

REQUEST FOR COUNCIL ACTION



CITY COUNCIL MEETING DATE:

FEBRUARY 16, 2016

TITLE:

FLOOD CONTROL UPDATE
{STRATEGIC PLAN NO. 6,1F}

CLERK OF COUNCIL USE ONLY:

APPROVED

- As Recommended
- As Amended
- Ordinance on 1st Reading
- Ordinance on 2nd Reading
- Implementing Resolution
- Set Public Hearing For _____



CITY MANAGER

CONTINUED TO _____

FILE NUMBER _____

RECOMMENDED ACTION

Receive and File Flood Control Update.

DISCUSSION

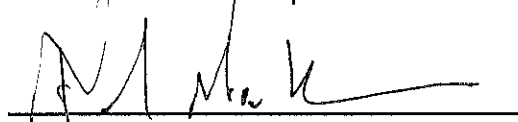
The Public Works Agency has provided an Executive Summary (Exhibit 1) of the Flood Control System Master Plan and an assessment of the existing system's capacity to withstand storm events with above average rainfall. The total cost to implement all recommended Master Plan Storm Drain improvements would total \$300 million. A more manageable implementation of the top 10 improvements, which would provide relief to the most flood prone watersheds would cost \$150 million. Over the last 10 years, the City has provided approximately \$5 million in drainage system improvements in various areas. In addition, there will be further drainage system improvements along the alignment of the OC Streetcar project.

STRATEGIC PLAN ALIGNMENT

This item supports the City's efforts to achieve Goal #6 - Community Facilities & Infrastructure, Objective #1 (Establish and maintain a Community Investment Plan for all City assets), Strategy F (Perform periodic measurements to monitor and update each asset's condition).

FISCAL IMPACT

There is no fiscal impact associated with this item.



Fred Mousavipour
Executive Director of Public Works

Exhibit: 1. Flood Control System Master Plan – Executive Summary

MEMORANDUM



To: David Cavazos,
City Manager

Date: January 8, 2016

From: Fred Mousavipour, *FM*
Executive Director of Public Works

Subject: FLOOD CONTROL SYSTEM MASTER PLAN – EXECUTIVE SUMMARY

Current Status of Flood Control System

The City's existing flood control system is significantly deficient. The system relies on a combination of surface roadway capacity and a limited network of catch basins and pipes. Our network does not extend into many of our watershed zones, or are under-sized in our arterial corridors; therefore we have many watershed areas that will flood upon moderate rain.

As it stands today, rainfall with even less than 10 year storm intensity will result in flooding, particularly in arterial streets. While sporadic flooding is anticipated, a greater concern is that some arterial street segments could be inundated with up to 8 inches of running water or more resulting in safety and mobility impacts.

Street closures would be affected to keep travelers away from flooded areas and to maintain safety, but pedestrians and bicycle users that turn to mass transit and private motor vehicles to navigate the city would be severely hampered by the closures.

Recent Storm Drain Master Plan

The City's Master Plan of Storm Drainage (MPD) was completed in 2015. MPD provides recommendations to alleviate flooding to protect life and prevent property loss. The improvements primarily consist of adding pipe to areas that do not have drain lines and increasing pipe sizes. Citywide storm drain runoff is routed into seven regional county channels:

- Delhi
- Gardens
- Greenville Banning
- Lane Barranca
- Santa Ana
- Santa Fe
- Wintersburg

In general, residential streets are the starting point for storm runoff, and capacities currently rely on roadway surface flows. Runoff from residential streets then collects at major arterials.

STORM DRAIN MASTER PLAN

January 7, 2016

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The master plan provides two protection level goals:

- Protection level in residential streets to prevent property damage due to flooding in a 100 year frequency storm.
- Protection level in arterial streets to keep at least one lane of travel free of flooding in a 25 year frequency storm.

Cost of Master Plan Improvements

Full implementation of the MPD would not eliminate all deficiencies, and localized flooding would still occur. However, we will be updating the MPD study to incorporate the latest technological advances and infiltration devices (green technology) that would alleviate localized flooding at much lower costs and bring down the overall MPD costs.

The total cost to make all MPD improvements to achieve our protection level goals is about \$350 Million. By incorporating the latest technology, the total cost may be reduced to \$300 Million.

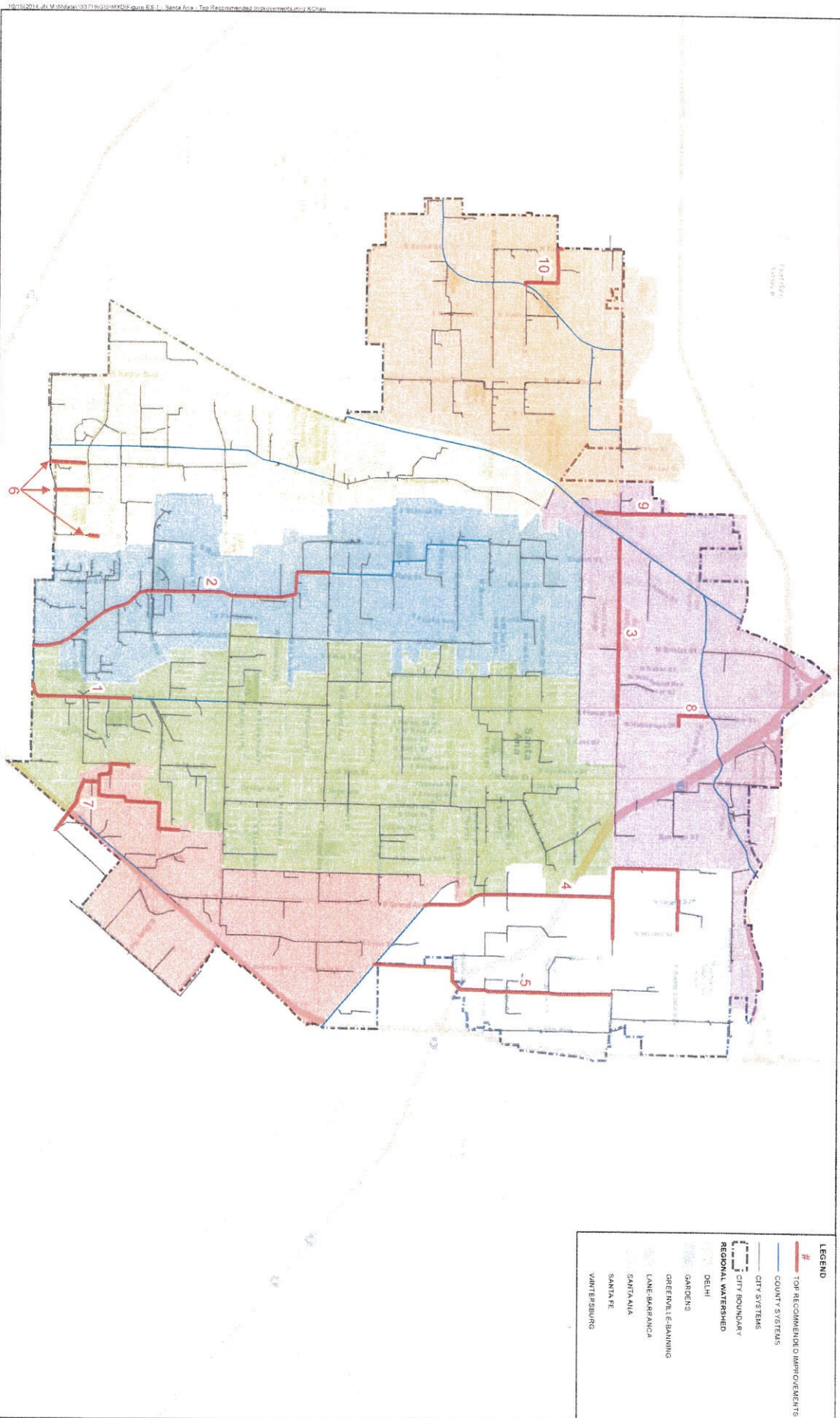
A more manageable implementation of the top 10 improvements which provide relief to the most flood prone watersheds is about \$150 Million. Attached is a map showing the top 10 priority improvements and system build-out.

Storm Drain System Improvements over the last 10 years

The previous Master Plan of Storm Drainage (MPD) developed in the 1990's has proven to be a valuable resource since the city has been able to add flood protection infrastructure to our system as funding or project opportunities have materialized.

Over the last 10 years, the City has added a small number of new storm drain lines and connector pipes, catch basin, and pervious concrete at various locations throughout the City. These projects were constructed primarily as part of street improvement projects. The following list summarizes the drainage system improvements added over the last ten years, providing a combined \$5 million value:

- Grand Avenue, First Street to Fourth Street - New Storm Drain
- Third Street, Birch Street to Spurgeon Street - New Storm Drain
- Various Storm Drain Upgrades - Pendleton/Forest, Birch Street Cul-de-sac, and Myrtle/Pacific
- Center Street, Edinger Avenue to La Verne Avenue - New Storm Drain
- Centennial Road, 1100' w/o Fairview - New Storm Drain
- College Avenue, Martha Lane to Washington Avenue - New Storm Drain
- Edinger, 700' w/o Fairview - New Storm Drain
- Bristol Street, McFadden to Civic Center - New Storm Drain
- Plaza of the Sun - New Storm Drains to eliminate the annual flooding in the Civic Center Plaza
- Fourth Street, Minter to Garfield - Pervious concrete to promote infiltration and reduce flooding



SANTA ANA MASTER PLAN OF DRAINAGE
TOP RECOMMENDED IMPROVEMENTS
 FIGURE ES-1

