improvements;

2. Complete the conceptual design of the East Side Detention Facility and Larimer and Weld Canal Crossing, including modeling and collaboration with the Lake Canal Ditch Company to determine the acceptable crossing structure to accomplish the goals of the Authority's Master Plan;

3. Initiate Final Design efforts (including Phase II of the geotechnical investigation - seismic site, seepage and stability analysis) for the East Side Detention Facility and Larimer and Weld Canal Crossing in order to prepare estimated costs for use in a loan application to the Colorado Water Conservation Board;

4. Initial coordination, meetings and preparation for United States Army Corps of Engineers permitting and coordination with the Colorado Office of the State Engineer; and

5. Coordination, preparation, design and engineering for conditional letter of map revision (CLOMR) and letter of map revision (LOMR) which are required by the Projects extending from the detention facility to where Boxelder Creek crosses under Interstate 25.

(c) The work described in Subsection 2.2(b) is intended to allow Authority to maintain an efficient design, submittal and construction schedule focused on an expedited completion of the Projects in a timely manner with a targeted completion by the end of 2014.

(d) The Authority hereby agrees to maintain appropriate documentation and make any reports, data or design deliverables produced for the Authority available for the TDA's review and use.

2.3 Funding.

(a) Following the design engineering phase described above, the TDA hereby agrees that it shall provide funds toward the Authority's Construction Costs and Financing Costs of the Projects ("Costs") in an amount not to exceed twenty-five percent (25%) of the Costs actually incurred by the Authority (the "Funding Contribution"). The Costs of the Projects are currently estimated to be $9,900,000. Payments under this agreement shall be due within 45 days of receipt of an invoice prepared by the Authority and are contingent upon a satisfactory showing that the Authority has readily available funds to match the funds requested from the TDA in the amount of three (3) dollars for every one (1) dollar requested from the TDA by the Authority. In the event that the Costs exceed the estimate stated above, the Authority agrees to meet with TDA and provide documentation to TDA confirming the need to increase the estimated Costs of the Projects. Moreover, the parties agree that any Project Cost increases in excess of 25% of the estimated budget shall be subject to mutual approval by the parties. The parties understand and agree that a part of the purpose of the ongoing design and engineering for the Projects is to provide more accurate information as to the Costs of the Projects.

Notwithstanding any provision in this Agreement to the contrary, the Authority and the TDA agree that each party shall pay its own costs in the negotiation and preparation of this Agreement.

(b) The Authority will seek a loan through the Colorado Water Conservation Board for the Projects. The TDA understands that the Authority is relying on TDA's Funding Contribution for adequate revenue to repay any loan obtained through the Colorado Water Conservation Board. TDA agrees to provide any necessary documentation, including financial documentation, deemed necessary by the Authority to be included in the loan application.

(c) If the Authority obtains funds to finance construction of the Projects through combination loans or any other debt arrangements from the Colorado Water Conservation Board or any other entity, the TDA shall time its Funding Contribution payments so they coincide with the debt service schedule or schedules agreed to by the Authority in connection with such loan, combination of loans, or other debt arrangement, including any pre-payment of principal and/or interest on the loan by the Authority.

(d) The parties acknowledge that the Funding Contributions provided by the TDA are intended as a match only to Authority payment on invoices for work directly attributable to the Projects. Any amounts not applied by the Authority for up to twenty-five percent (25%) of its actual costs for the same shall be returned to the TDA upon final completion of the Projects or termination of this agreement, whichever occurs first. The TDA shall be entitled to review all invoices and other documentation related to the Projects in order to verify use of the funds in accordance with this Agreement

2.4 CLOMR & LOMR. The Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) required by these Projects will extend from the East Side Detention Facility to where Boxelder Creek crosses under Interstate 25. This agreement covers the costs of preparing these documents, and coordinating their approval by FEMA. This CLOMR and LOMR will be submitted to FEMA along with the corresponding CLOMR and LOMR for the areas west of Interstate 25. The costs associated with the CLOMR and LOMR for the areas west of Interstate 25 are not part of this agreement and are to be covered by separate instrument between TDA and the City of Fort Collins.

2.5 Construction Deadlines. The Authority hereby agrees that it will complete construction of the Projects by July 1, 2015.

2.6 Pledged Revenues. The Authority intends to pledge the funds received from the TDA pursuant to Section 2.3 above as collateral for the repayment of the Colorado Water Conservation Board loan. The TDA agrees to approve and execute any documents required by the Colorado Water Conservation Board for said funds to be used as collateral for repayment of the loan and to comply with all requirements of the Colorado Water Conservation Board,

including execution of any security interest agreement associated with such funds as may be required by the Colorado Water Conservation Board.

2.7 CWCB Loan Feasibility Study. The funds made available by TDA pursuant to Section 2.3 above shall be included in the Loan Feasibility Study which is part of the application by the Authority to obtain approval of the CWCB loan. TDA agrees to provide all documentation including, but not limited to, availability of funds to meet the obligations of TDA pursuant to the terms and conditions of this Agreement.

ARTICLE 3

TARGETED TIMELINE

Attached hereto as **"Exhibit B"** and incorporated herein by this reference, is the anticipated timeline for completion the various components of the Projects. The parties understand and agree that completion of the individual components of the timeline are subject to change, including extension thereof, due to factors beyond the control of and unforeseen by the parties at this time. Unforeseen factors include, but are not limited to:

(a) unforeseeable design and/or engineering factors, which are not caused by acts or omissions of the Authority, and which delay the ability of the Authority to design and engineer the Projects or any portion thereof;

(b) unforeseeable regulatory issues, which are not caused by acts or omissions of the Authority, with any federal, state or local government agency having jurisdiction over the Projects or any part thereof, including, but not limited to, 404 permit, State Engineers approval and FEMA approval of CLOMR;

(c) unforeseeable cause(s) beyond the control of the Authority including, but not limited to, acts of God, national emergencies, or other incidents beyond the control and not due to the fault of the Authority; and

(d) unforeseeable issues in the acquisition of appropriate land, easements, and/or right-of-ways to allow the Authority to construct the Projects which are not caused by acts or omissions of the Authority.

ARTICLE 4

CONTINGENCIES

The obligation of the Authority to finalize the design and construct the Projects shall be specifically contingent upon the occurrence of the following events:

(a) Approval of the loan for construction of the Projects by the Colorado Water Conservation Board on terms and conditions acceptable to the Authority including the approval by all of the Members of the loan's terms and conditions.

ARTICLE 5

MISCELLANEOUS PROVISIONS

5.1. Binding Agreement. Both the TDA and the Authority intend that this Agreement shall be binding upon them.

5.2. Amendments. This Agreement may only be amended, changed, modified or altered in writing, signed by both parties hereto.

5.3. Governing Law. This Agreement shall be governed by and construed in accordance with the laws of the State of Colorado.

5.4. Jointly Drafted; Rules of Construction. The parties hereto agree that this Agreement was jointly drafted, and, therefore, waive the application of any law, regulation, holding or rule of construction providing that ambiguities in an agreement or other document will be construed against the party drafting such agreement or document.

5.5. Defined Terms. Capitalized terms used in this Agreement but not otherwise defined herein shall have the meanings set forth in the Master Plan.

[The Remainder of Page Intentionally Left Blank. Signature Page Follows]

IN WITNESS WHEREOF, the parties have executed this Agreement the day and year first above written.

THE TIMNATH DEVELOPMENT AUTHORITY

By: _____
Chairperson, Board of Commissioners

ATTEST:

_____
Clerk, Board of Commissioners

THE BOXELDER BASIN REGIONAL STORMWATER AUTHORITY

By: _____
President

EXHIBIT A

Visual Depiction of Boxelder Creek Flood Mitigation Projects

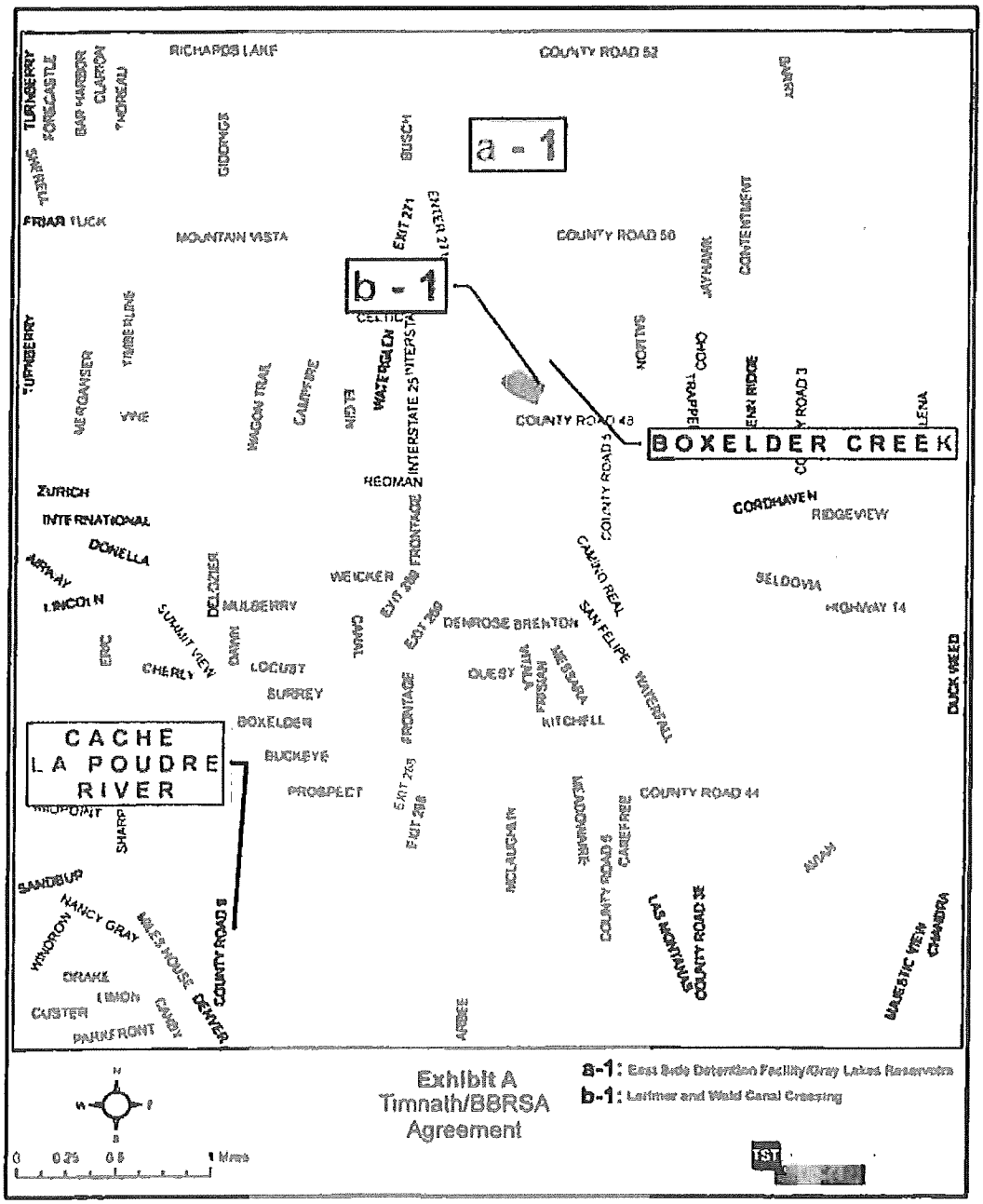


EXHIBIT B

Targeted Schedule Dates for CWCB Loan Application and Construction of Projects

CWCB Loan Application and Feasibility Study - February 1, 2013
Loan Closing and Funding – May 2013
Begin Construction – October 2013
Substantial Completion & Loan Finalization – October 2014
End of Construction – December 2014

EXHIBIT K

Boxelder Basin Regional Stormwater Authority
Schedule of Sources and Uses - Feasibility Study for ESDF

CWCB #1 - ESDF	
Project Costs	$ 8,761,000
CWCB Loan	$ 7,171,000
CWCB Share	82%

CWCB #2 - LWCCS	
Project Costs	$ 1,139,000
CWCB Loan	$ 1,010,000
CWCB Share	89%

	Sources					Uses						Cumulative Fund Balance	Portion of Fund Balance Allocated to CWCB Reserve
					Total Sources	Capital Expenses			Debt Retirement		Total Uses	Sources in Excess of Uses	
Year	Stormwater Fees	TDA Contribution	CWCB #1 ESDF Loan Proceeds	CWCB #2 LWCCS Loan Proceeds	*sum (a) - (d)*	ESDF Project	LWSSC Project	Authority Operations	Payments on CWCB #1 ESDF Loan	Payments on CWCB #2 LWCCS Loan	*sum (f) - (j)*	*Prior year balance plus (e) minus (k)*	*Prior year balance plus 10% of (i) plus (j)*
	(a)	(b)	(c)	(d)	(e)	(f)	(g)	(h)	(i)	(j)	(k)	(l)	(m)
												$ 594,326	
2013	$ 739,570	$ 192,500	$ 2,420,000	$ 230,000	$ 3,582,070	$ 3,579,081	$ 340,919	$ 200,000	$ -	$ -	$ 4,120,000	56,396	$ -
2014	739,570	180,006	4,680,000	770,000	6,369,576	5,181,919	798,081	206,000	169,676	20,349	6,376,025	49,947	-
2015	739,570	168,241	-	-	907,811	-	-	186,430	589,881	83,082	859,392	98,366	67,296
2016	739,570	168,241	-	-	907,811	-	-	114,773	589,881	83,082	787,735	218,441	134,592
2017	739,570	168,241	-	-	907,811	-	-	118,216	589,881	83,082	791,178	335,073	201,889
2018	739,570	168,241	-	-	907,811	-	-	121,763	589,881	83,082	794,725	448,159	269,185
2019	739,570	168,241	-	-	907,811	-	-	125,415	589,881	83,082	798,378	557,592	336,481
2020	739,570	168,241	-	-	907,811	-	-	129,178	589,881	83,082	802,140	663,262	403,777
2021	739,570	168,241	-	-	907,811	-	-	133,053	589,881	83,082	806,016	765,057	471,074
2022	739,570	168,241	-	-	907,811	-	-	137,045	589,881	83,082	810,007	862,860	538,370
2023	739,570	168,241	-	-	907,811	-	-	141,156	589,881	83,082	814,118	956,553	605,666
2024	739,570	168,241	-	-	907,811	-	-	145,391	589,881	83,082	818,353	1,046,010	672,962
2025	739,570	168,241	-	-	907,811	-	-	149,753	589,881	83,082	822,715	1,131,106	672,962
2026	739,570	168,241	-	-	907,811	-	-	154,245	589,881	83,082	827,207	1,211,709	672,962
2027	739,570	168,241	-	-	907,811	-	-	158,873	589,881	83,082	831,835	1,287,684	672,962
2028	739,570	168,241	-	-	907,811	-	-	163,639	589,881	83,082	836,601	1,358,894	672,962
2029	739,570	168,241	-	-	907,811	-	-	168,548	589,881	83,082	841,510	1,425,194	-
Totals	$ 12,572,690	$ 2,896,115	$ 7,100,000	$ 1,000,000	$ 23,568,805	$ 8,761,000	$ 1,139,000	$ 2,553,477	$ 9,017,884	$ 1,266,575	$ 22,737,936	$ 12,472,303	

COUNTY RD 80
COUNTY RD 76
COUNTY RD 74
COUNTY RD 72
COUNTY RD 70
COUNTY RD 68
COUNTY RD 66
COUNTY RD 64
COUNTY RD 62
COUNTY RD 60
COUNTY RD 58
COUNTY RD 56
COUNTY RD 54
COUNTY RD 52
COUNTY RD 50
COUNTY RD 44
BOXELDER CREEK
COAL CREEK
KILEY CANAL
NORTH POUDRE DITCH
INDIAN CREEK RESERVOIR
CLARK RESERVOIR
NORTH CREEK
COWAN LATERAL
WINDSOR DITCH
LARIMER COUNTY DITCH
NORTH POUDRE RESERVOIR #6
TOWN OF WELLINGTON
BOXELDER HYDROLOGIC BASIN BOUNDARY
COBB LAKE
HINKLEY LAKE
NORTH GRAY RESERVOIR
SOUTH GRAY RESERVOIR
GRAY RESERVOIR #3
BAKER LAKE
LARIMER COUNTY
WELD COUNTY
HIGHWAY 1
HIGHWAY 287
HIGHWAY 4
MOUNTAIN VISTA DR
TIMBERLINE ROAD
LAKE CANAL
SEVY CREEK
MULBERRY ST
POUDRE RIVER
POUDRE RIVER FLOODPLAIN
PROSPECT RD
E. VINE DR
E. DRAKE RD
HORSETOOTH RD
CITY OF FORT COLLINS
LARIMER AND WELD CANAL
INTERSTATE 25
CHERRY ST
COUNTY RD 13
COUNTY RD 11
COUNTY RD 9
COUNTY RD 7
COUNTY RD 5
COUNTY RD 3
COUNTY RD 1

LEGEND

- BOXELDER HYDROLOGIC BASIN BOUNDARY
- RIVER, CREEK, DITCH
- 100 YR FLOODPLAIN
- ZONE X FLOODPLAIN

EXHIBIT A
EXISTING BOXELDER CREEK FLOODPLAIN MAP

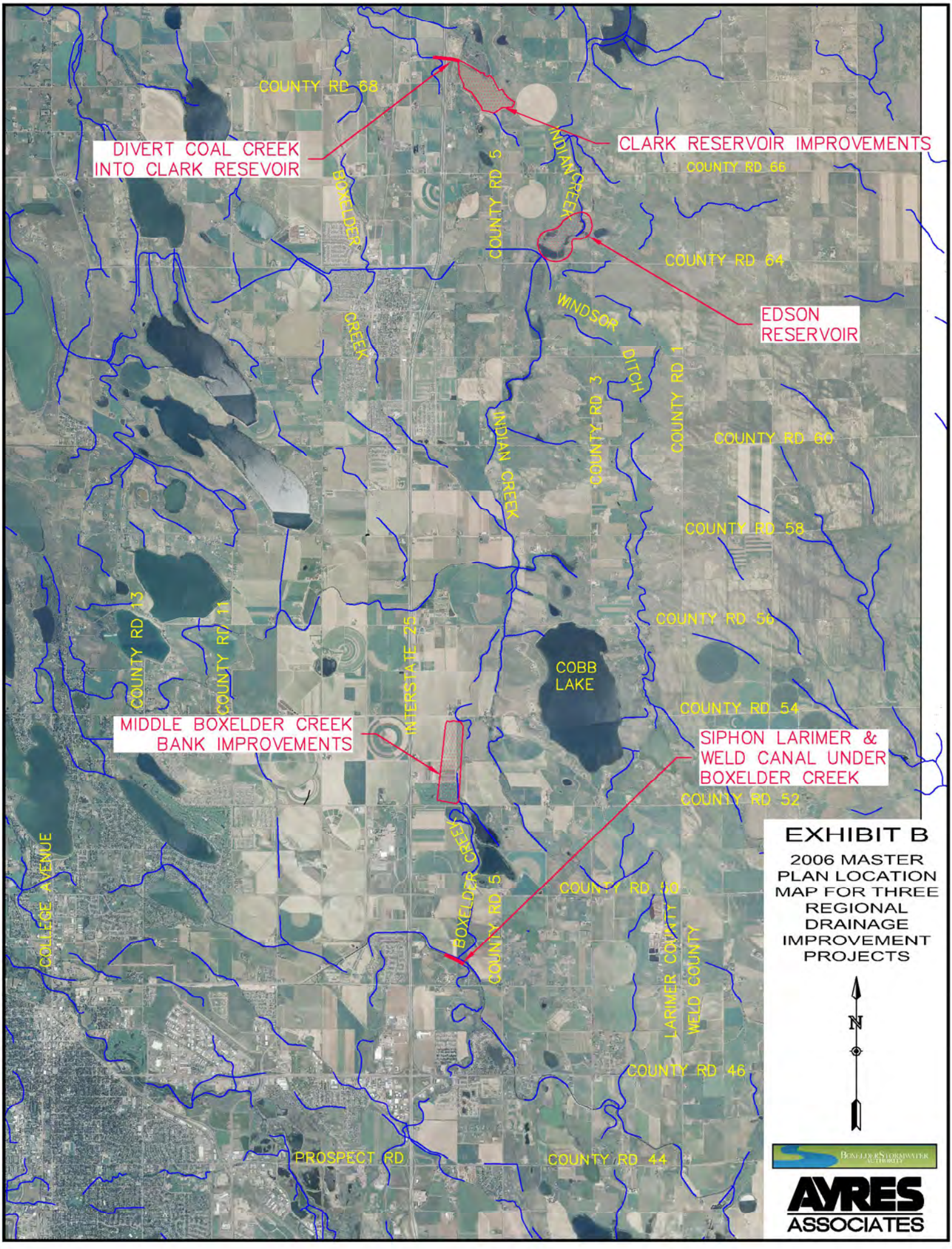
N

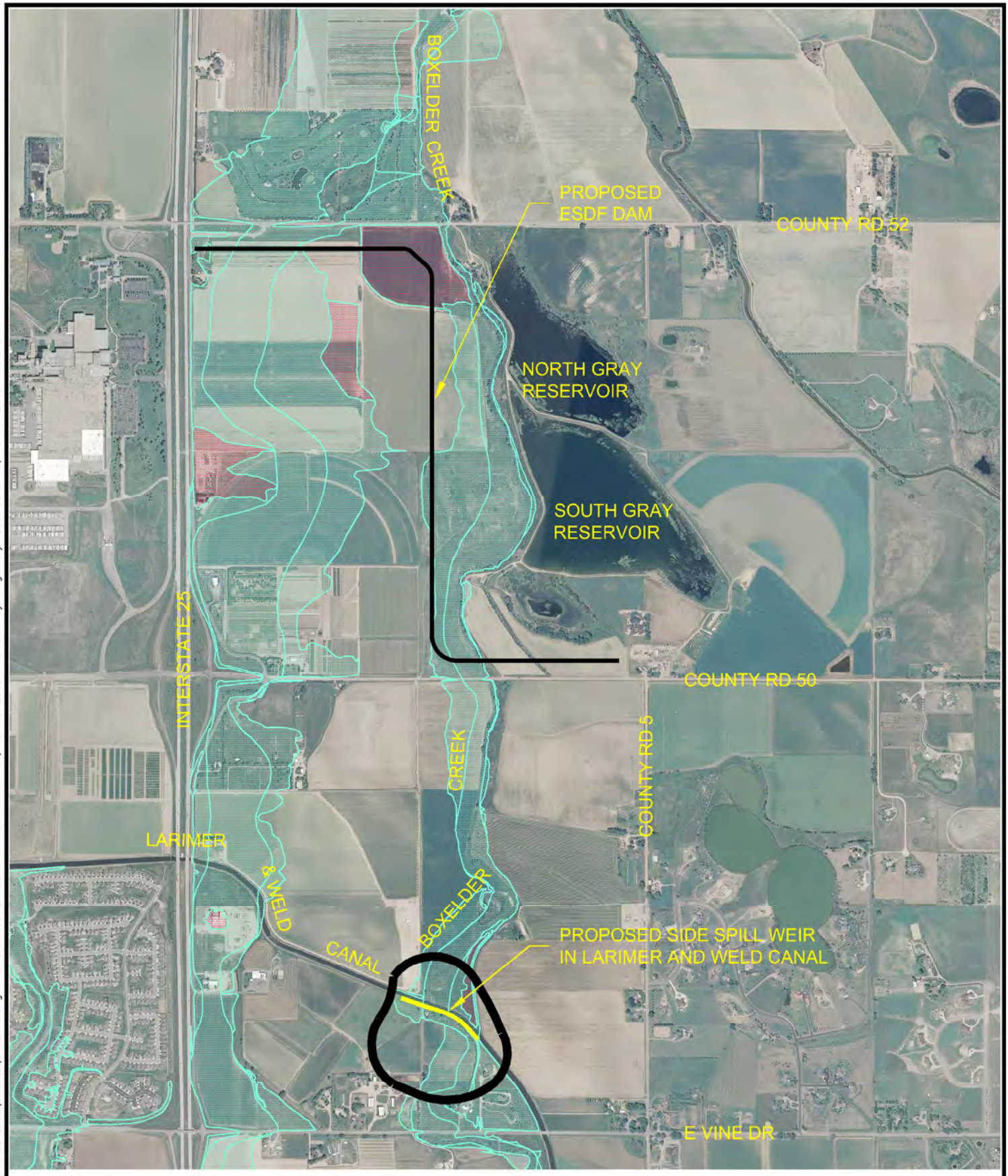
0 900 1800 3600
SCALE IN FEET

BOXELDER STORMWATER AUTHORITY

AYRES ASSOCIATES

Drawing Name: F:\32-1664.08 CWCB Loan\Exhibits\Exhibit A.dwg - Current tab: Exhibit A - Print Time: Wed, 20 Feb 2013 - 9:19cm By: brightwellj Last Save: Wed, 20 Feb 2013 - 9:15cm


COUNTY RD 68
DIVERT COAL CREEK INTO CLARK RESEVOIR
CLARK RESERVOIR IMPROVEMENTS
COUNTY RD 66
BOXELDER CREEK
COUNTY RD 5
INDIAN CREEK
COUNTY RD 64
EDSON RESERVOIR
WINDSOR DITCH
COUNTY RD 3
COUNTY RD 1
COUNTY RD 60
INDIAN CREEK
COUNTY RD 58
COUNTY RD 56
COUNTY RD 13
COUNTY RD 11
INTERSTATE 25
COBB LAKE
COUNTY RD 54
MIDDLE BOXELDER CREEK BANK IMPROVEMENTS
SIPHON LARIMER & WELD CANAL UNDER BOXELDER CREEK
COUNTY RD 52
COLLEGE AVENUE
BOXELDER CREEK
COUNTY RD 5
COUNTY RD 50
LARIMER COUNTY
WELD COUNTY
COUNTY RD 46
PROSPECT RD
COUNTY RD 44
EXHIBIT B
2006 MASTER PLAN LOCATION MAP FOR THREE REGIONAL DRAINAGE IMPROVEMENT PROJECTS
N
BOXELDER STORMWATER AUTHORITY
AYRES ASSOCIATES



LEGEND

BOXELDER CREEK EXISTING FLOODPLAIN

ZONE X FLOODPLAIN

N

0 375 750 1500

SCALE IN FEET

EXHIBIT C - LOCATION MAP

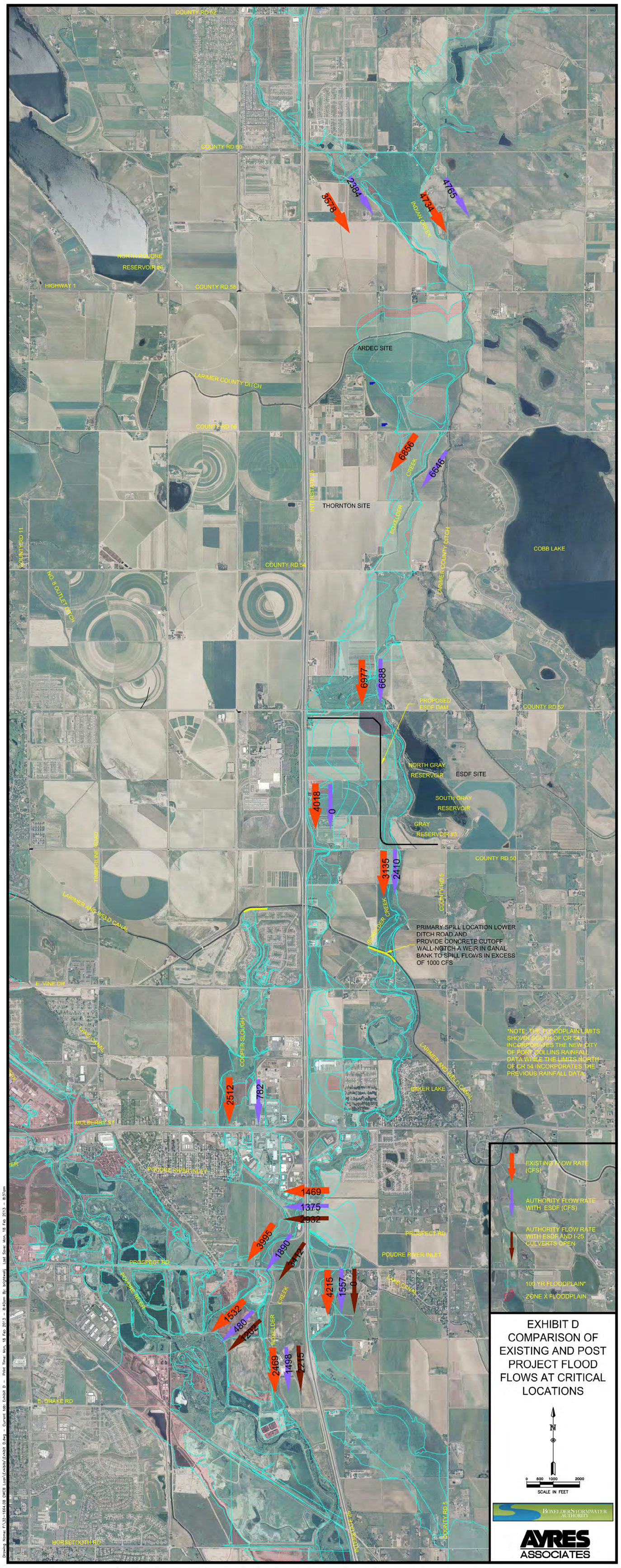
FOR

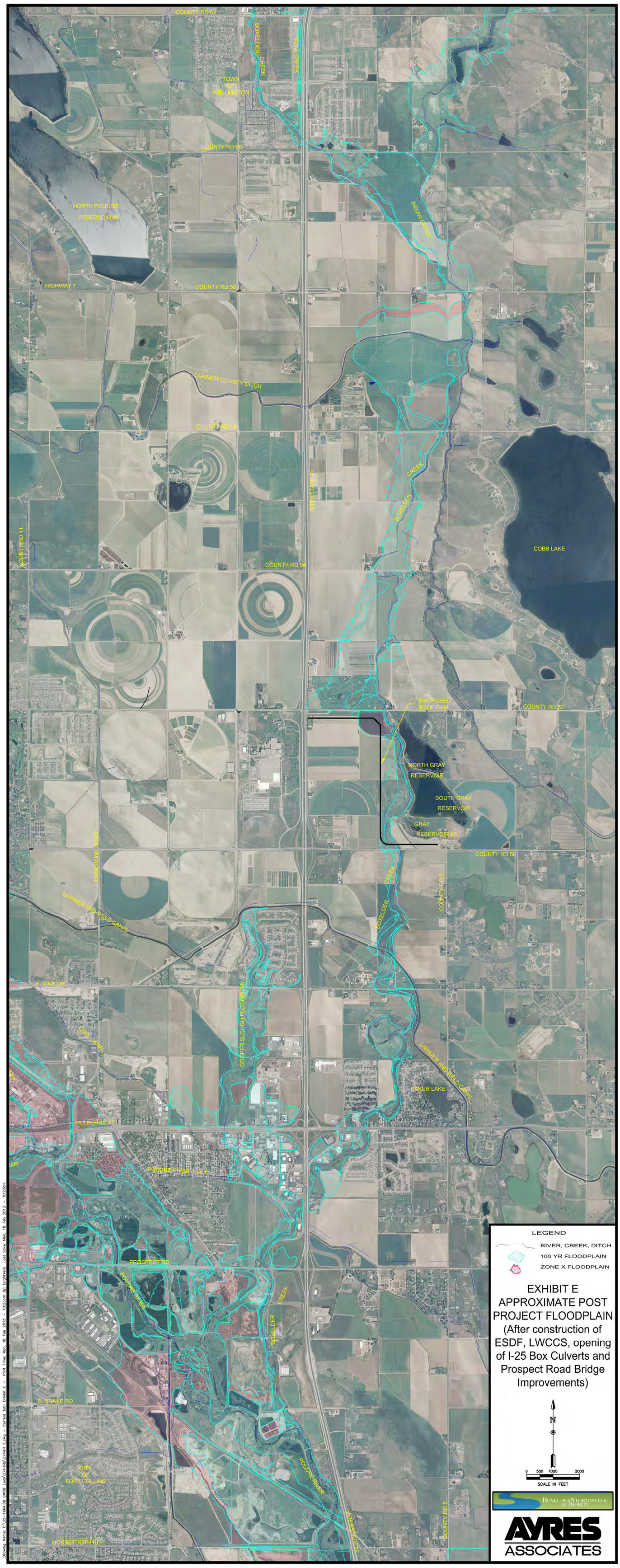
EAST SIDE DETENTION FACILITY (ESDF) &
LARIMER AND WELD CANAL CROSSING
STRUCTURE (LWCCS)

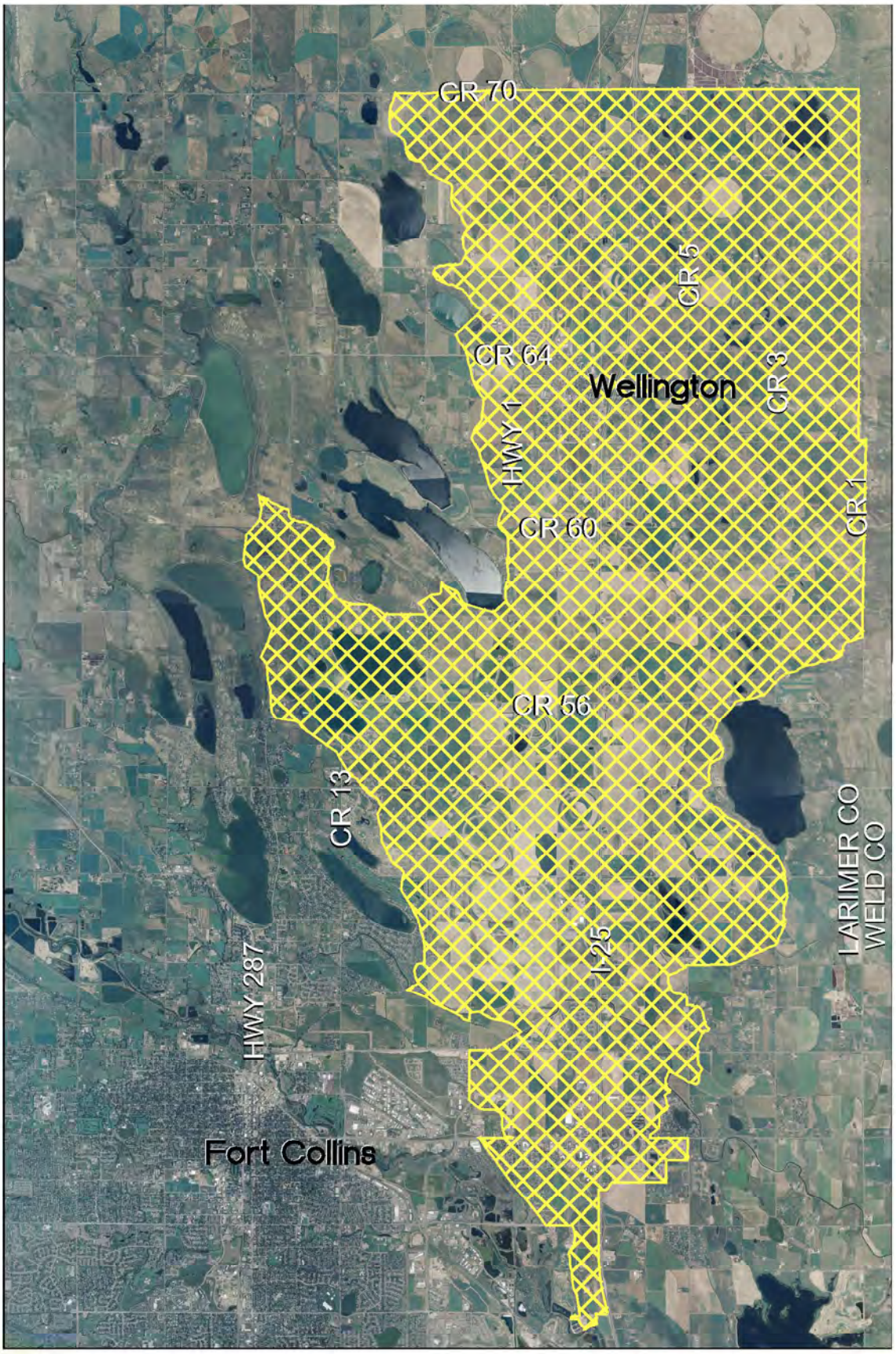
BOXELDER STORMWATER AUTHORITY

AYRES ASSOCIATES

Drawing Name: F:\32-1664.08 CWCB Loan\Exhibits\Exhibit C.dwg - Current tab: Exhibit C - Print Time: Mon, 18 Feb 2013 - 8:13am By: brightwellj Last Save: Fri, 15 Feb 2013 - 9:51am


COUNTY RD 62
COUNTY RD 60
2384
3578
4734
4765
INDIAN CREEK
NORTH BOULDER
RESERVOIR #5
HIGHWAY 1
COUNTY RD 58
ARDEC SITE
LARIMER COUNTY DITCH
COUNTY RD 56
6856
6646
CREEK
WESTLAKE #5
THORNTON SITE
BOULDER
COBB LAKE
COUNTY RD 11
COUNTY RD 54
NO 8 OUTLET DITCH
LARIMER COUNTY DITCH
6977
6688
PROPOSED
ESDF DAM
COUNTY RD 52
NORTH GRAY
RESERVOIR
ESDF SITE
SOUTH GRAY
RESERVOIR
GRAY
RESERVOIR #3
4018
0
COUNTY RD 50
3135
2410
COUNTY RD 5
TIMNATH INLET ROAD
LARIMER AND WELD CANAL
BOULDER CREEK
PRIMARY SPILL LOCATION LOWER DITCH ROAD AND PROVIDE CONCRETE CUTOFF WALL-NOTCH A WEIR IN CANAL BANK TO SPILL FLOWS IN EXCESS OF 1000 CFS
E VINE DR
CHE CANAL
COOPER SLOUGH
2512
782
BAKER LAKE
*NOTE: THE FLOODPLAIN LIMITS SHOWN SOUTH OF CR 54 INCORPORATES THE NEW CITY OF FORT COLLINS RAINFALL DATA WHILE THE LIMITS NORTH OF CR 54 INCORPORATES THE PREVIOUS RAINFALL DATA.
MULBERRY ST
POUDRE RIVER INLET
1469
1375
2032
3995
1890
3412
PROSPECT RD
POUDRE RIVER
1532
480
1282
BOXELDER
CREEK
4215
1557
0
2469
1498
4215
E DRAKE RD
HORSETOOTH RD
COUNTY RD 5
EXISTING FLOW RATE (CFS)
AUTHORITY FLOW RATE WITH ESDF (CFS)
AUTHORITY FLOW RATE WITH ESDF AND I-25 CULVERTS OPEN
100 YR FLOODPLAIN*
ZONE X FLOODPLAIN
EXHIBIT D
COMPARISON OF EXISTING AND POST PROJECT FLOOD FLOWS AT CRITICAL LOCATIONS
N
0 500 1000 2000
SCALE IN FEET
BOXELDER STORMWATER AUTHORITY
AYRES ASSOCIATES
Drawing Name: P:\32-1664.08 CWCB Loan\Exhibits\Exhibit D.dwg -- Current tab: Exhibit D -- Print Time: Mon, 18 Feb 2013 - 8:40am By: brightwelj Last Save: Mon, 18 Feb 2013 - 8:37am


COUNTY RD 62
BOXELDER CREEK
COAL CREEK
TOWN OF WELLINGTON
COUNTY RD 60
NORTH POUDRE RESERVOIR #5
INDIAN CREEK
HIGHWAY 1
COUNTY RD 58
LARIMER COUNTY DITCH
COUNTY RD 56
COUNTY RD 11
COUNTY RD 54
INTERSTATE 25
BOXELDER CREEK
COBB LAKE
PROPOSED ESDF DAM
COUNTY RD 52
NORTH GRAY RESERVOIR
SOUTH GRAY RESERVOIR
GRAY RESERVOIR #3
COUNTY RD 50
TIMBERLINE ROAD
LARIMER AND WELD CANAL
BOXELDER CREEK
COUNTY RD 5
E. VINE DR
COOPER SLOUGH FLOODWAY
LAKE CANAL
LARIMER AND WELD CANAL
BAKER LAKE
MULBERRY ST
POUDRE RIVER INLET
PROSPECT RD
POUDRE RIVER
BOXELDER CREEK
E. DRAKE RD
CITY OF FORT COLLINS
POUDRE RIVER
INTERSTATE 25
COUNTY RD 5
HORSETOOTH RD
LEGEND
RIVER, CREEK, DITCH
100 YR FLOODPLAIN
ZONE X FLOODPLAIN
EXHIBIT E
APPROXIMATE POST PROJECT FLOODPLAIN
(After construction of ESDF, LWCCS, opening of I-25 Box Culverts and Prospect Road Bridge Improvements)
N
0 500 1000 2000
SCALE IN FEET
BOXELDER STORMWATER AUTHORITY
AYRES ASSOCIATES
Drawing Name: FY32-1664.08 CWCB Loan\Exhibits\Exhibit E.dwg – Current tab: Exhibit E – Print Time: Mon, 18 Feb 2013 – 10:23am By: brightwell| Last Save: Mon, 18 Feb 2013 – 10:23am



BOXELDER SERVICE AREA BOUNDARY

Map Date: 11/2/2010
Imagery Date: 2009

0 0.5 1 2 Miles

BOULDER STORMWATER AUTHORITY

AYRES ASSOCIATES

EXHIBIT F

CURRENT SERVICE AREA BOUNDARY

EXHIBIT G
ALTERNATIVE LOCATIONS FOR EDSON FROM MAY 2010 SITING STUDY

EDSON A
EDSON B
EDSON C
EDSON D
EDSON E
EDSON F & G
EDSON H
EDSON I
EDSON J

COUNTY RD 68
COUNTY RD 66
COUNTY RD 64
COUNTY RD 62
COUNTY RD 60
COUNTY RD 58
COUNTY RD 56
COUNTY RD 54
COUNTY RD 52
COUNTY RD 50
COUNTY RD 1
COUNTY RD 3
COUNTY RD 5
HIGHWAY 1
INTERSTATE 25
MOUNTAIN VISTA DR
TOWN OF WELLINGTON
COBB LAKE
INDIAN CREEK
COWAN LATERAL
WINDSOR DITCH
BOXELDER CREEK

LEGEND

- MODIFIED BASIN
- EXISTING BASIN
- MODIFIED BASIN BOUNDARY
- EXISTING BASIN BOUNDARY
- CONVEYANCE ELEMENT
- DETENTION POND
- FLOW
- RIVER, CREEK, DITCH
- 100 YR FLOODPLAIN
- 500 YR FLOODPLAIN

N

0 750 1500 3000
SCALE IN FEET

BOXELDER STORMWATER AUTHORITY

AYRES ASSOCIATES

SPILLWAY ELEVATION = 5017.2

TOP BERM = 5022.2
(WITH 5' FREEBOARD)

VOLUME @ SPILLWAY= 1763 AC-FT

H = 34.2' (WITH 5' FREEBOARD)

Q RELEASE = 2443 cfs

CUT = 350,230 CY
FILL = 350,200 CY
NET = 30 CY CUT

0.20 ACRES WETLAND IMPACT

* Property lines have been hand drawn from Larimer County GIS data

N

0 150 300 600
SCALE IN FEET

EXHIBIT H
PROPOSED EAST SIDE DETENTION FACILITY (ESDF) GRADING PLAN

BOXELDER STORMWATER AUTHORITY

AYRES ASSOCIATES

COUNTY RD 52

INTERSTATE 25

PROPOSED ESDF DAM

EXISTING IRRIGATION STORAGE REMAINS ~ 895 AC-FT

A-A

B-B

C-C

Day

Blase

Herickoff

K & M Company

Griffin

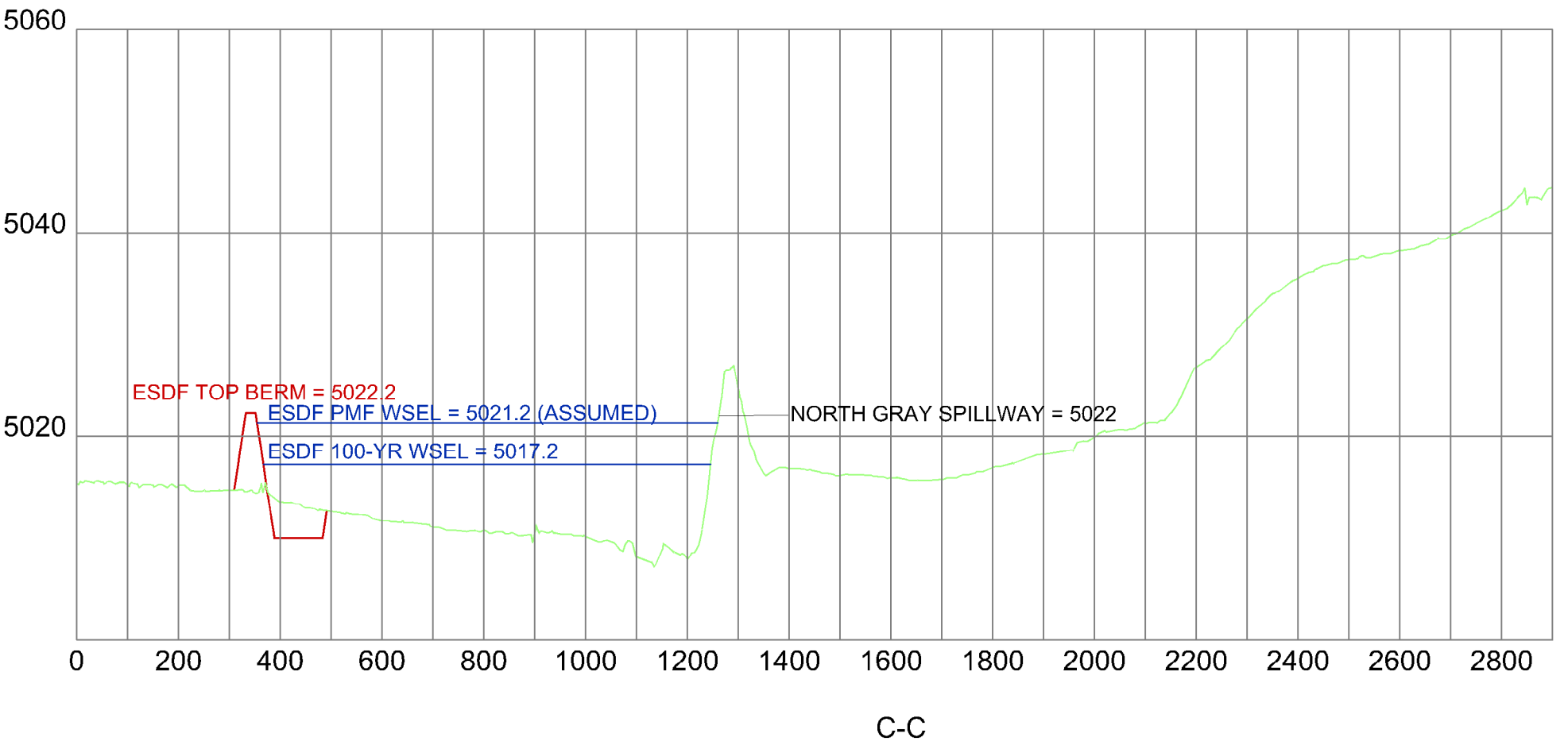
CSU

Meyer

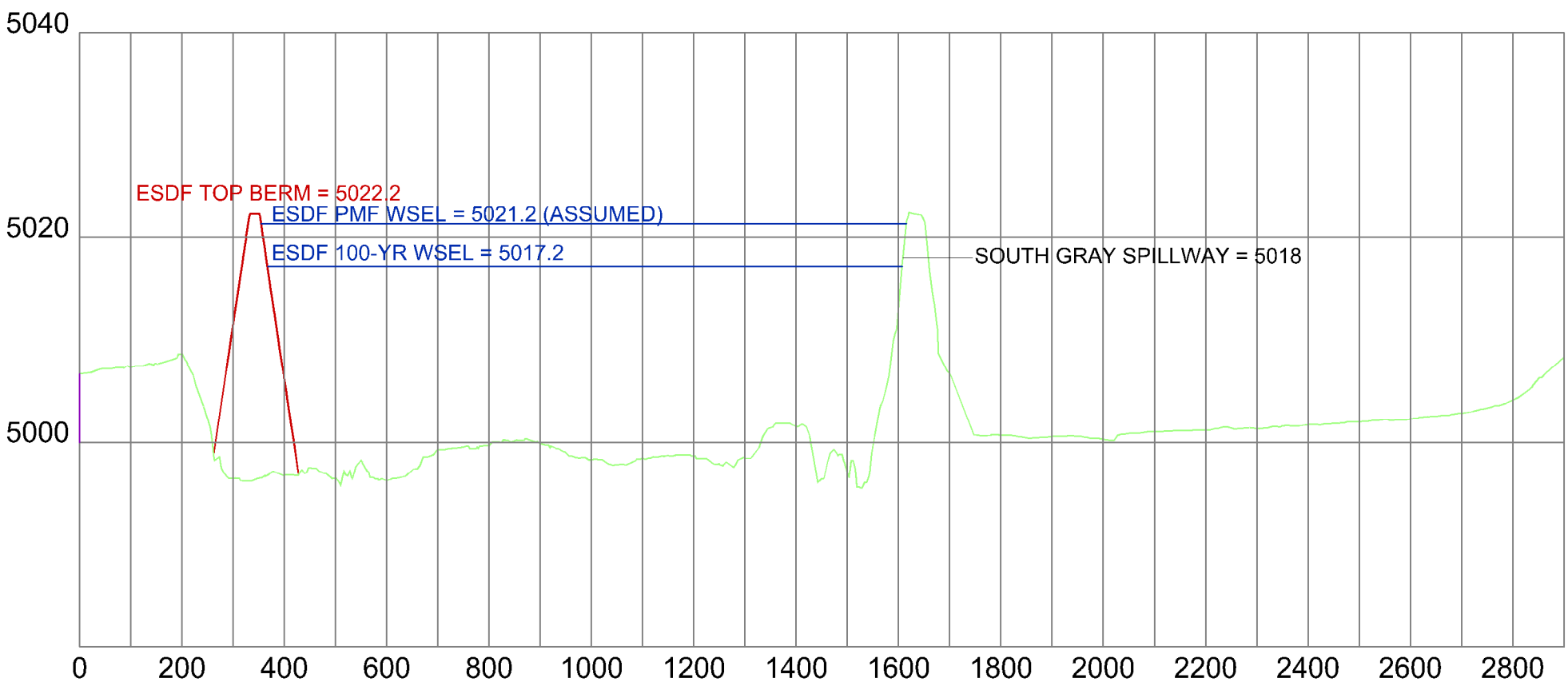
Boxberger

Boxberger

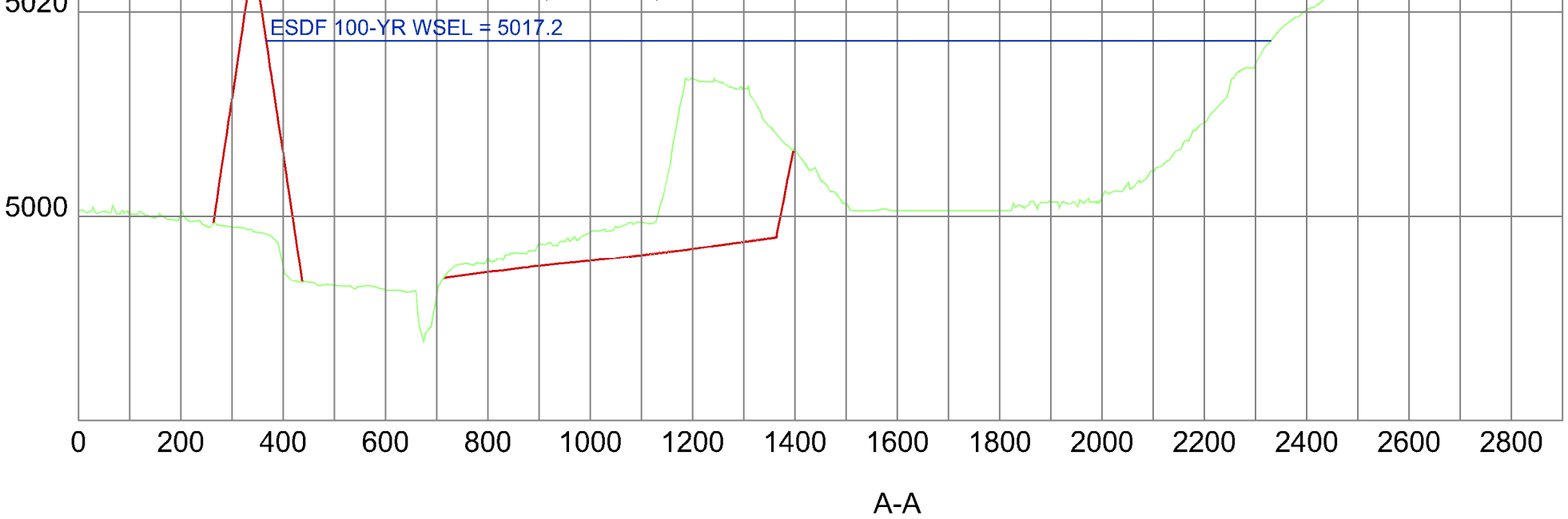
COUNTY RD 50



C-C

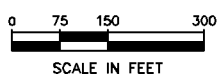


B-B



A-A

EXHIBIT I
CROSS SECTIONS THROUGH ESDF DAM



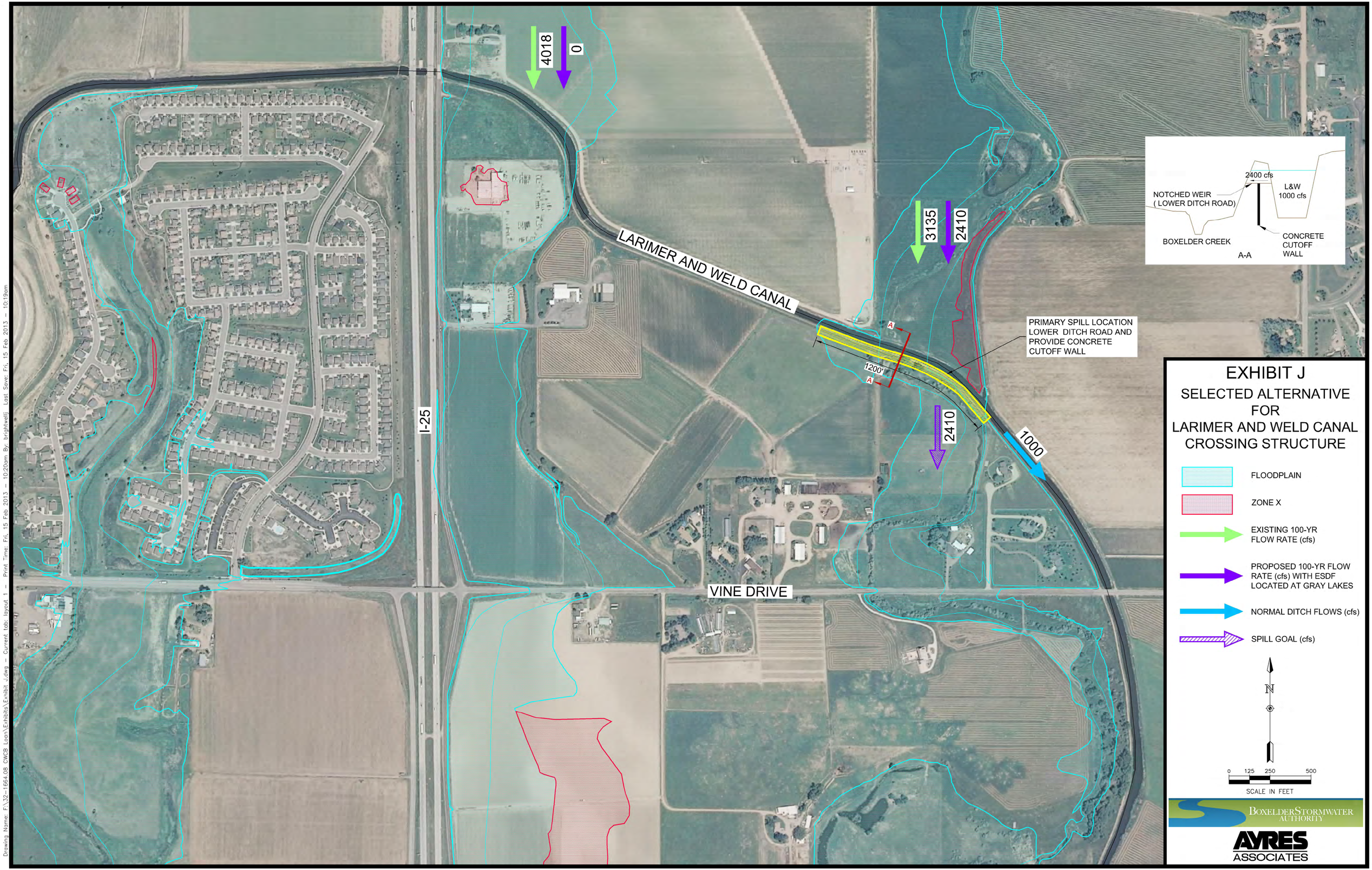


EXHIBIT J

SELECTED ALTERNATIVE FOR LARIMER AND WELD CANAL CROSSING STRUCTURE

FLOODPLAIN

ZONE X

EXISTING 100-YR FLOW RATE (cfs)

PROPOSED 100-YR FLOW RATE (cfs) WITH ESDF LOCATED AT GRAY LAKES

NORMAL DITCH FLOWS (cfs)

SPILL GOAL (cfs)

N

0 125 250 500

SCALE IN FEET

BOXELDER STORMWATER AUTHORITY

AYRES ASSOCIATES