ABSTRACT

The Northeast Maryland Waste Disposal Authority (the "Authority") is a public instrumentality of the State of Maryland created in 1980 to implement a solid waste disposal program based on resource recovery for the Baltimore, Maryland, metropolitan area. The Authority is presently proceeding with the replacement of the Baltimore City Pyrolysis Plant with a waterwall incinerator.

The Authority's work is carried out by a small group of professional staff and a team of expert consultants. Since the project is to be realized under greatly accelerated schedules, the Authority team developed innovative approaches in many areas of facility implementation such as procurement, financing, acquisition of environmental permits, energy sales, and waste supply guarantees.

BACKGROUND

Historically, solid waste management in the Baltimore Metropolitan Area has consisted primarily of sanitary landfills and has been the responsibility of each individual political subdivision. Pioneering resource recovery efforts were initiated at the Baltimore County Resource Recovery Facility in Cockeysville, Maryland, which produces refuse-derived fuel (RDF) and recovers ferrous metal and glass, and the City of Baltimore's Pyrolysis Plant which was designed to recover ferrous metals and steam. As the Pyrolysis Plant was unsuccessful and the Baltimore County Facility has not yet developed a reliable RDF market, the region still relies on landfills for disposal.

By 1980, the average life expectancy of all operating landfills in the Baltimore area was approximately two years. Additional landfill sites are being sought but facilities to minimize the need for landfills were deemed to be a priority.

In order to effect waste disposal programs on a regional basis, the Maryland General Assembly enacted legislation in 1980 providing for establishment of the Northeast Maryland Waste Disposal Authority (the "Act"). The Authority was established as a regional coordinating agency and financing vehicle for the establishment of an effective waste disposal program based on resource recovery. The Act provided that the bonds of the Authority shall not be deemed to constitute a debt, liability, or pledge of the faith and credit of the State of Maryland or any of its political subdivisions.

In order to set priorities for the Authority and to establish a framework for the use of available solid waste disposal facilities within the region, the City of Baltimore, Anne Arundel County, Baltimore County, and Harford County (the "Participating Subdivisions") and the Authority entered into the Northeast Maryland Regional Solid Waste Management Agreement (the "Regional Agreement").

The Regional Agreement's first priority is the replacement of the Baltimore City Pyrolysis Plant with the Southwest Resource Recovery Facility. The Regional Agreement states that the facility is to be operational by September 1, 1983.
In addition to providing for the implementation of certain new solid waste disposal/resource recovery facilities in the region, the Participating Subdivisions, through the Regional Agreement, also arranged to amend local ordinances to allow cross-jurisdictional flow of waste. The Authority is further directed to develop, in conjunction with the private solid waste haulers in the region, a mechanism for the direction of privately collected commercial waste to the facilities contemplated in the Agreement.

PROJECT CONCEPT

In developing the concept and overall strategy for the implementation of the Southwest Resource Recovery Facility (the “Southwest Facility”), the Authority and the participating subdivisions have identified the following primary project goals:

1. Economy - implement the project at the lowest possible life cycle cost.
2. Reliability - select an extremely reliable, efficient system.
3. Guarantees - specify performance guarantees in all appropriate contract documents: Design and construction, operation, energy use and output, residuals generation, etc.
4. Timeliness - adhere as closely as possible to a very tight time schedule.
5. Conformance with Environmental and Other Regulations - comply with all city, state, and federal laws and regulations before and during project construction and operation.
6. Aesthetic Acceptability - project should be visually acceptable to the residents of and visitors to Baltimore.

Immediately upon beginning the implementation of the Southwest Facility, two important decisions were made relating to the overall project structure. It was decided that: (1) the Authority would seek a full-service system vendor to provide design, construction and long-term operation services; and (2) the primary financing tool would be Authority-issued, tax-exempt industrial development bonds. Having one entity responsible for all phases of the Southwest Facility, from design through operation, and financing the project based on its ability to generate revenues through user fees and energy and/or material sales was thought to help achieve all of the Authority’s goals.

As an integral part of a two-phase, competitive procurement process, a series of agreements were drafted which identified the basic relationships between the parties involved in the project. Figure 1 illustrates the major parties and relationships. Table 1 describes each relationship, the formal instrument used to define the relationship, special features found in the instrument, and major activities related to the preparation and finalization of the instrument. As can be seen in Figure 1, the Authority is the central force in the project; all major activities are coordinated through the Authority.
### TABLE 1 INITIAL PROJECT RELATIONSHIPS

<table>
<thead>
<tr>
<th>Nature of Relationship</th>
<th>Instrument</th>
<th>Special Features, If Any</th>
<th>Activities Related to Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Put or Pay&quot; Obligation of Subdivisions to supply waste to the Authority's Project</td>
<td>Subdivision User Contract</td>
<td>1. Obligation of Subdivisions to pay all project expenses through &quot;Gross&quot; tipping fee for protection of bondholders 2. &quot;Gross&quot; tipping fee to be adjusted through revenue credits 3. Risks to be incurred are allocated through performance guarantees in construction and operation contracts</td>
<td>1. Establish basic obligations to supply waste to SW Facility in the &quot;Regional Agreement&quot;. 2. Draft Subdivision User Contract as part of Basis of Negotiation (BON) Document 3. Councils pass initial resolutions of interest based on BON contracts 4. Revise contracts based on final project structure 5. Submit contracts to Councils for approval</td>
</tr>
<tr>
<td>Agreement with &quot;Full Service&quot; system vendor for design, construction, and 20 year operation of the Facility</td>
<td>Construction Contract</td>
<td>Construction Contract:</td>
<td>1. Covers design, construction, start-up, initial operations and acceptance testing 2. Bonus for completion before scheduled acceptance date and damage payment for missing date 3. Fixed price construction 4. Performance guarantees related to throughput, availability, electricity generation, waste by-pass and residue</td>
</tr>
<tr>
<td></td>
<td>Operations Contract</td>
<td></td>
<td>4. Revise contracts based on final negotiations and sign contracts</td>
</tr>
<tr>
<td>Agreement for the purchase of power produced by the Facility by Baltimore Gas and Electric Co.</td>
<td>Electric Power Purchase Contract</td>
<td>1. BG &amp; E will purchase any and all electricity produced by Facility 2. Access to the grid will be at the existing Westport substation, adjacent to the Facility site</td>
<td>1. Agreement in principal to purchase refuse fired power between BG &amp; E and Authority. 2. Preliminary decision on steam and electricity prices for use in draft contract (Basis of Negotiation) 3. Decision to produce only electricity for sale 4. Review of draft contract in light of PURPA regulations 5. Negotiation of final purchase price and contract details 6. Sign contract</td>
</tr>
</tbody>
</table>
In this initial project structure, the project subdivisions (Baltimore City and Baltimore County) supply waste to the Southwest Facility under a "put-or-pay" type agreement, the Subdivision User Contract. All expenses of the Southwest Facility are covered by the "gross" tipping fee charged to the subdivisions. In this way, the bondholders are assured of full debt repayment. Any revenues realized from the sale of energy and/or materials will be credited to the subdivisions based on a pre-arranged revenue sharing formula. This arrangement effectively reduces the tipping fee to a "net" amount.

The full-service arrangement is broken into two distinct phases covered by separate contracts: the construction phase (including final design, construction, start-up, initial operations and acceptance testing); and the operations phase covering 20 years of commercial operation. Both contracts are fixed price arrangements with the operation and maintenance fee subject to annual adjustment based upon an agreed formula (based upon national inflation indices).

Both contracts contain language related to guarantees of performance on the part of the system vendor and the Authority. The system vendor guarantees completion of construction by a set date. Penalties for delays and bonuses for early completion are provided. After acceptance testing is satisfactorily completed, the Authority guarantees delivery of a specified weight of acceptable waste at the pre-arranged tipping fee. Once the waste is delivered to the Facility, the system vendor guarantees disposal, energy production, and an upper limit on the amount of residue to be disposed of at a landfill. To assure that these performance guarantees will be met, the vendor pledges to make funds available to assure system performance.

Energy produced by the Southwest Facility will be purchased by the Baltimore Gas and Electric Company (BG&E). The Electric Power Purchase Contract between BG&E and the Authority provides for the purchase of all power produced at a previously agreed to percentage of the Pennsylvania, New Jersey, Maryland (PJM) electric grid running rate.

A number of environmental permits related to air emissions and disposal of refuse are necessary for the construction and operation of the Southwest Facility. Being located in a nonattainment

<table>
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<th>Activities Related to Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Obtain applicable environmental permits necessary for construction and operation in a timely manner (A.Q. permits typically require long lead time)</td>
<td>State New Source Review</td>
<td>1. Summarize ambient conditions</td>
<td>1. Begin monitoring and modeling necessary to prepare A.Q. applications ASAP after procurement starts</td>
</tr>
<tr>
<td></td>
<td>Federal PSD Permit Refuse Disposal System Permit</td>
<td>2. Estimate future emissions</td>
<td>2. Obtain pertinent data on offset sources</td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Justify LAER and BACT</td>
<td>4. Prepare other permit applications (sediment and grading, etc.)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Assess impact on soils, visibility and vegetation</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. All permits ultimate responsibility of full service vendor</td>
<td></td>
</tr>
<tr>
<td>Obtain sufficient funds to finance project</td>
<td>1. Equity contribution (by full service team or third party)</td>
<td>1. Draft contracts (BON) and project structure so that guarantees (performance, waste, supply, etc., technology, etc., are good investment risks</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Tax exempt revenue bonds (to extent so qualified)</td>
<td>2. Select team of underwriters and make integral part of negotiation team</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. Bonds not liability of State of Maryland or the Participating Subdivisions</td>
<td>3. Review proposal costs, profit margin, rate of return, contingency needs and guarantees in light of rating agency criteria</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>4. Independent engineer opinion of final project structure</td>
<td>4.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Rating of issue by rating agencies</td>
<td>5.</td>
</tr>
</tbody>
</table>
area for particulates, the Southwest Facility has to meet special requirements under the Federal Prevention of Significant Deterioration program and also pass the State New Source Review. In order to meet these requirements, the Authority must justify the Lowest Achievable Emission Rate (LAER) and Best Achievable Control Technology (BACT) for the Facility in these permit applications. The Authority took initial responsibility for the acquisition of the necessary environmental permits, but the full-service contractor will be required to continue these efforts and obtain the necessary permits in a timely fashion.

All the decisions made in developing the project concept (performance guarantees, waste supply guarantees, energy marketing arrangements, etc.) were made with the goal of successful project financing in mind.

In accordance with Table 1, the Authority identified five major areas of activities which, when executed in a coordinated manner, lead to the successful implementation of a resource recovery facility. These are:

1. Procurement activities.
2. Financing preparations.
3. Regulatory agency approval.
5. Secure waste supply.

The detailed steps that make up each of these major activity areas are listed in Table 1, and further discussed in the implementation activities section of this paper. However, before discussing these activities, it is necessary to review the management and scheduling techniques which the Authority used to carry out these activities.

**PROJECT MANAGEMENT**

The Regional Agreement recognizes the immediacy of the waste disposal problem in the region and mandates an extremely aggressive time schedule for the implementation of the Southwest Facility. Such a time frame requires a unique and innovative approach to both project management and scheduling. The key elements utilized in the implementation of the Southwest Facility are a multidisciplinary team approach to project management and the simultaneous execution of all five major implementation activities.

In order to obtain the necessary expertise to execute the five major activities, the Authority selected a number of consultants to complement the Authority's staff. A resource recovery management consultant was selected to prepare procurement documents; and assist in scheduling, preparation, and review of contract documents. A technical advisor was brought on board to analyze technical options available, based on past project successes and failures, to develop the technical specifications for procurement documents and to analyze data provided during the procurement phase. Since the development of a sound financing scheme was considered to be of utmost importance, a financial advisor became a key member of the project team. Legal counsel was obtained for general procurement and for legal interpretation purposes as well as for specialized bond related activities. The drafting, negotiating and signing of all contracts was coordinated through the Authority's legal counsel. An environmental consultant was hired to begin preparing applications for necessary state and federal air quality permits. These experts, along with Authority staff, formed multi-disciplinary working groups which carried out the individual tasks. As each task moved into a more advanced stage or was completed, the members of each working group and respective levels of effort were changed.

Throughout the project the coordination of the Authority Members, its staff and consultants, and the vendor's resources, was vital to maintaining the desired time frame. Scheduling of these individuals to attend meetings and review documents in a timely manner, became a very critical administrative objective. The Authority spent considerable administrative time coordinating the schedules of its own staff and advisors as well as those of the vendors. Additionally, to track different documents, control sheets were prepared for each of the major project documents, permits, and financing documents that would be required. The control sheet noted each document's: (1) primary purpose; (2) related documents; (3) principal drafters; (4) principal reviewers; and (5) special features.

**SCHEDULE**

The most innovative aspect of the Authority's implementation process was the scheduling. In order to complete the implementation activities described above in the proposed time frame for the Southwest Facility, it was necessary to devise a method which would simultaneously "fast track" all activities. In order to accomplish this, the Authority began all major activities at virtually the same time. Out of necessity, the level of effort related to each activity varied over the schedule but progress was made on each activity throughout the imple-
The major aim of the schedule was to have all activities completed at approximately the same time such that the results would all feed into finalization of the financing package.

The schedule for the implementation of the Southwest Facility is shown in Fig. 2. Each major activity mentioned in the project concept section of this paper is shown, indicating the relative level of effort given to the activity during each of five implementation phases. The figure clearly shows that a significant amount of time was saved in the implementation process by proceeding with all activities simultaneously, instead of building consecutively.

The five phases identified in Fig. 2 are based on the "text book" approach to resource recovery facility implementation and assisted the Authority in establishing milestones for the five implementation activities. A brief description of the accomplishments expected at the end of each phase follows.

<table>
<thead>
<tr>
<th>EVENT</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Planning Phase</td>
<td></td>
</tr>
<tr>
<td>--Regional Agreement Concept</td>
<td>9-01-80</td>
</tr>
<tr>
<td>--Completion of Managerial, Financial, Technical and Legal Team</td>
<td>10-15-80</td>
</tr>
<tr>
<td>--RFQ ISSUED</td>
<td>11-20-80</td>
</tr>
<tr>
<td>--REGIONAL AGREEMENT SIGNED</td>
<td>12-01-80</td>
</tr>
<tr>
<td>Procurement Phase</td>
<td></td>
</tr>
<tr>
<td>--Quals Received</td>
<td>12-18-80</td>
</tr>
<tr>
<td>--BON ISSUED</td>
<td>1-20-81</td>
</tr>
<tr>
<td>--Subdivisions pass resolutions of intent</td>
<td>2-15-81</td>
</tr>
<tr>
<td>--Begin Competitive Negotiations</td>
<td>3-03-81</td>
</tr>
<tr>
<td>--Select Underwriter Team</td>
<td>3-30-81</td>
</tr>
<tr>
<td>--Select Independent Third Party Engineer</td>
<td>4-06-81</td>
</tr>
<tr>
<td>Negotiation Phase</td>
<td></td>
</tr>
<tr>
<td>--Proposals received; end of competitive negotiations</td>
<td>5-05-81</td>
</tr>
</tbody>
</table>

FIG. 2 PROJECT SCHEDULE
<table>
<thead>
<tr>
<th>EVENT</th>
<th>DATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>--Preferred system vendor selected; begin exclusive negotiations</td>
<td>5-26-81</td>
</tr>
<tr>
<td>--Submission of A.Q. permit applications</td>
<td>7-81</td>
</tr>
<tr>
<td>--Preliminary A.Q. approvals received</td>
<td>9-81</td>
</tr>
<tr>
<td>--Final A.Q. permits and refuse disposal permit received</td>
<td>11-81</td>
</tr>
<tr>
<td>--Contracts to Subdivisions for approval</td>
<td>12-81</td>
</tr>
<tr>
<td>Financing Phase</td>
<td></td>
</tr>
<tr>
<td>--Contracts approved by Subdivisions</td>
<td>12-81</td>
</tr>
<tr>
<td>--Independent Feasibility Report finalized</td>
<td>1-82</td>
</tr>
<tr>
<td>--Bond documents finalized</td>
<td>2-82</td>
</tr>
<tr>
<td>--Contracts signed by all parties</td>
<td>2-82</td>
</tr>
<tr>
<td>Implementation Phase</td>
<td></td>
</tr>
<tr>
<td>--Bond Issue</td>
<td>4-82</td>
</tr>
<tr>
<td>--Begin construction period</td>
<td>5-82</td>
</tr>
<tr>
<td>--Acceptance testing/begin commercial operation</td>
<td>5-85</td>
</tr>
</tbody>
</table>

NOTES:

(1) All dates in 1982 are projected.

(2) Indicates major work effort.

Indicates intermediate work effort.

Indicates minor work effort.

Indicates end of activity.

FIG. 2 PROJECT SCHEDULE (cont'd)

PLANNING PHASE

During this phase, a detailed project concept is developed by the implementation agency. Using this project concept, local political support should be acquired. The basic decisions relating to procurement type, financing, siting, waste supply, and energy markets should also be made.

PROCUREMENT PHASE

During this phase, the implementation agency selects the preferred system vendor or vendors to
implement the facility. Procurement can be broken into two steps: a qualification step and a proposal step.

NEGOTIATION PHASE

Negotiations are held with the preferred system vendor or vendors in order to finalize arrangements for the implementation of the facility. Final contracts and agreements relating to such items as siting, construction, operation, product market, and waste supply are negotiated and signed by all involved parties. All relevant permits relating to design, construction, and operation should be received and the final financial strategy completed.

FINANCING PHASE

Using the financing structure arrived at during the negotiation phase, the implementation agency acquires the funds necessary to implement the facility.

IMPLEMENTATION PHASE

Once capital has been obtained through the designated financing vehicle, actual implementation of the facility begins. Final design, construction, start-up, and acceptance testing precede the beginning of commercial operation of the facility. Once the facility has performed to specifications, the implementation process is completed and the period of commercial operation begins.

IMPLEMENTATION ACTIVITIES

The Planning Phase for the Southwest Facility began concurrent with the official formation of the Authority as an operating agency. Figure 2 shows that as the details of the Regional Agreement were being negotiated, the Authority began putting together the staff and consulting team necessary to carry out project implementation activities. The basic implementation decisions were made at this time. Siting, which is usually a major factor in the implementation of a resource recovery facility, was only a minor item in the implementation of the Southwest Facility. The location of the facility was set in the Regional Agreement (the site of the existing Baltimore City Pyrolysis Plant).

The Authority quickly issued a Request for Qualifications (RFQ) to 16 potential full-service system vendors. The Qualifications Step was a major item in determining the preferred vendor. Therefore, it was structured to require that very specific and detailed technical, managerial and financial information be submitted to the Authority.

The respondents to the RFQ were asked to provide technical data on their performance capabilities. Each system vendor was asked to project the performance of the proposed facility regarding such items as energy production, overall availability, throughput capacity, and emissions. In addition, each vendor was asked to back up these projections by supplying a three year operational history on a commercial-size reference facility operating in a utility-like capacity. By requesting this type of data, the Authority was assured of qualifying system vendors with a demonstrated performance ability in the waste-to-energy field, who had already demonstrated the ability and willingness to comply with major elements of system specification requested by the Authority.

In addition to technical expertise, the Authority wanted to ensure that the qualified vendors also possessed the management expertise to successfully undertake a project of this complexity. To this end, the Authority requested each firm seeking to be qualified to provide: the availability of key personnel involved in other operating projects; the relationship between the proposed joint venture partners (if a joint venture were proposed) to show which firms were responsible for particular aspects of the project; any applicable relationships with technology licensors; and the firms' commitment to the Authority's aggressive time schedule.

One major goal is to implement the Southwest Facility at the lowest life cycle cost to the Subdivisions and the Authority. Therefore, a thorough analysis of the financial condition of each firm seeking to be qualified was particularly important. Data on the financial resources of the firm available to back up contractual commitments and performance guarantees during the operation and construction periods was requested. In addition, the vendor was requested to indicate its attitude toward making a substantial equity contribution to the project and willingness to cooperate in the development of the overall financing plan.

By conducting such a comprehensive first step of the procurement phase, the Authority was assured of qualifying only those firms with a demonstrated ability in all phases of resource recovery facility implementation. In this way, the next procurement step would be a matter of choosing the qualified vendor who was ready to offer the Authority and the Participating Subdivisions the most

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an attractive package of performance guarantees, risk sharing, and cost.

As the schedule in Fig. 2 shows, other important activities were underway during the Qualifications Step of the Procurement Phase. Negotiations with BG&E resulted in a draft contract and the decision to generate electricity at the facility and not to sell steam to BG&E. This decision was based upon overall project economics using estimates of steam and electricity purchase prices supplied by BG&E. The Authority enlisted the aid of an environmental consulting firm to prepare the applications for state and federal air quality permits necessary for the facility. Close and continuous liaison with the federal and state regulatory agencies was established immediately. This prevented the submission of incomplete or unacceptable permit applications. In addition, the initial drafts of the waste supply (put-or-pay) contracts with the Subdivisions, the operations contract, and construction contract were prepared.

After careful consideration of the six qualification statements received, the Authority determined that two of these firms were qualified to undertake this project in accordance with Authority criteria. According to the Authority procurement procedures, if three or fewer firms are determined to be qualified to supply specific services, the Authority can enter into simultaneous competitive negotiations with the qualified vendors. In place of the standard Request for Proposal (RFP) for a full-service contractor, the Authority issued a Basis of Negotiation (BON) document which was used as the starting point for the negotiations. The BON contained all necessary background information relating to the project, technical specifications, project negotiation schedules, financing approach, instructions for preparing technical and price proposals, and drafts of all major contracts which are necessary in the implementation of the project. (The desired relationships between major parties expressed in the BON and related documents are discussed in the project concept section of this paper.)

The consultant team was completed with the addition of an investment banking underwriting team and the selection of an engineering consultant to provide the independent feasibility study for the bond prospectus. These members were selected sequentially, with the underwriting team selected first and providing input to the selection of the engineering consultant. RFPS for the underwriters asked a series of very detailed questions relating to both qualifications and experience in the field of resource recovery, ability to market bonds for such projects, technical capability in structuring resource recovery projects, and their opinion on certain critical project issues which the Authority felt would have an impact on the financing (e.g., the timing of the obtainment of environmental permits). Upon thorough review by Authority staff members and their management, financial and legal advisors, the Authority decided to select an investment banking team comprised of three senior managers and two co-managers. The key assets of the senior managers included their ability to market issues in the Mid-Atlantic Region, their experience in resource recovery financings, and their ability to retail to a broad base of individual bond purchasers. The co-managers were chosen for their ability to retail bonds in the Baltimore Region.

Five nationally recognized engineering firms were solicited and two responded to the Authority's RFP for independent engineering services. The selection of the firm was based primarily on the experience of the personnel and the acceptability of the firm's name in a bond prospectus. Input from the underwriting team was particularly important in determining this last aspect.

With the Authority's complete team now in place, simultaneous negotiations proceeded with the two vendors. The engineering consultant did not participate in the simultaneous negotiation step, as the Authority desired to keep the Engineer's opinions in a third party perspective throughout this portion of the procurement. All aspects of each vendor's intended proposal were reviewed during a series of sessions. For example, the technical configuration of the plant and site layouts were reviewed with the technical members of the Authority's team. Detailed discussions were held with regard to waste supply and levels of guarantees that the vendors and the subdivisions would each be inclined to take with regard to the project. Aspects related to system performance were also reviewed and the Authority's desired position was stated. In several instances, the Authority amended its BON to reflect new positions that it had reached as a result of observations made by one or both of the vendors. Additionally, the proposer's management approach, financial structure, and team members were also thoroughly reviewed. As a result the Authority was able to react and guide, to a degree, the attractiveness and desirability of each vendor's prospective proposal. As the negotiations proceeded it became apparent that each vendor preferred different institutional structures for implementation. As a result,
the Authority instructed each vendor to propose in
two manners: as the BON requested and in the ven-
dor's preferred approach.

This process in fact led to two very different
"preferred approaches" offered by the two ven-
dors. This was a result of the business postures of
the two vendors rather than a preference on the
part of the Authority.

The simultaneous negotiation step ended when
each vendor submitted their technical, managerial,
and financial proposal to the Authority and made
presentations to the Authority Members, staff and
consultants. The procurement phase concluded with
a complete review of every aspect of the proposals
based on the BON as well as the alternative ap-
proaches.

The Authority staff and consultant team were
segmented into four different disciplines: technical,
managerial, financial, and contractual for the pur-
pose of reviewing the vendor proposals. Written
evaluations were prepared for each of the areas and
an evaluation report was submitted to the Authority
Members as background for their decision.

The selection of a preferred system vendor and
continued exclusive negotiations was a major mile-
stone in the implementation of the Southwest Facil-
ity. The Negotiation Phase was undertaken next, to
resolve certain technical issues and to finalize the
necessary contracts. The Authority, its consultants,
and preferred vendor were committed to maintain-
ing an extremely aggressive time schedule for the
finalization of contracts leading to a bond issue,
construction, startup, shakedown, and operation of
the new facility.

The project structure took on a new look as
proposed by the preferred system vendor. This
structure is shown in Fig. 3 and is termed the
Owner/Operator Project Structure. While the basic
relationships remain the same as in the initial Pro-
ject Concept (Fig. 1), the sharing of project risks
and responsibilities changed significantly. Initially,
the Authority and the Subdivisions were assigned
most of the risk involved in the project. In the pro-
posed structure, the joint venture partnership, led
by the preferred system vendor, would take a major
share of the risk.

The Subdivision User Contract would obligate
the subdivisions to deliver only a portion of the
required waste to the facility and pay a "net" guaran-
teed tipping fee. The system vendor would
attract the remaining required tonnage from inde-
pendent commercial haulers. The tipping fee is to
be calculated by estimating total project cost (debt
service, operation and maintenance) and project
revenues (electricity and materials sales). The dif-
ference between costs and revenues on a per ton
basis, assuming operation at the maximum con-
tinuous rating (MCR), would be the "net" tipping
fee. This fee would be subject to adjustment only
for inflation and strictly-defined uncontrollable
circumstances.

The Facility Agreement (a combination of the
operations and construction contracts) would obli-
gate the Authority to turn over the bond proceeds
to the partnership and the partnership would obli-
gate itself to design, construct, own and operate a
facility able to process more waste than committed
to the facility in the Subdivision User Contracts,
and to repay the bond proceeds advanced to it. The
partnership therefore would take substantial risk for
attracting waste to the facility, since project eco-
nomics are calculated assuming operation at MCR,
and the "net" tipping fee is to be guaranteed to the
subdivisions.

The parent company of the general partner of
the joint venture further would guarantee the obli-
gations of the partnership under the Facility Agree-
ment, through the Additional Contributions Agree-
ment.

The Authority would enter into ancillary agree-
ments concerning the long-term lease of the facility
site from the City of Baltimore, the purchase of
electricity by BG&E, and for residue disposal and
emergency landfill capacity from Baltimore County
and assign these to the partnership.

This structure, including the backup guarantees
of the subdivisions, combined with the experience,
financial strength, and commitment of the parent
company of the general partner of the joint venture,
is deemed to be sufficient to sell the bond issue and
provide for the successful completion and operation
of the facility. This is the project structure the
Authority negotiated with the preferred system
vendor.

Upon completion of the negotiations and receipt
of the major environmental permits, the package
of agreements was submitted to the Subdivisions
for their approval. As a parallel activity the financ-
ing documents and the independent consulting engi-
neer's feasibility report were completed. The engi-
neering consultant selected for this task had begun
work on his report as the Authority and its other
advisors proceeded in the negotiation process. Since
that report will be required to express an opinion
on certain aspects related to solid waste manage-
ment practices and waste quantities in the region,
the engineer's efforts were initiated prior to the completion of the negotiation phase. Additionally, the engineer was made privy to the selected vendor's proposal and the results of subsequent negotiation sessions as well as the latest versions of contract documents. The engineer was also provided copies of permit applications as they were submitted to the regulatory agencies by the Authority.

As the financing documents are completed, the official statement will be presented to rating agencies for the rating of the bond issue. The Financing Phase will culminate with the sale of bonds.

SUMMARY

The fast track procurement of the Southwest Facility has included some very unique aspects. Careful and aggressive coordination was necessary throughout the process. Additionally, the Authority's ability to tap the experiences of other resource recovery projects, through its advisors and
consultants, expedited the preparation of both procurement and contract documents. The dynamic nature of the entire process, involving work on all key activities simultaneously, resulted in reaching major milestones in project implementation within a tight time frame and a project structure offering minimal risk to the users and sponsors of the project.

ACKNOWLEDGMENTS

The Authors wish to express their gratitude to the following team members for their efforts, without which this project would not have progressed as it has.

Authority Members and staff

Elected Officials in the Project Subdivisions

Government Finance Associates — Mr. Lawrence D. Shubnell

Piper & Marbury — Edward O. Clarke, Jr., Esquire; Edward Sledge, Esquire; Stewart K. Diana, Esquire

Quantum Associates — Mr. Klaus S. Feindler

Gershman, Brickner & Bratton, Inc. — Messrs. Harvey W. Gershman and Robert H. Bricker

Alex Brown & Sons — Mr. James T. Cavanaugh, III

Smith Barney, Harris Upham & Co. — Mr. Warren Gregory

Merrill, Lynch, Pierce, Fenner & Smith, Inc. — Mr. Daniel H. Harman, III

Henningson, Durham & Richardson — Mr. R. Lee Torrens

Wheelabrator-Frye, Inc. — team led by Mr. John M. Kehoe, Jr.

Katy Industries, Inc. — team led by Mr. Harold E. Miller

Key Words
Baltimore, Maryland
Contract
Financial
Full Service
Institutional
Management
Procurement