



# CITY OF COSTA MESA

77 Fair Drive  
Costa Mesa, CA 92626

## Agenda Report

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**File #:** 24-365

**Meeting Date:** 10/15/2024

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**TITLE:**

**ACCEPTANCE OF PART 1 OF THE STORM DRAIN MASTER DRAINAGE PLAN (SDMDP) UPDATE**

**DEPARTMENT:** PUBLIC WORKS DEPARTMENT/ENGINEERING DIVISION

**PRESENTED BY:** RAJA SETHURAMAN, PUBLIC WORKS DIRECTOR

**CONTACT INFORMATION:** SEUNG YANG, P.E., CITY ENGINEER, (714) 754-5633

**RECOMMENDATION:**

Staff recommends the City Council accept Part 1 of the Storm Drain Master Drainage Plan (SDMDP) update consisting of the Existing Conditions Assessment Report (ECAR) and the Proposed Drainage & Water Quality Improvements.

**BACKGROUND:**

In 2006, the City Council amended Costa Mesa Municipal Code Section 15-64 (Title 15, Chapter III) to identify and put into effect a Storm Drain Master Drainage Plan (SDMDP). The 2006 SDMDP was approved by the City Council and analyzed the existing storm drain system throughout the City using a "Rational Method". The detailed analysis aimed to model the effects of 25-year and 100-year design storms on the City's storm drain system. The 2006 SDMPD proposed storm drain upgrades and estimated storm drain improvement costs throughout the City.

On September 15, 2020, the City Council awarded a Professional Services Agreement (PSA) to Q3 Consulting (Q3) to complete an update to the City's SDMDP. Similar to the 2006 SDMDP, the current update is divided into three parts for a comprehensive and thorough analysis.

Part 1 focuses on the hydrologic modeling, planning, design, and maintenance of the City's storm drain system as it operates today and proposes ranked improvements for future upgrades to the City's storm drain system. Part 1 includes an Existing Conditions Assessment Report (ECAR) and a Proposed Drainage and Water Quality Improvements report. The reports can be found on the City's website at [www.costamesaca.gov/storm](http://www.costamesaca.gov/storm) [≤http://www.costamesaca.gov/storm≥](http://www.costamesaca.gov/storm).

Part 2 of the SDMDP is the City's drainage fee and Finance study update. This update is derived from proposed improvements outlined in Part 1, current existing parcel land use types, and the City's 2035 land use plan types with updated housing elements. It includes projected costs of upgrading regional flood control facilities, water quality facilities, and implementing storm water quality permit requirements. The Drainage Fee and Finance study is scheduled for completion by early 2025.

Part 3 of the SDMDP includes the design of the Westside storm drain improvement plans and the design of advanced stormwater monitoring and warning systems. These specific designs are scheduled for completion by the end of 2025.

The first part of the Storm Drain Master Plan update began with collecting new storm drain system maps and data throughout the City and then using that information to update the City's existing storm drain Geographic Information System (GIS). Q3's team updated the GIS to include drainage projects built since the 2006 SDMPD. With the completion of the updated GIS, a new hydraulic model of the existing condition of the City's current storm drain system could be developed. The computer model was generated with the latest storm drain analysis tools and storm drain system modeling software to identify and rank drainage "hotspots" throughout the City. The analysis focused on areas with the highest depth of ponding during a modeled 25-year design storm on major thoroughfares and roads with the highest potential impact on emergency services and essential facilities. The ECAR provides the commentary, evaluation, and analysis of the existing storm drain system models and identifies and ranks stormwater drainage hotspots in the City.

Once staff reviewed and tentatively approved the ECAR, the next step involved developing the Proposed Drainage and Water Quality Improvements and the Storm Water Alternatives Improvement Maps (SWAIM). The stormwater alternative maps propose to upgrade or expand existing City facilities to accommodate designed stormwater flows. The drainage projects being proposed included pipe rehabilitation technologies, replacing sections of storm drain pipe, adding water quality features, and installing Best Management Practices (BMPs), such as infiltration galleries, diversion systems, capture and re-use, bio-filtration, detention/retention facilities, and proprietary capture and treatment systems. The proposed drainage improvements throughout the City will serve as the basis for the City's 20-year Stormwater Capital Improvement Program (CIP). They will be the basis for future drainage fees that will be developed and proposed in the next part of the SDMDP Update.

### **ANALYSIS:**

Two (2) community outreach meetings were held to review the progress of the SDMDP update with community stakeholders and to elicit feedback from the community.

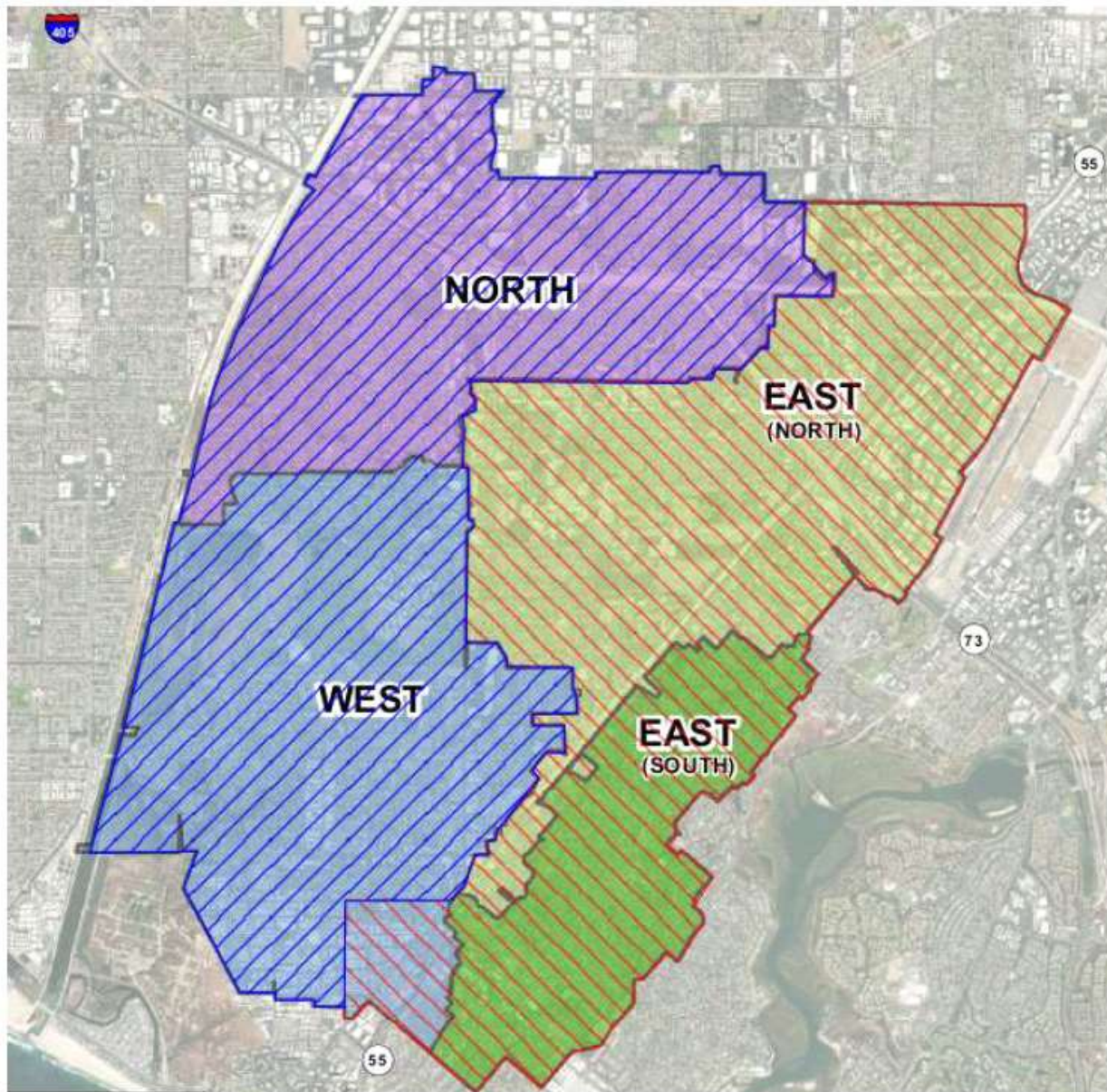
The first community meeting was held on June 16, 2022, where Q3 and City staff presented the Existing Conditions Assessment Report (ECAR) to the community. Residents and local business owners were encouraged to review the ECAR report, present questions, and provide feedback. Q3 discussed and presented the preliminary priority ranking analysis at this meeting, which was then used to focus on those locations where stormwater alternatives are most justified.

The Storm Water Alternative Improvement Maps (SWAIM), which are part of the Proposed Drainage & Water Quality Improvements report, were presented and reviewed at the second community meeting scheduled on April 26, 2023.

Based on the results of the ECAR, the purpose of this part of the drainage study was to evaluate the City drainage infrastructure using a more advanced stormwater modeling software and provide an alternative in identifying more economically feasible flood control solutions than proposed in the previous 2006 SDMDP.

In addition, staff met with representatives from the Coastal Corridor Alliance (CCA) and the Mountains Recreation & Conservation Authority (MRCA) on September 16, 2024, to answer questions related to the SDMDP. Potential future capital projects were also topics discussed, and more consultation is being planned as this SDMDP develops.

The City of Costa Mesa has two main watersheds. The Santa Ana River watershed is associated with the City's west side, and the Newport Bay watershed is related to the City's east side. In order to manage the large size of the City and these watersheds, the City is divided into four (4) areas of analysis, as shown in the map below:



Each area has its own set of alternative improvement maps and proposed stormwater system upgrades that improve upon the existing storm drain systems. The SWAIM also includes cost estimates for each area's proposed storm drain improvements.

Additionally, the proposed drainage and water quality report also provides an estimated cost of maintaining/implementing water quality measures and an estimated cost of replacing aging corrugated metal pipes (CMP) throughout the City.

A summary of the preliminary storm drain improvement costs is listed below:

Location	Proposed Facilities		
	Storm Drain Flood Control	Water Quality	CMP Replacement
West (W)	\$32,760,000		
North (N)	\$10,885,000		
East (North) (En)	\$7,750,000		
East (South) (Es)	\$41,180,000		
<b>Total</b>	<b>\$92,575,000</b>	<b>\$12,540,000</b>	<b>\$7,589,000</b>
<b>TOTAL STORM DRAIN IMPROVEMENTS:</b>		<b>\$112,704,000</b>	

Therefore, staff is recommending that the City Council accept Part 1 of the Storm Drain Master Drainage Plan update.

**ALTERNATIVES:**

This item is administrative in nature, and there are no alternatives to be considered.

**FISCAL REVIEW:**

Part 1 of the Storm Drain Master Drainage Plan (SDMDP) has no direct fiscal impact to the City. It examines the existing condition of the City’s storm drains and establishes a prioritization plan that estimates costs to improve the highest priority storm drains, citywide.

**LEGAL REVIEW:**

The City Attorney’s Office has reviewed this agenda report and approves it as to form.

**CITY COUNCIL GOALS AND PRIORITIES:**

This project works toward achieving the following City Council goals:

- Maintain and Enhance the City’s Facilities, Equipment and Technology
- Strengthen the Public’s Safety and Improve the Quality of Life

**CONCLUSION:**

Staff recommends the City Council accept Part 1 of the Storm Drain Master Drainage Plan (SDMDP) update consisting of the Existing Conditions Assessment Report (ECAR) and the Proposed Drainage & Water Quality Improvements.