



CITY OF LODI

COUNCIL COMMUNICATION

AGENDA TITLE: Presentation of Various Storm Drain Improvements to Mitigate Localized Street Flooding at Lockeford Street near Loma Drive

MEETING DATE: February 19, 2003

PREPARED BY: Public Works Director

RECOMMENDED ACTION: That the City Council provide direction to staff regarding the alternatives to improve storm drainage system operations in the vicinity of Lockeford Street near Loma Drive.

BACKGROUND INFORMATION: In the past 18 months, the City has experienced three significant rainfall events that have caused recurrent flooding in some areas of the City. In particular, areas in the vicinity of Lockeford Street and Loma Drive have been the focus of citizen discussion and call for action. Other areas in the City also experience occasional flooding problems that are magnified when these types of intense storms traverse the City. Background information on the City's drainage system and design criteria was presented at a Shirtsleeve Session on February 4, 2003.

The "Master Plan for the Development of Storm Water Collection and Disposal Facilities" adopted in January 1964 provided the foundation for the layout and design. This Master Plan envisioned the development of collector storm drain pipes that discharged to storage basins and/or pumping facilities. In large part, the concepts of this original Master Plan have been preserved in our existing facilities. However, in the subject area, the system designed in the late 1960's and built over the past few decades differs considerably from the original Master Plan.

In the plan, storm discharges from areas west of Lower Sacramento Road were planned to be pumped to the Beckman Pump Station. Also, the area west of Mills Avenue north of Lodi Avenue was planned to be drained by the Shady Acres Pump Station. Both areas now drain to the Lodi Lake Pump Station (see Exhibit A). This area is served by two major storm drain basins, one at Glaves Park and the other at Peterson Park. The entire area's runoff is pumped to the Mokelumne River by pumps at the Lodi Lake Pump Station located at the north end of Mills Avenue. In reviewing previous design calculations for this area, staff feels additional work must be performed to properly assess the system as constructed because it contains parallel and interconnected trunk lines that function differently with varying basin and pump station water levels.

Engineering and Maintenance Staff have developed a strategy for enhancing design and operational elements of the collection, storage and pumping facilities. These are outlined below.

- A. Updated Basin Drainage Plan: Staff will prepare a computer-based drainage plan for the B-2 basin area. The plan will construct a computer replica of the collection, storage and pumping facilities serving the basin. Operating assumptions (such as runoff coefficients, rainfall intensity, and hydraulic performance) will be tested and calibrated to measured field conditions. It is not

APPROVED:

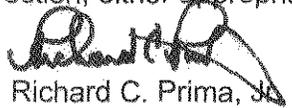

D. Dixon Flynn -- City Manager

uncommon for an agency to have such a model to not only establish new facility sizes but to also test the impact on the system resulting from development scenarios different from the base line assumptions built into the model. This will allow testing of the system under different storm conditions (i.e., 2-year design storm with nearly full basin, 5-year and 10-year storms with empty basin). Staff would be responsible for creating the model and calibrating it to existing conditions. Outside consultant oversight would provide technical support, quality control and quality assurance in the final product. Approximate Cost: \$35,000, plus staff time.

- B. Lodi Lake Pump Station Upgrades: Results of the drainage plan will quantify the rate of flow into the pump station from the collection system. With this information, the design and operating criteria for the station's pumps and controls can be evaluated. In this context, staff will be better equipped to determine required modifications to the station. Preliminarily, it is staff's recommendation to replace the existing pumps with ones less prone to clogging; add a fourth pump as backup; expand the influent bay and sump volume to current standards; add shut-off gates to allow the station to be cleaned more frequently; possibly add a trash rack and lighting and other safety features. Estimated Cost: To be determined upon completion of study. Rough cost is \$705,000 to \$905,000.
- C. Basin Operations Modifications: Increased utilization of the Graves Park and Peterson Park storm drainage storage basins is expected to relieve stress on the collection system by diverting greater volumes of water to storage in the early period of a storm event. Causing more water to be stored will remove water from the collection system, thereby reducing the frequency of street flooding. However, this will lead to more frequently occurring water in the basin/park. A number of constructable alternatives have been identified, including lowering the overflow weirs at the basins, adding one more inlet at each basin, and reconstructing the inlet structure and trash rack at Graves Park. The model under Item A will help in designing these improvements and in assessing their effectiveness and impacts. Approximate Cost: \$75,000.
- D. Westwood Avenue Parallel 18-inch Storm Pipe: Preliminary analysis of the main collection facilities serving the Lockeford Street area has resulted in the conclusion that some pipes are undersized to serve the existing development. A parallel 18-inch pipe could be constructed in Westwood Avenue to provide the required additional conveyance capacity. However, the effectiveness of this step will depend on satisfactory performance of the Lodi Lake Pump Station, which has been problematic. Alternatively, the pipe in Cross Street could be removed and replaced with a larger pipe, but this would be more disruptive and more costly. Other pipe improvements may be needed, pending results of the above studies. Approximate Cost: \$82,000.

Staff would normally recommend that we perform the study described in Item A before we begin construction of expensive improvements. However, recognizing this long-standing problem, we suggest that both Items A and D be implemented this calendar year.

FUNDING: Wastewater Fund, per Council direction, either appropriate now or in the next budget.



Richard C. Prima, Jr.
Public Works Director

Prepared by F. Wally Sandelin, City Engineer
RCP/FWS/pmf
Attachment

cc: Roger Baltz, Parks & Recreation Director
Fran Forkas, Water/Wastewater Superintendent

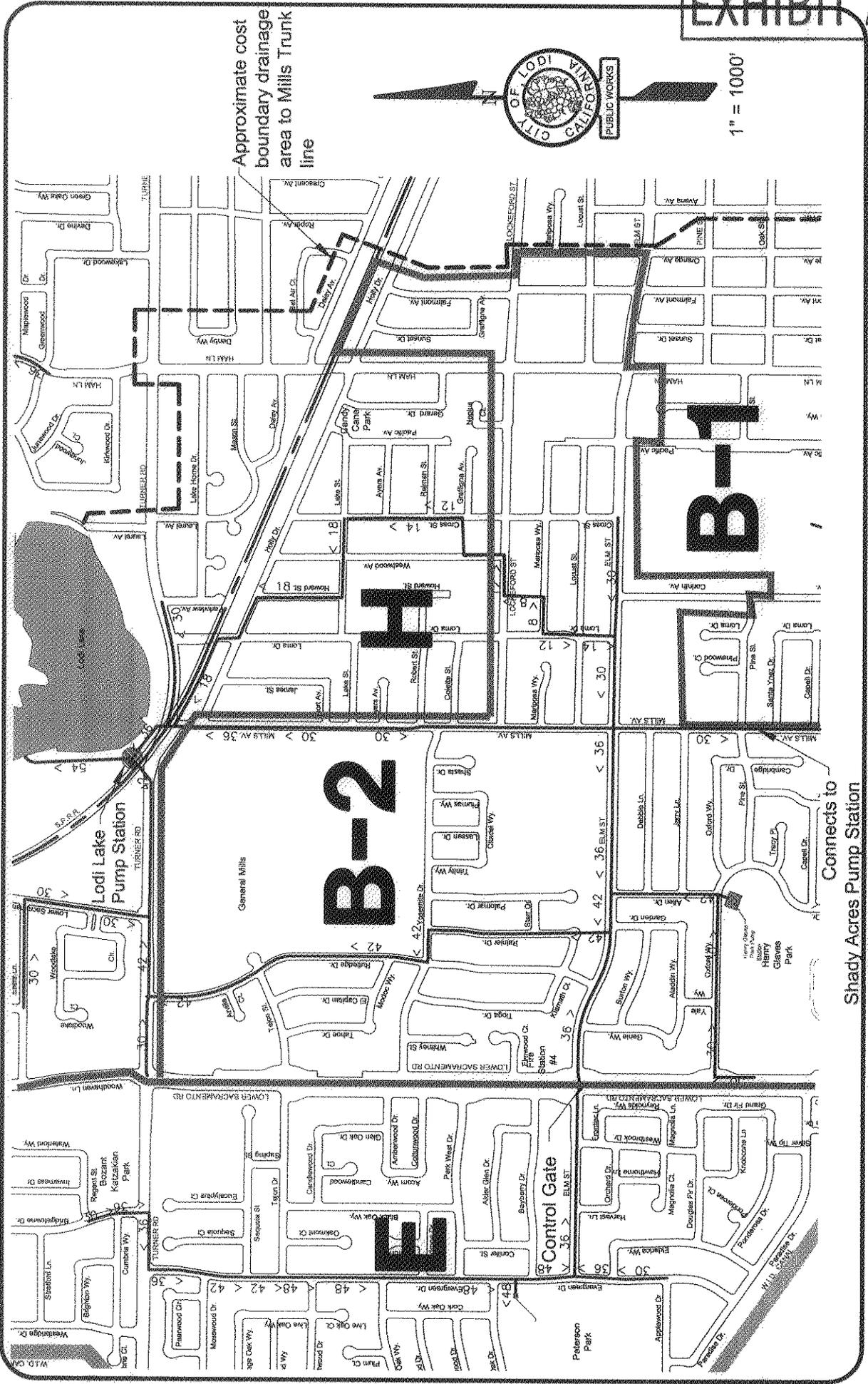
George Bradley, Street Superintendent
Concerned Citizens



CITY OF LODI

PUBLIC WORKS DEPARTMENT

Storm Drain System Near Mills Ave. S/Turner Rd



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February 13, 2003

Concerned Citizens

SUBJECT: Presentation of Various Storm Drain Improvements to Mitigate Localized
Street Flooding at Lockeford Street near Loma Drive

Enclosed is a copy of background information on an item on the City Council agenda of
Wednesday, February 19, 2003. The meeting will be held at 7 p.m. in the
City Council Chamber, Carnegie Forum, 305 West Pine Street.

This item is on the regular calendar for Council discussion. You are welcome to attend.

If you wish to write to the City Council, please address your letter to City Council,
City of Lodi, P. O. Box 3006, Lodi, California, 95241-1910. Be sure to allow time for the
mail. Or, you may hand-deliver the letter to City Hall, 221 West Pine Street.

If you wish to address the Council at the Council Meeting, be sure to fill out a speaker's
card (available at the Carnegie Forum immediately prior to the start of the meeting) and
give it to the City Clerk. If you have any questions about communicating with the
Council, please contact Susan Blackston, City Clerk, at (209) 333-6702.

If you have any questions about the item itself, please call Wally Sandelin,
City Engineer, at (209) 333-6709.



for: Richard C. Prima, Jr.
Public Works Director

RCP/pmf

Enclosure

cc: City Clerk