CITY OF Burlington

SKAGIT COUNTY, WASHINGTON INCORPORATED 1902

with

DIKE DISTRICT #12 AS CO-LEAD AGENCY

FINAL ENVIRONMENTAL IMPACT STATEMENT

TO ADOPT A STRATEGIC PROGRAM FOR COMPREHENSIVE FLOOD HAZARD MITIGATION IN THE BURLINGTON URBAN AREA AND ADJACENT LAND WITH A RANGE OF STRUCTURAL AND NON-STRUCTURAL COMPONENTS

THIS IS A PHASED REVIEW PURSUANT TO WAC 197-11-060 (5)

CITY OF BURLINGTON, WASHINGTON AND DIKE DISTRICT #12

Prepared for review by Citizens and Government Agencies in Compliance with the State Environmental Policy Act of 1971 (Chapter 43.21C Revised Code of Washington) as revised; the State Environmental Policy Act Rules, as revised (Chapter 197-11 Washington Administrative Code); and City of Burlington Municipal Code Chapter 15.12 Environmental Policy; and the National Environmental Policy Act Pub. L 91-19, 42 U.S.C.4321-4347 as amended.

DATE OF ISSUE: JULY 16, 2010

FACT SHEET

Proposal Title: Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land with a Range of Structural and Non-Structural Components

Description: The proposal includes several programmatic and project actions that reduce the flood risk of the City of Burlington's urban area while minimizing any upstream and downstream effects. The proposed actions include 3 projects and 8 programmatic actions: 1) Construction of a setback level in the three bridge corridor; 2) Enlargement of the existing northeast levee and; 3) Restore the Gages Slough ecosystem. The programmatic actions include 1) Negotiate concurrence on the appropriate flood hydrology to be used by FEMA; 2) Obtain certification and accreditation of the levees for the 100-year flood; 3) Obtain a Letter of Map Revision from FEMA; 4) Acquisition of Gages Slough corridor and the development rights on the land south of SR 20 between Pulver Road and the City Limits for ecosystem restoration and internal drainage, as well as to protect existing farmland from development; 5) Maintain designated floodway as defined in the 1984 Flood Insurance Study; 6) Reclassification of Agricultural Natural Resource Land for School Site Adjacent to Burlington City Limits As Part of UGA Land Exchange; 7) Connect Raspberry Ridge Farmworker Housing Project and any new high density farmworker housing to sanitary sewer service; 8) Regional cooperation for flood hazard mitigation.

PROJECT PROPONENT

The City of Burlington and Dike District #12

TENTATIVE DATE FOR IMPLEMENTATION

Project design and refinement of alternatives started in 2009; end date to be determined

CO-LEAD AGENCIES

City of Burlington and Dike District #12

RESPONSIBLE OFFICIALS AND CONTACT PERSON

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LICENSES, PERMITS AND APPROVALS

- Conditional Letter of Map Revision (CLOMR) and/or Letter of Map Revision (LOMR) for 100-year certified levees accredited by FEMA
- Compliance with Endangered Species Act
- Federal Emergency Management Agency approval and/or permits

- Shoreline Substantial Development Permit
- Grading Permit
- Coastal Zone Management Consistency Determination
- Skagit County Action to approve plan and issue permits as needed for work in unincorporated areas

AUTHORS AND PRINCIPAL CONTRIBUTORS

- Margaret Fleek, City of Burlington Planning Director
- Dike District #12 Commissioners: Charles Bennett, John Burt, Marv Cannon
- Chal Martin, City of Burlington, Public Works Director
- Federal Emergency Management Agency procedures and levee certification program
- Skagit County Planning and Community Development and Public Works Departments
- Pacific International Engineering (PIE)
- Northwest Hydraulic Consultants (NHC)
- Many related reports and studies including work by the US Army Corps of Engineers

DATE OF ISSUE OF FINAL ENVIRONMENTAL IMPACT STATEMENT

July 9, 2010

DATE FINAL ACTION IS PLANNED

To be determined.

TYPE AND TIMING OF SUBSEQUENT ENVIRONMENTAL REVIEW

Supplemental environmental review may be required if work is needed waterward of the Ordinary High Water (OHW) mark on the Skagit River or when additional site specific components are identified. A review under the National Environmental Policy Act (NEPA) with discipline reports including a Biological Assessment, a Social and Economic Report, Environmental Classification Summary, an Environmental Justice Report, and a Historic and Cultural Resources Report, is in process for the levee setback project through the Three Bridge Corridor. This work will be incorporated by reference for the overall program when it is completed and will serve as the starting point for Endangered Species Act compliance for the levee certification and accreditation project.

LOCATION OF BACKGROUND MATERIAL & COST OF FINAL EIS

Background material and supporting documents may be found at the offices of the Burlington Planning Department located at 833 S. Spruce Street, Burlington, Washington, with copies available at the Burlington Public Library located at 820 East Washington Avenue.

COST OF FINAL ENVIRONMENTAL IMPACT STATEMENT

- Electronic Copy: $2.00
- Copy: $0.15 per page

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Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land with a Range of Structural and Non-Structural Components

The Draft Environmental Impact Statement was circulated to the distribution list and posted on the City's website. A notice of availability of the document and notice of public hearing was advertised. A public hearing was conducted before the Burlington Planning Commission on March 12, 2009 to take public comments on the environmental impacts of the proposed alternatives.

1. PURPOSE OF AND NEED FOR ACTION

The purpose of the program is to reduce flood risk in the urban area while minimizing adverse impacts upstream and downstream of the levee system[1].

Strategic Goals include:

- Protect the existing urban built environment without further expansion into the floodplain.
- Reduce flood risk and improve safety for the 100-year flood event.
- Implement flood measures which minimize risk to adjacent communities, in addition to Burlington's urban area, to the maximum practicable extent.
- Ensure additional protection to the community by participating in the larger, regional planning effort for flood hazard mitigation.

The City of Burlington (City) is a fully developed city located in Skagit County, at the intersection of Interstate 5 and State Route 20 and on the mainline of the BNSF Railroad. Over 3.5 million square feet of commercial and industrial construction and over 1400 dwelling units have been built between 1995 and 2008, based on the Flood Insurance Rate Map (FIRM) adopted in 1985. Only 216 acres of vacant land are available within the City Limits. Because of the growth since 1995, the need to protect the existing urban built environment against the Base Flood[2] is very important for the economic vitality of the community.

The Skagit River Delta area is a unique location with very complex relationships among the existing uses and structures. The need to take a carefully balanced approach to flood hazard mitigation is clearly understood by the City and Dike District #12. To the extent practicable, it is the intention of the City of Burlington and Dike District #12 to minimize upstream and downstream impacts on existing conditions, while maintaining or enhancing current levels of flood protection and achieving FEMA accreditation of a segment of Dike District #12's levee system.

[1] In response to comments made by FEMA, the purpose and needs statement was revised.

[2] Base Flood is a flood having a 1% chance of being equaled or exceeded in any given year. This flood is referred to as the 1% or 100-year flood.

2. PROPOSED ACTIONS

2.1. Introduction

The alternatives for addressing flood mitigation issues are limited since the jurisdiction of the City of Burlington and Dike District #12 are restricted to each entity's geographic boundaries. A more encompassing approach beyond the Proposed Actions involves a regional flood hazard mitigation strategy, such as that envisioned in the General Investigation Study (GI), an ongoing process being conducted by the Corps of Engineers, and a parallel Skagit County process to develop an update to the Skagit River Comprehensive Flood Hazard Management Plan. Over the past 17 years, a combination of real-world flood events and technical work products produced by the Corps of Engineers, Skagit County, and the Cities and the Dike Districts in Skagit County have provided information about the flood risk which clearly recommends action to address the risk. Given the known flood risk, it is essential that the City and Dike District #12 move forward to reduce this risk. The City and Dike District #12 have a responsibility and an obligation to protect Burlington, which is why these entities are embarking on the proposed actions prior to the completion of the regional planning effort.

The Proposed Action consists of several related actions which are also defined in the 2008-2013 update of the Burlington Floodplain Management and Natural Hazard Mitigation Plan.

2.2. Programmatic Actions

a. Negotiate concurrence on the appropriate flood hydrology to be used by FEMA.

Advancements in hydraulic modeling have led the Federal Emergency Management Agency (FEMA) to initiate a revision to its 1984 Flood Insurance Study for the Skagit River. As part of the 1984 study, the 100-year flood elevations and flow paths were determined for the purpose of developing the Flood Insurance Rate Maps (FIRM). In 2002, pursuant to a national program to update flood insurance rate maps, FEMA Region X contracted with the Corps of Engineers (Corps) to conduct the hydrologic and hydraulic engineering analyses for the flood insurance study. This study is nearly complete and the outcome of the study will provide the necessary data for FEMA to revise the FIRMs for the Skagit River. The United States Geological Survey (USGS) maintains and operates streamflow gaging stations throughout the Skagit River watershed. Using peak flow data from the USGS stream gage records, the Corps conducted a flood frequency analysis to determine the recurrence interval of each peak flow. The peak flows at selected return intervals have been routed through a hydraulic model to identify where and to what extent flood water would theoretically flow in various flood scenarios. FEMA uses the 100-year flood as a basis (Base Flood) for preparing its FIRMs. FEMA does not include non-accredited levees in its flood modeling; therefore, the Base Flood Elevations resulting from the hydraulic model are derived from an artificial ground surface elevation map that has been modified to remove the existing non-accredited levees. This hydraulic modeling approach produces significantly higher base flood water surface elevations for Burlington than is the case if the levees can be included in the model. Currently, none of the levees along the Skagit River are certified and accredited for the 100-year flood.

Debate over the magnitude of peak flows on the Skagit River has been ongoing for many years and is particularly focused on estimates of several floods that occurred prior to the establishment

of a recording gage at the Dalles, near Concrete, in 1924. Corps of Engineers guidance on hydrologic analyses generally encourages use of "historic" or pre-gage estimates, of floods for which some type of information exists. In the case of the Skagit River, the USGS considers information on the floods of 1897, 1909, 1917, and 1921 adequate to be included in the historical peak flow record. The USGS also believes there were significant floods on the Skagit River in 1815 and 1856; however, the date these floods may have occurred, and their magnitude, cannot be ascertained with enough certainty to include in a flood frequency analysis.

A year following the flood of 1921, James E. Stewart, a USGS hydrologist, collected detailed notes on observed high water marks and cross-section data to develop an estimate of the magnitude of the 1921 flood. The other historic floods (1897, 1909, 1917) were estimated from the gage rating Stewart developed for the 1921 flood; consequently much of the subsequent analysis has surrounded this particular data point. The USGS did not publish the historic flood estimates of 1921, 1917, 1909, and 1897 until 1961 (Water Supply Paper 1527). Later, these peak flow estimates were revised downward slightly (Mastin, 2007). The Corps has incorporated the published data into its flood frequency analysis.

Three primary reports and several additional memoranda have been prepared addressing the hydrology of the Skagit River at Concrete: the Corps of Engineers[3], Pacific International Engineering[4], and Northwest Hydraulic Consultants[5]. The latter two reports provide new research, field work, and hydraulic analyses which indicate the USGS overestimated the magnitude of the historic flood events. The memoranda discussing the hydrologic issues were prepared by Pacific International Engineering[6], Michael Baker Corporation[7], Northwest Hydraulic Consultants[8], USGS[9], and the City of Burlington[10]. *See Exhibit 1 for Synopsis of Skagit River Hydrology.*

The most compelling new information from these reports results from extending the hydraulic model upstream about 2.5 miles from the current gage location at the Dalles, near Concrete (84 years of data, including the flood of record in 2003). Several homes in an old subdivision (Crofoot Addition) of lower Concrete (i.e. closer to the river) were built prior to the historic floods of 1909, 1917, and 1921. Hydraulic model results show that these homes would have been flooded many feet above the first floor level if the USGS estimates of the historic flood discharges were correct. Both new reports are returning similar stage/discharge results for the

[3] U.S. Army Corps of Engineers, Seattle District, Skagit River Basin, Washington, Revised Flood Insurance Study, Draft, Hydrology Summary, May 1, 2008. Prepared for Federal Emergency Management Agency.
[4] Pacific International Engineering, Skagit River Basin Hydrology Report Existing Conditions. October 2008. Prepared for the City of Burlington, City of Mount Vernon, Dike Drainage and Irrigation District #12, and Dike District 1.
[5] Northwest Hydraulic Consultants, Re-Evaluation Of The Magnitude Of Historic Floods On The Skagit River Near Concrete, Revised Final Report, March 2010. Prepared for Skagit County Department of Public Works.
[6] Pacific International Engineering, *Technical Memorandum: Review and Reevaluation of Skagit River 1921 Flood Peak Discharge*, March 2010.
[7] Michael Baker Corporation (Will Thomas), *Summary of the Skagit River Hydrology Technical Meeting*, March 17, 2010, Alexandria, Virginia.
[8] Northwest Hydraulic Consultants, *Memorandum, Subject: Skagit River 1921 High Water Marks*, 5 May 2010.
[9] USGS (Mark Mastin), *Memorandum USGS responses to issues raised by the Technical Memorandum, "Review and reevaluation of Skagit River 1921 flood peak discharge,"* May 6, 2010.
[10] City of Burlington, *Meeting Summary, USGS – Skagit County – City of Burlington*, 10 May 2010

hydraulic model. The primary difference in the discharge estimates between the two reports is the stage estimate used for the 1921 flood in the old subdivision: Northwest Hydraulic Consultants used the stage estimate based on a newspaper account of the time; Pacific International Engineering used a high water mark surveyed by James Stewart based on interviews he conducted with area residents in 1922.

The arguments supporting the Corps' use of the higher historic flood estimates stem from a 2007 USGS report[11] which used the slope-area method in a reach downstream of the gage site, similar to work originally performed by Stewart in 1922-23, to estimate historic discharges based on data collected following a 2006 high water event. This report added important information to the discussion, but did not take into account the high water marks on the homes in the Crofoot Addition, since no hydraulic modeling was done by the USGS.

FEMA continues to state that the Corps hydrology based on published USGS data will be used to update the Flood Insurance Rate Maps. No official review has been undertaken by FEMA that compares the three technical reports on the major issue of hydrology to determine the most accurate basis for the update of the Flood Insurance Rate Maps (FIRMS). FEMA has stated that the Corps hydrology is "within acceptable engineering tolerances." FEMA has defined acceptable tolerance as one standard error of the final regulated flood frequency analysis, or about 14%.

The following table presents a summary of the different hydrology estimates from the three technical reports:

100-Year Regulated Skagit River Peak Flow Estimate (cfs)			
Consultant	**Concrete**	**Sedro-Woolley**	**Mount Vernon**
Corps of Engineers	209,490	215,270	192,900
Northwest Hydraulic Consultants	191,400	196,690	176,250
Pacific International Engineering	184,400	184,700	162,200

In preparation for levee design and construction to provide 100-year flood protection, computer modeling runs using the Corps of Engineers model (see Exhibit 2 for maps of model results) have been completed to show the effects on Base Flood Elevations of four sets of assumptions:

1. Applying the hydrology assumptions of the Corps in the FEMA model that assumes no levees;
2. Applying the hydrology assumptions of the Corps if the levees are certified;
3. Applying the hydrology assumptions of the City's and Dike District #12's consultant, Pacific International Engineering, in the FEMA model that assumes no levees;
4. Applying the hydrology data of the City and Dike District #12, documented and developed by Pacific International Engineering, if the levees are certified.

[11] USGS, Re-Evaluation of the 1921 Peak Discharge at Skagit River near Concrete, Washington, Scientific Investigations Report 2007-5159.

b. Obtain FEMA Accreditation of a Certified Riverine Levee in a Delta Area with No High Ground Tieback Option

According to the Code of Federal Regulations (CFR)[12], a registered professional engineer certifies the levees which are then reviewed and accepted by FEMA for accreditation. Once the levees are accredited by FEMA, they can be included in the hydraulic modeling that is conducted to define the 100-year floodplain.

Because the levees are currently not accredited, the methodology FEMA has employed to date in establishing Base Flood Elevations (BFEs) assumed that no levee exists and the overflow elevations are at the top of the river bank and not at the top of the levee. This is a necessary and conservative approach from FEMA's perspective, although it is also an unrealistic scenario because the levees do, in fact, exist and they do prevent flooding at certain flow levels within the City of Burlington. Burlington and Dike District #12 recently completed a geotechnical study of the existing levees. This study indicated that although the levees needed to be enlarged and raised in the segment expected to be certified, the levees in general were already constructed soundly enough to withstand significant flooding, as has been confirmed through experience in the recent floods of 1990, 1995, 2003, and 2006. These floods had return intervals ranging from 25 to 50 years, depending on the hydrology used in the analysis.

Levee certification requirements state that *"riverine levees must provide a minimum freeboard of 3 feet above the 1% annual chance flood elevation. An additional 0.5 feet above that minimum is required along the length of the* ***upstream tieback levee*** *and at the upstream end of the main levee…An additional 1 foot of freeboard above the 3-foot minimum is required within 100 feet of either side of structures within the levees (bridges).[13]"* This discussion of freeboard along the length of the upstream and downstream tieback levees implies that the tieback levees are part of all levee systems. In the City's proposed action, no such tieback levee is envisioned. Rather, water will naturally overflow in the Sterling area, with some of the overflow spreading northerly onto the flood plain, and some into Burlington along the low areas near Gages Slough. This natural overflow area at Sterling takes pressure off the system and reduces the downstream flood peak. Burlington and Dike District #12 are hopeful FEMA will consider the benefits of conveying some of the flood peak out of the system, thereby mitigating upstream and downstream effects. Appendix H of the 2003 Guidelines states, *"Under certain circumstances, FEMA may also grant exceptions to the requirements itemized above or approve alternate analysis techniques."* Based on this statement, there does seem to be a basis for FEMA to accept a levee system for accreditation that intentionally does not have high ground tiebacks.

The City / Dike District #12 proposal is to begin the upstream end of the certified levee adjacent to Lafayette Road where the road turns south near SR-20, and ending at Bennett Road, at the City's western corporate boundary limit. The total length of this levee is about 4.6 miles and includes a new 1.3-mile setback levee below the BNSF Bridge and a 3.3-mile improved levee above the BNSF Bridge. Both ends of the levee do not tie to any high ground. The FLO-2D modeled maximum velocity is less than 3 ft/sec at both upstream and downstream ends of this

[12] Title 44 – Emergency Management and Assistance, Chapter I - Federal Emergency Management Agency, Department of Homeland Security, Subchapter B – Insurance and Hazard Mitigation, Part 65 - Identification and Mapping of Special Hazard Areas.

[13] FEMA, Guidelines and Specifications for Flood Hazard Mapping Partners, April 2003.

levee during the 100-year flood. These low velocities (< 5 ft/sec) indicate that if water did flow overland in these areas, the nature of the flooding would be less dangerous to life and property.

In response to the Draft EIS, one comment stated "that [the levee] does not isolate the flooding source from the community and therefore does not provide protection from the base flood." The Skagit River presents a serious flood risk, and the City / Dike District #12 program is focused on reducing flood risk. This flood risk reduction will be incremental. In the case of the riverine levee in the Skagit River delta area, the "protection" goal for Burlington is to have a levee system that will solidly withstand the 100-year flood event, lower Base Flood Elevations in the City, remove a percentage of the City from the 100-year floodplain (although flood insurance will be strongly encouraged since the potential for a larger flood always exists), and ensure that the established Base Flood Elevations adequately communicate the best estimates of 100-year water surface flood elevations to property owners. The other component of "protection" for Burlington is to minimize the upstream and downstream effects of the levee improvements on neighboring areas. This is an important component of the regional approach.

As described earlier in this section, Base Flood Elevations are determined by incorporating topographic features into the hydraulic model. In the case of Burlington and Dike District #12, the levees are not accredited; therefore, they will not be included as a topographic feature in the Corps' hydraulic model. Under this somewhat abstract theoretical circumstance, the disagreement over the hydrologic basis of a 100-year flood event makes little difference – both floods would overflow the City, with similar results in flood water surface elevations. Therefore, regardless of the outcome of the hydrologic analysis, FEMA will publish higher BFEs in Burlington until the levee segment is certified and accredited. Once this occurs, the differences in modeled water surface elevations during flood events are significantly different between the Corps hydrologic analysis and Pacific International Engineering's hydrologic analysis. However, for the purpose of conservatism, the proposed action incorporates the Corps' hydrologic analysis.

A key component of developing the levee certification project is addressing the impacts of the proposed action on the upstream and downstream areas. Burlington and Dike District #12 recognize that positive support from the community is essential for successful project implementation, including Sedro-Woolley and the Sedro-Woolley Wastewater Treatment Plant, United General Hospital, Mount Vernon, La Conner, the Anacortes Water Treatment Plant, the Dike and Drainage Districts between Sedro-Woolley and the mouth of the Skagit River, Skagit County, the agricultural community, and those living in the vicinity of the Samish River.

To ensure that impacts to the neighboring areas are minimized, the approach is to first study the minimum work necessary to protect Burlington from significantly increased BFE heights, i.e. levee certification along the river frontage of the urban area with setbacks through the bridge corridor and no high ground tiebacks. With that work in place, the remaining measures to be implemented would be determined through the regional planning process (Corps of Engineers General Investigation Study and the Flood Control Zone District (FCZD).

The primary structure to consider when addressing downstream impacts is the constriction of the BNSF Bridge. The bridge can only pass about 150,000 cubic feet per second (cfs). It is noteworthy that Pacific International Engineering's estimation of the 100-year regulated event is

a little over 160,000 cfs at the Riverside Bridge. With some additional upstream storage in Upper Baker and Ross Reservoirs and possibly a project in the Nookachamps area, this flow could be reduced such that the downstream effects would not change during a 100-year Skagit flood event. Conversely, using the Corps hydrology of 192,900 cfs will certainly result in significantly larger flood measures with associated impacts.

The 1984 Burlington Flood Insurance Study details how the overbank sheet flow patterns function north, at Sterling, and the variety of scenarios that result with levee failures or overtopping at downstream locations. If Burlington and Dike District #12 are able to go forward with the concept to upgrade the existing levee segment with no extension to the east, this will continue to allow water to escape at Sterling and prevent any upstream backwater effects. In addition, continued conveyance of reduced peak flows would not change downstream impacts.

The City of Burlington and Dike District #12 believe the proposal for levee certification and accreditation is viable and consistent with federal regulations.

c. Obtain Letter of Map Revision (LOMR) for the Burlington Urban Area

The mechanism to enable "credit" for a certified levee is a Letter of Map Revision. This is essentially an engineering report which documents the work completed to ensure the improved or new levees will withstand a 100-year flood event. Additionally, the report includes hydraulic modeling which will show what the revised Base Flood Elevations will be when the levees are included in the modeling. When approved by FEMA, the LOMR will become the basis for revised Base Flood Elevations within the City.

d. Retain Administrative Floodway

As part of the 1984 Flood Insurance Study, conventional floodways were determined not to be appropriate for the Skagit River delta area for a number of reasons. An agreement was reached with FEMA to address the regulatory floodway in two ways, the first being to define "Floodway" – "the channel of a river or other watercourse and the adjacent land areas that must be reserved in order to discharge the 100 year flood without cumulatively increasing the water surface elevation more than one foot. Floodways in Burlington consist of all areas riverward of the riverward toe of dikes and levees along the Skagit River." (See Appendix D, Exhibit 6, in the Draft EIS). In lieu of a floodway, pursuant to additional study, FEMA accepted a "most probable failure point" analysis, which concluded a 100-year flood would overtop the railroad tracks at Sterling.

The 1984 Flood Insurance Study stated "…for the Skagit River proper, the levees confining the channel and adjacent areas have been designated as floodways," using the most landward levees to establish the floodway boundary.

> *"Conventional floodways are not appropriate for the Skagit River delta area for a number of reasons. Although flood elevation and depth criteria can be established for the delta based upon general flood risk assessments which consider possible modes and locations of levee failure in flow path computations, such analyses are not appropriate for establishing floodways on the delta. Unlike typical valley situations, the exact location of flow paths during any particular flood event on the delta cannot be known in advance due to the uncertainty of where levee failures will occur, the relative sequence of levee failures, and the*

> *volumes of flow that will result. Likewise, because of the topographic nature of the delta, flooding occurs in sheet flow patterns and no one particular flow path is inherently more efficient than other possible alternatives, making the selection of a floodway location highly arbitrary."*
>
> *"Therefore, it is recommended that all communities with land use jurisdiction on the delta assume a responsibility to maintain flow paths for floodwaters in order to minimize backwater effects which may increase flood levels. Suggested measures include design of new roads and streets to be at grade in order that obstructive fills not be placed perpendicular to local flow paths, preservation of swale areas, and existing drainage channels such as Gages Slough, and a minimization of development density in currently zoned agricultural areas."*

Regarding a floodway designation in Burlington, FEMA helped with a compromise in 1984, which was to designate Gages Slough a "Special Flood Risk Area," having a ground elevation which is three feet or more below the 100-year floodplain elevation. In addition, FEMA included as floodway, areas lying within 300 feet of the landward toe of the levee. This was first reflected in Ordinance No. 1047, Ordinance No. 1055 and today in the Critical Areas Ordinance Title 15.15. This area does not have all the qualities of a floodway, but the designation is quite restrictive with flow-through house designs and other elements.

The August 2005 City of Burlington's Updated Surface Water Management Plan describes the capacity of Gages Slough as follows: *"The majority of Gages Slough and the Pulver Road Pump Station have the capacity to transport an undetained 25-year storm……Gages Slough and Gages Lake are a series of wetlands that flow to a pump station, which pumps into the Skagit River*." Storm profiles showing the 2-, 10- and 25-year high-water elevations were identified, and the model showed that the western portions of Gages Slough and Gages Lake act as a storage area during these design events, until the pump system can pump the stormwater into the Skagit River. The pump station draining Gages Slough can pump the 25-year storm volume out of the slough in three days. During a 25-year storm, undetained flows within Gages Slough were calculated as reaching a maximum velocity of 1.4 feet per second. Velocities less than 2 feet per second are considered non-erosive.

The Federal Regulation that formed the basis for the agreement with FEMA is 44 CFR 60.3(c)(10)Floodplain management criteria for flood-prone areas that states as follows:

> *"Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 and AE on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community."*

Burlington recently conducted a study to determine the cumulative amount of fill from 1985 to the present in 2010. The documented rise across Burlington is 0.3714 feet, well within the parameters of the code.

FEMA is proposing to negotiate a new floodway designation after the revised flood maps are adopted. It is Burlington's position that the current framework for addressing the regulatory floodway is satisfactory, and no changes are planned.

e. Acquisition Of Gages Slough Corridor And The Development Rights On The Land South Of SR 20 Between Pulver Road And The City Limits For Ecosystem Restoration And Internal Drainage, As Well As To Protect Existing Farmland From Development.

The City intends to purchase the Gages Slough corridor and wetland buffer as part of the Gages Slough Management Plan. In addition, the zoning code is being amended in June, 2010 to establish a one-year pilot program that will provide for increased residential density in several zoning districts through the purchase of Burlington Agricultural Heritage Credits.

The purpose of the Agricultural Heritage Credit Program is to provide additional residential density in specific zoning districts in exchange for a fee dedicated to transfer and/or purchase of development rights through the Skagit County Farmland Legacy Program. The program provides a voluntary, incentive-based process for permanently preserving agricultural lands that provide a public benefit. The provisions of this Program are intended to supplement land use regulations, resource protection efforts and open space acquisition programs and to encourage increased residential development density inside the City where it can best be accommodated with the least impacts on the natural environment and public services by:

1. Providing an effective and predictable incentive process for agricultural property owners to preserve lands with a public benefit;
2. Providing an efficient and streamlined administrative review system to ensure that transfers of development rights to receiving sites are evaluated in a timely way and balanced with other county goals and policies, and are adjusted to the specific conditions of each receiving site.

Acquisition of the Gages Slough corridor to accomplish ecosystem function restoration, water quality treatment and stormwater management in Gages Slough is a high priority. These actions will allow the City to better control open space, improve habitat and natural water quality functions, improve water quality of the Slough so that when it is pumped out to the river during a flood event, the water quality will be better than it is today.

Listed species under the Endangered Species Act are not allowed to enter Gages Slough. There is a structure at the Gages Slough outfall that prevents fish from heading into the Slough, which currently has poor water quality including temperatures too high to support fish.

An important consideration for flood risk reduction is the ability to drain water from the back side of the levee system during and following large flood events. Along the Mississippi River, very large pumping systems are in place to intercept and pump the tributaries into the main stem of the river, when the main stem water surface elevation is higher than the tributary water surface elevation. In Burlington, there are no tributary inflows to the Skagit behind the levee system; however, Gages Slough acts as a natural drainage system for the City. It is the City's intention to retain and enhance the capability of Gages Slough to help drain the City in the event of a major flood.

The City intends to pursue expansion of its western Urban Growth Area to Pulver Road in order to protect the downstream end of Gages Slough and Gages Lake. The City would then keep the expansion in an open space land use designation to protect and restore the Slough. If a protected expansion of the Urban Growth Area is not possible, then the City will pursue an expanded agreement with Skagit County regarding Gages Slough to address the long-term protection and restoration of the Gages Slough corridor.

f. Reclassification of Agricultural Natural Resource Land for School Site Adjacent to Burlington City Limits as Part of UGA Land Exchange.

This alternative is intended to remove nearly 30 acres of land from the northeast corner of the UGA in exchange for land located at the northeast corner of Peterson and Pulver Roads. The 30 acres that is currently in the UGA will be rezoned to agricultural resource zoning. The new location at Peterson Road will be re-designated UGA and removed from its agricultural zoning classification. Adjacent farmland development rights will be acquired and a permanent urban separator designed along the boundaries of the new site in coordination with the adopted Connected Open Space Plan for Burlington. The site will be zoned for school use only.

The City of Burlington is committed to working with the Burlington Edison School District on long-term school siting needs and issues, and will be coordinating closely with the District as they go through their capital facilities planning process.

The evaluation of alternatives for school sites is very important to this community. The School District serves an area of over 26 square miles. At the appropriate point in the process, a limited scope environmental impact statement is planned to focus on this alternative, in the context of the overall program for the district. An Urban Growth Area amendment application would then be filed for the 2011 Skagit County amendment process, following the agreed upon procedures.

Exchanging land of comparable size has been successfully accomplished in other locations and there will be no net loss of Agricultural NRL zoning. School siting is a regional issue and the site at Peterson and Pulver is an excellent location for a new school with respect to features such as urban services, transportation network, and future student populations.

g. Connect Farmworker Housing Projects to Sanitary Sewer Service

It is a goal of the City's to minimize contamination by sewage from failed septic systems during a flood event. The City is particularly concerned about the large septic systems and drain fields serving high density farmworker housing adjacent to the City. Currently, two large farmworker developments are in place on the City's east side. The City believes these developments, although outside of the City Limits, should be connected to the City's sanitary sewer system to reduce the risk of disease following a flood. Therefore, mitigation of the potential health hazard in this high density housing project by connecting it to sanitary sewer service is a high priority for the City. Under the GMA, the County comprehensive plan, and development regulations, the County can support public sewer extension into rural areas when the purpose of the expansion is to address existing public health issues. The City believes the risk to public health presented by these large septic systems meets the public health test. The City will work with Skagit County to connect the farmworker housing developments to the City's sanitary sewer system, whether or not the developments are eventually included in the City's Urban Growth Area.

h. Regional Cooperation for Flood Hazard Mitigation

The City and Dike District #12 will continue to support regional cooperation for flood hazard mitigation. An updated regional plan is needed that builds on current projects and carefully addresses the options for flood management when flows will be conveyed out of the river channel. The Advisory Committee also has the ability to recommend a property tax increase, which could provide some local funds for flood hazard mitigation projects.

- General Investigation Study: Burlington is an active participant in the General Investigation study and recently signed an interlocal agreement to provide funding for the study in the amount of $20,000 for 2010 and $20,000 for 2011. This General Investigation study, which could provide the framework for a regional flood/ecosystem restoration project, is not expected to be completed until 2015 at the earliest.
- Flood Control Zone District: Burlington is actively involved in the Flood Control Zone District Advisory Committee, which provides input to the Board of County Commissioners regarding flood control activities in the County.
- Comprehensive Flood Hazard Mitigation Plan (CFHMP): Burlington is involved with other Flood Control Zone District Advisory Committee members in developing an updated CFHMP.

2.3. Project Actions

Two levee projects and one restoration project are included in this section. The levee projects are: 1) Enlarging the Northeastern Area which extends from the site where the levee alignment crosses East Whitmarsh Road to the northern end of the project at the point where Lafayette Road turns east on the south side of the railroad tracks, and 2) Construct a setback levee in the Western Area which corresponds to the beginning at a point 500 feet west of the intersection of Bennett Road and Bouslog Road, west of Interstate 5 at the City Limits and extending east to connect to the existing levee at the Whitmarsh Road cross dike. The setback levee project will also include a smaller backwater structure that will extend north for several hundred feet from the western end of the setback levee. The setback levee project is feasible based on the November 20, 2009 Final Report Geotechnical Investigation and Levee Analysis City of Burlington and Dike District #12, prepared by Golder Associates Inc. The work for both projects will occur in phases along the approximate 4.6 mile project length. *See Exhibit 3 for Burlington Levee Project Exploration Plan*.

a. Analyze, Design, and Enlarge the Existing Northeastern Levee

The Northeastern Area project consists of enlarging (width and height) the existing levee in place for a distance of 3.3 miles from the northern end of the project to the point where the levee connects to the BNSF Railroad at East Whitmarsh Road, just north of the BNSF Railroad Bridge. This will include enlarging the east side of the existing Lafayette Road levee alignment, to where Lafayette Road turns east near SR-20. Based on the findings in the Geotechnical Investigation (Golder, 2009), a new levee will be constructed adjacent to the railroad between the Whitmarsh Road cross dike and the point where the railroad bridge begins. The railroad acts as the levee in that area and is also the weakest section in the Northeastern Area of the levee system.

New and more accurate topographic data were developed in 2008 based on an aerial flight of the area upstream from the Burlington / Dike District #12 levee to Sedro Woolley. This new information will be incorporated into the modeling effort to more accurately quantify the amount

of water leaving the system in the Sterling area during a flood event. The volume of overflow from the river at Sterling is a function of the flood flow in the Skagit River.

Geotechnical investigation and documentation of the existing levee from the upstream end at Lafayette Road to the BNSF Railroad Bridge has been completed. A determination has been made that the work completed to date and planned will accomplish the baseline levee work necessary to maintain structural stability, provide for adequate drainage and meet seismic, hydraulic and hydrologic components, and is adequate to support increased levee heights to provide 100-year base flood protection. All work continues to be supervised and documented to FEMA standards.

Levee design is under contract and anticipated to be completed in 2010, based on the Corps of Engineers hydrology assumptions. See Exhibit 4 – Plans for Levee Improvement.

This alternative of enlarging the upstream levees will not remove the risk of flooding; however, it will reduce the risk of a catastrophic levee failure, and make the specific flood risk for each individual property easier to quantify through modeling of water surface levels at various river discharges.

b. Construct Setback Levees in the Three Bridge Corridor

In the Western Area, from the BNSF Railroad Bridge down river for a distance of 1.3 miles, a new setback levee will be constructed. This will be tied into the three existing bridge structures with an appropriate design for each location. The existing levee will remain in place for this project.

The Three-Bridge Corridor Levee Setback project has completed its preliminary engineering analysis and Endangered Species Act (ESA) compliance and is in the process of completing its National Environmental Policy Act (NEPA) compliance documents. A Documented Categorical Exclusion is in the final stages of review by the Federal Highway Administration (FHWA). This level of environmental review is required because the funding is through the Federal Highway Administration as part of the program to protect Interstate 5. This ESA compliance work will serve as the point of beginning for the Burlington levee certification and accreditation project areas.

Geotechnical investigation work in the levee setback area has confirmed that the soils are poor and transmit water horizontally at relatively low river elevations, which further points to the need for the setback levee.

This project is currently in phase one which includes land acquisition and construction of the setback levees. Completed documentation needed to apply for the Conditional Letter of Map Revision (CLOMR) and/or Letter of Map Revision (LOMR) will subsequently be submitted to FEMA.

Future phases involve replacing or widening the span of the three bridges; replacing the BNSF Bridge, widening the span of the Old 99 Bridge, replacing the Interstate 5 Bridge, and determining the best approach for handling the old levees after the bridges are updated. These

actions are expected to be defined by the regional flood hazard mitigation plan in place at that time.

c. Ecosystem Restoration of Gages Slough

Gages Slough currently acts as a drainage mechanism for a flood event and has the capacity to convey a 25-year rainfall event (4% probability of occurring in any given year). Since the Slough has no outlet, a pump station at the downstream end pumps the stormwater into the Skagit River. The City intends to improve the slough's flood conveyance capability, restore habitat, and improve water quality. If the Slough corridor can be acquired by the City, this will ensure long-term protection of the area and the ability to significantly improve its environmental conditions.

3. ALTERNATIVES NOT INCLUDED IN THE PROPOSED ACTIONS

3.1. Programmatic Alternatives Not Included In The Proposed Action

a. Flood Storage

Reservoirs in the Skagit and Baker River systems have the ability to mitigate a portion of the peak flows generated in the Skagit River watershed. This storage can provide some reduction in the impacts to communities downstream situated in the lower Skagit River valley. Additional flood storage may eventually be available through administrative actions based on the outcomes of hydrologic and environmental studies.

Upper and Lower Baker Reservoirs

Additional potential for enhancing flood management and mitigation utilizing the hydropower dams owned by Puget Sound Energy was not directly addressed in the recently finalized relicensing process.

The relicensing of the Baker dams for an additional 50 years includes agreements for funding mitigation actions of many kinds, and expenditure of funds to accomplish those goals; however, flood hazard mitigation is not currently being addressed, and no funding has been set aside to upgrade the spillways on Lower Baker Dam. Without the ability to more quickly evacuate water in advance of a flood, any future benefits of additional flood storage in this river system cannot be counted on to assist in taking the peaks off flood events. Officials from Puget Sound Energy have stated that they intend to work with local jurisdictions on an informal basis.

Under the current licensing agreement with the Federal Energy Regulatory Commission (FERC), Puget Sound Energy is required to provide 74,000 acre feet of flood storage at the Upper Baker Dam. Any additional storage is subject to acceptance by the Corps of Engineers and adequate compensation to Puget Sound Energy. However, the license does have a provision for reservoir drawdown in advance of a flood:

> Article 107(c): *Licensee shall consult with the ARG (Aquatics Resources Group), and specifically Skagit County and the Corps of Engineers, to develop means and operational methods to operate the Project reservoirs in a manner addressing imminent flood events and consistent with the requirements of the license. Appropriate means and methods may include, without limitation, additional reservoir drawdown below the maximum established flood pool. Licensee shall submit a report to the Commission within three years following license issuance describing any operational changes developed as a result of this consultation.*

This report is due in October, 2011.

Ross Dam and Reservoir

The operating license for Ross dam and reservoir requires 120,000 acre-feet of flood storage, but not until December 1st of each year. Only 43,000 acre-feet of storage are required by November 1st, and only 60,000 acre-feet by November 15th. Approximately 40% of floods occur in the season prior to December 1st. Often, Seattle City Light operates the reservoir so that more than the minimum flood storage is provided early in the flood season, in October and November. However, given the potential for significant flooding prior to the full storage requirement on

December 1st of each year, Burlington believes the license should be modified in order to provide the full authorized flood storage, earlier in the flood season.

Nookachamps Basin

This is a natural lowland area situated just upstream from where the river flows onto the delta. A future project could help mitigate flood peaks however this is dependent on the Skagit River General Investigation (GI). Better utilization of the Nookachamps area for flood storage while protecting the Sedro-Woolley sewage treatment plant could help reduce peak flows in large Skagit River flood events. The Skagit River GI study is expected to provide more information about this possibility.

b. Protect Overbank Flow Paths

Protect natural overbank flow paths through farmland preservation areas in lieu of a regulatory floodway, such as the Sterling area.

c. Designate Downstream Overflow Pathways

Downstream overflow pathways should be considered as part of a regional study to mitigate flood damage.

3.2. Project Alternatives Not Included In The Proposed Action

a. Extend Levee Upstream To Sedro-Woolley And Tie Into High Ground

FEMA has provided preliminary feedback to Burlington that its current policy restricts the agency from accrediting any levee that is not tied into high ground. The current Northern Area levee is intentionally not connected to high ground so that overflow from floods can be routed onto farmland. A consequence of this would be that water would also flow into Burlington behind the levee. The City and Dike District #12 can construct a levee that does not allow this overflow; however, the upstream and downstream impacts could be significant. While the extension of the levee up to Sedro-Woolley will meet FEMA's standards for 100-year flood certification, it does not meet the needs of the region. Maintaining the entire flow in the river will result in more volume being conveyed downstream and onto facilities that may not be able to safely convey the water. In addition, potential backwater effects from such a levee would impose additional flooding in Sedro-Woolley, which is not an acceptable alternative to the City of Burlington.

The negative impacts of continuing the levee upstream toward Sedro-Woolley include: 1) taking Burlington completely out of the 100-year floodplain; 2) increasing downstream flood risk, including Burlington, Mount Vernon, and Dike District #12, Dike District #17, Dike District #1, Dike District #3, and Dike District #22; and 3) creating an unstable and dangerous condition at the BNSF Bridge. If Dike District #12 is forced to extend its levee up the SR-20 corridor in order to tie the upstream end into high ground, then the natural overbank flow path through Sterling and behind Burlington will be eliminated, thereby forcing more water to stay in the river. Since Dike District #12's levees would keep all of the water in the river until it reaches the bridge, something will have to give. The railroad bridge will likely fail and the levees on either side of the bridge would also be in danger of failure.

In the near term, until additional measures from a regional flood project can be put in place, the impacts of extending a levee toward Sedro-Woolley are significantly adverse and cannot be mitigated.

b. Design and Construct Control Structures to Move Water North to Overbank Flow Paths through Farmland Areas.

The City has no control over these overland flow areas because the land is outside of the City's and Dike District #12's jurisdiction. This alternative will not be undertaken now but will perhaps be addressed later as part of a regional flood hazard reduction project.

3.3. No Action

Dike District #12's existing levees provide reasonably reliable protection from flood events with a peak flow of 150,000 cubic feet per second (cfs). However, depending on the length of time the river remains close to this flow, segments of the levee could be susceptible to failure. If a section of Dike District #12's levee failed, much of the City could be flooded within hours.

The current 100-year regulated peak flow at the Mount Vernon gage site (just downstream of the Riverside Bridge) is 162,200 cfs[14]; the Corps of Engineers puts the regulated peak flow at 192,900 cfs. Either of these peak flow numbers would put Dike District #12's levees at risk. Possible failure modes could include overtopping, catastrophic failure of a weak segment, and/or levee failure related to the BNSF bridge constriction.

A Corps-defined 100-year flood event with a theoretical regulated peak flow of nearly 193,000 cfs would flood most of Burlington, with significant flood damage likely occurring to 80% or more of the buildings and structures located in the City. Under such a scenario, nearly the entire City would need to be evacuated. State and Federal help would be required for the evacuation as well as for the cleanup operation, which would be long and difficult. All of the communities throughout the Skagit Valley would be severely impacted. It would likely take many days for the flood water to recede and be pumped out of the City, after which mud, and then dust, would cover most of the City. Flood water would pick up chemicals from garages, kitchens, industrial areas, and failed septic systems. After the water receded, health risks to returning residents could be significant from dust, mold, standing water, chemical spills, and dead animals. Disposing of ruined property, cars, appliances, building materials would be a significant logistical challenge.

Separate from the flood risk, there are administrative ramifications of taking no action. If no action is taken to enlarge and strengthen the existing levee system, certification that the levee system can withstand a 100-year flood event will not be possible, and FEMA will not accredit the levee system. Therefore, new, higher Base Flood Elevations will remain in place indefinitely, negatively impacting property values, development opportunities, and the City's tax base. A reduced tax base will cause marginal tax rates to increase in order to maintain the level of government services provided to the community.

[14] PIE's calculated peak flow.

4. AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS, AND MITIGATION MEASURES

Proposed Action Impacts	Programmatic Actions	No Action	Project Actions		
			Enlarge Northeastern Levee	Construct setback levee in 3 Bridge Corridor	Restoration of Gages Slough
Does it meet applicant's objective?	Yes	No	Yes	Yes	Yes
Mitigate Flood Hazard	Yes	No	Yes	Yes	Yes
Viable future community	Yes	No	Yes	Yes	Yes

4.1. Demonstration of Endangered Species Act (ESA) and National Environmental Policy Act (NEPA) Compliance

In September, 2008, the Northwest Region of the National Marine Fisheries Service published a final Biological Opinion, pursuant to a judicial order, regarding the effects of elements of the National Flood Insurance Program throughout the Puget Sound region. A series of Reasonable and Prudent Alternatives (RPAs) were included in the Biological Opinion.

Subsequently, FEMA has developed a model ordinance to provide guidance to local jurisdictions such as Burlington and Dike District #12 in implementing the RPAs. The FEMA model ordinance proposed to meet the RPAs has a definition of Protected Area that includes the Floodway, the Riparian Habitat Zone and the Channel Migration Zone/Area. The area in which the levees are located is classified as a Protected Area. Because no levee work will be undertaken on the waterward side of the levees, No Effect to listed species will occur to the Protected Area with the proposed action.

The "Floodway" in Burlington and adjacent to the City, in accordance with the 1984 flood insurance study, is specifically limited to the area between the levees and extending landward from the toe a distance of 300 feet in the City and 500 feet in the County. Gages Slough is not included in the Protected Area definition.

With the existing riverfront currently protected by a levee system, no changes are proposed to the Essential Fish Habitat, the Riparian Area, or the Floodway. There are two existing forested riparian habitat zones in locations where the existing levees are set back from the riverfront, a total of 1.29 miles out of a total of 4.6 miles of levee, or 28%. The remainder of the levees that are along the river frontage consist of mowed levee vegetation that is required to be maintained under Corps of Engineers levee vegetation maintenance standards, in order to maintain eligibility for emergency repairs under PL 84-99. Dike District #12 relies on this program to maintain its levees' structural integrity and to qualify for Corps of Engineers assistance during and after flood events.

The FEMA guidance states that a community may consider the area landward of publicly maintained structures, such as levees and revetments, as disconnected from the channel migration zone. However, the NMFS-FEMA Biological Opinion is not bound by Shoreline Master Program guidelines. NOAA Fisheries used the DNR Forest Practices definition for channel migration area. Under that definition, when a structure has an opening (flood gate, culvert etc) that allow fish to get behind the structure then the area landward of the structure would be within the connected channel migration area. Gages Slough does not have an opening that would allow fish to get into the slough. Therefore, in either case, the Burlington project will not affect the existing disconnected channel migration area.

Burlington and Dike District #12's proposal to achieve levee certification and subsequent FEMA accreditation without any changes on the river side of the existing levees is therefore expected to gain a "No Effect" on listed species or habitat. For the levee setback area on the western end of the project, a Documented Categorical Exclusion is in the final stages of approval.

Burlington has a Floodplain Management planning program in place for citywide mitigation of floodplain impacts of the existing urban area, including but not limited to the following components:

- Community Rating System program
- NPDES II – Comprehensive Stormwater Plan with Water Quality Monitoring
- Connected Open Space Plan
- Urban Wildlife Habitat Plan
- Gages Slough Management Plan
- Comprehensive Land Use Plan
- Skagit County Natural Hazard Mitigation

5. COMMENTS ON DRAFT ENVIRONMENTAL IMPACT STATEMENT AND RESPONSES

The comments are separated into categories and a response follows each area of concern.

5.1. Urban Growth Area Issues

a. Issue: School site purchased by Burlington Edison School District at the corner of Peterson Road and Pulver Road, with proposal to swap for farmland located in the northeast corner of the Urban Growth Area.

Comments:

Robert Aptor and Jerry Burr:

- Opposes removal of land at NE corner from UGA because of loss of value.
- School site on Peacock Lane could buy the land needed for a cheaper, larger site now with John Ellis property in foreclosure.
- Site is best for residential development
- No swap of land should be allowed.
- Land has not been farmed lately and it used to be in cow corn.
- School District does not support it.

Skagitonians to Preserve Farmland:

- No to including the school site and/or a land swap; land is situated differently and soils and conditions are different.
- Many County policies are cited and no action is recommended on any Urban Growth Area issues until they are met. (No mention of sewer to Raspberry Ridge).

Bob and Kathi Williams:

- Oppose the proposed school district site and the land swap.
- Any encroachment into farmland west of Burlington will result in the demise of the agricultural natural area from the highway west to the bay.
- Do not ignore the desires of the community and feedback from citizen groups that were solicited by the City to study this issue.

Jim Anderson spoke in opposition to adding the school site at the public hearing.

Skagit County:

- Incorporation of new AgNRL land into the City is subject to an independent process under GMA and county code.
- No mechanism is proposed that would enforceably constrain the City's continued expansion.
- An Interlocal Agreement is the appropriate tool for this.
- The School District site is a case in point on overvaluing land next to UGA's hoping for future annexation.

Larry Kunzler:

- Essential public facilities include schools and they should not be in the floodplain.
- Do not add the school site.

Response to comments:

The School District proposal to modify the Urban Growth Area to create a new school site north of Peterson Road at Pulver Road will be processed by the City in accordance with the process identified in the Countywide Planning Policies. The process will include working with BESD on its capital facilities plan and circulation of a limited scope supplemental EIS. Formal submittal to Skagit County would be planned for 2011 (See page 15).

The City made the proposal for a land exchange that would redesignate land at the northeast corner of Burlington from its current UGA designation, returning that land to AgNRL zoning, because of the current philosophy of "no net loss of farmland". While soil types may differ, no such distinctions are made in AgNRL zoning.

The school district purchased the site under the assumption that it would eventually be added to the Urban Growth Area. The acquisition of the site at a much higher value than would have been paid for farm land, without any contingency for adding the site to the Urban Growth Area, has generated many problems for the district. The City supports the school district and will work with the district and other interested parties if a decision is finally made to remove the site from the agricultural resource designation. If allowed to be added to the Urban Growth Area and annexed into the City, the City will ensure that there is a permanent urban separator constructed along the north edge of the site, that the outdoor play areas are also available for use by the neighborhood, and to minimize the impacts of the project on farmland. Purchase of development rights on abutting land is also proposed.

Should the site be added to the Urban Growth Area and annexed as a school/park site? The concerns raised by the neighbors are also valid. The City supports the concept of an Interlocal Agreement as the means for setting out the details, especially if the agricultural natural resource land is removed from the designation. This can happen if Skagit County and the concerned parties who support farmland preservation for the long term work out an agreement.

b. Issue: Add the Raspberry Ridge site to the Urban Growth Area and zone as Open Space to prevent further inappropriate high density development behind the levee; this would allow the connection to sanitary sewer and prevent potential contamination of the area in a flood event.

Comments:

Skagit County:

- Incorporation of new AgNRL land into the City is subject to an independent process under GMA and county code.
- No mechanism is proposed that would enforceably constrain the City's continued expansion.

- An Interlocal Agreement is the appropriate tool for this.

Larry Kunzler:

- Sewer service to Raspberry Ridge is just another excuse for expansion and intense density and details on sewers are needed along with costs and expansion potential.

Response to Comments:

Development of migrant farm-worker housing has taken a different course recently. Such housing is now being located next to urban areas, because it is very high density and requires urban services, including schools, library, and infrastructure. Since it is not legally feasible to extend sanitary sewer outside of an urban growth area, a greater portion of productive farm land is typically required to hold septic tanks and drain fields (thereby taking the farmland out of agricultural production). At the same time, the risk of environmental pollution from sewage when the water table is high or during a flooding event is increased.

Burlington believes that permanent farmworker housing, such as the two high-density developments adjacent to the City's east, and a third proposed on the City's west side, need to be located in an Urban Growth Area since they require urban services. Smaller, seasonal farmworker housing developments may be appropriate for rural areas and could function adequately with a septic system but these larger permanent housing projects should not be placed in rural areas.

Burlington's position is that the two phases of the Raspberry Ridge farmworker housing area should be added to the Urban Growth Area and zoned for Open Space to allow connection to sanitary sewer, but prevent further urbanization of this area that is directly behind the levees near a dangerous bend in the river. The alternative would be a finding by Skagit County that the septic system constitutes a health hazard and the site is authorized to connect to sanitary sewer.

The City of Burlington supports a long-term interlocal agreement with Skagit County to address the Urban Growth Area issues. The process for modification of Urban Growth Areas will require joint environmental review and a limited scope supplemental EIS may be prepared as the process continues, if Skagit County agrees to work with the City on the environmental process.

c. Issue: Urban Growth Area Modifications with a Long Term Interlocal Agreement

Comments:

Skagit County:

- No mechanism is proposed that would enforceably constrain the City's continued expansion.
- An Interlocal Agreement is the appropriate tool for this.

Response to Comments:

Now could be the time and the opportunity to resolve long standing UGA concerns. Both jurisdictions have an opportunity to work together with interested stakeholders and environmental interest groups to get safe and positive housing opportunities and urban services to farm workers that meet their needs for services, create a sense of community, and prevent pollution during a flood event.

The County comment letter discusses an Interlocal Agreement as an effective mechanism to stop urban development in the floodplain. At the same time the letter does not address the underlying issues of new high density farmworker housing, the need for urban services, and the recognized deficiencies in the county comprehensive plan. We note that even the comment letter received from the Skagitonians to Preserve Farmland was vague on the Raspberry Ridge issue --- the focus was on the school site.

d. Issue: Add one lot to the eastern edge of the Urban Growth Area along SR 20.

Comment:

Arika Anderson Daniels:

- Request to include a 2.5 acre site in the UGA and zone as commercial/industrial, its former classification prior to GMA. Site is along SR 20 east of Burlington and they want an RV parking and storage facility.

Response to Comment:

Because this site is located at the eastern edge of the Urban Growth Area, the odds of it ever being annexed are extremely low. Burlington has not been successful in adding any land to the Urban Growth Area since 1997, and this site extends the strip of commercial uses further to the east with little benefit to the City. The applicant is proposing a heavy commercial use for the site and if the site were annexed in the future, it would likely become a nonconforming use. Skagit County would zone the site as Urban Reserve Commercial-Industrial if it is included in the Urban Growth Area and the County agreed to the rezone. This is a relatively broad zoning designation and an example is the used car lot that replaced the nearby grocery store.

Perhaps the property owner should pursue a rezone to Rural Business rather than request inclusion in the Urban Growth Area. Adding any land to the Urban Growth Area in the floodplain is unlikely to occur.

5.2. Ecosystem Function/Habitat Restoration Issues

a. Issue: Animal crossing culverts should be placed at road crossings along Gages Slough that could be beneficial in a flood event.

Comment:

Rick Major:

- Include animal crossing culverts along Gages Slough that could be closed or left open depending on the flood situation.
- More culverts are needed; consider the animal portion of the equation when planning buffers.
- The beaver on Burlington Boulevard is winning and they too should have culvert crossings for the Boulevard.

Response to Comment:

The need to enlarge and replace the culverts along Gages Slough is included in the Gages Slough Management Plan, and this new idea is very worthy of consideration. As the writer points out, improving a wildlife habitat corridor should include making it easy to move along the corridor without getting hit by a car. This recommendation will be discussed with the Public Works Department. Implementation of the culvert replacement project has been slow, because it is generally tied to street improvement projects.

b. Issue: Climate change is an important issue for drainage in the Skagit River Delta area, as sea level is expected to rise.

Comment:

- Bob Helton suggested that climate change will raise sea level over one meter and make the exit headwater problem even worse.
- Annie Lohman is very concerned about the impacts of floodwaters on an already problematic drainage system that does not work well in the winter.

Response to Comment:

Climate change is an important consideration. Emerging research (Hamlet, et. al.) indicates future flood potential in the Skagit River Basin will increase over the next 30-80 years. However, there is no accepted methodology at this time to incorporate the uncertainty related to climate change. Burlington and Dike District #12 intend to take appropriate, incremental actions in the future as the impact of climate change on flood risk becomes clearer.

c. Issue: The use of Gages Slough for buffer restoration, water quality upgrade, and habitat improvements has some benefit for mitigation. The City and Dike District #12 should also consider other measures along the Skagit River Shoreline.

Comments:

Skagit System Cooperative:

- Riparian restoration in Gages Slough resulting in improved water quality and that *may* provide some benefit to fish but that would be far short of commensurate with the impact to fish of maintaining the Skagit River in its degraded state.

FEMA:

- Discussion of the effects of the proposal on the natural and beneficial functions of the floodplain (NMFS Biological Opinion). The primary environmental mitigation action presented is the restoration, maintenance and management of the Gages Slough habitat and wetland corridor, but without sufficient details on location and actions to be taken, the determination on the sufficiency of the mitigation cannot be made.

Response to Comment:

Gages Slough has been used as an unofficial garbage dump for many years, and it is only since 1994 that a planning process was established to clean up the Slough. The Gages Slough Management Plan was adopted in 1999 and restoration projects have begun in two locations to date. Water quality monitoring and tracking pollution at the source is an active local program today. Urbanization and contaminated stormwater runoff have been cited by the Puget Sound Partnership as a major contributor to the destruction of the good environmental health of Puget Sound, the loss of species diversity and ecosystem functions. The City believes the best contribution it can make is to clean up water quality, restore Gages Slough as a valuable functioning ecosystem that also provides stormwater management functions, as 80-90% of the City's stormwater ends up in Gages Slough.

Restoring riparian habitat on the riverward side of the levees is not part of the proposed action although it is part of the City's proposed Shoreline Master Program.

d. Issue: Levee maintenance degrades habitat; also consider setback levees with riparian buffer

Comments:

- Levee maintenance maintains the banks of the Skagit in a degraded state for fish habitat; if not maintained the levee would degrade and fish habitat would recover.
- SRSC recognizes the City's need to maintain the levee, but there needs to be mitigation to off-set the impact to fish of continually maintaining the Skagit River in state of degraded habitat. Proposal has potential to exacerbate maintenance problem.

Response to Comments:

Burlington is an existing developed urban area that has levees along the riverfront; there is no option but to maintain levees. Setback levees are in the planning stage for the three bridge corridor, but to convert the old levee into a riparian buffer will require new and extended bridges and an implemented regional plan for the downstream impacts of increased water flow through the corridor. Any removal of the levees in the bridge corridor, after new setback levees are constructed, would be a separate project and not a part of the proposed action.

There are two existing forested riparian habitat zones in locations where the existing levees are set back from the riverfront, a total of 1.29 miles out of a total of 4.6 miles of levee, or 28%. The remainder of the levees that are along the river frontage consist of mowed levee vegetation that is required to be maintained under the Corps of Engineers annual levee vegetation maintenance standards under PL 84-99. Dike District #12 relies on this program to maintain the levee's structural integrity and to qualify for Corps of Engineers assistance during and after flood events.

5.3. No Action Alternative

a. Issue: The No Action alternative is unacceptable. The results of not having the levees certified will be devastating to the economic health of the community.

Comments:

Joel Gordon and Molly Lawrence, Attorneys for Haggens, Inc.:

- Strong support for the program.
- No action alternative will bring commercial development and redevelopment to a standstill.
- Substantial improvements will require elevation of the entire building which may be economically and/or structurally unfeasible.
- In old historic Burlington, this could be up to 7 feet of fill.
- Mere grandfathering of flood insurance rates is inadequate to compensate for the loss.
- The devastating impacts of "No Action" need to be fully explained and elucidated in the FEIS.
- Work together to come up with a practical solution to FEMA's remapping that does not put the entire Burlington urban area in a regulatory dead zone for numerous years.

Response to Comments:

The methodology that FEMA uses to set the Base Flood Elevations takes the worst case of three modeling runs, assuming no levee on the right bank, then no levee on the left bank, and then no levees at all. If a levee is accredited through FEMA's Letter of Map Revision (LOMR) process, then the levee can be included in the topographic features of the hydraulic modeling program.

No action will result in mandatory adoption of permanent higher Base Flood Elevations that may show more than six feet of increase in Base Flood Elevations above current levels in some

locations in Burlington. This will impact the potential for future development of vacant and underutilized land in Burlington, and may preclude the redevelopment of historic downtown Burlington with its 30-foot wide lots. Any substantial renovation of commercial, industrial or residential buildings will require elevation of the entire structure to the new Base Flood Elevation. This will discourage updating of existing buildings. Commercial buildings have a short life expectancy and must be renovated routinely.

Dike District #12's existing levees provide reasonably reliable protection from flood events with a peak flow of up to 150,000 cubic feet per second (cfs). However, depending on the length of time the river remains at this flow, segments of the levee could be susceptible to failure. If a section of Dike District #12's levee failed, parts of the City could be flooded within minutes, and much of the City could be flooded within hours.

The current 100-year regulated peak flow at the Mount Vernon gage site (just downstream of the Riverside Bridge) is 162,200 cfs (PIE, 2008); the Corps of Engineers puts the regulated peak flow at 192,900 cfs. Either of these peak flow numbers would put Dike District #12's levees at risk. Possible failure modes could include overtopping, catastrophic failure of a weak segment, and/or levee failure related to the BNSF bridge constriction.

A Corps-defined 100-year flood event with a theoretical regulated peak flow of nearly 193,000 cfs would flood most of Burlington, with significant flood damage likely occurring to 80% or more of the buildings and structures located in the City. Under such a scenario, nearly the entire City would need to be evacuated. State and Federal help would be required for the evacuation as well as for the cleanup operation, which would be long and difficult. All of the communities throughout the Skagit Valley would be severely impacted. It would likely take many days for the flood water to recede and be pumped out of the City, after which mud and then dust would cover most of the City. Flood water would pick up chemicals from garages, kitchens, industrial areas, and failed septic systems. After the water receded, health risks to returning residents could be significant from dust, mold, standing water, chemical spills, and dead animals. Disposing of ruined property, cars, appliances, building materials would be a significant logistical challenge.

Separate from the flood risk, there are administrative ramifications of taking no action. If no action is taken to enlarge and strengthen the existing levee system, certification that the levee system can withstand a 100-year flood event will not be possible, and FEMA will not accredit the levee system. Therefore, new, higher Base Flood Elevations will remain in place indefinitely, negatively impacting property values, development opportunities, and the City's tax base. A reduced tax base will cause marginal tax rates to increase in order to maintain the level of government services provided to the community. Flood modeling completed to date indicates that the Proposed Action for a certified levee segment may be able to maintain Base Flood Elevations that are about the same as the existing condition if the levees are certified/accredited.

Finally, No Action will generate increased flood insurance premiums for the families and businesses working and living in the community. While the existing buildings will be "grandfathered in" according to FEMA's regulations; as a practical matter, we have seen Burlington citizens already impacted with much higher rates for existing conditions when mortgage lenders get involved at the time of sale or refinancing. Crawl spaces are often reclassified as basements, and if insurance carriers are changed, the policy is no longer subject to

the low original rates. Rerating of flood insurance policies has become commonplace, and there are no assurances of "grandfathering" now or in the future.

b. Issue: The No Action and other alternatives should be further studied. Non-structural alternatives should be considered, along with setback levees that include areas with fish habitat and riparian buffer restoration on the river side of the setback levees.

Comments:

Department of Ecology:

- Setback levee design and location; will there be benches with habitat restoration to meet the NMFS Biological Opinion and will other areas be set back or just the three-bridge corridor

Skagit System Cooperative:

- No action analysis limited to it being harder to develop and induce economic hardship; need to analyze the hydrology and where flood waters will route under no action alternative, and do environmental analysis.
- No analysis of alternative such as set back levees with riparian restoration.
- Greater analysis of No Action Alternative and analyze additional alternatives (no list presented).

FEMA:

- Reasonable and Prudent Alternative #5D recommends setback levees to protect natural and beneficial functions of floodplains, and to provide for fish habitat and LWD; following the RPA criteria can help with compliance with ESA.
- Further investigation and evaluation on non-structural solutions to thoroughly rule out those alternatives AND if federal funding is used, Executive Order 11988 requires rigorous review and documentation to identify practicable alternatives that avoid the floodplain.
- Proposed action and "no action" alternative discuss potential economic effects, but do not assess the risk of flooding in their assessment and discussions; construction of levee does not constitute a "no risk" scenario.

Larry Kunzler:

- Costs of building elevation should be detailed.

Response to Comments:

No Action for Burlington means that the Dike District #12 will continue to work to maintain the structural integrity of the levees. The levees would not be required to be increased in height to have the freeboard specified for levee certification. The Base Flood Elevations will increase throughout the City, with the heights based on the final FIRM maps, following publication and resolution of any technical appeals.

The cost of building elevations will generally consist of the cost of adding a first floor that is used for parking and flood-proofed elevators will be required for upper story access in buildings other than single family dwellings that are over 3,000 square feet. Residential additions that would constitute a substantial improvement will either require elevating the entire existing building at a prohibitive cost, or require that the addition be elevated and designed to meet the building code standards for a separate structure.

Work will continue on stormwater system management and improvement, including Gages Slough restoration and water quality improvement projects.

The proposal to look at setback levees with fish habitat and large woody debris installations is not realistic for this area of the Skagit River. The existing forested riparian buffer area that extends from the Wastewater Treatment Plant east along Johnson's Bar may be able to be improved for fish habitat, but the issue of maintaining the current river flows from the Railroad Bridge past Mount Vernon is critical to keep sediment deposits to a minimum.
The City and Dike District #12 have not specifically modeled the hydraulic impacts of a 100-year flood event on the existing levee system. However, the Corps of Engineers has completed modeling which is relevant to this issue and available for examination. Additionally, the City and Dike District #12 have provided modeling that assumed the levee would remain in place, showing the water routing under two hydrological scenarios. These modeling outputs have been included in this EIS and the detailed modeling computer runs are available upon request. The visual output of the model runs is included in *Exhibit 2 - Maps of Model Results Using COE and PIE Hydrology for Base Flood Elevations in Burlington With and Without Accredited Levees*.

c. Issue: The GI Study should not be considered the "no action" alternative.

Comments:

Department of Ecology:

- Corps of Engineers General Investigation is the comprehensive regional approach to flood hazard reduction and has many measures that could have serious impacts on the proposed levee project.
- GI study is supposed to be done in 2010-2012 versus 2018 stated in the report.

Gary Jones:

- The GI study should not be identified as the "no action" alternative; it is a watershed flood plain flood hazard reduction plan rather than urban growth protection plan; timelines are speculative.

Larry Kunzler:

- The GI study is not no action; just frustrating.
- Dam storage merely lulls the public into complacency; the City should pay for dam storage and the report should state that large flood events will not be helped once the storage is full.
- Flood Control Zone Advisory Committee is moving slowly; Nookachamps storage should be dumped and extending levee protection to Sedro-Woolley should be studied.

- PIE hydrology will never be accepted.
- Provide specifics on the levee modification and what other flood control measures will be and the cumulative effects of those measures.
- Provide details on what will happen to levees in the rural area.

Skagit County:

- There is no mechanism for coordinating flood projects among various jurisdictions.
- The City should "continue its participation" on the Skagit County Flood Control Zone District Advisory Committee; county is "open to a forthright discussion" on holding a seat on the committee.
- Any plan to spill water on AgNRL land requires consideration of the drainage districts and landowners.

Response to Comments:

We concur the GI study should not be considered the "no action" alternative. The most recent unofficial estimate for completion of the GI study is 2015.

5.4. Upstream And Downstream Effects Of Levee Certification

a. Issue: Evaluate upstream and downstream impacts of levee certification

Comments:

FEMA:

- Evaluate upstream and downstream impacts; more holistic approach would be more appropriate for the Skagit River delta; Skagit County and Mount Vernon should be included in the planning and design of this project.
- Specifically identify downstream effects

Mike Anderson:

- Concern about building flood protection at the expense of the upstream property at 21241 Lafayette Road.
- Site is located so that the water flows over the RR tracks and grade, flows northwest and the house is high enough to be okay; house has been elevated.
- If flow is restrictive it might back up higher on the property in the area and cause more damage

Skagit System Cooperative:

- Upstream and downstream effects analyzed for all alternatives with specific details.
- Detail and analysis needed on the effects of 100-year levees; hydraulic analysis of the alternatives is needed; generalities stated of potential effect.
- Identify what areas would be appropriate for 100-year levees and other measures and analyze effects
- Flow modeling including water routing needed if over-topping levees are considered as alternatives

Gary Jones, Attorney for Dike and Drainage Districts:

- Any evaluation of a flood plain management plan must resolve questions such as whether the three-bridges will be modified to accommodate a 100-year flood and whether an alternative to passage of the flood through the Bridge Corridor can be done consistent with public safety, and environmental protection.
- All plans for managing flood water must slow the velocity and reduce the water surface elevation by providing corridors for flood waters to leave the flood plain by means other than the main stem of the river.
- A comprehensive plan should be developed starting at the salt water dikes and working upstream to reduce barriers to interior drainage and accommodate water, silt and debris generated by a flood event greater than the 100-year
- The cumulative effect of protecting MV and Burlington as allowed by the common enemy doctrine will have impacts on other entities which face a higher risk of levee failure if concurrent action is not taken to reduce the velocity and water surface elevation of a major flood.
- A path to salt water for flood water avoided in Burlington should be identified.
- The use of the most accurate hydrology and hydraulics is important to levee design and construction; recommend using at least one set of data to establish the effects of the levee for review purposes.

Department of Ecology:

- Provide specifics quantifying the increased flows downstream from levee certification.
- Show in quantifiable terms based on hydraulic analysis the upstream and downstream impacts.

Larry Kunzler:

- Levees are the worst form of flood control; an emergency outlet should be provided (at Avon Bend).
- Do not send water north at Sterling; overbank flow north and west is bad.

Skagit County:

- Skagit County is not really in cooperation with the City and Dike District #12 on this project.
- More complete analysis is needed of the 100-year peak volume discharge above which there would be no plausible scenario of levee improvements without detrimental impacts to upstream and downstream neighbors.
- What about Northwest Hydraulic Consultant's study?
- Decisions are premature without federal regulatory decisions on hydrology and BFE's.

Annie Lohman:

- Annie Lohman is very concerned about the impacts of floodwaters on an already problematic drainage system that does not work well in the winter.

Response to Comments:

See discussion on pages 11 - 12 addressing upstream and downstream impacts.

5.5. Impact Of Levee Upgrades On Water Side

a. Issue: Accommodating increased need for maintenance and handling the weight of the increased levee height

Comments:

The Skagit System Cooperative, via Stan Walsh:

- Analysis of what waterward work would be required so levee toe can support the additional levee height
- Cumulative effects analysis of how increasing levee height will affect the in-water levee maintenance scheduled.
- Raising levees in place may require more frequent river front maintenance with additional pressure on levee toe rock and river front levee face; may also require increasing waterward footprint of levee.

Response to Comments:

1) The Golder and Associates report (November 2009) indicated no waterward work on the levees was necessary. Levees will be enlarged from the back sides.

2) Cumulative effects analysis of how increasing levee height will affect the in-water levee maintenance schedule. The Golder report indicated damage could continue to be expected on the waterward side of the levees, however, the geotechnical opinion was that this damage could be expected to be minor, and covered under post-flood O&M work that could largely be handled through existing PL84-99 program requirements.

3) Raising levees in place may require more frequent river front maintenance with additional pressure on levee toe rock and river front levee face; may also require increasing waterward footprint of levee. Golder's report did not indicate additional riverfront maintenance would be a problem. Also, many segments of the levee are already set back significantly from the OHWM. No additional waterward levee footprints are anticipated, at least within several hundred feet of the current Ordinary High Water Mark.

5.6. Purpose And Need For NEPA; ESA Compliance Requirements, The Biological Opinion, And Three-Bridge Corridor Reports

a. Issue: There are other environmental laws in addition to the State Environmental Policy Act, including the National Environmental Policy Act, the Endangered Species Act with the current Biological Opinion that need to be addressed.

Comments:

Skagit System Cooperative:

- Address the Biological Opinion

Larry Kunzler:

- What is environmental justice (eliminating low income housing)
- What is the status of NEPA review for the three-bridge corridor project.

FEMA:

- Since the NMFS issued the Biological Opinion on September 22, 2008, FEMA advises all communities in NFIP that before any permit is issued an application for a CLOMR should be submitted, initiating FEMA's review of the project under ESA Section 7; of course the community has the option to pursue a Section 10 ESA permit with NMFS.

Response to Comments:

See page 6 for updated approach to the purpose and need statement. See page 22 for further discussion of NEPA and ESA compliance. The biological assessment and discipline reports have been prepared for the Three-Bridge Corridor setback levee portion of this project and are being reviewed for approved by the Federal Highway Administration in consultation with other agencies, with the exception of additional studies being requested on historic areas on the Mount Vernon side of the river.

One of the discipline reports is called Environmental Justice, and that has to do with the need to relocate low income residents. In this area, the Whitmarsh Road RV Park is a low income residential facility and the proposal is to relocate the Park to a new site directly behind the setback levees.

5.7. Regulatory Floodway

a. Issue: Should there be changes to the current handling of the floodway in the Skagit River delta area?

Comments:

Larry Kunzler:

- Conventional floodways should be further analyzed and the history in the delta area accurately presented.

- The City should provide documentation that current development has not already raised the floodwaters more than one foot at any point in the community, which is in the code.
- How high will the levees be for certification and how much water will Gages Slough hold.
- Regulatory floodway must be based on reality in terms of where the waters flow.

FEMA:

- Floodway not defined for Skagit River delta communities, thus the maximum one foot rise over the community is the standard to be met.

Response to Comments:

See discussion on pages 12-13 regarding regulatory floodway and the capacity of Gages Slough. No changes are proposed to current floodway status. The question of whether the maximum one foot rise in flood elevations has been met is raised. Based on the record of cumulative fill from 1985 to the present to date, Burlington is well below the limit, with approximately 0.37 feet of rise.

5.8. Flood Insurance

a. Issue: Will flood insurance rates go up, even for "grandfathered" structures?

Comments:

Department of Ecology:

- Flood Insurance rates will NOT increase because existing buildings are "grandfathered".

FEMA:

- Impacts to local property owners for flood insurance requirements will occur; difficult to estimate what those specific impacts will be without knowledge of the proposed location of the levees.
- Flood insurance premiums are based on maps in effect at time of construction or substantial improvement; DEIS states that "No action will generate extremely high flood insurance premiums…"

Response to Comments:

There are 1,339 flood insurance policies in effect in the City of Burlington. From Burlington's perspective, despite FEMA statements to the contrary, flood insurance customers are being rerated for crawlspace height and vents with no consideration for continuous coverage or whether the structure was constructed prior to issuance of the first Flood Rate Insurance Map in 1985. The increases in Base Flood Elevations will further exacerbate the extremely high flood insurance rates as more and more homes and businesses become nonconforming with the new Flood Insurance Rate Maps. Burlington has the highest number of flood insurance policies in the region. There are no repetitive loss properties in the City of Burlington.

5.9. Other Miscellaneous Comments

Responses follow each comment in this section and are italicized.

A number of comments have been addressed in this document since comment on the draft, by further defining the proposed action, such as the use of the term "appropriate location" which has been eliminated with clearly laying out the proposed action.

Larry Kunzler:

- The Dike District #12 is finally admitting they have been working on the levees, which is illegal because improvements are not maintenance. *The Dike District #12 is responsible for maintaining the structural integrity of the levee system and that requires plenty of work, ranging from increasing backslope to improve drainage and prevent boils, installing keyways to protect levee integrity, widen levee tops for increased stability.*

- The presence of volcanic lahar should be identified. *Volcanic lahar from Glacier Peak is found throughout the region, as well as along the levee system. There is a significant body of research available on this topic (Beget, Dragovich, et. al.).*

- Code enforcement is poor; examples include placing rocks along the Whitmarsh levee and a house being constructed in Skagit County. *The first example is rock that was replaced in its former location after the Old 99 Bridge was replaced and the original levee was removed. This is a critical section of bridge protection. The second example is a very large house that has been constructed in the Gages Slough corridor with a minimal protected buffer and this project is located in Skagit County, outside the City Limits. The County has stated that the permit meets County standards.*

- Clarify the events of the mid-1980's regarding assumptions about levee failure. *The July 3, 1984 Flood Insurance Study simply states that the Flood Insurance Rate Map "is developed in accordance with the latest flood insurance map preparation guidelines published by the Federal Emergency Management Agency."*

Skagit System Cooperative:

- Issue a supplemental EIS with greater level of analysis, including a "comprehensive hydraulic analysis with all 3 models" (note hydrology is "how much water gets here" versus hydraulics "the behavior of water" and it is the hydrology that is in question); analysis of upstream and downstream effects and effects on other proposed flood damage reduction measures. *The comparative analysis is completed and shown in Exhibits 1 and 2.*
- Competing flow models are discussed and either all should be analyzed or the City should wait for FEMA process to be completed. *They have been analyzed. See pages 7-10.*
- Analysis should be done in the context of comprehensive basin wide flood damage reduction studies AND directly analyze how City flood control efforts need to be coupled with other actions under consideration to avoid impacts. *As stated in this document, this is the minimum necessary for public safety and designed to minimize upstream and*

downstream effects (page 11); other measures will need to be considered as part of the regional plan.

Department of Ecology:

- Clearly identify levee segments to be upgraded ("appropriate locations"). *This has been specifically spelled out in this document. See Exhibit 4.*
- Provide detailed technical information on areas of Burlington that will be removed from the 100-year floodplain. *See Exhibit 2.*
- Provide most accurate hydrology and hydraulics modeling information so reviewers will be able to assess the impacts based on at least one set of hydrology figures. *See Exhibits 1 and 2.*
- Provide greater specificity on the two sets of hydrology (more than the table) to assess impacts *See discussion on pages 7- 10.*
- Status quo is the goal for Base Flood Elevations; specifics are needed on what parts of the City would be protected and what those Base Flood Elevations would be. *See Exhibit 2.*
- These comments do not include Shorelines or Water Quality Certification. *All work within 200 feet of the Skagit River shoreline is under a Shoreline Substantial Development Permit. If work is proposed in the water, a Water Quality Certification will be obtained as needed. Work in the water today is strictly limited to post-flood emergency riprap repairs.*

Gary Jones:

- The use of the most accurate hydrology and hydraulics is important to levee design and construction; recommend using at least one set of data to establish the effects of the levee for review purposes. *See Exhibits 1 and 2 and pages 7 - 10.*

6. REFERENCES

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Anchor QEA, LLC, Memorandum For Summary Field Work Performed To Assess The Existing Biological Conditions For The Skagit River Bridge Modification And Interstate Highway Protection Project. Prepared for Skagit County Public Works, September 2008.

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U.S. Geological Survey, Re-evaluation of the 1921 Peak Discharge at Skagit River near Concrete, Washington, Scientific Investigations Report 2007-5159, 2007.

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7. EXHIBITS

Exhibit 1 – Synopsis of Skagit River Hydrology Differences (November 2008)

Unregulated Peak Flow at the Dalles USGS Gage near Concrete:
Variation in opinions re: historic flood peaks and the 1932 recorded flood peak (cubic feet per second)

Consultant	Year				
	1897	1909	1917	1921	1932
Corps of Engineers	265,000	245,000	210,000	228,000	182,000
Northwest Hydraulic Consultants	220,000	205,000	185,000	195,000	182,000
Pacific International Engineering	181,200	179,000	158,700	169,700	165,000

100-Year Unregulated Peak Flow Estimates

Consultant	Location		
	Concrete	Sedro-Woolley	Mount Vernon
Corps of Engineers	278,000	272,220	237,500
Northwest Hydraulic Consultants	254,000	248,720	217,000
Pacific International Engineering	240,800	240,400	199,700

100-Year Regulated (includes effect of dam storage) Peak Flow Estimates

Consultant	Location		
	Concrete	Sedro-Woolley	Mount Vernon
Corps of Engineers	209,490	215,270	192,900*
Northwest Hydraulic Consultants	191,400	196,690	176,250*
Pacific International Engineering	184,400	184,700	162,200

*this flow is not possible at this location

500-Year Unregulated Peak Flow Estimates

Consultant	Location		
	Concrete	Sedro-Woolley	Mount Vernon
Corps of Engineers	373,000	371,670	324,270
Northwest Hydraulic Consultants	330,000	328,820	286,890
Pacific International Engineering	309,500	302,300	251,120

500-Year Regulated (includes effect of dam storage) Peak Flow Estimates

Consultant	Location		
	Concrete	Sedro-Woolley	Mount Vernon
Corps of Engineers	316,530	322,900	281,720
Northwest Hydraulic Consultants	268,080	274,180	239,210
Pacific International Engineering	229,400	231,700	195,700

FEMA 100-year Flood Hydrographs at Sedro Woolley

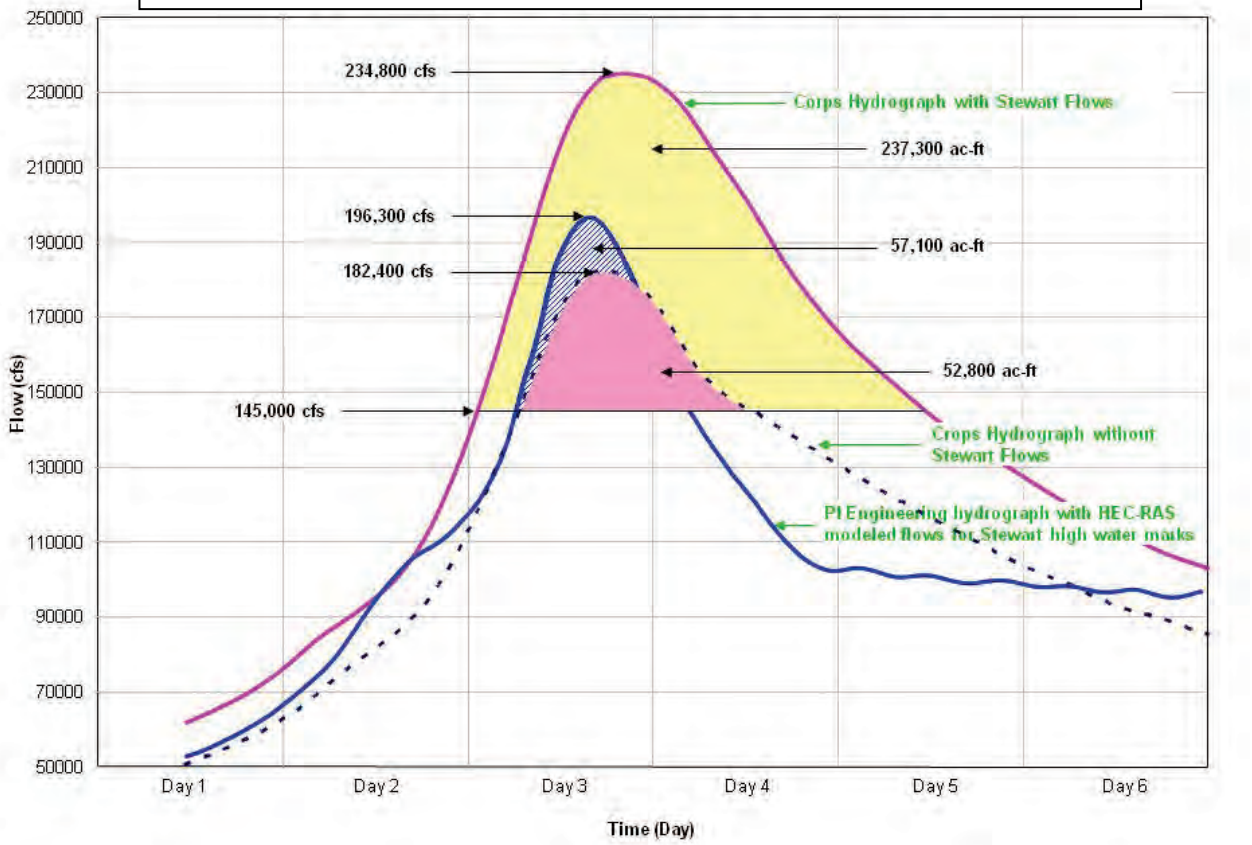
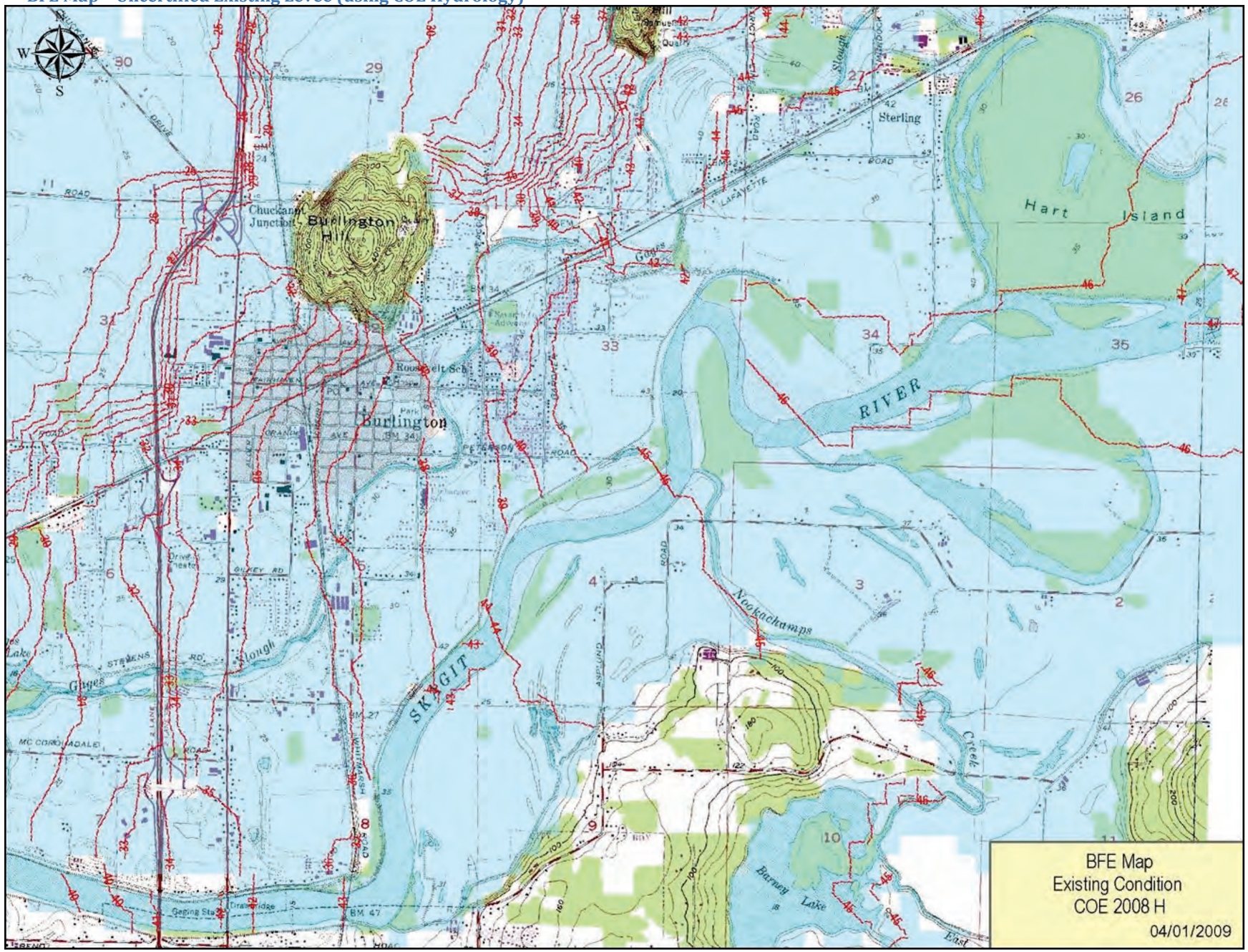
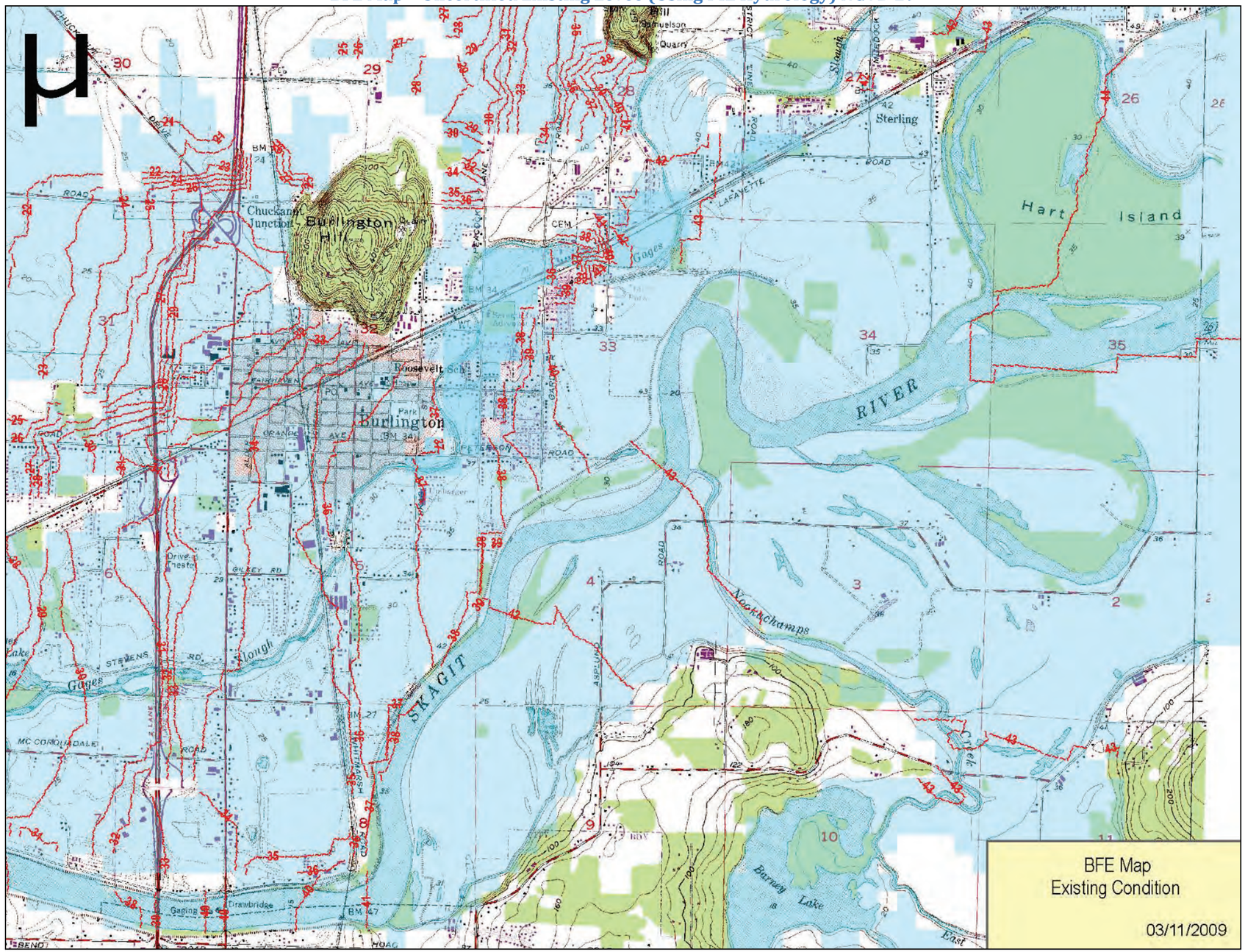


Exhibit 2 - Maps of Model Results Using COE and PIE Hydrology for Base Flood Elevations in Burlington With and Without Accredited Levees.

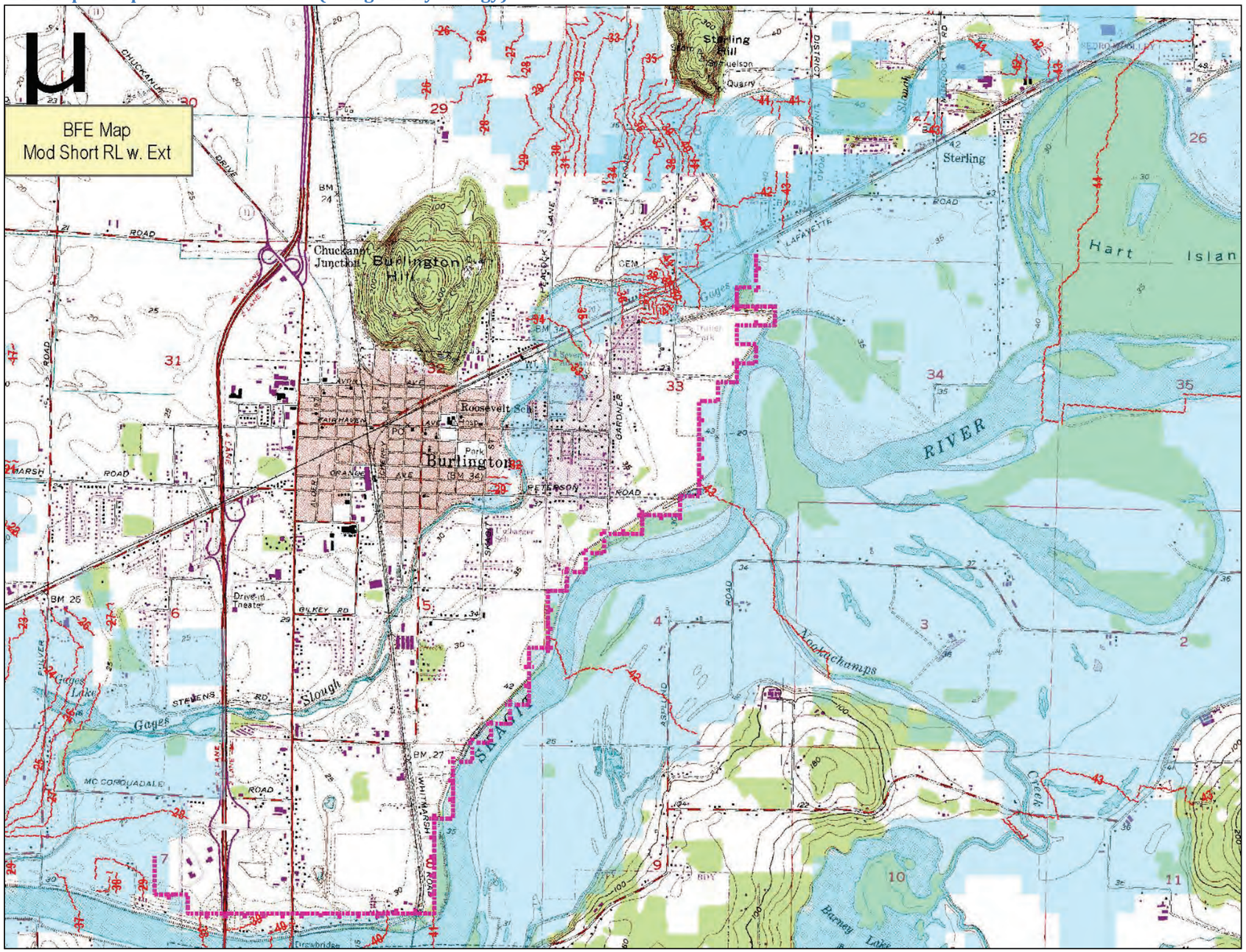
BFE Map – Uncertified Existing Levee (using COE Hydrology)



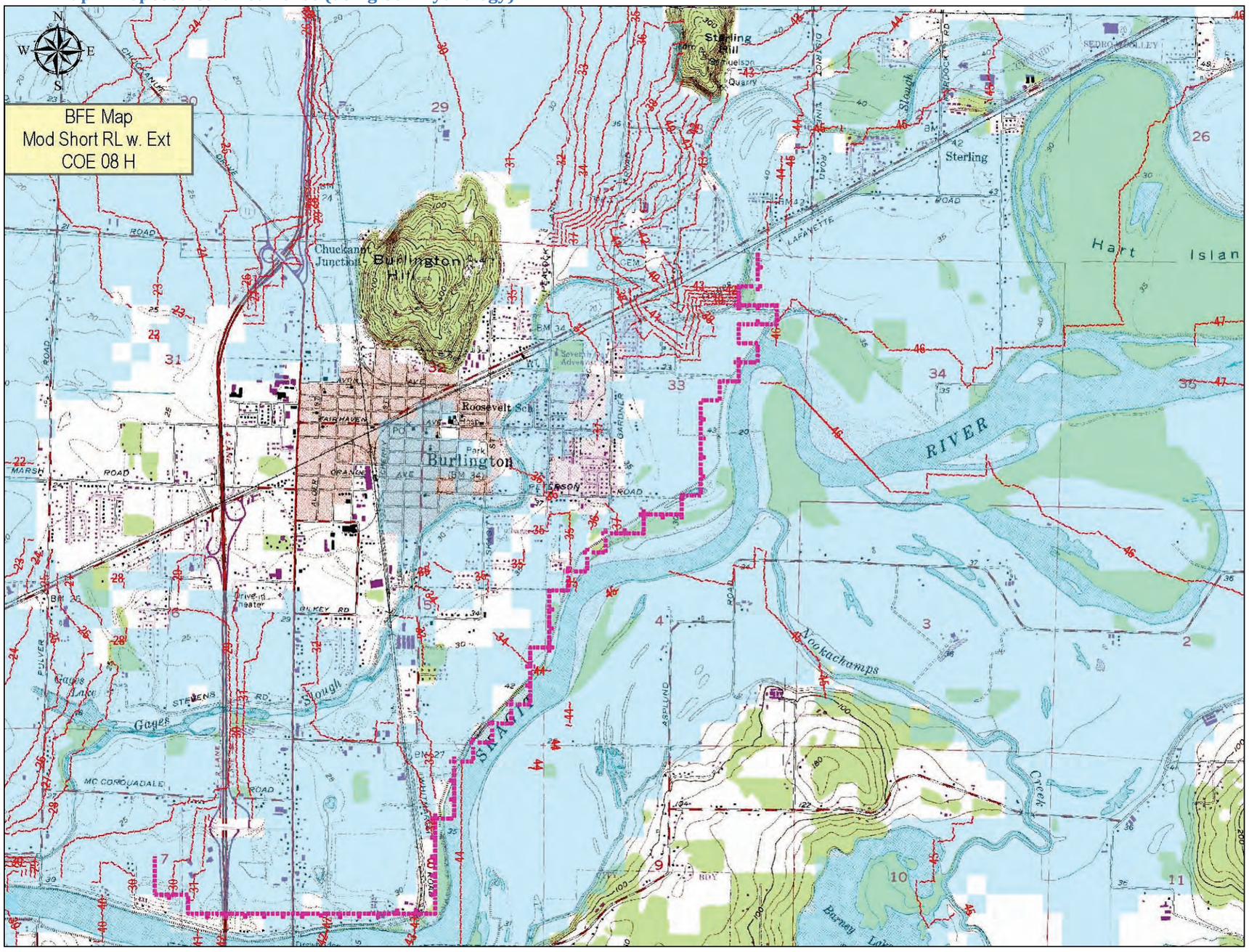
BFE Map – Uncertified Existing Levee (Using PIE Hydrology) NGVD 29



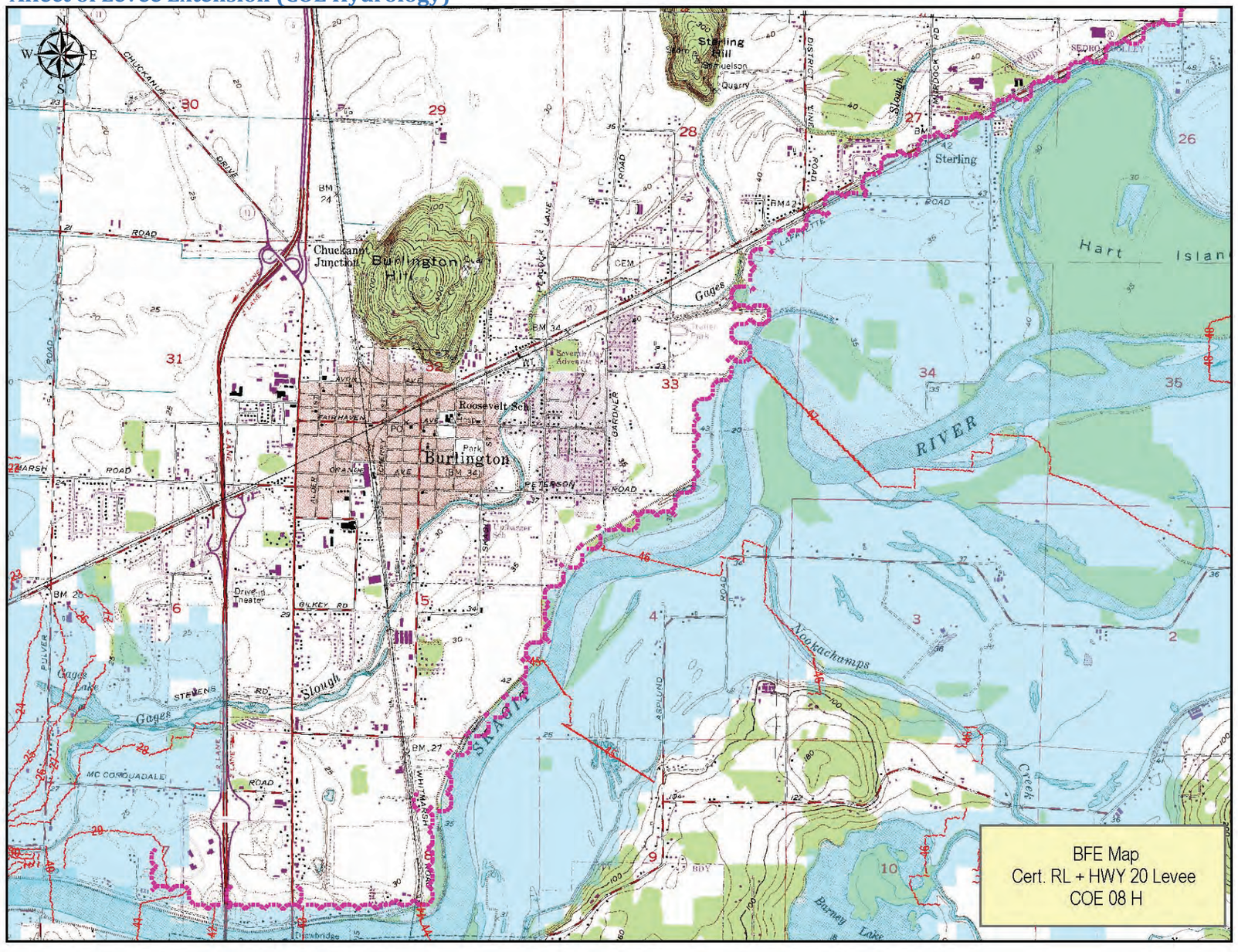
BFE Map – Proposed Certified Levee (Using PIE Hydrology)



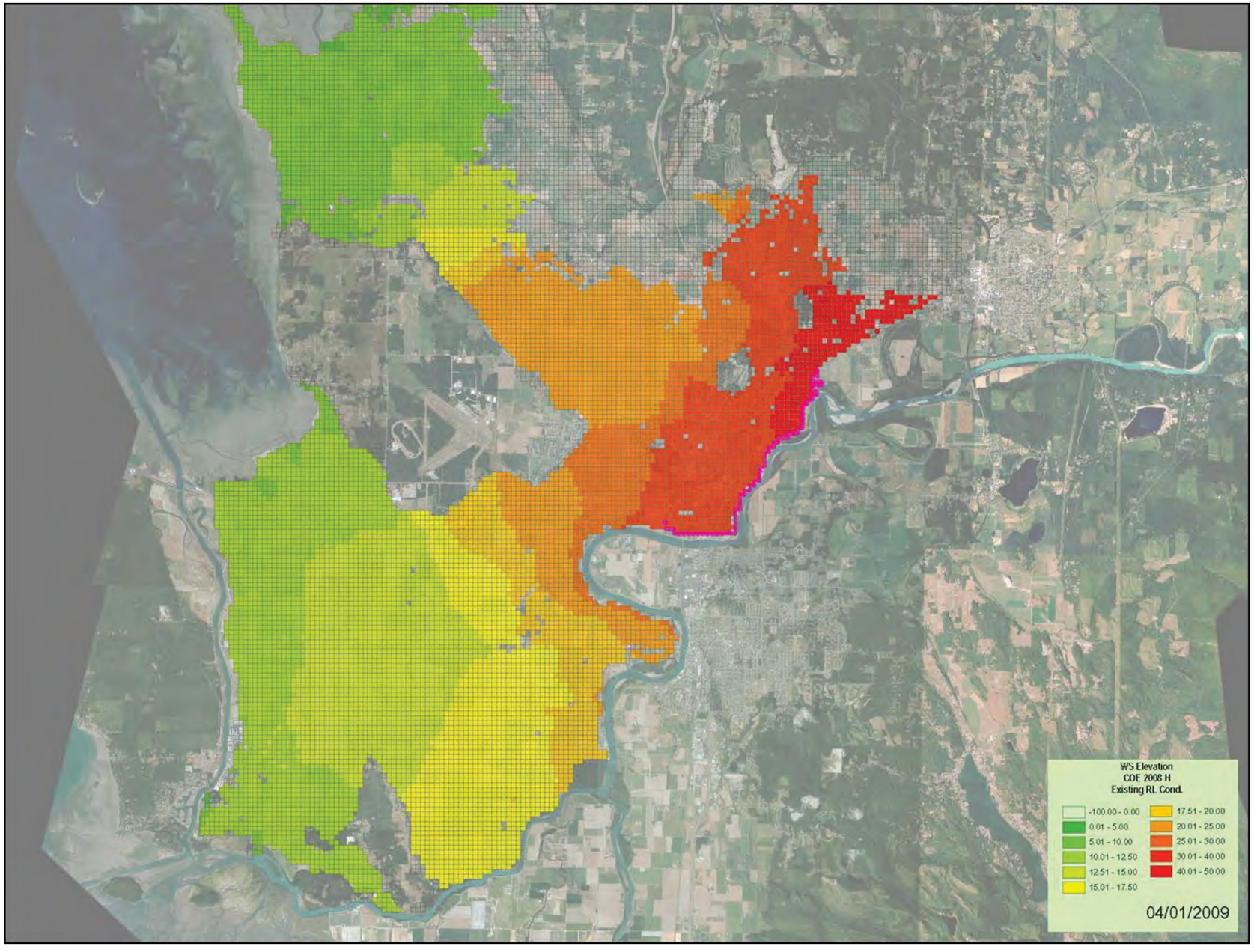
BFE Map – Proposed Certified Levee (using COE Hydrology)



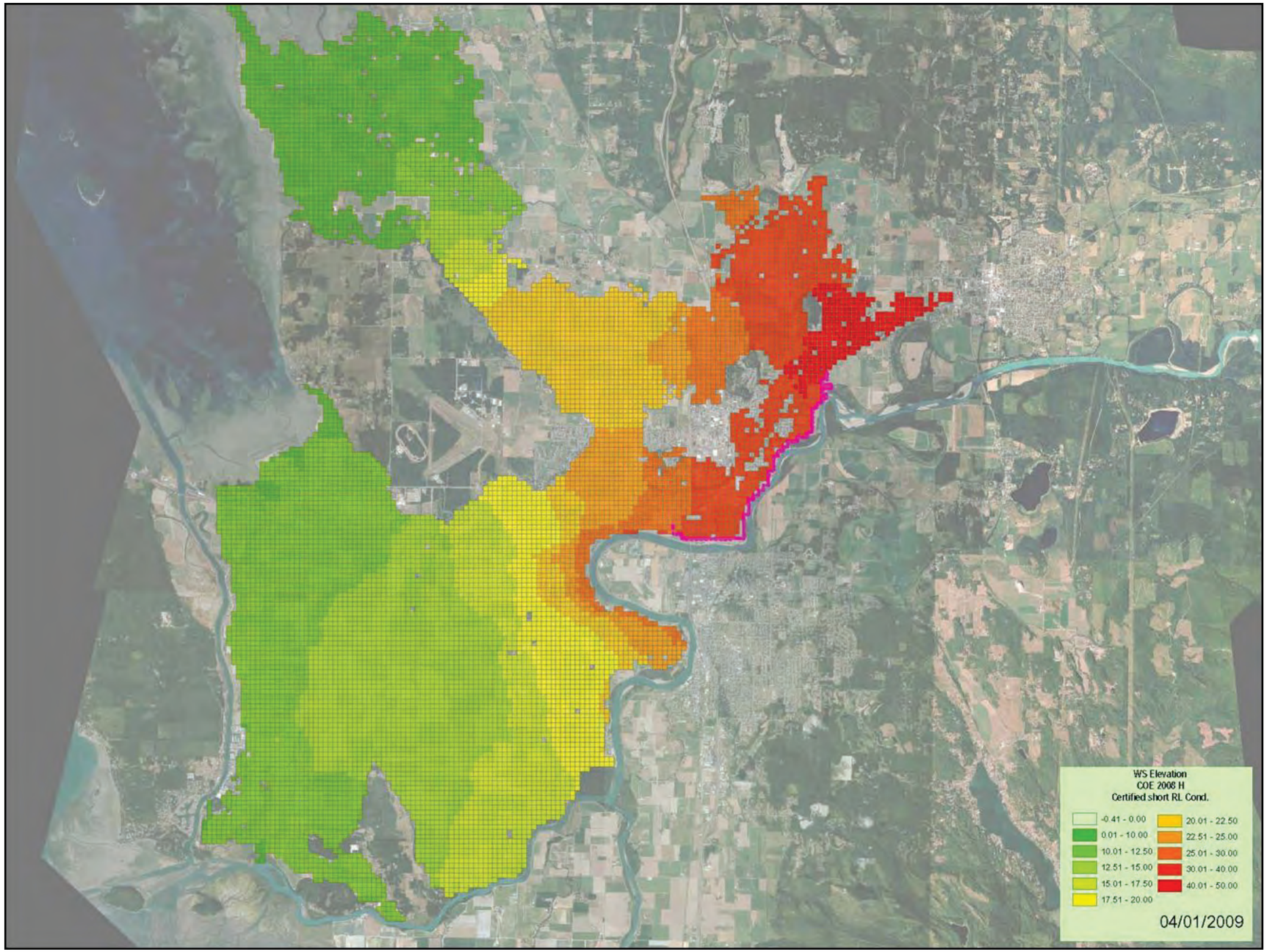
Affect of Levee Extension (COE Hydrology)



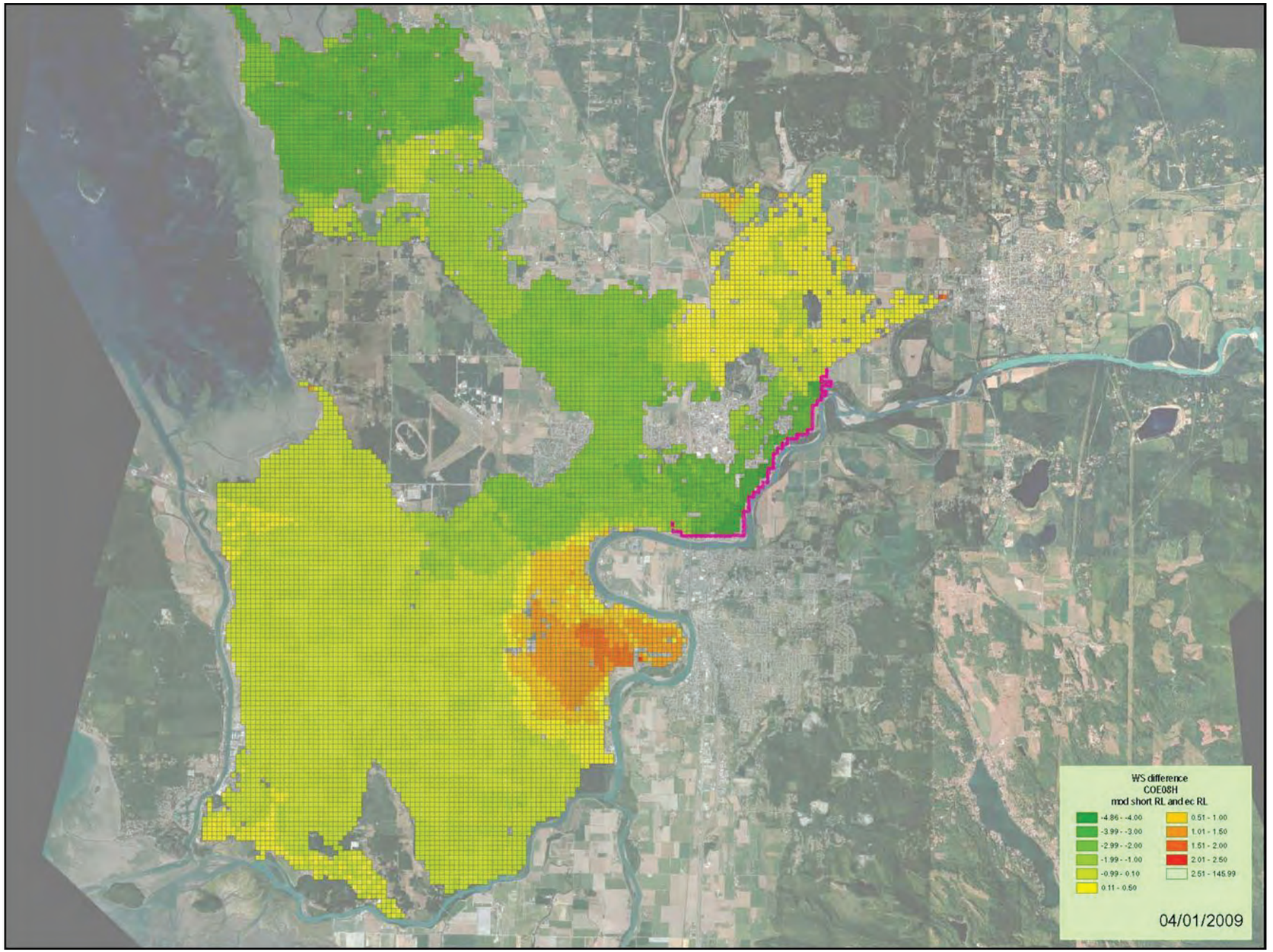
Right-bank Floodplain BFE Map – Uncertified Existing Levee (using COE Hydrology)



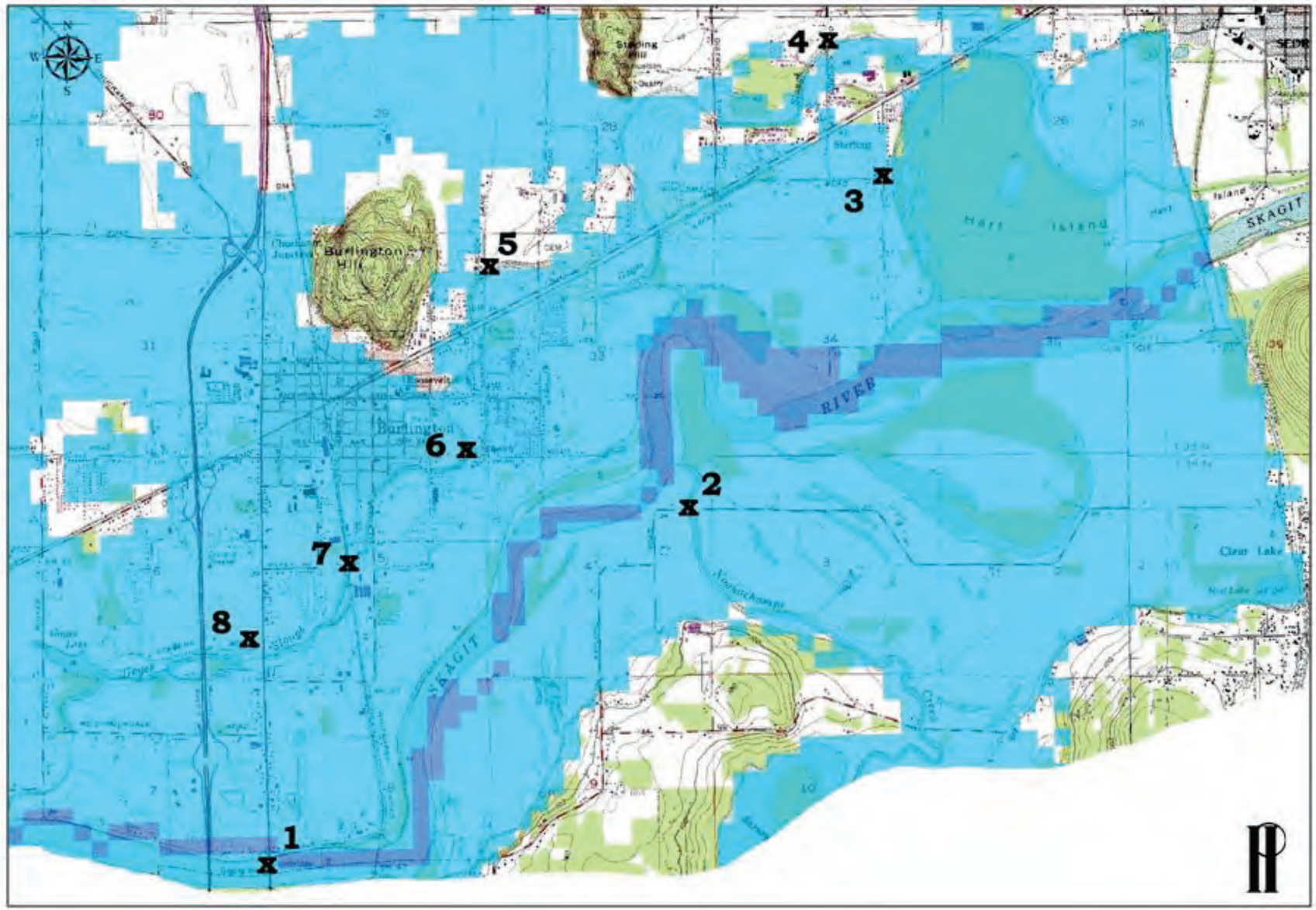
Right-bank Floodplain BFE Map – Proposed Certified Levee (using COE Hydrology)



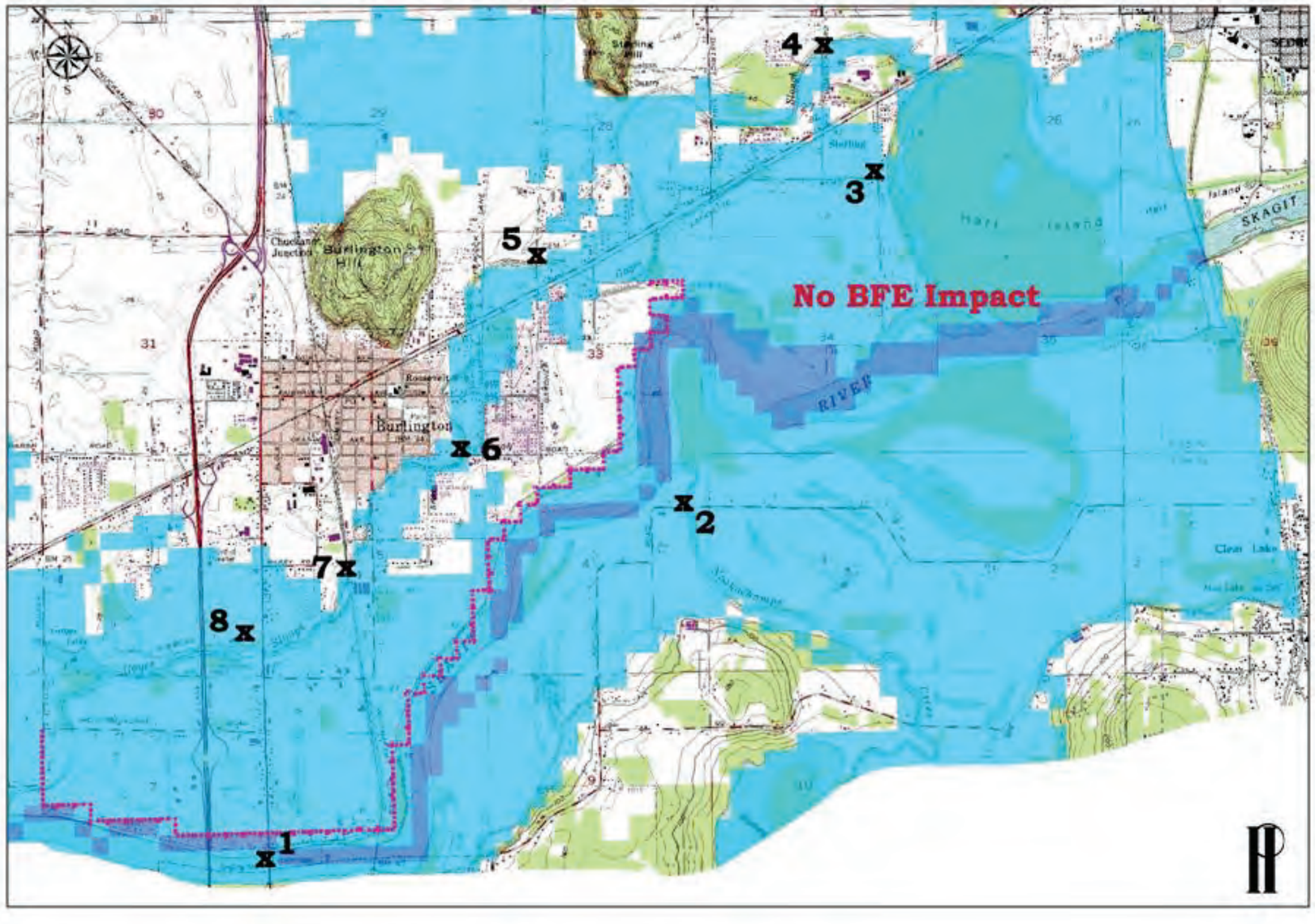
BFE Difference Between Uncertified Existing Levee and Proposed Certified Levee (using COE Hydrology)



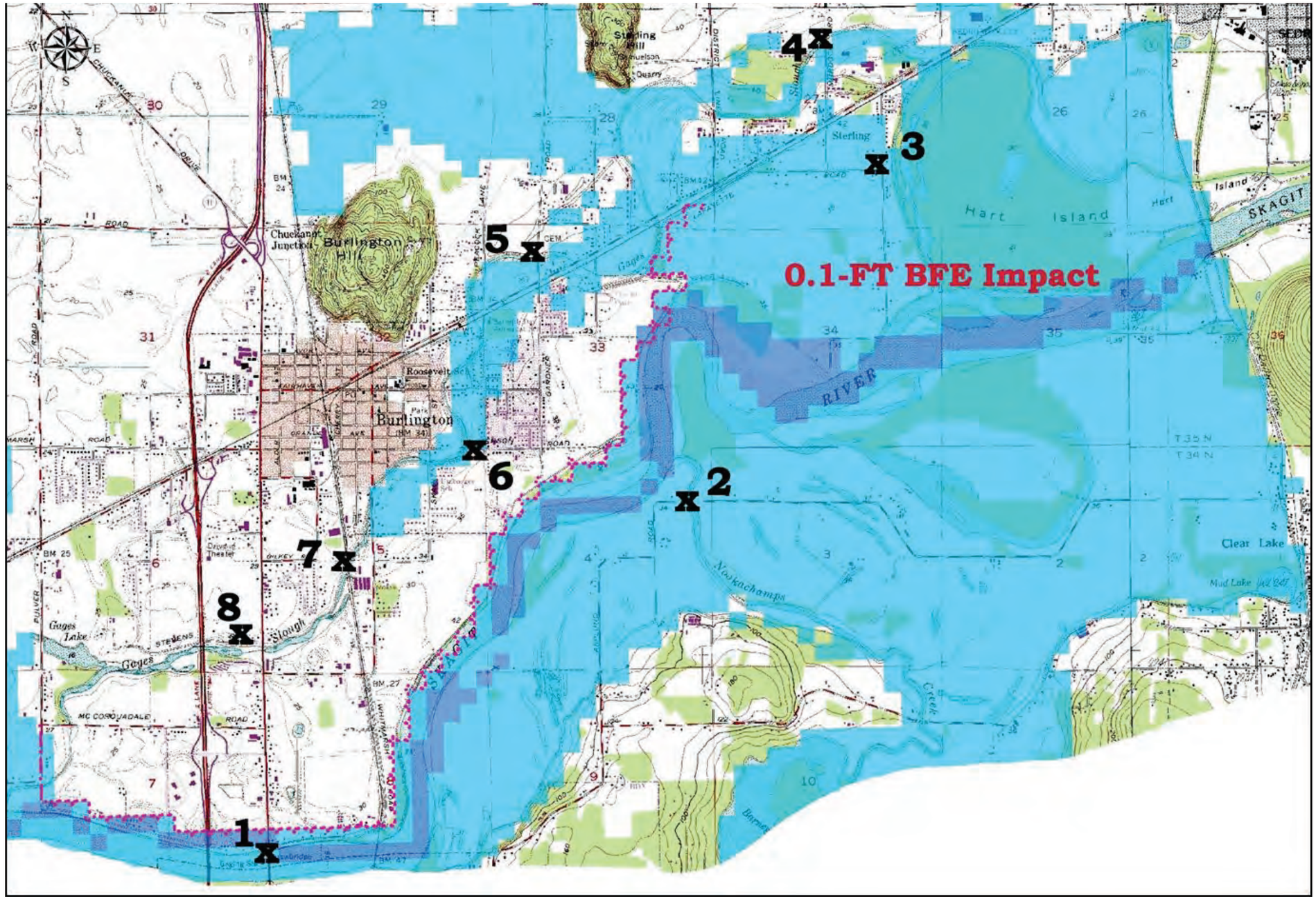
Uncertified Existing Levee: 100-year Flood Area in Burlington (PIE Hydrology)



Certified Levee Alternative 1: 100-year Flood Area in Burlington (PIE Hydrology)



Certified Levee Alternative 2: 100-year Flood Area in Burlington (PIE Hydrology)



Certified Levee Alternative 3: 100-year Flood Area in Burlington (PIE Hydrology)

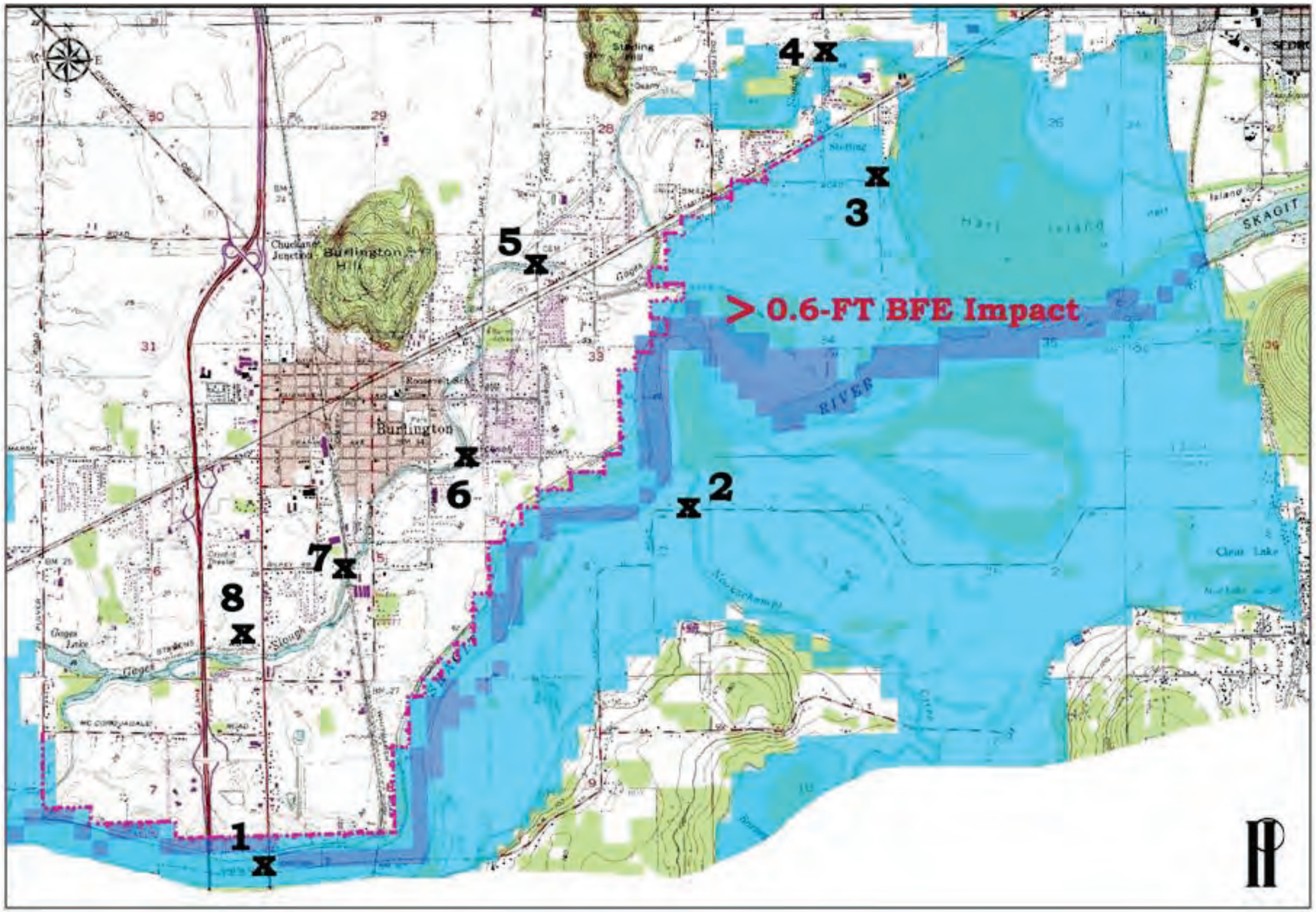


Exhibit 3 – Burlington Levee Project Exploration Plan

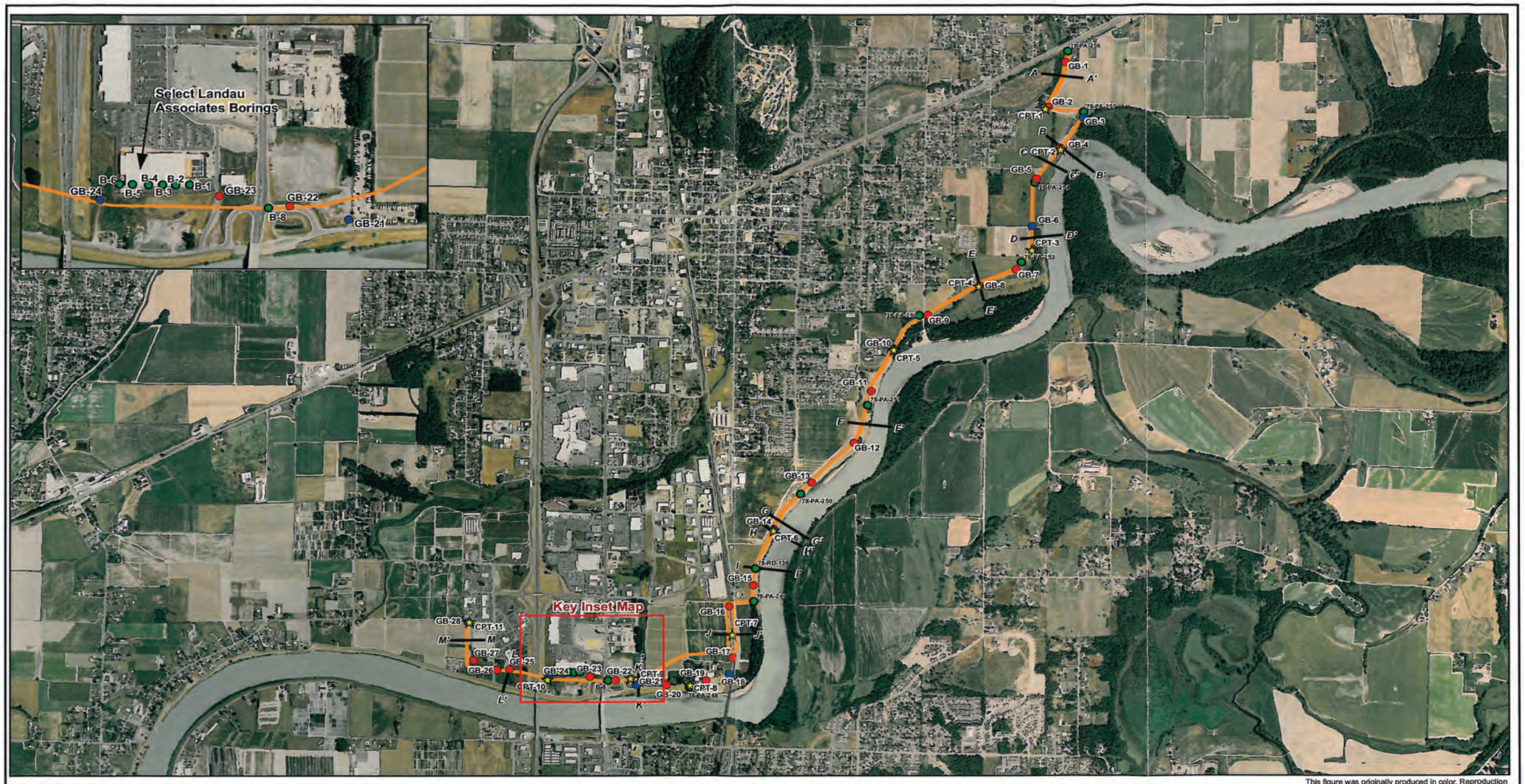


FIGURE 3
BURLINGTON LEVEE PROJECT
EXPLORATION PLAN
PIE/BURLINGTON LEVEES/WA

Exhibit 4 – Plans for Levee Improvement

DIKE 12 LEVEE CERTIFICATION

PHASE 1: NORTHWEST TERMINUS TO BNSF CROSS LEVEE

CITY OF BURLINGTON

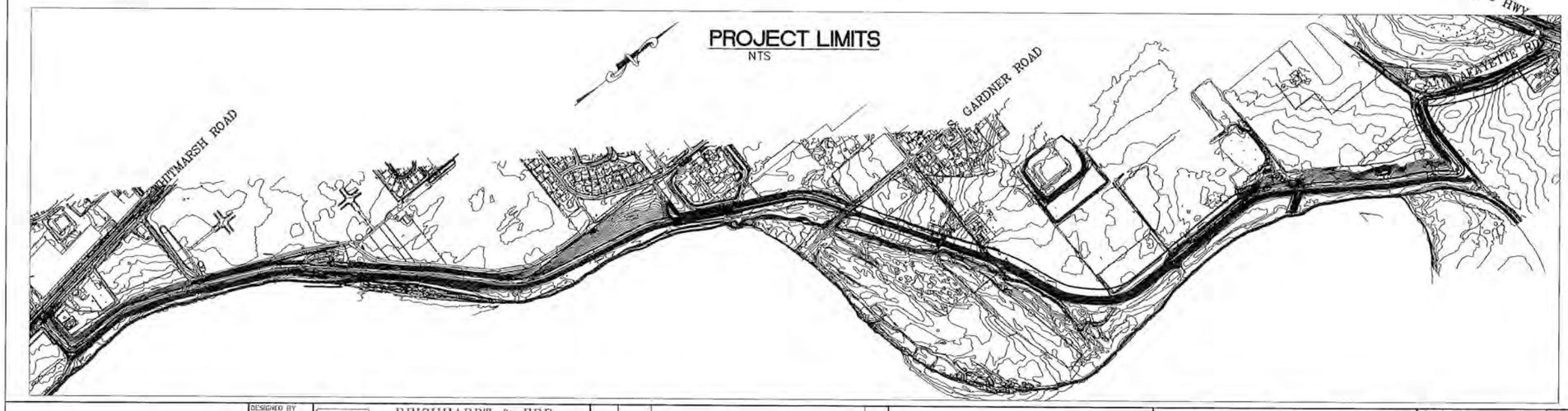
SHEET INDEX

LEGEND

= PROPOSED LEVEE MATCHPOINT
= PROPOSED LEVEE CENTERLINE
= EXISTING LEVEE CENTERLINE
= EXISTING ASPHALT ROADWAY
= EXISTING GRAVEL ROADWAY

PROJECT LIMITS

NTS



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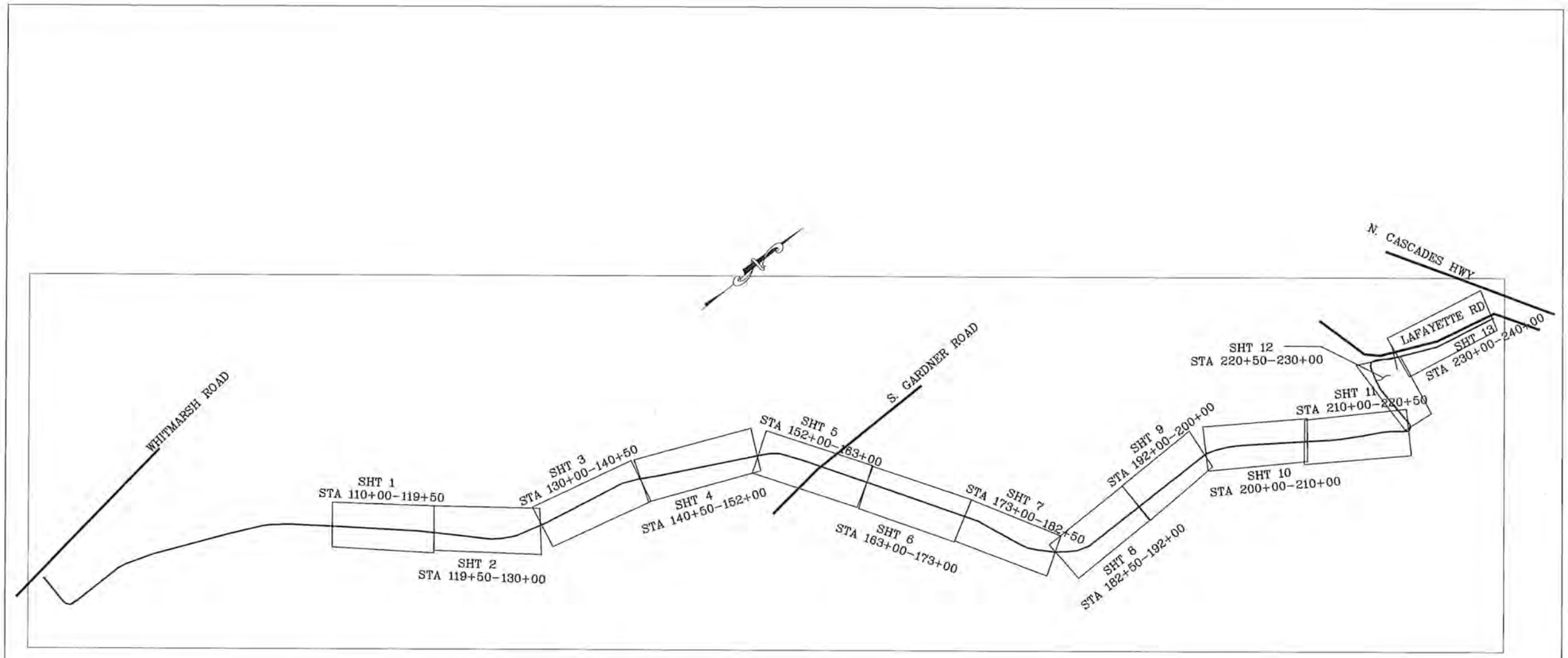

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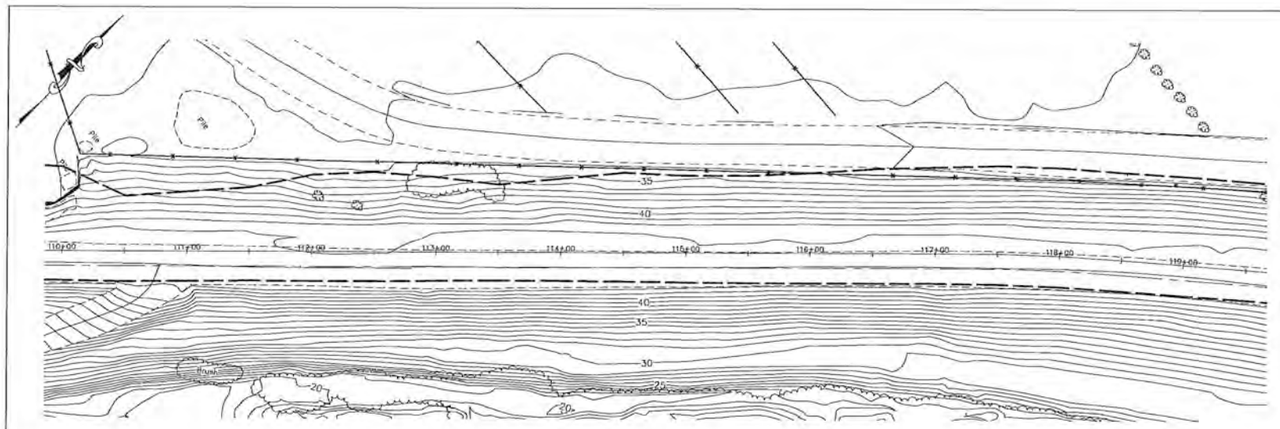

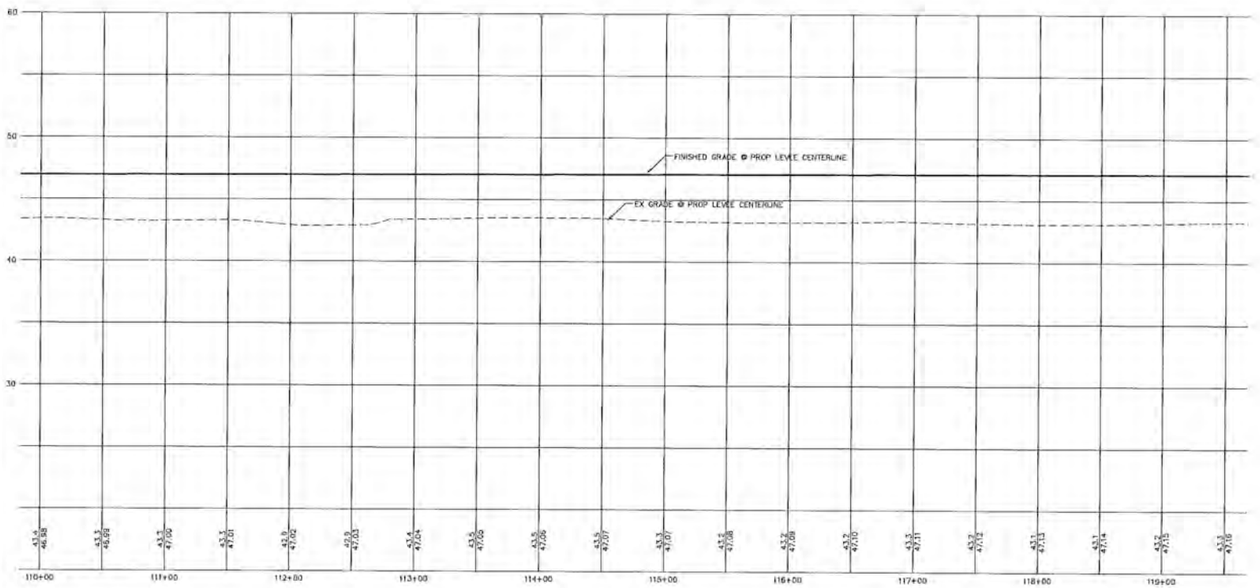

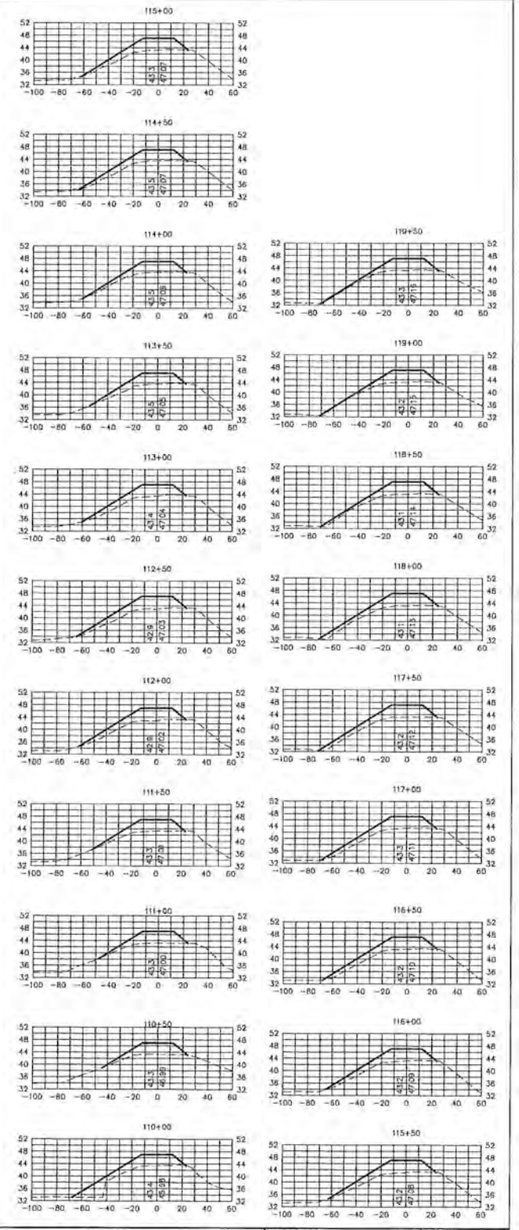

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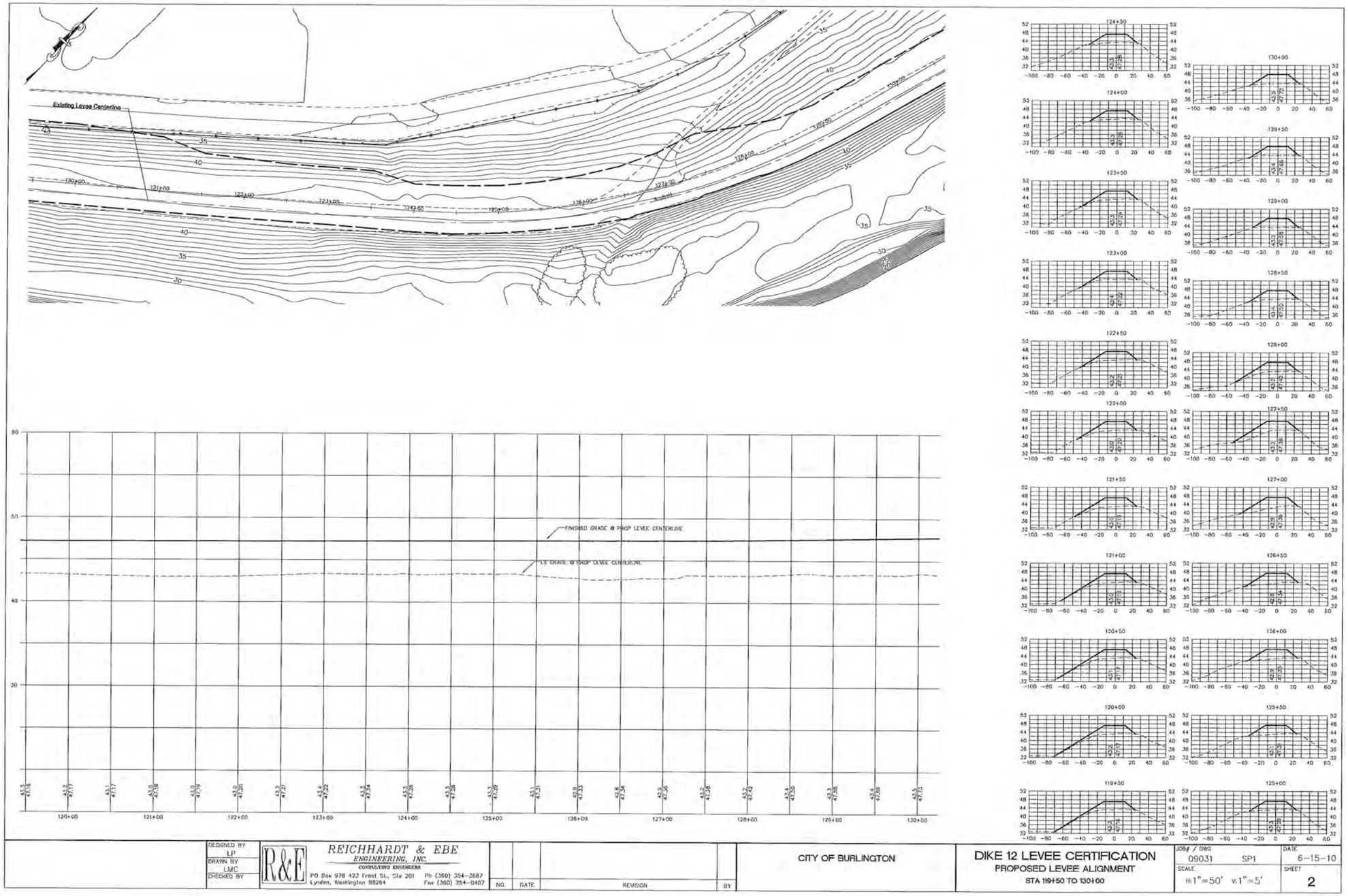

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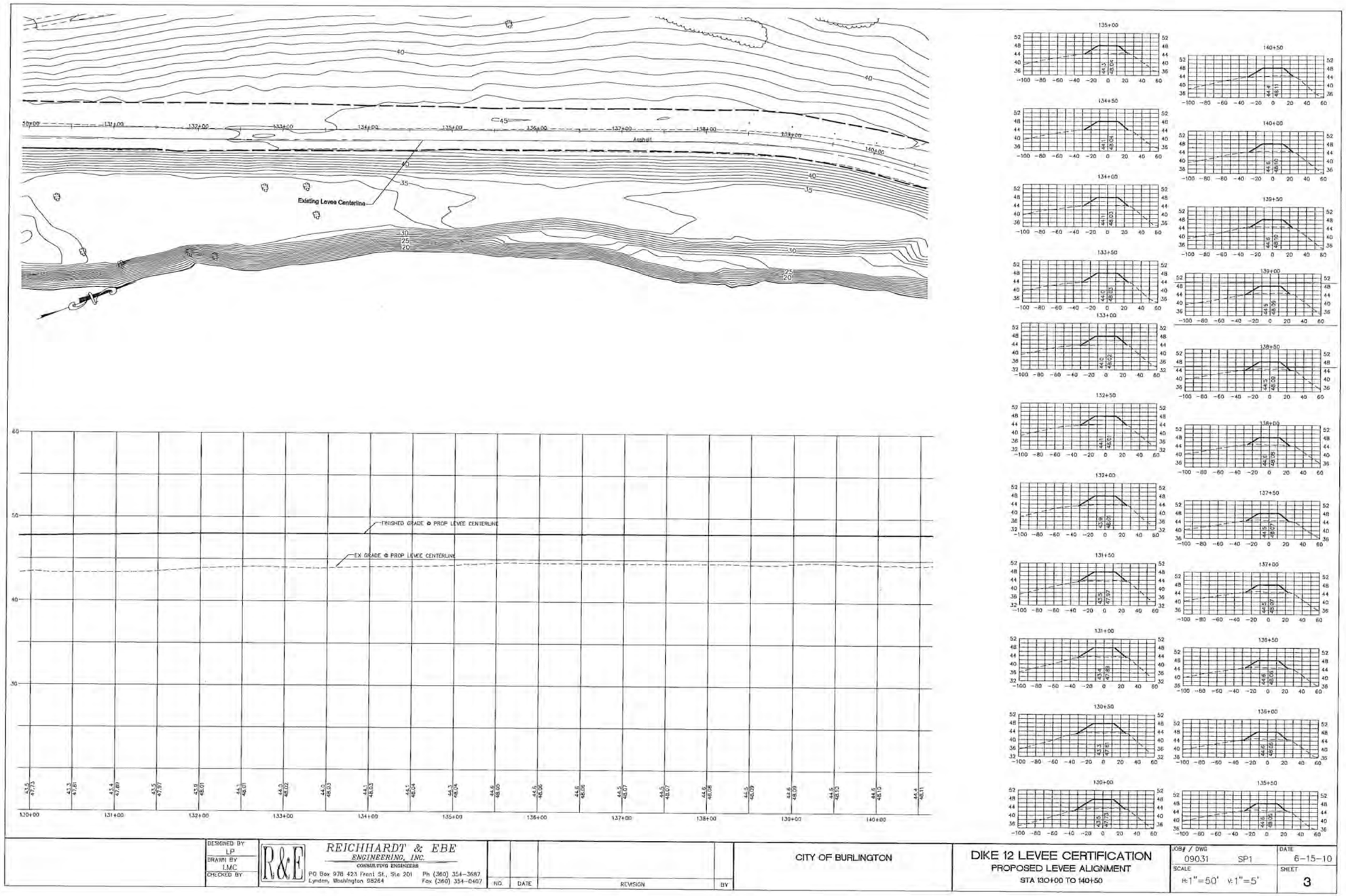

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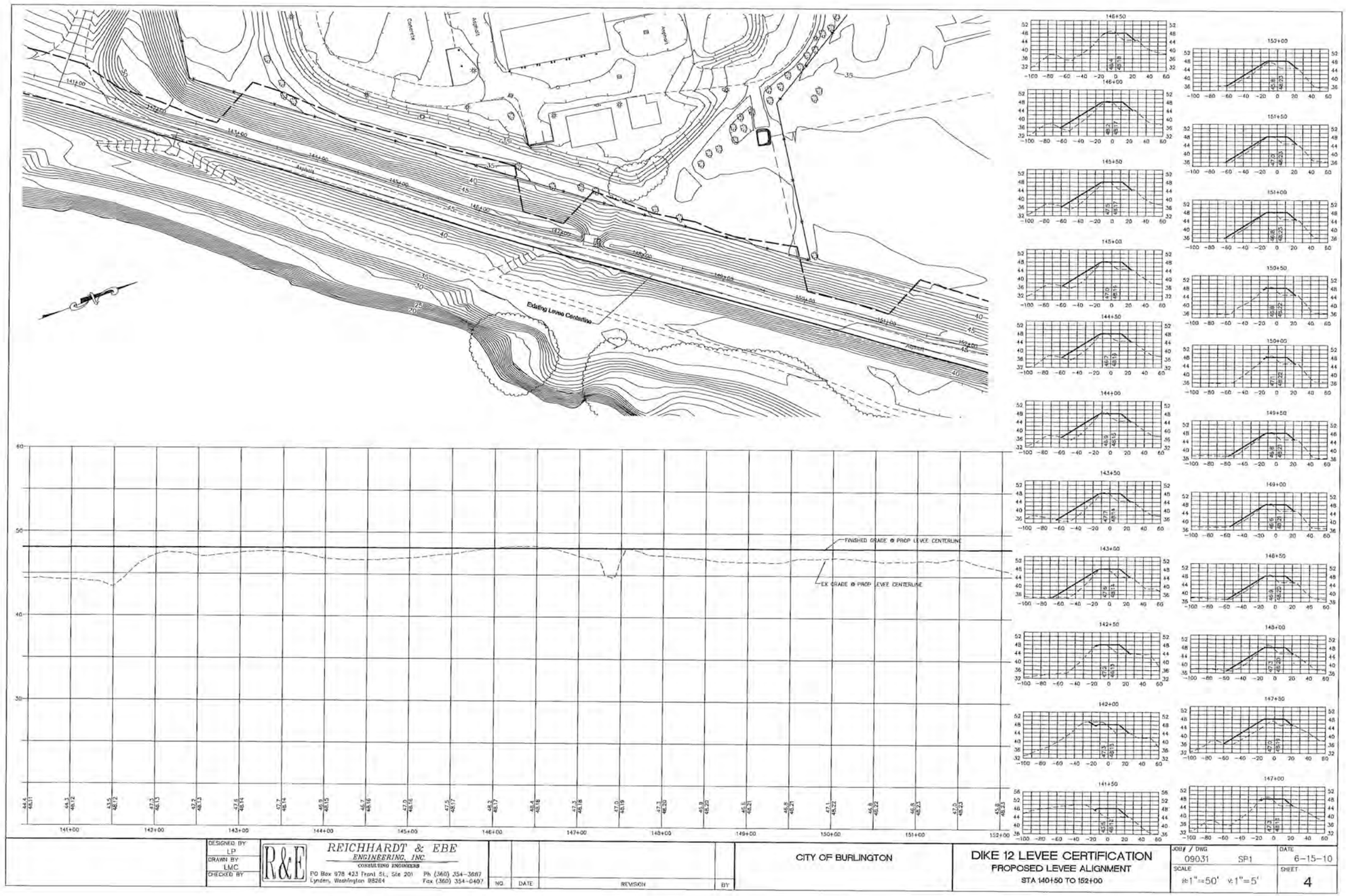

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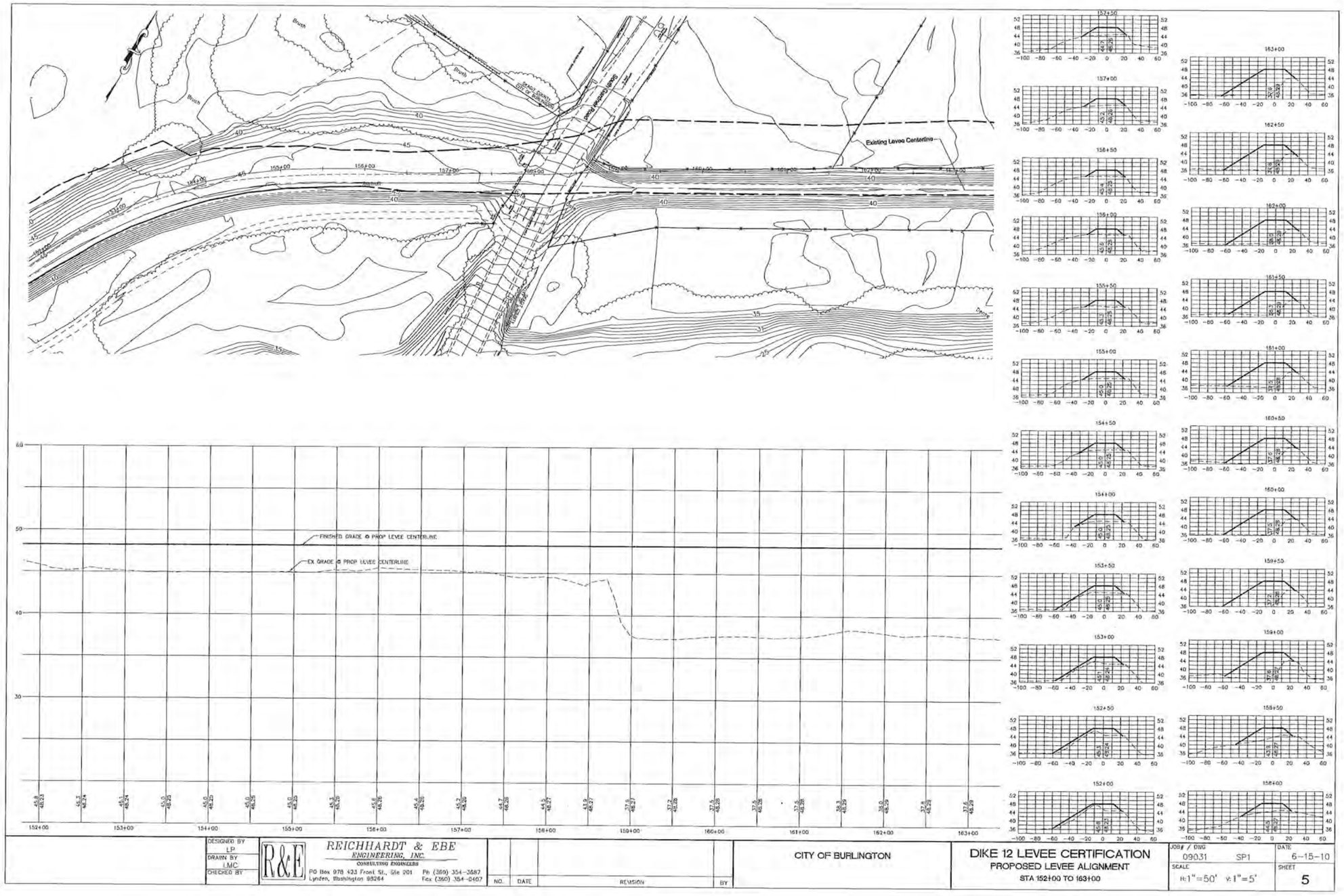

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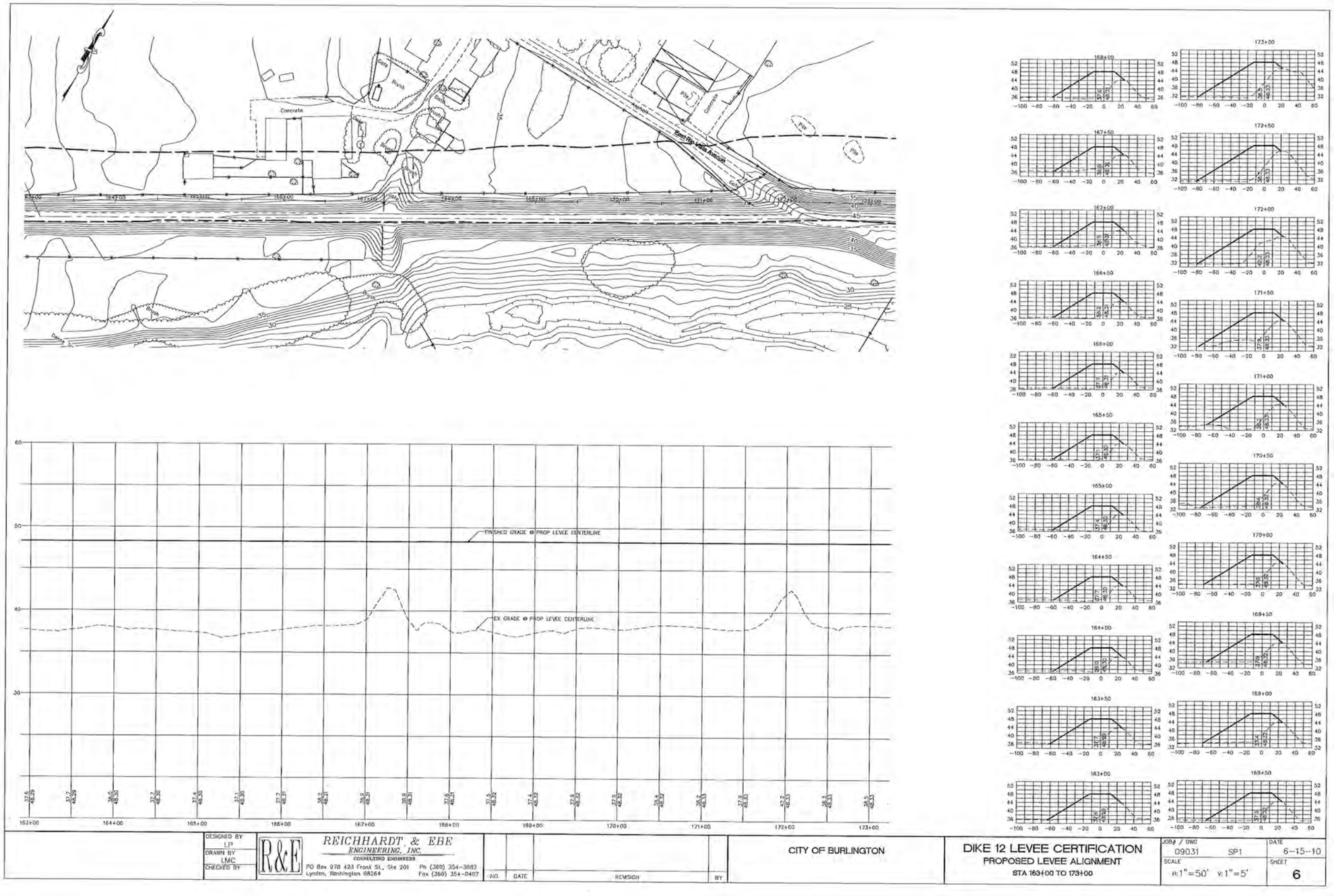

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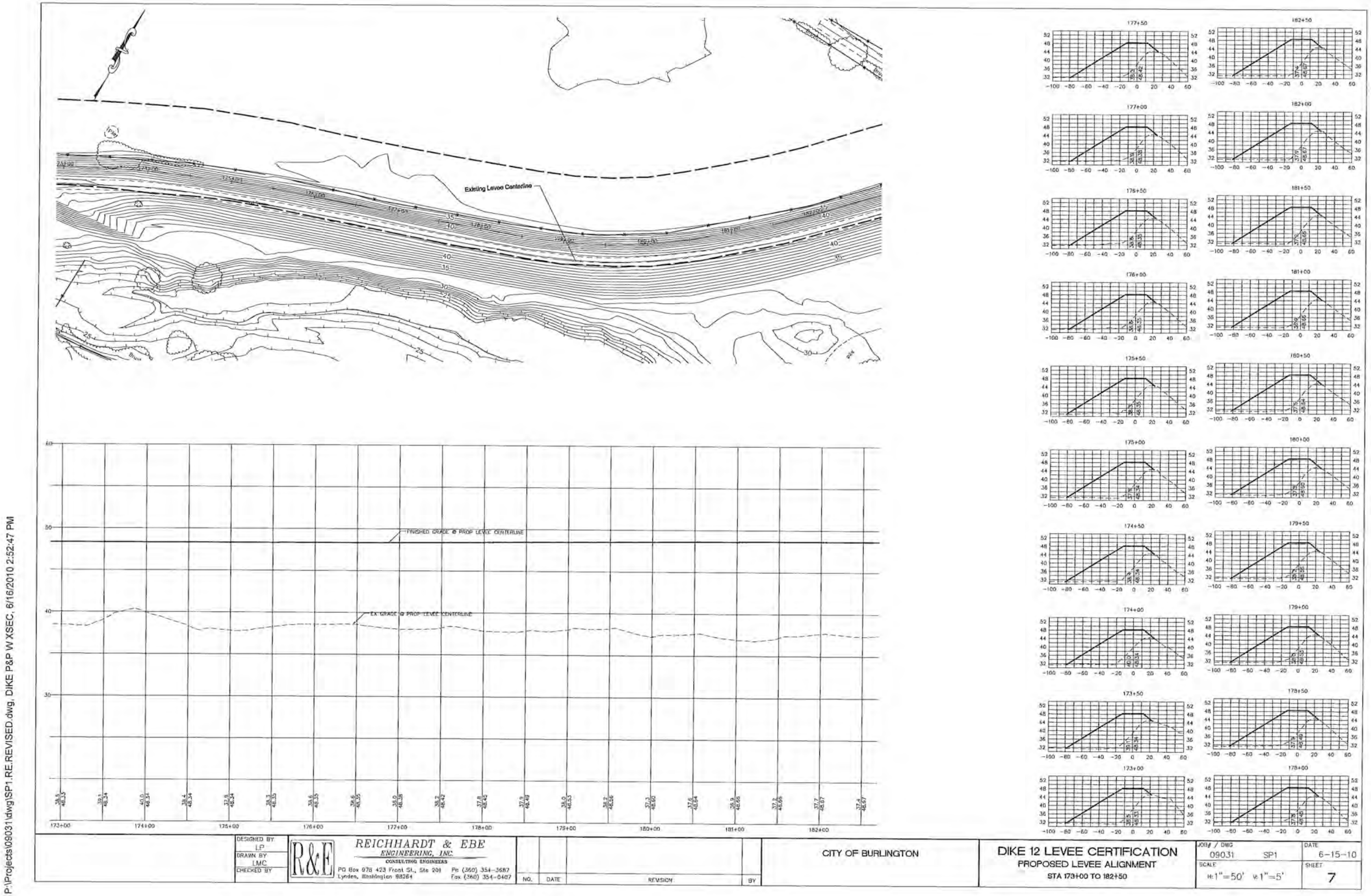
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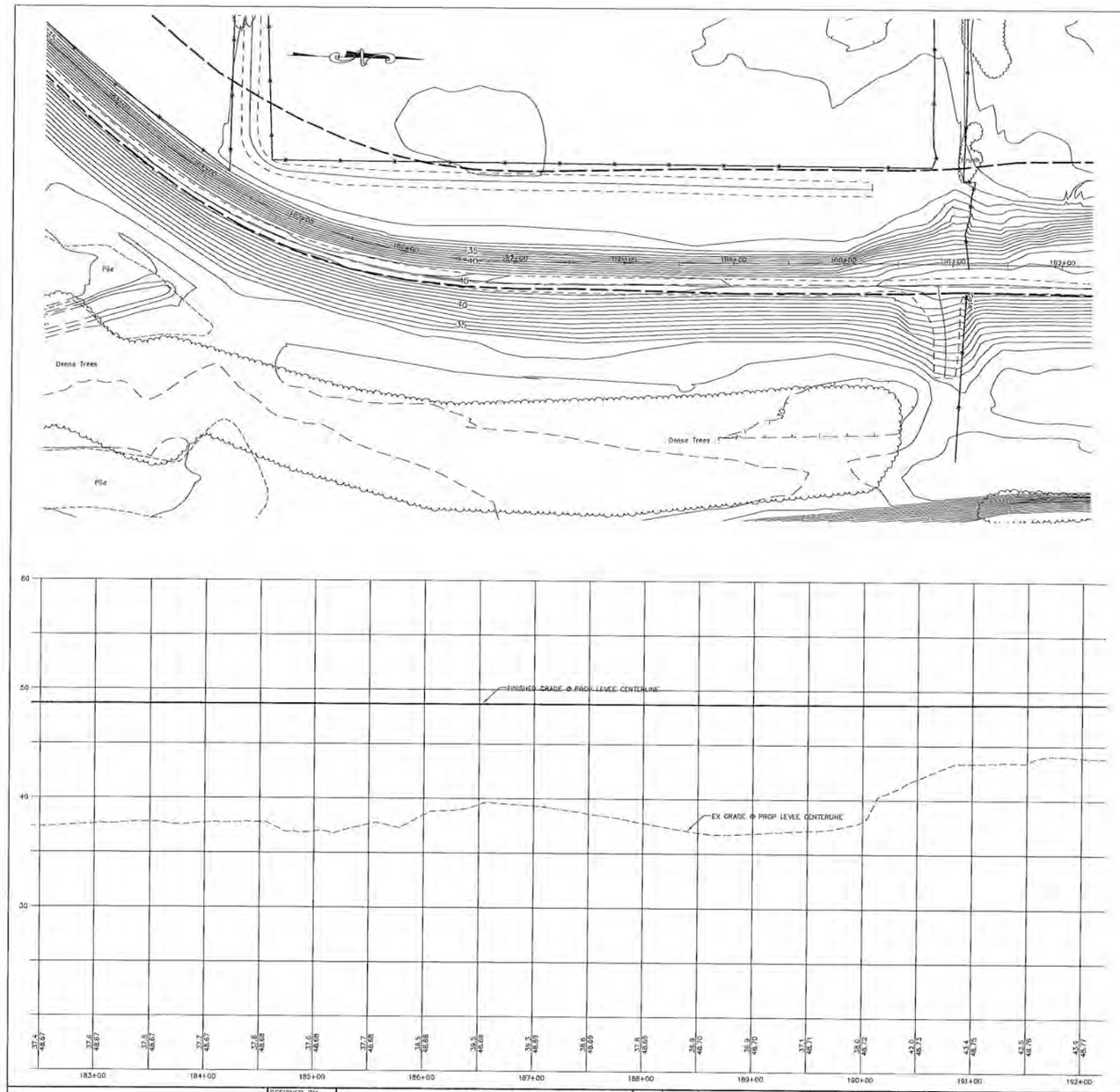

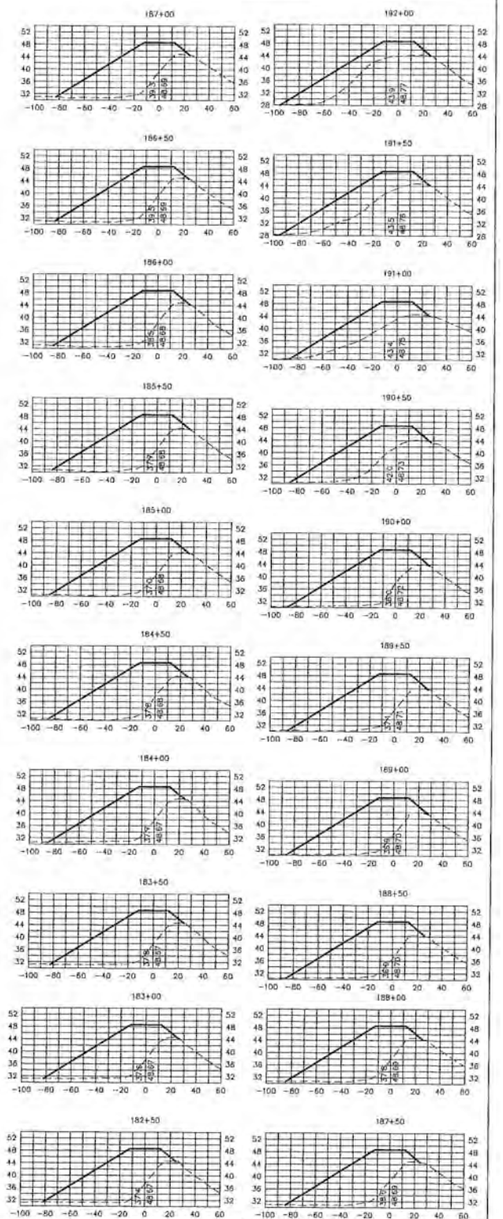

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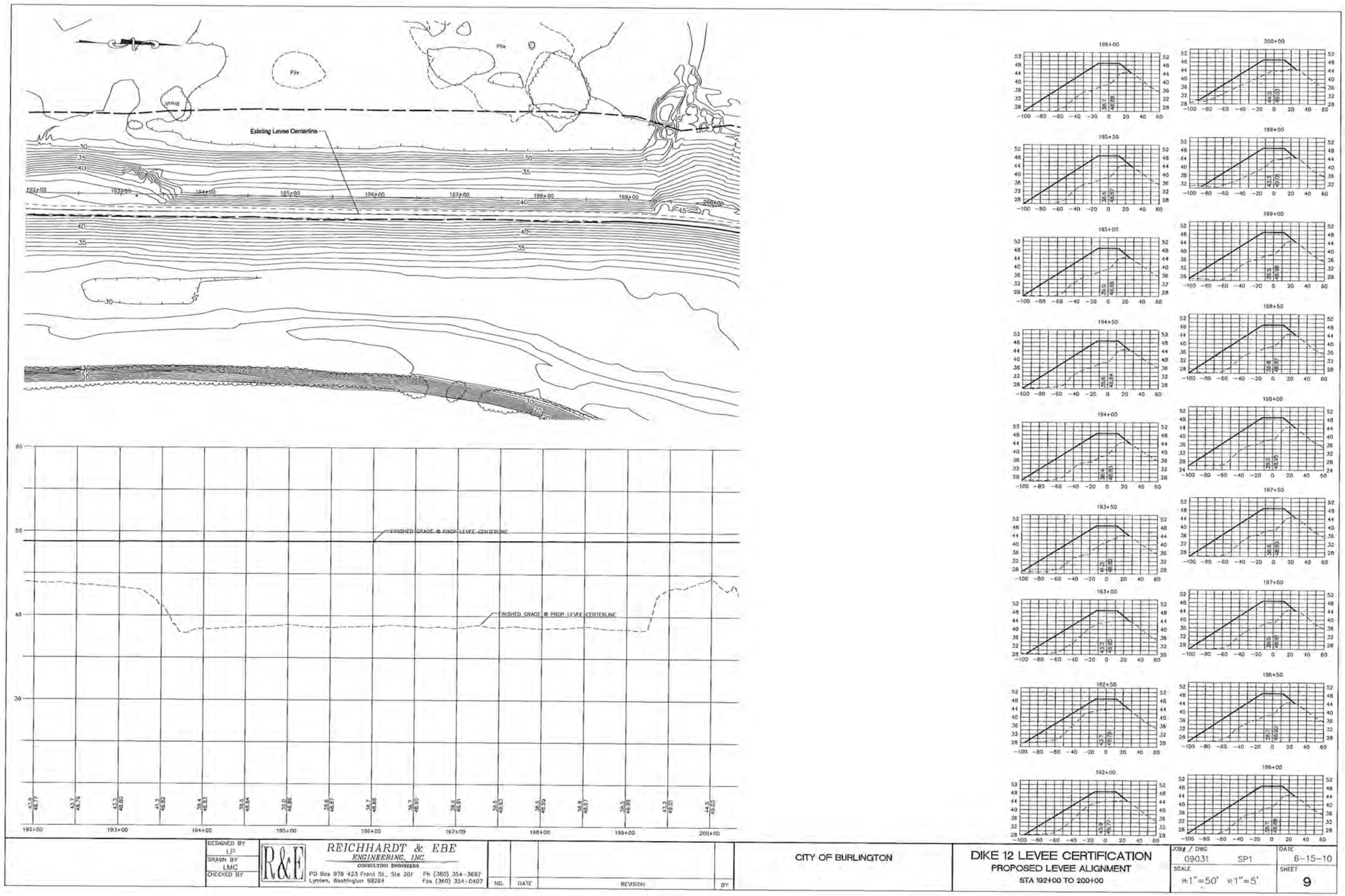

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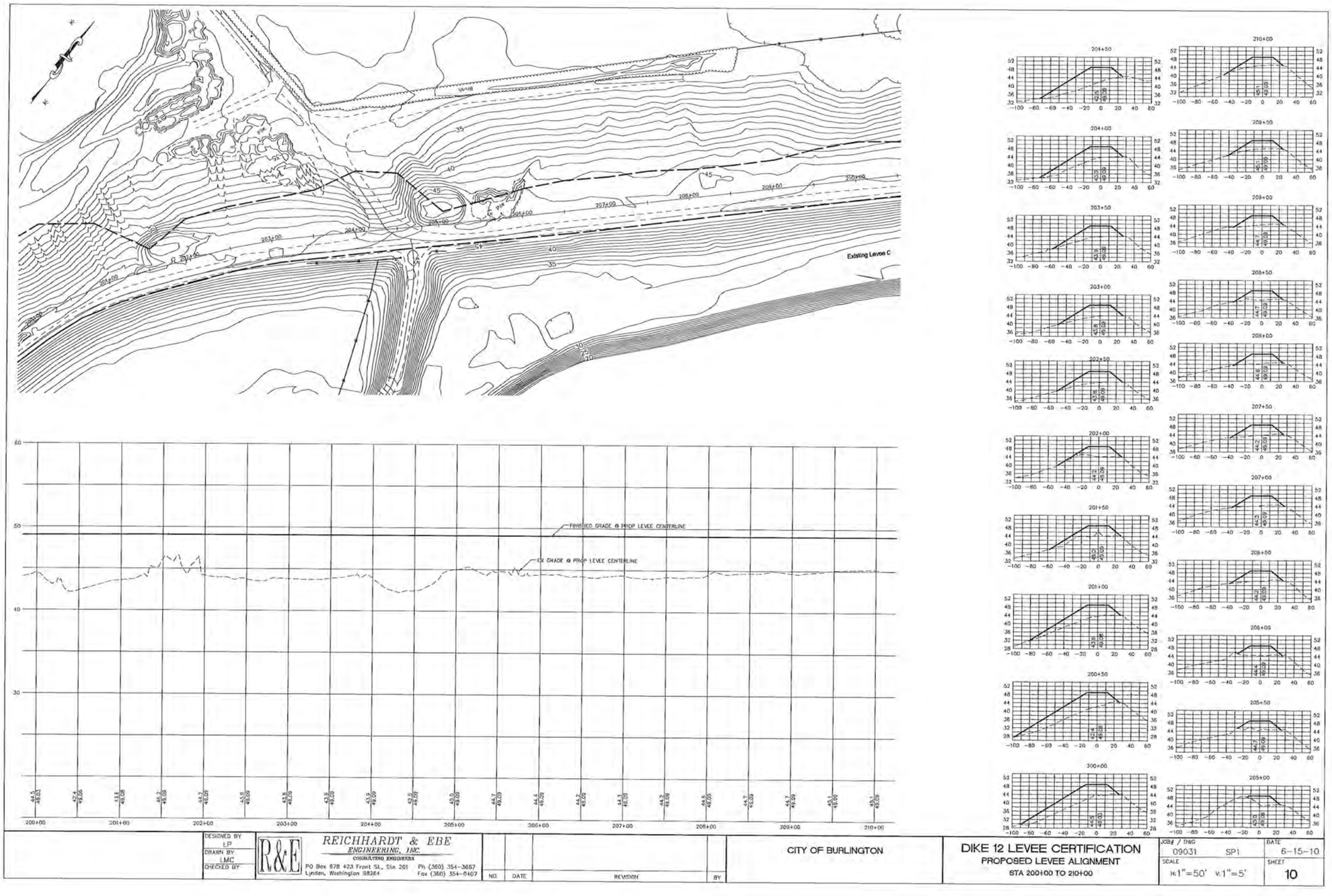
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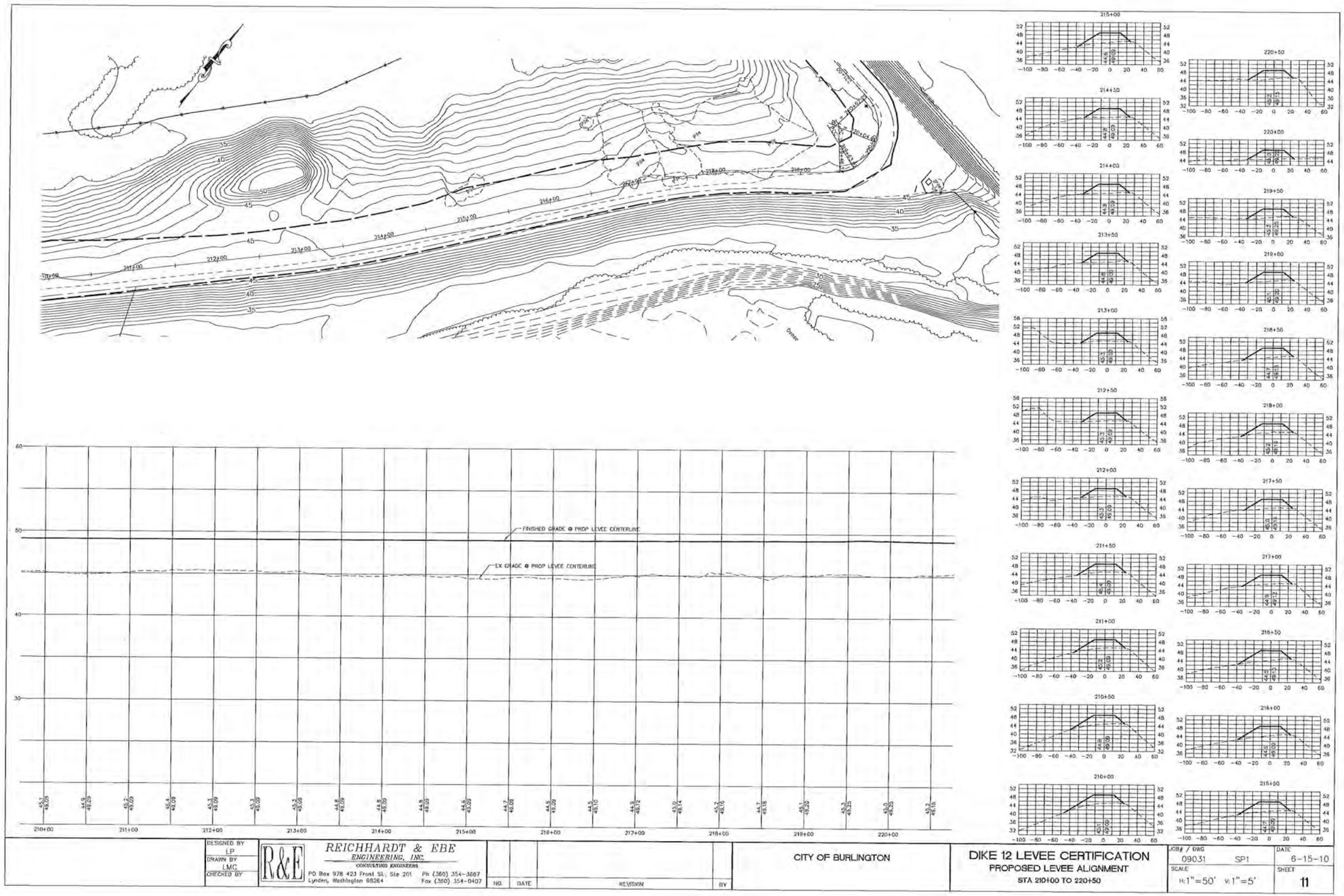

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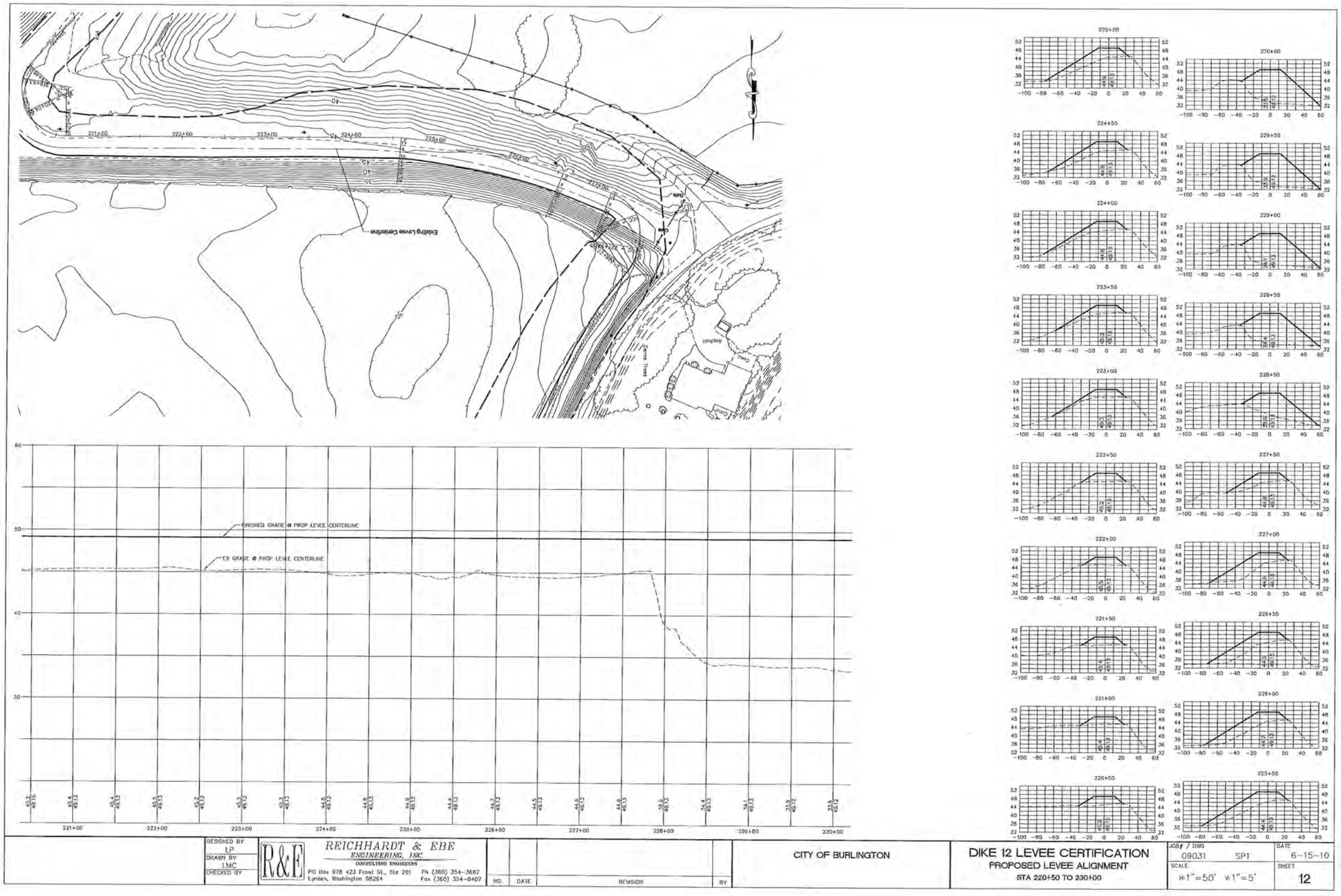

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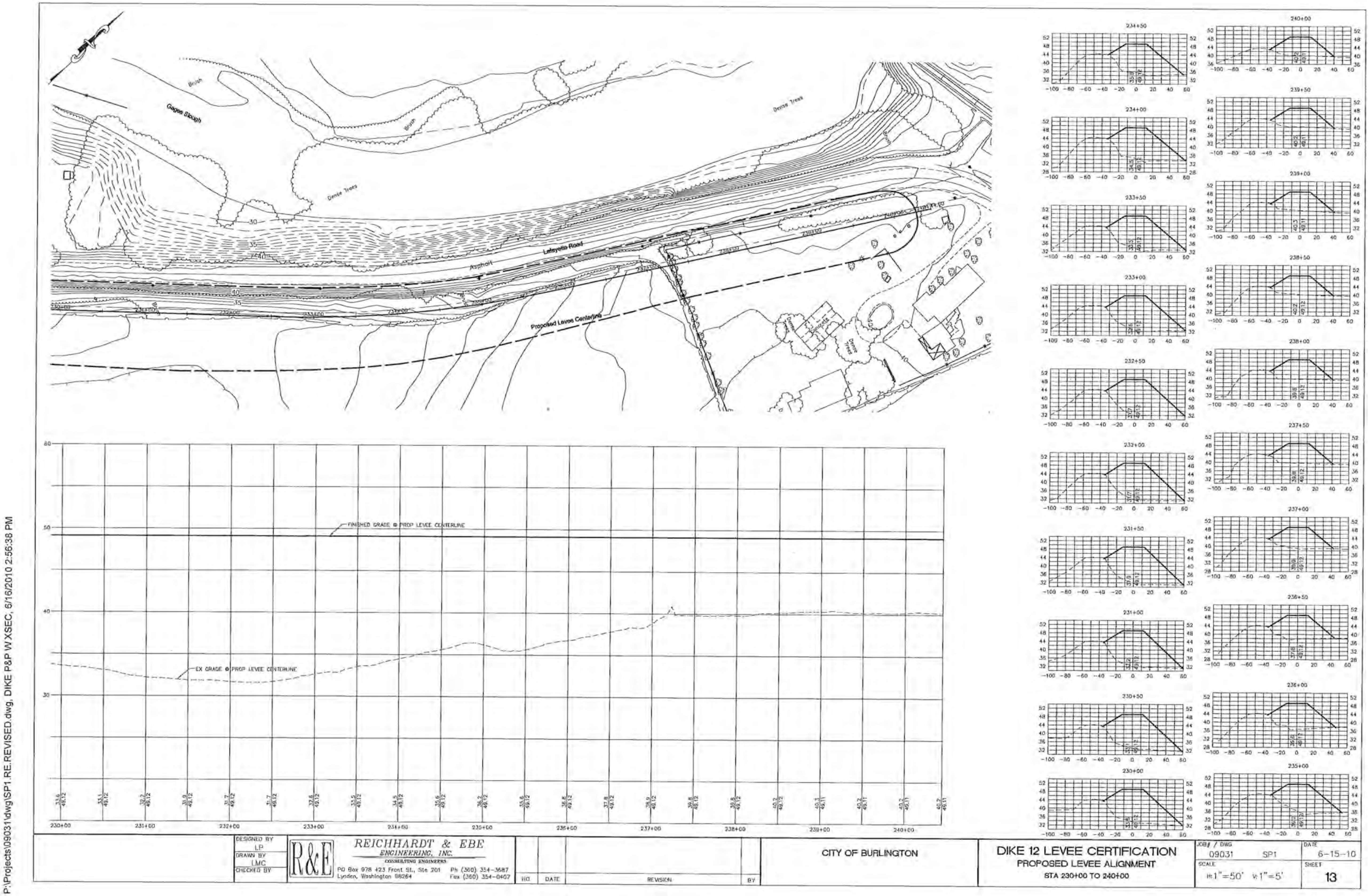
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Lafayette Road
Asphalt
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CONSULTING ENGINEERS
PO Box 978 423 Front St., Ste 201 Lynden, Washington 98264
Ph (360) 354-3687 Fax (360) 354-0407
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PROPOSED LEVEE ALIGNMENT
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JOB# / DWG 09031 SP1
DATE 6-15-10
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SHEET 13

Exhibit 5 - Copies of Comment Letters

Bob & Kathi Williams
18155 Joy Pl
Burlington, WA 98233
757.0835

March 9, 2009

Margaret Fleek, Planning Director
833 S Spruce St
Burlington, WA 98233

RE: Draft EIS Flood Protection Plan

Dear Ms. Fleek,

We are writing to violently oppose the proposed change to return 30 acres of land within the existing urban growth area to farmland in exchange for removing the land purchased by the Burlington-Edison School District on the corner of Peterson & Pulver roads from farmland classification and adding it to the urban growth area.

When citizen groups meet, at the request of the City, a few years ago to discuss potential changes to the urban growth area and to formulate the concept of the Agricultural Heritage credit program (Kathi was a participant in both efforts) the overwhelming consensus was that farmland west of I-5 and north of Peterson Road should be protected. Any encroachment would ultimately lead to the demise of the agricultural nature area from the Hiway westward to the bay, something that no one wanted to happen.

The School District made the ill advised decision to purchase the property in question in spite of advice not to do so. It is prime farmland and has been (for decades), and continues to be, in active production. To include this proposal as a part of a plan to protect Burlington from flooding is unfathomable. The classification of the land has no impact causing or preventing flooding. It does however, have the frightening potential to make an irreversible negative change our rural/agricultural community.

We respectfully ask the City council, mayor and staff to remain committed to protecting farmland west of I-5, and not move forward with the portion of the plan dealing with the Peterson/Pulver road property. If that does not happen, if will be another example of ignoring the desires of the community and the feedback from citizen groups solicited by the City to study issues like this.

Sincerely,

Bob & Kathi Williams

Cc; Skagit County Planning Department, Skagitonians to Preserve Farmlands

Margaret Fleek

From: Reed, Greg [Greg.Reed@unitedgeneral.org]
Sent: Wednesday, March 11, 2009 6:03 PM
To: Margaret Fleek
Cc: Jon Aarstad; Scott, Jacque R; Bonthuis, Michael; Warren, Cindy; Barnts, Thomas
Subject: RE: Burlington's Flood Control Plans

Margaret,

The following is for consideration by the Administration and Council of the City of Burlington in relationship to the flood control project they have under study.

The Board and Administration of Skagit County Public Hospital District #304 are always concerned about any proposed projects that would have an effect on services at United General Hospital. We appreciate the opportunity for input to your study. Recalling the presentation by personnel of the City of Burlington during the latter part of 2008 at a workshop of the City Council of Sedro-Woolley, there was information shared that indicated that placing dikes along the Skagit River created a funnel effect. Such an effect would result in flood waters backing up into the flood plains of Sedro-Woolley and the surrounding county area. As you are aware United General Hospital (United) is located in part of the flood plain at the eastern city limits of Burlington and just within the boundaries of Sedro Woolley. Some projections indicate that with a backup of waters of the magnitude discussed Highway SR20 would be closed minimizing if not eliminating access to the hospital for emergency care. In fact there are scenarios that demonstrate that the United campus would very likely become an island. Such an event would prevent United from participating in any effective fashion in caring for those in need during such a disaster.

While the obvious solution for United would be to relocate the hospital, research for that purpose revealed a number of other issues. Not only would there be significant cost involved for the construction of the hospital facility but the reconstruction of the entire campus with all of its adjacent buildings as well. Additionally relocation to those useable sites above the flood plain would take the hospital away from the mainstream roads system used by most of the people we serve. Just as important to United's continued viability is its Critical Access Hospital designation from both the State of Washington and the Federal Government. Due to limitations within the related regulations should United be relocated from its present campus the C.A.H. designation would be lost.

If the dike plan being considered is the most effective answer to the flood dilemma of Burlington it would seem reasonable to co-ordinate that project with related planning and projects of the City of Sedro-Woolley, the Dike Districts, Skagit County as well as United and incorporate it into a more regional solution to the problem. I would be willing to participate in whatever activities that would be required to arrive at such a solution.

Thank you for your time.

Respectively,

Greg

Gregory C. Reed, FACHE
United General Hospital
2000 Hospital Drive
Sedro-Woolley, WA 98284
(360) 856-7112
greg.reed@unitedgeneral.org
www.unitedgeneral.org

3/12/2009

3/12/2009

GordonDerr
ATTORNEYS AT LAW

March 13, 2009

Ms. Margaret Fleek
Planning Director
City of Burlington
833 South Spruce Street
Burlington, WA 98233-2810

Re: Comments on the Draft Environmental Impact Statement to Adopt a Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land

Dear Director Fleek:

This letter constitutes Haggen, Inc.'s ("Haggen") and its development affiliate Briar Development Company's ("Briar") formal comment on the City of Burlington's and Dike District #12's Draft Environmental Impact Statement ("EIS") to Adopt a Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land issued February 13, 2009. Writing on behalf of both Haggen and Briar, we would like to commend the City of Burlington and Dike District #12 for strategizing, forming a partnership, and taking action to address and mitigate the potentially devastating impacts of FEMA's Skagit County floodplain remapping on the Burlington community.

Briar owns and Haggen operates a grocery store located at 757 Haggen Drive, and Briar also owns several undeveloped commercial parcels in the immediate vicinity of the store. As a result, both entities have a vested interest in the business climate of Burlington and keep abreast of local planning issues. Haggen and Briar both support and applaud the City's and Dike District #12's decision to construct 100-year certified levees and other flood measures as necessary and appropriate to protect Burlington's urban area from flood hazards and stabilize base flood elevations in the long-term.

If anything, the EIS understates the impacts of its "No Action" alternative on Burlington's existing and planned commercial areas. If FEMA adopts new flood maps depicting 6-to-8 feet increases in height of the base flood elevations ("BFE") in Burlington's urban area, commercial development and/or redevelopment will effectively come to a standstill. Once such BFEs are adopted, any new development or substantial improvements to existing buildings mapped within the floodplain will have to be elevated (through fill or otherwise) or floodproofed to above the 100-year floodwater elevation, which may be economically and/or structurally infeasible. In the old historic downtown and commercial areas of Burlington, this could require importing as much as seven vertical feet of fill.

2025 First Avenue, Suite 500, Seattle, WA 98121-3140 206-382-9540 fax 206-626-0675 www.GordonDerr.com

The effects of these changes could render the City's remaining vacant commercial land practically undevelopable and could make future updates to existing commercial development unviable. Raising BFEs in Burlington commercial areas by approximately six feet essentially vitiates the City's planning efforts to establish business development in its existing and planned locations, and will have drastic impacts on the values of vacant property and existing businesses. Mere grandfathering of flood insurance rates to existing premium levels is inadequate to compensate for these losses. Significant impacts on the City's residential land are equally likely. Consequently, if the "No Action" alternative is adopted, Burlington will effectively forfeit a significant portion of the development capacity of its remaining undeveloped properties in its urban area, make the redevelopment of existing structures nearly impossible, and threaten the Town's overall economic vitality. The devastating impacts of this "No Action" alternative need to be fully explained and elucidated in the Final EIS in order to facilitate informed flood hazard mitigation decision making.

Going forward, Haggen and Briar respectfully request that it be kept informed of any updates of, revisions to, or additional analysis regarding the City's Strategic Program for Comprehensive Flood Hazard Mitigation. Further, both entities encourage the City and Dike District #12 to work with all affected agencies and jurisdictions to come up with a practical solution to FEMA's floodplain remapping that does not put the entire Burlington urban area in a regulatory dead zone for numerous years.

Thank you for the opportunity to offer comment and please feel free to contact us regarding any follow-up questions related to the EIS.

Very truly yours,

GordonDerr LLP

Joel Gordon
Molly Lawrence

Y:\WP\HAGGEN\BURLINGTON\FLOOD ISSUES\EIS\DRAFT EIS COMMENT LETTER_MMN.DOC

Burlington Planning Department
833 South Spruce Street
Burlington, WA. 98233
Attn: Margaret Fleek

3/10/09

Rick Major
20814 W. Jordan Rd.
Burlington, WA. 98233

Dear Margaret,

In trying to imagine how water might surge through the Skagit Valley during a flood, I hope you will consider a couple of points regarding Gages Slough.

By including in your plan some animal access culverts at highway crossings, you would be providing a safe alternative for small animals to cross under the roadways and another way to control flood movement though the corridor.

In a flood event, these animal crossing culverts could be closed in sequence or left open from the upstream end on down, as needed, to control the fill rate of the reservoir behind each one. After the crest, they could be opened to expedite release of water and thereby improve our chances of dealing with a second flood surge.

The flow through each highway crossing could be controlled by the number of culverts, the elevation of the culverts, or by the diameter. This added flow and the control of it could be just enough to save the day by adding options at crest time that don't exist now.

In recent years, I've noted with interest the beaver dam at Burlington Boulevard and Gages Slough and the efforts to clear it. It's amazing to think of the chaos of tens of thousands of cars passing each day along with the constant breaching of their dam and yet those beavers persist. Well, I'm rooting for the beaver on that one and I hope that you can see how crossing under Burlington Boulevard and SR20 would help the beavers, possums, muskrats, raccoons, and other small animals have access to each end of the Gages Slough corridor.

If part of your plan is to restore a healthy natural buffer along Gages Slough, I hope you will think about the salmon studies that show how eagles, bears, and other predators feeding on the fish deposit vital nutrients in the watershed. This proven connection between plants, animals, water, soil, etc. is what makes the system work. I hope you will consider the animal portion of the equation when planning your buffer.

These animal crossings under the highways have a dual purpose when combined with flood control that seems to make this idea a do-able win-win situation.

Respectfully,
Rick Major.

Rick Major

SKAGIT COUNTY

RECEIVED
MAR 13 2009
PLANNING DEPT.

March 13, 2009

Margaret Fleek, Planning Director
City of Burlington
833 South Spruce Street
Burlington, WA 98233

Dike District # 12
1317 South Anacortes Street
Burlington, WA 98233

RE: Skagit County Consolidated Comments to City of Burlington / Dike District 12 Draft Environmental Impact Statement Regarding Proposed Flood Control Measures

Please find Skagit County's consolidated comments regarding the City of Burlington / Dike District 12 "Draft Environmental Impact Statement to Adopt a Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land with a Range of Structural and Non-Structural Components," dated February 13, 2009.

Please make these comments a part of the official record of this action. Please direct all comments and questions to the undersigned. Skagit County requests to be made a party of record to the proposed action.

1. Clarification – Scope of Skagit County Participation in DEIS.

The DEIS states at 7 that the Proponent of the DEIS is "[t]he City of Burlington in cooperation with Skagit County." This requires clarification.

Skagit County supports and encourages all reasonable efforts to protect the City's existing built urban environment from the threat of catastrophic flooding. Skagit County considers itself a partner on flood control issues with each and every municipality within its corporate limits, and, to that end, has an obligation to promote flood control solutions that consider broader regional needs and impacts countywide.

Skagit County and the City of Burlington are moving forward in partnership on a range of issues such as securing additional flood storage in the Baker River hydroelectric system. In addition, the City of Burlington and Dike District 12 are actively participating in the Skagit County Flood Control Zone District Advisory Committee ("Advisory Committee"), through their participation in technical sub-committees.

With the foregoing in mind, Skagit County is not a co-lead, co-drafter, or participant in the Burlington DEIS. Skagit County's participation in and engagement with the Burlington DEIS and the proposed action is strictly limited to Skagit County's formal comments in the record and the County's land use authorities as prescribed under the Growth Management Act, Countywide Planning Policies, Skagit County Comprehensive Plan, and Skagit County Code.

2. DEIS Requires More Analysis of Connection Between Plausible Scenario For Contemplated Levee Improvements and Estimated 100 Year Peak Volume Discharge.

The DEIS at page 20 lists the 100 year event peak volume discharge at Sedro-Woolley predicted by, respectively:

- The U.S. Army Corps of Engineers ("Corps"), 215,270 cfs;
- County consultant Northwest Hydraulic Consultants ("NHC"), 196,690 cfs; and
- City consultant Pacific International Engineering ("PIE"), 184,700 cfs.

In the table at page 20 the DEIS makes conclusions regarding the ultimate effect should federal agencies decline to accept PIE's estimate rather than the Corps' estimate.

According to the DEIS (table at 20):

- If the Corps' predicted 100 year peak volume discharge estimate remains the basis for federal regulatory decisions, this will mean there is "no plausible scenario of levee improvements [around the City of Burlington] without significant detrimental impacts to upstream and downstream neighbors." DEIS, table at 20.
- If PIE's predicted 100 year peak volume discharge estimate is adopted by federal agencies as the basis for regulatory decisions, this will mean that "effects on upstream water levels" created by the City's proposed levee improvement will be "minimal." *Id.*
- Accordingly, "[l]evee certification along river front [will be] feasible" only if PIE's predicted peak volume discharge is ultimately adopted by federal agencies as the basis for various flood-related regulatory decisions. *Id.*

The foregoing analysis is not complete for the following reasons:

a. *DEIS Fails To Discuss, Analyze, or Establish 100 Year Peak Volume Discharge Above Which There Would Be No Plausible Scenario of Levee Improvements Without Detrimental Impacts To Upstream and Downstream Neighbors.*

As previously discussed, the DEIS appears to be centrally focused on the idea that there may be no "plausible scenario of levee improvements without significant impacts to upstream and downstream neighbors," depending on the 100 year peak volume discharge estimate adopted by federal agencies as the basis for their regulatory decisions.

However, the DEIS does not predict or analyze the peak volume discharge threshold, or "tipping point", above which there is no plausible scenario of levee improvements without detrimental impacts to upstream and downstream neighbors. Instead, the DEIS appears to simply predict that PIE's peak volume discharge estimate equates to a plausible scenario, while the Corps' estimate does not.

Because it forms a central decision point in the analysis the DEIS purports to undertake, the DEIS should discuss and analyze the threshold 100 year peak volume discharge beyond which no plausible scenario of levee improvements is feasible without detrimental impacts to upstream and downstream neighbors.

b. The DEIS Fails To Consider Whether Adoption Of NHC's Predicted 100 Year Peak Volume Discharge Means No Plausible Scenario Of Levee Improvements Without Significant Detrimental Impacts To Upstream And Downstream Neighbors.

As communicated to the City on many prior occasions, Skagit County intends to continue to rely on NHC to provide the technical basis for our regional effort to develop flood control strategies feasible from an economic, engineering, and environmental perspective. NHC's credibility with federal agencies and regulators is unchallenged.

Skagit County is unable to concur in or support the DEIS to the extent it fails to consider, predict and analyze whether NHC's predicted 100 year peak volume discharge, if adopted by federal agencies as the basis for regulatory decisions, would in the City's view equate to a "plausible scenario of levee improvements without significant detrimental impacts to upstream and downstream neighbors."

3. DEIS Appears To Be Outcome-Oriented With Reference To A Particular Project Course Of Action.

The DEIS proposes to "construct 100-year certified levees in appropriate locations and provide other flood measures as necessary and appropriate based on FEMA's final Flood Insurance Study, when this study is adopted following resolution of any appeals." DEIS at 14. The DEIS expressly recognizes that the proposed action cannot proceed until the hydrology used by federal agencies as the basis for their regulatory decisions is conclusively established. *See, e.g.*, DEIS at 11 ("[T]he options for effective flood hazard mitigation are significantly different depending on the assumptions about hydrology.") *See also* DEIS at 10 (discussing idea that "there is a need to lower the estimate" of the Flood Frequency Analysis.)

The sole difference between the two DEIS alternatives appears to be the data set on which they rely. With that in mind, the DEIS appears on its face to be engaging in a decision analysis to determine which set of data better supports a proposed course of action. This is a problematic use of SEPA.

SEPA is intended to systematically consider the impact of project proposals on the natural and human environment. RCW 43.21C.030. SEPA is designed to objectively inform the decision-making analysis. Accordingly, SEPA's entire purpose is defeated if it is allowed to become an outcome-oriented process aimed at justifying pre-conceived decisions. WAC 197-11-406 (SEPA review is "not to be used to rationalize or justify decisions already made.") Federal courts have made this same idea clear in the context of NEPA as well. See, *Metcalf v. Daley*, 214 F.3d 1135, 1142 (9th Cir. 2000)(Environmental review "must be taken objectively and in good faith, not as an exercise in form over substance, and not as a subterfuge designed to rationalize a decision already made.")

Skagit County fully supports and applauds the City's continued efforts to develop relevant technical information. However, it is premature to make decisions on specific flood control projects – let alone at unspecified "appropriate locations" – until such time as the hydrology and base flood elevations underlying federal regulatory decisions have been conclusively established.

4. The DEIS Does Not Provide A Mechanism For Coordinating Flood Projects Among Various Jurisdictions. The City Should Continue Its Participation On The Skagit County Flood Control Zone District Advisory Committee.

The DEIS recognizes that "impacts on upstream and downstream neighbors" is a central concern, and further recognizes that the City's flood control plans will have impacts on a wide range of surrounding jurisdictions, agencies, entities, and landowners. Among other things, the DEIS explicitly contemplates that the proposed action will involve:

- Backwater impacts on the City of Sedro-Woolley;[1]
- Utilization of the Nookachamps Basin for flood storage;[2]
- Levee setbacks in the City of Mount Vernon, which levees are owned by Dike District 17;[3]
- Establishing overbank spill pathways through privately-owned farmland that will direct flood waters into the Samish River Basin, in lieu of a regulatory floodway through the City of Burlington. According to the DEIS, this will create "unavoidable adverse impact on frequently flooded farmland and rural residential areas";[4]
- Modifications to the flow control regime by which Skagit mainstem and Baker River hydroelectric projects are managed;[5]

[1] DEIS at 6.
[2] DEIS at 6.
[3] DEIS at 6.
[4] DEIS at 6, 18.
[5] DEIS at 10.

- Incorporation of Skagit County agricultural (Ag-NRL) land into the City's Urban Growth Area.[6]

The only meaningful way to consider, analyze and balance these significant adverse impacts on the City's neighbors is to engage in a basin-wide planning process that involves and includes the jurisdictions and entities that are on the receiving end of these impacts, in a manner calculated to produce mutually agreeable, regionally applied mitigation measures and implementation solutions. For this reason, Skagit County is committed to the Corps' General Investigation process and our comprehensive flood planning efforts, which envision a holistic, basin-wide approach.

Skagit County fully agrees with and supports the City's ongoing efforts to "evaluat[e] options for the future to protect the urban area from flooding."[7] As the DEIS correctly observes, protecting our community's existing built urban environment "fit[s] into what is generally perceived to be the long term regional strategy."[8]

That being noted, the complex and often contentious details of a long term regional strategy cannot be realistically managed absent a mechanism for developing a flood control plan that considers the interests of the entire community – including other cities, towns, rural landowners, tribes, the business community, state and federal transportation officials, and regional utility providers such as PUD No. 1, the City of Anacortes, and Puget Power.

For this reason, Skagit County respectfully requests that the City of Burlington re-commit to participation in the Skagit County Flood Control Zone District Advisory Committee. While the City and Dike District 12 have already been participating in the Advisory Committee through their positions on various technical sub-committees, Skagit County is open to a forthright discussion involving the other members of the Advisory Committee (including the City of Mount Vernon) as to whether the City of Burlington holding a seat on the overall Advisory Committee is indispensable to an effective regional strategy.

5. Any Plan To Spill Water Onto Rural Agricultural Lands Requires Consideration Of The Impacted Drainage Districts and Landowners.

The DEIS appears to envision directing floodwaters from the Sterling area toward the Samish River Basin. Depending on the plan proposed, this may require the agreement of and appropriate compensation for the impacted drainage districts and landowners.

6. Incorporation of New Agricultural Land Into City of Burlington Is Subject To An Independent Public Process.

The DEIS contemplates incorporating land currently zoned agricultural (Ag-NRL) into the City of Burlington. This includes Ag-NRL designated parcels in the vicinity of the Raspberry Ridge migrant farmworker housing project, land purchased by the Burlington-

[6] DEIS at 6, 14-15
[7] DEIS at 9.
[8] *Id.*

Edison School District in the vicinity of Pulver Road and Peterson Road,[9] as well as land south of SR 20 and east of Pulver Road.

Any decision to amend the Skagit County Comprehensive Plan and/or rezone land within unincorporated Skagit County is an independent process subject to independent public notice, hearing and opportunity to be heard in accordance with the Growth Management Act, RCW 36.70A, the Countywide Planning Policies[10], the Skagit County Comprehensive Plan[11], and the Skagit County Code. This would include, among other things, review by the Skagit County Planning Commission and the multi-jurisdictional Growth Management Act Steering Committee established pursuant to interlocal agreement,[12] and its formally adopted "Criteria and Procedures for Urban Growth Area Boundary Modifications."[13]

As a general matter, Skagit County's Comprehensive Plan discourages the conversion of productive agricultural land to non-agricultural uses.[14]

7. The DEIS Provides No Mechanism That Would Enforceably Constrain The City's Continued Expansion.

In the DEIS, the City offers the other citizens of the Skagit River Basin community a *quid pro quo*: if the City is supported in an effort to proceed independently with levee improvements that protect the City's existing built urban areas, the City is willing to permanently end outward expansion into surrounding flood-prone farmland. This will simultaneously limit the scope of the already-daunting flood control challenge, and help protect the region's dwindling agricultural land base from urban encroachment. Both are broadly-accepted public policy objectives. *See, e.g.*, DEIS at 18 ("[c]ontinued increase in commercial activity and residential density will occur, but it will be confined to the existing urbanized area.").

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[9] DEIS at 6.
[10] CWPP, October 10, 2007
[11] Skagit County Comprehensive Plan, October 10, 2007, or as thereafter amended
[12] '2002 Framework Agreement' Among Skagit County, the City of Burlington, the City of Mount Vernon, the City of Anacortes, the City of Sedro Woolley, and the Town of LaConner Regarding Coordinated Planning, Urban Services, and Countywide Planning Policies, as recorded with the Skagit County Auditor file number 200211270010.
[13] Resolution of the Growth Management Act Steering Committee Adopting Criteria and Procedures for Urban Growth Boundary Modifications, June 27, 2007.
[14] To the extent the subject EIS purports to accomplish SEPA review of a proposed incorporation of Ag-NRL land into the City of Burlington UGA, Skagit County does not concur or agree that the present SEPA review is a substitute for or in any way replaces, supersedes or renders unnecessary SEPA review associated with any proposed GMA action to amend the Skagit County Comprehensive Plan or rezone land that would add, modify or transfer Ag-NRL zoned land to Burlington's UGA. Any such action or proposal must be initiated, considered and reviewed on its own merits in full compliance with GMA and SEPA. Among other things, Skagit County is obligated to consider the cumulative impacts on a region wide basis. Skagit County expressly reserves all rights, power and authority to conduct SEPA review associated with any later proposal to add new Ag-NRL land to Burlington's UGA, and does not waive any rights, power or authority by commenting on this SEPA review.

Skagit County supports this concept in principle, as long as it is memorialized in an interlocal agreement. Doing so will ensure that the benefits and burdens shared by our community are clearly defined and enforceable.

To accomplish permanent constraint on the City's future expansion into flood-prone farmland, the DEIS proposes to extinguish development rights on farmland surrounding the City with a voluntary transfer of development rights program, the "Burlington Agricultural Heritage Credit Program." DEIS at 15 and Appendix E. For the reasons discussed below, Skagit County supports exploration of innovative planning tools to protect farmland, but is skeptical that such a program, standing alone, will adequately assure constraints on the City's future expansion into surrounding flood-prone agricultural land.

The success of the City's transfer of development rights (TDR) program would require an unequivocal, lasting commitment by the City to refrain from incorporating new agricultural land in the City's UGA, now or in the future.

Even the mere *possibility* that new agricultural land will be incorporated into the City's UGA would substantially inflate the value of agricultural land adjoining the City, likely beyond the reach of a transfer or purchase of development rights (PDR) program, potentially compromising the viability and effectiveness of the Skagit County Farmland Legacy program as well. In turn, the Farmland Legacy program is proposed to be the purchasing agent for farmland development rights under the City's Agricultural Heritage Credit Program.

The School District property on Pulver Road provides a case in point. The 28.9 acre property consisting of four parcels was purchased in July 2007 for a total purchase price of $1,830,970.[15] This equates to $63,355 per acre. The DEIS assumes that agricultural land is valued at $6,000 per acre absent development potential. *See*, "Skagit Valley Agricultural Land Value Analysis" at 1, attachment to DEIS Appendix E. In broad terms, the price differential between $63,355 per acre paid by the School District and the $6,000 per acre assumed by the DEIS represents a price premium that exists solely as a result of speculation that the property will be incorporated in the City and rezoned to more intensive non-agricultural uses at some later date.

As long as agricultural land on the City's periphery has the potential of a tenfold increase in value as a result of a potential incorporation and upzone, it is a virtual certainty the City will continue to expand into surrounding flood-prone farmland in future years. While we do not question the good intentions expressed in the DEIS, the global history of municipal willpower in preventing urban encroachment into surrounding flood-prone farmland demands skepticism.[16]

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[15] According to records filed with the Skagit County Assessor, parcel nos. P62593 (9.37 acres) and P62595 (6.29 acres) were purchased together for $1,000,000, while P62594 (8.34 acres) and P62596 (4.88 acres) were purchased together for $830,970.

[16] On March 11, 2009, as this comment letter was being drafted, the Washington State House of Representatives passed HB 1967, which, if passed by the Senate and signed by the Governor, would prohibit the expansion of municipal UGAs into the 100 year flood plain. Exceptions in the bill include UGAs that are surrounded by 100 year floodplain, which would appear to exempt the City of Burlington from the bill's ambit.

In our view, the first indispensable step toward problem solving is to stop making the problem worse. With that principle in mind, it is essential that we engage honestly in a difficult but unavoidable discussion as to how to permanently and lawfully constrain further incorporation and conversion of surrounding flood-prone agricultural land into the City's UGA.

The Burlington City Council cannot permanently prohibit incorporation of surrounding agricultural land by simply passing an ordinance to that effect. It is well-established that a municipal legislative authority cannot permanently constrain the legislative zoning acts of future City officials:

> *The power of a municipal legislative body to amend the zoning regulations is legislative in character. Therefore, it is not exhausted when it has been used once. Rather, a legislative body can reconsider its passage or rejection of a proposed amendment.*
>
> *Thus a zoning amendment may be valid although it was rejected by the same legislative body on an earlier occasion. . . . It is a matter peculiarly within the discretion of the legislature, and that body is free to change its mind without a demonstration that its earlier decision was demonstrably wrong, or that circumstances have changed since the earlier action.*

Anderson, American Law of Zoning, s 4.28 (1st ed., 1968). Thus, even if the City Council passed an ordinance banning new incorporation of agricultural land, the City Council would be free to simply amend that ordinance, or eliminate it altogether, at any time. As a result, surrounding agricultural land values would continue to incorporate a very high speculative rezone value factor even if the City goes so far as to pass an ordinance precluding incorporation of more surrounding farmland.

It is also a matter of substantial doubt as to whether such an ordinance would be enforceable standing on its own. Pursuant to the Growth Management Act, counties and the cities within its corporate limits, working together, are statutorily obligated to provide sufficient land to accommodate countywide population growth as forecasted by the State Office of Financial Management. RCW 36.70A.110, .115. It is far from clear that a city has the legal authority to unilaterally constrain its urban boundaries on a permanent basis, and it is virtual certainty that doing so would be subjected to legal challenge by surrounding agricultural landowners and other parties that support future conversion of agricultural land to urban uses.

However, it is entirely possible for the City to, permanently and enforceably constrain the expansion of its urban growth area into flood-prone farmland by executing an interlocal agreement to that effect. See, *State ex rel Myhre v. City of Spokane*, 70 Wn.2d 207, 216 (1968); *Swinomish v. Skagit County*, 138 Wn. App. 771, 776-77 (2007).

The *Swinomish v. Skagit County* decision is particularly instructive and on-point. Skagit County is party to a 1996 interlocal agreement between Skagit County and Skagit PUD No. 1, the City of Anacortes, various state agencies, and local tribes, an agreement that envisions joint water resources planning in the Skagit River Basin consistent with the Growth Management Act (hereinafter, the "Interlocal Agreement").

In 2003, Skagit County sought to have the Interlocal Agreement judicially invalidated on grounds it was an improper "granting away" of the County's legislative authority by a prior Board of Commissioners.

The Court of Appeals rejected Skagit County's argument, holding that the Interlocal Agreement was a proper, lawful and binding agreement, fully consistent with the GMA. Following is the relevant portion of the Court of Appeals decision:

> *The County asserts that the [Interlocal Agreement] is contrary to public policy and therefore void and unenforceable. It argues that the County cannot grant away its legislative authority or limit its ability to protect the health, safety, and welfare of its population. It further argues that it is prohibited from contractually limiting its governmental capacity when so doing could prevent it from enacting legislation that may become necessary to protect the welfare of its citizens.*
>
> .....
>
> *Far from being arbitrary and unreasonable, the [Interlocal Agreement] in the present case has a substantial relation to public health, safety, morals, and general welfare. It represents, not a limitation on the County's legislative and police powers, but a commitment to follow and enforce specific statutory requirements. There is abundant statutory authority to support a conclusion that the [Interlocal Agreement] is not contrary to public policy. The GMA itself specifies coordinated planning. " It is in the public interest that citizens, communities, local governments, and the private sector cooperate and coordinate with one another in comprehensive land use planning." The GMA mandates county-wide planning in cooperation with cities located within the county.*
>
> .....
>
> *The [Interlocal Agreement] comports squarely with the public policy aims of the GMA, the Interlocal Cooperation Act, and the Water Resources Act. Given the manifest legislative intent favoring cooperation and joint planning in the above acts, the [Interlocal Agreement] is not void as against public policy.*[17]

Simply put, the City can bind itself to stop growing into surrounding flood-prone farmland by signing a GMA interlocal agreement to that effect.

In the present circumstances, there is little question that protecting the community against catastrophic flooding while engaging in cooperative growth planning and protection of agricultural land all have a 'substantial relation to public health, safety, morals and general welfare," in accordance with "specific statutory requirements." Accordingly, entering a properly-drafted interlocal agreement to accomplish these ends is entirely lawful, necessary, and desirable.

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[17] *Swinomish v. Skagit County*, 138 Wn. App. at 776-78.

At its essence, the proposed action discussed in Burlington's DEIS is a proposed set of mutual promises:

- A promise that the City will permanently end further expansion into flood-prone farmland, thereby ensuring that the flood control risks and challenges the DEIS seeks to address will not grow worse and even more difficult for the community to address in the years and decades to come;

- In exchange for this promise, the City asks that the broader Skagit River Basin community agree to prioritize the City's effort to protect its existing built urban environment from the threat of catastrophic Skagit River flooding.

This concept has merit if the City is willing to commit to an enforceable agreement, i.e., put it in writing. Absent such an agreement, the DEIS presents no realistic mechanism to stop the City from continuing to expand into surrounding flood-prone farmland in future years.

As the DEIS highlights, protecting the City of Burlington's existing built urban areas against the risk of catastrophic flooding is perhaps the most difficult problem facing our region, both from the standpoint of public health and safety as well as the economic vitality of our community.

An agreement as discussed would constrain this problem to its existing footprint. It would send a strong message to federal and state officials who are concerned about enabling further urban sprawl into flood-prone agricultural land that our community is willing to make the hard decisions necessary to address our flood control challenges. It would provide quantifiable boundaries to the complex environmental, engineering and economic factors local officials must grapple with in planning to protect the City of Burlington and other communities in the Skagit River Basin from catastrophic flooding. At the same time, an enforceable agreement would substantially reduce pressure to convert flood-prone delta farmland surrounding the City, helping to safeguard a vibrant and viable agricultural economy within Skagit County.[18] Skagit County would continue to accept growth allocations consistent with the GMA, directing growth to areas that are not farmland under risk of catastrophic flooding.[19]

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[18] A long-term commitment to halting expansion of a city's urban boundaries into flood-prone farmland does not constitute regulatory taking as to the surrounding farmland. A law in general creates a regulatory taking only where property is deprived of all economically viable use. *Guimont v. Clark*, 121 Wn.2d 586, 605 (1993). A landowner has no legally-cognizable economic expectation that flood-prone farmland will be incorporated into a UGA and rezoned to urban use. See, *Peste v. Mason County*, 133 Wn. App. 456 (2006). The extent of the necessary process, notice and opportunity to be heard prior to effecting the agreement discussed herein is a topic that merits further analysis and discussion.

[19] Allocating new growth to areas other than flood prone farmland would benefit the finance, insurance and real estate (FIRE) sector in Skagit County by promoting higher overall property values. First, directing growth to non-flood prone areas would eliminate the negative value adjustment associated with development on land at risk of catastrophic flooding. This would simultaneously protect the agricultural community that plays a central role in making Skagit Valley's quality of life attractive to home buyers and businesses.

For all foregoing reasons, the City and the County should consider negotiations toward an interlocal agreement that formalizes and memorializes the City's proposals set forth in the DEIS. This may require consulting our partners on the Growth Management Steering Committee. This is an indispensable first step toward securing Skagit County's support for the proposed actions discussed in the DEIS.

We thank you for the opportunity to comment on the DEIS, and look forward to continuing to work with the City and Dike District 12 toward a regionally supportable flood hazard mitigation program. Please do not hesitate to contact the undersigned with questions, comments, or concerns.

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U.S. Department of Homeland Security
Region X
130 228th Street, SW
Bothell, WA 98021-9796

FEMA

May 21, 2009

City of Burlington, Washington
Department of Planning and Community Development
833 South Spruce Street
Burlington, Washington 98233
Attn: Margaret Fleek, Planning Director

Dike District #12
1317 South Anacortes Street
Burlington, Washington 98233
Attn: Chuck Bennett

Dear Ms. Fleek and Mr. Bennett:

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) Region 10 received your request for comments on the "Draft Environmental Impact Statement to Adopt a Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land with a Range of Structural and Non-Structural Components." This EIS was prepared as a requirement under the State Environmental Policy Act (SEPA). Although we have no regulatory responsibilities in reviewing SEPA determinations, we do review them for consistency with national goals in mitigating future disasters and promoting sound floodplain management.

The following comments were garnished from Mitigation staff and are submitted for your consideration:

1. If a federal nexus occurs the National Environmental Policy Act (NEPA) will be applicable and FEMA would consider the purpose and needs statement insufficient for meeting NEPA. In defining the purpose, FEMA recommends the city address the following:

   • The Purpose is analogous to the problem. It is the "what" of the proposal. The Purpose should be stated in a concise manner. The Purpose should be stated as the positive outcome that is expected. For example, the purpose is to reduce flooding impacts in the City of Burlington.
   • The project Purpose should address strategic goals such as:
     Taking Care of What We Have
     Making the System Work Better
     Increasing Capacity
     Improving Safety
   • The Purpose should avoid stating a solution, for example: "the purpose of the project is to build a levee."

- Similarly, it should be stated broadly enough so that more than one alternative can be considered and alternatives are not dismissed prematurely.

The need:

- Should establish the evidence that a problem exists, or will exist if projected population and planned land-use growth are realized.
- Should be factual and numerically based.
- Should support the assertion made in the purpose statement. For example, if the purpose statement is based on safety improvements, the need statement should support the assertion that there is or will be a safety problem to be corrected.

(source: Utah DOT guidance on Purpose and Need Statements)

2. FEMA doesn't prescribe structural solutions for addressing flooding problems. FEMA recognizes, however, that structural solutions may be the only viable option. FEMA recommends that further investigation and evaluation be done on non-structural solutions to thoroughly rule out those alternatives. If federal funding will be used, the Executive Order 11988 review process will require a rigorous review and documentation to identify practicable alternatives that avoid the floodplain.

3. If levees are deemed to be the only practicable solution, then FEMA encourages and supports levee setbacks as far from the river as possible to protect natural and beneficial functions of the floodplain (water, biologic and societal resources) and to provide for fish habitat and the incorporation of large woody debris between the levee and the river. Please refer to element 5D of the Reasonable and Prudent Alternative (RPA) issued by the National Marine Fisheries Service (NMFS) to FEMA on September 22, 2008. Following the criteria outlined in the RPA can help ensure compliance with the Endangered Species Act (ESA).

4. The DEIS does not include discussion of the effects of the proposal on the natural and beneficial functions of the floodplain in light of the National Marine Fisheries Services (NMFS) September 22, 2008 Endangered Species Act-Section 7 Consultation Final Biological Opinion (Bi-Op). The primary environmental mitigation action presented is the restoration, maintenance and management of the Gages Slough habitat and wetland corridor, but without sufficient details on location and actions to be taken, the determination on the sufficiency of the mitigation cannot be made.

5. The proposed action indicates the construction of a 100-year certified levee "in appropriate" locations and provides other flood measures "as necessary and appropriate." The DEIS should clarify and provide specifics.

6. The DEIS states that other flood measures "as necessary and appropriate" will be provided. What are the other appropriate flood control measures to protect the City of Burlington's urban area under consideration? Additional information is necessary to be able to assess potential impacts.

7. The use of the phrase "in appropriate locations" throughout the document makes reviewing the impacts of the proposal difficult. Once identification of specific "appropriate" locations is made, FEMA can provide more specific comments referencing impacts to the floodplain.

8. Although the document states that impacts to the local property owners for flood insurance requirements will occur, it is difficult to estimate what those specific impacts will be without knowledge of the proposed location of the levees.

9. The Draft Environmental Impact Statement (DEIS) states that, "No action will generate extremely high flood insurance premiums for the families that live in the community." Flood Insurance premiums are based on the maps that were in effect during construction of the home or business, unless the structure is substantially damaged or substantially improved.

10. The use of the most accurate hydrology and hydraulics is important to the design and construction of the levee; however, it is hard to determine what the effects of the project might be without knowing the requirements that it must meet. FEMA recommends that the city use at least one set of data to establish the effects of the levee for review purposes.

11. The downstream impacts are not clearly identified in the DEIS. Utilizing the best available hydrologic and hydraulic data would help to evaluate the impacts. Also, the specific impacts to both upstream and downstream communities need to be evaluated for those communities to determine additional measures they should take to protect themselves. A more holistic approach to a project like this would be more appropriate for the Skagit River Delta. Skagit County and the City of Mount Vernon should be included in the planning and design of this project.

12. Specific to downstream effects, the table on page 20 of the DEIS outlines the potential impacts from the two different scenarios. The U. S. Army Corps of Engineers (USACE) report identifies downstream impacts while the Pacific International Engineering (PIE) report makes no mention of downstream effects. Upstream and downstream impacts must be addressed, especially for adjacent jurisdictions (Skagit County and City of Mount Vernon) and their residents.

13. FEMA did not define a floodway for Skagit River delta communities. The City of Burlington must therefore administer their floodplain ordinance in accordance with 44 CFR 60.3 (c) (10) which states: "no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 on the community's FIRM unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood more than one foot at any point within the community."

14. The proposed action and the "no action" alternatives discuss potential economic impacts; however, they do not assess the risk of flooding in their assessment and discussions. The construction of a levee does not constitute a "no risk" scenario.

Finally, since the NMFS issued its final Biological Opinion on September 22, 2008 FEMA advises all communities participating in the National Flood Insurance Program (NFIP) that before any permit is issued an application for a Conditional Letter of Map Revision (CLOMR) should be submitted. This will initiate FEMA's review of the project under Section 7 of the Endangered Species Act. Of course, the applicant or community always has the option to pursue a Section 10 ESA permit with the U.S. Fish and Wildlife Service or National Marine Fisheries Service.

Thank you for the opportunity to comment. We look forward to reviewing additional documents as you progress further in your planning.

Sincerely,

Mark Carey, Director
Mitigation Division

MR:bb

Skagit River System Cooperative
11426 Moorage Way • P.O. Box 368 LaConner, WA 98257-0368
Phone: 360-466-7228 • Fax: 360-466-4047 • www.skagitcoop.org

June 8, 2009

Margaret Fleek
Planning Director
City of Burlington

Electronic Correspondence

Reference: Draft Environmental Impact Statement to Adopt a Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land

Dear Ms. Fleek

Thank you for the opportunity to submit late comments on the Burlington Flood Hazard Mitigation Draft EIS. Skagit River System Cooperative (SRSC) submits these comments on behalf of the Sauk-Suiattle Indian Tribe and the Swinomish Indian Tribal Community.

SRSC appreciates the City of Burlington's and Dike District 12's (City) desire to plan for flood damage reduction through the development of the Flood Hazard Mitigation Draft EIS (DEIS). The Sauk-Suiattle Tribe and Swinomish Tribe recognize the need for comprehensive flood damage reduction in the Skagit Valley. The DEIS however lacks sufficient detail and fails to analyze the effects of primary proposed actions of heightened and fortified levees to attain Federal Emergency Management Agency (FEMA) 100-year certification. The DEIS does not perform any hydraulic analysis of the alternatives, it only states generalities of potential effect. The DEIS repeatedly states the City's intent to construct 100-year certified levees where appropriate and other flood control measures as necessary and appropriate without any identification of locations or analysis of effects. The City needs to identify what areas would be appropriate for 100-year levees and what other measures would be considered for other locations. The alternatives analysis needs to include flow modeling including water routing if over-topping levees are considered as alternatives. Upstream and downstream effects need to be analyzed for all alternatives with specific details. That analysis should include the necessary height of levees for 100-year certification, an analysis of what waterward work will need to take place so that the levee toe can support the additional levee height, and a cumulative effects analysis of how increasing levee height will affect the in-water levee maintenance schedule. The primary analysis of the No Action Alternative seems to be that it will make it harder to develop the flood plain in Burlington and induce economic hardship. There is no analysis of hydrology and where flood waters will route under the No Action Alternative, nor is there any environmental analysis. There are also a very limited number of alternatives to the proposed

action. The alternatives are essentially raising the levees and no action. For a major action there should be other alternatives considered, at least a levee setback option should be analyzed.

There is considerable discussion in the DEIS about competing flow models. The City comes to the conclusion that it only has viable options if its consultant's model is used. The City also states that it is prepared to appeal the FEMA decision and take legal action if FEMA does not chose to use the City's consultant's model. In this respect the DEIS seems premature. The City should either wait for the FEMA process to be completed or analyze the alternatives using all three models.

The DEIS does not analyze the proposed action in the context of comprehensive basin wide flood damage reduction studies. The DEIS recognizes that flood control efforts by the City will likely need to be coupled with other actions under consideration to avoid impacts but provides no direct analysis.

The Affected Environment, Significant Impacts, and Mitigation Measures section does not contain sufficient detail and analysis of ongoing and foreseeable impacts. The continued maintenance of the DD 12 levee at Burlington maintains the banks of the Skagit River in a degraded state for fish habitat. Without continued maintenance the levee would degrade and fish habitat would recover. SRSC recognizes the city's need to maintain the levee but there also needs to be mitigation to off-set the impact to fish of continually maintaining the Skagit River in state of degraded habitat. Even with the levees in a functional state there could be some incremental improvements in fish habitat but vegetation removal and addition of new rock at potential failure sites precludes significant incremental habitat improvement. The City's proposal has the potential to exacerbate this problem. Raising the levees in place may place more pressure on the levee toe rock and river front levee face requiring more frequent levee maintenance. Raising the levees may also require increasing the waterward footprint of the levees further impacting fish habitat. The DEIS alludes to this possibility but does not evaluate that potential or environmental impact. The DEIS does not analyze any alternatives such as set back levees with riparian restoration that could significantly decrease the environmental impact of maintaining a system of levees. The DEIS states that there will be fish benefits because there will be riparian restoration in Gages Slough resulting in improved water quality. Gages Slough is not connected directly to the Skagit River and has no anadromous fish access. Therefore riparian restoration in Gages Slough will not have a direct benefit to anadromous fish. Improved water quality may provide some benefit to fish but that benefit would be far short of commensurate with the impact to fish of maintaining the Skagit River in its degraded state.

SRSC believes it would be counterproductive to proceed to a Final EIS from the current draft and recommends that the City of Burlington and Dike District 12 issue a supplemental Draft EIS with a greater level of analysis. The supplemental DEIS should include a comprehensive hydraulic analysis of the proposed action using all three hydraulic models. Conversely if the city wished to use only one model for in-depth hydraulic analysis the City should wait until the model issue is resolved by FEMA. The hydraulic analysis should include up and downstream environmental effects as well as the projects effects on other proposed flood damage reduction measures. The supplemental DEIS should also include a greater analysis of the No Action Alternative and analyze additional alternatives. The National Marine Fisheries Service (NMFS)

recently issued a Jeopardy Biological Opinion for effects of FEMA's National Flood Insurance Program (NFIP) in Puget Sound. The City should address the Biological Opinion and how it may effect the proposed action, other alternatives, and flood plain development in Burlington.

SRSC appreciates the opportunity to provide comments on the Burlington Flood Hazard Mitigation Draft EIS and looks forward to working with Burlington and Dike District 12 toward comprehensive flood damage reduction solutions in the Skagit River Basin.

Sincerely,

Stan M. Walsh
Environmental Services Manager
Skagit River System Cooperative

Cc: Lorraine Loomis (Swinomish)
Richard Wolten (Sauk-Suiattle)

March 10th, 2009

To City of Burlington:
Re: new flood protection

I am voicing my concerns about Burlington's plan to build flood protection at the expense of my property at 21241 Lafayette, Sedro-Woolley, Washington. I have owned this property for many years and have seen it flooded and have elevated the house to be above the 100 year flood mark and the railroad tracks and grade to the north. Currently when the water gets high it flows over the railroad tracks and grade, flows northwest and that's the highest it can get on the property. I'm concerned if flow is restrictive that it might back up higher on our property and my neighbors and cause more damages. Please enter my concerns for the open comment period.

Thank You,

Mike Anderson
900 w sr 20
Sedro-Woolley, Wa 98284

360-856 4637

Jones & Smith

Attorneys at Law

Gary T. Jones

Gail R. Smith

June 3, 2009

RECEIVED

JUN 05 2009

PLANNING DEPT.

Margaret Fleek, Director
Planning and Community Development
City of Burlington
833 South Spruce Street
Burlington, WA 98233

Re: Draft Environmental Impact Statement
Comprehensive Flood Hazard Mitigation in Burlington Urban Area

Dear Ms. Fleek:

I am writing to confirm that you orally agreed to extend time for Diking District No. 3 and Consolidated Dike District No. 22 of Skagit County to comment further on the Burlington Comprehensive Flood Hazard Mitigation program described in the DEIS. The Districts commented on March 13, 2009.

Based on your confirmation that this is a programmatic EIS and that further environmental review will be done with notice to the Districts before permits and implementation of the plan, the Districts are not commenting further at this time.

As the comments by Skagit County indicate and as the Districts comment letter dated March 13, 2009 states, the DEIS involves multiple levels of local, Skagit County and Burlington policy and planning; state shoreline and flood hazard mitigation planning regulated by the Washington Department of Ecology as well as Federal issues including the letter of map revisions by Federal Emergency Management Agency, as well as Coastal Zone Management consistency determinations. All this is in addition to the consultation under the Endangered Species Act required for the Corps of Engineers or FEMA to proceed with the comprehensive flood hazard mitigation in Burlington urban area.

Thank you for the courtesy extended to our clients. We wish Burlington well in its efforts to coordinate a comprehensive flood hazard mitigation program with other affected jurisdictions.

Respectfully yours,

JONES & SMITH

GARY T. JONES
GTJ/slb
cc: Stan Nelson
David Olson
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Pine Street Legal Center · 415 Pine Street
P.O. Box 1245 · Mount Vernon, WA 98273
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Jones & Smith

Attorneys at Law

Gary T. Jones Gail R. Smith

March 13, 2009

RECEIVED
MAR 13 2009
PLANNING DEPT.

Margaret Fleek, Director
Planning and Community Development
City of Burlington
833 South Spruce Street
Burlington, WA 98233

Re: Draft Environmental Impact Statement
Comprehensive Flood Hazard Mitigation in Burlington Urban Area and adjacent land.

Dear Ms. Fleek:

City of Burlington and Dike District No. 12 as co-leads issued a draft environmental impact statement (DEIS) on February 13, 2009. I found out about it because of skagitriverhistory.org and Larry Kunzler in March. The Skagit Valley Herald had a story March 7, 2009. Skagit County Diking Districts 22 and 3 were asked for letters of support for a railroad bridge project recently, but not for comments on the DEIS. Appendix F does not list any Drainage or Dike Districts on its Distribution List.

The document puts forward for the public and governmental entities a detailed statement required by RCW 43.21C.030(2)(c) because of proposals which would have a significant environmental impact. The Appendices assemble important data and sources of law which should guide the City of Burlington in its proposed action. There are many more sources of information, including the Anchor Environmental Consultants' impact statement underway for the Three Bridge Corridor which are relevant. I had no access to the maps which are referenced in the DEIS, and will try to get them.

The inescapable conclusion is that the actions described in the DEIS involve multiple levels of local, Skagit County and Burlington policy, and planning; state shoreline and flood hazard mitigation planning and regulation through the Department of Ecology, as well as federal issues including the Letter of Map Revision by the Federal Emergency Management Agency approval and or permits as well as Coastal Zone Management Consistency Determination. Endangered Species Act consultation is triggered by both the FEMA request and the permits which would be required from the Corps of Engineers under the Clean Water Act and Rivers and Harbors Act to build levees or bridges.

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Under the frame work of the State Environmental Policy Act and particularly RCW 43.21C.060:

> "Any governmental action may be conditioned or denied pursuant to this chapter: PROVIDED, That such conditions or denials shall be based upon policies identified by the appropriate governmental authority and incorporated into regulations, plans, or codes which are formally designated by the agency (or appropriate legislative body, in the case of local government) as possible basis for the exercise of authority pursuant to this chapter. Such designation shall occur at the time specified by RCW 43.21C.120. Such action may be conditioned only to mitigate specific adverse environmental impacts which are identified in the environmental documents prepared under this chapter. These conditions shall be stated in writing by the decision maker. Mitigation measures shall be reasonable and capable of being accomplished. In order to deny a proposal under this chapter an agency must find: (1) The proposal would result in significant adverse impacts identified in a final or supplement environmental impact statement prepared under this chapter; and (2) reasonable mitigation measures are insufficient to mitigate the identified impact."

The DEIS is ambiguous as to whether it is intended as a project or non project environmental impact statement ("EIS"). Based on its content and the lack of site specific analysis the EIS appears to be non project or programmatic. See page 18 paragraph 1, page 9 paragraph 1. Nevertheless project actions are spelled out in the summary at page 14. Is the City intending to use the FEIS as a basis for declaring that projects in the document are "planned action" authorized without further environmental review under RCW 43.21C.031(2), WAC 197-11-164/172. If so the Districts object. An acceptable use of the FEIS would be to initiate Phased Environmental Review under WAC 197-11-060(5). The line on the DEIS cover sheet says "This is a phased review pursuant to WAC 197-11-060(5). By moving from the current broad review and assessment of City policy to achieve 100-year flood protection to later narrower site specific analysis of projects implementing levee set backs, changes to a bridge or structure, impacts can be better identified, investigated, mitigated, and implemented.

A key document in the draft environmental impact statement is an overview which you prepared and submitted to the Land Use Planning Technical Committee, a subdivision of the Advisory Committee to the Skagit County Board of Commissioners under its comprehensive flood hazard management planning process. This process is a local advisory response to the General Investigation ("GI") Study being conducted by the Corps of Engineers under contract with Skagit County. Skagit County in turn is managing this project through its Countywide Flood Control Zone District. The GI Study has proven to be an expensive process for local jurisdictions, led by Skagit County.

Some added flood storage at dams of PSE on the Baker River is conditioned on completing the GI Study. The DEIS published by Burlington and the Mount Vernon Flood Protection Project, aimed at similar objectives for downtown Mount Vernon when its EIS was completed last year.

It is not accurate to refer to the GI study as the no action alternative. It is fair to identify the GI study as a watershed flood plain flood hazard reduction plan rather than urban growth protection plan. How long either plan requires for implementation is speculative.

In light of several parallel processes which are active at the time of this DEIS publication and the multi level consideration of legal and factual issues which are relevant to the Burlington proposal, I am writing to request that additional time be granted to respond to the impact statement. WAC 197-11-455 allows extension of time.

Among the benefits which could flow from additional time for written response to the draft environmental impact statement will be some opportunity for developing a consensus about a preferred alternative or rational basis for supporting or opposing a particular alternative among those set forth on page 6 of the impact statement. In my initial review of the document I do not see links to the City of Burlington's plans which involve transportation agencies. The so called "Three Bridge Corridor" is identified in the hydrology documents as a barrier to passage of the flood having a one percent chance of occurring in any year. Debris management, set back levees and other components of alternative plans are essential for managing the 100-year flood or larger flows in the Skagit River. All these studies report that more than 160,000 cubic feet per second will not pass through the railroad bridge owned and operated by Burlington Northern Santa Fe at the up stream end of the Three Bridge Corridor. Any evaluation of the environmental impacts of a flood plain management plan for Burlington and Skagit County must resolve questions such as whether these bridges will be modified to accommodate a 100-year flood and whether an alternative to passage of the flood through the Bridge Corridor can be done consistent with public safety, and environmental protection.

Diking District No. 12 has involved other districts, including all five of the main stem Skagit River corridor diking districts in a joint effort partially funded by a Puget Sound Energy settlement gained by the efforts of Skagit County Diking District No. 12 and District No. 1. Speaking for Skagit County Consolidated Diking District No. 22 and Skagit County Diking District No. 3 it is crucial that all plans for managing flood water slow the velocity and reduce the water surface elevation by providing corridors for flood waters to leave the flood plain by means other than the main stem of the river. These districts propose that a comprehensive plan be developed starting at the salt water dikes and working up stream to reduce barriers to interior drainage and accommodate water, silt and debris generated by a flood event greater than the base flood which has the

probability of occurring equal to one percent in any given year on Skagit County's flood plain.

The cumulative impact of protecting Mount Vernon and Burlington Urban Growth Area as allowed by the common enemy doctrine will have impacts on other private and public entities which face a higher risk of levee failure if concurrent action is not taken to reduce the velocity and water surface elevation of a major flood. The Burlington DEIS does not identify a path to salt water for flood water avoided on the Burlington portion of the Skagit flood plain.

It will take more time than the March 13, 2009 deadline allows to complete meaningful comments on the DEIS with its many appendices on behalf of the other dike and drainage districts and their constituents. This writer commends the City of Burlington for a serious effort to involve and inform the public about its plans and the choices which are facing the community of Burlington and its neighbors. A 30-day extension of time for comments would be the minimum to allow public bodies such as dike and drainage districts which meet periodically to formulate their response. By this letter I am requesting that the time for response be extended to Wednesday, May 13, 2009.

Thank you for your consideration of this request for additional time to analyze the draft environmental impact statement.

Respectfully yours,

JONES & SMITH

GARY T. JONES
GTJ/lfd

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Larry Kunzler

www.skagitriverhistory.com

RECEIVED

MAR 0 9 2009

PLANNING DEPT.

Date: March 8, 2009

To: City of Burlington and Dike District #12

From: Larry J. Kunzler

RE: Comments on Draft Environmental Impact Statement to Adopt a Strategic Program for Comprehensive flood Hazard Mitigation

Please accept the attached as my comments on the above referenced document. While I am providing the City with a hard copy, I am also publishing my comments on www.skagitriverhistory.com. I would appreciate being placed on your mailing list for any future FEIS on this program. Thank you for the opportunity to comment.

1. Proposed Action – Construct 100-year certified levees in appropriate locations, and provide other flood measures as necessary and appropriate based on FEMA's final Flood Insurance Study, when this study is adopted following resolution of any appeals. (Page 6)

COMMENT #1: Throughout this draft EIS the term "in appropriate locations" is liberally used. The final EIS should identify where these "appropriate locations" are. Dike 12 levees extend from the terminus of Layfette Road south and west to the Avon Bend area. Contained in that area should be identified where exactly would it not be appropriate to construct a 100-year certified levees.

Also the term "other flood measures as necessary and appropriate" is also liberally used. The final EIS should state with specificity what those measures are and provide a through environmental including but not limited to a complete hydraulic analysis on how those "other flood measures" will impact surrounding communities upstream and downstream of their proposed location.

2. **No Action** – This is essentially embodied in the current General Investigation study that has been underway for many years by the County and the Corps of Engineers, and because of lack of adequate funding will not be completed until 2018 at the earliest. (Page 6)

Comment #2: The final EIS should provide justification for such a provocative statement. Where did the 2018 date come from? While I am somewhat sympathetic to the cities frustration with the GI process, it is my understanding that the GI process will be completed well before 2018. If the city has information to the contrary it should provide it in the FEIS.

3. Remove approximately 30 acres of land from the UGA and exchange for land located at the northeast corner of Pulver and Peterson Road for a school site.

The 30 acres currently in the UGA will be returned to agricultural resource zoning and the school site will be redesignated as UGA, from its agricultural zoning classification. Adjacent farmland development rights will be acquired and a permanent urban separator designed along the boundaries of the site, coordinated with the adopted Connected Open Space Plan for Burlington. (Page 6)

Comment #3: *Essential Facilities* are essential to the health and welfare of the whole population and are especially important following hazard events. The potential consequences of losing them are so great that they should be carefully inventoried. Vulnerability is based on the service they provide rather than just their physical aspects; therefore, not only their structural integrity and content value should be considered, but also the effects of interrupting their functions. Essential facilities include hospitals and other medical facilities, police and fire stations, emergency operations centers and evacuation shelters, and schools.
(Source:http://www.gflrpc.org/Publications/GeneseeAllHazard/CritFacilities&ComAssets.pdf)

Given the verbiage above why would the City of Burlington recklessly endanger the life and safety of it school children by placing a school, a critical/essential facility in the location that has historically flooded. The photo below is from the 1917 flood event showing waters crossing Peterson Road not far from the location Burlington wants to build its school, in a volcanic floodplain, underlain with volcanic lahar material, adjacent to two active earthquake faults, and located on "prime farmland". Come on people, this is not a good idea by any stretch of the imagination.

4. Evaluate the concept of adding Raspberry Ridge to the UGA so that sanitary sewer is provided to mitigate potential health hazard in event of a flood.

This area is proposed to be added to the Burlington UGA and zoned as Open Space in order to be able to provide sanitary sewer to the high density farmworker housing that has been constructed on the site that is zoned as Agricultural Natural Resource Land (Ag-NRL). The goal is to protect the citizens of Burlington from contamination by sewage from failed septic systems in the event of a flood. This area was proposed to be included as a sending zone for farmland development rights under the transfer/purchase of development rights provisions adopted in the Burlington Zoning Code in 1994. However, this proposal was rejected by Skagit County at that time. Page 6

COMMENT #4: It appears that this proposal is just another excuse to further create intense density within the City. The Final EIS should identify the terminus of the current sewer lines, the route taken to the farm worker housing identifying all properties that would benefit from a sewer line extension, the current zoning of the property and how that could change with city

services made available and how the extension is going to be paid for. Given the cities, well-publicized opposition to the farm worker housing project residents must be assured that this is not just another attempt to have them removed from their current location by charging them excessive hookup fees. Given the obvious violation of Executive Order 11988[1] it is assumed that no federal funds will be used for this project. It is also apparent that the cities presumed worries about "contamination by sewage from failed septic systems" is superficial at best. If the levees fail, and eventually they will as they all do, any possible sewage contamination from the housing project will be the last of Burlington's worries as every farmer's manure pit from Burlington to Concrete will also be flowing through Burlington. Not to mention all the chemicals stored within Burlington itself.

The purpose is to stabilize the Base Flood Elevations for the long term future, ensure predictable development standards, protect the public from the 100-year flood (which has a 1% probability of occurring in any year) initially, while planning for and implementing measures to provide incrementally greater protection as time goes by. (Page 9)

COMMENT #5: This statement seems to be adding now another purpose of this proposal. If the City is successful in someday achieving 100-year certified levees what will the cities policy be with respect to requiring development to be built to what elevation? 100 year flood levels or flat on the ground? The Final EIS should also identify by what means the city perceives are available to "provide incrementally greater protection" and what if any environmental impacts those perceptions would entail.

At that time (July 3, 1984), conventional floodways were determined not to be appropriate for the Skagit River delta area for a number of reasons (See Appendix D, Exhibit 6, page 18.) In lieu of a floodway, pursuant to additional study, FEMA accepted a "most probable failure point" analysis, which had the flood overtopping the railroad tracks at Sterling. In Burlington, FEMA helped with a compromise which was to designate Gages Slough a "Special Flood Risk Area." This area does not have all the qualities of a floodway, but the designation is quite restrictive with flow-through house designs and other elements. Now, a regulatory floodway is being proposed for "later adoption" by FEMA, following changes to the Base Flood Elevations, and it is critical to Burlington that the adopted program of protecting overbank flow paths through farmland preservation be retained as a floodway-like option. (Pages 9 & 10)

COMMENT #6: The comments above are nothing short of incomplete and downright misleading. The FEIS should include a much more thorough analysis based on the documentation below. The base flood elevation analysis consisted of the following: (NOTE: All documents are available for public viewing at www.skagitriverhistory.com under FEMA.)

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[1] Executive Order 11988 is online at http://www.FEMA.gov/plan/ehp/ehplaws/eo11988.shtm.

Skagit County, WA

As a result of meetings held in Region 10 during the week of March 15, 1982 it was determined that a conventional floodway would not be established for the communities within the Skagit Delta area. These include Skagit County, the cities of Burlington and Mt. Vernon, and possibly others. The FIRM for these communities should show floodways delineated to include only the main channel of the Skagit River and the levees. Thus, the floodway should be delineated at the inside toe (protected side) of the levees.

Source: 4/2/1982 FEMA MFR, http://www.skagitriverhistory.com/FEMA/1982-4-2%20MFR%20re%20D&M.pdf

Despite the fact that the Federal Emergency Management Agency (FEMA) has not designated a regulatory floodway, it is still recognized that there is a need for development to be regulated in order that flood hazards are not significantly increased. Section 60.3c of the Code of Federal Regulations is designated for areas where 100-year flood elevations have been established but no regulatory floodway identified. The City of Burlington and Skagit County will be required to adopt ordinances which comply with the requirements of Section 60.3c in order to maintain participation in the NFIP. Part of this requirement will be to ensure that no new construction, substantial improvements, or other development (including fill) is permitted within Zones A1-A30 on the Flood Insurance Rate Maps, unless it is demonstrated that the cumulative effect of proposed development, when combined with all other development, will not increase the water-surface elevations of the base flood more than 1.0 foot at any point within the community. While it is recognized that this determination will be difficult for reasons discussed in this letter, good faith efforts on the part of these communities will be expected by FEMA.

Source: 8/22/83 FEMA letter, http://www.skagitriverhistory.com/FEMA/1983-08-22%20Mrazik%20Letter%20to%20LJK.pdf

The basic standard FEMA must require of communities in situations where floodways are not yet established, is Section 60.3(c)(10) of the program regulations (copy enclosed):

(10) Require until a regulatory floodway is designated, that no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development, will not increase the water surface elevation of the base flood more than one foot at any point within the community.

Source: 12/15/1983 FEMA letter to Burlington, http://www.skagitriverhistory.com/FEMA/1983-12-15%20Ltr%20to%20Burl.pdf

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First, Mr. Kunzler states that the FIS fails to accurately identify flood-flow paths. Given available topographic information for the Skagit River Delta and the uncertainties of where levee overtopping and/or failure would occur, it is impossible for the Federal Emergency Management Agency (FEMA) to predict the precise path of a 100-year flood. We estimate that approximately 130,000 cubic feet per second (cfs) of the 240,000 cfs 100-year discharge could not be handled by the Skagit River channel, but would instead travel through overbank areas. As explained in our August 22, 1983, letter to Mr. Kunzler, we cannot divide that flow with any degree of certainty between Burlington proper (Gages Slough and overbank areas) and the agricultural area north of the city. The nature of the delta is such that flooding occurs in sheetflow patterns. Topographic variation will result in some split flow at Interstate 5, but the overbank flood plain itself will not diverge into 2 distinctly separate entities until the flow reaches Bay View Ridge.

Source: 2/1/1984 FEMA letter to Burlington,
http://www.skagitriverhistory.com/FEMA/1984-02-01%20Mrazik%20to%20Henery.pdf

According to Mr. Moos, our assumption that the entire overland flow of 130,000 cubic feet per second (cfs) exits the Skagit River channel upstream of Burlington is unrealistic and inconsistent with historic flooding. FEMA recognizes that the proposed base (100-year) flood elevations (BFEs) resulting from this assumption may not duplicate recorded flood events. However, because it cannot be predicted with sufficient certainty where flow breakouts caused by levee breaches and failures will occur, our modeling distributes all flow which exceeds the estimated river channel capacity of 110,000 cfs to the overbank areas. Since the Skagit River levees are inadequate to contain the total 100-year discharge of 240,000 cfs, our hydraulic analysis was performed as though the levees did not exist, in conformance with our levee policy.

Source: 5/22/1984 FEMA letter to Burlington,
http://www.skagitriverhistory.com/FEMA/1984-5-22%20Ltr%20to%20Burl.pdf

In addition to our discussion on the extra foot of freeboard, we also discussed the need for a setback from the levees in the interest of protecting the public health and safety. Two separate types of zones were discussed, first a zone where all new construction would be prohibited and, second, a zone where special building techniques and engineering certifications would be required. In our discussions, we concluded that a 100 foot setback would be desirable and realistic in view of the real hazard posed by levees that could break at any point. Likewise, because of the possibility of such breaks, an additional setback necessitating special building techniques between 100 and 500 feet from the levees was judged to be appropriate. These techniques would involve use of post, pier, pile, or column construction, with water able to flow under the foundations, and would need to be certified by a registered engineer as being able to sustain at least overtopping velocities. These two strips would also serve as additional conveyance areas to complement that which is described in the next paragraph.

Concerning conveyance areas, we agreed that the work Bob Boudinot is doing to designate secondary drainage channels, such as the Gages Slough, as areas for which building cannot occur, as well as designating areas adjacent to such channels as areas in which buildings must be elevated using post, pier, pile, or column techniques, would be desirable and would probably comply with the encroachment provision found at Section 60.3(c)(10) when combined with the additional strip available along the levees discussed in the previous paragraph. We agreed that construction in these areas would not need to be certified against velocities as they would for the strip adjacent to the river and levees.

Source: 11/1/1984 FEMA letter to Skagit County:
http://www.skagitriverhistory.com/FEMA/1984-11-1%20Ltr%20to%20SC.pdf

Thus we can tell from a review of the above documents that FEMA performed their analysis as if the levees did not exist (thus giving the residents of Burlington a terrible false sense of security on how deep the water will be in case of a levee failure) and that the informal floodway in the lower valley was from the landward toe of the levees to the landward to of the levee on the opposite side of the river. Also since a regulatory floodway was not established that Burlington was to conduct themselves under 44 CFR 60.3.(c)(10) meaning that "no new construction, substantial improvements, or other development (including fill) shall be permitted within Zones A1-30 on the community's FIRM, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other existing and anticipated development will not increase the water surface elevation of the base flood more than one foot at any point within the community." The FEIS should extensively discuss and show with hydraulic analysis that the massive development east of Interstate 5 has not already raised the flood waters more than one foot at any point in the community, especially concentrating on the area east of the interstate. The FEIS should also speak with specificity to the issue of where it has or as the case may be why it has not ever enforced the verbiage of 44 CFR 60.3.(c)(10).

The relicensing of the Baker Dams for an additional 50 years includes agreements for funding mitigation actions of many kinds, and expenditure of funds to accomplish those goals; however, flood hazard mitigation is not currently

7

being addressed, and no funding has been set aside to upgrade the spillways on Lower Baker Dam. Without the ability to more quickly evacuate water in advance of a flood, any future benefits of additional flood storage in this river system cannot be counted on to assist in taking the peaks off flood events. Puget Sound Energy has stated that they intend to work with local jurisdictions on an informal basis. The November 2008 flood threat was handled extremely efficiently with the Corps of Engineers taking over operation of the dams and the peak flood elevation was reduced by about four feet. (Page 10)

COMMENT #7: Instead of touting the dam owners with their failures to provide Burlington with not promoting further growth in the bottom of a volcanic floodplain by forcing them to provide something that Burlington has not yet stated that they are willing to pay for, the public would be better served if the FEIS shows how while the smaller flood events in recent years have in fact been better managed by the Corps and the dam owners that this style of management has a downside as well as it lulls the lower valley into another false sense of security that makes people believe that they are totally protected by the storage already provided by the dams. The FEIS should verbalize that neither the Seattle City Light dams nor the Puget Sound Energy Baker dams have the capacity to contain large flood events and that once their capacity has been reached it will be like the dams did not exist at all and major damage will be the end result within the lower valley floodplain.

For the mainstem Skagit system, Ross Dam and reservoir provide valuable flood storage during the winter flood season; however, the availability of this flood storage must be moved to mid- October, instead of 1 December as the license currently allows. (Page 10)

COMMENT #8: While this is an admirable purpose/goal the FEIS should extensively address how the City of Burlington will finance the loss of generating capacity to Seattle City Light.

It is the City's position that these Base Flood Elevations, if adopted, will have a severe, long term negative impact the economy of the region. Immediate effects will be on the redevelopment of old downtown, where the lots are 30 feet wide. Elevating the first occupied floor up one story will be a difficult and costly challenge for property owners and the community. The market conditions for redevelopment of old downtown are slow to emerge and there is no predicting the timeline for revitalization at this point. (Page 11)

COMMENT #9: While there is no dispute that elevating buildings is a "negative impact" on the pocketbooks of developers, said negative impact is far outweighed by the safety provided by such elevation to the residents/businesses that move into said structures. The FEIS should in detail discuss the cost involved of raising a building either on fill or post and pier construction versus the damage to the contents of a business when the levees break and a catastrophic flood event occurs.

4. A viable regional strategy is not in place.

An array of flood hazard mitigation strategies exist and have been studied for many years in Skagit County, but there is no regional strategy for approving or implementing them. Skagit County is working toward development of an update of the Skagit County Comprehensive Flood Hazard Management Plan. The City of Burlington is not represented on the Advisory Committee and the scope of work appears limited to the Corps of Engineers General Investigation without consideration of independent studies by Burlington and Skagit County. There does not appear to be an emerging consensus on the best course of action, for a number of reasons, including the fact that few of the proposed measures will work with the hydrology set forth by the Corps.

Some of the relevant components include flood storage at Lower Baker Dam, better utilization of the Nookachamps area for flood storage when combined with better protection of the Sedro-Woolley sewer plant, extending levee protection along the railroad east of Burlington to a point so the site does not require flood fighting, setting back the levees in the multiple bridge corridor through Burlington and Mount Vernon, and protecting overbank flow paths in lieu of a regulatory floodway. (Page 11)

COMMENT #10: I would first like to address the text highlighted in yellow above. While it is true that the City of Burlington is not a sitting voting member on the Advisory Committee, the City has its City Planner as the chairperson of the Land Use Sub-Committee and Dike District 12 (Burlington's admitted partner in this DEIS, sits on the Dike and Drainage Sub-Committee both committees of which report to the Advisory Committee. If the City of Burlington really feels that it needs three bites at the apple then maybe they should contact the Mayor of Mount Vernon who has boycotted the last 6 months worth of meetings and who refuses to give his voting proxy to his City Engineer or other City employee and see if he would be willing to give up his seat at the Advisory Committee table to the City of Burlington. While I have no authority to speak for the rest of the members of the Advisory Committee I for one would welcome the City of Burlington taking Mt. Vernon's place.

With respect to the second paragraph while I must admit that the process is painstakingly slow progress is being made. At the last Advisory Committee meeting the committee endorsed the GI study evaluating Lower Baker Dam storage, threw out the "better utilization of Nookachamp Storage project" as a project that will not work for many reasons including impacts on salmon, ownership of the levees proposed, cost, and as Burlington has often admitted a project that will not work unless their consultants hydrology is used. Not to mention the fact that this project had been looked at in 1966 and again in 2001 and rejected both times.

If the City of Burlington strongly feels that extending levee protection to Sedro Woolley is a viable option then the FEIS should include a complete hydraulic analysis to show the impacts on upstream and downstream property owners. In 1979 the Corps GDM stated that such action would increase BFE's by about 4 feet which clearly would be unacceptable to those impacted.

b. Burlington strongly supports participating in the National Flood Insurance Program. The only viable option for the City at this time appears to be taking expeditious action to get the levees certified for 100-year flood protection, including any related actions such as training levees, control mechanisms to move water north to overbank flow paths through farmland areas, ensuring

Gages Slough is protected as a flood drainage mechanism and facility, and other measures. This will ensure that the levees are given credit in setting the Base Flood Elevations and that the elevations are reasonably close to the existing condition. (Page 12)

COMMENT #11: The FEIS should state with specificity when Burlington states "get the levees certified for 100 year flood protection" if it means the entire levee system or as it stated in paragraph #1 page 6 "in appropriate locations". The FEIS should state where the "appropriate locations" are if it is the latter. It should also state how high the levees will be for them to be certified as compared to how high they are now. Also the FEIS should indicate the width of Gages Slough (high ground to high ground) and the amount of water the City feels will flow through this area.

c. With certified levees, flood insurance may become optional in some locations. The City of Burlington will continue to strongly support the flood insurance program. (Page 12)

COMMENT #12: Really? Just in some locations? The FEIS should state with specificity which areas if feels will not need flood insurance.

How about this area? Will it be out of the 100 year floodplain and if so does that mean that all property south to the Skagit River behind the levees will also be out of the 100-year floodplain?

Flood of 1921 Fairhaven Street Looking West

1921 Flood 09 - Fairhaven Looking West.jpg

3. FEMA has also proposed creation of a Regulatory Floodway at some point in time after the Base Flood Elevations are put in place. It is the City's position that the Regulatory Floodway issue must be considered together with the Base Flood Elevations and the correct hydrology and hydraulic modeling, so that cumulative effects can be evaluated and a responsible course of action can be selected. (Page 12)

COMMENT #13: Any regulatory floodway must be based on reality, meaning where the waters will be flowing. The deeper the water and the faster the current the more the area should be considered as a floodway. Under existing conditions, no waters will cross Interstate 5 from the Skagit River north until they reach the Gages Slough area next to and including the Cascade Mall. WSDOT purposely designed the freeway to overtop in that location. From there the waters traverse overland to Padilla Bay. The path of the floodwater current has long been known to Burlington and Skagit County residents. See below:

42. The channel is also restricted by the bridges above Mount Vernon and particularly at the Great Northern Railway bridge, which is located immediately below a right-angled bend. The dike above this bridge was broken and the railway track to Burlington was washed out during the floods of 1909, 1917, and 1921, the water flowing across country to Padilla Bay along the general direction of what was apparently a former river channel.

Source: 5/1/1928 Corps of Engineers Skagit River Report to the Board of Engineers for Rivers and Harbors

As mentioned before, the waters flowing through the breaks in the dyke ahead of bridge #35 flow west to Swinomish Slough and Padilla Bay; they follow the Anacortes Branch of the Great Northern Railway.

Source: 9/26/1922 GNRR letter and Robert Herzog Report

Unless the City of Burlington widens the 3 bridge corridor more then its current plan of only 400 feet, gets the water past the City and gets rid of it before it gets to Mt. Vernon as it has been described in the two documents below, there is no other alternative to keep the floodway designation from going through Burlington.

Given the uncertainties with points 1-3 above, it is therefore the City's position that the best option for Burlington is to devise a plan to obtain 100-year levee certification for the Burlington Urban Area, and update the existing Special Flood Risk Zones as a comparable alternative to a classic regulatory floodway that is specifically designed to work in the Skagit River delta area. (Page 13)

COMMENT #14: This is a terrible option for our second largest urban area to undertake. Levees are the worst form of flood control available to mankind. All they do is promote a

terrible sense of false security. Giving the floodwater a place to go instead of trying to keep it out is a far better option. The FEIS should include an analysis of widening the three bridge corridor and providing an emergency outlet for floodwaters in any greater amount then the 1990 flood event. All other options harm individual property owners more then they currently are being harmed. The emergency outlet option does not provide any more harm then will currently be experienced under current conditions. This option also has the impact of lowering the BFE figures for Burlington and Mt. Vernon, and perhaps most importantly does away with the floodway designation for both urban areas.

1. Impact of 100-year flood protection on Burlington and surrounding areas, including analysis of levee height, levee configuration and other flood control measures, and design options for those measures, based on a comparison of Corps of Engineers versus Pacific International Engineering hydrology alternatives and assumptions about Baker Dam storage, Nookachamps storage with Sedro-Woolley protection, control structures in the Sterling area, overbank flow paths to the north and west, and levee setbacks through the bridge corridor. (Page 13)

COMMENT #15: See discussions in comments #10 and #14 above. Almost everything mentioned in the paragraph above is a complete waste of time and money. Especially putting control structures in the Sterling area and establishing a flow path to the north into the Samish Valley. The last thing the Samish farming community needs right now is more induced flooding.

There are two major alternatives presented: one is to modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the hydrology developed for Skagit County, Burlington and Mount Vernon by Pacific International Engineering that is not currently accepted by the Army Corps of Engineers. At present it is not known if FEMA will accredit levees certified using this hydrology. (Page 14)

COMMENT #16: The PIE hydrology has been rejected by every federal and state agency involved for several years now. The chance of FEMA or the Corps accepting the PIE hydrology is on its best day slim and next to none.

The other major alternative is to modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the Army Corps of Engineers hydrology, if that becomes the basis for the new FIRM maps, and to evaluate options within that framework. (Page 14)

COMMENT #17: If this is in fact the chosen major alternative then the FEIS must include the location of said levee segments, how they will be modified during the certification process and what the impacts of said modifications will be to upstream and downstream property owners. Also the FEIS should state with specificity on what the other flood control measures will be and what the cumulative impacts (in accordance with 44 CFR 60.3.(c)(10)) of those measures as

well as what will be the impacts to upstream and downstream property owners, their impacts on the environment and what will be the economic cost and how will the measures be funded.

2. Levee upgrades require coordinating with Dike District #12 and Skagit County on the location of levees and control structures. In order to protect the urban area, some of these will of necessity be constructed in Skagit County's rural jurisdiction in. (Page 14)

COMMENT #18: The FEIS should elaborate on exactly what "levee and control structures" will be constructed in Skagit County's rural jurisdiction and what are the hydraulic and environmental impacts of said structures.

- Land added to the UGA at the northwest corner of Burlington is proposed for a future school site. In order to comply with the Skagit County policy of "no net loss" of land that is zoned Agricultural Resource Land, a comparable amount of farmland is proposed to be removed from the northeast corner of the Burlington UGA just east of Burlington Hill. (Page 14)

COMMENT #18: See comment #3 above. Really people, this is a terrible idea. I don't care how many $100,000's of dollars the school district paid for the land. They made a bad investment of district dollars.

OBJECTIVES OF THE PROPOSAL

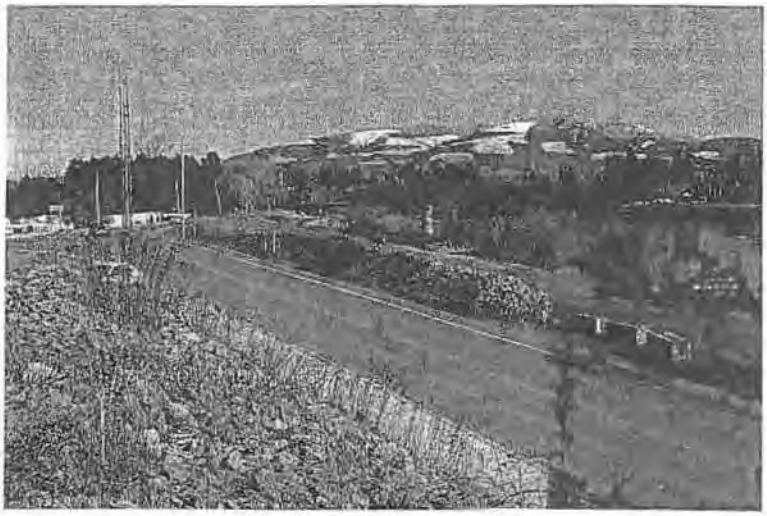
♦ Revise the existing FEMA approved alternate to the regulatory floodway to clarify the role of Gages Slough, to add overbank flow paths that include the Nookachamps drainage basin and farmland located to the north and west of Burlington Hill. (Page 16)

COMMENT #18: See comments 13 and 14 above. This is a terrible objective which will ultimately alienate your neighbors and receive no public support amongst the voters of Skagit County and you will end up with exactly what you got in 1979.....nothing. No public support equals no funding.

♦ Develop and implement reasonable and prudent alternatives such as those presented in the NPDES Phase II Municipal Stormwater permit, Burlington Connected Open Space Plan, the Gages Slough Management Plan and related alternative future concepts, to comply with all local, state and federal environmental requirements, including the Endangered Species Act. (Page 16)

COMMENT #19: Admirable statement however given Burlington's, Skagit County's and FEMA's lackadaisical approach to code enforcement I don't hold out much hope that all local, state and federal environmental requirements. Look at the following to see what I mean:

13



4 feet of fill material placed on the riverward side of the levee in 1990, in the floodway just 6 years after the adoption of the local flood ordinance.

Massive fill being placed in a flow path just upstream and adjacent to Gages Slough in an area where the levees broke in January 1935. See 1/31/35 C.H.

The Burlington Northern has violated the flood plain permit requirement and the encroachment standard of Section 60.3(c)(10). This is a very serious violation, in view of the extensive hearings and other meetings over a 4-year period that went into the negotiated agreement among Skagit Valley communities in lieu of a conventional floodway designation. The encroachment remains a violation until either the fill is removed from the Slough, or a scientific, technical engineering analysis is provided demonstrating that the cumulative effect of the proposed fills, combined with all existing and anticipated development, will not increase water surface elevations of the base flood more than one foot. Such an analysis would, of course, have to apply to the entire reach of the ...

Source: 2/20/1987 FEMA letter to BNSF.

While to my knowledge this is the only time CFR 44 60.3(c)(10) has been enforced, the fill material BNSF railroad placed in Gages Slough is still there today.

♦ Address the unresolved national and state environmental policy issues, including the requirement for NEPA review of the change in the FEMA Levee Failure Policy., FEMA has taken the position that the agreement reached in 1985 when the Flood Insurance Rate Maps were first set up in the Skagit River Delta Area is no longer valid. At that time, there was no regulatory floodway established because it is not practical in this situation and the levees were assumed to fail at a single point. Today, FEMA is stating that if the levees are not certified to 100-year flood protection, they are assumed not to exist at all for the purpose of setting base flood elevations. Rather than consider the issues together, FEMA is also proposing to establish a classic regulatory floodway through the Skagit River delta area at an unknown future date. (Page 16)

COMMENT #20: The levees have never been considered in establishing BFE's in the past. See documents contained in comment #6, specifically the 5/22/1984 FEMA letter to Burlington: http://www.skagitriverhistory.com/FEMA/1984-5-22%20Ltr%20to%20Burl.pdf and also available under "FEMA Documents" in www.skagitriverhistory.com's document directory. The FEIS should change the above paragraph appropriately to reflect what actually happened. The only difference today is that the BFE's are determined as if only one side of the rivers levees fail unlike 1984 when no levees were considered and "sheetflow flooding" was the method used.

There is little debate about the need to protect existing developed urban areas from flooding. However, there is a great debate about what constitutes 100-year flood protection and how much water arrives in the Skagit River delta in that flood event. It is expected that this debate will escalate once FEMA makes a decision on flood hydrology, and produces new Flood Insurance Rate Maps. The City of Burlington and Dike District #12 are prepared to file technical appeals if necessary. Extensive levee enlargement work has been in process since 1990 by Dike District #12. With correct flood hydrology in place, the feasibility of obtaining 100-year levee certification would be improved. The process involves certification by a private consultant with review and accreditation by FEMA. This

is a recent change from past practice, with substantially less direct federal involvement in the process. (Page 16)

COMMENT #21: Nice to see that Burlington is prepared to make consultants' rich because I really feel that is all that would be accomplished. Appealing and ultimately taking the issue to court will result in a resounding defeat for the City, its taxpayers, and make only the consultant assisting the City happy as he laughs all the way to the bank. The City Counsel needs to seek outside legal advice before this course of action is taken.

Land Use – There is a clear need for permanent acquisition of farmland development rights to provide paths for floodwaters to move during a major flood event. This option is critical to protect Burlington from becoming a regulatory floodway. (Page 16)

COMMENT #22: The FEIS should identify with specificity where these "farmland" areas are and exactly how Burlington plans on moving the water onto these "paths".

Floodway or "Floodway-like Tool" – Gages Slough is currently identified as a Special Flood Risk Area with some, but not all, of the restrictions that would be in place if it were designated as a floodway; however, Gages Slough cannot carry enough water to be considered a floodway conveyance area. The Skagit River, from a point three hundred feet behind the landward toe of the levees across the river, is considered a Special Flood Risk Area and the typical floodway rules apply in this area. The proposed addition to the program is to protect farmland that will provide overbank flow paths, the actual course of floodwaters in a flood event. FEMA is proposing to establish a floodway or floodway-like tool, but there is no information or schedule for this action and it needs to be considered together with the Base Flood Elevations, and the proposals outlined in this document. (Page 17)

COMMENT #23: The FEIS needs to state clearly what documentation Burlington is relying on make the Gages Slough statement. Gages Slough is the old channel of the Skagit River before it moved to its current location approximately 1,500 years ago. If the slough is recognized that it is not just where the water is sitting but the high ground area to the high ground area it is several hundred yards wide and will contrary to popular opinion carry a significant amount of water and in most cases at a high rate of velocity. Before the FEIS can be published, a complete topo map and hydraulic analysis should be conducted. It has carried the water before and it will carry the water again. It is only a matter of time.

Further Study - If the flood hazard mitigation issues for the City of Burlington cannot be solved, further study will be necessary, and there will be significant adverse effects that cannot be mitigated. These include gradual deterioration of the city and loss of economic vitality, loss of protection of major regional transportation infrastructure, inability to continue with ecosystem restoration efforts and continued poor storm water quality entering the Skagit River, as examples. (Page 17)

COMMENT #24: This paragraph is nothing but a scare tactic to generate commercial interest in the proposal. Our neighbors to the south in Lewis County have experienced 500 year back to back flood events. Despite the hardship imposed on the poor and the homeowners, commercial development apparently is still continuing, no matter how foolish it might be. The FEIS would be a lot more creditable if this paragraph was modified to explain the terrible inconvenience of flooding events instead of trying to scare residents into this holistic approach of public policy.

SIGNIFICANT IMPACTS, MITIGATION MEASURES, AND SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

This is a programmatic environmental impact statement intended to address planning issues related to flood hazard mitigation, including levee certification. The typical environmental impacts of site preparation and construction are addressed by the existing land use and construction codes and are not considered significant adverse effects and they will be adequately mitigated. Supplemental environmental assessments ranging from biological assessments and evaluations to discipline reports pursuant to NEPA will be incorporated into the program as they become available or required. (Page 18)

COMMENT #24: With respect to the highlighted text above I view this as a public admission that this DEIS document is nothing more then a total BS exercise that contains no specifics, no environmental analysis with the final conclusion of "trust us the check is in the mail". I'm sorry if that seems kind of harsh but this document accomplishes nothing other then a feeble attempt to say that you recognize that you have a problem but whatever you need to do is covered by existing codes so you can do anything you want to. What a waste of taxpayer's time and money. If I was on the Burlington City Council, I would be outraged that staff spent any money on this document at all.

There will be an unavoidable adverse impact on frequently flooded farmland and rural residential areas that are located in overbank flow areas when flooding occurs. This is an existing condition. (Page 18)

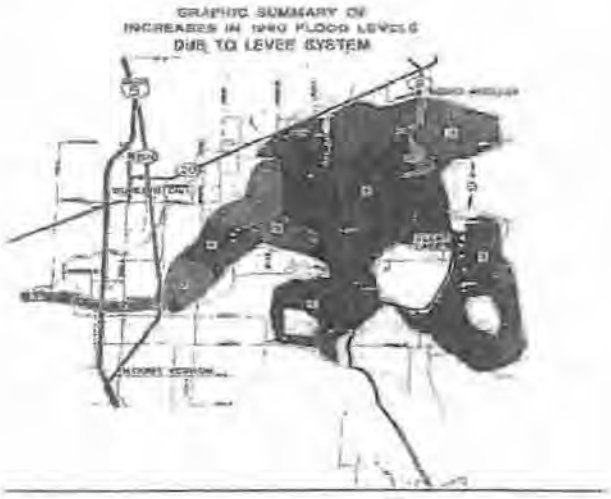
COMMENT #25: If this was indeed a true EIS it would address what those adverse impacts would be and to what degree Burlington's plans will make them worse. One is now left with the impression of what is it exactly that Burlington is trying to hide.

Levee certification may result in more water moving down the river past Burlington, with potential impacts to rural and agricultural lands if there is levee overtopping or failure downstream. (Page 18)

COMMENT #25: It "may result in more water"? The FEIS should have a complete analysis of the quantity of water moving downstream and what plans does Burlington have to mitigate that impact?

Levee setbacks are planned through the three-bridge corridor on the south side of Burlington. The setback area will be maintained as part of the Burlington Connected Open Space, affording new potential opportunities for public access, buffer enhancement, and flood hazard mitigation, all of which will benefit fish and wildlife and their habitats. Preliminary study with regard to the three-bridge corridor has identified the 100-year old BNSF railroad bridge, at the upstream end of the corridor, as a restriction to flood conveyance. (Page 18)

COMMENT #26: As the below diagram shows it is not the BNSF railroad bridge that is the restriction to flood conveyance as much as it is the configuration of Dike 12 and Dike 17 levees. The below diagram was provided by a hydraulic analysis performed by nhc of the impacts of induced flooding due to the current levee system. Even if you accept the argument that the bridge acts as an impediment to flood flows the impacts of said impediment are minuscule as compared to the levee system itself as the flood waters simply scour out the area under the bridge. The FEIS needs to identify the amount of levee setbacks planned by the City of Burlington, Mt. Vernon, Dike Districts 12 & 17 and the WSDOT.



Additional studies will be prepared as part of the request for levee certification, addressing issues of environmental justice and archeology and historic preservation and completing the Endangered Species Act consultation process. (Page 18)

COMMENT #27: Interesting choice of words but the FEIS should explain in detail what is meant by "environmental justice".

There really isn't very much contained in the rest of this document that hasn't already been addressed in the comments above as most of the verbiage beyond this point is nothing more than a repeat of the above. However there are one or two statements that need addressing.

Fortunately for Burlington, the Dike District #12 has been focused on protecting the interests of the citizens they serve and working on the ground to upgrade the levee system. There has been an excellent supply of acceptable fill material available since the project began after the 1995 flood event, and the levee system upgrade is designed as an overtopping levee with wide top and long backslope. The current levee profile is generally higher than the 1979 Corps of Engineers 100-year water surface elevation. To gain the required three feet of freeboard under any hydrology and hydraulic scenario that is currently on the table, a range of between two and five feet of additional levee height will be required. With the wide levee top and long backslope profile, there is ample space for additional material. Many of the technical considerations for levee design identified in the Corps' Levee Design Manual are addressed by this design. (Page 22)

COMMENT #28: So at long last the City of Burlington has admitted that the activity of the Diking District over the past decade or so constitutes "improvements" to the levee system. Improvements unlike maintenance (i.e. mowing the lawn) require a variety of permits. The FEIS should add an appendix to show all the SEPA environmental checklist, grading permits, Shoreline Management permits and what analysis has been done under 44 CFR 60.3(c)(10) that have been issued for all the "system upgrades" performed by Dike 12 in accordance with "*all federal state and local regulations including the Critical Areas Ordinance, federal and state air and water quality standards, state noise standards and other applicable laws and regulations*". Without the production of those permits the argument could clearly be made that the current condition of Dike 12 levees are nothing short of illegal which could have long range implications for any flood control project put forth by the City o Burlington.

AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS AND MITIGATION MEASURES

As stated in the 2008-2013 Floodplain Management and Natural Hazard Mitigation Plan, page 39, there is an available supply of 222 acres of commercial and industrial land within the City limits of Burlington, out of a total of 1,349 acres, and there are 80 acres of vacant residential land located primarily on Burlington Hill. Infill and redevelopment will be the primary activities that will affect the environment. Levee upgrades will have a temporary impact on air quality and noise during construction. (Page 25)

COMMENT #29: Now this is exactly the kind of analysis required to comply with 44 CFR 60.(3)(c)(10). Burlington has a total of 2688 acres. Of that number according to the above 1,349 acres are commercial and industrial land. So if only 222 acres have not been built on

how much will the 222 acres when combined with the 1,127 acres that have already been developed raise the floodwaters at any point in the community especially east of Interstate 5. If they have been raised by 1 foot or more then according to Burlington's own flood ordinance and FEMA requirements then landfill within the community must stop. Of course, since no analysis has been done I guess we don't know. The FEIS should conduct such an analysis especially since on page 26 Burlington states, *"All new development shall comply with all federal state and local regulations including the Critical Areas Ordinance, federal and state air and water quality standards, state noise standards and other applicable laws and regulations."*

8. Earth

Appendix F describes the Levee certification and accreditation process. Geotechnical reports are required to be developed and filed as part of the application for map revision. The scope of the reports needed for levee modifications will be determined in cooperation with the Dike District Commissioners, the Public Works Department, a Registered Professional Engineer, a Geotechnical Engineer and FEMA. (Page 28)

COMMENT #29: The FEIS should address the presence of the volcanic lahar that the levees sit on as well as the entire town of Burlington, the two active earthquake faults under or in near proximity of the levees and the town, as well as acknowledge the fact that the Skagit River floodplain is a volcanic floodplain subject to flood flows from Mt. Baker and pyroclastic flows from Glacier Peak.

21. Transportation

State Route 20, Interstate 5 and the BNSF Railroad all intersect in Burlington. Protecting these critical infrastructure components is a key goal of the levee certification program. The first project designed to protect Interstate 5 (the three-bridge corridor levee setback and certification project) is currently in the process of NEPA review. (Page 30)

COMMENT #30: What is the status of the NEPA review and who is the lead agency? How does one obtain a copy or get on the mailing list for any DEIS or FEIS for the project?

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March 13, 2009

City of Burlington
Department of Planning and Community Development
Attn: Margaret Fleek, Planning Director
833 S. Spruce Street
Burlington, WA 98233

VIA HAND DELIVERY

Dear Ms. Fleek:

Thank you for the opportunity to comment on the Draft Environmental Impact Statement (DEIS) To Adopt A Strategic Program For Comprehensive Flood Hazard Mitigation In The Burlington Urban Area And Adjacent Land With A Range Of Structural And Non-Structural Components. Our comments at this time are narrowly focused on the proposed UGA expansion request to include approximately 30 acres of prime agricultural farmland within the corner of Pulver Road and Peterson Road for the Burlington Edison School District (BESD).

It is our understanding the BESD purchased the subject Ag.-NRL zoned parcel(s), which are situated completely outside the current City boundaries and UGA, without consideration to the Countywide Planning Policies (CPP) or any other Growth Management Act regulation, policy or guideline, including, but not limited to, the City of Burlington's Growth Management Plan or Skagit County's Growth Management Plan.

We also understand the City of Burlington proposes to "swap" land currently within the City's UGA and return it to it to Ag-NRL, in an effort to achieve a no net loss of farmland and forgo any analysis required for UGA expansion and citing of public facilities. SPF disagrees that the proposed swap of land will equal a no net loss as the properties are not similarly situated nor are the soil types and conditions the same for each property.

At a minimum, SPF believes the BESD UGA expansion proposal and other UGA expansion requests that will convert Ag-NRL zoned land, are in violation of the following policies and goals:

- Skagit County Comprehensive Plan, Chapter 4 and the following adopted thereunder:
    - Introduction
    - Goal A-1
    - Policy 4A-1.1
    - General Policy Goals: Agricultural Resource Lands
    - Goal A-3
    - Policy 4A-3.1
    - Goal A-4
    - Policy 4A-4.1
    - Goal A-5
    - Policy 4A-5.1
    - Policy 4A-5.6

- County Planning Policies (CPP) 1.9, 1.10.5, 1.10.7(c), 5.10, 5.10, 8.2, 8.5, 8.8, 8.9, 10.2, 12.1, 12.3, 12.4, 12.5, 12.6, 12.7, and 12.16

Given the above, SPF respectfully requests the proposed UGA expansion be withdrawn from this round of Comprehensive Plan updates until such time the proper studies and analysis can be completed and the UGA expansion request can conform to the above cited Countywide Planning Policies.

If you have any questions about our comments please do not hesitate to contact me by phone at 360-336-3974 or by e-mail at allenr@skagitonians.org.

Sincerely,

Allen Rozema
Executive Director

RECEIVED

MAR 13 2009

PLANNING DEPT.

12 March 2009

To whom it may concern;

I am writing in reference to the "Draft Environmental Impact Statement To Adopt A Strategic Program For Comprehensive Flood Mitigation In The Burlington Urban Area and Adjacent Land With A Range Of Structural And Non-Structural Components". Referred to as DEI. I am impressed with the work involved and answers they have come up with. With the exception of an addition by Burlington Planner Margaret Fleek that she refers to as switching. Appendix D. Maps Exhibit 4. It concerns switching zoning between land on Peterson road and land on Peacock Lane. When President Obama does this it's called redistribution of wealth. In this case I call it taking, as I own 10 acres in the affected switching area.
This item should be removed from the DEI and be made to stand on it's own merits or lack of them. At that time I will be happy to give my full support to the DEI. I plan to fight this "switch" with every resource available to me. It's a bad idea and the Burlington School Dist doesn't even support it and yet Margaret Fleek claims that the schools is what it's all about. If the switch takes place it ties up the school property on Peacock lane so it cannot be used as a school either. Margaret Fleek knows this but she is hoping that it will slide through on the tail of a worthwhile project like the levy program.

Thank You.

Jerry Burr

19813 Piper Cub Ln.
Burlington WA 98233

Robert Apter
Brenda Graham Apter (formerly Brenda Burr)
5A Beach Dr.
La Conner, WA 98257
360-466-4980
Fax 360-466-2385

Margaret Fleek
Planning Director
City of Burlington
833 S. Spruce St.
Burlington, WA 98233

March 23, 2009

Re: draft EIS for Flood Hazard Mitigation and withdrawal of land from Burlington UGA

Dear Margaret,

We are writing to express our concern regarding the proposed withdrawal of 30 acres of land Northeast of Burlington Hill from the Burlington Urban Growth Area. We are owners of land in this area.

This area has been in the Burlington Urban Growth Area since 1997. It is relatively poor farmland, particularly in comparison with the Pulver Road area parcel that it is proposed to be swapped with to avoid a net loss of farmland. Since 1997, the value of our property has largely been due to its Urban Growth Area status, and it doesn't seem right to take it away 12 years later. This land hasn't been farmed at all for over 5 years, and was formerly leased for cow corn.

The best use of this property near Burlington Hill is for additional residential development. The Burlington School District had been interested in putting a new school in that area until it began to consider the Pulver Road area. In fact, the land near Burlington Hill is still a good site for a new school. While additional land would need to be acquired for such a school, discussions were previously held with developer John Ellis to make such an acquisition. John Ellis' property is now in foreclosure, which should allow

the School District to acquire the land it needs at a bargain price. In addition, sharing the costs of utilities with a residential developer would benefit both the School District and our property.

To summarize, the School District has an opportunity now to solve several problems by pursuing development of a school in the Burlington Hill/Peacock Lane area. Doing so would avoid an unnecessary loss of farmland in the Pulver Road area and preserve the value of property already designated as part of the Burlington UGA. The Burlington Flood Hazard Mitigation Plan should not include any swap of farmland in the Urban Growth Area.

Sincerely,

Robert Apter
Brenda Graham Apter

STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Avenue SE • Bellevue, Washington 98008-5452 • (425) 649-7000

March 13, 2009

RECEIVED
MAR 16 2009
PLANNING DEPT.

Margaret Fleek, Director
Planning & Community Development Department
833 South Spruce Street
Burlington, WA 98233

Dear Ms. Fleek:

Re: Burlington/Dike District #12
Draft EIS on Flood Hazard Mitigation, February 13, 2009

Thank you for sending a copy of the Draft Environmental Impact Statement referenced above, and for the opportunity to review this document. Our review is focused only on the levee upgrade and construction elements of the DEIS.

Overall, the DEIS is lacking in detail and specificity regarding the impacts of enlarging existing levees and constructing new levees. Levees in Burlington and in the Lower Skagit Delta in general are major physical facilities that have major impacts. But it is unclear from the DEIS just what is being proposed. Following are some examples supporting this conclusion:

Page 6, Construct 100-year levees "in appropriate locations." The DEIS does not identify levee segments that will be upgraded or constructed to the 100-year standard. Is this the entire levee reach throughout the City of Burlington? Through the many miles of DD 12's jurisdiction? There is no discussion of what "appropriate locations" are or how they were determined. The location is important in order to identify uses subject to impacts from levee work, including upstream and downstream impacts as well as impacts across the River.

Page 12, Certified levees and insurance. There is a statement that: "With certified levees, flood insurance may become optional in some locations." These locations need to be identified; are they most of the City or only portions of the City? There should be enough technical information to show what parts of Burlington will and will not be protected to the 100-year standard, but that information was not found in the DEIS. Lacking this information, one cannot assess the effectiveness of the proposed projects.

Page 15, Use of most accurate hydrology and hydraulics. An objective of the proposal is to ensure that the most accurate modeling is used to generate new Base Flood Elevations (BFEs) so that levee elevations are certifiable. The presumption in our review is that at least some of this work should have been done for the DEIS so that reviewers will be able to assess the impacts based on at least one set of hydrology figures.

Page 18, Downstream impacts from levee certification. The statement is made that: "Levee certification may result in more water moving down the river past Burlington. . .." This is precisely the kind of information that is lacking in the DEIS, i.e., specifics on the increased flows that will result from rebuilding or constructing the new levees. The impacts need to be quantified.

Page 18, Levee setbacks. The DEIS states that levee setbacks are planned through the three-bridge corridor. Is this the only area where setback levees will be used, or will there be setback levees on other parts of the system, and will all of these be certifiable levees? Will the setback levees have significant benches between the River and the levee in order to grow trees and brush for fish habitat? Setback levees will have a greater chance of complying with the NMFS Biological Opinion as it relates to the levee Reasonable and Prudent Alterative.

Page 19, Proposed action. The proposed action is to: ". . .construct 100-year certified levees in appropriate locations, and provide other flood measures as necessary and appropriate based on FEMA's final Flood Insurance Study, when this study is adopted following resolution of any appeals." Presumably, the FEMA study will choose between either the Corps of Engineers or the PIE hydrology, and a table on page 20 shows differences in impacts between these two sets of hydrology. However, there is not nearly the degree of specificity discernable from this table for the reviewer to assess impacts. Also, it may be difficult to certify only certain segments of a levee system, given the need to tie into high ground, etc.

These examples highlight the fact that the DEIS does not adequately specify impacts of what appears to be a major levee building proposal. The document needs to show in quantifiable terms based on hydraulic analyses the upstream and downstream impacts, as well as the impacts across the River in the City of Mount Vernon and, if applicable, in unincorporated Skagit County.

Another general concern we have is that the project is proceeding outside of the context of a comprehensive regional approach to flood hazard reduction in the Skagit Delta. While we applaud the City for its initiative, the DEIS calls for regional considerations but does not present a holistic framework for solving flood problems in the larger area. The Corps of Engineers' General Investigation (GI) is a comprehensive approach to solving flood problems, and has many measures that are currently being considered that could have serious impacts on the proposed levee project. The DEIS does acknowledge the GI on page 11 and references some measures that would be supported in the regional approach (Nookachamps storage and Sterling bypass, both of which have been criticized by committees dealing with the Comprehensive Flood Hazard Management Plan revision).

Following are other comments on the DEIS besides those regarding impacts of enlarging or building new levees:

Page 6, Corps of Engineers General Investigation. The DEIS states that the Corps/County GI will not be completed until 2018 "at the earliest." While the GI process has taken a long time, the information that we have indicates a completion date of between 2010 and 2012.

Page 6, flood insurance increases. The DEIS states that: "No action will generate extremely high flood insurance premiums for the families that live in the community." This is not true. Burlington's average annual premium at this time is $703, which is less than Skagit County's overall average premium of $784. Premiums will not increase because as stated in the DEIS, flood insurance is grandfathered for existing buildings. Below-grade crawlspaces should have been properly regulated since November 2001, and those that were built before then have a couple of options to assure they will not be rated as basements. Any new construction will have to comply with Burlington's flood ordinance, which means flood insurance will not be "extremely high" unless variances are granted or mistakes are made.

Response to Skagit County comment letter. The City's response to Skagit County's August 27, 2008 letter stated the following: "The goal of the program is to retain BFEs at or near their present levels in order to maintain the City's ability to provide economic opportunity for its citizens and the region. The goal is **not** to completely remove the City from the floodplain." This is also referenced in the table on page 20 of the DEIS, *viz.*, that BFEs will be retained at near the status quo if levee segments are certified and parts of the City will be out of the floodplain. The DEIS does not provide specifics on what parts of the City will be protected by certified levees, and what the "status quo" BFEs would be, based on detailed engineering analyses and quantifiable numbers.

Our comments are only from the perspective of the State's floodplain management program. They do not include reviews from the perspective of the Shoreline Management Act or Section 401 Water Quality Certification.

Thank you for considering these comments. If you have any questions, please feel to contact me at (425) 649-7139.

Sincerely,

Charles L. Steele
Floodplain Management Specialist

cc: Dan Sokol, Ecology
Bob Fritzen, Ecology
Geoff Tallent, Ecology
Mark Carey, FEMA

Exhibit 6 – Draft EIS not including Appendices

CITY OF
Burlington
SKAGIT COUNTY, WASHINGTON INCORPORATED 1902

with

DIKE DISTRICT #12 AS CO-LEAD AGENCY

DRAFT ENVIRONMENTAL IMPACT STATEMENT

TO ADOPT A STRATEGIC PROGRAM FOR COMPREHENSIVE FLOOD HAZARD MITIGATION IN THE BURLINGTON URBAN AREA AND ADJACENT LAND WITH A RANGE OF STRUCTURAL AND NON-STRUCTURAL COMPONENTS

THIS IS A PHASED REVIEW PURSUANT TO WAC 197-11-060 (5)

CITY OF BURLINGTON, WASHINGTON AND DIKE DISTRICT #12

Prepared for review by Citizens and Government Agencies in Compliance with the State Environmental Policy Act of 1971 (Chapter 43.21C Revised Code of Washington) as revised; the State Environmental Policy Act Rules, as revised (Chapter 197-11 Washington Administrative Code); and City of Burlington Municipal Code Chapter 15.12 Environmental Policy; and the National Environmental Policy Act Pub. L 91-19, 42 U.S.C.4321-4347 as amended.

DATE OF ISSUE: ***February 13, 2009***

COMMENTS DUE: ***March 13, 2009***

TABLE OF CONTENTS

FACT SHEET

PROJECT TITLE AND DESCRIPTION: Strategic Program for Comprehensive Flood Hazard Mitigation in the Burlington Urban Area and Adjacent Land with a Range of Structural and Non-Structural Components

The proposed action is to construct 100-year certified levees in appropriate locations, and provide other flood measures as necessary and appropriate based on the Federal Emergency Management Agency's (FEMA) final Flood Insurance Study, when this study is adopted following resolution of any appeals.

Levee certification with FEMA accreditation is required so that FEMA will include the existence of the levees in their computer model that sets the Base Flood Elevations for Burlington. Without the levees being considered in the modeling, Base Flood Elevations will increase significantly and this is a serious problem in a city that has very small lots and anticipates a substantial redevelopment of much of the City over the next twenty years.

The City of Burlington and Dike District 12 recognize their responsibility to ensure that flood protection measures which help protect Burlington's urban area are, to the extent possible, also helpful in protecting adjacent communities. It is the goal of the City and Dike District 12 to implement flood measures which lower risk to adjacent communities, in addition to Burlington's urban area, to the maximum practicable extent.

Other components of the proposed action include modification of the City of Burlington Urban Growth Area (UGA) consistent with the City's 2005 adopted Comprehensive Plan. This includes a transfer and purchase of development rights program, the Burlington Agricultural Heritage Credit program, to help fund the Skagit Farmland Legacy program to acquire farmland development rights in a targeted area around Burlington to protect overbank flow paths for floodwaters and preserve agriculture in the Skagit River valley. The potential health hazard posed by the high density Raspberry Ridge farmworker housing site that is on septic tanks is also covered. A range of land use alternatives is presented, in order to maximize flexibility in the decision-making process and ensure adequate analysis of the impacts of each alternative.

This project consists of several related actions implementing the 2008-2013 update of the Burlington Floodplain Management and Natural Hazard Mitigation Plan.

PROPOSED ACTION AND ALTERNATIVES

1. **Proposed Action** – Construct 100-year certified levees in appropriate locations, and provide other flood measures as necessary and appropriate based on FEMA's final Flood Insurance Study, when this study is adopted following resolution of any appeals.

Alternative #1A - Modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the hydrology developed for Skagit County, Burlington and Mount Vernon by Pacific International Engineering that is not presently accepted by the Army Corps of Engineers. It is not known at present whether FEMA would accredit levees certified using this hydrology.

Alternative #1B - Modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the Army Corps of Engineers hydrology, if that becomes the basis for the new FIRM maps, and evaluate options within that framework.

2. **No Action** – This is essentially embodied in the current General Investigation study that has been underway for many years by the County and the Corps of Engineers, and because of lack of adequate funding will not be completed until 2018 at the earliest.

Doing nothing will result in mandatory adoption of higher Base Flood Elevations that may show up to 6.4 feet increase in height in some locations in Burlington. This will be devastating for the future development of vacant and underutilized land in Burlington, and may preclude the redevelopment of historic downtown Burlington with its 30-foot wide lots.

No action will generate extremely high flood insurance premiums for the families that live in the community. While the existing buildings will be "grandfathered in", according to FEMA, citizens have already been hit hard with much higher rates for existing conditions when mortgage lenders get involved at the time of sale or refinancing. Crawl spaces are often reclassified as basements, and if insurance carriers are changed, the policy is no longer subject to the low original rates.

3. **Remove approximately 30 acres of land from the UGA and exchange for land located at the northeast corner of Pulver and Peterson Road for a school site.**

The 30 acres currently in the UGA will be returned to agricultural resource zoning and the school site will be redesignated as UGA, from its agricultural zoning classification. Adjacent farmland development rights will be acquired and a permanent urban separator designed along the boundaries of the site, coordinated with the adopted Connected Open Space Plan for Burlington.

4. **Evaluate the concept of adding Raspberry Ridge to the UGA so that sanitary sewer is provided to mitigate potential health hazard in event of a flood.**

This area is proposed to be added to the Burlington UGA and zoned as Open Space in order to be able to provide sanitary sewer to the high density farmworker housing that has been constructed on the site that is zoned as Agricultural Natural Resource Land (Ag-NRL). The goal is to protect the citizens of Burlington from contamination by sewage from failed septic systems in the event of a flood. This area was proposed to be included as a sending zone for farmland development rights under the transfer/purchase of development rights provisions adopted in the Burlington Zoning Code in 1994. However, this proposal was rejected by Skagit County at that time.

PROPONENT

The City of Burlington in cooperation with Skagit County

TENTATIVE DATE FOR IMPLEMENTATION

2009 to start the projects; end date to be determined

CO-LEAD AGENCIES

City of Burlington and Dike District #12

RESPONSIBLE OFFICIALS AND CONTACT PERSON

- Department of Planning and Community Development
  Margaret Fleek, Planning Director
  833 South Spruce Street
  Burlington, WA 98233
- Dike District #12
  1317 South Anacortes Str.
  Burlington, WA 98233

PHONE NUMBER AND STREET ADDRESS FOR WALK IN INQUIRIES

360-755-9717
833 South Spruce Street
Burlington, WA 98233

LICENSES, PERMITS AND APPROVALS

- Amendment to Burlington Natural Hazard Mitigation Plan
- Amendment to Skagit County Natural Hazard Mitigation Plan
- Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR) for 100-year certified levees
- Federal Emergency Management Agency approval and/or permits
- Shoreline Substantial Development Permit
- Coastal Zone Management Consistency Determination
- Skagit County Action to approve plan and issue permits as needed for work in unincorporated areas

AUTHORS AND PRINCIPAL CONTRIBUTORS

- Margaret Fleek, City of Burlington Planning Director
- Dike District #12 Commissioners: Charles Bennett, John Burt, Mary Cannon
- Chal Martin, Public Works Director
- Federal Emergency Management Agency procedures and levee certification program
- Skagit County Planning and Community Development and Public Works Departments
- Pacific International Engineering (PIE)
- Northwest Hydraulic Consultants (NHC)
- Many related reports and studies including work by the US Army Corps of Engineers

DATE OF ISSUE OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

February 13, 2009

PUBLIC HEARING TO RECEIVE COMMENTS

March 12, 2009 at 4:00 p.m., in the City Council Chambers at 833 South Spruce Street, Burlington WA

DATE COMMENTS ARE DUE ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT

March 13, 2009

DATE FINAL ACTION IS PLANNED

To be determined

TYPE AND TIMING OF SUBSEQUENT ENVIRONMENTAL REVIEW

Supplemental environmental review may be required if work is needed waterward of the Ordinary High Water (OHW) mark on the Skagit River or when additional site specific components are identified. A review under the National Environmental Policy Act (NEPA) including a biological assessment with discipline reports is in process for the levee setback and certification project through the three bridge corridor. This work will be incorporated by reference for the overall program when it is completed.

LOCATION OF BACKGROUND MATERIAL

Background material and supporting documents may be found at the offices of the Burlington Planning Department located at 833 S. Spruce Street, Burlington, Washington, with copies available at the Burlington Public Library located at 820 East Washington Avenue.

COST OF DRAFT ENVIRONMENTAL IMPACT STATEMENT

$20.00

INTRODUCTORY NOTE

The first programmatic step will be completed by the end of 2008 with final approval of the five year update of the multi-jurisdictional Skagit County Natural Hazard Mitigation Plan that includes significant amendments to the Burlington Floodplain Management and Natural Hazard Mitigation Chapter. This is the framework planning document to set the goal of upgrading appropriate sections of the existing levees and constructing new levees, or providing other measures as necessary to result in certified levees where appropriate to protect the City of Burlington's Urban Area. The purpose is to stabilize the Base Flood Elevations for the long term future, ensure predictable development standards, protect the public from the 100-year flood (which has a 1% probability of occurring in any year) initially, while planning for and implementing measures to provide incrementally greater protection as time goes by.

The purpose and need to prepare an Environmental Impact Statement arises because the City of Burlington is evaluating the options for the future to protect the urban area from flooding. An array of complicated issues is unfolding in a manner that forces the City to focus action on improving the levee system to provide 100-year flood protection with certified levees, and take related actions to optimize local flood hazard mitigation. The engineering, design and construction work necessary for certification will be overseen by a licensed engineer with expertise in levee design because the U.S. Army Corps of Engineers is not available or funded to do that work. The accreditation of the levees will be overseen by FEMA. This is a two part process involving application for a Conditional Letter of Map Revision (CLOMR) followed by a Letter of Map Revision (LOMR).

This program will fit into what is generally perceived to be the long term regional strategy. In order to work effectively with local, state and federal agencies and elected officials to protect the urban area of Burlington from flooding, the plan of action must be evaluated in the regional setting to ensure that projects done here will not adversely affect adjacent jurisdictions and interests.

The following actions have led to the decision by the City of Burlington and Dike District #12 to move ahead at this time to obtain better protection from potential flooding:

1. FEMA changes its policies on key program components, leading to long term uncertainty for property owners and businesses.

July 3, 1984 is the date of publication of the City of Burlington, Washington Flood Insurance Study. The purpose of the study was to convert Burlington to the regular program of flood insurance.

At that time, conventional floodways were determined not to be appropriate for the Skagit River delta area for a number of reasons (See Appendix D, Exhibit 6, page 18.) In lieu of a floodway, pursuant to additional study, FEMA accepted a "most probable failure point" analysis, which had the flood overtopping the railroad tracks at Sterling. In Burlington, FEMA helped with a compromise which was to designate Gages Slough a "Special Flood Risk Area." This area does not have all the qualities of a floodway, but the designation is quite restrictive with flow-through

house designs and other elements. Now, a regulatory floodway is being proposed for "later adoption" by FEMA, following changes to the Base Flood Elevations, and it is critical to Burlington that the adopted program of protecting overbank flow paths through farmland preservation be retained as a floodway-like option.

In addition, a compromise was reached on how high the Base Flood Elevations would be. Today, the criteria for the "map modernization" program does not allow the type of compromises made in the past, as described above. Further, current flood modeling under FEMA's guidance does not allow any credit to be given for levees that are not certified.

2. Burlington is not assured that all the dams in the river will be functioning to optimize flood hazard mitigation.

Additional potential for enhancing flood management and mitigation utilizing the hydropower dams that are owned by Puget Sound Energy was not directly addressed in the recently final relicensing process.

The relicensing of the Baker Dams for an additional 50 years includes agreements for funding mitigation actions of many kinds, and expenditure of funds to accomplish those goals; however, flood hazard mitigation is not currently being addressed, and no funding has been set aside to upgrade the spillways on Lower Baker Dam. Without the ability to more quickly evacuate water in advance of a flood, any future benefits of additional flood storage in this river system cannot be counted on to assist in taking the peaks off flood events. Puget Sound Energy has stated that they intend to work with local jurisdictions on an informal basis. The November 2008 flood threat was handled extremely efficiently with the Corps of Engineers taking over operation of the dams and the peak flood elevation was reduced by about four feet.

For the mainstem Skagit system, Ross Dam and reservoir provide valuable flood storage during the winter flood season; however, the availability of this flood storage must be moved to mid-October, instead of 1 December as the license currently allows.

3. Higher base flood elevations are certain under any option and Burlington has major concerns with computer modeling and hydrology and hydraulic assumptions.

The studies and estimates that have been completed for determining how much water will get to Burlington in a 100-year base flood event (called the Flood Frequency Analysis) are inconsistent, and independent third party review indicates that there is a need to lower the estimates. The U.S. Army Corps of Engineers, as FEMA's technical consultant for the Skagit River Flood Insurance Study remapping effort, is responsible for the hydrologic analysis and hydraulic modeling that provides the basis for updating the Flood Insurance Rate Maps. The Corps is continuing to incorporate into its flood frequency analysis estimates of historic flooding that have been questioned by the City's qualified technical consultant. In addition, the Corps' work also discounts a number of years of gage data. Several other issues, some emerging, raise valid concerns about hydrology and hydraulic assumptions. The complications of flood hazard analysis in the Skagit River Delta area are very real, not to be overstated.

The different numbers are presented by three different groups with respect to the Skagit River hydrology, as shown in the table below. As can be seen at a glance, the options for effective flood hazard mitigation are significantly different depending on the assumptions about hydrology.

The results of the current approach used by FEMA (via the Corps) are of great concern for the City of Burlington, because it is FEMA policy to base its analysis on an artificial condition; that is, that none of the levee system currently in place exists. No credit is given for having levees at all, unless the levees are certified as providing 100-year flood protection. It is the City's position that this policy constitutes a change in the Levee Failure Policy that must be reviewed under NEPA pursuant to Title 44: Emergency Management and Assistance, Subpart B, Section 10.6.

The model that has been presented by FEMA to the City identifies over 6 feet of water on Interstate 5 in the middle of the Burlington retail core using the current assumptions by the Corps of Engineers combined with the FEMA floodplain modeling assumptions.

It is the City's position that these Base Flood Elevations, if adopted, will have a severe, long term negative impact the economy of the region. Immediate effects will be on the redevelopment of old downtown, where the lots are 30 feet wide. Elevating the first occupied floor up one story will be a difficult and costly challenge for property owners and the community. The market conditions for redevelopment of old downtown are slow to emerge and there is no predicting the timeline for revitalization at this point.

Even the most accurate computer modeling appears to result in Higher Base Flood elevations.

4. A viable regional strategy is not in place.

An array of flood hazard mitigation strategies exist and have been studied for many years in Skagit County, but there is no regional strategy for approving or implementing them. Skagit County is working toward development of an update of the Skagit County Comprehensive Flood Hazard Management Plan. The City of Burlington is not represented on the Advisory Committee and the scope of work appears limited to the Corps of Engineers General Investigation without consideration of independent studies by Burlington and Skagit County. There does not appear to be an emerging consensus on the best course of action, for a number of reasons, including the fact that few of the proposed measures will work with the hydrology set forth by the Corps.

Some of the relevant components include flood storage at Lower Baker Dam, better utilization of the Nookachamps area for flood storage when combined with better protection of the Sedro-Woolley sewer plant, extending levee protection along the railroad east of Burlington to a point so the site does not require flood fighting, setting back the levees in the multiple bridge corridor through Burlington and Mount Vernon, and protecting overbank flow paths in lieu of a regulatory floodway.

These are close-to-Burlington examples of flood hazard mitigation strategies that offer real opportunities for flood hazard mitigation, some of which may be cost effective from a practical

point of view, but which may not meet the Corps of Engineers' test for cost effectiveness using the Corps' very limited cost-benefit analysis methodology.

5. There is no other option to ensure access to flood insurance to protect property owner's rights.

a. FEMA has stated its plans to propose significant increases in the 100-year Base Flood Elevation, and because FEMA regulates by controlling the lending institutions, opting out of the flood insurance program is not an alternative.

b. Burlington strongly supports participating in the National Flood Insurance Program. The only viable option for the City at this time appears to be taking expeditious action to get the levees certified for 100-year flood protection, including any related actions such as training levees, control mechanisms to move water north to overbank flow paths through farmland areas, ensuring Gages Slough is protected as a flood drainage mechanism and facility, and other measures. This will ensure that the levees are given credit in setting the Base Flood Elevations and that the elevations are reasonably close to the existing condition.

c. With certified levees, flood insurance may become optional in some locations. The City of Burlington will continue to strongly support the flood insurance program.

d. This action must be taken to protect the interests of the public, in the midst of grave uncertainty and controversy over what constitutes the 100-year flood hydrology and what the 100-year Base Flood Elevations should be in Burlington and the Skagit River delta area.

e. The financial impact to individual property owners of skyrocketing flood insurance rates that will never provide full coverage, combined with the extreme disparity in mandatory building elevations that will result if flood elevations are increased by what amounts to an entire story, are key components in the decision of the City Council to partner with Dike District #12 and Skagit County to take local control of the future of the community.

There are three significant problems and one good option for Burlington:

1. Hydrology assumptions and computer modeling provided by the Corps of Engineers to FEMA combine to raise Base Flood Elevations even higher than the significant increases that will be seen with the correct analysis.

2. Base Flood Elevation increases of up to 6.4 feet will have a severe negative impact on economic development in this community, and have significant ramifications for the future of much of Skagit County, over a period of time.

3. FEMA has also proposed creation of a Regulatory Floodway at some point in time after the Base Flood Elevations are put in place. It is the City's position that the Regulatory Floodway issue must be considered together with the Base Flood Elevations and the correct hydrology and hydraulic modeling, so that cumulative effects can be evaluated and a responsible course of action can be selected.

Given the uncertainties with points 1-3 above, it is therefore the City's position that the best option for Burlington is to devise a plan to obtain 100-year levee certification for the Burlington Urban Area, and update the existing Special Flood Risk Zones as a comparable alternative to a classic regulatory floodway that is specifically designed to work in the Skagit River delta area.

The lead agencies have identified the following areas for discussion in the EIS:

1. Impact of 100-year flood protection on Burlington and surrounding areas, including analysis of levee height, levee configuration and other flood control measures, and design options for those measures, based on a comparison of Corps of Engineers versus Pacific International Engineering hydrology alternatives and assumptions about Baker Dam storage, Nookachamps storage with Sedro-Woolley protection, control structures in the Sterling area, overbank flow paths to the north and west, and levee setbacks through the bridge corridor.

2. Impact of alternative UGA designs:

   a. Emphasis on environmental mitigation such as riparian buffer enhancement, wetland buffer restoration, connected open space for habitat improvements and public access.
   b. Impact of removal of land on the northeast from the UGA and adding land on the west for the school district.
   c. Consideration of sanitary sewer service to the Raspberry Ridge development that is high density farmworker housing on septic tanks.

3. Alternatives that meet the project objectives and/or mitigate environmental impacts.

SUMMARY

The proposed action is to construct 100-year certified levees in appropriate locations, and provide other flood measures as necessary and appropriate based on FEMA's final Flood Insurance Study, when this study is adopted following resolution of any appeals.

There are two major alternatives presented: one is to modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the hydrology developed for Skagit County, Burlington and Mount Vernon by Pacific International Engineering that is not currently accepted by the Army Corps of Engineers. At present it is not known if FEMA will accredit levees certified using this hydrology. The other major alternative is to modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the Army Corps of Engineers hydrology, if that becomes the basis for the new FIRM maps, and to evaluate options within that framework.

This project consists of several related actions implementing the 2008-2013 update of the Burlington Floodplain Management and Natural Hazard Mitigation Plan.

1. The updated plan adds the flood hazard mitigation strategy of designing and building certified levees at appropriate locations near the City of Burlington, and providing other appropriate flood control measures to protect the City's urban area. This action may result in some or all of Burlington's urban area being removed from the 100-year floodplain, and/or reduced Base Flood Elevations in some or all of Burlington's urban area; however, flood insurance will continue to be promoted.

2. Levee upgrades require coordinating with Dike District #12 and Skagit County on the location of levees and control structures. In order to protect the urban area, some of these will of necessity be constructed in Skagit County's rural jurisdiction in.

3. Modify the UGA for the City of Burlington to implement flood hazard mitigation measures including but not limited to the restoration of the Gages Slough wetland corridor with native plant buffer restoration projects, water quality improvements through source control with Low Impact Design standards, designing an urban separator along Pulver Road, and connecting open space from Gages Slough to the riparian corridor along the Skagit River in conjunction with the planned setback levees in the three-bridge corridor. The proposal is to add the three sites identified in the 2005 Comprehensive Plan, straightening out the very irregular UGA boundary on the west side of Burlington to line up with Pulver Road to a point north of the intersection of Peterson Road and Pulver Road, that would represent an extension of West Fairhaven Avenue.

   - Land added to the UGA at the northwest corner of Burlington is proposed for a future school site. In order to comply with the Skagit County policy of "no net loss" of land that is zoned Agricultural Resource Land, a comparable amount of farmland is proposed to be removed from the northeast corner of the Burlington UGA just east of Burlington Hill.

- The remainder of the agricultural resource land added to the UGA will be used as a sending zone for farmland development rights under the Burlington Transfer of Development Rights standards or for the purchase of development rights using funds raised by the Burlington Agricultural Heritage Credit program.
- Implement the adopted Burlington Connected Open Space Plan with a diverse array of riparian buffer upgrades, wetland buffer restoration projects, and related native vegetation enhancement opportunities and corridors that are appropriate for protecting and enhancing habitat.

4. Add the existing Raspberry Ridge high density urban farmworker housing project to the UGA to get the site on sanitary sewer to prevent sewage from flooding the City in the event of failure of the septic systems during high water. The site could retain zoning comparable to the existing Agriculture Natural Resource zoning in Skagit County as needed to adhere to the current no net loss of farmland policy in Skagit County. This area includes the land along the Skagit River east of Gardner Road that is owned by the City of Burlington and consists of a forested riparian buffer on the riverside of the levee.

5. Amend the Zoning Code to include the Burlington Agricultural Heritage Credit program and fee structure. Amendments to Skagit County Code may also be required to facilitate the purchase and/or transfer of development rights from land in the unincorporated UGA to land within the City limits.

OBJECTIVES OF THE PROPOSAL

The objectives of the proposal are as follows:

- Focus on the long term best interests of the City of Burlington in a regional context.
- Design and implement a program for levee certification along the Skagit River frontage to mitigate significant adverse effects on the City of flood hazard, through an extensive public involvement process, and in coordination with all affected jurisdictions, including Mount Vernon, Skagit County, Sedro-Woolley and all of the Dike Districts in the Skagit River delta area.
- Work with private property owners and Skagit County to assist in efforts to permanently preserve farmland around Burlington to reserve overbank flow paths in the event of a major flood. New residential development in Burlington would be required to participate in the Burlington Agricultural Heritage Credit program, and funds raised would be donated to the Skagit Farmland Legacy program to target acquisition of farmland development rights around Burlington.
- Work to ensure that the most accurate hydraulics and hydrology form the basis for the most accurate computer modeling that generates the new Base Flood Elevations, so that the levee elevations and freeboard are correct for 100-year certified levees. This includes pursuing technical appeals of proposed FEMA maps as necessary.
- Work with all affected local districts and jurisdictions to develop reasonable flood hazard mitigation measures that work for the region, such as additional flood storage behind Baker Dams, Nookachamps drainage basin storage with Sedro-Woolley sewer plant

protection, overbank flow paths to the north and west, and levee setbacks through the bridge corridor.

- Revise the existing FEMA approved alternate to the regulatory floodway to clarify the role of Gages Slough, to add overbank flow paths that include the Nookachamps drainage basin and farmland located to the north and west of Burlington Hill.
- Evaluate the impact of alternative UGA configurations, with removal of land on the northeast and adding land on the west, including consideration of Raspberry Ridge development, with two goals: long term school sites and public health and safety.
- Develop and implement reasonable and prudent alternatives such as those presented in the NPDES Phase II Municipal Stormwater permit, Burlington Connected Open Space Plan, the Gages Slough Management Plan and related alternative future concepts, to comply with all local, state and federal environmental requirements, including the Endangered Species Act.
- Consider other alternatives that meet the project objectives and/or mitigate environmental impacts.
- Address the unresolved national and state environmental policy issues, including the requirement for NEPA review of the change in the FEMA Levee Failure Policy., FEMA has taken the position that the agreement reached in 1985 when the Flood Insurance Rate Maps were first set up in the Skagit River Delta Area is no longer valid. At that time, there was no regulatory floodway established because it is not practical in this situation and the levees were assumed to fail at a single point. Today, FEMA is stating that if the levees are not certified to 100-year flood protection, they are assumed not to exist at all for the purpose of setting base flood elevations. Rather than consider the issues together, FEMA is also proposing to establish a classic regulatory floodway through the Skagit River delta area at an unknown future date.

MAJOR CONCLUSIONS AND SIGNIFICANT AREAS OF CONTROVERSY AND UNCERTAINTY

There is little debate about the need to protect existing developed urban areas from flooding. However, there is a great debate about what constitutes 100-year flood protection and how much water arrives in the Skagit River delta in that flood event. It is expected that this debate will escalate once FEMA makes a decision on flood hydrology, and produces new Flood Insurance Rate Maps. The City of Burlington and Dike District #12 are prepared to file technical appeals if necessary. Extensive levee enlargement work has been in process since 1990 by Dike District #12. With correct flood hydrology in place, the feasibility of obtaining 100-year levee certification would be improved. The process involves certification by a private consultant with review and accreditation by FEMA. This is a recent change from past practice, with substantially less direct federal involvement in the process.

Land Use – There is a clear need for permanent acquisition of farmland development rights to provide paths for floodwaters to move during a major flood event. This option is critical to protect Burlington from becoming a regulatory floodway.

Environmental Quality - If the City's recommendations for a plan of action that mitigates urban flooding through levee system upgrades is not feasible or practical, and Base Flood Elevations

are substantially increased, there will be significant adverse impacts on the future growth and development of the City, aesthetic and economic impacts on local property owners, and the quality of the human environment will suffer. The opportunity to improve and protect fish and wildlife species and habitats arise with the program for levee certification and connected open space design and enhancement.

Floodway or "Floodway-like Tool" – Gages Slough is currently identified as a Special Flood Risk Area with some, but not all, of the restrictions that would be in place if it were designated as a floodway; however, Gages Slough cannot carry enough water to be considered a floodway conveyance area. The Skagit River, from a point three hundred feet behind the landward toe of the levees across the river, is considered a Special Flood Risk Area and the typical floodway rules apply in this area. The proposed addition to the program is to protect farmland that will provide overbank flow paths, the actual course of floodwaters in a flood event. FEMA is proposing to establish a floodway or floodway-like tool, but there is no information or schedule for this action and it needs to be considered together with the Base Flood Elevations, and the proposals outlined in this document.

Further Study - If the flood hazard mitigation issues for the City of Burlington cannot be solved, further study will be necessary, and there will be significant adverse effects that cannot be mitigated. These include gradual deterioration of the city and loss of economic vitality, loss of protection of major regional transportation infrastructure, inability to continue with ecosystem restoration efforts and continued poor storm water quality entering the Skagit River, as examples.

SIGNIFICANT IMPACTS, MITIGATION MEASURES, AND SIGNIFICANT UNAVOIDABLE ADVERSE IMPACTS

This is a programmatic environmental impact statement intended to address planning issues related to flood hazard mitigation including levee certification. The typical environmental impacts of site preparation and construction are addressed by the existing land use and construction codes and are not considered significant adverse effects and they will be adequately mitigated. Supplemental environmental assessments ranging from biological assessments and evaluations to discipline reports pursuant to NEPA will be incorporated into the program as they become available or required.

With certified levees and a committed plan for farmland and open space preservation and restoration, with a defined urban separator, there will be long term stability in the character of the area around the existing City limits.

Continued increase in commercial activity and residential density will occur, but it will be confined to the existing urbanized area.

There will be an unavoidable adverse impact on frequently flooded farmland and rural residential areas that are located in overbank flow areas when flooding occurs. This is an existing condition.

Levee certification may result in more water moving down the river past Burlington, with potential impacts to rural and agricultural lands if there is levee overtopping or failure downstream.

With respect to fish and wildlife, benefits include a range of programs and projects, including but not limited stormwater cleanup, wetland buffer restoration, riparian habitat enhancement, levee setbacks and connected open space.

Mitigation measures include the restoration of the Gages Slough Habitat corridor through Burlington, providing clean water, a wetland buffer, and habitat for birds and small animals.

Levee setbacks are planned through the three-bridge corridor on the south side of Burlington. The setback area will be maintained as part of the Burlington Connected Open Space, affording new potential opportunities for public access, buffer enhancement, and flood hazard mitigation, all of which will benefit fish and wildlife and their habitats. Preliminary study with regard to the three-bridge corridor has identified the 100-year old BNSF railroad bridge, at the upstream end of the corridor, as a restriction to flood conveyance.

Additional studies will be prepared as part of the request for levee certification, addressing issues of environmental justice and archeology and historic preservation and completing the Endangered Species Act consultation process.

ALTERNATIVES INCLUDING THE PROPOSED ACTION

The purpose of including a discussion of alternatives is to inform decision-makers and the public of reasonable alternatives, including mitigation measures that would avoid or minimize adverse impacts or enhance environmental quality.

1. **Proposed Action** – *The proposed action is to construct 100-year certified levees in appropriate locations, and provide other flood measures as necessary and appropriate based on FEMA's final Flood Insurance Study, when this study is adopted following resolution of any appeals.*

There are two major alternatives presented: one is to modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the hydrology developed for Skagit County, Burlington and Mount Vernon by Pacific International Engineering that is not presently accepted by the Army Corps of Engineers. At present it is not known if FEMA will accredit levees certified using this hydrology. The other major alternative is to modify existing levees, including certification of some levee segments, and take other appropriate flood control measures based on the Army Corps of Engineers hydrology, if that becomes the basis for the new FIRM maps, and to evaluate options within that framework.

(see table on next page)

Technical Report	Regulated 100-year peak flow estimate (how much water gets here)	Effects on upstream water levels	Effects on downstream measures	Effect on base flood elevations in Burlington
Corps of Engineers	215,270 cfs at Sedro-Woolley, Highway 9 Bridge	May raise upstream surface water levels 1-4 feet, depending on how much water downstream constrictions such as the BNSF bridge and the levees hold back	Overtopping or control structures critical Levee certification may not be feasible at all without ring dike and then adverse effects cascade both upstream and downstream	Up to 7 feet increase; generally, between 3 and 7 feet throughout the City No plausible scenario of levee improvements without significant detrimental impacts to upstream and downstream neighbors
Pacific International Engineering	184,700 cfs at Sedro-Woolley, Highway 9 Bridge	Minimal effect depending on levee configuration; less than 3 inches	Levee certification along river front feasible Levee setbacks and habitat improvement feasible Flood insurance still needed most places	Up to 6 feet increase; generally between 2 and 6 feet throughout the City BFE's near status quo if levee segment is certified; parts of town out of floodplain
FEMA review results	UNKNOWN	UNKNOWN	UNKNOWN	UNKNOWN

Consultant	Unregulated Peak Flow Input Data Points				
	1897	1909	1917	**1921**	1932
Corps of Engineers	265,000	245,000	210,000	**228,000**	182,000
Northwest Hydraulic Consultants	220,000	205,000	185,000	**195,000**	182,000
Pacific International Engineering	181,200	179,000	158,700	**169,700**	165,000

Consultant	100-Year Regulated Peak Flow Estimate		
	Concrete	Sedro-Woolley	Mount Vernon
Corps of Engineers	209,490	215,270	192,900
Northwest Hydraulic Consultants	191,400	196,890	176,250
Pacific International Engineering	184,400	184,700	162,200

1. Running the Flo-2 D computer model with the levees as they are today, a significant volume of water never gets to the RR bridge: the Nookachamps fills, Sterling area fills, and water overtops the RR in the Sterling area, heading north and then west to the farmland. At some point, when the bridge corridor is at maximum capacity, levee failure or overtopping occurs at one of several locations; Avon Bend, Riverbend, Fir Island are examples.

2. Running the model with the FEMA levee failure policy in place yields different results depending on the assumption of how much water gets to Burlington, but even with the lower numbers supported by the City, Base Flood Elevations go up significantly within the City limits and future development and redevelopment will be costly and aesthetically displeasing and function poorly. Levee certification is the only way to get credit for having levees at all in setting the Base Flood Elevations.

This project consists of several related actions implementing the 2008-2013 update of the Burlington Floodplain Management and Natural Hazard Mitigation Plan.

1. *The updated plan adds the flood hazard mitigation strategy of designing and building certified levees at appropriate locations near the City of Burlington, and providing other appropriate flood control measures to protect the City of Burlington's urban area. This action may result in some or all of Burlington's urban area being removed from the 100-year floodplain, and/or reduced Base Flood Elevations in some or all of Burlington's urban area: however, flood insurance will continue to be promoted.*

2. *Levee upgrades require coordinating with Dike District #12 and Skagit County on the location of levees and control structures. In order to protect the urban area some of these will of necessity be constructed in Skagit County's rural jurisdiction.*

3. *Modify the UGA for the City of Burlington to implement flood hazard mitigation measures including the restoration of the Gages Slough wetland corridor with native plant buffer restoration projects, water quality improvements through source control with Low Impact Design standards, designing an urban separator along Pulver Road, and connecting open space from Gages Slough to the riparian corridor along the Skagit River in conjunction with the planned setback levees in the three-bridge corridor. The proposal is to add the three sites identified in the 2005 Comprehensive Plan, straightening out the very irregular UGA boundary on the west side of Burlington to line up with Pulver Road to a point north of the intersection of Peterson Road and Pulver Road, that would represent an extension of West Fairhaven Avenue.*

    - *Land added to the UGA at the northwest corner of Burlington is proposed for a future school site. In order to comply with the Skagit County policy of "no net loss" of land that is zoned Agricultural Resource Land, a comparable amount of farmland is proposed to be removed from the northeast corner of the Burlington UGA just east of Burlington Hill.*
    - *The remainder of the agricultural resource land added to the UGA will be used as a sending zone for farmland development rights under the Burlington Transfer of Development Rights standards or for the purchase of development rights using funds raised by the Burlington Agricultural Heritage Credit program.*
    - *Implement the adopted Burlington Connected Open Space Plan with a diverse array of riparian buffer upgrades, wetland buffer restoration projects, and related native*

vegetation enhancement opportunities and corridors that are appropriate for protecting and enhancing habitat.

4. *Add the existing Raspberry Ridge high density farmworker housing project to the UGA to get the site on sanitary sewer to prevent sewage from flooding the City in the event of failure of the septic systems during high water. It could retain zoning comparable to the existing Agriculture Natural Resource zoning in Skagit County as needed to adhere to the current no net loss of farmland policy in Skagit County. This area includes the land west of Gardner Road that is owned by the City of Burlington and consists of a forested riparian buffer on the riverside of the levee.*

5. *Amend the Zoning Code to include the Burlington Agricultural Heritage Credit program and fee structure. Amendments to Skagit County Code may also be required to facilitate the purchase and/or transfer of development rights from land in the unincorporated UGA to land within the City limits.*

Discussion:

The proposed action is designed to reflect the unique location of Burlington in the Skagit River delta area with the river on two sides, Gages Slough diagonally crossing the City, major state and interstate transportation corridors (both highways and railroads) running north-south and east-west, combined with agricultural resource land of long term significance to the north and west. The goal is to make the best of the situation for all parties, focus on public health, safety, welfare and the character of the area, and protect the long term interests of the community and the region with an effective and practical combination of measures.

Fortunately for Burlington, the Dike District #12 has been focused on protecting the interests of the citizens they serve and working on the ground to upgrade the levee system. There has been an excellent supply of acceptable fill material available since the project began after the 1995 flood event, and the levee system upgrade is designed as an overtopping levee with wide top and long backslope. The current levee profile is generally higher than the 1979 Corps of Engineers 100-year water surface elevation. To gain the required three feet of freeboard under any hydrology and hydraulic scenario that is currently on the table, a range of between two and five feet of additional levee height will be required. With the wide levee top and long backslope profile, there is ample space for additional material. Many of the technical considerations for levee design identified in the Corps' Levee Design Manual are addressed by this design.

Burlington is ready to make its case to get credit for the levee system in the establishment of Base Flood Elevations. While "No Action" may continue in the region into the indefinite future, Burlington is simply asking for good data to finalize the levee profiles, complete the work, get a clear understanding from FEMA on the specific submittals required to document the case for levee certification by a registered professional engineer, and file for Map Revisions.

2. No Action

The current General Investigation study has been underway for many years by the County and the Corps of Engineers, and will continue for several years to come. Doing nothing will result in mandatory adoption of higher Base Flood Elevations that may show up to 6.4 feet increase in height in some locations in Burlington. This presents an extremely difficult challenge to Burlington's future economic stability and for the future development of vacant and underutilized land in the City, and may preclude the redevelopment of historic downtown Burlington with its 30-foot wide lots.

No action will continue to generate extremely high flood insurance premiums for the families that live in the community. While the existing buildings will be "grandfathered in", according to FEMA, citizens have already been hit hard with much higher rates for existing conditions when mortgage lenders get involved at the time of sale or refinancing. Crawl spaces are often reclassified as basements, and if insurance carriers are changed, the policy is no longer subject to the original lower rates.

Discussion:

Under this alternative, the community will participate in the on-going exercise, action will be delayed. Base Flood Elevations will increase when the FEMA maps are produced, flood insurance premiums will increase, possibly substantially, and investment in economic development will nearly cease, particularly the revitalization of historic downtown Burlington and infill development in the retail core and industrial areas. Without levee certification, the potential for overtopping and widespread contamination is very great, particularly when combined with the potential for establishing a regulatory floodway through the Skagit River delta area.

3. **Remove approximately 30 acres of land from the Urban Growth Area and exchange for land located at the northeast corner of Pulver and Peterson Road for a school site.**

Land currently in the UGA will be returned to agricultural resource zoning and the school site will be redesignated as UGA, from its agricultural zoning classification. Adjacent farmland development rights will be acquired and a permanent urban separator designed along the boundaries of the site, coordinated with the adopted Connected Open Space Plan for Burlington.

Discussion:

See Appendix C, Exhibit 3 for a map that illustrates the proposal. Long term growth in the Burlington-Edison School District population means that two new school sites are needed for the long term future. With the policy of no net loss of farmland in mind, a swap of land from one side of the UGA to the other is proposed.

4. Evaluate the concept of adding Raspberry Ridge to the UGA so that sanitary sewer is provided to mitigate potential health hazard in event of a flood.

This area is proposed to be added to the Burlington UGA and zoned as Open Space in order to be able to provide sanitary sewer to the high density farmworker housing that has been constructed on the site. The site is currently zoned as Agricultural Natural Resource Land (Ag-NRL). The goal is to protect the citizens of Burlington from contamination by sewage from failed septic systems in the event of a flood. This area was proposed to be included as a sending zone for farmland development rights under the transfer/purchase of development rights provisions adopted in the Burlington Zoning Code in 1994. However, this proposal was rejected by Skagit County at that time.

Discussion:

See Appendix C, Exhibit 3 for a map that illustrates the proposal. Today, all of the land in this area has been taken from long term agricultural resource use and high density housing has been constructed by Skagit County with very large septic systems and drainfields. The likelihood of failure in a flood event with high water table is high and this area needs to be connected to sanitary sewer.

AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS AND MITIGATION MEASURES

Comparative Impacts of Alternatives	Alternative #1 – Proposed Action 100-yr levees + preserve farmland + modified floodway	Alternative #2 – No Action-study	Alternative #3 – land swap for school site	Alternative #4 – Sanitary sewer to farm worker housing
Does it meet applicant's objectives?	Yes	No	Yes	Yes
Mitigate flood hazard	Yes	Unknown & unlikely	No net change	Yes
Viable future community	Yes	No	Yes	Yes
Enhance Wild and Scenic River	Yes	No	No net change	No net change

AFFECTED ENVIRONMENT, SIGNIFICANT IMPACTS AND MITIGATION MEASURES

1. **How would the proposal be likely to increase discharge to water; emissions to air; production, storage or release of toxic or hazardous substances; or production of noise?**

The recent amendment of the Flood Hazard Mitigation Plan to add the goal of 100-year flood protection, combined with an update of the existing alternative regulatory floodway program and playing a role in other regional flood hazard mitigation components, will allow the existing community within the current UGA/ City limits to continue to thrive as a small city. As stated in the 2008-2013 Floodplain Management and Natural Hazard Mitigation Plan, page 39, there is an available supply of 222 acres of commercial and industrial land within the City limits of Burlington, out of a total of 1,349 acres, and there are 80 acres of vacant residential land located primarily on Burlington Hill. Infill and redevelopment will be the primary activities that will affect the environment. Levee upgrades will have a temporary impact on air quality and noise during construction.

Proposed measures to avoid or reduce such increases are:

All new development shall comply with all federal state and local regulations including the Critical Areas Ordinance, federal and state air and water quality standards, state noise standards and other applicable laws and regulations. Green development principles, state of the art surface water management, low impact infrastructure design, and sustainable development techniques are proposed to be integrated into codes and plans for design and construction. Following participation in a state Technical Assistance program, an Interim Low Impact Design Code is in process for adoption for a trial period so that code language can be improved after practice in the field.

2. How would the proposal be likely to affect plants, animals, fish or marine life?

The proposal for levee certification and maintenance of floodway-like open space components is expected to have no adverse effect on fish or wildlife or their habitats. While new development including infill and redevelopment is part of the future of the City, in addition to using environmentally sound practices, a major component of the project is restoration, maintenance and management of the Gages Slough habitat and wetland corridor and other surface waters and outfall locations to meet or exceed state and federal clean water standards.

Proposed measures to protect or conserve energy and natural resources are:

The Skagit River is home to threatened and endangered species of fish, such as Chinook salmon, native steelhead, and bull trout, as well as the bald eagle. The overall program of surface water quality management, habitat and buffer restoration and maintenance of floodway-like open space components is a unique mitigation opportunity and no adverse effects are expected. This plan will benefit listed and priority habitats and species. Part of the proposal includes levee setbacks and connected open space with additional mitigation opportunities for listed and priority species and habitat.

Additional biological evaluation and assessment work will be completed for implementation of the plan, including the application for Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR), with any supplemental documentation, consultation and determinations required.

3. How would the proposal be likely to deplete energy or natural resources?

All development uses energy and natural resources. Part of this proposed action is Gages Slough restoration, maintenance and habitat management which is a major turnaround opportunity to restore critical habitat and natural resources. While not on the main stem of the Skagit River, there is substantial migratory bird use, as well as other habitat.

This proposed action protects and permanently conserves farm land in the agricultural natural resource designation and that is a significant opportunity to preserve natural resources.

Proposed measures to protect or conserve energy and natural resources are:

The project has a specific goal of natural resource conservation, including acquisition of farmland development rights through the Skagit County Farmland Legacy, funded by the Burlington Agricultural Heritage Program (See Appendix E).

4. **How would the proposal be likely to use or affect environmentally sensitive areas or areas designated (or eligible or under study) for government protection; such as parks, wilderness, wild and scenic rivers, threatened or endangered species habitat, historic or cultural sites, wetlands, floodplains, or prime farmlands?**

The proposal is a Flood Hazard Mitigation project to provide protection to a finite existing urban area, while completely extinguishing development rights from prime farmland that also provide overbank flow paths for flood hazard mitigation, restore and maintain the Gages Slough wetland corridor, implement, monitor and manage water quality improvement programs so that clean water reaches the Skagit River which is designated critical habitat for several species of listed salmonids.
By this means, through a cooperative effort representing the interests of fish and wildlife habitat, wetlands, floodplains, and threatened or endangered species habitat, farmland preservation, opportunities for improvements in sensitive areas will be optimized for future generations, while protecting the lives of the existing community now in the floodplain.

Proposed measures to protect such resources or to avoid or reduce impacts are:

Adopt effective codes to regulate development over the years; monitor the ecosystems in the area and manage restoration planning and implementation in a cooperative venture among interested parties with future generations in mind. Strong maintenance and management action plans are critical to long term viability and they must be adequately funded and monitored.

Additional biological evaluation and assessment work will be completed for implementation of the plan, including the application for Conditional Letter of Map Revision (CLOMR) and Letter of Map Revision (LOMR), with any supplemental documentation, consultation and determinations required.

5. **How would the proposal be likely to affect land and shoreline use, including whether it would allow or encourage land or shoreline uses incompatible with existing plans?**

This plan will protect and maintain substantial connected open space through and around the urban area, while providing levee certification around the urban area, and will retain rural and agricultural uses in perpetuity in protected agricultural resource lands where there will continue to be less than 100-year levee protection and urban development will not be allowed. This program is consistent with existing land and shoreline use plans in place.

Proposed measures to avoid or reduce shoreline and land use impacts:

This plan should accomplish the goal of reducing impacts.

6. **How would the proposal be likely to increase demands on transportation or public service and utilities?**

There will be a minor increase in population and business activity within the urban area.

Proposed measures to reduce or respond to such demand(s) are:

The plan and code addresses this issue by establishing a Level of Service and concurrency requirements.

7. **Identify, if possible, whether the proposal may conflict with local, state, or federal laws or requirements for the protection of the environment.**

The plan is consistent with requirements for protection of the environment.

8. **Earth**

Appendix F describes the Levee certification and accreditation process. Geotechnical reports are required to be developed and filed as part of the application for map revision. The scope of the reports needed for levee modifications will be determined in cooperation with the Dike District Commissioners, the Public Works Department, a Registered Professional Engineer, a Geotechnical Engineer and FEMA.

9. **Air**

Levee vegetation is intended to reduce dust and airborne particulates. Construction emissions are a temporary, unavoidable adverse effect. Dust control is used during the dry season.

10. **Water**

- *Long term improvement of surface water quality is an important goal. Storm water quality monitoring and management through a long range plan to implement the NPDES Phase II storm water program is in place.*
- *Drinking water supply is managed by the PUD #1.*
- *The Burlington Wastewater Treatment Plant uses ultraviolet light for disinfection and has a major pretreatment program in place to exceed water quality standards for effluent.*
- *Protection of the urban area from flooding, while providing overbank flow paths for floodwaters should help protect water quality from hazardous waste, septage, and other industrial hazards.*

11. Plants

There are no known threatened or endangered plants in the area. A component of the project is buffer restoration with native plants in the Gages Slough area. There are very restrictive standards for management of levee vegetation to protect the integrity of the levee system. The installation of setback levees may afford greater opportunities for shoreline plants in the riparian corridor along the river.

12. Animals

The Skagit River is home to several species of threatened or endangered fish, including salmon, steelhead and bull trout. The bald eagle is also found in the area, along with many other birds, mammals and other animals. Buffer restoration and enhancement and upgrading the environmental qualities of the Gages Slough corridor are positive for animals.

13. Energy and Natural Resources

Protecting property, protecting the environment and ensuring that there is long term ability for passage of floodwaters through protected open space will conserve both energy and natural resources.

14. Environmental Health

Protection of the urban area from flooding will directly benefit environmental health by preventing from potential contamination by a variety of sources.

15. Land and Shoreline Use

Preservation of farmland in open space, maintaining the existing urban area with no potential for future expansion into floodplains and farmland, improving and cleaning up habitat in the wetland corridor, and setting back levees are all actions that are positive for land and shoreline use. Levee modification to provide for overtopping, instead of potential failure, increases protection for the existing land use.

16. Housing

Protecting the ability of the citizens to be able to afford flood insurance in conjunction with home mortgages is critical for the working families of Burlington. In addition, infill housing needs to fit into the character of the neighborhoods at the same Base Flood Elevations as the other homes in Burlington. New higher density housing that is planned for the redevelopment of downtown and may occur in the retail core needs to be affordable market rate. This means reasonable elevations are necessary without the need for fill or parking garages on the ground floor.

17. Aesthetics

The design and development of the existing urban area will be able to proceed and preserve the character of the community. Some significant historical structures will be protected in context, and new construction will be in keeping with the historical and existing community character of the area. Preserving farmland in open space will protect the aesthetics of the Skagit Valley for future generations.

18. Light and Glare

Limiting the expansion of the urban area to the land protected by certified levees, and protecting farmland around the perimeter, will help keep excess light at night to current levels.

19. Recreation

Access to Gages Slough and the Skagit River for fishing, bird watching, and fish viewing will be enhanced as restoration projects proceed over the years ahead. Connected open space in the setback levee area will be accessed by paths and sidewalks as appropriate. Local parks in the Gages Slough corridor and along the Skagit River function to protect flood hazard areas and provide recreational opportunities. Where protection of priority habitats and species is needed, public access will be restricted to specific viewing locations without direct access.

20. Historic and Cultural Preservation

Cultural and historic resources will be evaluated for each element of the project and appropriate action taken if archeological sites are identified. Preserving Burlington's history is directly linked to being able to build at reasonable Base Flood Elevations. Historic Burlington has 30-foot wide lots and infill development needs to be at the same elevation as the existing buildings.

21. Transportation

State Route 20, Interstate 5 and the BNSF Railroad all intersect in Burlington. Protecting these critical infrastructure components is a key goal of the levee certification program. The first project designed to protect Interstate 5 (the three-bridge corridor levee setback and certification project) is currently in the process of NEPA review.

22. Public Services

Levee certification decreases the need for on the ground flood fighting. This has already been the experience in the 2003 and 2006 flood events with the current levee improvements in place, allowing emergency resources to provide assistance to others.

23. Utilities

Protecting utilities and infrastructure with an adequate levee system ensures that vital services are available.

APPENDICES

NOTE: Attachments for Appendices are in three separate attachments as follows:

- **Appendices A – C**
- **Appendices D – G**
- **Appendices H – J**

APPENDIX A

City of Burlington 2008-2013
Floodplain Management and Natural Hazard Mitigation Plan

and

2008-2013 Skagit County Natural Hazard Mitigation Plan

Available via the following weblink:

http://www.skagitcounty.net/Common/asp/default.asp?d=EmergencyManagement&c=General&p=2003NHMPFinaltoc.htm

APPENDIX B

Current studies on Hydrology and Hydraulics

1. Skagit River Basin Hydrology Report Existing Conditions prepared by Pacific International Engineering, October 2008
2. Skagit River Basin, Washington Revised Flood Insurance Study Hydrology Summary Draft, May 2008, U.S. Army Corps of Engineers for Federal Emergency Management Agency
3. Skagit River Basin, Washington Revised Flood Insurance Study Hydraulics Summary, May 2008, U.S. Army Corps of Engineers for Federal Emergency Management Agency
4. Re-evaluation of the Magnitude of Historic Floods on the Skagit River near Concrete, Final Report October 2008, Northwest Hydraulics Consultants for Skagit County Department of Public Works
5. Skagit River Flood Elevations and Flood Frequency Data presentation for NORMFA meeting 2008 by Chal Martin, P.E. and Albert Liou, P.E.
6. Microscopical Studies of Concrete WA Historical Flood Investigation by WJE Associates, Inc.

APPENDIX C

Background Reports

APPENDIX D

Maps

Exhibit 1 – Skagit River and Tributaries Basin Map

Exhibit 2 – Vicinity Map showing levee system

Exhibit 3 – Urban Growth Area Map from 2005 Comprehensive Plan

Exhibit 4 – Map showing Alternative 3 with proposed changes to Urban Growth Area to add new school site, remove comparable acreage from the Urban Growth Area at the northeast corner adjacent to Peacock Lane; and Alternative 4, adding Raspberry Ridge as Open Space so that sanitary sewer can be made available.

Exhibit 5 – Special Flood Risk Map with Gages Slough & Open Space

Exhibit 6 – Overbank Flow Paths, FEMA Levee Failure Policy with no levee credit, Levee segment corrected hydrology, Certified Levee Options

APPENDIX E

Project Description for Farmland Preservation through Burlington Agricultural Heritage Credit Program

APPENDIX F

Distribution List

APPENDIX G

Overview of Burlington's flood hazard mitigation program as it relates to the Corps of Engineers Measures List, and the need for a realistic approach to the Skagit River Comprehensive Flood Hazard Management Plan update

APPENDIX H

- Background Report - Dike District #12
- Levee Plan and Profile Existing Conditions as of December 2007
- Aerial Photos keyed to each Plan Sheet
- Burlington Levee Certification Project Overview
- FEMA Fact Sheet Requirements of 44 CFR Section 65.10
- 44 CFR Section 65.10
- Joint Resolution 01-2007
- Interlocal Agreement between Burlington and Dike District #12 -- Preliminary Work for Levee Certification

APPENDIX I

- **Environmental Information and Scope of Future Environmental Phases**

- **Summary of scoping meeting**

  1. **Upper Skagit Fisheries**
  2. **Skagit System Cooperative**
  3. **FEMA Environmental Review and NOAA Fisheries**

- **Washington State Department of Fish and Wildlife Priority Habitats and Species information**

- **Endangered Species Act – Section 7 Consultation Final Biological Opinion And Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Consultation including correspondence from FEMA and Burlington Response**

- **FEMA requirements for Conditional Letter of Map Revision including Archeology and Historic Preservation**

APPENDIX J

Comment Letters Received to Date with Response

End of Exhibit 6