



5

DEPARTMENT OF  
PUBLIC WORKS

CITY OF SACRAMENTO  
CALIFORNIA

1391-35TH AVENUE  
SACRAMENTO, CA  
95822-2911

DIVISION OF  
FLOOD CONTROL AND SEWERS

916-449-5271

May 31, 1988

Budget and Finance Committee  
Sacramento, California

Honorable Members in Session:

SUBJECT: Modeling Study of Sump 132D - Amendment No. 2 to Consultant Services Agreement (City Agreement No. 86227), and Transfer Appropriations

SUMMARY

This report recommends that the City Manager be authorized to approve Amendment No. 2, in the amount of \$41,000.00, to the Consultant Services Agreement with Hydro Research Science (HRS) for the Modeling Study of Sump 132D and further it is recommended that the Committee approve the attached resolution authorizing a transfer of funds to finance the amendment.

BACKGROUND

The Hydro Research Science model of Sump 132D, a storm water pumping station located on Pocket Road north of Garcia Bend Park has demonstrated that the forebay structure of the pumping plant does not have sufficient capacity to provide an adequate flow of water to the pumps for the operation of multiple pumps at low water levels. As a result the pump station cannot perform as originally designed, which is to give flood protection against a storm similar to the April 1935 event. Subsequently the City needs to study the forebay structure to determine the modifications necessary to permit the pump station to operate as it was originally designed.

The Sump 132D modeling study is progressing in stages. Stage I has been completed and was broken into two phases. Phase 1 investigated the storm water flow characteristics of the existing pump station. Phase 2, Amendment No. 1 to the contract, investigated the existing station's pumping capacity during unsteady flows. The Phase 1 study identified and designed the modifications necessary to maximize the plant's pumping capacity under steady flow conditions. The Phase 2 study then analyzed the "modified" sump's pumping capacity under unsteady inflow conditions similar to the April 1935 storm which served as the

basis for the pump station's design. The Phase 2 study has determined that Sump 132D cannot provide the designed level of flood protection because the forebay structure restricts storm water inflow to the pumps.

The proposed Amendment No. 2 will initiate Stage II of the modeling study. Stage II-Phase 1 of the study will investigate the performance of Sump 132D with a modified forebay structure for both steady and unsteady inflows. The City will design the modifications using structural criteria from HRS to maximize storm water inflow to the sump. HRS will design modifications to maximize flow to the pumps and test the plant pumping capacity using the April 1935 event pump operation schedule provided in the original design report.

If the Stage II-Phase 1 testing determines that Sump 132D still cannot provide the design level of flood control, the City will have the option of authorizing Phase 2 of Amendment No. 2 which will develop a pump on/off schedule to maximize the pumping capacity of Sump 132D which in turn will minimize the potential flooding in the Pocket Area. Completion of Stage II of the Sump 132D Modeling Study will provide data for designing the modifications to the Sump 132D forebay and for operating the station. No additional modeling studies of this storm water pumping station are anticipated.

Presented for approval is Amendment No. 2 to the HRS consultant services agreement, City Agreement No. 86227 for a Modeling Study of Sump 132D. This amendment provides for an increase in consulting fees of \$41,000. It will authorize a two phase study of the structural modifications to the Sump 132D forebay structure. Phase 1 will test and augment forebay structural changes designed by the City of Sacramento. It is anticipated that the structural modifications will sufficiently increase the water inflow to the pumps to allow multiple pump operation at low water levels as prescribed in the original design report. Phase 2 (if necessary) will modify the pump operation schedule to maximize the pumping capacity of Sump 132D.

#### FINANCIAL

The additional cost to the City incurred by this Amendment No. 2 is \$41,000.00. The cost for Phase 1 is not to exceed \$23,500.00 and the cost for Phase 2 is not to exceed \$17,500.00. The original agreement and amendment no. 1 with the City was for \$60,167.00. The total consultant's fee with this amendment will be \$101,167.00. Funding is available from the Pocket Area Assessment District Maintenance Fund (Fund #240). Fund #240 (2-40-710-7012-4998 & 4999), as of May 12, 1988 had a balance of \$812,856.00.

RECOMMENDATION

It is recommended that the Budget and Finance Committee recommend the approval of Amendment No. 2 to the agreement with Hydro Research Science, and of the transfer of funds and forward the attached Resolution to the full City Council for adoption.

Respectfully submitted,



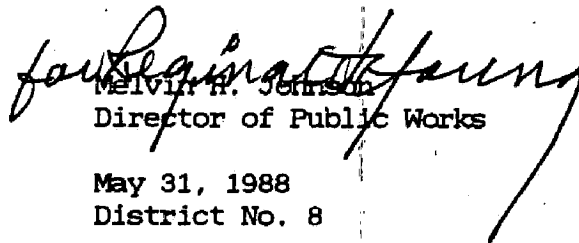
*Sir* Donald M. Dodge  
Deputy Director of Public Works

Recommendation Approved:



Jack R. Crist  
Deputy City Manager

Approved:



Melvin H. Johnson  
Director of Public Works

May 31, 1988  
District No. 8

# RESOLUTION No.

Adopted by The Sacramento City Council on date of

A RESOLUTION AUTHORIZING THE CITY MANAGER  
AND THE CITY CLERK TO EXECUTE  
AMENDMENT NO. 2 TO CONSULTANT SERVICES  
AGREEMENT NO. 86227 FOR THE SUMP 132D  
MODELING STUDY AND TRANSFER APPROPRIATIONS

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

1. The City Manager and City Clerk are hereby authorized to execute Amendment No. 2 to Consulting Services Agreement No. 86227 in the amount of \$41,000.00. The total consultant fee will not exceed \$101,167.00 for all services performed under this agreement.
2. Funds in the amount of \$41,000.00 will be transferred from the Pocket Area Assessment District Maintenance Fund (2-40-710-7012-4999) to the Flood Control and Sewer Administration Operations Budget (4-25-310-3161-4252).

\_\_\_\_\_  
MAYOR

ATTEST:

\_\_\_\_\_  
CITY CLERK

Amendment No. 2

To Consultant Services Agreement between the City of Sacramento and Hydro Research Science  
Dated June 10, 1987

City Manager Agreement 86227

Exhibit A

PHASE 1

Hydro Research Science (HRS) under Phase 1 of this agreement will modify the Sump 132D model inlet structure, constructed under City Manager Agreement 86227, in accordance with City design to eliminate the inflow constriction, test the modified model's operations in steady and unsteady flow simulations and report the results to the City. The experimental program will consist of:

1. Calibration Tests
2. Base Tests
3. Developmental Tests
4. Verification Tests

Upon completion of the Phase 1 experimental program, HRS will prepare and submit three copies of a letter report describing test procedures and results; the report will include detailed drawings of the final sump design.

PHASE 2

HRS will proceed with Phase 2 of this agreement upon completion of Phase 1 and after receiving written instruction from the City to proceed with Phase 2. Under Phase 2 of this agreement, HRS will test the model modified in Phase 1 in unsteady flow simulations to develop an optimized pump operation schedule and a control scheme for utilizing the optimized schedule, and report the results to the City. The experimental program will consist of:

1. Calibration Tests
2. Base Tests
3. Developmental Tests
4. Verification Tests

Upon completion of the Phase 2 experimental program, HRS will prepare and submit three copies of a letter report describing test procedures and results. If HRS at any time during the testing determines that further experimentation would be unproductive, HRS is to immediately notify the City. HRS shall terminate the testing program and complete the "Report" unless otherwise instructed by the City.

Exhibit B

HRS will be paid on a monthly basis for work performed under this agreement. The total cost of Phase 1 of Amendment No. 2 shall not exceed \$23,500.00 unless additional costs are authorized by the City. The total cost of Phase 2 of Amendment No. 2 shall not exceed \$17,500.00 unless additional costs are authorized by the City. The final ten percent (10%) of the fee for each phase will be paid after submittal of the "Report" on that phase. Statements of fees and expenses shall be submitted by HRS to the City monthly and payment shall be made within thirty days after receipt of statements.

City of Sacramento

Hydro Research Science Inc.

---

Walter J. Slipe  
City Manager

---

Melvin H. Johnson  
Director of Public Works