

CACHE LA POUUDRE RIVER AT GREELEY, COLORADO  
PROGRESS REPORT BY TECHNICAL DISCIPLINE  
September 8, 2006

A. HYDROLOGIC ANALYSIS

1. The FIS discharge probability relationship was evaluated using 20 additional years of record.
2. It was determined that flows from the most frequent events increased as much as 17%, while the 25-year flood was found to increase only 2% relative to the 1988 study.
3. At the 50-year and 100-year flood, no change was evidenced, so the existing flood frequency distribution was confirmed for the purpose of designing to protect against the 100-year flood.
4. Trend analysis has begun to permit a better understanding of the trend in the more frequent floods, which could impact project economics.

B. GEOTECHNICAL ANALYSIS

1. An initial evaluation of the spoil bank levees was completed.
2. Probable levee flood failure points were developed for use in the hydraulic analysis.

C. HYDRAULIC ANALYSIS

1. The HEC-2 model used in the FIS was converted to HEC-RAS.
2. Split flow HEC-2 models were incorporated into the main model and the split flow was computed using the HEC-RAS optimization routine.
3. The "Existing Conditions" Hydraulic Model was established & passed internal peer review.
4. Existing conditions water surface profiles were computed.
5. An initial evaluation of the onset of flooding by sub-reach was determined using the results of the preliminary geotechnical evaluation.
6. A first draft describing the hydraulic analysis is under way in preparation for the ITR.
7. Model reaches have been defined in cooperation with economics to permit the initial formulation and evaluation of flood damage reduction plans.

D. EVALUATION OF FLOOD PLAIN ISSUES

1. Coordinating with Colorado Water Conservation Board regarding Colorado regulatory requirements.
2. Made initial site reconnaissance to locate areas where nonstructural measures may be considered.
3. General coordination with PDT members on flood plain issues.

#### E. PROJECT ECONOMICS – Handout

1. The economic analysis for existing conditions for Phase I of the Feasibility Study was performed using the Omaha District (Newark) flood damage model.
2. Initial figures were calculated for Estimated Annual Flood Damages (EAD= \$1,174,630) and for the maximum affordable project (\$21,036,365 - \$23,448,859).
3. Details of this process are provided on a separate handout.

#### F. ECOSYSTEM RESTORATION & RECREATION

1. Identification of environmental problems.
2. Identification of environmental opportunities.
3. Defining Existing Conditions
  - a. Coordination with FWS & CDW to identify techniques to address areas receiving restoration treatment.
  - b. Defining typical species and habitat requirements along the Cache la Poudre.
  - c. Definition of T&E species.
  - d. Overall current ecosystem description.
  - e. Evaluation of appropriate riparian buffer and bioengineering techniques.
4. Obtaining more information regarding what recreation opportunities and facilities the City of Greeley desires to be developed
  - a. At lands and waters that are expected to be provided as part of the flood damage reduction / ecosystem restoration project
  - b. During the project's construction period (will follow the footprint of flood damage reduction and ecosystem restoration efforts).

#### G. PROJECT MANAGEMENT & PLAN FORMULATION

1. Federal Funding for the project is likely for FY'07, and is expected to be about \$300,000. The project is in the Senate Bill for \$602,000, but is not mentioned in either the President's Budget or in the House Bill. In recent years, the House-Senate Conference Committee has often split the difference, thus ~\$300,000 is our best estimate at this time. Projections of Federal funding are never certain as we discovered in FY 2006.
2. Presently, we are somewhat behind the schedule that we envisioned last winter. This is largely due to the fact that our funding was cut. We originally expected \$316,000 in Federal \$ for FY'06, but received only \$138,000.
3. Within the 6 Step Plan Formulation Process we are currently finishing the 2<sup>nd</sup> step & starting on the 3<sup>rd</sup>.
  - a. Specify Problems and Opportunities
  - b. **Inventory Current Conditions and Forecast Future without Project Conditions.** – <<Completing this phase>>
  - c. Formulate Alternative Plans
  - d. Evaluate Effects of Alternative Plans
  - e. Compare Alternative Plans
  - f. Select Recommended Plan