



CITY OF SACRAMENTO

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December 9, 1980

R. H. PARKER
CITY ENGINEER
J. F. VAROZZA
ASSISTANT CITY ENGINEER

City Council
Sacramento, California

Honorable Members in Session

SUBJECT: Resolution Authorizing the Execution of the Agreement between Brown & Caldwell, Consulting Engineers, and the City of Sacramento for the Preparation of the Sacramento Central City Sewer Study

SUMMARY:

This report recommends execution of an agreement between Brown & Caldwell, Consulting Engineers, and the City of Sacramento for the preparation of the Sacramento Central City Sewer Study at an estimated cost of \$184,000.

BACKGROUND:

The 1980/81 Capital Improvement Program has budgeted \$200,000 for a Central City Sewer Study to formulate plans for the rehabilitation or replacement of some of the old brick sewers within the Broadway and Alhambra Boulevard portion of the City of Sacramento. This study will be composed of several parts: 1st - a hydraulic analysis of the Central City area, 2nd - a structural condition study of the brick sewers, 3rd - a replacement or rehabilitation priority list based on the results of the hydraulic study, condition of the sewer, probability of failure, severity of the failure and results of the failure, and 4th - description of alternative methods of rehabilitation including replacement specifications, recommended pipe sizes, and an itemized cost estimate. The study report will also include a base map showing the existing and proposed pipe systems, interconnections, depth and slopes of sewers, and other hydraulic information for all pipes fifteen inches (15") in diameter and greater within the boundaries of the Central City.

One of the most important aspects of this study is the hydraulic analysis of the existing system. The Central City Sewer System is very complicated as it is composed of many pipe lines with various interconnections and the final disposal of the water is done by two large pumping stations. It is proposed by the consultant that they make a computer model of the system which will then be verified by actual flow measurements during rain storms to compare with an actual computer run of the model for a similar storm. The City Staff during last winter's storms made some measurements during various rain storms and it was found that the system acts differently for different intensity storms. In one particular case, for the highest intensity storm measured, the flow in one sewer actually reversed and flowed in a different direction from all other intensity storms measured.

APPROVED
BY THE CITY COUNCIL

A-80139

DEC 16 1980

OFFICE OF THE
CITY CLERK

Four consulting firms were interviewed during the selection procedure and all four proposed various computer modeling approaches to the solution of a hydraulic analysis to the Central City Sewer System. All agreed that the system was so complicated and interconnected that a manual solution was virtually impossible. The object of this study is to provide alternatives to replacing the existing brick sewer by considering options such as lining an existing sewer with a smaller pipe, structural grouting of the existing brick sewer, or re-routing flows to other sewers which may have unused capacity. We may even find after the hydraulic analysis that some brick sewers could be replaced with a line of smaller size or that there are other hydraulically weak portions of the system in non-brick sewers which need to be corrected. The importance of this study can be demonstrated by pointing out that the replacement of even a moderately sized sewer, 36" to 42", is estimated to cost approximately \$100,000 per block. Staff feels the rehabilitation and replacement program for the Central City Sewers can be accomplished with greater efficiency and less cost due to this overall study of the system.

The firm of Brown & Caldwell was selected for this study as they have had experience either in Sacramento or in other cities with all of the tasks required to successfully complete this report. They are currently completing a similar hydraulic study for the combined sewers in a portion of San Francisco using a computer model that they would adapt for use with the Sacramento Sewer System. They were also the only firm interviewed that had experience with the rehabilitation of old brick sewers. This experience was gained in Seattle, Washington where most of the sewers are much larger than Sacramento's. In addition, they did the analysis for the combined waste water control system portion of the Sacramento Regional County Sanitation District, including the re-design of Sump 2.

Immediately upon execution of this agreement, Brown & Caldwell will start field monitoring the Central City Sewer System during all rain storms of any consequence. This is extremely important as it will provide the data to accurately verify the make-up of the computer model of the Central City System. The more intense storms are more important in this verification process, therefore, as the month of January has statistically the greater intensity storms, it is imperative that we move ahead immediately and prepare for the field work necessary during those storms.

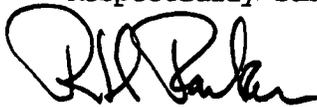
FINANCIAL:

The 1980/81 Capital Improvement Program includes \$200,000 budgeted for this study. The estimated cost of this study from Brown & Caldwell is \$184,000.

RECOMMENDATION:

It is recommended the City Manager and City Clerk be authorized to execute the subject agreement by passage of the attached resolution.

Respectfully submitted,



R. H. PARKER
City Engineer

Recommendation Approved:



Walter J. Slope, City Manager

RESOLUTION No. 80-823

Adopted by The Sacramento City Council on date of

December 16, 1980

RESOLUTION AUTHORIZING EXECUTION OF AGREEMENT BETWEEN
BROWN & CALDWELL, CONSULTING ENGINEERS, AND THE CITY
OF SACRAMENTO FOR PREPARATION OF THE SACRAMENTO CENTRAL
CITY SEWER STUDY

BE IT RESOLVED BY THE COUNCIL OF THE CITY OF SACRAMENTO:

That the City Manager and City Clerk are hereby authorized
and directed to execute on behalf of the City of Sacramento that certain
consultant services agreement between Brown & Caldwell and the City of
Sacramento for the preparation of the Sacramento Central City Sewer Study
for an estimated amount of \$184,000.00

MAYOR

ATTEST:

CITY CLERK