SECTION 6 - WITHOUT-PROJECT CONDITION

OVERVIEW

Identification of the most likely condition expected to exist in the future in the absence of any improvements to the existing navigation system is a fundamental first step in the evaluation of potential improvements. The without-project condition serves as a baseline against which alternative improvements are evaluated. The increment of change between an alternative plan and the without-project condition provides the basis for evaluating the beneficial or adverse economic, environmental, and social effects of the considered plan. Definition of the without-project condition and, where appropriate, the rational for inclusion of a specific assumption are presented below.

DESCRIPTION

The without-project condition identified for use in this study includes the following analytical assumptions:

1. Operation and maintenance of all system locks will be continued through the period of economic analysis to ensure continued navigability.

2. To provide continued service equal to existing levels, it will be necessary to make above normal maintenance expenditures to the existing IHNC lock. The maximum amount of extraordinary maintenance for a specific feature of work is estimated to be $4.5 million. All features will be funded by the operations and maintenance budget. These costs in excess of normal maintenance costs are estimated to total 16.1 million dollars over a 4-year period. The total dollar expenditure schedule by year is given below.

Yr 1 - 1999 $6.3 million

Yr 2 - 2000 $3.8 million

Yr 3 - 2001 $4.5 million

Yr 4 - 2002 $1.5 million

Extraordinary maintenance would include the following items:

a.) Miter Gate Leaves and Miter Gate Machinery - Four single skin gate leaves will be constructed to replace the four main operating gate leaves. Installation of the new gates would be done concurrently with replacement of the existing gate operating machinery for the four main

operating gates with hydraulic operating systems. The gate bays will be dewatered for installation and adjustment of the gates. The lock will be closed to navigation for six weeks.

The existing gates are of an obsolete, double skin, riveted design that requires intensive maintenance. The gates are designed with air chambers for flotation which must be kept evacuated at all times. The air chambers leak excessively necessitating frequent pump-out of the gates. The complexity of the internal structure of the gates considerably impacts the repair costs.

In the interest of minimizing lock closure due to repairs, the typical sequence entails substituting the auxiliary gates for the operating gates when the operating gates are removed for repairs. This practice has resulted in a general shuffling of all gates from their original positions. The gates were originally constructed in place, and although the gates are theoretically identical and interchangeable, problems have been experienced with the fit of the gates in various positions. In some cases, all efforts to adjust the gates have failed to draw the gates fully into their recesses in the fully open position. This has introduced the hazard of the gates being hit by tows and the potential for serious damages. Replacement of the existing Panama Canal type gate operating systems, with direct acting hydraulic cylinders would overcome gate adjustment limitations.

The cost of gate leave replacement and operating machinery replacement are estimated to be $4.0 million and $2.3 million, respectively. Both items are scheduled for 1999.

b.) Emergency Dam Crane - The existing emergency dam crane is not considered reliable for emergency closure of the lock. The crane does not afford sufficient capability to manipulate the stoplogs to ensure that they could be lowered in a flowing water condition. Consequently replacement is required. A 175 ton capacity boom type crane or stiff leg derrick will be required. No interruptions to navigation will be required to accomplish this replacement. The cost of this work is estimated to be $3.5 million and is scheduled for the year 2000.

c.) Control Houses - This item will replace the existing prefabricated buildings with permanent masonry concrete structures. The existing control stations consist of small fiberglass booths that house gate and valve control switches. The booths are mounted directly to the lock wall and provide no vantage point for lock operators to observe the progress of vessels entering or exiting the

lock. Additionally, the existing booths provide only a marginally suitable work space for the lock operators.

Replacement of the existing booths with raised control houses is necessary to improve visability and provide a suitable working environment for lock operators. No interruptions to navigation will be required for construction of the new control houses. The cost of this work is estimated to be $0.3 million and is scheduled for the year 2000.

d.) Wall Armor Retrofit - Existing lock concrete is heavily spalled and requires retrofit with steel wall armor and/or other cladding materials. The concrete is worn down to the steel reinforcement in many locations. There are numerous cracks in the lock walls that cause leakage into the gallerys during high water seasons. Without repairs the structural integrity of the lock chamber may be compromised, and unacceptable leakage will continue. The eroded surface of the lock walls, and protruding steel reinforcement, could cause damage to vessels transiting the lock. Additionally, there are no mooring pins in the lock walls. Consequently, lock operators must handle lines for vessels transiting the lock. This is particularly dangerous since the operators must walk the wall outside of the protective handrails. A fall from the lock wall has a high potential for fatal injury.

Repair of the concrete chamber would require dewatering of the lock, and a closure of approximately 60 days. Repair costs are estimated at $4.5 million and are scheduled for the year 2001.

e.) Concrete - Repairs are required to the concrete masonry in the upper 12 feet of the lock walls in the vicinity of the machinery rooms. The lock concrete has spalled and some rebar is exposed on overhead beams. Exposed rebar is heavily corroded. Some of the ceiling slab needs repair. Some columns also have exposed rebar. If this work is not done, leakage, corrosion, and failure of the structure will occur. No interruptions to navigation will be required for these repairs. The cost of this work is estimated to be $1.5 million and is scheduled for the year 2002.

3. Lock closure associated with miter gate leaves and machinery, and wall armor retrofitting will be announced in advance to allow navigation interests the opportunity to plan for the outage and to minimize the impacts of closure.

4. All existing waterway projects or those under construction are to be considered in place and will be

operated and maintained through the period of analysis. This includes all shallow-draft lock and channel projects as well as deep-draft channel projects including the Mississippi River-Gulf Outlet.

5. Baptiste Collette is not considered a viable long-term alternative to use of the IHNC Lock. Baptiste Collette is located at mile 11.3 above the Head of Passes on the left descending bank of the Mississippi River. This channel connects the Mississippi River with the Breton Sound area and the Mississippi River-Gulf Outlet. By utilizing this route, which is approximately 160 miles long, it is possible to circumvent the IHNC Lock.

However, Baptiste Collette is not considered to be a viable alternative to the IHNC Lock, except in the case of prolonged lock closure for some parts of the year and then only for certain commodities. The primary problem, beyond the added distance, is the unpredictable weather conditions on the open channel across Breton Sound, particularly during the winter months. The potential for quickly developing bad weather is compounded by the fact that the decision to commit to Baptiste Collette must be made 10 to 12 hours before actual exposure to the open channel. In addition, higher insurance premiums may be required from shippers on shipments routed via Baptiste Collette. Operators contacted during the course of this study indicated that they would prefer facing delays at the IHNC Lock significantly in excess of the implied delay that would equate to the additional travel distance, rather than the uncertainties of Baptiste Collette. In regard to the useability of Baptiste Collette, the American Waterways Operators has taken the position that Baptiste Collette should not be considered as a viable alternative to the IHNC Lock except under the most extreme circumstances. As a result these considerations, use of Baptiste Collette was not considered to represent a viable alternative to IHNC Lock use and therefore was not a factor in determining the least cost non-system route.

6. Delay and congestion costs at other potential system constraint points not directly modeled will not change significantly over the period of analysis.

7. All system locks are using the most efficient locking policies.

8. The State of Louisiana will replace the current low-level Florida Avenue roadway/railway bridge with a new high-level roadway bridge. A new low-level railway/roadway bridge will be constructed under the authority of the Truman Hobbs Act.

9. Alternative non-system transportation means (rail and non-system water) are assumed to have sufficient capacity to move diverted system traffic at current costs over the period of analysis.

10. Waterway user taxes will continue in the form of the towboat fuel tax prescribed by the Water Resources Development Act of 1986, Public Law 99-662.

11. The capacities of system locks are as presented in tables 5 - 1 and 5 - 8.

12. Traffic demands on the system will grow at the mid growth rates.