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TRANSPORTATION RESEARCH FORUM

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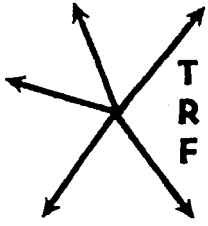

TRANSPORTATION RESEARCH FORUM

Tri-State Region Intermodal Terminal System Study

by Robert Crosby, Steven Feldsott,** and Dr. Wilbur A. Steger****

OVERVIEW

SUPPORTED partially by public and partly by private sources, this study has two objectives:

a) First, to perform an in-depth evaluation of the capacity of the distribution system of the Tri-State region (Southwestern Pennsylvania, Northern West Virginia, and Eastern Ohio), to effectively respond to a projected substantial increase in the level of coal production (and, to the extent necessary, other bulk commodity movements) to serve the region's, the nation's and the world's future energy requirements; and
b) Secondly, to investigate the utility and viability of an informal public-private sector "planning process" to make such a determination.

This assessment, and the co-related planning process, focuses on the economic and technical feasibility of a system of intermodal terminal facilities, peculiar to the transportation infrastructure of this region, linking water and land transportation arteries, in order to facilitate the anticipated increased production of coal, coal by-products, and other commodities. (An intermodal terminal is defined as an intermediate point [serviced by truck, rail, and barge carriers] established to facilitate the interchange of coal and coal by-products.)

While the most detailed focus is on the Tri-State region, **per se**, the study is also designed to encompass the role of the region's resources in meeting national and world energy demand. As such, the project additionally illustrates how a detailed multi-state regional study treats national and international transportation system capabilities, to better achieve its regional-national purpose. While the project is on-going, this is a useful time to write down some first-thoughts, to better obtain the suggestions of others working on similar projects elsewhere.

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1.0 BACKGROUND

There is almost unanimous recognition among government and industrial interests, as well as the general public, that increased production and use of domestic coal is one of the nation's highest priorities. In domestic use, American coal is to reduce the dependence on expensive imported oil which has been a factor in inflation and retardation of economic growth. An even greater danger exists because of the strategic vulnerability of the United States to a cut-off or reduction in oil imports—the temporary oil glut of the 1981-1982 period, aside.

Additionally, with the rapid increases in world oil prices of 1979-1980, when the study was on the original sponsor's drawing board, there were burgeoning and very high estimates of export markets for American coal. The ability of the American coal industry to serve the energy needs of Western Europe and Japan was considered then—and still remains—a very positive prospect for the American economy, as well as the integrity of the Western Alliance in the face of secularly increasing world oil prices.

Confronted with this realization, the U.S. Department of Transportation (Research and Special Projects Administration) made several assumptions in designing and sponsoring this project:

1. The **transition** to greater production and use of coal was neither to be easy nor cheap: there are sizable constraints at both the production and consumption ends of the coal cycle, as well as in the transport of coal. Whether or not the transition to a more efficient higher capability system would be facilitated by a regional planning exercise: this was, also, a study unknown.
2. Coal can be, and is, moved by several modes of transport: rail, barge, truck, conveyor, and slurry pipeline. Each of the modes possesses a set of physical and economic attributes which give it advantages and disadvantages vis-a-vis the other

modes. For example, truck is a highly flexible mode which can efficiently serve the collection function for short distances, and can readily adapt to shifting production and consumption patterns within relatively short distances. For longer hauls, trucks are more expensive than the other modes and consume the most energy in performing the transport function. For both short and long haul, trucks can cause significant community disruption and deterioration of public highways which may have to be borne by the public. Barge is potentially the cheapest and most energy-efficient mode where there is a waterway and the movement originates and terminates on or near a commercially navigable waterway. The other coal transport modes have analogous advantages and disadvantages.

3. In order to serve the nation's needs for coal, and to do so at a minimum cost and within the shortest time possible, it is possibly necessary that the overall coal transport system evolve to a considerably more efficient state. The key to such efficiency is to foster those measures, whether economic or regulatory, which promote the use of each mode where and when that mode is most advantageous. This would necessarily lead to intermodal coordination including the movement of coal by several modes with efficient intermodal transloading at one or more points in the move. The sponsor DOT has recognized, since its inception as a separate agency, that the promise (theory) of intermodal bulk movement such as coal is very high. The reality, more than a decade later, continues to be very different. There are numerous impediments to intermodal transport, especially between the two modes which compete over the greatest range of markets, rail and barge. The conventional wisdom within rail management (and, to a lesser extent, bargeline management) has been that the transfer of coal to any other mode is analogous to competing with itself. Consequently, the emphasis of rail management has been to movements with long hauls which can be carried all the way by rail, even if not by the same carrier. Certainly, where rail management has given careful consideration and has found that river-rail coordination would be profitable, there have been joint moves put into effect to the benefit of all. Yet, there are numerous opportunities for such intermodal coordination which are not being fully exploited.

A major premise of the Tri-State project is that the Tri-State Region of Southwestern Pennsylvania, Northern West Virginia, and Southeastern Ohio is of particular interest in the search for increased intermodal coordination of coal movements. It is a key crossroads in the coal flows of the nation, and has—or potentially could have—all of the relevant coal transport modes operating separately and in coordination. Coal from nearby coalfields is of a high quality: it is generally high in Btu content and of moderate sulphur content. Coal from the Tri-State Region has the potential to move to any or all of several major domestic and export markets.

For example, Tri-State coal can move overland to the East Coast ports (Philadelphia, PA, Baltimore, MD, Hampton Roads, VA, etc.) or overland to the Great Lakes and hence to the St. Lawrence Seaway, or can move either overland or by barge to Gulf ports (overland to Gulf ports would likely not be economically attractive). Within domestic markets, Tri-State coal has potential local (within the region, itself) as well as New England and eastern coal markets, markets in the Great Lakes region, and to a limited extent, southern and southeastern markets.

There is, at present, varying degrees of penetration of these markets by Tri-State coal. That coal is either moved by a single long-haul mode (rail or barge) or by barge, after collection by truck. With intermodal coordination, it should be possible to allow greater market penetration at lower costs.

The most dramatic example of the effect of improved intermodal coordination relates to the much noted congestion—through 1981—at East Coast coal docks. Export vessels were, at that time, waiting for as long as 69 days at a demurrage rate of some $15,000 per day. (Even a rather moderate vessel wait of some five days increased the cost of export coal by $3 to $4 per ton.) Such congestion at East Coast ports, in effect, was acting to reduce the value of Central Pennsylvania coal for export. If, however, there were a direct rail link between Tri-State coal fields, such as Somerset County, Pennsylvania, and the river, possibly in the vicinity of Conrail's Conway Yard and, if there were a modern and highly efficient rail-river transfer facility at that place, the coal could be barged to New Orleans for transfer to ocean-going vessels. That intermodal

move could, in concept, be more economic in European markets, even considering the longer ocean voyage, than the move through East Coast ports where excessive demurrage is involved.

Noted when the study began was that there were only very few major active rail/water terminals in the Tri-State region, and these were underutilized. On the other hand, there are several truck/river terminals.

The fact that the rail/river facilities are underutilized points out a basic impediment to intermodal coordination—the potential suboptimization which is practiced by each transport mode, rail and barge. The railroad tends to encourage and promote long haul direct moves and discourage short haul feeder moves to or from the waterway. However, where there are opportunities for traffic growth, and where the modes do not have the capacity to handle all of the future traffic, the study posited that there were potential efficiencies that could potentially be gained by coordination.

2.0 PLANNING/STUDY APPROACH

At the very beginning, a major change was thrust upon the study's mantle. Funded originally by one Administration (as a result of the insertion of a budget line item by a Congressman of the majority party at the time, mid-1980), a substantial change in political fortunes caused the study to begin—in earnest, in 1981—under a new Administration, one with a fundamentally different approach to the role of Federal-level public sector resources in solving and resolving transportation system problems at subnational (state, regional, and local) levels.

Under the Reagan Administration, such a study is—in effect— an anomaly. There is little or no expectation that the Federal government will be any more helpful, e.g., in providing new transportation infrastructure to the region after (rather than before) the study: the New Federalism connotes a great deal more responsibility for subnational level infrastructure development and maintenance (although many details have not been worked out, at this time).

In a sense, this project is unusual in that its regional planning/assessment objectives (see above, p. 1) are being exercised for the first time, under emerging New Federalism concepts. To what extent do study/planning resources provide local and substate regional levels help in weaning these subnational levels from previously substantial levels of Federal support, which is no longer likely to be available?

One thing needs to be made clear at the outset. This study is **not** connected in any way—except casually—with the region's **formal** transportation planning process. As such, it must be considered an isolated, **ad hoc** process. However, the project has attempted to bring together many affected public and private sector leaders, key influentials, and just-plain-affected individuals. Interaction with state and local officials, private sector groups and organizations, and other interested parties was designed to involve these parties in the identification of problems and/or issues facing the Tri-State's coal/bulk distribution systems. Draft lists of problems/issues were to be developed and assigned priorities for purposes of assessing alternative subnational level roles. After review the priorities and problems were to be revised.

A second major thrust of the planning effort has been to forecast the effects on the Tri-State distribution system of expected growth. This effort, again, was to rely largely upon available information, making sure to incorporate the latest trends and developments, such as the rapid growth in coal exports.

The third major thrust of this effort is to identify and assign responsibility for a set of low cost measures which might be identified for implementation in the near and medium term—by and for the various levels of governments—including identification of issues requiring further study and description of the effort, time, and cost involved.

These measures, it is believed, would aid in the conduct of the study; assure that the emphasis of the study is well placed; maximize the value of the study to those parties; and fully apprise the parties relative to any implementation phase, if it were to go ahead.

CONSAD proposed to involve those parties through a series of seminars, to which key Federal, state, and local officials, representatives of carriers, terminal operators, bulk commodity shippers, consumers, and marketeers would be invited. The seminars would be conducted by CONSAD staff with the opportunity given to key persons, public officials, and private sector groups to take an active role if they so choose.

For each of the seminars CONSAD was to develop specific objectives and agenda, making summary materials available ahead of time for review. This format of a series of meetings is similar to the meetings conducted by CONSAD, and other contractors, who have been involved in the development of state railroad plans.

2.1 Alternative Subnational Public Roles

Two major premises need to be expressed at the outset. For one, current local. regional and State mandates cannot be considered simply a given, since these roles themselves are emerging and changing in light of the current and future dynamics of requirements levied by the President, Congress and state governments. This New Federalism subnational role is clearly continuously "in the making" and there is no a priori reason to suppose that it will never become fully crystallized and fixed, any more than there would be reason to argue that the present region and/or State's role is an unchangeable constraint upon its future. The developing roles of these subnational levels are, at the same time, not merely reflective of the technical requirements associated with their mandate, but also of the socio-political environment throughout the Tri-State region and other relevant, affected levels of government.

Secondly, "planning" itself is an on-going effort, both with regard to the formulation of plans and their implementation. This is another way of saying the obvious, but important, point: in no imaginable circumstance can any level of government start as if from scratch. The ongoing realities are necessarily a significant constraint—and challenge—on the kind of impact the State and the region can have in the first place.

The major operating roles to be defined, below, are in a sense, what might be termed "realistic abstractions". The subsequent, more detailed, analysis of each option will show that subnational levels are most likely to be operating in more than one mode at any time, in turn, responsive to various projects and plans.

The options are arranged here in terms of the type of mandates which they imply: from minimum responsibility to maximum responsibility over the spectrum of the information acquisition and use, planning and carrying out of plans/activities.

A descriptive term is used to designate each operating mode. This is a deliberate simplification for the purpose of discussion: the term itself is merely shorthand for the actual definition of the operating mode. But it is intended to highlight the central theme of each of the modes. Here then follow brief definitions of the feasible operating roles:

Operating Role 1: Information Sink: In this mode, the subnational levels are viewed as a recipient of available information about on-going and future bulk system projects and plans. Plan formulation and implementation of plans are activities carried out by other agencies and organizations, public and private.

Operating Role 2: Information Collector: In this mode, the subnational levels are authorized, in the sense of their mandate, to acquire information from the various agencies. They have the right to ask for such information, and have the right to expect compliance with information, requests. They have the option to seek information in standardized form; or else, seek information already formatted at the discretion of other agencies. Other agencies, public and private (who are then the institutionalized suppliers of information which the subnational level seeks), are responsible for the formulation of plans, and for carrying out those plans which have been approved and budgeted for.

Operating Role 3: Program Monitor: In this mode, the subnational level is viewed as Information Collector much like before: it has the right to acquire data from other agencies, and use it as a data base to provide, in turn, information to the regional levels, the Governor, the state legislators and other units (in turn, entitled to receive it). But the Program Monitor mode includes a provision for the subnational level to carry out its own evaluation of any and all on-going programs. As in the previous modes, planning and plan implementation is carried out by other agencies.

Operating Role 4: Component Evaluator: The previous modes are, once again, subsumed. In this mode, the subnational level is seen as having the authority to ask to obtain development plans as they are formulated by other agencies, and to carry out an ex ante evaluation of each project (hence, "component evaluator" role) in terms of its feasibility, cost, desirability and probable effects upon the target populations of the subnational level. Planning, of course, is done by other agencies and they may, in their decision to replan or to implement their respective plans, be affected by the results of the prior evaluation. Implementation of plans, under this role, is similarly in the hands of other private and public agencies.

Operating Role 5: System Evaluator: In this role, the subnational level assesses on an ex ante basis, not only individual bulk distribution system projects as separate and distinct development plans, but rather, the total fabric of individual plans in their relationship to each other. The key element in evaluation which is involved above and beyond the Component Evaluator mode is, of course, concern over the **interaction** of different plans. This then involves **coordination** of all plans, as plans, with regard to their mutual compatibility, joint feasibility, aggregate cost, joint effects upon the relevant segments and groups of the State's population. As a consequence, the results of the System Evaluator mode lead to recommendations as to priorities of various plans whenever choices have to be made in the first place (and this is, indeed, by far most of the time). Planning is, indeed, done by other agencies and their projects are component inputs into the system plan.

Operating Role 6: Planner: In this mode, the subnational level is seen as responsible for the **formulation of plans.** This does not mean, in and of itself, that the subnational level is the **sole** planning agency: but through the System Evaluator mode, it has authority over coordination of all plans, while the Planner mode entitles it also to originate projects and programs by itself. Furthermore, this mode is compatible with the idea of the subnational level delegating the plan formulation activity to other agencies, but the final responsibility—and accountability—rests with it. The plans are implemented, however, by agencies other than the particular subnational level.

Operating Role 7: Developer. This is the last major mode to be considered. The public sector's role is not merely to formulate plans, but also to be responsible for their implementation. This implies that the public sector has the authority to set up implementation procedures, new organizations and agencies to carry out the plans, or to delegate the implementation effort to existing agencies.

One point may well be worth repeating, although it is quite implicit throughout. Each "higher numbered" option subsumes the mandate of all "lower numbered" options. Thus the Developer mode includes the authority explicit in each of the six preceding mandates, etc.

It is premature, at this time, to comment on the preferred forms of which subnational bulk/freight system planning will/might evolve; however, alternative modes are being investigated and, in a sense, are being devised as the project proceeds through its various stages.

2.2 Technical Approach

This is not the place to dwell on the traditional analytic approaches and data bases used in the project, although we will briefly touch upon these below. As might be expected, the project's technical approach follows the more-or-less conventional outline depicted in Exhibit 1: prospective demand for the output of the region is estimated, utilizing the best information available (Task 1); modal transportation (Task 2) and intermodal (Task 3) capacities are assessed relative to these demands; institutional aspects are "factored in" to examine how any prospective capacity gaps might be filled (Task 4); and, pending the need for and viability of new prospective facilities, coarse-level implementation plans would be developed (Task 5). Only a few details are presented here. Exhibit 2 briefly lists the classes of techniques used.

2.2.1 The Region

The Tri-State Study Area was taken to comprise the southwestern and central portions of Pennsylvania, the West Virginia panhandle and northern West Virginia and eastern and southwestern Ohio. (See map, Exhibit 3,) Eighty counties are included. The study region is contiguous with Bureau of Mines coal producing Districts 1 (Central PA), 2 (Southwestern PA), 3 (Northern WV), 4 (all coal producing counties in Ohio) and 6 (WV panhandle) and with the DOE area Northern Appalachia. Bureau of Mines data are available for reserves (county level) and for distribution (district to state level). Production information is available for each county.

The region was delineated to comprise an area for which data are available for a variety of analyses and where production and consumption are centered around major transportation arteries. The Allegheny and Monongahela Rivers are included in the study area as is much of the Ohio River, down the

TECHNICAL APPROACH

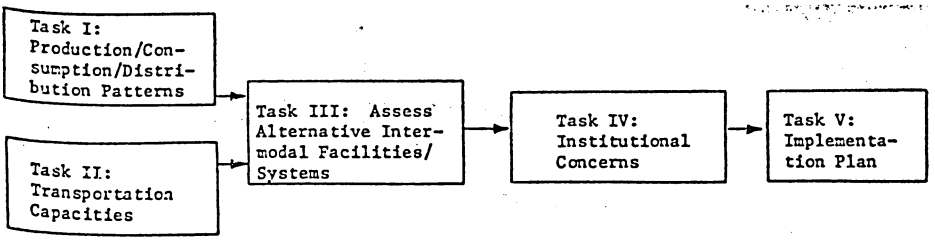

EXHIBIT 1

Ohio River, slightly north of the Kanawha on the West Virginia side and to Gallipolis on the Ohio side. The major Class I railroads serving this region are: Conrail, Norfolk & Western, Baltimore & Ohio, Chesapeake & Ohio, Bessemer & Lake Erie, and Pittsburgh & Lake Erie.

2.2.2 Demand Estimates

From estimates of reserves and trends in production and consumption, we projected production levels for 1985, 1990, 1995 and 2000 and compared these forecasts to those published by the U.S. Department of Energy, the National Coal Association, the World Coal Study and other public and private sector projections. We also examined trade-offs between the use of Eastern and Western coal for utilities in related regional markets. Determinants of preferences were taken to include scrubbing costs, which are dependent on the relative sulfur and Btu content of the different competing coals, as well as transport costs. Finally, we considered physical, financial and legal constraints on production and examined the benefits, both national and regional, incurred from increased levels of coal production. (The analytic model was used for this analysis also enabled us to determine the overall changes in employment and output resulting from expanded coal production.)

The "philosophy" of our forecasting approach was to select that set of estimates which, upon discussion with public and private sector groups, did not appear overly optimistic or pessimistic. Of course, predicting the future is an uncertain business at best, but care was taken to avoid forecasts which could mistakenly cause regional public and private sector leaders to decisional errors of overadjusting, where needed investment and/or institutional changes are not made soon enough for the region to take full advantage of developing growth opportunities.

2.2.3 Modal Facilities

The Tri-State Region encompasses the Allegheny and Monongahela Rivers and includes the Ohio River down to Huntington, West Virginia. Four hundred and eight miles of navigable waterway are included in the study area, comprising almost 20% of the Ohio River System. Twenty-seven locks and dams regulate waterway traffic in the study area; eight on the Allegheny, nine on the Monongahela and ten on the Upper Ohio. Estimates of increases in coal and total waterway traffic must be made in order to determine whether lock and dam ca-

EXHIBIT 2

APPROACH

- In-depth, Informal Discussions with Key Parties
- Supply-Demand Scenarios
- Cost-Benefit Assessment
- Direct and Indirect Impact Estimation
- Use of Current Data (e.g., NETS, ICE, NWS, DOE, FRA, Corps, Other)
- Review of Pertinent Legislation, Hearings, and Other Material
- Input-Output (Impact) Analysis
- Seminars

STUDY AREA: BUREAU OF MINES DISTRICTS 1, 2, 3, 4, 6

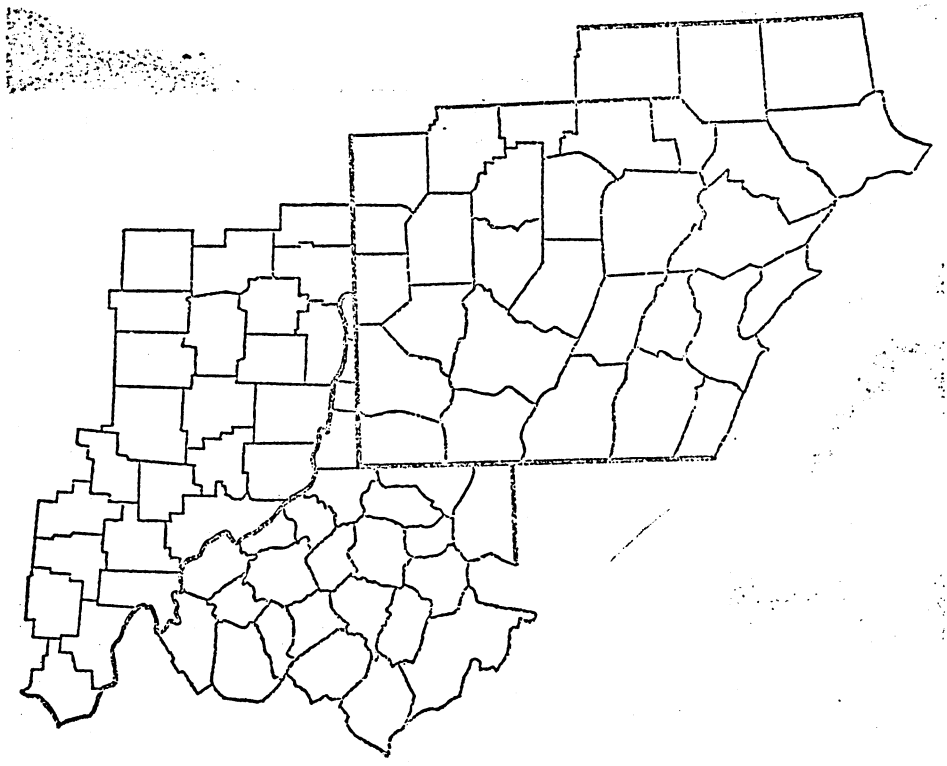

EXHIBIT 3

pacities/conditions will constrain coal movements in the future and, if so, at which facilities bottlenecks may occur.

Three studies commissioned by the Army Corps of Engineers in 1979-1980, projecting future freight traffic on the Ohio River Basin navigation system, were analyzed in light of the coal production scenarios developed in Task 1 (2.2.2 above). In addition, some of the findings of the 1977 **Mid-America Ports Study**, a comprehensive project addressing the problems and potentials of the U.S. inland river ports system, were also utilized, as were the projections and sensitivity analyses of the 1981 **National Waterways Study.**

An inventory is being carried out of the rail facilities in the Tri-State Region to assess the railroads' ability to handle the "coal boom". Current and anticipated future traffic densities are compared to line haul capacities; the ability of the railroads' to raise the capital for maintenance-of-way and equipment investment needs is addressed.

Finally, extent and condition of the coal haul road system has been studied. This mode is extremely important as study region is heavily dependent on truck for the initial movement of coal from mine to next mode, or directly to consumer.

2.2.4 Intermodal Facilities

The function of an intermodal terminal, the transfer of coal from arriving vehicles of one mode to departing vehicles of a different mode, is complicated by operational differences between the two modes. The most important among these are capacity and schedule. For instance, the capacity of a unit train may exceed the capacity of avail-

able barges (or vice versa), or the arrival of the supplying mode may not coincide with that of the receiving mode. In all such cases, avoidance of expensive delays requires the maintenance of a coal stockpile. Much of the cost of terminal operation is due to land and equipment use of stockpiling. Thus, an intermodal terminal consists of unloading, loading, and storage facilities connected, as shown in Exhibit 4, by flow-thru, stacking, and reclaiming operations. Depending on system design, various combinations of these operations may be performed simultaneously.

The capacity of an intermodal facility is characterized in terms of its stacking rate, flow-thru rate, reclaiming rate, and storage volume.

At the time of this status report, CONSAD was collecting data on the approximately fifty or so facilities which comprise the current system's intermodal capabilities. While we do not anticipate extensive model-building, the prospective individual and joint capabilities of these facilities—with or without future expansion—were to be analytically and systematically assessed.

2.2.5 Institutional Aspects

At the time of this status report, we are in the midst of investigating the variety of institutional aspects we believe to be of importance, here. Some of these concerns are briefly mentioned here.

For one, the economics of bulk transport depends greatly upon the perspective taken. Any particular corporate entity, by its nature, tends to suboptimize its own economic position so as to maximize net revenues or internal rate of return on the investments made and services offered. As regards coal movement, the most obvious case of this would be the reluctance of rail carriers to participate in intermodal moves, and subsequent port activity, where they can serve the same move through single mode (single line) service.

Another economic-institutional issue being addressed is the availability of capital. This, currently, entails determination (crudely) as to the potential commercial viability of multimodal facilities, as measured by their ability to be self-amortizing through fees collected (and other sources). If, given current costs of capital, such facilities are not self-amortizing, then alternative financing, possibly including some form of Federal, state, county or local participation in financing may be indicated.

Of particular importance in this period of sky high interest rates is the degree of capital needed in advance of revenue generation and its effect upon cash flow. A system which is clearly beneficial in the long run and has substantial secondary (non-financial) benefits, but which has a long payback period, may not be attractive as a purely private investment, but could be a highly appropriate public-private cooperative venture.

The assessment of capital availability must take into account the implications of the intermodal system investments. While economists often tend to view taxes as transfer of payments, and not relevant to evaluating the merit of investments, it must be recognized that the actual decisions are made by individuals and firms which want to improve their particular financial position. Taxes are an extremely important element in the determination of the attractiveness of an investment, and capital availability in turn. Investment tax credits, industrial development bonds, tax sheltered municipal bonds, and other aspects of taxation as related to the proposed intermodal system will all be analyzed as regards capital availability.

The export of coal has its own set of institutional, economic, and physical impediments. These impediments have been the subject of several studies in recent years, including the recent efforts of the Interagency Coal Export Study. Through review of those studies, and through the contacts with coal pro-

BASIC ELEMENTS OF AN INTERMODAL TERMINAL

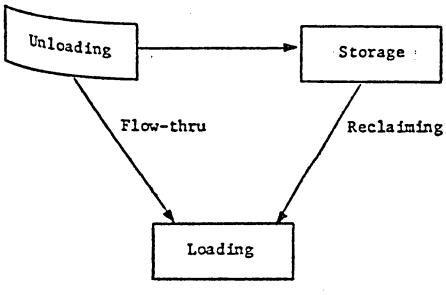

EXHIBIT 4

ducers and brokers to be completed within this study, the issues of railroad capacity, railroad tariffs, foreign competition and maritime regulations need to be addressed.

Within the framework of the Staggers Act and ICC proceedings on railroad coal rates, there are indications as to the range of rates. Where there is no market dominance by railroad, rail rates can be expected to be sensitive to competitive forces, with rates not to be less than approximately 115 percent of variable cost. The Staggers Act provides for much more flexibility in setting railroad rates, but does not do away with the non-discrimination provisions of the Interstate Commerce Act. The Staggers Act also explicitly permits contract rates with the provision that contracts be offered without discrimination. The effects of all of these provisions, as well as proposed legislation on coal slurry pipelines, need to be further addressed.

In addition to the question of eminent domain as it affects pipeline development, the Corps of Engineers has authority over the navigable rivers, and requires permits for construction and use of terminal facilities. The degree to which the Corps' authority and procedures would affect development of a railport/intermodal system will also be pursued, largely through discussions with Corps officials and terminal operators.

Clearly, the results of these several institutional changes bring a large degree of uncertainty to the system, and may mean that firm conclusions as to effects cannot be derived with certainty. However, the trends can be identified and a "bracketing" of effects should be possible. The fact that the study focuses on a particular geographic region and its related bulk traffic, we believe, increases the degree of certainty and specificity that can be expected in this task.

3.0 CONCLUDING REMARKS

Is the **ad hoc** assessment/planning process working? While it is premature to make **definitive** statements at the current time, these are some observations about which we feel comfortable:

1. While no formal planning process is involved—or, perhaps, **because** it is not formal—there has been a great deal of private sector cooperation, interest, give-and-take, data and other support. If, as is true in this situation, there are local (privately sponsored) economic and transportation studies underway, very useful connections can be made between such efforts and this type of project.
2. It is not necessary to use exceptionally high-powered techniques or unique approaches in projects of this sort: credibility, understandability, flexibility-in-use, and cost, however, are all important criteria. We have found a wealth of useful studies, data bases, analytic models, and related projects upon which to draw. In a few instances, we needed to develop an approach which, by its nature, was "original". In no case, however, does there seem to be a virtue, **per se**, in the "innovativeness" of the approach.
3. The public-private sector planning approach, if it becomes more institutionalized, will tend to fall nearer the lower number "public roles" (section 2.1 above), that is, information collector, program monitor, and/or component evaluator. There appears to be a good deal of interest—and need—for such a function and, unless there is a formal regional planning process which meets this need, such a process may very well—**sui generis**—develop in regions with critical transportation problems such as the one discussed in this paper.

FOOTNOTES

1 The U.S. Department of Transportation.