



August 26, 2020

Ms. Kim Braun
Environmental Programs and Operations Manager
9505 W. Jefferson Boulevard
Culver City, CA 90232

Subject: Proposal for Stormwater Quality Master Plan and Multi-Jurisdictional Hazard Mitigation Plan Update

Dear Ms. Braun,

Thank you for your proposal request. The purpose of this modification to the scope of the Stormwater Quality Master Plan (SWQMP) is to support the City of Culver City (City) and Culver City Unified School District (CCUSD) to address mitigation items associated with drought, flooding, and wildfire as identified in Multi-Jurisdictional Hazard Mitigation Plan (MJHMP) developed in 2017. The City saw an opportunity to expand the SWQMP to include mitigation action items from the MJHMP due to overlapping features such as low impact development, identify and pursue alternative water sources, evaluate the effectiveness of city-owned drainage infrastructure, and development of additional water infrastructure. These activities include:

- a. Identify and pursue alternative water sources to supplement imported Golden State Water Company deliveries to protect City's community from repeating regional drought conditions, including expanding groundwater recharge and making recycled water available in Culver City in case of fire.
- b. Identify locations and explore constructing additional water storage facilities and additional emergency connections to supplement water supplies during drought conditions or short-term shortages.
- c. Identifying locations in the City where urban flooding may occur and evaluating potential impacts to critical infrastructure.
- d. Coordination with Culver City Unified School District to identify opportunities within their property that may protect critical infrastructure.

The following modifications to existing tasks and addition of tasks are proposed.

1. Task A – Project Management

The Blue Ocean Team will work with the City to coordinate all work efforts. Additional Monthly Status Meetings will occur to report on progress, define next steps, and discuss outstanding questions. The project schedule will be updated to reflect the additional work effort required. Minutes from these meetings will be recorded and provided to the City along with any updates to the schedule.

2. Task B - Data Collection and Processing

Much of the information gathered during the work on the SWQMP will be used during this effort as well. Additional information sources will be collected, reviewed, and processed. It is expected this will include:

- a. Cal MyHazards information.
- b. Community Rating System (CRS) National Flood Insurance Program (NFIP) tool to summarize and organize risk related to flooding.
- c. Culver City Multi-Jurisdictional Hazard Mitigation Plan
- d. Culver City Natural Hazard Mitigation Plan
- e. Culver City Urban Water Management Plan (2011)

- f. Storm Drain As-Built data, as needed
- g. Culver City and CCUSD Critical Facilities
- h. Updated Facility Replacement and Content Values for Critical Facilities
- i. Updated references in MJHMP (i.e. 2018 State of California Hazard Mitigation Plan)
- j. West Basin Master Plan

This information will support addressing the mitigation measures identified for drought, flooding, and wildfire. Where necessary, the information gathered during this effort will be used to create or update GIS files for further analysis. Specifically, updates to the storm drain GIS are expected to add elevation data and close any gaps.

3. Task C – Coordination

The Blue Ocean Team will hold one additional internal stakeholder meeting with City staff to gather supplemental information pertinent to the MJHMP effort that may not have been generated during the previous SWQMP work.

4. Task D - Develop Project Opportunities

The SWQMP identifies priority projects based on water quality goals presented in the Enhanced Watershed Management Plan (EWMP). To address the drought, flood, and wildfire hazard mitigation goals, the following analysis is suggested:

- a. Develop a city-wide two-dimensional (2D) model to understand and identify potential flood risk associated with critical facilities. The current MJHMP addresses the 100-year flood risk based on FEMA mapping of the Ballona Creek Special Flood Hazard Areas. The additional would identify areas within the city potentially impacted by urban flooding, which can limit or prohibit access to, impair function of, or cause damage to critical facilities. The analysis will provide insight into areas of likely flooding, which can be compared to critical facility locations. SWQMP or Critical Facility stormwater capture projects already identified and located upstream or within localized flooding areas would be considered flood hazard mitigation projects.
 - i. A rain-on-grid model applies rainfall directly to surface topography to identify areas where surface flooding is likely to occur. The 50-year rainfall data from NOAA Atlas 14 will be used along with the LA County Hydrology Manual rainfall distribution.
 - ii. Flood depths of less than six inches will be filtered out from identified flood risk areas.
- b. **Alternate Scope** option to further develop the surface flooding model to reflect underground storm drain facilities. Once the flood risk areas (more than six inches deep) are identified, a one-dimensional (1D) model of the existing underground storm drain facilities in those areas will be incorporated into the model to determine if there is adequate capacity to reduce flood risk in the vicinity of Critical Facilities. Assumptions will be used to minimize cost of the 1D model such as pipe slopes and inverts will be determined from assumed pipe cover of four feet and street slopes from LARIAC surface topography.
 - i. The results from the hydraulic model will be used to map where flood risk in the City exists, and if those areas coincide with Critical Facilities.
 - ii. Three projects that would mitigate identified flood risk will be developed and modeled to quantify the flood hazard mitigation.
- c. Critical facilities that were not considered as part of the SWQMP (24 facilities) will be added to the list of potential water quality opportunities, screened for feasibility, and prioritized per SWQMP methodology. These facilities include parking lots or paved areas associated with police stations, fire stations, and public works yards.

- d. Project opportunities previously developed for critical facilities would be further analyzed to determine if elements could be added to better address drought, flooding, or wildfire.
- e. Identify Critical Facilities which can benefit from West Basins' planned projects.

5. Task E - Prioritize and Map of Potential and Planned Projects

The SWQMP targets water quality goals and funding, therefore the prioritization tends to value water quality goals most. The MJHMP prioritization will use the SWQMP metrics for water quality and multi-benefit and add metrics that evaluate projects based on hazard vulnerability and risk assessment. Coordination with the City will be required to place the correct value on each metric.

The resulting MJHMP prioritization may be different from the SWQMP.

6. Task F - Project Partnerships (Alternate Scope)

An additional meeting will be added to the scope of work in recognition of CCUSD's increased importance in the project. It is expected additional coordination will be required.

7. Task G - Preliminary Concept Reports

Up to 10 MJHMP prioritized projects will be developed into Concept Plans. The Concept Plans are expected to be a mix of new project locations identified during the Task D analysis and Task E prioritization, as well as added/modified design components to the water quality opportunities developed during the SWQMP.

8. Task H - Workplan for Completion of Future and Prioritized Projects

This task will capture the process used to identify project opportunities during the MJHMP update. The format and approach will be like that developed for the SWQMP but targeted toward the MJHMP language and goals.

9. Task I - Conduct Outreach and Education with Public, Staff, and Elected Officials

Minimal outreach specific to MJHMP is anticipated based on discussion with Culver City. This task includes one additional presentation to City staff.

10. Task J - SWQMP Update

The MJHMP Amendment developed as part of Task K will be included in the SWQMP as well as the MJHMP. The SWQMP will be modified to include this additional information.

11. Task K - MJHMP Update

The MJHMP Update will include updates to the Drought, Flood Hazards, and Wildfire sections of the existing MJHMP as an Amendment. The Amendment will also provide an updated *Table 5-2 Hazard Mitigation Actions* that will include the top five priority projects identified in Task E.

12. Task L – MJHMP Adoption

Effort in this task is dedicated to coordination with City, CalOES, and FEMA for the adoption of the MJHMP Amendment.

The Fee Table for proposed work is attached.

Please call me at (714) 655-1441 if you have any questions.

With appreciation,

A handwritten signature in black ink that reads "Jessica Cassman". The signature is written in a cursive, flowing style.

Blue Ocean Civil Consulting
Jessica Cassman, PE, QSD/P, ENV SP, CFM, LEED AP

	BOCC	Michael Baker International										Paradigm			K&A			Total	Total	
TASK	Project Manager	Sr. Tech Manager	Technical Manager	Staff Planner	Design Engineer	Assistant Engineer	Ass't Engineer - WQ	GIS Project Manager	Sr. GIS Analyst	GIS Analyst	Programmer Sys. Analyst	Principal Engineer	Senior Engineer	Associate Engineer	Technical Manager	Task Manager	Stormwater Comms Specialist	Hours	Cost	
	\$160.00	\$250.00	\$222.91	\$163.56	\$113.40	\$113.40	\$91.80	\$151.20	\$126.90	\$99.90	\$173.42	\$222.00	\$192.00	\$160.00	\$190.00	\$165.00	\$160.00			
Task A - Project Management																				
Monthly Status Meetings	10	10												5				25	\$ 4,900.00	
City Staff Meetings	16	16																32	\$ 6,560.00	
Total for Task A	26	26	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	57	\$ 11,460.00	
Task B - Data Collection and Review																				
Research, Gather, Review/QC data	16	0		24														40	\$ 6,485.38	
Develop and attribute GIS data	4	0						8		20								32	\$ 3,847.60	
Total for Task B	20	0	0	24	0	0	0	8	0	20	0	0	0	0	0	0	0	72	\$ 10,332.98	
Task C - Coordination																				
Utility Company Meeting																			\$ -	
Internal City Coordination	8	8																	\$ 3,280.00	
Total for Task C	8	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ 3,280.00	
Task D - Develop Potential Regional, Green Streets, and LID Projects																				
City Hydraulic Model - Rain-on Grid flood risk identification	8	4	24			100		24	0	60								220	\$ 28,592.69	
Critical Facilities screening	8																	8	\$ 1,280.00	
Total for Task D	16	4	24	0	0	100	0	24	0	60	0	0	0	0	0	0	0	228	\$ 29,872.69	
Task E - Prioritize and Map Potential and Planned Projects																				
Online GIS based dashboard and web mapping application - add critical facilities								16		24	40							80	\$ 11,753.64	
Develop Hazard Mitigation Metrics for Drought, Fire, Flood	24	8		8								4		40				84	\$ 14,436.46	
Prioritize Critical Facility Projects	8											4		20				32	\$ 5,368.00	
Total for Task E	32	8	0	8	0	0	0	16	0	24	40	8	0	60	0	0	0	196	\$ 31,558.10	
Task F - Project Partnerships (Alternative Scope - See Below)																				
Additional CCUSD Meeting	0	0																0	\$ -	
Total for Task F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	\$ -	
Task G - Preliminary Concept Report																				
Site visit to each priority project location	10																	10	\$ 1,600.00	
Develop Concept Reports for priority projects and fact sheets for non-priority projects	60	16				80												156	\$ 22,672.00	
Total for Task G	70	16	0	0	0	80	0	0	0	0	0	0	0	0	0	0	0	166	\$ 24,272.00	
Task H - Workplan for Completion of Future and Prioritized Projects																				
Add to the SWQMP programmatic approach to develop and prioritize Critical Facility projects	8					40												48	\$ 5,816.00	
Capture approach in a guidance document	8					16												24	\$ 3,094.40	
Total for Task H	16	0	0	0	0	56	0	0	0	0	0	0	0	0	0	0	0	72	\$ 8,910.40	
Task I (Alternate) - Conduct Public Outreach and Education with Public, Staff, and Elected Officials																				
Public Outreach Plan Presentation	4																	4	\$ 640.00	
Community Workshop 1	1																	1	\$ 160.00	
Presentation	1																	1	\$ 160.00	
Finance Advisory Committee Meeting	0																	0	\$ -	
City Council Meeting	0																	0	\$ -	
Report	4																	4	\$ 640.00	
Total for Task I	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	\$ 1,600.00	
Task J - Stormwater Capital Improvement Master Plan																				
SWMP Update	4					4												8	\$ 1,093.60	
Dashboard, prioritization, and web-viewer orientation with City staff																		0	\$ -	
Total for Task J	4	0	0	0	0	4	0	0	0	0	0	0	0	0	0	0	0	8	\$ 1,093.60	
Task K - Multi Jurisdictional Hazard Mitigation Plan																				
MJHMP Update	24	4		60														88	\$ 14,653.46	
Total for Task J	24	4	0	60	0	0	0	0	0	0	0	0	0	0	0	0	0	88	\$ 14,653.46	
Other Direct Costs																				
Includes travel, reproduction, and other direct costs																				\$1,000
TOTAL	202	62	24	32	0	240	0	48	0	104	40	8	0	65	0	0	0	809	\$138,033.24	
Alternative Scope Options																				
Task F - Project Partnerships (Alternative)	4	4																	\$ 1,640.00	
Task D - Rain on Grid + 1 D model and 3 project suggestions			24			80			20	12	60								\$ 28,563.95	
Alternative Scope Options Total																			\$30,203.95	