NORTH COAST RESOURCE PARTNERSHIP
2018/19 IRWM Project Application

The North Coast Resource Partnership (NCRP) 2018/19 Project Application Instructions and additional information can be found at the NCRP 2018/19 Project Solicitation webpage (https://northcoastresourcepartnership.org/proposition-1-irwm-round-1-implementation-funding-solicitation/). Please fill out grey text boxes and select all the check boxes that apply to the project. Application responses should be clear, brief and succinct.

Project Applications will be accepted until 5:00 pm, ~~March 8, 2019~~ **March 15, 2019.** It is important to save the application file with a distinct file name that references the project name. When the application is complete, please email to kgledhill@westcoastwatershed.com

If you have questions, need additional information or proposal development assistance please contact:

- Katherine Gledhill at kgledhill@westcoastwatershed.com or 707.795.1235
- Tribal Projects: Sherri Norris, NCRP Tribal Coordinator at sherri@cieaweb.org or 510.848.2043

Project Name: Eureka Storm Water Management and Sea Level Rise Resiliency Project

A. ORGANIZATION INFORMATION

1. **Organization Name: City of Eureka**

2. **Contact Name/Title**
   Name: Jesse Willor
   Title: City Engineer
   Email: jwillor@ci.eureka.ca.gov
   Phone Number (include area code): 707-441-4031

3. **Organization Address (City, County, State, Zip Code):**
   531 K Street Eureka, CA 95501

4. **Organization Type**
   ☒ Public agency

☐ Non-profit organization
☐ Public utility
☐ Federally recognized Indian Tribe
☐ California State Indian Tribe listed on the Native American Heritage Commission's California Tribal Consultation List
☐ Mutual water company
☐ Other:

5. **Authorized Representative** (if different from the contact name)
Name: Richela Maeda
Title: Project Engineer
Email: richela.maeda@ghd.com
Phone Number (include area code): 707-267-2263

6. **Has the organization implemented similar projects in the past?** ☒ yes ☐ no
Briefly describe these previous projects.
The City has implemented numerous grant funded projects: a $2.3 Mil Roadway/Infrastructure project, a $1.2 Mil Pedestrian Crossing project, and several other grants ranging from $250,000 to $650,000. The City has also implemented the Mad River Pipeline Project (included 55,000 ft of 24" water pipe for $15 Mil) and the Martin Slough Interceptor Project (new sewer pump station and gravity and force mains for $26 Mil). Projects included all phases of planning, ROW, design and construction.

7. **List all projects the organization is submitting to the North Coast Resource Partnership for the 2018/19 Project Solicitation in order of priority.**
Eureka Storm Water Management and Sea Level Rise Resiliency Project

8. **Organization Information Notes:**

B. ELIGIBILITY

1. **North Coast Resource Partnership and North Coast IRWM Objectives**

GOAL 1: INTRAREGIONAL COOPERATION & ADAPTIVE MANAGEMENT
☒ Objective 1 - Respect local autonomy and local knowledge in Plan and project development and implementation
☒ Objective 2 - Provide an ongoing framework for inclusive, efficient intraregional cooperation and effective, accountable NCIRWMP project implementation
☐ Objective 3 - Integrate Traditional Ecological Knowledge in collaboration with Tribes to incorporate these practices into North Coast Projects and Plans

GOAL 2: ECONOMIC VITALITY
☒ Objective 4 - Ensure that economically disadvantaged communities are supported and that project implementation enhances the economic vitality of disadvantaged communities by improving built and natural infrastructure systems and promoting adequate housing

☐ Objective 5 - Conserve and improve the economic benefits of North Coast Region working landscapes and natural areas

GOAL 3: ECOSYSTEM CONSERVATION AND ENHANCEMENT
☒ Objective 6 – Conserve, enhance, and restore watersheds and aquatic ecosystems, including functions, habitats, and elements that support biological diversity
☒ Objective 7 - Enhance salmonid populations by conserving, enhancing, and restoring required habitats and watershed processes

GOAL 4: BENEFICIAL USES OF WATER
☐ Objective 8 - Ensure water supply reliability and quality for municipal, domestic, agricultural, Tribal, and recreational uses while minimizing impacts to sensitive resources
☐ Objective 9 - Improve drinking water quality and water related infrastructure to protect public health, with a focus on economically disadvantaged communities
☐ Objective 10 - Protect groundwater resources from over-drafting and contamination

GOAL 5: CLIMATE ADAPTATION & ENERGY INDEPENDENCE
☒ Objective 11 - Address climate change effects, impacts, vulnerabilities, and strategies for local and regional sectors to improve air and water quality and promote public health
☐ Objective 12 - Promote local energy independence, water/ energy use efficiency, GHG emission reduction, and jobs creation

GOAL 6: PUBLIC SAFETY
☒ Objective 13 - Improve flood protection and reduce flood risk in support of public safety

2. Does the project have a minimum 15-year useful life?
☒ yes ☐ no
If no, explain how it is consistent with Government Code 16727.

3. Other Eligibility Requirements and Documentation

CALIFORNIA GROUNDWATER MANAGEMENT SUSTAINABILITY COMPLIANCE
a) Does the project that directly affect groundwater levels or quality?
☐ yes ☒ no
b) If Yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?
☐ yes ☐ no

CASGEM COMPLIANCE
a) Does the project overlie a medium or high groundwater basin as prioritized by DWR?
☐ yes ☒ no
b) If Yes, list the groundwater basin and CASGEM priority:
c) If Yes, please specify the name of the organization that is the designated monitoring entity:
d) If there is no monitoring entity, please indicate whether the project is wholly located in an economically disadvantaged community.
☐ yes ☐ no

URBAN WATER MANAGEMENT PLAN

a) Is the organization required to file an Urban Water Management Plan (UWMP)?
☒ yes ☐ no

b) If Yes, list the date the UWMP was approved by DWR: 12/1/16

c) Is the UWMP in compliance with AB 1420 requirements?
☒ yes ☐ no

d) Does the urban water supplier meet the water meter requirements of CWC 525?
☒ yes ☐ no

c) If Yes, will the organization be able to provide compliance documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?
☒ yes ☐ no

AGRICULTURAL WATER MANAGEMENT PLAN

a) Is the organization – or any organization that will receive funding from the project – required to file an Agricultural Water Management Plan (AWMP)?
☐ yes ☒ no

b) If Yes, list date the AWMP was approved by DWR:

c) Does the agricultural water supplier(s) meet the requirements in CWC Part 2.55 Division 6?
☐ yes ☐ no

SURFACE WATER DIVERSION REPORTS

a) Is the organization required to file surface water diversion reports per the requirements in CWC Part 5.1 Division 2?
☒ yes ☐ no

d) If Yes, will the organization be able to provide SWRCB verification documentation outlined in the instructions, to include in the NCRP Regional Project Application should the project be selected as a Priority Project?
☒ yes ☐ no

STORM WATER MANAGEMENT PLAN

a) Is the project a stormwater and/or dry weather runoff capture project?
☒ yes ☐ no

b) If yes, does the project benefit a Disadvantaged Community with a population of 20,000 or less?
☐ yes ☒ no

e) If No, will the organization be able to provide documentation that the project is included in a Stormwater Resource Plan that has been incorporated into the North Coast IRWM Plan, should the project be selected as a Priority Project?
☒ yes ☐ no

C. GENERAL PROJECT INFORMATION

1. Project Name: Eureka Storm Water Management and Sea Level Rise Resiliency Project

2. Eligible Project Type under 2018/19 IRWM Grant Solicitation

- ☐ Water reuse and recycling for non-potable reuse and direct and indirect potable reuse
- ☐ Water-use efficiency and water conservation
- ☐ Local and regional surface and underground water storage, including groundwater aquifer cleanup or recharge projects
- ☒ Regional water conveyance facilities that improve integration of separate water systems
- ☐ Watershed protection, restoration, and management projects, including projects that reduce the risk of wildfire or improve water supply reliability
- ☒ Stormwater resource management projects to reduce, manage, treat, or capture rainwater or stormwater
- ☒ Stormwater resource management projects that provide multiple benefits such as water quality, water supply, flood control, or open space
- ☐ Decision support tools that evaluate the benefits and costs of multi-benefit stormwater projects
- ☒ Stormwater resource management projects to implement a stormwater resource plan
- ☐ Conjunctive use of surface and groundwater storage facilities
- ☐ Decision support tools to model regional water management strategies to account for climate change and other changes in regional demand and supply projections
- ☒ Improvement of water quality, including drinking water treatment and distribution, groundwater and aquifer remediation, matching water quality to water use, wastewater treatment, water pollution prevention, and management of urban and agricultural runoff
- ☐ Regional projects or programs as defined by the IRWM Planning Act (Water Code §10537)
- ☐ Other:

3. Project Abstract

The objectives of the project are to reduce the impacts of extreme weather flooding and associated hazards, increase water quality of sensitive habitat, and reduce impacts from climate change including sea level rise and changes in precipitation patterns. The project consists of storm drain improvements and LID features, which will enhance the quality and reduce quantity of stormwater that discharges to the bay, and reduce extreme coastal event impacts to the City and receiving bay waters.

4. Project Description

The City of Eureka has experienced significant flooding due to sea level rise and an old, undersized storm water system located in low-lying areas near Humboldt Bay. The primary needs addressed by the project are protection from severe weather flooding events, increased resiliency to climate change effects, and preservation of water quality that reaches sensitive habitat. The project addresses these issues by reducing peak flows, increasing the storm water system's capacity, and providing pollutant removal. The project would result in significant flood reduction, increased pollutant removal, and increased resilience to climate change.

The project consists of upsizing 3,150 LF of existing storm drains and installing 3,675 LF of new storm drain. LID features (e.g., rain gardens) will be placed along, or upstream of storm drain improvements. These improvements will reduce peak flows thereby reducing the volume of runoff that may create erosion and carry sediment loads. The LID features will provide additional pollutant removal from the urban runoff that ultimately reaches Humboldt Bay. Additional improvements include enhancing outfalls, which will reduce needs for routine maintenance.

The City will coordinate with utility companies, adjacent property owners, and Caltrans on construction times to minimize disturbance. A traffic control plan will be developed to minimize impacts to the

community during construction. Unavoidable City utility conflicts such as water and sewer facilities would be relocated during the phase of construction and are anticipated to be limited to lateral water and sewer services only.

Construction will include saw-cutting existing asphalt concrete and concrete curb/gutter/sidewalk, trench excavation and shoring for storm drain improvements, scarification and re-compaction of the sub-grade, installation of new storm drain pipes, drainage inlets, storm drain manholes and LID features. Once the improvements are in place, the excavated area would be backfilled, re-compacted, naturalized, and restored to pre-project conditions.

5. Specific Project Goals/Objectives

Goal 1: Climate Change Resiliency
Goal 1 Objective: Provide protection from backwater effects due to sea level rise
Goal 1 Objective: Provide additional capacity required with increased rainfall intensity and sea level rise
Goal 1 Objective:
Goal 1 Objective:

Goal 2: Water Quality of Humboldt Bay
Goal 2 Objective: Reduce stormwater pollutants, trash, and sediment that reaches Humboldt Bay
Goal 2 Objective:
Goal 2 Objective:
Goal 2 Objective:

Goal 3: Flood Reduction
Goal 3 Objective: Improve public safety
Goal 3 Objective: Minimize economic losses to businesses
Goal 3 Objective: Reduce impacts to City facilities

Additional Goals & Objectives (List)

6. Describe how the project addresses the North Coast Resource Partnership and North Coast IRWM Plan Goals and Objectives selected.

Obj. 1 & 2: The project takes into consideration the local watershed characteristics, evidenced by its consistency with the Eureka Area's Storm Water Resource Plan (SWRP) goals and management objectives. The SWRP promotes regional collaboration.
Obj. 4: The project benefits the City of Eureka, an economically disadvantaged community.
Obj. 6: The proposed project will include low impact development features that will improve storm water quality that reaches Humboldt Bay, an impaired water body.
Obj. 7: The project improves water quality for the salmonid habitat in Humboldt Bay.
Obj. 11: The project provides sea level rise resiliency and addresses anticipated changes in storm intensity and resulting runoff due to climate change by increasing the storm water system's capacity and improving existing outfalls.
Obj. 13: The project improves flood protection by increasing the storm water system's capacity and reducing runoff to alleviate capacity-strained portions of the system.

7. Describe the need for the project.

Many portions of the City's existing storm water system are old and undersized, which results in significant flooding. Although the impacts propagate to upstream portions of the system, the low-lying

areas of the City experience the most flooding. Approximately one foot of flooding was witnessed on Washington Street during November 2012, when the area experienced high rainfall coinciding with high tides, which prevented the system from draining. Similar flooding was observed in January 2019. With the potential effects of rising sea levels and increased precipitation intensities, the City is susceptible to similar or more severe flooding at more frequent intervals. Water quality concerns arise due to surface runoff from areas surrounding the bay (Humboldt Bay Management Plan 2007). A 1980's federally-funded study of the bay demonstrated that bacteria-laden runoff was conveyed to the bay from land-use areas including agricultural, rural residential, and urban areas (NCRWQCB 2011).

8. **List the impaired water bodies (303d listing) that the project benefits:**
   Humboldt Bay

9. **Will this project mitigate an existing or potential Cease and Desist Order or other regulatory compliance enforcement action?** ☐ yes ☒ no
   If so, please describe?

10. **Describe the population served by this project.**
    The entire City of Eureka is considered a Disadvantaged Community. The population most directly benefitting from this project would be the community of "west-side Eureka" including residences, businesses and travelers.

11. **Does the project provide direct water-related benefits to a project area comprised of Disadvantaged Communities or Economically Distressed Communities?**
    - ☒ Entirely
    - ☐ Partially
    - ☐ No

    List the Disadvantaged Community(s) (DAC)
    City of Eureka

12. **Does the project provide direct water-related benefits to a project area comprised of Severely Disadvantaged Communities (SDAC)?**
    - ☐ Entirely
    - ☐ Partially
    - ☒ No

    List the Severely Disadvantaged Community(s)

13. **Does the project provide direct water-related benefits to a Tribe or Tribes**?
    - ☐ Entirely
    - ☐ Partially
    - ☒ No

    List the Tribal Community(s)

    If yes, please provide evidence of support from each Tribe listed as receiving these benefits.

14. **If the project provides benefits to a DAC, EDA or Tribe, explain the water-related need of the DAC, EDA or Tribe and how the project will address the described need.**
The City of Eureka has experienced significant flooding due to an old, undersized storm water system located in low-lying areas near Humboldt Bay. The project increases protection against flooding by reducing peak runoff, increasing the storm water system's capacity and improving existing outfalls to reduce maintenance.

15. **Does the project address and/or adapt to the effects of climate change? Does the project address the climate change vulnerabilities in the North Coast region?** ☒ yes ☐ no
If yes, please explain.
The project provides protection against two climate change vulnerabilities in the North Coast Region - sea level rise and increased precipitation. The project provides protection by reducing peak runoff and increasing the storm water system's capacity.

16. **Describe how the project contributes to regional water self-reliance.**
N/A

17. **Describe how the project benefits salmonids, other endangered/threatened species and sensitive habitats.**
All lifestages of coastal cutthroat trout, coho salmon, chinook salmon, and steelhead rely on Humboldt Bay for critical habitat (SONCC 2014). The proposed project decreases peak flows thereby reducing the rate of runoff that may create erosion and associated sediment loads. Additional water quality benefits are achieved with low impact development for pollutant removal and trash capture.

18. **Describe local and/or political support for this project.**
The project was developed in part in response to flooding complaints from local business owners and residents. The project addresses community needs as well as City water quality goals outlined in the MS4 permit. The project is consistent with goals and objectives outlined in the Humboldt Bay Management Plan, the Water Quality Control Plan for the North Coast Region, and the Final Recovery Plan for the Southern Oregon/Northern California Coast Evolutionarily Significant Unit of Coho Salmon.

19. **List all collaborating partners and agencies and nature of collaboration.**
The City will collaborate with the following agencies to acquire the anticipated permits shown in Section E: Coastal Commission, USACE, NCRWQCB, Caltrans, County of Humboldt. In addition to permitting agencies, the project was included in the Eureka Area Watershed Storm Water Resource Plan. The technical advisory committee for the SWRP included staff from the County of Humboldt, Humboldt Community Services District, NCRWQCB, and the Redwood Community Action Agency. As a portion of the plan's development, input from stakeholders was sought after. Stakeholders included staff from local schools, USFWS, local tribes, Green Diamond Resource Company, Humboldt Baykeeper, Humboldt Bay Initiative, and PG&E.

20. **Is this project part or a phase of a larger project?** ☐ yes ☒ no
Are there similar efforts being made by other groups? ☐ yes ☒ no
If so, please describe?

21. **Describe the kind of notification, outreach and collaboration that has been done with the County(ies) and/or Tribes within the proposed project impact area, including the source and receiving**

watersheds, if applicable.
The project was included in the Eureka Area Watersheds Storm Water Resource Plan. The technical advisory committee included staff from the County. Stakeholder outreach was included in the SWRP's development. Stakeholders were identified based on the project watershed, which included the Wiyot Tribe.

22. **Describe how the project provides a benefit that meets at least one of the Statewide Priorities as defined in the 2018 IRWM Grant Program Guidelines and Tribal priorities as defined by the NCRP?**
Increase flood protection: The primary purpose of the project is to increase flood protection within the low-lying areas of the City. The project provides protection by reducing peak runoff and increasing the storm water system's capacity.
Protect important ecosystems: An additional benefit of the project is pollutant removal in runoff that reaches Humboldt Bay, an important ecosystem that provides critical habitat for salmonids and tidewater gobies, and other state and federally listed aquatic dependent species, such as Eel Grass, an Essential Fish Habitat (EFH). LID features will provide pollutant removal. Additional water quality treatment will be achieved by decreased erosion potential due to decreased peak flows.
Ensure that there is a sustainability aspect: The project improvements are retrofits to the City's storm water system for which the City has an annual maintenance budget, the improvements to the outfalls will reduce long-term maintenance.

23. **Project Information Notes:**

D. PROJECT LOCATION

1. **Describe the location of the project**
Geographical Information
A project map is included in the "Supporting_Documentation.pdf" submitted with this application. Storm drain improvements are located in the City of Eureka near Washington and Del Norte Streets, with some improvements extending southeast to Williams and Dollison Streets.

2. **Site Address (if relevant):**

3. **Does the applicant have legal access rights, easements, or other access capabilities to the property to implement the project?**
☒ Yes If yes, please describe
☐ No If No, please provide a clear and concise narrative with a schedule, to obtain necessary access.
☐ NA If NA, please describe why physical access to a property is not needed.
The City maintains right-of-way throughout the project area within the roadways and sidewalks where improvements are proposed. The staging area parcel is owned by Simpson Timber Company and preliminary approval has been provided to use a portion of the parcel for construction staging.

4. **Project Location Notes:**

E. PROJECT TASKS, BUDGET AND SCHEDULE

1. **Projected Project Start Date:** 3/1/20
   Anticipated Project End Date: 12/31/22

2. **Will CEQA be completed within 6 months of Final Award?**
   ☐ Yes State Clearinghouse Number:
   ☐ NA, Project is exempt from CEQA
   ☐ NA, Not a Project under CEQA
   ☒ NA, Project benefits entirely to DAC, EDA or Tribe, or is a Tribal local sponsor. [Projects providing a water-related benefit entirely to DACs, EDAs, or Tribes, or projects implemented by Tribes are exempt from this requirement].
   ☐ No

3. **Please complete the CEQA Information Table below**
   Indicate which CEQA steps are currently complete and for those that are not complete, provide the estimated date for completion.

CEQA STEP	COMPLETE? (y/n)	ESTIMATED DATE TO COMPLETE
Initial Study	N	1/30/21
Notice & invitation to consult sent to Tribes per AB52	N	2/28/21
Notice of Preparation	N	2/28/21
Draft EIR/MND/ND	N	4/15/21
Public Review	N	5/31/21
Final EIR/MND/ND	N	6/30/21
Adoption of Final EIR/MND/ND	N	6/30/21
Notice of Determination	N	6/30/21
N/A - not a CEQA Project		

If additional explanation or justification of the timeline is needed or why the project does not require CEQA, please describe.

4. **Will all permits necessary to begin construction be acquired within 6 months of Final Award?**
   ☐ Yes
   ☒ NA, Project benefits entirely to DAC, EDA, Tribe, or is a Tribal local sponsor
   ☐ No

5. **PERMIT ACQUISITION PLAN**

Type of Permit	Permitting Agency	Date Acquired or Anticipated
Coastal Development Permit	Coastal Commission	3/1/22

Type of Permit	Permitting Agency	Date Acquired or Anticipated
USACE Section 10/404	USACE	3/1/22
Water Quality 401	NCRWQCB	3/1/22
Encroachment Permit	Caltrans	3/1/22

For permits not acquired: describe actions taken to date and issues that may delay acquisition of permit.
Actions to acquire permits will begin after preliminary project designs are complete. No delay in acquisitions are anticipated.

6. **Describe the financial need for the project**.
   The City of Eureka is a disadvantaged community and has limited available resources to allocate towards flood protection and sea level rise resiliency projects. Additionally, the City is the County seat and therefore incurs responsibilities that other cities in the County do not.

7. **Is the project budget scalable?** ☐ yes ☒ no
   Describe how a scaled budget would impact the overall project.
   The City evaluated multiple options for flood reduction and sea level rise resiliency. The most cost-effective option that provides flood protection, sea level resiliency, and water quality treatment includes all of the proposed project components. If requested budget amount is not available the City would entertain a reduced request amount to $500,000 and would apply to other grant funding sources to make the project budget whole.

8. **Describe the basis for the costs used to derive the project budget according to each budget category.**
   Task A costs presented are based on the level of effort that has been required on behalf of Cities and their consultants for previous projects.
   Task C costs are based on the level of effort for tasks of similar projects.
   Task D costs are based on previous construction projects. It is anticipated that the construction of the project will take approximately six months.
   Unit costs were developed and were submitted with this application in "Supporting_Documentation.pdf".

9. **Provide a narrative on cost considerations including alternative project costs.**
   Many permutations of the proposed project were considered. Alternatives included upsizing and/or installing storm drains throughout different areas within system, and installing a detention pond near an existing outfall. Each alternative's costs and benefits were evaluated using a hydraulic model in conjunction with FEMA's Benefit Cost Analysis model, and considering environmental impacts and benefits. The final selected alternative had the greatest benefit for the least cost.

10. **List the sources of non-state matching funds, amounts and indicate their status**.

    The City applied for $3 million from FEMA HMGP funds. The application has been reviewed by CalOES and forwarded to FEMA; grant award is pending.

11. **List the sources and amount of state matching funds.**

    N/A

12. **Cost Share Waiver Requested (DAC or EDA)?** ☐ yes ☒ no
    Cost Share Waiver Justification: Describe what percentage of the proposed project area encompasses a DAC/EDA, how the community meets the definition of a DAC/EDA, and the water-related need of the DAC/EDA that the project addresses. In order to receive a cost share waiver, the applicant must demonstrate that the project will provide benefits that address a water-related need of a DAC/EDA.

13. **Major Tasks, Schedule and Budget for NCRP 2018 IRWM Project Solicitation**
    Please complete MS Excel table available at https://northcoastresourcepartnership.org/proposition-1-irwm-round-1-implementation-funding-solicitation/; see instructions for submitting the required excel document with the application materials.

14. **Project Tasks, Budget and Schedule Notes:**

F. PROJECT BENEFITS & JUSTIFICATION

1. **Does the proposed project provide physical benefits to multiple IRWM regions or funding area(s)?**
   ☐ yes ☒ no
   If Yes, provide a description of the impacts to the various regions.

2. **Provide a narrative for project justification. Include any other information that supports the justification for this project, including how the project can achieve the claimed level of benefits. List any studies, plans, designs or engineering reports completed for the project.** *Please see the instructions for more information about submitting these documents with the final application.*
   The anticipated benefits of this project have been extensively evaluated using hydraulic modeling as part of the Storm Water Resource Plan (SWRP). Excerpts from the SWRP were submitted with this application in "Supporting_Documentation.pdf". Full reports are available upon request. Significant data collect efforts were made to assess potential solutions to the flooding that the City of Eureka currently experiences. The project benefits not only business owners and residents who currently experience wet weather flooding, but is beneficial for the City to meet its MS4 Permit trash capture goals. The low impact development and trash capture devices provide water quality treatment to runoff that is ultimately conveyed to Humboldt Bay, an impaired water body that provides habitat to salmonids and tidewater gobies. Additionally, many areas of the City are low-lying, making them particularly vulnerable to the effects of climate change. The project would minimize backwatering from increased sea levels, and provide increased capacity within the storm water system for potential increases is in precipitation intensity.

3. **Does the project address a contaminant listed in AB 1249 (nitrate, arsenic, perchlorate, or hexavalent chromium)?** ☐ yes ☒ no
   If yes, provide a description of how the project helps address the contamination.

4. **Does the project provide safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes consistent with AB 685?** ☐ yes ☒ no
   If Yes, please describe.

5. **Does the project employ new or innovative technologies or practices, including decision support tools that support the integration of multiple jurisdictions, including, but not limited to, water supply, flood control, land use, and sanitation?** ☒ yes ☐ no
   If Yes, please describe.
   The project leveraged computer technology by running multiple scenarios to evaluate improvement options. Uncertainty associated with the effects of climate change require robust numerical models with efficient engines that allow for ease of altering model parameters to reflect numerous scenarios.

6. **For each of the Potential Benefits that the project claims complete the following table to describe an estimate of the benefits expected to result from the proposed project.** [*See the NCRP Project Application Instructions, Potential Project Benefits Worksheet and background information to help complete the table. The NCRP Project Application, Attachment B includes additional guidance, source materials and examples from North Coast projects*.]

PROJECT BENEFITS TABLE

Potential Benefits Description	Physical Amt of Benefit	Physical Units	Est. Economic Value per year	Economic Units
Water Supply				
Water Quality				
Decrease erosion potential (see Question F5)				
Trash Removal (see Question F5)				
Other Ecosystem Service Benefits				
Habitat Protection (see Question F5)				

Potential Benefits Description	Physical Amt of Benefit	Physical Units	Est. Economic Value per year	Economic Units
Other Benefits				
Flood Damage Reduction	8.44	MG/10-yr, 24-hr	12,541,663	$ avoided/ year
Resiliency to Climate Change Effects (see Question F5)				

7. Project Justification & Technical Basis Notes:

Flood damage reduction was determined using FEMA's Benefit Cost Analysis (BCA) model. A hydraulic model was developed to determine the depth of flooding for the 10- and 25-year storm events. Sea level rise effects were included by modifying the model boundary conditions. Building damage and associated costs to repair damage were calculated and used as input for the BCA, which annualized avoided damage. Excerpts from BCA Report and SWRP were submitted with this application as "Supporting_Documentation.pdf". Erosion potential benefits were determined qualitatively using the hydraulic model results, which suggested decreases in peak flows. Other pollutant removal, including trash and sediment, are anticipated to be achieved with the low impact development features, which will be designed to achieve water quality treatment. The anticipated water quality benefits will decrease pollutant concentration in urban runoff that reaches Humboldt Bay, a critical habitat to state and federally listed threatened endangered species.

Major Tasks, Schedule and Budget for North Coast Resource Partnership 2018/19 IRWM Project Solicitation

Project Name: Storm Water Management and Sea Level Rise Resiliency Project
Organization Name: City of Eureka

Task #	Major Tasks	Task Description	Major Deliverables	Current Stage of Completion	IRWM Task Budget	Non-State Match	Total Task Budget	Start Date	Completion Date
A	**Category (a): Direct Project Administration**								
1	Administration	In cooperation with the County of Humboldt sign a sub-grantee agreement for work to be completed on this project. Develop invoices with support documentation. Provide audited financial statements and other deliverables as required	Invoices, audited financial statements and other deliverables as required	0%	$1,950	$5,850	$7,800	3/1/20	12/31/22
2	Monitoring Plan	Develop Monitoring Plan to include goals and measurable objectives	Final Monitoring Plan	0%	$2,000	$6,000	$8,000	3/1/20	12/31/22
3	Labor Compliance Program	Execute service agreement with Labor Compliance Program company	Submission of Labor Compliance Program	0%	$2,000	$6,000	$8,000	3/1/20	12/31/22
4	Reporting	Develop monthly reports describing work completed, challenges, and strategies for reaching remaining project objectives. Develop Final Report	Quarterly and Final Reports	0%	$2,000	$6,000	$8,000	3/1/20	12/31/22
B	**Category (b): Land Purchase/Easement**								
1				0%	$0.00	$0.00	$0.00		
C	**Category (c): Planning/Design/Engineering/Environmental Documentation**								
1	Environmental Compliance	Complete special studies required for completion of NEPA/CEQA	Special studies and related documents	0%	$12,000	$36,000	$48,000	11/1/20	1/30/21
2	Preliminary Project Design	Develop sufficient design to support applicable Environmental Copmliance studies, documentation and permits	Preliminary geotechnical investigations, topographic surveys, and preliminary (30%) designs		$19,500	$58,500	$78,000	6/1/20	12/31/20
3	Final Project Design	Complete geotechnical investigations, surveying, utilitty identification, and potholing. Complete final engineering design	Geotechnical investigations report, topographic surveys, and preliminary (30%) designs	0%	$36,000	$108,000	$144,000	1/1/21	12/31/21
4	Permit Development	Complete required NEPA/CEQA processes. Prepare a Stormwater Pollution Prevention Plan, and Mitigation and Monitoring Plan. Prepare and submit other applicable permits	CEQA document, SWPPP, Mitigation and Monitoring Plan, Coastal Development Permit, USACE Section 10/404, NCRWQCB 401, Caltrans Encroachment Permit, and if neeeded, a Harbor District/State Lands Coimmission Permit	0%	$13,500	$40,500	$54,000	1/1/21	12/31/21
D	**Category (d): Construction/Implementation**								
1	Construction Services	Overseeing construction bidding process, contract award, engineering daily inspections, contract change orders, invoice review, development of as-built drawings, and all other work required to oversee and ensure that construction of the project is properly executed	Construction Contract Documents (Notice of Award, Contract, and Notice to Proceed), construction management logs, monthly progress reports	0%	$45,000	$135,000	$180,000	12/1/21	9/30/22
2	Mobilization and Site Preparation	Prepare site and mobilize project	Summary of site preparation activities in monthly reports; pre-project site photos	0%	$24,000	$72,000	$96,000	6/1/22	6/30/22
3	Potholing	Identify existing utilities, pothole as needed	N/A	0%	$11,850	$35,400	$47,250	6/1/22	6/30/22
4	Demolition and Disposal (Existing Facilities)	Demolish and dispose of existing facilities (e.g., existing storm drains and drop inlets)	N/A	0%	$13,600	$40,800	$54,400	6/1/22	7/15/22
5	Excavation, Shoring, and Off-Site Disposal	Excavate, install shoring, and haul excavated material	N/A	0%	$64,500	$193,500	$258,000	6/1/22	10/31/22
6	Materials and Labor	Furnish and install project components (e.g., rain gardens, storm drain, drop inlets, and outfall improvements)	N/A	0%	$684,350	$2,053,200	$2,737,550	6/1/22	10/31/22
7	Project Signage and Traffic Control	Develop and inforce traffic control plan	Traffic Control Plan	0%	$30,000	$90,000	$120,000	6/1/22	10/31/22
8	Utility Conflicts	Relocate utility conflicts	N/A	0%	$33,250	$99,750	$133,000	6/1/22	10/31/22
9	Project Close Out, Inspection & Demobilization	Inspect project components and establish that work is complete. Verify that all project components have been installed and are functioning as specified will be conducted as part of construction inspection and project closeout. Conduct project completion photo monitoring. Prepare record drawings.	As-Built and Record Drawings; Project completion site photos	0%	$4,500	$13,500	$18,000	10/1/22	12/31/22
	Total North Coast Resource Partnership 2018/19 IRWM Grant Request				**$1,000,000.00**	**$3,000,000.00**	**$4,000,000.00**		
	Is Requested Budget scalable by 25%? If yes, indicate scaled totals; if no delete budget amount provided.								
	Is Requested Budget scalable by 50%? If yes, indicate scaled totals; if no delete budget amount provided.								

Budget Detail for North Coast Resource Partnership 2019 IRWM Project Solicitation

Project Name: Storm Water Management and Sea Level Rise Resiliency Project
Organization Name: City of Eureka

#	Item Name	Unit Quantity	Unit of Measure	Unit Cost	Cost Estimate Total
1	Application & Administration	100	HR	$ 120	$ 12,000
2	Environmental Compliance	400	HR	$ 120	$ 48,000
3	Preliminary Project Design	650	HR	$ 120	$ 78,000
4	Hazard Mitigation Grant Administration	165	HR	$ 120	$ 19,800
5	Final Project Design	1200	HR	$ 120	$ 144,000
6	Permitting	450	HR	$ 120	$ 54,000
7	Construction Services	1200	HR	$ 150	$ 180,000
8	Mobilization/Demobilization	24	DAY	$ 4,000	$ 96,000
9	Traffic Control & Signage	120	DAY	$ 1,000	$ 120,000
10	Potholing	105	EA	$ 450	$ 47,250
11	Demolition and Disposal (Existing Facilities)	3200	LF	$ 17	$ 54,400
12	Excavation, Shoring and Off-Site Disposal	12900	CY	$ 20	$ 258,000
13	18-inch dia. Stormdrain Pipe	450	LF	$ 30	$ 13,500
14	24-inch dia. HDPE Stormdrain Pipe	50	LF	$ 40	$ 2,000
15	30-inch dia. HDPE Stormdrain Pipe	1900	LF	$ 50	$ 95,000
16	36-inch dia. HDPE Stormdrain Pipe	1220	LF	$ 65	$ 79,300
17	42-inch dia. HDPE Stormdrain Pipe	310	LF	$ 80	$ 24,800
18	48-inch dia. HDPE Stormdrain Pipe	830	LF	$ 95	$ 78,850
19	54-inch dia. HDPE Stormdrain Pipe	1710	LF	$ 110	$ 188,100
20	60-inch dia. Flap Gate	1	EA	$ 25,000	$ 25,000
21	4-foot x 8-foot RCB	400	LF	$ 585	$ 234,000
22	Bedding, Structural Backfill & Compaction	10440	CY	$ 26	$ 271,440
23	Connect to Existing DI	40	EA	$ 4,200	$ 168,000
24	New DI	30	EA	$ 11,500	$ 345,000
25	Connect to Existing SDMH	15	EA	$ 6,000	$ 90,000
26	New SDMH (<= 36-inch dia pipes)	2	EA	$ 18,000	$ 36,000
27	New SDMH (> 36-inch dia pipes)	8	EA	$ 24,000	$ 192,000
28	LID Feature	12	EA	$ 30,000	$ 360,000
29	Wastewater Conflict	18	EA	$ 3,500	$ 63,000
30	Water Utility Conflict	20	EA	$ 3,500	$ 70,000
31	Hot Mix Asphalt	43456	SF	$ 10	$ 434,560
32	Stormdrain Outfall Improvements	2	EA	$ 50,000	$ 100,000
33	Project Closeout	150	HR	$ 120	$ 18,000
					$ 4,000,000

Unit Costs

#	Item Name	Unit Quantity	Unit of Measure	Unit Cost	Cost Estimate Total
1	Application & Administration	100	HR	$ 120	$ 12,000
2	Environmental Compliance	400	HR	$ 120	$ 48,000
3	Preliminary Project Design	650	HR	$ 120	$ 78,000
4	Hazard Mitigation Grant Administration	165	HR	$ 120	$ 19,800
5	Final Project Design	1200	HR	$ 120	$ 144,000
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19	54-inch dia. HDPE Stormdrain Pipe	1710	LF	$ 110	$ 188,100
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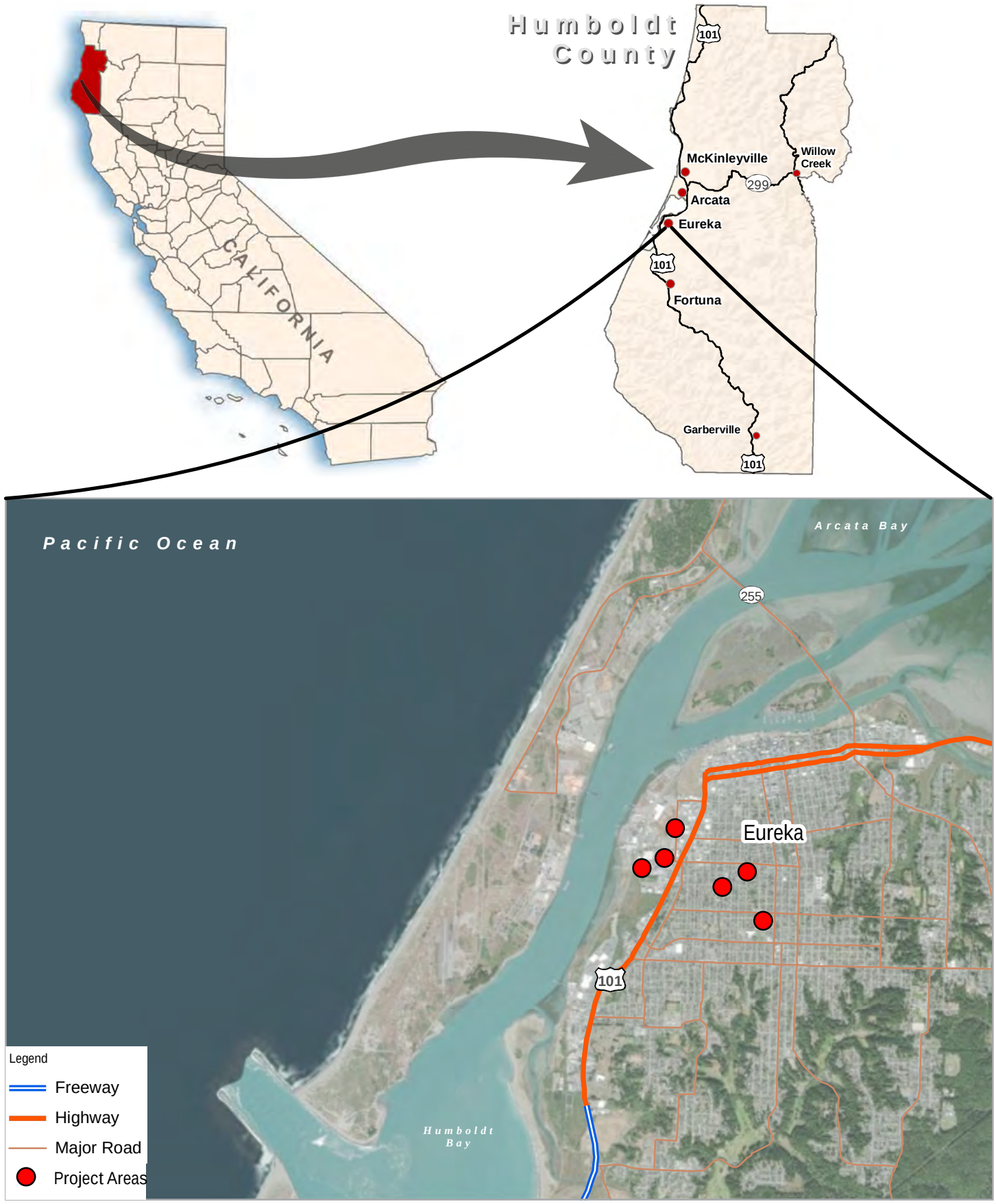
27	New SDMH (> 36-inch dia pipes)	8	EA	$ 24,000	$ 192,000
28	LID Feature	12	EA	$ 30,000	$ 360,000
29	Wastewater Conflict	18	EA	$ 3,500	$ 63,000
30	Water Utility Conflict	20	EA	$ 3,500	$ 70,000
31	Hot Mix Asphalt	43456	SF	$ 10	$ 434,560
32	Stormdrain Outfall Improvements	2	EA	$ 50,000	$ 100,000
33	Project Closeout	150	HR	$ 120	$ 18,000
					$ 4,000,000

Appendix A: Project Maps



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Miles

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

City of Eureka

Vicinity Map

Project No. 11159210
Revision No. -
Date August 2018

FIGURE 1

Data source: Sources: Esri, USGS, NOAA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: bvivyan

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American Datum 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

City of Eureka

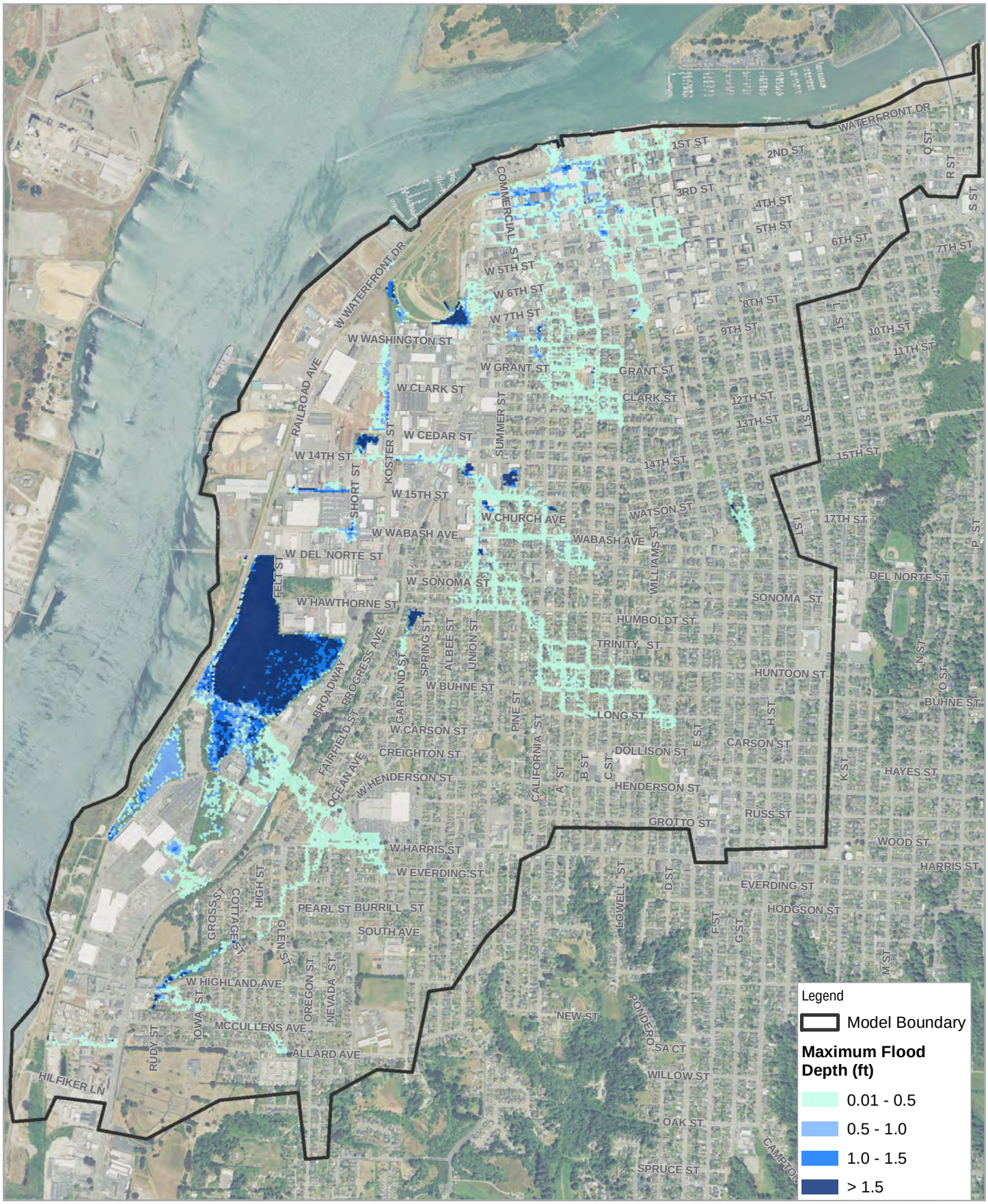
Project Map

Project No. 11159210
Revision No. -
Date August 2018

FIGURE 2

Data source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: bvivyan

Appendix D: 2D Model Results for Sea Level Rise



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City of Eureka
Eureka Area Watersheds Storm Water Resource Plan

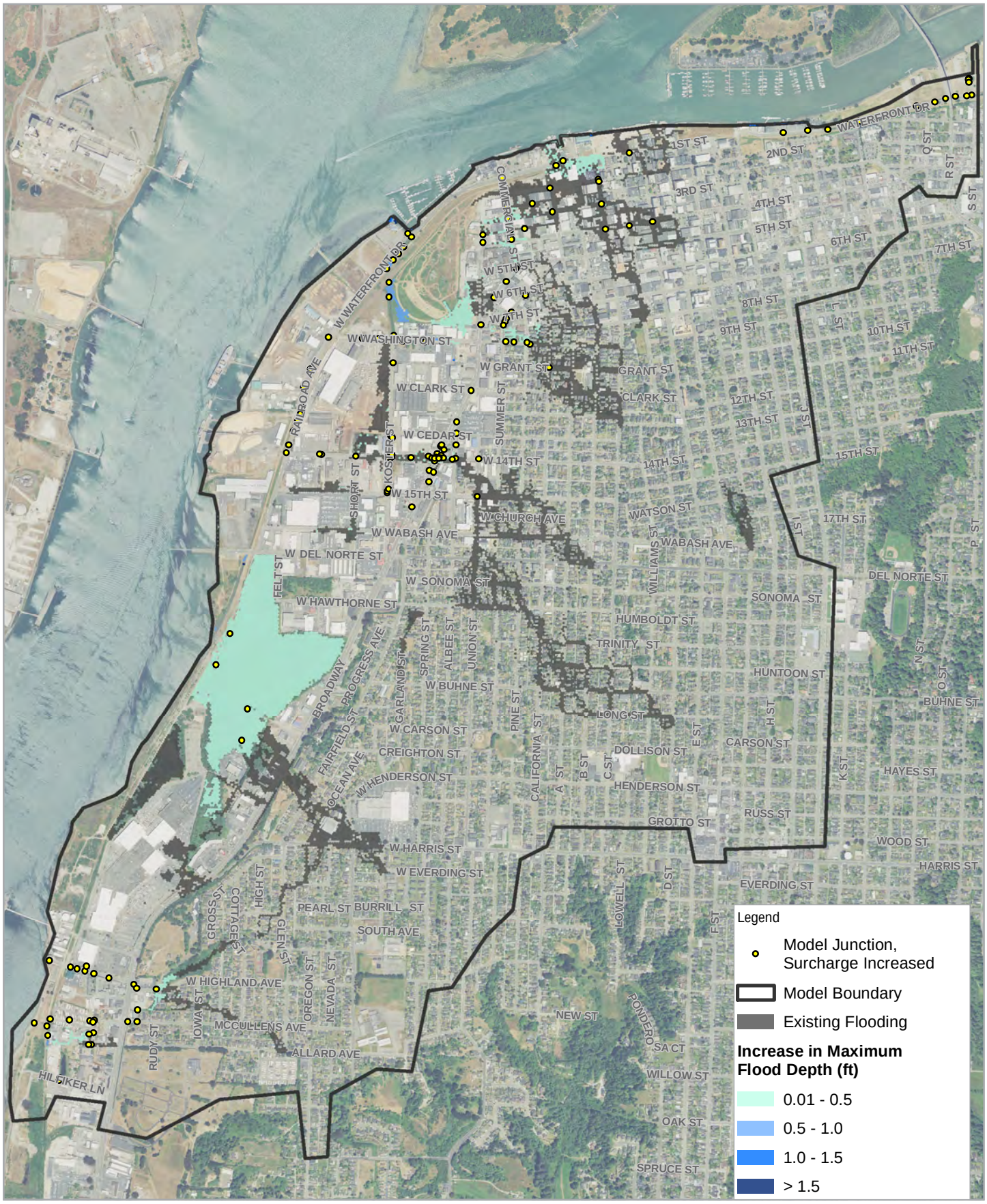
Existing Conditions
10-Year Flood Event
Base Scenario

Project No. 11110741
Revision No. -
Date 08/23/2018

FIGURE 1

N:\US\Eureka\Projects\111\11110741 Eureka-Stormwater Resource Plan\08-GIS\Maps\Deliverables\AppJ_ModelingMemo\11110741_001_EC_10yrFlood_base.mxd
Print date: 23 Aug 2018 - 12:47

Data source: GHD modeling, 2018; NAIP orthoimagery, 2016; . Created by: jclark2



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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American Datum 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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City of Eureka
Eureka Area Watersheds Storm Water Resource Plan

Existing Conditions
10-Year Flood Event
With 1 Foot of Sea Level Rise

Project No. 11110741
Revision No. -
Date 08/23/2018

FIGURE 2

N:\US\Eureka\Projects\111\11110741 Eureka-Stormwater Resource Plan\08-GIS\Maps\Deliverables\AppJ_ModelingMemo\11110741_002_EC_10yrFlood_1ftSLR.mxd
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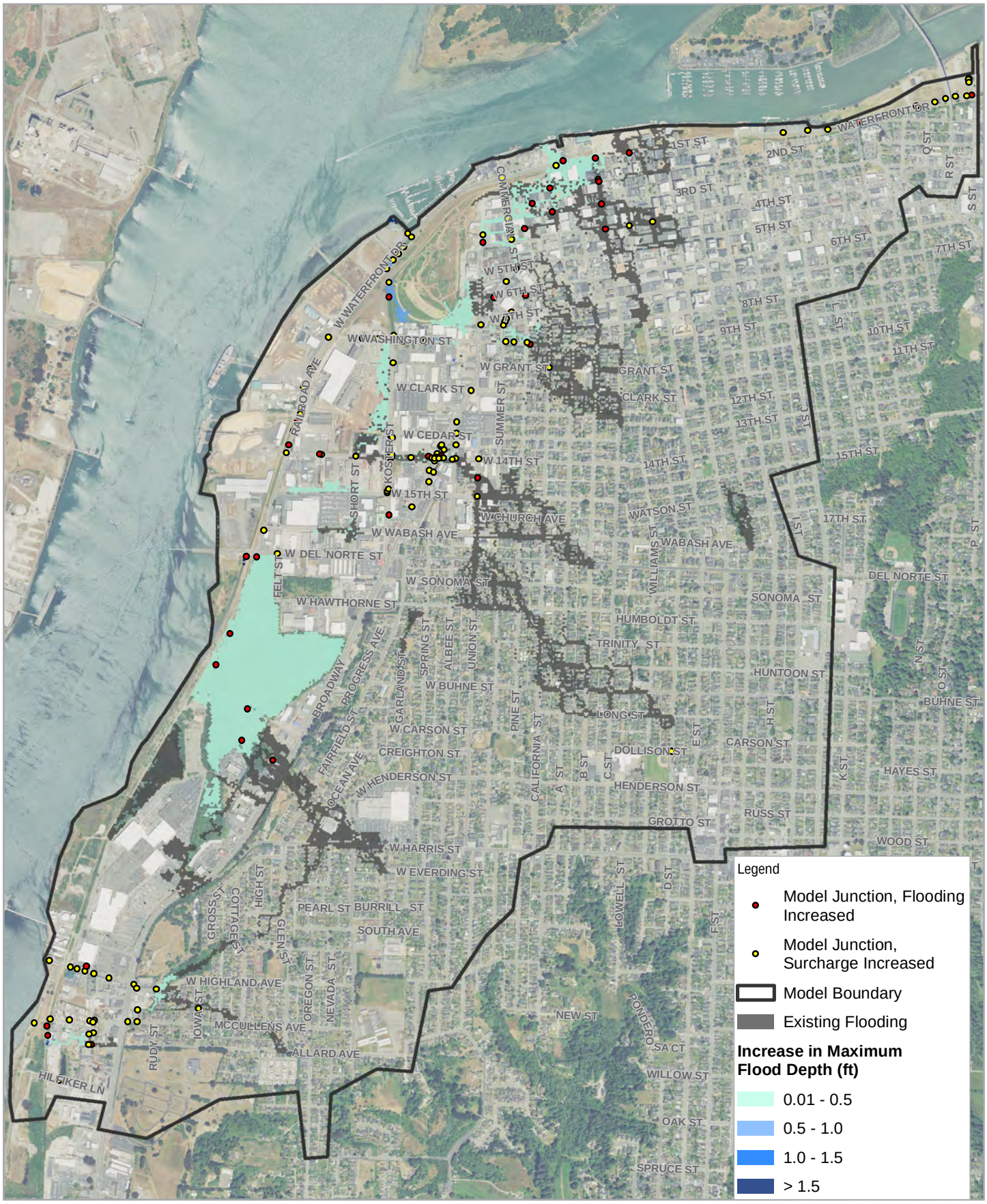

Paper Size ANSI A

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American Datum 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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City of Eureka
Eureka Area Watersheds Storm Water Resource Plan

Existing Conditions
10-Year Flood Event
With 2 Feet of Sea Level Rise

Project No. 11110741
Revision No. -
Date 08/23/2018

FIGURE 3

\\Acv-svr-001\ghd\US\Eureka\Projects\111\11110741 Eureka-Stormwater Resource Plan\08-GIS\Maps\Deliverables\AppJ_ModelingMemo\11110741_003_EC_10yrFlood_2ftSLR.mxd
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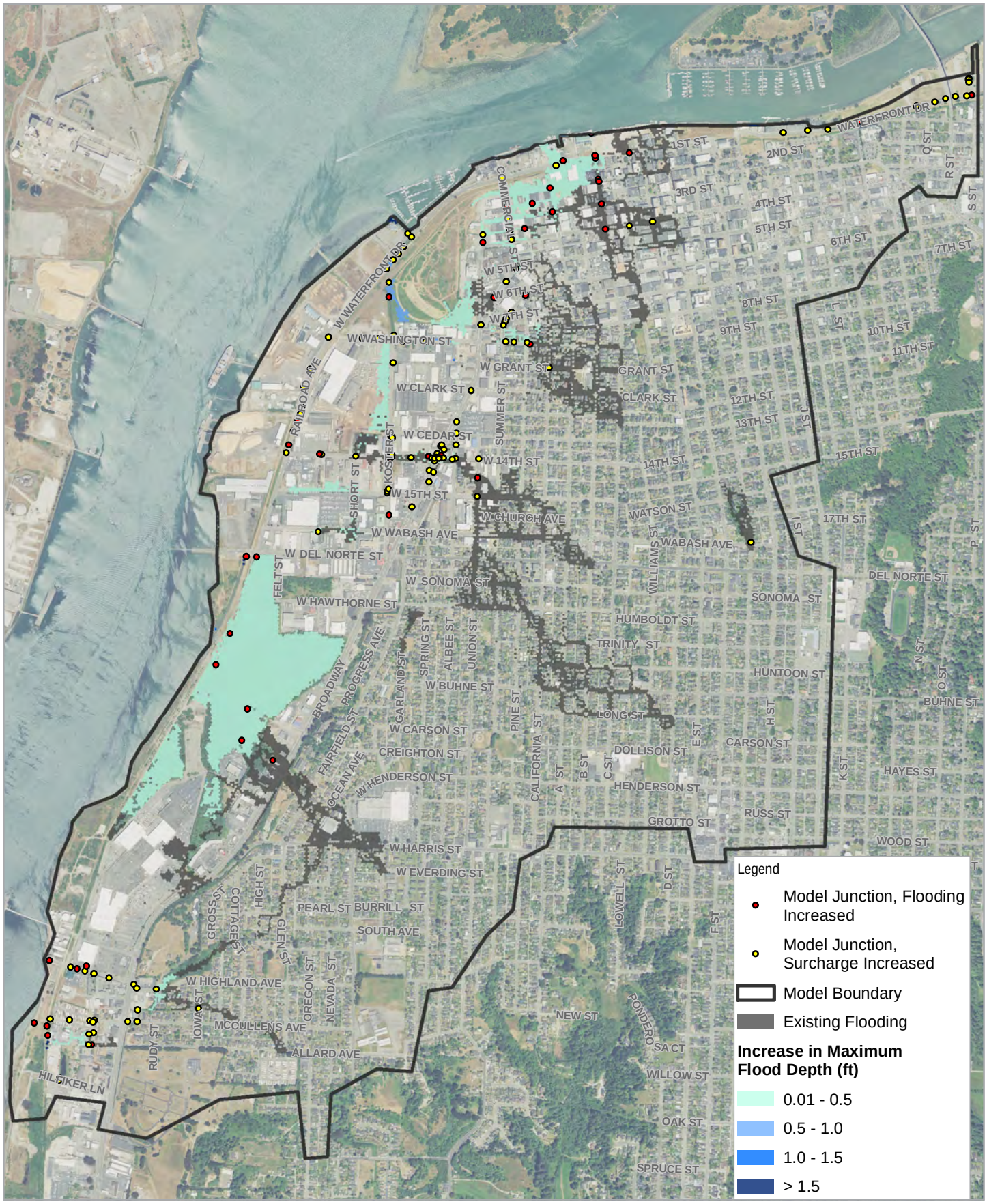

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American Datum 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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City of Eureka
Eureka Area Watersheds Storm Water Resource Plan

Existing Conditions
10-Year Flood Event
With 3 Feet of Sea Level Rise

Project No. 11110741
Revision No. -
Date 08/23/2018

FIGURE 4

N:\US\Eureka\Projects\111\11110741 Eureka-Stormwater Resource Plan\08-GIS\Maps\Deliverables\AppJ_ModelingMemo\11110741_004_EC_10yrFlood_3ftSLR.mxd
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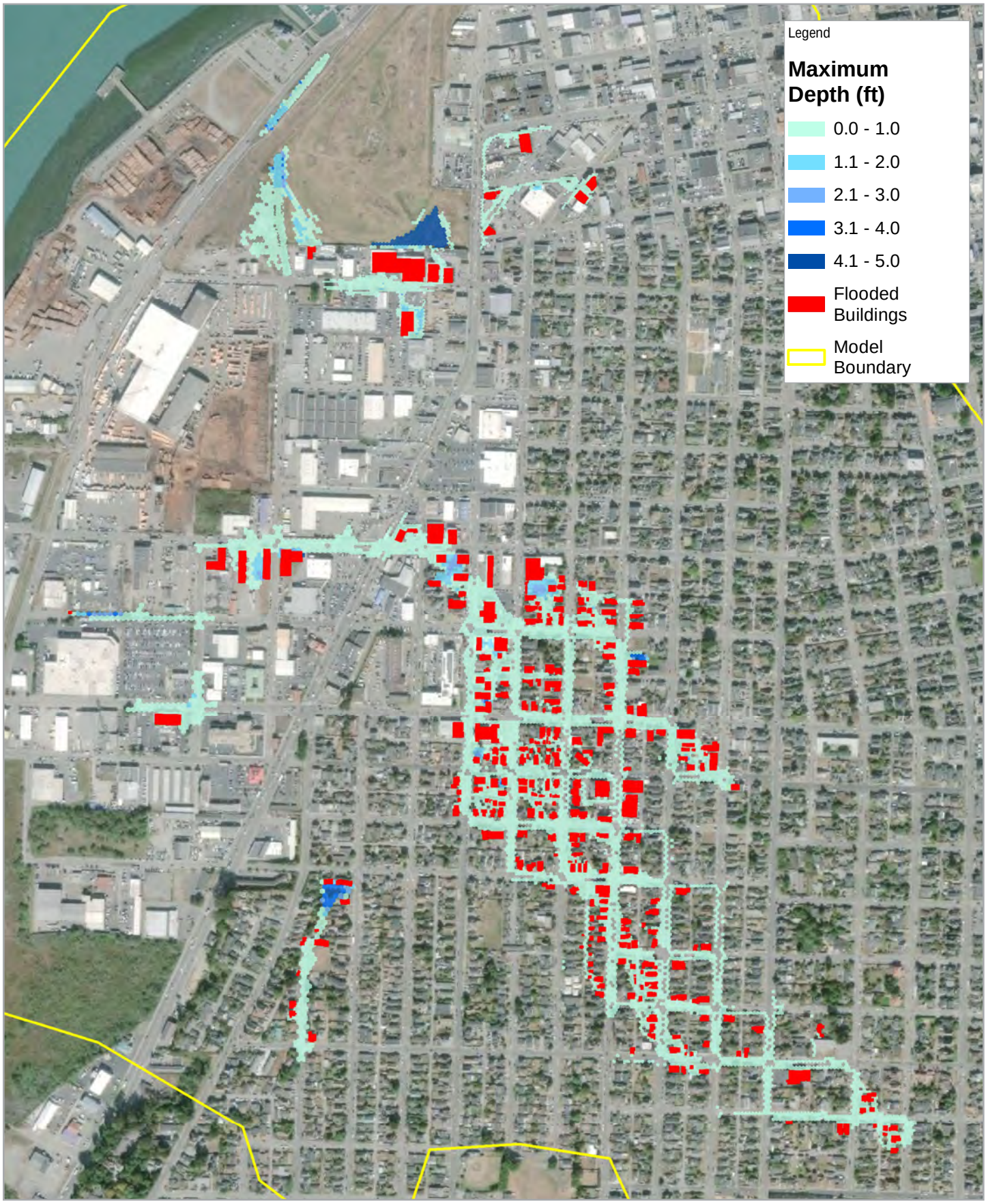
Data source: GHD modeling, 2018; NAIP orthoimagery, 2016; . Created by: jclark2

Appendix F: Flood Reduction and Sea Level Rise Model Results



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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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City of Eureka
Flood Reduction and Sea Level Rise Mitigation Project
Hazard Mitigation Grant Application

Project No. 11159210
Revision No. -
Date August 2018

Existing Conditions 10-Year Flood Event

FIGURE 1

G:\111\11159210 Eka-Clark Slough HMGP\08-GIS\Maps\Deliverables\HMG\F1_Existing10yr.mxd
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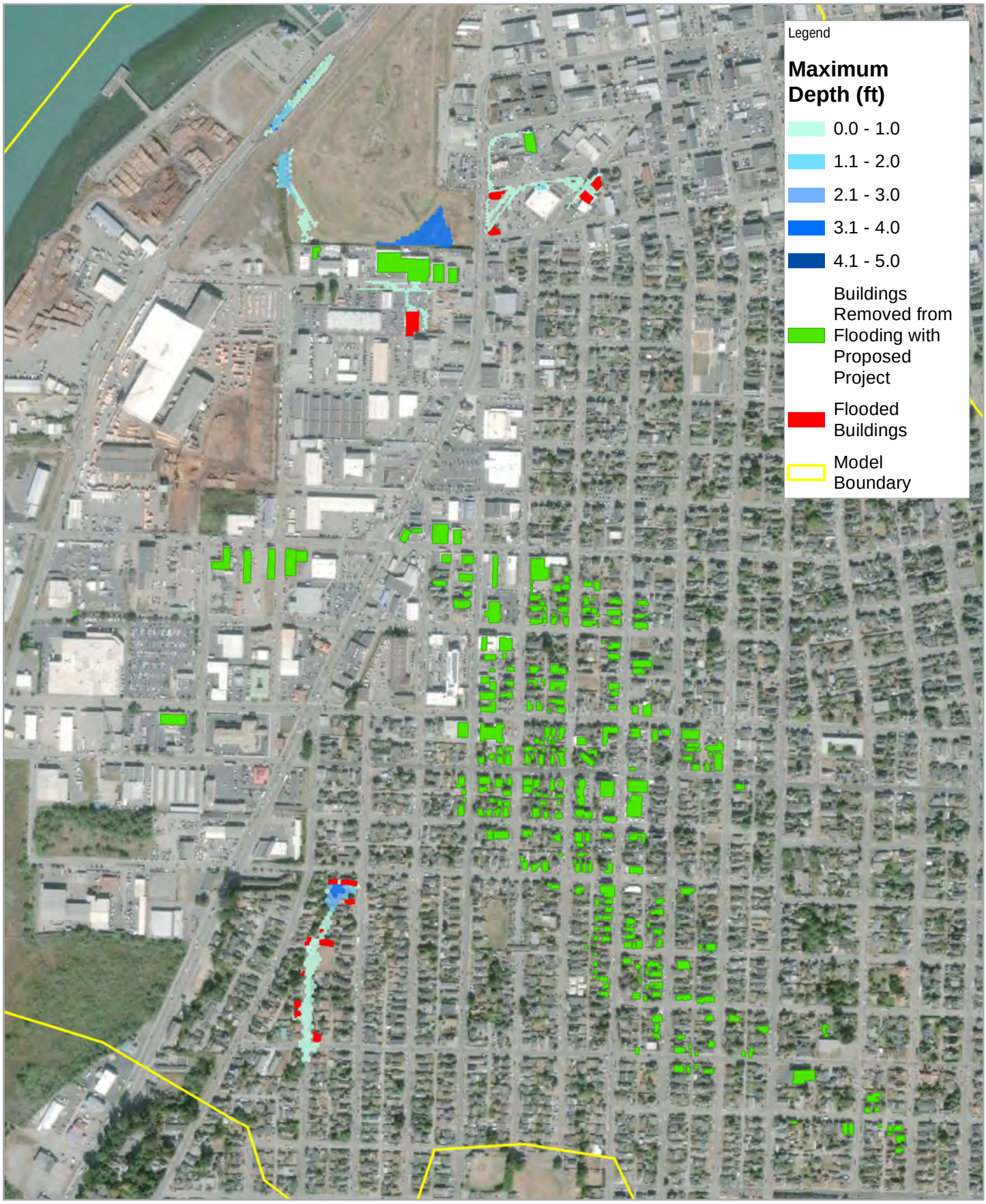
Data source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community. Created by: ashows



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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

City of Eureka
Flood Reduction and Sea Level Rise Mitigation Project
Hazard Mitigation Grant Application

Project No. 11159210
Revision No. -
Date August 2018

Proposed Conditions 10-Year Flood Event

FIGURE 2

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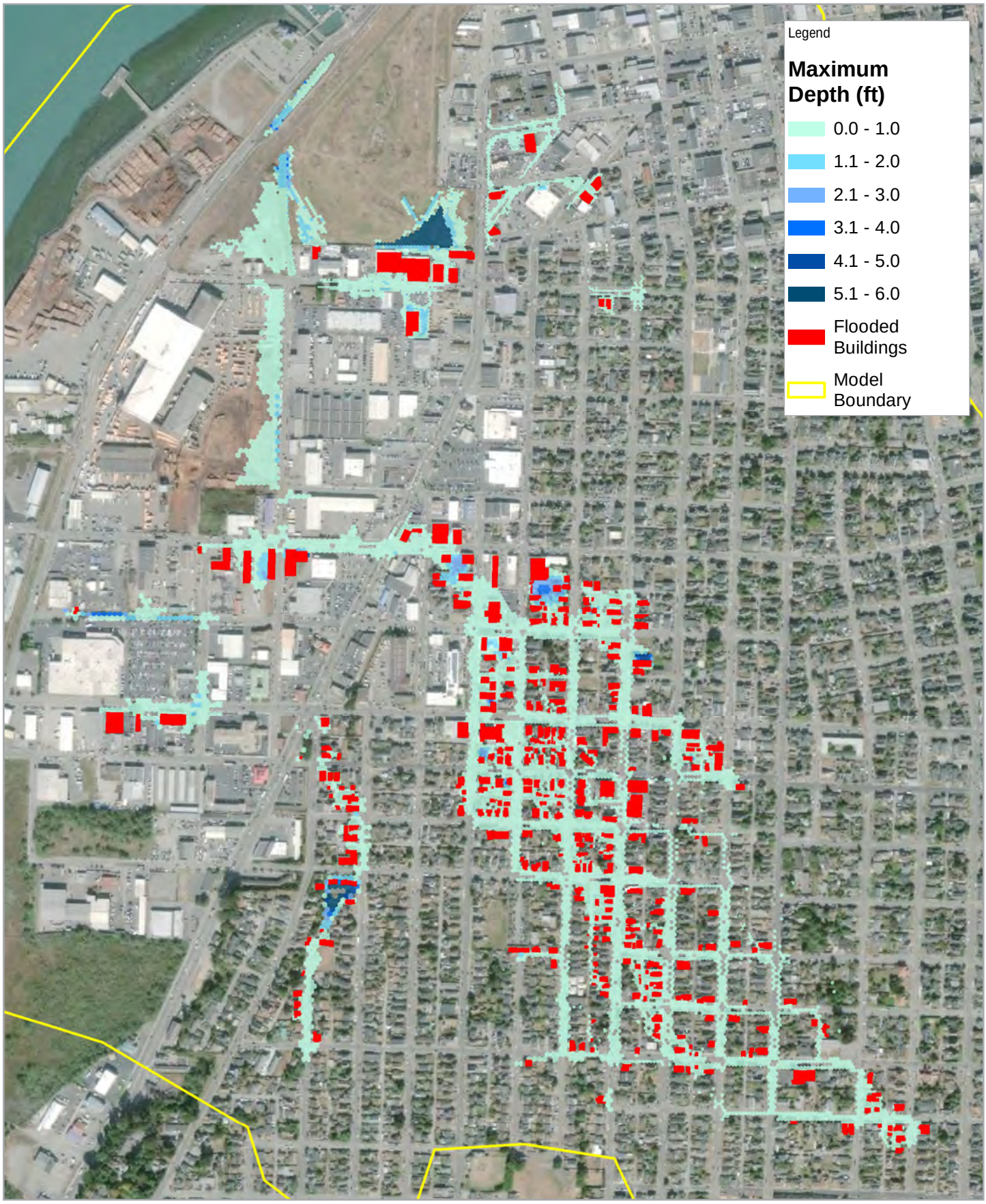

Paper Size ANSI A

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Feet

Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

City of Eureka
Flood Reduction and Sea Level Rise Mitigation Project
Hazard Mitigation Grant Application

Project No. 11159210
Revision No. -
Date August 2018

Existing Conditions 25-Year Flood Event

FIGURE 3

G:\111\11159210 Eka-Clark Slough HMGP\08-GIS\Maps\Deliverables\HMG\F3_Existing25yr.mxd
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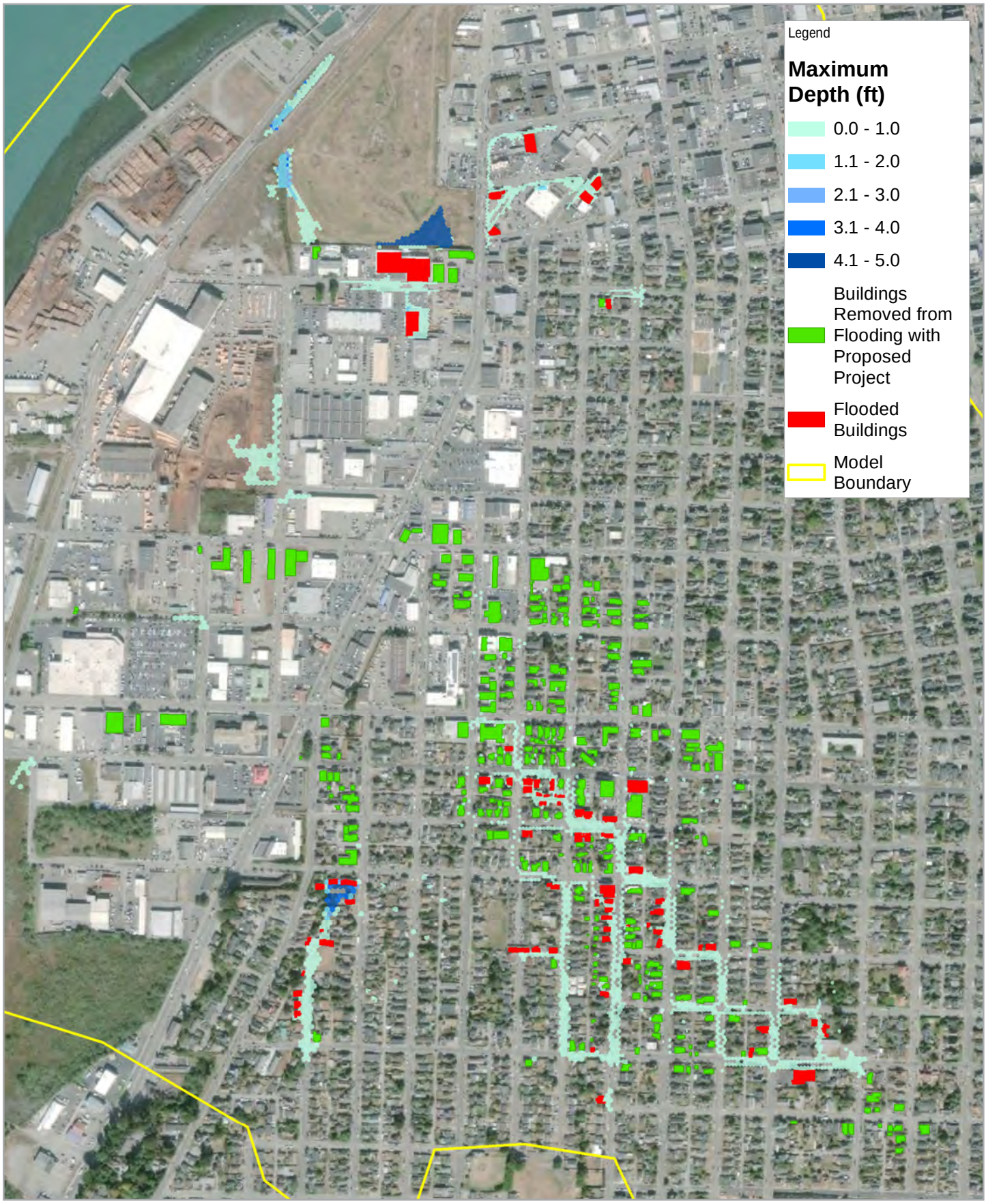

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Map Projection: Lambert Conformal Conic
Horizontal Datum: North American 1983
Grid: NAD 1983 StatePlane California I FIPS 0401 Feet

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GHD

City of Eureka
Flood Reduction and Sea Level Rise Mitigation Project
Hazard Mitigation Grant Application

Project No. 11159210
Revision No. -
Date August 2018

Proposed Conditions 25-Year Flood Event

FIGURE 4

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