TRANSPORTATION RESEARCH SYNTHESIS

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The Use of Life-Cycle Cost Analysis to Evaluate Public-Private Partnerships

The purpose of this TRS is to serve as a synthesis of pertinent completed research to be used for further study and evaluation by MnDOT. This TRS does not represent the conclusions of either CTC & Associates or MnDOT.

Introduction

MnDOT would like to compare traditional procurement options to the design-build-finance-operate-maintain (DBFOM) approach in public-private partnerships (P3) involving concession agreements so that it can estimate the proper valuation of private sector proposals. To do so, MnDOT needs information about conducting life-cycle cost analyses (LCCAs) of corridor, bridge and multi-modal projects to forecast operations and maintenance (O&M) costs over the long term. This information will help support MnDOT's Alternative Transportation Finance, Sustainability, Asset Management and Bridge Risk Infrastructure Management initiatives.

To meet this need, CTC & Associates conducted a literature review and interviews with experts from several departments of transportation (DOTs) about the use of LCCA for comparing traditional procurement options to P3 concessions projects.

Summary

We found little direct information about the use of LCCA specifically for P3 projects, although there is a significant amount of guidance and research related to value for money (VfM) comparisons of public procurement options to P3 proposals, and to LCCA in general. Interview results suggested that states are using consultants to estimate the long-term O&M costs of projects, however, it is unclear whether consultants have a formal LCCA methodology for estimating such costs. We conducted a follow-up interview with a consultant to Georgia DOT that provided spreadsheets (one in Appendix A and another provided to MnDOT) for estimating O&M costs of Georgia DOT's Northwest Corridor P3 project, which was initially conceived as a concession project but was

transitioned to design-build-finance (DBF). Further, the Maryland Transportation Authority provided us with a consultant's detailed estimates of costs of ownership over 30 years for its travel plaza concessions project (Appendix B). In **Related Research**, the authors of one report conducted a similar literature search on the use of LCCA for P3 projects and found no related reports, confirming our findings that there seems to be little publicly available information in this area.

We identified research and conducted interviews related to the following key topic areas:

- Major P3 Concessions Projects in the United States
- Consultation with Experts
- National Resources
- Related Research

Major P3 Concessions Projects in the United States

We list major P3 concessions projects in the United States. We searched for but were unable to find documentation of the use of LCCA for any of these projects. However, we did find several VfM analyses comparing public procurement to P3 options. (See **Comparing P3 Projects to Traditional Procurement** in the **National Resources** and **Related Research** sections for more information about VfM analyses, especially FHWA's Value for Money Assessment for Public-Private Partnerships: A Primer.)

Consultation with Experts

We contacted experts at the California, Georgia, Maryland, Texas and Virginia DOTs. (We were unable to reach Washington State DOT.) We also contacted the Federal Highway Administration (FHWA), the Maryland Transportation Authority and, at the suggestion of Georgia DOT, the consulting firm HNTB. The information obtained in the interviews did not clarify whether states are using a LCCA methodology when calculating the costs of public procurement options for comparison to P3 proposals. California, Georgia and Virginia DOTs referred to the VfM process for comparing public procurement to P3 proposals. (See **Comparing P3 Projects to Traditional Procurement** in the **National Resources** and **Related Research** sections.) However, guidance about VfM analyses does not clarify where cost estimates for public procurement options originate, and interviewees from Georgia and Maryland DOTs noted that they use consultants to calculate the projected O&M costs of such projects. Georgia DOT referred us to the consultant HNTB, which provided spreadsheets for the calculation of O&M costs for the Northwest Corridor P3 project, which began as DBFOM and was changed to DBF. (See Appendix A for one of these spreadsheets.) The Maryland Transportation Authority provided a consultant's detailed estimates of costs of ownership over 30 years for its travel plaza concessions project (Appendix B).

National Resources

- FHWA's Value for Money Assessment for Public-Private Partnerships: A Primer gives an overview of the use of VfM analyses to determine whether a P3 agreement would yield better value than conventional procurement. FHWA's P3 Toolkit provides numerous related resources, and its Major Project Program Cost Estimating Guidance provides direction for preparing a total program cost estimate for a major project. FHWA also has a primer on P3 concessions projects.
- The TRCP's A Guidebook for the Evaluation of Project Delivery Methods includes an evaluation of the impacts, advantages and disadvantages of including O&M as a component of a contract for a project delivery method.
- We include several resources on the use of LCCA to evaluate the costs of competing design alternatives for pavements and bridges. The standard tool for pavement analyses is FHWA's RealCost software; for bridges, it is BridgeLCC.

Related Research

LCCA for P3 Projects

We found only three documents directly addressing the use of LCCA for P3. The authors of Public Private Partnerships in California conducted a literature search on this topic and found no documents, confirming the results of the current Transportation Research Synthesis (TRS). They conclude, "We do not know whether life cycle costing is an uncommon practice in P3 projects, or whether such costing details are not published, or whether our search was not sufficiently extensive to find such reports." They point instead to the VfM process, which focuses on the significant financing costs of P3 projects. Also significant are O&M costs, for which the authors recommend consulting Whitestone Research's Building Maintenance and Repair Cost Reference, which despite its focus on buildings, also gives "service life estimates for specific building components" that would be relevant to transportation projects. The authors also recommend use of the U.S. Army Corps of Engineers' publicly available O&M databases for completed infrastructure projects.

P3 Concessions (DBFOM) and Comparing P3 Projects to Traditional Procurement

Several reports address the use of DBFOM. We also found numerous reports about the use of VfM analyses and other methods to compare traditional procurement with P3 proposals:

- Design of Concession and Annual Payments for Availability Payment Public Private Partnership (PPP) Projects indicates that concession term and availability of payments are the most important parameters in evaluating P3s, and several reports note that the allocation of risk between partners is also critical.
- Feasibility Study Guideline for Public Private Partnership Projects includes a Microsoft Excel-based software package called P3FAST to facilitate P3 feasibility studies.
- Other reports address the process for determining the discount rate for VfM analyses.
- We also include a section about estimating risk and determining the preferred risk allocation between public and private partners. Risk-Based Cost and Schedule Estimation for Large Transportation Projects includes a methodology for estimating cost and schedule on large projects using a risk-based approach.

LCCA for Other Projects

We include research related to LCCA for pavements and bridges:

- Guidelines for Life Cycle Cost Analysis includes a survey of state practices for LCCA, including input values for the discount rate, inflation rate and analysis period.
- Life Cycle Cost of Bridges presents an analysis of life-cycle costs for four bridges and two tunnels constructed and operated by the Port Authority of New York and New Jersey. Cost components include the initial cost, repair and rehabilitation costs, and annual maintenance costs.

Major P3 Concessions Projects in the United States

Project Profiles, Public-Private Partnerships, Office of Innovative Program Delivery, Federal Highway Administration, undated.
http://www.fhwa.dot.gov/ipd/p3/project_profiles/

From the website:

NEW BUILD FACILITIES

Design Build Finance Operate Maintain (Real Toll)

- Downtown Tunnel/Midtown Tunnel/MLK Extension—Cities of Norfolk and Portsmouth, Virginia
  http://www.fhwa.dot.gov/ipd/project_profiles/va_midtown_tunnel.htm
- Dulles Greenway—Loudoun County, Virginia
  http://www.fhwa.dot.gov/ipd/project_profiles/va_dulles_greenway.htm
- I-495 Capital Beltway HOT Lanes—Fairfax County, Virginia
  http://www.fhwa.dot.gov/ipd/project_profiles/va_capital_beltway.htm
- IH 635 Managed Lanes—Dallas-Fort Worth Metroplex, Texas
  http://www.fhwa.dot.gov/ipd/project_profiles/tx_lbj635.htm
- North Tarrant Express—Dallas-Fort Worth Metroplex, Texas
  http://www.fhwa.dot.gov/ipd/project_profiles/tx_north_tarrant.htm
- SH 130 (Segments 5-6) —Austin, Texas Metropolitan Area
  http://www.fhwa.dot.gov/ipd/project_profiles/tx_sh130.htm
- South Bay Expressway (formerly SR 125 South Toll Road)—San Diego County, California
  http://www.fhwa.dot.gov/ipd/project_profiles/ca_southbay.htm

Design Build Finance Operate Maintain (Availability Pay)

- Eagle Project—Denver Metro Area, Colorado
  http://www.fhwa.dot.gov/ipd/project_profiles/co_eagle_project.htm
- I-595 Corridor Roadway Improvements—Broward County, Florida
  http://www.fhwa.dot.gov/ipd/project_profiles/fl_i595.htm
- Port of Miami Tunnel—Miami, Florida
  http://www.fhwa.dot.gov/ipd/project_profiles/fl_port_miami_tunnel.htm
- Presidio Parkway—San Francisco, California
  http://www.fhwa.dot.gov/ipd/project_profiles/ca_presidio.htm

EXISTING FACILITIES

O&M Concession

- Anton Anderson Memorial Tunnel—Porter-Whittier, Alaska
  http://www.fhwa.dot.gov/ipd/project_profiles/ak_andersontunnel.htm

Long Term Lease Concession

- Chicago Skyway—Chicago, Illinois
  http://www.fhwa.dot.gov/ipd/project_profiles/il_chicago_skyway.htm
- Indiana Toll Road—Northern Indiana
  http://www.fhwa.dot.gov/ipd/project_profiles/in_indianatoll.htm
- Pocahontas Parkway/Richmond Airport Connector—Greater Richmond, Virginia
  http://www.fhwa.dot.gov/ipd/project_profiles/va_pocahontas.htm

- Puerto Rico PR-22 and PR-5 Lease—Northern Puerto Rico
  http://www.fhwa.dot.gov/ipd/project_profiles/pr_pr22_and_pr5_lease.htm

We searched for but were unable to find documentation of the use of LCCA for any of these projects. However, we did find several VfM analyses comparing public procurement to P3 options:

- Presidio Parkway
  http://www.presidioparkway.org/project_docs/files/presidio_prkwy_prjct_bsnss_case.pdf
  See Analysis of Delivery Options for the Presidio Parkway Project in **Consultation with Experts** for a summary of this document.
- Port of Miami Tunnel
  http://www.japarker.com/wp-content/uploads/2010/04/POMT-VfM-Analysis-April-2010.pdf
- I-595 Corridor Roadway Improvements
  http://www.transportation-finance.org/pdf/funding_financing/financing/i595_vfm_0609.pdf

However, it is unclear how the agencies involved in these projects estimated the costs for the public procurement options or whether LCCAs were involved in producing them.

For more about VfM, see FHWA's Value for Money Assessment for Public-Private Partnerships: A Primer in **National Resources**.

Consultation with Experts

National Agency Contacts

Federal Highway Administration
Jim Sinnette, Project Delivery Team Leader, Office of Innovative Program Delivery, Federal Highway Administration, james.sinnette@dot.gov, (202) 366-1561.

Deborah Brown-Davis, Strategic Delivery Team Leader, Office of Innovative Program Delivery, Federal Highway Administration, deborah.e.brown@dot.gov, (202) 366-4249.

Jim Sinnette referred us to Deborah Brown-Davis, but we were unable to reach her by phone or email.

State Practitioners

California
Nizar Melehani, Program Manager, Caltrans Public-Private Partnerships Program, nizar_melehani@dot.ca.gov, (916) 654-5021.

Caltrans does a VfM analysis (which it calls a business case comparison) before validating any project to be a P3 project. Caltrans determines the public sector costs and how much the private sector charges for the same services. (See **Comparing P3 Projects to Traditional Procurement** in the **National Resources** and **Related Research** sections for more information about VfM analyses, especially FHWA's Value for Money Assessment for Public-Private Partnerships: A Primer.) P3 projects are helpful when a DOT doesn't have the money available for a large investment. A P3 project allows this cost to be amortized over the next 30 to 35 years, allowing the public sector to take the benefit without coming up with a large amount of money or being responsible for O&M costs. Annual availability payments are made to the concessionaire, contingent upon the facility being well-maintained and available at all times.

Nizar Melehani provided Caltrans' VfM analysis for the Presidio Parkway project as an example:

> **Analysis of Delivery Options for the Presidio Parkway Project**, California Department of Transportation, San Francisco County Transportation Authority, February 2010.
> http://www.presidioparkway.org/project_docs/files/presidio_prkwy_prjct_bsnss_case.pdf
> This report compares the life-cycle costs of public procurement methods for Caltrans' only P3 project to date, the Presidio Parkway. It includes the results of quantitative and qualitative analyses of the full life-cycle costs of delivering the project using a traditional design-bid-build (DBB) method compared with DBF and DBFOM methods. According to the results, DBFOM (P3) is significantly less costly than the other methods. The analysis uses a base discount rate of 8.5 percent and a typical VfM methodology:
>
> - Define procurement options (risk allocation, organizational structure, P3, etc.).
> - Identify relevant precedent transactions and conduct market soundings to define a robust set of input assumptions (including inflation rate) and financial structures.
> - Starting with the baseline design and construction costs in the FHWA Initial Financial Plan, apply a series of cost adjustments to the baseline cost for scope changes, conduct a gap analysis of missing cost line items, and account for cost efficiencies that a design-build contractor may achieve.
> - Conduct a project-specific analysis of construction and operation risks to estimate risk-adjusted nominal cash flows, including estimates of transaction costs.
> - Compare the project-specific risk adjustments with the department, national and international benchmarks for "optimism bias" to check for reasonability.
> - Prepare a "shadow bid" financial model with the above inputs, iteratively optimize the financial structure, conduct sensitivity and scenario analyses, and produce outputs in terms of year-of-expenditure cash flows and net present value of the options to compare them on a like basis.
>
> Appendices include a detailed itemization of estimated costs used in the VfM comparison.

However, Melehani was unable to say exactly how the public procurement costs used in the Presidio VfM analysis were determined or whether they involved LCCA, except to say that estimates were based on historical data.

Georgia

Georgia Department of Transportation
Darryl VanMeter, Administrator, Innovative Program Delivery, Georgia Department of Transportation, dvanmeter@dot.ga.gov, (404) 631-1703.

Georgia DOT has not carried out a P3 DBFOM project. Its Northwest Corridor P3 project was initially envisioned as DBFOM, but was changed to DBF. When the project was envisioned as a concession, Georgia DOT carried out a VfM analysis (http://www.junctionatl.org/wp-content/uploads/2012/03/0008256_2011-04_Project-Delivery-Comparison-vFinal.pdf), but this analysis focuses on the assumption of O&M risk for the long term. Decisions about a long-term contract aren't made based on saving a little money on O&M, but on whether a higher level of value can be obtained from the continuity between design, construction and O&M.

Projected costs of public procurement—especially O&M costs for the life of the project—are determined by subject matter expert consultants who have knowledge about a long-term, toll-backed financed project. Georgia DOT suggested we contact HNTB, the consultant for the Northwest Corridor P3 project, for details. The most important issue for P3 concession projects is the long-term risk involved in the facilities' O&M.

HNTB
Tom Hutchinson, Senior Transportation Planner, HNTB, thutchinson@hntb.com, (404) 946-5759.

Darryl VanMeter of Georgia DOT suggested we contact a representative of HNTB, which assessed the O&M costs for the Northwest Corridor P3 project (http://www.dot.ga.gov/informationcenter/p3/projects/NWC/Pages/default.aspx). According to Tom Hutchinson, HNTB worked with Georgia DOT's maintenance department to get information from equipment vendors (for example, various pieces of toll equipment); mean time between failure; and so on. Then they developed anticipated expenditures for both the toll side and the roadway side. They calculated such costs both when the project was envisioned as DBFOM and when it was reconceived as DBF.

Hutchinson provided two spreadsheets (one in Appendix A and another provided separately to MnDOT) estimating costs for the Northwest Corridor as a DBF (and if possible, will provide costs calculated when envisioned as a DBFOM). There is no standard LCCA methodology for determining such costs.

Maryland

Maryland Transportation Authority
George Fish, Travel Plazas Oversight Manager, Division of Strategic Development, Maryland Transportation Authority, gfish@mdta.state.md.us, (410) 537-5693.

Maryland has conducted only one P3 project (a concession project that is still under construction), the redevelopment of two travel plazas on I-95. JMT, the project consultant, developed the costs of traditional procurement for comparison to the P3 option. George Fish provided JMT's report (Appendix B) detailing the long-term costs of ownership of these travel plazas. This report includes life expectancies of various systems (concrete curbs, guard rails, etc.); architectural features; mechanical features; and electrical systems. An appendix breaks down the estimated costs per system or feature over 30 years.

Fish suggested we talk to Jodie Misiak of Maryland DOT for more information.

Maryland Department of Transportation
Jodie Misiak, Manager for Innovative Finance, Office of Finance, Maryland Department of Transportation, jmisiak@mdot.state.md.us, (410) 865-1050.

Ideally LCCA would be a component of everything Maryland DOT does, according to Jodie Misiak. In reality it is difficult to implement, and it is unlikely that any DOT is involved in LCCA when comparing traditional procurement to P3 projects. A consultant determined the projected construction and O&M costs for the Maryland travel plazas.

Texas

Dieter Billek, CDA Program Director, Strategic Projects Division, Texas Department of Transportation, dieter.billek@txdot.gov, (512) 334-3832.

Dieter Billek preferred to answer questions by email and responded briefly to the effect that Texas DOT does not use a life-cycle approach. Texas DOT captures the costs for construction and O&M following that construction, to include routine and life-cycle costs. Data comes from industry standards, typical life cycles of assets, expected preventive maintenance, and regional characteristics and practices. For example, soil and climate are considered as well as the traffic and typical maintenance practices of a district or area. Performance measures are based on Texas DOT practices and expectations for asset performance. O&M costs are forecasted based on how the asset is expected to perform, considering cycles for routine and life-cycle events. Texas DOT uses a proprietary software tool for O&M estimates.

Virginia

Raymond T. Partridge, Innovative Project Delivery Division, Virginia Department of Transportation, raymond.partridge@vdot.virginia.gov, (804) 371-0128.

Raymond Partridge referred to VDOT's VfM guidance:

- http://www.vappta.org/resources/VDOT_VfM_guidance_document_August2012.pdf
- http://www.vappta.org/publications.asp

He was unable to provide information about the use of LCCA in comparing traditional procurement to P3 DBFOM projects.

Washington

Jeff Doyle, Director, Public/Private Partnerships, Washington State Department of Transportation, doylej@wsdot.wa.gov, (360) 705-7023.

We were referred to Jeff Doyle as the relevant contact for Washington State DOT, but were unable to reach him by phone or email.

National Resources

Comparing P3 Projects to Traditional Procurement

Value for Money Assessment for Public-Private Partnerships: A Primer, Guidance Documents, P3 Toolkit, Federal Highway Administration, December 2012.
http://www.fhwa.dot.gov/ipd/p3/toolkit/guidance_documents/vfm_for_ppps/toc.htm
This primer gives an overview of the use of Value for Money analyses to determine whether a P3 agreement would yield better value than conventional procurement. According to this primer:

> At the core of a P3 agreement is the allocation of project risks between the public and private partners in order to minimize the overall costs of risk by improving the management of risk. … The methodology for carrying out a VfM analysis varies, but its major elements generally involve:
>
> - Creating a Public Sector Comparator (PSC) which estimates the whole-life cost of procuring the project through the conventional approach, including operating costs and costs of risks, which are not typically considered in conventionally procured projects, except for major projects covered by FHWA's Cost Estimate Review (CER) process which captures a risk profile and challenges capital cost estimates using principles similar to those discussed in this primer;
> - Estimating the whole-life cost of the P3 alternative, either as proposed by a private bidder or a hypothetical Shadow Bid (SB) at the pre-procurement stage which attempts to predict the bidder's costs, financing structure and other assumptions; and
> - Completing an "apples-to-apples" risk-adjusted cost comparison, with appropriate consideration of qualitative factors.

Chapter 2 of the primer covers creating the PSC, which "estimates the hypothetical risk-adjusted cost if a project were to be financed, owned and implemented by the public sector." The PSC has five elements:

- The raw PSC, which "accounts for all life-cycle costs including public procurement costs, public oversight costs, and both capital and operating costs associated with building and maintaining the project and delivering the service over the pre-determined time"
- Financing costs
- Retained risk, which is "the value of any risk that is not transferable to the bidder"
- Transferable risk, which "the value of any risk that is transferable to the bidder"

- Competitive neutrality, which "adjusts the PSC for any competitive advantages or disadvantages that accrue to a public sector agency by virtue of its public ownership"

The VfM includes both a quantitative assessment of risk-adjusted costs and a qualitative assessment of what is not easily quantifiable. The estimate of the P3 option, called a shadow bid, is then compared to the PSC and actual bids. In general, there are higher baseline and financing costs for P3s, for which agencies receive a reduction in risks and disadvantages associated with public ownership. Chapter 3 discusses choosing a discount rate for comparing P3 costs to those of traditional procurement, which:

> … can have a heavy influence on which option appears to have a more attractive cost, and therefore, a heavy influence on the final result of the VfM analysis. Best practices recommend the utilization of multiple sensitivity tests using different discount rates to ensure that the outcome is not skewed or biased by the selected discount rate. … However, there is no international consensus on the appropriate methodology for calculating the rate to use and the risks that should be reflected in that rate. In some countries, fixed discount rates are used for all projects irrespective of their individual characteristics, while others determine project-specific discount rates.

The primer lists several methodologies for determining the discount rate without discussing them in detail.

Chapter 4 discusses life-cycle and financing costs. Life-cycle costs are "an overall cost estimate for the sum of all project elements (including costs of risks) anticipated throughout a project's life." Life-cycle costs include capital costs, operations costs, maintenance costs, reconstruction and rehabilitation, and overhead costs. FHWA provides the following guidance for estimating these costs:
http://www.fhwa.dot.gov/ipd/pdfs/project_delivery/major_project_cost_guidance.pdf.

Chapter 5 covers accounting for risk:

> A key component of P3 procurement involves the transfer of certain risks from the public agency procuring the project to the private sector partner. The concept of "transferring risk" requires that the private partner will be responsible for cost overruns or expenses associated with the occurrence of that risk.

This includes the risk of the project not being completed on time or on budget, and lower than expected revenues. A risk analysis involves a series of workshops to develop a "project risk register," or "risk matrix," that addresses risks and their probability, potential consequences, and how they will be allocated between public and private agencies. The chapter includes on overview of quantitative risk analysis using a formula developed by the Virginia Department of Transportation; and of risk analysis using a Monte Carlo computer simulation, which "produces a deterministic sample set of likely project outcomes and the probabilities of their occurrence."

Risks are allocated in one of three ways: as fully transferable to the private sector, fully retained by the public sector or shared between them. The risk analysis is critical to comparing P3 with other procurement methods:

> Risk allocation is at the core of P3s, which are structured around the sharing of risks (and rewards) between the public agency and private sector entity. It is the transfer of risks that provides incentives to the private entity to innovate in the approach it takes to delivering a project under a P3. One study of 17 P3 projects found that risk transfer valuations accounted for 60% of the total forecast cost savings under a P3 approach.
>
> Transferring too little risk to the private sector would constrain the value for money that could be achieved. Conversely, transferring too much risk (e.g., risk that the private sector is unable to manage) will result in high risk premiums, making the project more costly and driving down the value for money.

Chapter 6 covers estimating risks associated with toll revenue, and Chapter 7 covers quantitative assessment of VfM, including the comparison of the PSC to actual bids.

Related Resources:

P3 Toolkit, Office of Innovative Program Delivery, Federal Highway Administration, undated.
http://www.fhwa.dot.gov/ipd/p3/toolkit/index.htm

Analytical tools
http://www.fhwa.dot.gov/ipd/p3/toolkit/analytical_tools/index.htm

- **P3-VALUE Orientation Guide**, Federal Highway Administration, December 2012.
  http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_orientation_guide_020713.pdf
  From the website: The Guide reviews the different types of P3s … and their benefits and limitations, and explains how public agencies may evaluate different procurement options for a particular project. The Guide explains how the P3-VALUE can help users understand the processes and considerations that go into a rigorous quantitative analysis of P3 procurement options for transportation projects.

- **Risk Assessment Tool**
  Manual: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_riskassessment_manual_v1.pdf
  Excel tool: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_riskassessment_tool.xlsm
  From the website: This tool assists the user in understanding the process used in identifying, defining, valuing, allocating and mitigating risks. The output from this tool are used as inputs into the Public Sector Comparator and the Shadow Bid tools.

- **Public Sector Comparator Tool**
  User guide: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_psc_manual_v1.pdf
  Excel tool: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_psc_tool.xlsm
  From the website: This tool assists the user in understanding the process used in developing the hypothetical risk-adjusted cost if a project were to be financed, constructed, maintained and operated following the traditional public sector delivery model.

- **Shadow Bid Tool**
  User guide: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_shadowbid_manual_v1.pdf
  Excel tool: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_shadowbid_tool.xlsm
  From the website: This tool assists the user in understanding the process used in estimating the cost to deliver a project as a P3. It calculates the current value of future payments to be made by the government entity to the private contractor.

- **Financial Assessment Tool**
  Guide: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_financialassessment_manual_v1.pdf
  Tool: http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_value_financialassessment_tool.xlsm
  From the website: This tool assists the user in understanding the process used to calculate value for money under a P3 and to evaluate financial viability, including identification of required financial subsidies, cash flow deficiencies, and payment amounts.

Guidance documents
http://www.fhwa.dot.gov/ipd/p3/toolkit/guidance_documents/index.htm

- **Financial Structuring and Assessment for Public-Private Partnerships: A Primer**, Federal Highway Administration, December 2012.
  http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_financial_assessment_primer_122612.pdf
  From the website: This primer addresses Financial Structuring and Assessment for public-private partnerships (P3) and has been prepared as a companion document to FHWA's recent primers on *Value for Money Analysis* and *Risk Assessment for P3s*. Most P3 projects are financed by using a combination of private equity, debt, and (often) public subsidies.

- **Risk Assessment for Public-Private Partnerships: A Primer**, Federal Highway Administration, December 2012.
  http://www.fhwa.dot.gov/ipd/pdfs/p3/p3_risk_assessment_primer_122612.pdf
  From the website: This primer addresses Risk Assessment for public-private partnerships (P3) and has been prepared as a companion document to FHWA's recent primers on *Value for Money Analysis* and *Financial Structuring and Assessment for P3s*.

Checklists
http://www.fhwa.dot.gov/ipd/p3/toolkit/check_lists/index.htm

Fact sheets
http://www.fhwa.dot.gov/ipd/p3/toolkit/fact_sheets/index.htm

Resources
http://www.fhwa.dot.gov/ipd/p3/resources/index.htm

Value for Money State of the Practice, Federal Highway Administration, December 2011.
http://www.fhwa.dot.gov/ipd/pdfs/p3/vfm_state_of_the_practice.pdf
This report includes chapters on national and international methodology for a VfM analysis, the process through which public agencies compare traditional procurement with P3 alternatives. "At a high level, [this process] involves:

- Creating a Public Sector Comparator (PSC) which estimates the whole-life cost of carrying out the project through traditional approaches.
- Estimating the whole-life cost of the P3 alternative (either as proposed by a private bidder or a hypothetical 'shadow bid' at the pre-procurement stage).
- Completing an 'apples-to-apples' comparison of the costs of the two approaches."

The report includes an overview and case studies for the use of VfM in Australia, Canada and the United Kingdom.

A Guidebook for the Evaluation of Project Delivery Methods, Transit Cooperative Research Program, TCRP Report 131, 2009.
http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_131.pdf
From the abstract: [This guidebook] describes various project delivery methods for major transit capital projects. The guidebook also includes an evaluation of the impacts, advantages, and disadvantages of including operations and maintenance as a component of a contract for a project delivery method. The project delivery methods discussed are design-bid-build (DBB), construction manager at risk (CMR), design-build (DB), and design-build-operate-maintain (DBOM). The guidebook offers a three-tiered project delivery selection framework that may be used by owners of transit projects to evaluate the pros and cons of each delivery method and select the most appropriate method for their project. Tier 1 is a qualitative approach that allows the user to document the advantages and disadvantages of each competing delivery method. The user can then review the results of this analysis and select the best delivery method. If, at the conclusion of this analysis, a clear option does not emerge,

the user then moves on to Tier 2. Tier 2 is a weighted-matrix approach that allows the user to quantify the effectiveness of competing delivery methods and select the approach that receives the highest score. The third tier uses principles of risk analysis to evaluate delivery methods. The selection framework may also be useful as a means to document the decision in the form of a Project Delivery Decision Report. The guidebook will be helpful to transit general managers, policymakers, procurement officers, planners, and consultants in evaluating and selecting the appropriate project delivery method for major transit capital projects.

Major Project Program Cost Estimating Guidance, Federal Highway Administration, January 2007.
http://www.fhwa.dot.gov/ipd/pdfs/project_delivery/major_project_cost_guidance.pdf
From the introduction: This guidance is for the preparation of a total program cost estimate for a major project. … The total program cost estimate includes construction, engineering, acquisition of right-of-way, and related costs.

P3 Concessions (DBFOM) Guidance

Public-Private Partnership Concessions for Highway Projects: A Primer, Office of Innovative Program Delivery, Federal Highway Administration, October 2010.
http://www.fhwa.dot.gov/ipd/p3/resources/primer_highway_concessions_p3.htm
From the introduction: This primer provides a brief introduction to public-private partnership (P3) concessions for transportation project finance.

LCCA for Pavement

Best Practice Methodology for Calculating Return on Investment for Transportation Programs and Projects, *NCHRP Report 8-36*, Task 62, September 2008.
http://statewideplanning.org/wp-content/uploads/240_NCHRP-8-36-62.pdf
This report develops a best practice methodology for calculating return on investment (ROI) for transportation programs and projects. It includes a chapter about LCCA, with a section on project-level tools for measuring life-cycle costs (pages 1-3 to 1-6) and a section with examples of the use of LCCA in ROI analyses (page 1-18 to 1-20).

Life-Cycle Cost Analysis Primer, Office of Assessment Management, Federal Highway Administration, Report No. FHWA-IF-02-047, August 2002.
http://isddc.dot.gov/OLPFiles/FHWA/010621.pdf
This document outlines FHWA's guidance on using LCCA to compare the total costs of competing design or preservation alternatives. Pages 11 to 18 describe the steps of the LCCA methodology:

1. Establish design alternatives.
2. Determine activity timing (as in a schedule for maintenance and rehabilitation).
3. Estimate costs (both to the agency and to the traveling public in terms of vehicle operating costs, travel time costs, etc.).
4. Compute life-cycle costs.
5. Analyze the results.

Step 4 (pages 14 to 17) covers economic analysis techniques for accounting for the changing value of money over time (discounting). FHWA recommends the "present worth" or "present value" approach; also commonly used is the equivalent uniform annual cost approach. Also covered are computational approaches: the deterministic approach, which assigns LCCA variables to fixed values based on historical data and judgment, and uses this to determine a single estimate; and sensitivity analysis, which shows how estimates change with inputs:

> In this way input variables may be ranked according to their impacts on the bottom-line conclusions. This information is important to decision-makers who want to understand the variability associated with

alternative choices. It also allows the agency to identify those input factors or economic conditions that warrant special attention in terms of their estimation procedures.

Page 19 includes a brief LCCA example.

Related Resources:

Life-Cycle Cost Analysis, Transportation Performance Management, Federal Highway Administration, 2013.
https://www.fhwa.dot.gov/infrastructure/asstmgmt/lcca.cfm

RealCost, Version 2.5, Transportation Performance Management, Federal Highway Administration, 2013.
http://www.fhwa.dot.gov/infrastructure/asstmgmt/lccasoft.cfm
From the website: This software provides a tool to perform LCCA for pavement selection in accordance with FHWA best practice methods. These best practices are outlined in the FHWA's Life-Cycle Cost Analysis Primer, and the software methodology is fully documented in the FHWA's Life-Cycle Cost Analysis Technical Bulletin.

This website provides access to compressed files that contain the setup programs for RealCost, which uses Microsoft Excel spreadsheets.

RealCost Life-Cycle Cost Analysis User Manual, Version 2.1, Office of Asset Management, Federal Highway Administration, May 2004.
http://www.fhwa.dot.gov/infrastructure/asstmgmt/rc210704.pdf
From the introduction: This manual provides direction on how to enter the data required to perform LCCA and how to incorporate the software's outputs into project-level decisionmaking.

LCCA for Bridges

LTBP: Long-Term Bridge Performance Program, Turner-Fairbank Highway Research Center, Federal Highway Administration, June 28, 2011.
http://www.fhwa.dot.gov/research/tfhrc/programs/infrastructure/structures/ltbp/index.cfm
Among the LTBP program's goals is the compilation of a comprehensive database of quantitative information from a representative sample of bridges nationwide. The study will provide a detailed and timely picture of bridge health and better bridge management tools. Among the benefits expected to result from analysis of the data collected through the program is the effective use of LCCA.

Bridge Life-Cycle Cost Analysis, *NCHRP Report 483*, 2003.
http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rpt_483a.pdf
From the summary: [This report] establishes guidelines and standardizes procedures for conducting life-cycle costing. … The Guidance Manual outlines the concept of life-cycle costing, identifies sources for data, and explains the methodology by which life-cycle costing can be conducted. [An accompanying CD-ROM] contains appendices to the Report, the User's Manual and Guidance Manual … and the bridge life-cycle cost analysis software. … The software considers agency and user costs and enables the user to consider both vulnerability and uncertainty in the analysis.

BridgeLCC, Version 2.0, National Institute of Standards and Technology, Technology Administration, U.S. Department of Commerce, September 2003.
http://www.nist.gov/el/economics/bridgelcc.cfm
From the website: BridgeLCC is a user-friendly life-cycle costing software developed by the National Institute of Standards and Technology (NIST) to help bridge engineers assess the cost effectiveness of new, alternative construction materials. The software uses a life-cycle costing methodology based on both ASTM standard E 917 and a cost classification developed at the NIST. BridgeLCC is specifically tailored for comparing new and conventional bridge materials—for example, high-performance concrete versus conventional concrete—but works equally well when analyzing alternative conventional materials. Also, it can be used to analyze pavements, piers and other civil infrastructure.

Related Resource:

> **BridgeLCC 2.0 Users Manual: Life-Cycle Costing Software for the Preliminary Design of Bridges**, National Institute of Standards and Technology, Technology Administration, U.S. Department of Commerce, Report No. NIST GCR 03-853, September 2003.
> http://www.nist.gov/customcf/get_pdf.cfm?pub_id=907943
> This user manual includes step-by-step instructions for using BridgeLCC and example analyses.

Related Research

LCCA for P3 Projects

Public Private Partnerships in California, Final Report No. 2 and No. 3, METRANS Transportation Center, July 2011.
http://www.metrans.org/Other_Research/PublicPvtPart-CA7-2011.pdf
This is one of just a few documents we found that directly addresses the use of LCCA for P3s (as well as other tools needed for evaluating P3s, including demand analysis and modeling, construction cost variability and uncertainty, and fiscal analysis and modeling). The authors' findings (page 4) reaffirm the results of the current TRS, to the effect that there seem to be few other publicly available reports directly addressing the use of LCCA for P3 projects (DBFOM or otherwise):

> While our literature search provided information on the prevalence and state of practice of life cycle costing for individual building construction projects, it did not yield any reports that provided a detailed description of LLC for P3s. Caltrans indicated that life cycle cost estimation is incorporated into the larger cost/benefit analysis for prospective California highway and transit improvement projects (2007). But, we do not know whether life cycle costing is an uncommon practice in P3 projects, or whether such costing details are not published, or whether our search was not sufficiently extensive to find such reports.

The authors note (page 6) that whatever the life-cycle costs, "financing costs are an omnipresent cost center for transportation capital projects." Further, O&M costs that play a large role in LCCA for such projects are very difficult to estimate (page 7). The authors recommend using historical O&M cost data and "consulting Whitestone Research's Building Maintenance and Repair Cost Reference (2010), which, despite its focus on buildings, also gives 'service life estimates for specific building components' (Fuller 2010)." (The 2012-2013 Whitestone cost reference is available at https://secure.whitestoneresearch.com/products/view/FAC-OPS-2012-2013-INT-PDF.) The authors also recommend use of the U.S. Army Corps of Engineers' publicly available O&M databases for previous infrastructure projects. For new types of infrastructure assets with no historical data, the authors recommend combining the costs of components from previous projects (page 8). But ultimately (pages 9 to 10):

> Since LCC can only be reliably estimated at the end of the project planning process, it is not a convenient tool for evaluating P3 project alternatives. Fuller (2010) notes that accurate LCC estimates are available

so late in the design process that opportunities for cost-reducing design changes are likely to have already been missed. Ultimately, the inclusion of LCC review in the P3 development process must occur—by the very definition of LCC—once project design I engineering plans have been finalized. But, in the case of design-build (DB) P3 contracts, the individual contractors bid on the price of the project and have, presumably, conducted their own LCC analysis of the given project. It is up to the public sponsor, then, to either verify those estimates or to judge them against the sponsor's own LCC estimate for the project and choose the project's contractor accordingly. This cost-comparison process is covered in more detail in the section titled d) Fiscal Analysis and Modeling on page 13.

The Fiscal Analysis and Modeling section covers the VfM analysis process for comparing a P3 option to traditional procurement options. The current TRS also includes national guidance and related research covering this process.

Public Private Partnership Approach to an Integrated Life-Cycle Management of Highway Infrastructure in Hong Kong, International Association for Bridge and Structural Engineering Symposium, Weimar, Germany, 2007.
Abstract at: http://trid.trb.org/view/2007/C/987395
From the abstract: Transport infrastructure system is central to economic activities and important to economic growth. The rapid economic growth of Hong Kong, especially in last two decades, leads to high demands of a comprehensive and effective highway networks. Conventional procurement approach without the integration of probabilistic life cycle cost model induces substantial long term maintenance cost. The main idea of this paper is to develop a research framework for predicting the service life by using appropriate corrosion deteriorating model on reinforced concrete structures. The deteriorating model will then be integrated into life-cycle cost analysis in dealing with long term maintenance and repair strategy. Once deteriorating and life-cycle cost models of highway structures have been established, proper public private partnership procurement strategies and associated financing method and project period determination could be established.

"Risk-Based Life-Cycle Cost Analysis of Privatized Infrastructure," H. Osman, *Transportation Research Record*, Vol. 1924, 2005: 192-196.
Abstract at: http://trid.trb.org/view/2005/C/775728
From the abstract: One main shortcoming in the use of life-cycle cost analysis (LCCA) for analyzing long-term infrastructure projects is the uncertainty in the value of the LCCA parameters. Probabilistic LCCA incorporates these elements of uncertainty by assigning probabilistic values to cost and performance parameters. Studies that have performed probabilistic LCCA in the infrastructure domain propose a probability-based framework for alternative comparison. Although such frameworks convey a wealth of probabilistic information, they are not well suited to decision making. This study proposes a risk-based framework that is similar to techniques used in portfolio risk management. To illustrate the use of such a framework, a Monte Carlo simulation is used to perform probabilistic LCCA for a highway project. Two highway investment opportunities with varying risks and returns are analyzed. The decision framework is used to compare the simulation results with some common investment opportunities in the market. This framework enables private-sector investors to assess the relative risks and returns of alternative infrastructure projects. The fact that similar frameworks are used in the financial investment domain makes this approach suitable for the economic analysis of privatized infrastructure.

P3 Concessions (DBFOM)

Policy Issues in U.S. Transportation Public-Private Partnerships: Lessons from Australia, Mineta Transportation Institute, Report 09-15, July 2010.
http://ntl.bts.gov/lib/34000/34000/34055/2807_09-15.pdf
From the abstract: In this report, the authors examine Australia's experience with transportation public-private partnerships (PPPs) and the lessons that experience holds for the use of PPPs in the United States. Australia now has decades of experience in PPP use in transportation, and has used the approach to deliver billions of dollars in project value. Although this report explores a range of issues, the authors focus on four policy issues that have been salient in the United States: (1) how the risks inherent in PPP contracts should be distributed across public

and private sector partners; (2) when and how to use non-compete (or compensation) clauses in PPP contracts; (3) how concerns about monopoly power are best addressed; and (4) the role and importance of concession length. The study examines those and other questions by surveying the relevant literature on PPP international use. The authors also interviewed 23 Australian PPP experts from the academic, public and private sectors, and distilled lessons from those interviews.

Privatizing Transportation through Public-Private Partnerships: Definitions, Models, and Issues, Kentucky Transportation Center, University of Kentucky, Research Report KTC-06-09/SPR-05-2F, May 2006.
http://www.ktc.uky.edu/files/2012/06/KTC_06_09_SPR_302_05_2F.pdf
From the abstract: This report serves as a primer on public-private partnerships for the delivery of transportation infrastructure and services. It provides an overview of the concept of public-private partnerships, presenting a broad definition of the privatization approach, comparing it to contracting out, and discussing a theoretical framework for understanding why, when and how partnerships are appropriate as a privatization strategy. The report also reviews six public-private partnership models—design bid build, private contract fee services, design build, design build operate maintain or build operate transfer, design build finance operate, and build own operate—identified by the Federal Highway Administration as available for use by transportation agencies considering privatizing transportation projects. Adopting a public-private partnership involves two important decisions—(1) the decision to privatize via a public-private partnership; and (2) the decision on which partnership model to adopt—which are also addressed. This report also discusses key issues and factors necessary for successful transportation public-private partnerships and provides a glossary of terms as a reference for understanding the terminology and language of privatization and public-private partnerships.

"Managing Your Money: Project Delivery Methods," F. Kessler, *Mass Transit*, Vol. 31, Issue 2, April 2005: 26-39.
http://www.nossaman.com/managing-your-money-project-delivery-methods
From the abstract: This article reviews a survey and report on design-build-operate-maintain (DBOM) and design-build (DB) project delivery methods in passenger rail industry. The report was based on a review of available literature, interviews with various commentators on the subject and interviews with key officials regarding DBOM passenger rail projects. The primary focus of the interviews was to determine the project owner's level of satisfaction with DBOM and to obtain the benefit of any lessons learned relating to the operations and maintenance (O&M) phase of the project. Information obtained from interviews and review of materials provides corroborative evidence of the validity of using DBOM for passenger rail transit projects. DBOM has been found to be capable of delivering following advantages: contractual integration; reduced system integration risk; quality control and life cycle cost efficiency; increased cost certainty; better cost-saving innovations; social goals achievable with DBOM; and DBOM preserves public control of fare structure. Considering the listed advantages, DBOM should continue to receive serious attention as an alternative to more traditional methods of delivering and operating passenger rail transit projects.

Comparing P3 Projects to Traditional Procurement

Comparing Public-Private Partnerships with Traditional Procurement: Incorporating Considerations from Benefit-Cost Analysis, Transportation Research Board 92nd Annual Meeting, 2013.
http://amonline.trb.org/2vdfh9/1
From the abstract: Value for Money (VfM) analysis processes have been used in evaluating various approaches to procure a highway project, to help government officials determine whether, from the perspective of the public agency's financial balance sheet, a public-private partnership (P3) is likely to be preferable compared to traditional approaches to procuring the same highway project. VfM is an analysis tool that primarily focuses on the financial impacts of different procurement models from the perspective of the agency sponsoring a project. Non-financial impacts such as benefits to users or non-users of a facility are not generally considered, or are relegated to a qualitative evaluation. Quantitative VfM analysis has normally been conducted once an agency has decided to undertake a project and wishes to evaluate how to deliver it in a way that has the least financial impact on its balance sheet. Benefit-cost analysis (BCA), on the other hand, has been used by public agencies earlier in planning and project development phases to determine whether an investment is worth making. BCA is a more

comprehensive tool which is capable of quantifying and monetizing non-financial impacts, such as benefits to users or non-users that may accrue from earlier delivery of a project. This paper discusses how BCA considerations may be incorporated in a more analytically comprehensive approach to comparing P3s with traditional procurement, by using some of the results from VfM analysis and adding new items that are consistent with a BCA approach. The paper illustrates the use of the approach using a hypothetical project.

Design of Concession and Annual Payments for Availability Payment Public Private Partnership (PPP) Projects, Construction Research Congress, 2012.
http://rebar.ecn.purdue.edu/crc2012/papers/pdfs/-301.pdf
From the abstract: Public Private Partnerships (PPPs) have emerged as an important project delivery method in the United States, where funding agencies are finding it difficult to support the increasing demand of highway projects. The United States has witnessed several types of PPPs during the past two decades, and a recent trend shows that newer designs of PPPs are being adopted for upcoming projects. Availability Payment, an extensively used PPP in the United Kingdom and Canada, is the newest performance based PPP implemented in California and Florida. Extensive use of these PPPs in other countries strongly supports the belief of their widespread acceptance in the United States. The literature review indicates that concession term and availability payments are the most important parameters of this PPP. However, the public agencies do not have any solid tool that can design these parameters and have to largely depend on traditional methods. This research work introduces a hybrid model that will allow the public sector to determine the upper limit of availability payments and concession duration. The hybrid model has been developed by combining the stochastic dynamic programming model with multi-objective optimization principles. The model allows using private sector's financial condition, uncertainty of private sector's performance and the remaining life cycle costs of the asset. The use of this model ensures cost savings for the public sector and financial stability for the private sector simultaneously. This research includes an analysis of the CALTRANS' Presidio Parkway Project as a case study to demonstrate the use of the model.

"Public-Private Partnerships: When are They Appropriate for Transportation Infrastructure?," R. Resor, N. Tuszynski, *Transportation Research Record*, Vol. 2288, 2012: 40-47.
http://amonline.trb.org/1sg6ku/1sg6ku/1
From the abstract: Proposed restrictions on federal funding for surface transportation projects are forcing state and local governments to consider alternative funding and financing mechanisms. The Transportation Investment Generating Economic Recovery and Transportation Infrastructure Finance and Innovation Act and other programs have successfully leveraged private dollars, but other programs are still needed to fund the surface transportation infrastructure gap. The U.S. Department of Transportation has been exploring new programs for innovative financing; one is public-private partnerships (P3s). P3s allow private firms to participate in the financing of an infrastructure project and take either part or all of the business risks and earn a market return on their investment as compensation. Conclusions from this analysis are the following. First, although accurate revenue forecasts are essential if a project is to be a success, making accurate estimates of revenues has proved difficult. Second, the success of any P3 depends on accurate measurement and sharing of risk. Deals that place all risk on the private sector are likely to fail. Projects in which the public sector takes more of the business risk are more likely to succeed. Third, public outreach, explanation, and strategic communication are essential, especially if the privatization will result in significant pricing changes for users. Fourth, due diligence and a thorough cost-benefit analysis are essential for public and private parties. Private firms typically have more experience in P3s and project financing. The public sector must have similar information and may need to contract out the cost analysis procedures. Fifth, if a project generates a revenue stream, then a private firm is more likely to embrace a P3 agreement.

"The Global Experience with Infrastructure Public-Private Partnerships," M. Siemiatycki, *Planning & Environmental Law*, Vol. 64, Issue 9, August 2012: 6-11.
http://www.tandfonline.com/doi/pdf/10.1080/15480755.2012.718624
From the abstract: Countries throughout the world are faced with aging infrastructure and limited budgets. As a result, many are turning to public-private partnerships (PPPs) to deliver large-scale public infrastructure projects. Although PPPs are widely supported by a variety of political affiliations and governments, they can also be

controversial. This paper provides a brief overview of PPPs to assist municipal planners in weighing their benefits and drawbacks. A brief history is provided and contemporary practices are described. The rationales and motivations for choosing a PPP structure are summarized, along with the shortcomings of PPPs. The author concludes that PPPs are neither inherently positive nor inherently negative. The failure or success of the process is determined by the quality of the processes through which the PPP is structured, planned and delivered. The ways that key project risks are allocated between the partners also determines the end result. Shortcomings of PPPs can be addressed by publicly releasing key project information during the project planning process; examining mechanisms to transfer project risks to the private sector; and hiring experienced staff and advisors who can protect the public interest during the entire process.

State-of-the-Art of Value for Money Analysis: Determining the Value of Public-Private Partnerships, Transportation Research Board 90th Annual Meeting, 2011.
http://amonline.trb.org/12l9r6/12l9r6/1
From the abstract: Recent high-profile public-private partnerships (P3s) have generated significant interest in utilizing novel contracting methods to reduce costs and transfer risks associated with transportation infrastructure. Determining that a P3 will outperform a traditional approach to construction, financing or maintenance is not easy, however. Uncertain costs and risks extend far into the future. Governments in the UK, Canada and Australia use similar approaches to assessing P3 projects to determine their overall expense relative to the overall expense of traditional procurement or management. These "Value for Money" (or VfM) approaches involve developing a Public Sector Comparator which estimates total public-sector project cost, and then comparing that to the P3 cost estimate. Setting a value for risks retained and for risks transferred between the public and private sectors is the largest challenge. Governments in the three countries do through risk-assessment processes and meetings. Countries differ in their approaches to Value for Money analyses: the UK does the analyses at three levels—the program, procurement and project levels—increasing its quantitative precision with each step. In Canada, Quebec and British Columbia include VFM analyses in the larger assessment of a project's overall business case, integrating the process and doing it only once. In Australia, guidelines direct that VfM analyses be done only after the project is defined and proposals from contractors have been submitted. In all cases, the VfM process is laborious and requires skilled analysis to ensure accuracy. The US has limited experience with P3s and almost none with VfM.

Feasibility Study Guideline for Public Private Partnership Projects, Vol. 1 and 2, University Transportation Center for Alabama, UTCA Report No. 08403, October 2010.
http://ntl.bts.gov/lib/36000/36000/36066/930-722R_Final_Report.pdf
From the abstract: For many state Departments of Transportation (DOTs), a shortage of transportation funds requires the agencies to combat that shortage by implementing innovative programs. Nationwide, Public Private Partnerships (PPP) in transportation projects are increasingly gaining acceptance as an alternative to the traditional approaches of project delivery and public financing. Due to the complexity of scale of PPP projects, it remains a challenging task for state DOTs to identify PPP opportunity while protecting public interest. This report presents a framework for PPP feasibility study at the early phase of project development. The financing analysis process model is developed and refined for the guideline. An Excel-based software package named P3FAST is developed and attached with the research report to facilitate the PPP feasibility study for transportation agencies. An example is discussed to demonstrate the analysis process and outcome. Three types of PPP models are compared and evaluated to achieve a feasible financing structure. The report includes two volumes: volume I research report and volume II feasibility study guideline.

Evaluation of Public Private Partnership Proposals, University Transportation Center for Alabama, UTCA Report No. 08402, June 2010.
http://ntl.bts.gov/lib/33000/33100/33140/08402_Final_Report_6-2-10.pdf
From the abstract: This report documents the current practices of Public-Private Partnerships in transportation investment, summarizes the PPP evaluation and implementation processes in leading states, investigates alternative financing options available for transportation projects, and assesses the legal environment and public opinion with respect to PPP implementation. The I-10 connector project has been used as an example to illustrate

an appropriate method for Alabama to evaluate the economic viability of PPP proposals in an effort to protect public interest.

"Value for Money Analysis in U.S. Transportation Public-Private Partnerships," D. Morallos, A. Amekudzi, C. Ross, M. Meyer, *Transportation Research Record*, Vol. 2115, 2009: 27-36.
http://people.ce.gatech.edu/~aa103/ValueforMoney.pdf
From the abstract: Value for money (VfM) assessment has been used by various public agencies worldwide as a tool to compare the viability of pursuing a project as a public-private partnership (PPP) with traditional procurement. Although sources have described the use of VfM in Europe, Australia, and parts of Asia, relatively little is known of the use of such tools in the United States. This paper presents the results of a survey of state transportation agency officials on their PPP practices and their use of assessments and tools to evaluate PPPs. From the evaluation, the paper provides a guided reference for public agencies looking to adopt the VfM methodology in their current PPP decision-making framework. It also provides recommendations for future adaptations to enhance the VfM tool's level of effectiveness.

"Public Sector Comparators for UK PFI Roads: Inside the Black Box," R. Bain, *European Transport Conference, 2009 Proceedings*, 2009.
Abstract at: http://trid.trb.org/view/2009/C/1108032
From the abstract: The hypothetical, risk-adjusted cost of a project financed, owned and implemented by government is called a public sector comparator (PSC). Public procurement decision-makers use a PSC as a yardstick against which private investment proposals are evaluated. Because the detail of a PSC is usually kept confidential by public sector procuring agencies, informed discussion and open debate has been restricted. This paper uses material released by the UK Highways Agency to recreate the PSCs used for the evaluation of the first eight road projects to be promoted under the UK's private finance initiative (PFI). Alternative assumptions regarding project risks were modeled using different levels of optimism-bias uplift. The impact on value-for-money of using different discount rates was evaluated. Although it has generally been assumed that any reduction in the discount rate used in PSC calculations will favor conventional procurement over PFI-type contracting arrangements, this research demonstrates that the relationship between the discount rate and the attractiveness of using private finance is not that simple. The use of the recommended test discount rate of 3.5% reduces the value-for-money from most of the eight projects, the program as a whole remains value-for-money from the public perspective. Value-for-money continues to be demonstrated when construction cost optimism-bias uplifts are significantly reduced.

"Review of Value-for-Money Analysis for Comparing Public-Private Partnerships with Traditional Procurements," D. Morallos, A. Amekudzi, *Transportation Research Board 87th Annual Meeting Compendium of Papers DVD*, Report No. 08-2864, 2008.
Abstract at: http://trid.trb.org/view/2008/C/848804
From the abstract: Various authors have written about public private partnerships (PPPs) and their ability to provide public sectors with Value for Money (VfM). However, few literary sources provide a background on the state of the practice of VfM. This paper provides an overview of VfM practice across the globe, focusing particularly on the practice of three agencies with well-developed VfM guidance and tools—Partnerships Victoria, The United Kingdom's Her Majesty Treasury Department, and Partnerships British Columbia. In addition, it discusses the critiques regarding VfM and suggestions brought up in the literature to improve this type of assessment. The authors find that although VfM analyses can be faulty, they are often valued as adequate tools that allow public agencies to determine the added value—benefits, costs and risks—that can result from a PPP option versus a traditional procurement. With targeted incentives to develop the appropriate data, and as the applications of these tools continue to evolve in robustness, such assessments and tools can be an extremely valuable resource for U.S. state agencies looking to provide services and facilities through the PPP option.

"The State of the Practice of Value for Money Analysis in Comparing Public Private Partnerships to Traditional Procurements," D. Morallos, A. Amekudzi, *Public Works Management & Policy*, Vol. 13, Issue 2, October 2008: 114-125.
Abstract at: http://trid.trb.org/view/2008/C/878063
From the abstract: A value for money (VfM) analysis should be conducted to determine the value of pursuing a project through a public-private partnership (PPP) versus a traditional procurement. This article provides a state-of-the-practice review of VfM analysis using examples from Australia, Canada, Europe, Africa, and Asia. This article evaluates reviews of VfM, noting the weaknesses and strengths of the methodology. Using the information derived from the evaluation, this article provides a guided reference for public agencies looking to adopt this VfM methodology in their current PPP decision-making framework. It is recommended that improvements to current VfM methodology be made in the risk evaluation and allocation strategies. In addition, the VfM methodology needs to take greater consideration of the role of the qualitative factors in making the final decision to pursue a PPP or not and needs to incorporate wider social costs and benefits. Despite these limitations, the VfM methodology can successfully provide the public sector with a simple tool to account for the costs, benefits and risk involved in a project and can be a factor (but not the only one) in deciding whether or not to pursue a project as a PPP.

VfM—Risk

"A Simulation Approach for Estimating Value at Risk in Transportation Infrastructure Investment Decisions," S. Mishra, S. Khasnabis, S. Dhingra, *Research in Transportation Economics*, Vol. 38, Issue 1, 2013: 128-138.
http://www.ce.memphis.edu/smishra/Publications/RITE2012.pdf
From the abstract: Traditional economic analysis techniques used in the assessment of Public Private Partnership (PPP) projects are based upon the assumption that future cash flows are fully deterministic in nature and are not designed to account for risks involved in the assessment of future returns. In reality, many of these infrastructure projects are associated with significant risks stemming from the lack of knowledge about future cost and benefit streams. The fundamental premise of the PPP concept is to efficiently allocate risks between the public and the private partner. The return based on deterministic analysis may not depict a true picture of future economic outcomes of a PPP project for the multiple agencies involved. This deficiency underscores the importance of risk-based economic analysis for such projects. In this paper, the authors present the concept of Value-at-Risk (VaR) as a measure of effectiveness (MOE) to assess the risk share for the public and private entity in a PPP project. Bootstrap simulation is used to generate the risk profile savings in vehicle operating cost, and in travel time resulting from demand-responsive traffic. The VaR for Internal Rate of Return (IRR) is determined for public and private entity. The methodology is applied to a case study involving such a joint venture in India, the Mumbai Pune Expressway/National Highway 4 (MPEW/NH4), and fiscal implications from the perspective of the public and the private entities are examined. A comparison between deterministic and risk based economic analysis for MPEW/NH4 is presented. Risk analysis provides insightful results on the economic and financial implications from each participant's viewpoint.

"Risk Allocation in Public-Private Partnership Infrastructure Projects in Developing Countries: Case Study of the Tehran-Chalus Toll Road," G. Heravi, Z. Hajihosseini, *Journal of Infrastructure Systems*, Vol. 18, Issue 3, 2012: 210-217.
Abstract at: http://trid.trb.org/view/2012/C/1215981
From the abstract: All over the world, limited funding for the development and operation of infrastructure projects propels governments to attract private investment and enter public-private partnerships (PPPs). Different types of PPPs have been practiced in infrastructure development in both developed and developing countries, with diverse results. Although PPPs have many advantages, they involve some complexities in planning, execution, and monitoring and control that vary according to specific project and country conditions. This paper provides a case study of the Tehran–Chalus Toll Road project, one of the largest highway projects in Iran. The authors analyze the contract organization of the PPP project, identify the most important risks, compare the project's organization with successful and unsuccessful experiences in similar PPP projects, and suggest ways to improve risk allocation to achieve better project performance for this and other PPP projects in developing countries.

Protecting Public Interests in Public-Private-Partnership Arrangements for Highway Improvement Projects, Final Report, University of Florida, Gainesville, 2012.
http://ntl.bts.gov/lib/45000/45600/45651/yin_cms_2010-002_final.pdf
From the abstract: Engaging private investors and entrepreneurs through public-private partnership (PPP) in constructing and operating transportation facilities has emerged as one of the viable options to meet the challenges of funding the development and maintenance of transportation systems. PPP developments lead to additional capacities without (directly) using public funding, faster delivery of projects, risk sharing with the private sector and more efficient operations and management of facilities. However, the profit-maximizing private sector may compromise public interests by, e.g., imposing higher toll rates or failing to offer high quality of service. A rigorous up-front analysis is needed to better protect public interests prior to entering into a PPP arrangement. This report considers the problem of selecting highway projects for the PPP development with the objective of improving the social benefit while ensuring the marketability of those selected. The problem has a structure of a tri-level leader-follower game and is formulated as a mixed integer program with equilibrium constraints. Without solving the associated problem, the authors show that optimal tolls and travel times on selected PPP highway projects can be determined from their attributes under mild assumptions. This leads to an efficient heuristic algorithm for solving the project selection problem.

"Risk Allocation in the Operational Stage of Private Finance Initiative Projects," N. Wang, *Journal of Performance of Constructed Facilities*, Vol. 25, Issue 6, December 2011: 598-605.
Abstract at: http://trid.trb.org/view/2011/C/1132153
From the abstract: A qualitative analysis based on four private finance initiative (PFI) projects during the operational monitoring stage is demonstrated in this paper. The investigation focused on how the design and contractual risks were reflected and handled at the operational stage of the PFI projects. Some unforeseen project risks that occurred during the operational stage were highlighted, and more focus on the risk control of future PFI procurement from the various parties involved is recommended. The research process includes documentation review and a semistructured interview survey. It is found that the public sector still is liable to some unforeseen risks during the operational stage, although the private sector takes most of the risks according to the contract. Recommendations are made for further research and improvements on the PFI project management.

"Risk Allocation in Public-Private Partnership Infrastructure Projects: Comparative Study," Y. Ke, S. Wang, A. Chan, *Journal of Infrastructure Systems*, Vol. 16, Issue 4, December 2010: 343-351.
Abstract at: http://trid.trb.org/view/2010/C/1089411
From the abstract: It is important for the public and private sectors to establish effective risk allocation strategies for public-private partnership (PPP) projects in order to achieve a more efficient process of contract negotiation and reduce the occurrence of dispute during the concession period. This paper aims first to identify the preferred risk allocation in PPP projects of mainland China and the Hong Kong Special Administrative Region (referred to as China and Hong Kong from here onward) and then to compare these preferences to those in the U.K. and Greece by a questionnaire survey based on the same risk register. The results in China and Hong Kong show that the public sector preferred to retain most political, legal, and social risks, and share most microlevel risks and force majeure risk; while the majority of mesolevel risks were preferred to be allocated to the private sector. The comparative analyses of risk allocation preference among these four countries/jurisdictions indicate that the public sector in the U.K. was most able to transfer the PPP risks to the private sector, followed by Greece, Hong Kong, and China. Respondents from Greece exhibited the greatest degree of support for the public sector to retain the macrolevel risks. All respondents agreed that private investors should take a more active role in managing the mesolevel risks. Respondents from China and Hong Kong considered that majority of the microlevel risks should be shared equally between the public and private sectors, while respondents from Greece indicated that the private sector should take a more active role in managing the microlevel risks. The comparative study provides international investors a better understanding of risk preferences in different countries/jurisdictions so that they could adjust their strategies according to the specific situation and achieve better value for money in running their PPP projects.

Valuing Public Sector Risk Exposure in Transportation Public-Private Partnerships, University Transportation Center for Mobility, Report No. UTCN 08-41-01, October 2010.
http://utcm.tamu.edu/publications/final_reports/Aldrete_08-41-01.pdf
From the abstract: This report presents a methodological framework to evaluate public sector financial risk exposure when delivering transportation infrastructure through public-private partnership (PPP) agreements in the United States (U.S.). The framework is based on U.S. and international best practices to quantify public sector risk exposure in infrastructure. Transportation agencies worldwide and across the U.S. are increasingly using PPPs as a mechanism to deliver much needed transportation infrastructure. The key premises behind the increased use of PPPs as project delivery mechanisms are the interdependent concepts of value for money (VfM) and the optimum allocation of project risks to the partner most capable to manage them. Internationally, countries with relatively longer experience in PPPs have devised different methodological approaches to measure and manage risk exposure, and a handful of other countries have developed more sophisticated and well-documented methodologies to value risk in the context of VfM. However, transportation agencies in the U.S. have not developed structured processes to measure risk exposure and to integrate the cost of risk bearing into the process of evaluating PPP projects. More specifically, U.S. transportation agencies—including agencies in Texas—currently lack a well-documented approach to consistently evaluate and account for public sector financial risk exposure in a PPP, and a methodology to incorporate the cost of risk bearing in the analysis of PPP projects.

"Risk-Based Cost and Schedule Estimation for Large Transportation Projects," M. Maher, A. McGoey-Smith, *Proceedings of the European Transport Conference*, 2006.
http://dandelion-patch.mit.edu/afs/athena/course/11/11.951/oldstuff/albacete/Other_Documents/Europe%20Transport%20Conference/innovative_transport_i/riskbased_cost_and1510.pdf
From the abstract: Estimates of cost and schedule on large infrastructure projects, such as new motorways, bridges, transit projects, pipelines or oil and gas processing plants, need to be completed at early stages in the feasibility study or preliminary design to allow rational decision-making with respect to necessary financing and approval to proceed. In studies of large infrastructure projects over the past 100 years, engineer's cost estimates are almost invariably too low when compared with the final project cost upon completion by on average twenty percent but sometimes as much as one hundred percent. These discrepancies arise not because of poor engineering or planning practices but rather because a single number (point estimate) is being used to represent what is intrinsically a random process. Quantities used to compute a project cost for example are often highly uncertain at the time of preparing the estimate and sometimes unknown. In addition, items that were never anticipated, such as delays in acquiring property, labour disputes, or extreme weather come into play and conspire to delay the project and result in spiralling costs. In this paper we describe a systematic and defensible methodology for estimating cost and schedule on large projects using a risk-based approach. We replace point estimates by probability distributions which account for uncertainty explicitly. This methodology has been developed by Golder Associates in association with leading transportation clients, such as the State of Washington Department of Transportation and the Federal Highways Administration, over a number of years and is based upon research and practices in risk analysis. It has also been applied to over 100 infrastructure projects to date worldwide, ranging in value from US $25 million to US $10 billion. The risk assessment process is carried out in the following stages. First base costs and schedules are estimated for all major activities which comprise the project with contingency removed from the estimates. The activities are then sequenced into a flow chart. Next all major risks are identified which can impact the project activities and are quantified using subjective probability assessments. The mathematical relationships, including correlations between activities, risks and the total cost and schedule are captured and implemented in a conceptual model of the project. Total cost and schedule for the project are then computed using Monte Carlo simulation, which also takes into account the time value of money. This information gathering process is usually conducted in a workshop setting where the risk assessment team acts as an outside, independent third party which elicits project cost and schedule information from a group of professionals who were involved in calculating the original (not risk-based) cost and schedule as well as developing the engineering design. In this talk we illustrate a risk-based cost and schedule estimation process with examples on actual projects. We also show how a risk-based approach to cost and schedule estimation leads to more effective risk management through mitigation of the significant risks which are identified and ranked during the risk assessment process. Finally, we illustrate how use of probabilistic quantification of cost and schedule leads to improved

decision-making by the project owners and show how it enhances the overall efficiency of managing a large infrastructure project.

LCCA for Other Projects

General

"The Discount Rate in Life-Cycle Cost Analysis of Transportation Projects," K. Ozbay, D. Jawad, *Transportation Research Board 85th Annual Meeting Compendium of Papers CD-ROM*, Report No. 06-2662, 2006.
Abstract at: http://trid.trb.org/view/2006/C/777599
From the abstract: Although there is a widespread agreement on the need to discount future costs in monetary-based evaluation techniques of long-term transportation projects, there is less agreement on the specific discount rate that should be employed in the analysis. The choice of the discount rate is ultimately a policy decision; but even when the philosophical approach is set by the policy makers and a general guidance is issued, there still remain many questions to be addressed—questions such as: What are the tangible rates that decode the preferred rationale set by the policy makers? What are the data sources to obtain these rates? How can we deal with the economic aspect of uncertainty in the actual analysis? The research presented in this paper does not aim at adding another philosophical approach for the discount rate into the on-going debate; rather it aims at providing a practical insight for the practitioner analyst as regards the effect of implementing on-hand approaches and guidance on the discount rate. The research infers several probable scenarios for choosing and applying the discount rate from past academic research, federal guidance, or state-of-the-practice at transportation agencies. By developing a study methodology based on a look-back life cycle cost analysis that employs timely data, these scenarios are tested and analyzed in depth. The results of these analyses endorsed some guidance's while, on the other hand, uncovered the shortcomings of other proposed approaches. At the end, the paper concludes with recommending good-practice guidance for choosing the discount rate.

"Life-Cycle Cost Analysis: State-of-the-Practice versus State-of-the-Art," K. Ozbay, D. Jawad, N. Parker, S. Hussain, *Transportation Research Record*, Vol. 1864, 2004: 62-70.
http://www.rits.rutgers.edu/files/lifecyclecost.pdf
From the abstract: The product of a 3-year study that assessed the LCCA practice in state highway agencies (SHAs) is presented. The study examined how LCCA practice changed in two decades, surveyed the way LCCA is practiced currently at SHAs in the United States, and reviewed how this evaluation technique is deliberated by the academics and researchers in the engineering and economics domains. Results of this study prove noteworthy in the inspection of an observed gap between the state of the practice and state of the art of LCCA. After all, that gap set up grounds for the noted mistrust in the credibility of LCCA. In addition to study results, an analysis of the observed gap and its causes is presented as well as recommendations for what can be done to bridge that gap. It is hoped that this will prove valuable for practitioners conducting LCCA, for policy makers, and for researchers carrying out studies on various topics related to LCCA.

Guidelines for Life Cycle Cost Analysis, Final Report, New Jersey Department of Transportation, Federal Highway Administration, Report No. FHWA-NJ-2003-012, July 2003.
http://cait.rutgers.edu/files/FHWA-NJ-2003-012.pdf
This report includes an overview of research establishing guidelines for conducting LCCA. It also gives details about the components of LCCA and reviews LCCA models. Chapter 2 provides a general methodology for LCCA; Chapter 4 discusses the discount rate; and Chapter 7 evaluates alternative software packages. Appendix 2 presents survey results of state practices for LCCA, including input values for the discount rate, inflation rate and analysis period (pages 90 to 96).

LCCA for Pavements

"Life-Cycle Cost Analysis System for Pavement Management at Project Level," J. Santos, A. Ferreira, *International Journal of Pavement Engineering*, Vol. 14, Issue 1, January 2013: 71-84.
Abstract at: http://trid.trb.org/view/2013/C/1239112
From the abstract: This paper presents a new LCCA system based on an optimisation model considering pavement performance, called OPTIPAV, developed and programmed to help pavement designers to choose the best pavement structure for a road or a highway. The LCCA system considers the serviceability concept adopted by the American Association of State Highway and Transportation Officials for use in the design of flexible pavements. The results obtained by the application of the new LCCA system clearly indicate that it is a valuable addition to the road engineer's toolbox.

"**Comparison of Software Packages for Life Cycle Cost and Benefit Analysis of Highway Projects,"** Y. Jiang, G. Zhao, S. Li, *Sustainable Transportation Systems: Plan, Design, Build, Manage, and Maintain*, Ninth Asia Pacific Transportation Development Conference, 2012: 85-100.
Abstract at: http://trid.trb.org/view/2012/C/1240141
From the abstract: As part of the effort to develop an economic analysis methodology for evaluating highway projects, the commonly utilized software packages for highway life cycle cost analysis (LCCA) were examined and evaluated. The software packages include MicroBENCOST, California Life-Cycle Benefit/Cost Analysis Model (Cal-B/C), and the Redbook Wizard. Through this study, the methodologies applied by these packages were examined. The similarities and differences among the methodologies were identified and compared. Cost and benefit data from real highway projects were applied using the software packages to evaluate and compare the economic analysis results. It was found that even though the general frameworks of economic analyses are similar in these packages, there exist many differences in the specific processes and parameter values. This paper presents the results of the comparisons and evaluations. The evaluation procedures are illustrated. The similarities and differences of the methods are outlined. The impact of the differences on the results of highway economic analysis is discussed. It is believed that the results of this study will be helpful for highway engineers and planners to understand the capacities and limitations of the software packages.

Life-Cycle Cost Analysis: A Tool for Better Pavement Investment and Engineering Decisions, American Concrete Pavement Association, 2011.
Abstract at: http://trid.trb.org/view/2011/M/1214580
From the abstract: This document provides both a general and detailed discussion of life-cycle cost analysis (LCCA). Detailed case studies presented relate to airport pavements, highways, and local roads. The document includes some extensions and applications of LCCA, like the role of LCCA in the selection of pavement type; the "mix of fixes" concept; total ownership costs; the impact of specifications for material quantity on LCCA results; and sustainability in the context of LCCA.

Colorado Department of Transportation's Current Procedure for Life Cycle Cost Analysis and Discount Rate Calculations, Final Report, Colorado Department of Transportation, Report No. CDOT-2009-2, January 2009.
http://www.coloradodot.info/programs/research/pdfs/2009/lcca2009.pdf
From the abstract: This report provides information on life cycle cost analysis (LCCA) as applied to Colorado Department of Transportation (CDOT) roadways. It describes the current method CDOT uses to select a discount rate. It also summarizes data collected from several states listing their hot mix asphalt (HMA) overlay cycles and discount rates. To implement these results, the discount rate will be calculated annually by the HQ Materials Pavement Design Unit and distributed to the Pavement Design Engineers in each Region for use in their LCCA.

"Evaluation of Life-Cycle Cost Analysis Practices Used by the Michigan Department of Transportation," A. Chan, G. Keoleian, E. Gabler, *Journal of Transportation Engineering*, Vol. 134, Issue 6, June 2008: 236-245.
Abstract at: http://trid.trb.org/view/2008/C/860404
From the abstract: This paper seeks to analyze MDOT's accuracy in projecting the actual costs over the pavement service life and choosing the lowest-cost pavement alternative. Ten highway sections in Michigan were

chosen and grouped into four case studies. Their estimated and actual accumulated costs and maintenance schedules were compared. While results indicate that MDOT LCCA procedure correctly predicts the pavement type with lower initial construction cost, actual costs are usually lower than estimated in the LCCA. This outcome may be partly because the cost estimation module in MDOT's model is not site specific enough. Refinements to its pavement construction and maintenance cost estimating procedures would assist MDOT in realizing the full potential of LCCA in identifying the lowest cost pavement alternatives for the pavements studied.

Life-Cycle Cost Analysis: The Georgia Experience, Transportation Asset Management Case Studies, Federal Highway Administration, FHWA Publication No. FHWA-IF-07-009, 2007.
http://www.fhwa.dot.gov/asset/if07009/if07009.pdf
From the executive summary: In 2005 GDOT sought to conduct an LCCA for several projects on I-85 that called for rehabilitating an entire corridor. The agency's Office of Materials and Research experimented with the FHWA RealCost Software and decided to develop a customized spreadsheet that follows methodology outlined in the FHWA Technical Bulletin Life-Cycle Cost Analysis in Pavement Design (FHWA Publication No. FHWA-SA-98-079). Doing so required extensive work and a number of technical support meetings with the FHWA-Georgia Division Office, Resource Center and Office of Asset Management. By working together, the FHWA and GDOT have identified ways for GDOT to enhance its LCCA practices. In addition, these meetings have provided the opportunity for FHWA to refine the RealCost LCCA software and make it an even more attractive tool for States conducting an LCCA.

Life Cycle Cost Analysis of Pavements: State-of-the-Practice, Clemson University, 2006.
Abstract at: http://trid.trb.org/view/2006/M/924403
From the abstract: Life Cycle Cost Analysis (LCCA) is performed by transportation agencies in the design phase of transportation projects in order to be able to implement more economical strategies, to support decision processes in pavement type selection (flexible or rigid) and also to assess the relative costs of different rehabilitation options within each type of pavement. However, most of the input parameters are inherently uncertain. In order to implement the LCCA process in a reliable and trustworthy manner, this uncertainty must be addressed. This thesis summarizes a through research that aims at improving the existing LCCA approach for South Carolina Department of Transportation (SCDOT) by developing a better understanding of the parameters used in the analysis. In order to achieve this, a comprehensive literature review was first conducted to collect information from various academic and industrial sources. After that, two surveys were conducted to survey the state-of-the-practice of LCCA across the 50 U.S. Departments of Transportation (DOTs) and Canada. The questionnaires were designed to gauge the level of LCCA activity in different states as well as to solicit information on specific approaches that each state is taking for pavement type selection. The responses obtained from the web surveys were analyzed to observe the trends regarding the various input parameters that feed into the LCCA process. The results were combined with the additional resources in order to analyze the challenges to implementing the LCCA approach. The survey results showed LCCA is used widely among transportation agencies. However, the extent of the analysis varies widely and is presented here.

"Life-Cycle Cost Award Algorithms for Design/Build Highway Pavement Projects," D. Gransberg, K. Molenaar, *Journal of Infrastructure Systems*, Vol. 10, Issue 4, December 2004: 167-175.
Abstract at: http://trid.trb.org/view/2004/C/746934
From the abstract: This study provides best-value award algorithms that can be used to procure pavement on the basis of life cycle cost rather than low bid initial costs. The study uses the Federal Highway Administration life cycle cost analysis (LCCA) design algorithm as a basis of the best value award. Two detailed case study projects were used to furnish input data and information on which to base the comparison of the best value award algorithms. The analysis proves that many of the best value award algorithms currently used in design/build projects have a strong bias toward minimizing the capital cost of design and construction. The analysis also shows that the LCCA input can be used but must be heavily weighted to influence the final award decision away from the lowest proposed price.

Life-Cycle Cost Analysis: The Pennsylvania Experience, Transportation Asset Management Case Studies, Federal Highway Administration, FHWA Publication No. FHWA-IF-03-038, 2003.
http://www.fhwa.dot.gov/infrastructure/asstmgmt/dipa2.pdf
From the executive summary: Life-cycle cost analysis (LCCA) is an engineering economic analysis tool useful in comparing the relative merit of competing pavement design alternatives. This analytical approach uses a structured methodology to account for the costs of agency activities and the effects of those activities on transportation users. By considering all of the relevant costs incurred during the service life of an asset, the LCCA process helps transportation officials to select the lowest total cost option and provides a means to balance user impacts with the construction, rehabilitation, and preservation requirements of the pavement itself. The Pennsylvania Department of Transportation has a long and successful history of using LCCA in its pavement selection decision process. This booklet discusses Pennsylvania's experience with LCCA.

Life Cycle Cost Analysis: A Guide for Comparing Alternate Pavement Designs, American Concrete Pavement Association, 2002.
Abstract at: http://trid.trb.org/view/2002/M/702592
From the abstract: This engineering bulletin presents the concepts of Life Cycle Cost Analysis (LCCA) for the purpose of comparing equivalent competing pavement design alternatives on an economic basis. All of the factors that should be considered in an economic analysis are explained, and guidance is given on the selection of values for LCCA-sensitive factors. Examples of three different analyses are given: highway, county road, and city street. Advanced LCCA techniques are discussed, including the impacts of pavement type selection on a roadway network. Finally, life cycle cost and pavement performance studies are summarized, showing the benefits of concrete low life cycle cost and other economic benefits.

LCCA for Bridges

Life Cycle Cost of Bridges: Part 1, Whole Life Cycle Cost for Chicago-Type Bascule Bridges; Part 2, Life Cycle Cost Analysis of Bridges and Tunnels, Final Report, Infrastructure Technology Institute, 2009.
http://iti.northwestern.edu/publications/utc/tea-21/FR-4-6-Krizek.pdf
From the abstract: (Part 1) The whole life cost of a bridge consists of the total investment throughout the life of the bridge. This investment includes the initial construction cost, repair and rehabilitation costs, and all maintenance costs. An ability to determine the whole life cost of a bridge will help agencies evaluate the asset value of existing bridges, make better decisions on the design and construction of new bridges, and choose methods and approaches for rehabilitating existing structures such that the lowest life cycle cost is achieved rather than the lowest initial cost. Toward this end the whole life costs of Chicago trunnion bascule bridges are analyzed and found to be less than five times the initial costs for life spans exceeding 100 years. It was also shown that timely maintenance, repair, and rehabilitation can lower the life cycle cost of a bridge. (Part 2) This paper presents an analysis of life cycle costs for four bridges and two tunnels constructed and operated by the Port Authority of New York and New Jersey. Cost components include the initial cost, repair and rehabilitation costs, and annual maintenance costs. Results show that the maintenance and rehabilitation costs, as a percentage of the initial cost, are reasonably similar for both bridges and tunnels for perhaps the first 65 years of their service life, after which these costs increase significantly for bridges. However, based on cost per square foot and cost per traffic lane, the opposite is clearly true. Only time and detailed cost records for ensuing years will reveal how the two types of structure compare over their entire service lives.

"Life-Cycle Cost Analysis Algorithm for Bridges: Comprehensive Approach," A. Ertekin, H. Nassif, K. Ozbay, *Transportation Research Board 87th Annual Meeting Compendium of Papers DVD*, Report No. 08-2067, 2008.
Abstract at: http://trid.trb.org/view/2008/C/848351
From the abstract: Bridge Life Cycle Cost Analysis (BLCCA) has received a great deal of attention, especially in the last decade. Currently, there is no consensus on the required level of detail in performing a BLCCA concerning the number of elements that should be studied to attain a certain level of accuracy. However, some analysts, as mentioned in NCHRP-483 report, suggest that considering three elements (substructure, deck, and superstructure) yields an adequately detailed description of most highway bridges. The majority of previous

studies, however, focused more on developing algorithms for one individual element of the bridge or the bridge itself as one element, rather than all the components as a system. Such a system approach would make the empirical results more realistic. Thus, this paper's main objective is to develop a comprehensive BLCCA methodology using real data available in the National Bridge Inventory. Here, this inventory is primarily used for modeling the deterioration behavior of the bridge. The methodology predicts the agency and user costs using Genetic Algorithm for cost optimization, and Markov-Chain approach for deterioration modeling. Monte-Carlo Simulation is used for dealing with uncertainties. The BLCCA algorithm developed here can be a valuable tool for allocating limited public resources efficiently and maintaining all parts of the bridges functioning at acceptable levels. To validate the effectiveness of the suggested algorithm, results from a hypothetical case study are presented, which verify that the proposed methodology can be successfully applied to steel and concrete superstructure bridges that constitute the majority of bridges.

"Applying LCCA to Bridges," A. Al-Wazeer, B. Harris, C. Nutakor, *Public Roads*, Vol. 69, No. 3, November/December 2005: 66-71.
http://www.fhwa.dot.gov/publications/publicroads/05nov/09.cfm
This article describes the use of LCCA to determine the best options for infrastructure projects.

APPENDIX A

TOM/RR				
Item #	**Reference #**	**Item**	**Responsibility**	**Category**
1	2	Special Events and Emergency Closures Weekends	GDOT	O&M
2	4	CCTV Camera (GDOT IR)	GDOT	O&M
3	5	CCTV Camera (SRTA cameras)	SRTA	O&M
4	7	Changeable Message Signs (Not Incl. DMS/Toll Rate)	GDOT	O&M
5	8	Toll Rate Signs	SRTA	O&M
6	10	Detection Sensors (Shared MDS)	SRTA	O&M
7	11	Fiber Trunk Maintenance (Pullbox)	GDOT	O&M
8	12	Fiber Cuts	GDOT	O&M
9	13	Back-office Toll System Hosting Maintenance	SRTA	O&M
10	14	ETC Lane Equipment Maintenance, Hosting, Software Maintenance	SRTA	O&M
11	15	Communication Hub	SRTA	O&M
12	16	Travel Time Sensors and Readers	SRTA	O&M
13	17	Traffic Control Signals (Blank Out Signs)	GDOT	O&M
14	18	Roadside Cabinets (IR CCTV, CMS)	GDOT	O&M
15	20	Roadside Cabinets (SRTA ITS and Toll)	SRTA	O&M
16	21	Reversible Gate Routine Maintenance	GDOT	O&M
17	22	Annual Reversible Gate Replacement (60% not reimbursed by insurance)	GDOT	O&M
18	23	Generators	SRTA	O&M
19	24	Network Management Software SRTA	SRTA	O&M
20	25	Annual Utilities: GDOT Toll Related	GDOT	O&M
21	27	Annual Utilities: SRTA	SRTA	O&M
22	28	HERO Vehicle Maintenance	GDOT	O&M
23	29	NaviGAtor NWC Upgrade Maintenance	GDOT	O&M
24	30	SRTA Integration Maintenance	SRTA	O&M
25	31	WAN Access SRTA	SRTA	O&M
26	36	Admin	SRTA	Admin, Overhead
27	37	Transponders	SRTA	Admin, Overhead
28	38	Traffic Management Center	GDOT	Admin, Overhead
29	39	HERO Operators	GDOT	Admin, Overhead
30	40	Emergency Towing	GDOT	Admin, Overhead

31	41	Toll Operations Center Staff	SRTA	Admin, Overhead
32	42	Public Information Outreach	GDOT	Admin, Overhead
33	43	Environmental Justice Survey	GDOT	Admin, Overhead
34	44	Environmental Compliance Manager	GDOT	Admin, Overhead
35	45	Zone Controllers	SRTA	R&R
36	46	IDRIS licenses, Express Lane Loops (non-shoulders)	SRTA	R&R
37	47	Shoulder Loops	SRTA	R&R
38	48	Camera, Host VES/OCR , Development, License Fee	SRTA	R&R
39	49	Camera Mounts, brackets, Cables	SRTA	R&R
40	50	Power Supplies, Lightning Suppression	SRTA	R&R
41	51	RFI Antenna, RFI Reader Module, Misc	SRTA	R&R
42	52	Network Switches SRTA	SRTA	R&R
43	53	Network Switches (IR CCTV, CMS) GDOT	GDOT	R&R
44	55	Toll Host/Plaza Server, Lane Software	SRTA	R&R
45	56	Back Office Toll Collection System	SRTA	R&R
46	57	UPS - Batteries SRTA	SRTA	R&R
47	58	UPS SRTA	SRTA	R&R
48	59	Roadside Cabinets, Racks SRTA	SRTA	R&R
49	60	UPS - Batteries Toll Related (Gates, IR CCTV, CMS) GDOT	GDOT	R&R
50	61	UPS Toll Related (Gates, IR CCTV, CMS) GDOT	GDOT	R&R
51	62	CMS Signs & Blocks GDOT	GDOT	R&R
52	63	Toll Rate CMS Signs SRTA	SRTA	R&R
53	65	Travel Time System	SRTA	R&R
54	66	Reversible Gates	GDOT	R&R
55	67	Traffic Control Signals (Blank Out Signs)	GDOT	R&R
56	69	Detection Sensors (Shared MDS)	SRTA	R&R
57	70	CCTV System SRTA	SRTA	R&R
58	72	CCTV System (IR cameras) GDOT	GDOT	R&R

59	73	Roadside Cabinets (IR CCTV, CMS) GDOT	GDOT	R&R
60	75	Hub Replacement	SRTA	R&R
61	76	Network Management System SRTA	SRTA	R&R
62	77	Generators	SRTA	R&R
63	78	NaviGAtor NWC Upgrade GDOT	GDOT	R&R
64	79	HERO Vehicles	GDOT	R&R
65	80	Computer Hardware SRTA	SRTA	R&R
66	81	Computer Hardware GDOT	GDOT	R&R
67	82	Server Hardware SRTA	SRTA	R&R
68	83	NaviGAtor to Toll System Integration	GDOT	R&R
69	84	Digital Sign and ITS Structures	SRTA	R&R
70	85	Toll Point Gantry Structures	SRTA	R&R
71	86	Toll Area - Static Signs	GDOT	R&R
72	87	Non-Tolled Area - Signs	GDOT	R&R
73	88	Non-Tolled Area - Sign Structures	GDOT	R&R

ROM/RR				
74	1	Snow and Ice Removal	GDOT	O&M
75	3	CCTV Camera (GDOT PTZ)	GDOT	O&M
76	6	Digital Message Signs	GDOT	O&M
77	9	Detection Sensors (MDS)	GDOT	O&M
78	19	Roadside Cabinets (MDS, PTZ CCTV)	GDOT	O&M
79	26	Annual Utilities: GDOT Non-Toll Related	GDOT	O&M
80	32	Insurance GDOT	GDOT	Admin, Overhead
81	33	General Admin, Mgmt GDOT	GDOT	Admin, Overhead
82	34	Insurance (Business Interruption)	SRTA	Admin, Overhead
83	35	Insurance (Buildings and Contents)	SRTA	Admin, Overhead
84	54	Network Switches (Shared MDS, PTZ CCTV) GDOT	GDOT	R&R
85	64	DMS Signs	GDOT	R&R
86	68	Detection Sensors (MDS)	GDOT	R&R
87	71	CCTV System (PTZ Cameras) GDOT	GDOT	R&R
88	74	Roadside Cabinets (MDS, Shared MDS, PTZ CCTV) GDOT	GDOT	R&R
89	36	Admin	SRTA	Admin, Overhead

APPENDIX B

Maryland Transportation Authority

Maryland & Chesapeake House Travel Plazas

Facility Assessment & Long-Range Planning for MdTA Ownership

Draft Report

September 26, 2008





JOHNSON, MIRMIRAN & THOMPSON
Engineering A Brighter Future®

TABLE OF CONTENTS

EXECUTIVE SUMMARY

Objective and Methodology: The objective of this planning level report is to identify the long-range capital improvement program (CIP) costs for MdTA Ownership associated with the building facilities infrastructure for the Maryland House and Chesapeake House Travel Plazas. The CIP costs developed in this analysis are the elements of the facilities which are the responsibility of the MdTA. These facilities include the main travel plaza building for each site and ancillary buildings such as gas stations and support building. The approach used in developing this planning level analysis included the following:

a. Facility Assessment: A broad-based facility assessment of each travel plaza has occurred. This assessment evaluated overall "system" age/general conditions for the following major components of the facilities:

   i. Civil and Site Elements: Sidewalks, ADA accessibility, parking lots, curb and gutter, drainage inlets, guard rails, access roads, landscaping, signage and potable water supply and underground distribution.

   ii. Architectural and Structural Elements: Roofing, windows, doors, exterior walls, interiors including flooring and ceilings, toilet room hardware including stall partitions and finishes including counters.

   iii. Mechanical and Plumbing Elements Chiller/cooling tower systems, boiler systems, air distribution systems, building automation systems, potable water distribution plumbing fixtures and interior water piping, sanitary piping and sewage ejectors, fuel dispensing and storage tanks.

   iv. Electrical and Lighting Elements Power distribution including switchgear/switchboard and power panels, interior lighting fixtures and exterior site lighting, fire alarm and special systems including CCTV and communications.

b. Life-Cycle Cost Model: The model developed for this effort includes the following elements:

   i. Capital Improvement Cost Estimating/Contingency: The construction cost estimating have been based upon the planning level details typical "square foot" based estimates. Multipliers have been added to the costs Contingency (40%), Engineering Design and Construction Management/Inspection (15%/10%) and Construction Extra Work Orders (10%):

   ii. Escalation: A 3% annual escalation rate has been applied when determining the future cost of capital improvements as well as recurring costs.

c. Reporting Timeframe: The reporting for the life-cycle cost for each travel plaza has been performed for six specific MdTA ownership durations; 3-year (FY 2013), 5-Year (FY 2015), 10-Year (FY 2020), 15-Year (FY 2025), 20-Year (FY 2030) and 30-year (FY2040).

Analysis of Data: The condition assessment and cost data are representative of a broad based assessment of the facilities. The cost represents the estimated *future liability* that the MdTA may incur to maintain the facilities to a building industry standard of performance. These costs may also be considered a *future savings* if the MdTA elects to proceed with the Design-Build-Operate-Maintain (DBOM) performance contract for the Maryland House and Chesapeake House Travel Plazas.

MARYLAND HOUSE - SUMMARY OF CONDITION ASSESSMENT AND COSTS

The Maryland (MD) House was constructed in 1963 and additions were installed in 1989. The building is designed to a Georgian style and is constructed to a very durable quality standard. The building is generally in fair to good condition for the age of the building, with significant renovations occurring on building systems within the past 5-7 years. The cost projections for the Maryland House, which are detailed in the cost estimate portion of the report, have been separated into six specific MdTA Ownership durations. The recommendations for total capital expenditures by fiscal year have been developed for each ownership duration.

MdTA Ownership Duration	FY 2010/FY2011	FY2012/FY2013	FY2015	FY 2020	FY 2025	FY 2030	Total
FY2013 - 3-Year Ownership	$640,920	-	-	-	-	-	$640,920
FY2015 - 5-Year Ownership	$1,806,797	$221,745	-	-	-	-	$2,028,542
FY2020 - 10-Year Ownership	$9,609,480	$3,759,055	$0	-	-	-	$13,368,535
FY2025 - 15 Year Ownership	$10,542,763	$5,371,189	$2,119,641	$111,901	-	-	$18,145,494
FY2030 - 20 Year Ownership	$1,300,618	$15,927,860	$1,735,416	$1,777,570	$42,123	-	$20,783,587
FY2040 - 30-Year Ownership	$1,300,618	$12,981,803	$4,137,895	$1,114,457	$10,807,391	$3,957,757	$34,299,921

CHESAPEAKE HOUSE - SUMMARY OF CONDITION ASSESSMENT AND COSTS

The Chesapeake (CH) House was constructed in 1972 and is designed to a modern style. The building is constructed to a standard commercial quality and durability. The building is generally in fair to good condition for the age of the building, with limited renovations occurring on building systems within the past 5-10 years. The cost projections for the Chesapeake House, which are detailed in the cost estimate portion of the report, have been separated into six specific MdTA Ownership durations. The recommendations for total capital expenditures by fiscal year have been developed for each ownership duration.

MdTA Ownership Duration	FY 2010/FY2011	FY2012/FY2013	FY2015	FY 2020	FY 2025	FY 2030	Total
FY2013 - 3-Year Ownership	$590,709	-	-	-	-	-	$590,709
FY2015 - 5-Year Ownership	$898,215	$336,362	-	-	-	-	$1,234,577
FY2020 - 10-Year Ownership	$5,877,695	$5,249,249	$487,358	-	-	-	$11,614,302
FY2025 - 15 Year Ownership	$5,979,539	$6,397,834	$487,358	$2,238,305	-	-	$15,103,036
FY2030 - 20 Year Ownership	$4,785,078	$7,563,717	$2,434,262	$2,345,407	$1,267,188	-	$18,395,652
FY2040 - 30-Year Ownership	$4,714,101	$5,312,251	$2,951,290	$6,619,906	$2,435,582	$4,530,905	$26,564,036

INTRODUCTION

The objective of this planning level report is to identify the long-range capital improvement program (CIP) costs for MdTA Ownership associated with the building facilities infrastructure for the Maryland House and Chesapeake House travel plazas. The CIP costs developed in this analysis are the elements of the facilities which are the responsibility of the MdTA. These facilities include the main travel plaza building for each site and ancillary buildings such as gas stations and support building. The approach used in developing this planning level analysis is as follows:

a. Facility Assessment: A broad-based facility assessment of each travel plaza has occurred. This assessment evaluated overall "system" age/general conditions, rather than an evaluation at a specific component or detailed deterioration level. Industry standards were used to determine anticipated life-expectancy of various components, and discussion with MdTA personnel was used to approximate the installation date for the systems. The following major components of the facilities were evaluated for the main buildings and the service centers/gas stations for this planning level report:

   i. Civil and Site Elements: Sidewalks, ADA accessibility, parking lots, curb and gutter, drainage inlets, guard rails, access roads, landscaping, signage and potable water supply and underground distribution.

   ii. Architectural and Structural Elements: Roofing, windows, doors, exterior walls, interiors including flooring and ceilings, toilet room hardware including stall partitions and finishes including counters.

   iii. Mechanical and Plumbing Elements Chiller/cooling tower systems, boiler systems, air distribution systems, building automation systems, potable water distribution plumbing fixtures and interior water piping, sanitary piping and sewage ejectors, fuel dispensing and storage tanks.

   iv. Electrical and Lighting Elements Power distribution including switchgear/switchboard and power panels, interior lighting fixtures and exterior site lighting, fire alarm and special systems including CCTV and communications.

b. Capital Improvements: The recommended capital improvements resulting from the facility assessment have been based upon maintaining the existing performance and capacity of the existing travel plazas.

c. Addition of Recurring/Operations and Maintenance Costs: The addition of recurring operating or maintenance costs incurred by the MdTA has been incorporated into the life-cycle cost development.

d. Utility Costs: JMT understands that the utility costs (electric, gas, water/sewer, telecommunications) are the responsibility of the current Operator (Host Marriott) and have not been incorporated into the life-cycle cost development.

e. Life-Cycle Cost Model: The model developed for this effort includes the following elements:

i. Capital Improvement Cost Estimating/Contingency: The construction cost estimating have been based upon the planning level details developed from the facility assessment. The costs have been based upon typical "square foot" based estimates from RS Means (as opposed to detailed component breakdown with vendor quotes). The following multipliers have been added to the costs:

1. Contractor General Conditions and Overhead/Profit: The construction costs have a contractor general conditions and contractor overhead and profit incorporated into the direct labor and materials costs developed for the estimate.
2. Contingency: A 40% contingency has been applied to the construction costs to address a lack of detail available at the planning level.
3. Engineering and Construction Management/Inspection Fees: Engineering fees at 15% of construction value and CM/I fees at 10% of construction value have been added to the cost model.
4. Construction Extra Work Orders (EWO's): A 10% EWO has been included to address potential unforeseen field conditions.

ii. Maintenance Costs: Maintenance costs for equipment and systems will be estimated from either past records maintained by the MdTA or standard "rule-of-thumb" costs for similar types of facilities.

iii. Escalation: A 3% annual escalation rate has been applied when determining the future cost of capital improvements as well as recurring costs.

f. Reporting Timeframe: The reporting for the life-cycle cost has been performed for each travel plaza for six specific MdTA ownership durations; 3-year (FY 2013), 5-Year (FY 2015), 10-Year (FY 2020), 15-Year (FY 2025), 20-Year (FY 2030) and 30-year (FY2040).

MARYLAND HOUSE - SUMMARY OF CONDITION ASSESSMENT AND CAPITAL IMPROVEMENT COSTS

Condition Assessment

The Maryland (MD) House was constructed in 1963 and additions were installed in 1989. The building is designed to a Georgian style and is constructed to a very durable quality standard. The building is generally in fair to good condition for the age of the building, with significant renovations occurring on building systems within the past 5 years. A summary of the condition for each of the four major areas of the facility are as follows:

i. Civil and Site Elements: The civil/site elements of the facility are generally in fair to good condition, with the exception of the potable water system. On-going improvements to the parking lot and site features will be required.

ii. Architectural and Structural Elements: Significant renovations to the architectural and structural elements of the main building have recently occurred and the building is in fair to good condition. The service center/gas station has not had significant repairs/renovations and is in fair to poor condition.

iii. Mechanical and Plumbing Elements: Significant renovations/replacement to portions of mechanical systems have occurred recently, however other portions of the system have remained unchanged from either the original construction or the late 1980's renovation. Large portions of the plumbing system are either original or in need of renovations. The older portions of the mechanical and plumbing systems are in either fair or poor condition.

iv. Electrical and Lighting Elements: The utility power and power distribution system associated with the building is in fair to good condition. The emergency power system serving the building is in poor condition. Special systems serving the building are in fair to good condition.

Capital Improvement Costs

The capital improvement costs of maintaining the Maryland House have been developed for six (6) separate periods (3-year, 5-year, 10-Year, 15-year, 20-Year and 30-Year) of MdTA ownership. A summary of the assumptions for this model are as follows:

Assumptions

i. Basis of Cost: Capital improvement costs are based upon 2008 cost data and escalated at 3% annually.
ii. Recommended Timing of Capital Improvements: Period when capital improvement for a specific work item occurs varies as the duration of MdTA ownership changes. Recommendation is based upon professional architectural/engineering judgment of critical needs for the facility in the time frame evaluated.
iii. Ownership: The MdTA ownership period means the date in which the facility will no longer be used/maintained by the MdTA.

3-Year Ownership Period (MdTA Ownership until FY 2013): The 3-year ownership cost projection for future capital improvements is approximately $640,000.

CAPITAL IMPROVEMENT COSTS FOR 3-YEAR MDTA OWNERSHIP

Work Item	Description	FY2010/2011	Total
	Civil/Site Work Item Summary	$0	$0
	Architectural/Structural Work Item Summary	$444,724	$444,724
	Mechanical/Plumbing Work Item Summary	$99,946	$99,946
	Electrical/Lighting Work Item Summary	$96,250	$96,250
	Total Per Period	$640,920	$640,920

5-Year Ownership Period (MdTA Ownership until FY 2015): The 5-year ownership cost projection for future capital improvements is approximately $1.9 Million.

CAPITAL IMPROVEMENT COSTS FOR 5-YEAR MDTA OWNERSHIP

Work Item	Description	FY2010/2011	FY2012/FY2013	Total
	Civil/Site Work Item Summary	$0	$0	$0
	Architectural/Structural Work Item Summary	$772,071	$88,124	$860,195
	Mechanical/Plumbing Work Item Summary	$99,946	$133,622	$233,568
	Electrical/Lighting Work Item Summary	$934,780	$0	$934,780
	Total Per Period	$1,806,797	$221,745	$2,028,542

10-Year Ownership Period (MdTA Ownership until FY 2020): The 10-year ownership cost projection for future capital improvements is approximately $12.8 Million.

CAPITAL IMPROVEMENT COSTS FOR 10-YEAR MDTA OWNERSHIP

Work Item	Description	FY2010/2011	FY2012/FY2013	FY2015	Total
	Civil/Site Work Item Summary	$5,902,050	$2,946,057	$0	$8,848,107
	Architectural/Structural Work Item Summary	$1,626,303	$241,995	$0	$1,868,298
	Mechanical/Plumbing Work Item Summary	$1,146,347	$571,003	$0	$1,236,100
	Electrical/Lighting Work Item Summary	$934,780	$0	$0	$934,780
	Total Per Period	$9,609,480	$3,759,055	$0	$12,887,285

15-Year Ownership Period (MdTA Ownership until FY 2025): The 15-year ownership cost projection for future capital improvements is approximately $18.0 Million.

CAPITAL IMPROVEMENT COSTS FOR 15-YEAR MDTA OWNERSHIP

Work Item	Description	FY2010/2011	FY2012/FY2013	FY2015	FY2020	Total
	Civil/Site Work Item Summary	$5,902,050	$2,946,057	$2,062,016	$0	$10,910,123
	Architectural/Structural Work Item Summary	$1,812,747	$1,343,823	$0	$108,383	$3,264,953
	Mechanical/Plumbing Work Item Summary	$1,893,186	$513,378	$57,625	$3,518	$2,467,707
	Electrical/Lighting Work Item Summary	$934,780	$567,931	$0	$0	$1,502,711
	Total Per Period	$10,542,763	$5,371,189	$2,119,641	$111,901	$18,145,494

20-Year Ownership Period (MdTA Ownership until FY 2030): The 20-year ownership cost projection for future capital improvements is approximately $20.7 Million.

CAPITAL IMPROVEMENT COSTS FOR 20-YEAR MDTA OWNERSHIP

Work Item	Description	FY2010/2011	FY2012/FY2013	FY2015	FY2020	FY 2025	Total
	Civil/Site Work Item Summary	$0	$9,395,227	$723,059	$827,944	$0	$10,946,230
	Architectural/Structural Work Item Summary	$560,417	$3,751,350	$352,201	$247,615	$0	$4,911,584
	Mechanical/Plumbing Work Item Summary	$99,946	$2,459,456	$57,625	$3,518	$42,123	$2,662,668
	Electrical/Lighting Work Item Summary	$640,255	$321,827	$602,531	$698,492	$0	$2,263,105
	Total Per Period	$1,300,618	$15,927,860	$1,735,416	$1,777,570	$42,123	$20,783,587

30-Year Ownership Period (MdTA Ownership until FY 2040): The 30-year ownership cost projection for future capital improvements is approximately $34.2 Million.

CAPITAL IMPROVEMENT COSTS FOR 30-YEAR MDTA OWNERSHIP

Work Item	Description	FY2010/2011	FY2012/FY2013	FY2015	FY2020	FY 2025	FY 2030	Total
	Civil/Site Work Item Summary	$0	$6,449,170	$3,125,538	$838,216	$1,112,643	$2,247,297	$13,772,865
	Architectural/Structural Work Item Summary	$560,417	$3,751,350	$352,201	$108,383	$161,404	$1,406,158	$6,339,913
	Mechanical/Plumbing Work Item Summary	$99,946	$2,459,456	$57,625	$167,858	$4,006,265	$220,860	$7,012,010
	Electrical/Lighting Work Item Summary	$640,255	$321,827	$602,531	$0	$5,527,079	$83,442	$7,175,134
	Total Per Period	$1,300,618	$12,981,803	$4,137,895	$1,114,457	$10,807,391	$3,957,757	$34,299,921

MD.I – CIVIL AND SITE ASSESSMENT AND RECOMMENDATIONS

A. Introduction: The Civil portion of the facility assessment evaluated various site components of the Maryland House. The condition of the pavement, the sidewalks and pavers, the concrete curb and gutters, the drainage system, the guard rail and the directional signage in the parking area were checked to develop a repair or replacement schedule for those items. In addition, the water and sanitary sewer utility systems were considered, and the landscaping throughout the sites was examined.

Field inspections were conducted and each of the surface site elements were evaluated with regards to their overall conditions. A condition rating of Good, Fair or Poor were established for each of the site elements. The condition ratings are defined as follows:

- **Good** –Minimal to no visible distress or deterioration.
- **Fair** – Noticed some visible distress and deterioration at isolated locations, but overall in decent condition.
- **Poor** – Visible distress and deterioration was identified at several locations.

B. Life-Cycle of System or Equipment: The basis of a majority of the estimates for life cycles of materials was developed by consulting with JMT Staff with experience in maintenance, including Dick Harrison, Charlie Watkins and Jack Krummel.

LIFE EXPECTANCY CIVIL/SITE FEATURES AND SYSTEMS

Systems	Life Expectancy (Years)
Bituminous Pavement	12-15
Concrete Curbs	20-25
Concrete Sidewalk	10-15
Concrete Pavers	20-25
Drainage Inlets	50-60
Reinforced Concrete Drainage Pipe	70-80
Guard Rails	NA
Water and Sanitary Sewer Facilities	30-50
Water Tank Paint	15-20
Flow Meter	15-20
Signage	12-15
Landscaping	4-6

C. Condition Assessment of Equipment/Systems: The condition assessment of the civil/site systems is based upon a physical assessment of the systems and a records research of system installation dates.

1. Bituminous Pavement

The existing typical pavement section at the Maryland House consists of 1 ½" bituminous concrete surface course with a 6" soil cement base course and a 6" subbase. Past history shows that bituminous pavement in an area such as the Maryland House has a lifetime of 12-15 years, assuming routine maintenance. This is lower than in general conditions due to a presumed increase in salting during winter months, and an increase in wear due to excessive traffic, including a high intensity of truck traffic. The pavement analysis includes the ramps giving access to and from I-95, the drive aisles, car, truck and bus parking areas, and the service station areas.

The general condition of the bituminous parking area and drive aisles at the Maryland House is best described as in ***fair*** condition. Several cracks were identified. Of these cracks, a majority of the cracks have been sealed through the routine maintenance program. The pavement at the Maryland House received a slurry coat between 2001-2003.

2. Concrete Curb and Gutter

It is estimated that concrete curbing lasts from between 20-25 years with routine maintenance. The concrete curbing at the Maryland House appeared to be in ***good to fair*** condition. Minimal cracking or deterioration was noticed. It is estimated that a majority of the curb is original to the site construction, with spot repair and replacement as required over the past several years.

Typical bituminous pavement condition found throughout the site.

Isolated case of distress/cracking of concrete curb & gutter.

3. Concrete Sidewalk

The existing typical sidewalk section at the Maryland House consists of 5" concrete paving on grade. Typical industry standards show that with continued maintenance, concrete sidewalk lasts between 10-15 years. The age and condition of the existing concrete sidewalks varies within the Maryland House site. There are newer sections of sidewalk, primarily located around the building, were installed during the site and building renovations in the year 2000. Also, various sidewalk sections were repaired and replaced in 2007. The newer sections of sidewalk are in ***good*** condition. The older sections, which are primarily located within the parking areas, are in ***fair*** condition.

As improvements to the sidewalks have been made over the years, they have been brought up to meet current standards of the Americans with Disabilities Act (ADA). Improvements required in future years will continue to bring the sidewalks up to current ADA standards. Costs for ADA requirements have been included in the costs for sidewalk improvements.

Plaza area concrete sidewalk in good condition.

4. Concrete Pavers

Typical industry standards show that concrete pavers last between 25-30 years if installed and maintained properly.

Structurally and aesthetically the concrete pavers found on the Maryland House site are in ***good*** condition. Weeds between pavers were noticed, but this could be corrected through continued maintenance. The pavers at the Maryland House were given a spot replacement in 2007, and were replaced when the Maryland House underwent renovations in the year 2000.

Concrete paver area depicting maintenance needs.

5. Drainage Facilities

Drainage infrastructure typically includes a life span ranging from 50 years to 80 years. Drainage inlets, which are subjected to more wear and tear due to their proximity to the roadway surface will last approximately 50 to 60 years. The reinforced concrete

pipe typically lasts 70 to 80 years.

The drainage facilities at the Maryland House consisted of drainage inlets, reinforced concrete pipe and a storm water management area. The inlets and pipes, for the most part, are original to the site. The inlets appeared to be in ***fair*** condition, at the roadway surface.

6. Guard Rail

The guard rail at the Maryland house is located primarily along the entrance and exit ramps of the facility. There is also some guard rail located around overhead sign posts. The Guard rail appeared to be in ***good*** condition throughout the site.

The guard rail at the Maryland House was completely replaced in 1993, when the parking area was renovated to add additional parking spaces. The guard rail was updated to meet recent standards at that time. No major replacement is anticipated over the next 20 years.

7. Water and Sanitary Sewer Utilities

The water system at the Maryland House consists of 8" ductile iron pipe. The existing force main from the service plaza to the metering vault is 50 years old, and ruptures several times a year. The main is located 2.75 miles away in the City of Aberdeen. The City of Aberdeen claims that the City is running low on water, and cannot guarantee any additional capacity to the Maryland House. The Maryland House also utilizes a booster station and a 100,000 gallon above ground storage tank located just across I-95 from the site. The storage tank needs to be painted and repaired.

The sewer system at the Maryland House consists of 8" gravity lines with 4" and 6" service laterals. The system has not experienced any recurring service problems. Overall, the sewer is in ***good*** condition. The sewer system discharges to

Guard rails located along access drives and

Overhead signing with up-lighting.

Harford County.

8. Signage
   The directional signage at the Maryland House appeared to be in good condition throughout the site. The signage has been replaced twice in the lifetime of the Maryland House. The signs have an expected lifetime of 12-15 years. A consideration for future sign replacement could include replacing the existing overhead, highway signs with reflective signs eliminating the need for up lighting.

   The cost estimate assumes the structure for the overhead signing will remain in place, but the signing will be replaced.

9. Landscaping
   It is estimated that with proper care, large trees and shrubs at the travel plazas will not need to be replaced. Perennial flowers are replaced every 4-6 years, and bulbs are replaced every year. The landscaping at the Maryland House appeared to be in ***good*** condition, and appeared to be well cared for.

Well maintained landscaped areas create an inviting facility.

D. Civil/Site Work Items

A total of eight work items have been developed for the Maryland House. The work items below and associated costs are for the anticipated capital improvement items. These costs do not include typical maintenance and operation costs, such as mowing, salting sidewalks and roads, plowing, and replacing light bulbs.

1. Work Item MD-C.1 – Mill and Overlay of Bituminous Parking Surfaces: Work to include milling and resurfacing of the bituminous areas of the parking lot and restriping. It is anticipated that one resurfacing of the entire lot will be required.
   - Recurring Costs: Annual maintenance will be required during the next 5 years for the sealing of cracks and minor patch work.

2. Work Item MD-C.2 – Miscellaneous Site Repair and Replacement: Work to include replacement of portions of the concrete curb, concrete sidewalk, concrete pavers, landscaping improvements and bulb and perennial flower replacement. Routine inspections are needed to determine where replacements would be needed.
   - Replace up to 50% of concrete curb
   - Replace up to 25% of concrete sidewalk
   - Replace up to 15% of concrete paver walkway

3. Work Item MD-C.3 – Miscellaneous Site Repair and Replacement: Work to include replacement of portions of the concrete curb, concrete sidewalk, concrete pavers, landscaping improvements and bulb and perennial flower replacement. Routine inspections are needed to determine where replacements would be needed.
   - Replace up to 15% of concrete curb
   - Replace up to 50% of concrete sidewalk
   - Replace up to 10% of concrete paver walkway
   - Landscape Improvements

4. Work Item MD-C.4 – Miscellaneous Site Repair and Replacement: Work to include replacement of portions of the concrete curb, concrete sidewalk, concrete pavers, drainage inlets, landscaping improvements and bulb and perennial flower replacement. Routine inspections are needed to determine where replacements would be needed.
   - Replace up to 10% of concrete curb
   - Replace up to 25% of concrete sidewalk
   - Replace up to 25% of concrete paver walkway
   - Replace up to 10% drainage inlets
   - Landscape Improvements

5. Work Item MD-C.5 – Miscellaneous Site Repair and Replacement: Work to include replacement of portions of the concrete curb, concrete sidewalk, concrete pavers, drainage inlets, landscaping improvements and bulb and perennial flower replacement. Routine inspections are needed to determine where replacements would be needed.
   - Replace up to 10% of concrete curb
   - Replace up to 25% of concrete sidewalk
   - Replace up to 30% of concrete paver walkway
   - Replace up to 15% drainage inlets
   - Landscape Improvements

6. Work Item MD-C.6A – Water System Improvements: The entire water system, including the piping, from the City of Aberdeen to Maryland House Facility, will need to be replaced for the facility to continue to operate efficiently.
   - Clean and paint above ground storage tank.
   - Replace the flow meter

7. Work Item MD-C.6B – Water and Sewer System Improvements: Work to maintain water system
   - Clean and paint above ground storage tank.
   - Replace the flow meter

8. Work Item MD C.7A - Signage Improvements: Replace directional signing at facility

9. Work Item MD C.7B - Signage Improvements: Replace directional signing at facility

MD.II – ARCHITECTURAL AND STRUCTURAL ASSESSMENT AND RECOMMENDATIONS

A. Introduction: The Architectural/Structural portion of the facility assessment evaluated various building components of the Maryland House. The condition of the existing roof and skylight, facades, doors and windows, finishes, and elevators were checked to develop a repair or replacement schedule for those items.

Field inspections were conducted and each of the systems with regards to their overall conditions. A condition rating of Good, Fair or Poor were established for each of the architectural and structural elements. The condition ratings are defined as follows:

- **Good** –Minimal to no visible distress or deterioration.
- **Fair** – Noticed some visible distress and deterioration at isolated locations, but overall in decent condition.
- **Poor** – Visible distress and deterioration was identified at several locations.

B. Life-Cycle of System or Equipment: The basis of a majority of the estimates for life cycles of materials was referenced from "Life Cycle Costing for Facilities" written by Alphonse J. Dell'Isola, and Dr. Stephen Kirk and published by Reed Construction Data.

LIFE EXPECTANCY ARCHITECTURAL AND STRUCTURAL FEATURES AND SYSTEMS	
Systems	**Life Expectancy (Years)**
Super Structure	
Basement Walls, Structural Floors, Roof and Stairs	40 - 60
Structural Frame	65 - 75
Exterior Enclosure	
Walls	75 - Life
Doors, Windows and Skylights	30 - 40
Roof and Flashing	20 - 50
Interior Construction	
Partitions and Flooring	25 - 50
Doors and Hardware	20 - 30
Ceilings	10 - 15
Toilet Partitions	20 - 25
Conveying Systems	
Elevator	20 - 30

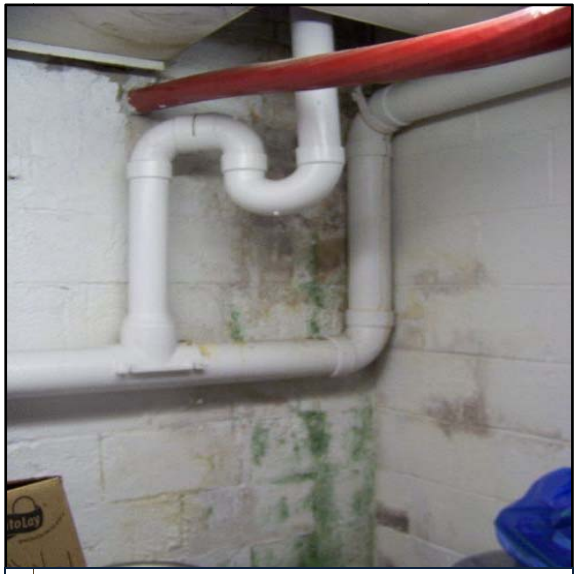
C. Condition Assessment of Equipment/Systems: The condition assessment of the architectural and structural systems is based upon a physical assessment of the systems and a records research of system installation dates.

1. Super Structure

The Maryland House was constructed in 1963 and additions were installed in 1989. There building contains a partial basement and slab on grade. The life expectancy of the basement walls is 50 years and was found to be in ***fair*** condition. Mold was visible in areas due to moisture and corrective measures should be completed to prevent long term damage to the walls. General inspections should be conducted on 5 year intervals to inspect for damage. The structural frame is composed of steel framing and has a life expectancy of 75 years. Though the framing is concealed behind finishes, there are no visible signs of fatigue thus found to be in ***good*** condition. No maintenance is required for this material. The structural floors are concrete on metal decking and slab on grade. The life expectancy of these flooring systems is at least 50 years and was found to be in ***fair to good*** condition. Where steel beams bear on exterior walls, rust was observed on the ends of the beams.

This rust should be removed and the steel beams should be cleaned, primed and painted to prevent further corrosion. General inspections should be conducted on 10 year intervals to inspect for damage.

The structural roof is a steel frame with concrete planking. This system has a life expectancy of at least 50 years and not found to be in good condition. Inspections should be conducted on 10 year intervals. The structures of the lobby and emergency egress stairs have a life expectancy of 40 years. The stairs are in ***fair to good*** condition. Inspections should occur every year and replacement of damaged treads and handrails should be made on an as needed basis.



Presence of Mold in Basement.

Presence of Steel Framing Corrosion

2. Exterior Enclosures

Exterior Walls: The exterior walls of both the original structure and the additions are load bearing masonry walls with a Flemish bond brick pattern. The life expectancy of this wall system is greater than 75 years. The brick was found to be in ***good*** condition. The mortar between the brick appears to be the original mortar on both the original structure and the additions. Life expectancy of the mortar is 15 years and was found to be in ***poor to fair*** condition. As the mortar ages, it can crack and deteriorate allowing moisture to enter the wall system. Yearly inspections should be conducted and repointed as necessary. Mortar in areas at the tops of the chimneys have failed and should be replaced.

The exterior walls of the 2003 additions are an Exterior Insulation Finish System (EIFS). The life expectancy of this system is 35 years. This system is dependent on the framing system that it is attached to and the sealant. The EIFS system was in ***fair*** condition and yearly inspections should be conducted for signs of mold and sealant failure. Mold will have a tendency to occur on shaded elevations and should be cleaned, as needed, by brushing with a water and bleach mixture (three parts water and one part bleach).

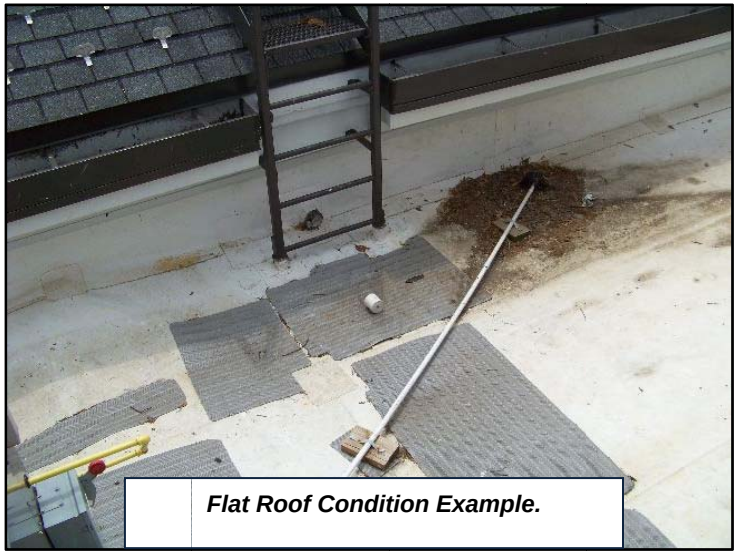
Doors and Windows: The doors and windows were replaced in 2003. The storefront doors and windows have a life expectancy of 40 years are in ***good*** condition. The wood trim around some windows were found to be poor conditions, showing signs of rot. The windows on the service station appear to be the original window, have a life expectancy of 40 years and are in ***poor*** condition.

Typical Brick Condition Example.

Deteriorated Wooden Window Trim.

Roofing System: The original roof structure was replaced in 2006 with Architectural grade fiberglass shingles on the sloped roof and a white EPDM roofing membrane on the flat roofs. The life expectancy of the fiberglass shingle roofs is 30 years and the life expectancy of the EPDM roof is 20. Both roofing systems are in ***good*** condition. General maintenance should occur on the flat roof seasonally and the gutters, downspouts and internal drains should be cleaned of debris regularly. The flashing, gutters and downspouts have a life expectancy of 40 years and require preventative maintenance every 10 years.

The service stations contain the original slate roofing. This material has a live expectancy of 50 to 75 years. The slate shingles are in ***fair*** condition. The copper flashing used on the structure has a life expectancy of 50 years and shows signs of corrosion and is in ***fair*** condition.



Flat Roof Condition Example.

Copper Flashing Corrosion.

3. Interior Construction

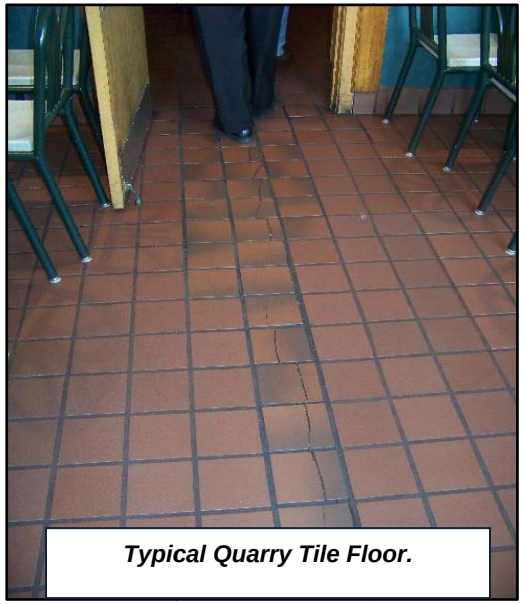
Walls: The interior construction is a mix of concrete masonry units (CMU), metal stud framing with gypsum board and in the lobby of the original structure plaster finish on an unknown structure. The life expectancy of the CMU walls is 60 years and is in ***good*** condition. Repointing of joints should occur at 25 year intervals. The plaster finish on wood lath and unknown structure appears to be the original material and has a life expectancy of 30 years and is in ***poor to fair*** condition. This wall system requires patching on 10 year intervals. The metal stud framing with gypsum board has a life expectancy of 15 years when used in this application. Repair of these walls should occur on an as needed basis. The metal stud framing in the public restrooms require higher maintenance due to the moisture and have a life expectancy of 5 to 10 years. The restrooms were renovated in the mid 1990's and a partial renovation of the toilet rooms was completed in 2004. The restrooms are in ***fair*** condition. The metal toilet compartment partitions have a life expectancy of 25 years and are in ***fair to good*** condition. Maintenance should be completed daily involving a general cleaning with a damp towel and an inspection of hardware and attachment into adjacent walls.

Plaster Finish Deterioration.

Doors: The interior doors have a life expectancy of 30 years and are in fair to good condition. Maintenance should occur weekly with an inspection of finishes and hardware operations.

Typical Bathroom Tile Floor.

Flooring: The Maryland House has a combination of quarry, ceramic and vinyl composition tile (VCT) as well as painted concrete floors. The majority of the public areas contains quarry tile. The life expectancy of quarry tile is 30 years and requires daily moppings and yearly minor repairs. The condition of this tile is ***fair to good***. Control joints in the concrete substrate have telegraphed through the quarry tile in areas. Let untreated, the tiles will be prone to more frequent maintenance. The offices on the 2nd floor contain VCT which has a life expectancy of 20 years. The condition of this floor is ***good*** and requires monthly cleaning and waxing. The basement contains painted concrete floors that are in poor condition and require cleaning painting. Maintenance should be completed on an as needed basis.



Typical Quarry Tile Floor.

Ceilings: The ceilings in the public areas are acoustic ceiling tiles and have a life expectancy of 15 years. General maintenance and inspections should occur yearly. The condition of the acoustic ceiling tiles is generally ***fair to good*** condition, though water damage tiles which are in poor condition should be replaced.

Water Stained Ceiling Tiles.

4. Conveying Systems

The hydraulic elevator and the freight elevators were installed with the original structure. The life expectancy of elevators is 30 years and requires daily cleaning and yearly inspections and maintenance. The condition of the elevators appears to be ***fair***, though parts are difficult to obtain.

Existing Elevator.

D. Architectural/Structural Work Items

A total of fifteen work items have been developed for the Maryland House. The work items below and associated costs are for the anticipated capital improvement items. These costs do not include typical maintenance and operation costs, such as painting and cleaning.

1. Work Item MD-A.1 – Super Structure: The Super Structure of the Maryland House is sound and should last through year 2040 with regular maintenance and inspections. It is recommended that all exposed rust be cleaned, primed and painted to prevent continued corrosion of steel. Exposed structural steel in the basement should be scraped and painted. Additionally, the source of the water damage to the basement walls should be corrected and the damaged CMU striped and repainted.

2. Work Item MD-A.2 – Exterior Enclosures

   - MD-A.2A – Chimney Repairs: There are visible signs of mortar failure occurring on the chimneys. The tops of the chimneys should be removed down to good load bearing material and rebuilt.

   - MD-A.2B – Brick Repointing: The mortar on the exterior walls is currently in fair to good condition, though the life expectancy of the mortar is 25–75 years. The current mortar is in good condition. If long-term ownership of the travel plaza occurs, the MdTA should schedule repointing the entire exterior brick. The repointing of the wall should also include the cleaning of the brick.

   - MD-A.2C – Refinishing of EIFS: The EIFS was installed in 2003 and has a life expectancy of 35 years. Cracking in the surface will occur and a new synthetic finish coat should be applied every 10 to 15 years.

   - MD-A.2D – Replacement of all Wood Window Trim of EIFS: During the 2003 window replacement renovation, wood trim was used around the side entrance windows. Flashing was not properly installed causing the wood trim to rot. The windows and wood trim should be removed, flashing should be properly installed and windows and new PVC trim installed. The PVC will reduce maintenance requirements and will not rot.

   - MD-A.2E – Replacement of all Wood Windows in Service Station: The original windows in the Service Stations have exceeded their life expectancy and MdTA should schedule the replacement of these windows and attic louvers.

   - MD-A.2F – Replacement of Roofing, Flashing, Gutters and Downspouts in Service Station: The Service Stations have the original slate shingles and copper flashing. The copper flashing has met its life expectancy of 50 years and requires replacement. To replace the valley flashing will require the selective removal of the slate shingle and due to their age and likelihood of damage to the shingles, it is recommend MdTA replace both at the same time. MdTA should schedule the replacement of the roof, flashing, gutters and downspout to match the main travel plaza building.

3. Work Item MD-A.3 – Interior Construction

   - MD-A.3A – Plaster Wall Repairs: There are visible signs of cracking on the plaster walls. Cracks should be repaired and a new plaster top coat applied to walls.

   - MD-A.3B – Metal Stud Framing Replacement: The life expectancy of the metal stud framing in the application at the Travel Plaza is 15 years. Based on visual inspection, these walls appear to be replaced during renovation of food service tenants. It is assume this practice will continue during replacement of restaurants occurring every 15 years on average.

   - MD-A.3C – Metal Stud Framing Replacement in Restrooms: The life expectancy of the metal stud framing in the restrooms is 5 to 10 years. A partial renovation of these walls and finishes was completed in 2004. With the expectations of heavier traffic to the travel plazas in the coming years, MdTA should schedule repair of walls and replacement of finishes in progressively shorter occurrences.

   - MD-A.3D – Quarry and Ceramic Tile Finishes: The majority of the flooring finishes in the public and service areas are quarry tile and have a life expectancy of 30 years. The current age of the existing tile is unknown though aesthetically will soon need replacement. It is recommended that MdTA schedule a full replacement of flooring finishes throughout the facilities. Control joints should be placed in the tile floors over joints in the concrete slab to prevent cracking of new tile.

   - MD-A.3E – Painted Concrete Floor Finishes: The basement and storage rooms contain painted concrete flooring that is chipped and peeling. MdTA should schedule the refinishing of these floors.

   - MD-A.3F – Replacement of Acoustic Ceiling Tile and Grid: The existing ceiling tile has been replaced on an as needed basis. For aesthetic reasons, MdTA should schedule a complete replacement of all tile.

4. Work Item MD-A.4 – Conveying Systems

   - MD-A.4A – Elevator replacements: The two hydraulic freight elevators and one hydraulic passenger elevator in the Maryland House are believed to have been renovated in the 1986 construction/renovation. Though the elevators are operating, parts are becoming increasingly scarce. MdTA should consider scheduling the replacement of all three elevators, eliminating the need for further work during the period of this study.

   - MD-A.4B – Lobby Stair Tread Replacement: The stair in the lobby is believed to be structurally sound, though aesthetically worn and cracking. It appears to be part of the original building structure and should be replaced.

MD.III – MECHANICAL SYSTEMS ASSESSMENT AND RECOMMENDATIONS

A. Introduction: The mechanical systems portion of the facility assessment evaluated various components of the Maryland House travel plaza. Condition assessment of boilers, chillers, air distribution, plumbing and underground storage tanks. Field inspections were conducted and each was evaluated with regards to their overall conditions. A condition rating of Good, Fair or Poor were established for each of the elements. The condition ratings are defined as follows:

- **Good** –Minimal to no visible distress or deterioration.
- **Fair** – Noticed some visible distress and deterioration at isolated locations, but overall in decent condition.
- **Poor** – Visible distress and deterioration was identified at several locations.

B. Life-Cycle of System or Equipment: The following report details the existing conditions and estimated service life of the Mechanical systems at the Maryland House Welcome Centers. The service life estimates given in the report are based on industry standards. In this case the 2007 ASHRAE Handbook – HVAC Applications has been used. When information could not be found in ASHRAE the manufacturer was contacted directly for an estimated life expectancy.

LIFE EXPECTANCY FOR MECHANICAL SYSTEMS	
Systems	**Life Expectancy (Years)**
Cast Iron Boiler	25-35
Fuel Oil Storage Tank	25-35
Base Mounted End Suction Pump	15-20
Inline Pump	10-20
Fuel Oil Pump	10-15
Scroll Chiller and Cooling Tower	20-25
DX Packaged Roof Top Unit	20-25
Multizone Air handling Unit & DX Air Conditioning Unit	15-25
Exhaust Fan & Make Up Air Unit	20-25
Ductwork, Diffusers & Grilles	15-25
Domestic, Mechanical, Storm & Sanitary Pipe	30-40
Plumbing Fixtures	40-60
Grease Trap	15-20
Pneumatic Control System	12-20

C. Condition Assessment of Equipment/Systems: The condition assessment of the mechanical systems is based upon a physical assessment of the systems and a records research of system installation dates.

1. Heating Water System
   The heating water system consists of two 5000 MBH oil-fired hot water boilers (2003), an inline blend pump to maintain a constant return water temperature (2008), an air separator & expansion tank (2003), two base mounted heating water pumps that distribute the heating water to the building (2003), and two fuel oil pumps that feed the burners (2003) from a 10,000 gallon No. 2 Fuel Oil storage tank (1992) The heating water system is in ***fair*** condition.

Heating system - Fuel-oil, cast iron sectional boiler.

2. Chilled Water System
   The chilled water system includes a Multistack Scroll chiller (2004) which serves the cooling coils in the multizone AHU's, two base mounted chilled water pumps (2006), a base mounted glycol pump (2006), an inline glycol circulating pump (2006), and a BAC closed circuit cooling tower (2006). The chilled water system is in ***good*** condition.

Cooling system – Scroll Chiller

3. Air Distribution System

The building is served by a combination of eight packaged DX roof top units (RTU's) (2005), eight exhaust fans (1987), and seven multi-zone air handling units (AHU's) on the second floor (1987). A make up air unit (2004) serves the Bob's Big Boy area. Most of the ductwork and insulation that runs throughout the building is original from 1963. Portions have been replaced when new units were installed. The diffusers and grilles were replaced in the 1987 renovations. The 2004 make up air unit and the 2005 packaged rooftop units are in ***good*** condition. The 1987 air handling units and exhaust fans are in ***poor*** condition. The ductwork within the building is in ***fair to poor*** condition. The diffusers are in ***good*** condition.

Multi-Zone Air Handling Unit

4. Building Automation and Control System

The mechanical equipment is centrally controlled by a pneumatic system (1963). If any major equipment replacements are to occur the MdTA should replace the existing pneumatic control system with a DDC system. The control system is in ***fair to good*** condition.

5. Plumbing

Most of the buildings plumbing (Domestic, Sanitary & Storm) remain as the original 1963 pipe. Some of the pipe has been replaced in various upgrades to the building throughout the years, particularly in the kitchen areas. The 1000 gallon holding tank linked to the grease interceptor often fills too quickly and needs to be emptied after three days. The main water utility enters the building on the southbound side from the water tower. The pipe and valves are all original from the 1963 construction. The Plumbing system is in ***fair to poor*** condition

The facility is served by two hot water heaters (2007), two storage tanks (exact year unknown), and a circulating pump (2003). These systems are in ***good*** condition.

Domestic Hot Water Generator/Storage Tank

6. Maryland House Service Centers
   There are two service centers on either side of the main Maryland House Facility. These services centers were constructed in 1963 and upgraded in 1966 and are nearly identical. Both are served by a DX air conditioning unit with electric heaters in the duct. The condensing units are on the ground outside of the buildings. Hydronic unit heaters supplied by a small boiler are present in the buildings and garage areas for additional heat. The system is in ***poor*** condition.

7. Underground Fuel Storage Tanks (Service Station)
   The UST's were installed in 1992. There are a total of 12 gasoline and diesel underground fuel storage tanks. Six tanks are rated at 15,000 gallons and six tanks are rated at 12,000 gallons. Eight smaller UST's related to waste oil/oil storage include five tanks at 1,000 gallons and three tanks at 550 gallons. There are a total of thirty-two fuel dispensers.

Service Station Boiler

Sunoco Station

Exxon Station

D. Mechanical Systems Work Items

A total of nineteen work items have been developed for the Maryland House. The work items below and associated costs are for the anticipated capital improvement items. These costs do not include typical maintenance and operation costs, such as filter changes, annual equipment tuning and testing, and fuel usage.

- Work Item MD-M.1 - Hot Water Heating System: The hot water heating system is comprised of multiple components which require replacement in a phased manner. These components include the boiler, fuel storage tanks and pumping systems.
  - MD-M.1A – Replace Boilers, Hot Water Heating Pumps, & Inline Circulating Pumps: The boilers were installed in 2003 and since then they have already experienced problems with cracked cast iron sections within the boiler. During the heating season of 2007, the problem was addressed and the boilers have been functioning properly. However, the boiler jackets were left rusted and damaged. Also the condition of the original sections is unknown. The two heating water pumps & inline circulating pumps were installed with the boiler replacement in 2003. The pumps appear to be in good working condition and have not needed any significant maintenance.
  - MD-M.1B – Replace Fuel Oil Storage Tank: The 10,000 gallon fuel storage tank for the boilers was replaced in 1992 and tested two years ago. Replacement would include tanks and associated piping.
  - MD-M.1C - Inline Blend Pumps: The inline blend pumps were installed in 2008 to help protect the boilers. These pumps are in good condition. Replacement would include pumps and ancillary valves and piping.
  - MD-M.1D - Fuel Oil Pumps: The fuel oil pumps were installed with the boiler replacement in 2003. The MdTA should expect to replace the pumps independent of the boiler replacement.
- Work Item MD-M.2 - Chiller System Replacement: The chiller system is comprised of multiple components which require replacement. These components include the chiller, cooling tower and pumping systems.
  - MD-M.2A – Replace Chiller & Base Mounted Chilled Water Pumps: The chiller was installed in 2004 and has not needed any significant maintenance since its installation. Replacement of the chiller system will include the chiller, pumps and ancillary piping and valves.
  - MD-M.2B - Replace Cooling Tower, Base Mounted Glycol Pump & Inline Glycol Circulating Pump: The cooling tower, base mounted glycol pump and inline glycol circulating pump were installed in 2006 and are in good working condition. The units should be replaced when the chiller system is replaced.

- Work Item MD-M.3 - Air Distribution System: The air distribution system is comprised of multiple components which require replacement in a phased manner. These components include air handling units, exhaust fans and ductwork.

  - MD-M.3A - DX Packaged Roof Top Units w/Natural Gas Heat: The roof top units were installed in 2005 and are in good condition.

  - MD-M.3B - Multizone Air Handling Units: The air handling units on the second floor were replaced in the 1987 renovations. The units are visibly worn down and rusted in some areas. The replacement of these units should correspond to the interiors upgrade to the facility.

  - MD-M.3C – Exhaust Fans: The exhaust fans were installed throughout the building in 1987. Due to years of minimal maintenance the life expectancy will be closer to the 15 year time period. The replacement of these units should correspond to the multizone AHU upgrades.

  - MD-M.3D – Ductwork, Insulation Diffusers & Grilles: The majority of the ductwork in the original building is existing from the 1963 construction. Duct was added with the 1987 additions to the building and the air terminal units were replaced. Due to the condition of the duct throughout the building the MdTA should replace the ductwork, insulation diffusers if a long-term (+20-Year) ownership plan is established for the travel plaza.

  - MD-M.3E – Make Up Air Unit: The make-up air unit was installed in 2006 and is in good working condition. The replacement of this unit should correspond to the packaged rooftop upgrades.

- Work Item MD-M.4 – Building Automation Control System: The existing pneumatic control system is functioning properly. There is no immediate need to replace this system. The MdTA would want to consider the level of controllability they would like over their building. Eventually the control system should be replaced with a DDC system but this does not need to occur until the first major replacement of a mechanical system. This would be the recommended year to replace the control system as well. The heating water and chilled water system could be added to the central DDC control system at this time.

- Work Item MD-M.5 - Plumbing Systems: The plumbing system is comprised of multiple components which require replacement in a phased manner. These components include piping, storage tanks and hot water generators.

  - MD-M.5A - Domestic, Storm & Sanitary Piping: Most of the facility's pipe is existing from the original 1963 construction. Some piping has been replaced in various upgrades throughout the years, but the majority of the pipe is over 40 years old. The MdTA should completely replace the facility's piping in a corresponding toilet room upgrade.

- MD-M.5B – Mechanical Pipe: Most of the pipe in the mechanical room was replaced in 2003. The pipe from the mechanical room to the equipment has not been replaced since the original 1963 construction. That pipe should be replaced when the multi-zone air handling units (M.3B) on the second floor are replaced. The mechanical room pipe will not need to be replaced under the time period of this study.

- MD-M.5C - Grease Trap w/1000 Gallon Storage: The grease trap was installed with the original construction in 1963. The trap does not function properly and fills with water. The maintenance staff needs to empty the trap three times a week during the summer and once a week in the winter. The piece of equipment is over 40 years old.
  *Note: A reasonable life expectancy range could not be found. Manufacturers of grease traps claim that the life of their equipment will vary depending on the conditions of installation and how often the trap is used.

- MD - M.5D - Domestic Water Heaters: The water heaters were installed in 2007 and have not had any problems since installation. The water heater replacement would include ancillary piping and valves.

- MD-M.5E – Domestic Hot Water Storage Tanks: An accurate age for the storage tanks could not be obtained. The tanks are known to be at least over ten years old. Replacement of the storage tanks should include ancillary piping and valves.

- MD-M.5F – Plumbing Fixtures: The plumbing fixtures within the toilet room should be replaced with the corresponding upgrade of the toilet room.

- Work Item MD-M.6: Maryland House Service Centers

  - MD-M.6A - Oil Fired Cast Iron Boilers: The cast iron boilers in both the north and south bound service stations are original from the 1963 construction. These boilers are still functional but appear to be in below average condition. Boiler replacement will include ancillary circulator pumps, piping and valves.

  - MD-M.6B - DX Air Conditioning Units: The units were installed with the 1966 renovations to the Service Centers. One of the condensing units does not currently have a fan therefore is not running.

- Work Item MD-M.7 – Underground Fuel Oil Storage Tank: The underground fuel oil storage tanks were replaced in 1992 and should be replaced in approximately 25-35 years from original installation.

MD.IV – ELECTRICAL SYSTEMS ASSESSMENT AND RECOMMENDATIONS

A. Introduction: The electrical systems portion of the facility assessment evaluated various components of the Maryland House travel plaza. Field inspections were conducted and each was evaluated with regards to their overall conditions. A condition rating of Good, Fair or Poor were established for each of the elements. The condition ratings are defined as follows:

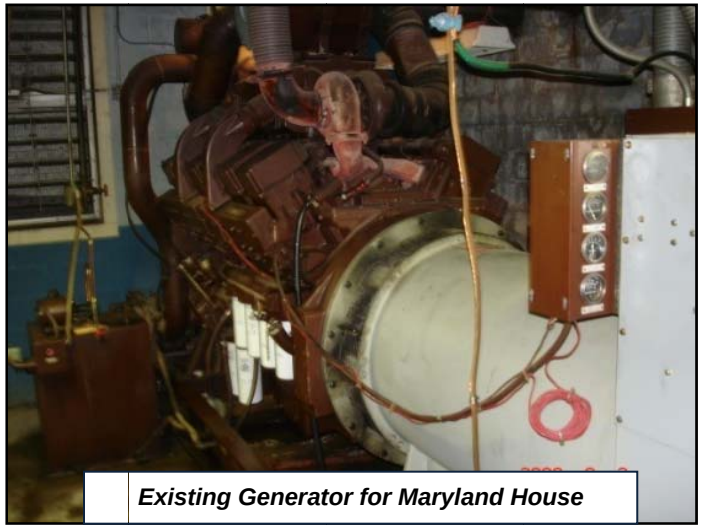
- **Good** –Minimal to no visible distress or deterioration.
- **Fair** – Noticed some visible distress and deterioration at isolated locations, but overall in decent condition.
- **Poor** – Visible distress and deterioration was identified at several locations.

B. Life-Cycle of System or Equipment: The following report details the existing conditions and estimated service life of the electrical systems at the Maryland House Welcome Centers. The service life estimates given in the report are based on industry standards. Systems life is dependent on many factors, such as manufacturer, transport and handling, installation, operation, protection from third party damage, systems maintenance and other external factors. The systems life estimates given in the report are based on widely adopted industry standards for life expectancy of electrical equipment.

LIFE EXPECTANCY FOR ELECTRICAL SYSTEMS	
Systems	**Life Expectancy (Years)**
Interior Lighting	25-35
Exterior Lighting	25-35
Main supply switchboard and distribution equipment	35-40
Transformers (dry-type)	30-40
Distribution and branch circuit panel boards	35-40
Power feeders (conduit and wiring) & power outlets	35-40
Motor starters and disconnects	35-40
Fire Alarm System	20-30
Voice and Data Systems	20-30
Public address system	20-30
Closed circuit television and video	15-25

C. Condition Assessment of Equipment/Systems: The condition assessment of the electrical systems is based upon a physical assessment of the systems and a records research of system installation dates.

1. Utility Power Service: The existing electrical service at the Maryland House is three phase, 4-wire 480Y/277V service and originates from an exterior pad mounted transformer. The existing pad mounted transformer is 1000 kVA with 13.2kV primary and 480Y/277V secondary. The utility power is supplied by BGE. The primary service consists of a single 13kV feeder. The primary medium voltage service conductors are routed in direct burial duct(s). The existing electrical service entrance consists of main switchboard rated 2000A amperes (A), 480Y/277 volt (V) that serves the main building, 200A, 480Y/277 volt (V) service serving area lighting, 200A, 480Y/277 volt (V) service serving south service station -"Exxon", and 200A, 480Y/277 volt (V) service serving north service station "Sunoco". Each electrical service has own electrical utility billing meter. Electrical service was upgraded in 1986 and is in ***good*** condition.



Existing Generator for Maryland House

2. Emergency Power Service: Emergency power supply to the main building is provided by a 775KVA diesel engine generator supplying power at 277/480V. The generator provides emergency backup power to the entire building and site lighting loads. The emergency generator is original with the building, and is in ***poor*** condition.

   - Emergency power supply to the south (Exxon) service station is provided by a 75kW @ 277/480V diesel engine generator
   - Emergency power supply to the north (Sunoco) service station is provided by a 75kW @ 277/480V diesel engine generator.

Existing Power Distribution Panelboard

3. Building Power Distribution Systems: The majority of the power distribution systems within the building were replaced in the 1986 renovation.

   - Building power feeders, receptacle outlets and branch circuits: the majority of the original building power feeders, receptacle outlet and branch circuits were replaced in 1986 and 1989. Items replaced include outlets, boxes, conduits, wiring, etc. All power feeders, receptacles, wiring, conduits, and components installed in 1986 and 1989 appear to remain in ***good*** condition.

   - Main Electrical Room, Basement Floor: Existing power distribution equipment in this room was replaced in 1986. This includes main building distribution switchboard, distribution panelboards, Automatic Transfer Switches (ATS),

Disconnects, Dry-Type transformers, and associated power feeders. The power distribution equipment in this room appears to be in ***good*** condition and no components observed require immediate attention.

- Electrical Room, Basement Floor: The majority of the panels in this room have been replaced in 1986 (building panels) and 1991 (exterior lighting panels). The power distribution equipment installed in 1986 & 1991 appears to be in good condition. However some of the panels and transformers serving the building originate from 1966 and are original with the building. This equipment is 42 years old, and in ***poor*** condition. A major contribution factor to the deficiency of the old panels is their age. Due to this, the circuit breakers are more likely to fail and more importantly, it is evident from past repairs and modifications, that proper replacement components are no longer available.

- Kitchen panels and building branch circuit panel boards: The majority of the panels in the kitchen and throughout the building have been replaced in 1986. These panels appear to remain in ***good*** condition. However some of the original branch circuit panel boards are still energized and still being used. These panels are in poor condition, with significant physical gaps around the front of the panels, and missing or broken locks. All these factors represent a potential life safety and fire hazard.

- Mechanical room, second floor: Panel boards located in this room are original with the building and are in ***poor*** condition.

- Boiler room, basement floor: Panel boards located in this room are new, replaced in 2007. Majority of the motor starters and disconnect switches in this room have been replaced in 2007. All this equipment is new and appears to be in ***good*** condition.

- Motor starters and disconnect switches: Majority of the motor starters and disconnect switches throughout the building have been replaced in 1986 and 2007 (boiler room). This equipment appears to be in ***good*** condition. Some of the disconnect switches in mechanical room,

Existing Power Distribution Panelboard

Existing Mechanical Room Panelboard

second floor are original with the building and will have to be replaced.

- Elevator machine room equipment: Electrical equipment, such as elevator controller, disconnects, and power feeders have been installed in 1988 and appear to be in ***good*** condition.

4. Lighting Systems: A variety of lighting systems

- Exterior Lighting: Parking lot and walkway lighting was installed approximately 12 years ago, while the high mast lighting is original with the site/building (1963). Exterior lighting has been well maintained and appears to remain in ***good*** condition. Existing exterior lighting consists of the following:
  - (120) – Parking Lot, 35' pole height light fixtures utilizing 400W metal halide (MH) lamps.
  - (60)-Walk way, 10' pole height light fixtures utilizing 150W MH lamps.
  - (6) – four heads, High Mast fixtures utilizing 1000W high pressure sodium (HPS) lamps.
  - Some of the lighting pole base covers are corroded. These light pole covers should be replaced.
  - Existing lighting and controls panels, located in the electrical room, basement level were replaced in 1996 and appear to be in good condition.

Corroded parking lot lighting pole base

- Interior Lighting: The original lighting system was replaced in 1986 and 1989. Items replaced include; lighting fixtures, switches, lighting controls, conduits, wiring, etc. In general lighting fixtures throughout the building are 2'x4'; 2'x2' & 1'x4' fluorescent fixtures with T12/40 watt lamps, track lighting, as well as fluorescent and incandescent down light and wall wash fixtures. In general the lighting control is done by individual toggle switches. Emergency light fixtures throughout the building are powered from existing emergency generator. All lighting, including lighting equipment, wiring and components installed in 1986 and 1989 appear to be in ***good*** condition.

5. Fire Alarm System: Existing Fire Alarm System has been upgraded in 1986. New fire alarm devices were added and connected to existing system. New fire alarm and smoke control panel was installed in 1986 to replace existing control panel. Existing panel is a "Cerberus Pyrotronics", System 3 control panel and has the capability of reporting to outside monitoring station. Duct smoke detectors throughout the building are not connected to the fire alarm system. The system is in ***fair*** condition.

6. Special Systems: Special systems consist of a variety of support systems for the Travel Plaza's.

    - Data/Communication and CATV System: All voice/data, and CATV equipment, wiring and components appear to be in ***good*** working condition and no components observed require immediate attention.
    - CCTV System: A new closed circuit television (CCTV) system has been recently installed in the building. The existing CCTV system consists of interior and exterior (building mounted) security cameras, wiring, terminations and additional hardware components. The existing CCTV appeared to be adequate, in ***good*** working condition and no components observed require immediate attention.

7. Sunoco and Exxon service stations: Existing power distribution equipment has been upgraded in 1996. Panels and feeders appear to remain in ***good*** condition and no components observed require immediate attention.

Fire Alarm Panel

D. Electrical Systems Work Items

A total of ten work items have been developed for the Maryland House. The work items below and associated costs are for the anticipated capital improvement items. These costs do not include typical maintenance and operation costs, such as annual equipment tuning and testing, and fuel usage.

1. Work Item MD-E.1 – Utility Power Distribution System: Includes exterior power transformer, secondary ductbank and power feeder.

2. Work Item MD-E.2 –Emergency Power Distribution System: The emergency generator is original with the building, and is in poor condition. Due to current maintenance issues and lack of replacement components, the MdTA should replace the generator with associated control and transfer equipment.

3. Work Item MD-E.3 –Building Power Distribution System: The building power distribution system is comprised of multiple components which require replacement in a phased manner. This components include the following items:

   - MD-E.3A –Replace original panels and electrical equipment: The electrical equipment that has been original installed with the building has exceeded their expected life span and should be replaced. The outdated electrical equipment are as follows: electrical room – basement floor electrical equipment, kitchen panels and building branch circuit panel boards, mechanical room – second floor panel boards, and motor starters and disconnect switches. The MdTA should replace this equipment with new panels and feeders.

   - MD-E.3B –Replace 1986 panels and electrical equipment: The electrical equipment that has been installed 1986 are in fair condition. However this equipment around year 2025 will be reaching the end of its expected life. The electrical equipment are as follows: building power feeders and receptacle outlets, electrical equipment in the main electrical room, electrical equipment in the electrical room – basement floor, kitchen panels and building branch circuit panel boards, motor starters and disconnect switches, and elevator machine room equipment.

4. Work Item MD-E.4 –Lighting Systems: The lighting system is comprised of multiple components which require replacement in a phased manner. This components include the following items:

   - MD-E.4A – Exterior Lighting: Exterior lighting has been well maintained and currently appears to remain in good condition. Replacement of the exterior lighting is required if long-term (30-year) ownership of the site occurs.

   - MD-E.4B – Exterior Lighting, corroded lighting poles: Some of the lighting pole bases are corroded and should be upgraded to limit maintenance costs.

- MD-E.4C – Interior Lighting: All lighting, including lighting equipment, wiring and components installed in 1986 and 1989 appear to remain in good condition. However this equipment around year 2015 – 2020 will be reaching the end of its expected life.

5. Work Item MD-E.5 –Fire Alarm System: The existing fire alarm system was installed and is in fear condition. The fire alarm system is outdated, has limited capacity and occasionally causes false alarm.

6. Work Item MD-E.6 –Special System (FY 2030): All voice/data, and CATV equipment, CCTV equipment, wiring, and components appear to be in good condition. Replacement with technology which is current at the time of replacement is recommended.

7. Work Item MD-E.7 – Sunoco and Exxon service stations: Panels and feeders appear to remain in good condition and no components observed require immediate attention.

Project	Travel Plaza Long-Range Planning	X	Planning
AE Firm:	Johnson, Mirmiran and Thompson		30% Estimate
Date:	Friday, September 26, 2008		60% Estimate
Site:	Maryland House		90% Estimate
Task:	Overall Projected Costs		100% Estimate

Work Item	Description	FY 2010	FY2013	FY2015	FY 2020	FY 2025	FY 2030	Total
MD-C	**Civil/Site Work Items**							
MD-C.1	Bituminous Asphalt			$1,816,797				**$1,816,797**
MD-C.2	Misc Site Repairs			$1,308,741				**$1,308,741**
MD-C.3	Misc Site Repairs and Replacement				$838,216			**$838,216**
MD-C.4	Misc Site Repairs and Replacement					$1,112,643		**$1,112,643**
MD-C.5	Misc Site Repairs and Replacement						$1,465,030	**$1,465,030**
MD-C.6	Water System Improvements							
MD-C.6A	Water System Improvements		$9,160,514					**$9,160,514**
MD-C.6B	Water System Improvements						$782,267	**$782,267**
MD-C.7	Signage Improvements							
MD-C.7A	Signage Improvements			$1,338,957				**$1,338,957**
MD-C.7B	Signage Improvements						$2,086,046	**$2,086,046**
	Civil/Site Work Item Summary	**$0**	**$9,160,514**	**$3,125,538**	**$838,216**	**$1,112,643**	**$2,247,297**	**$16,484,208**
MD-A	**Architectural/Structural Work Items**							
MD-A.1	Super Structure	$84,508						**$84,508**
MD-A.2	Exterior Enclosures							
MD-A.2A	Service Building Chimney Repairs	$222,421						**$222,421**
MD-A.2B	Brick Repointing		$1,371,082					**$1,371,082**
MD-A.2C	Refinishing EFIS			$168,709				**$168,709**
MD-A.2D	Replacement of Window/EFIS Trim	$48,895						**$48,895**
MD-A.2E	Replacement of Service Station Windows			$183,493				**$183,493**
MD-A.2F	Roofing System/Service Stations		$231,274					**$231,274**
MD-A.3	Interior Enclosures							
MD-A.3A	Plaster Wall Repairs	$137,795						**$137,795**
MD-A.3B	Metal Stud Framing Replacment		$608,738				$1,006,169	**$1,614,907**
MD-A.3C	Metal Stud Framing Replacment/Bathrooms		$88,124		$108,383		$145,658	**$342,165**
MD-A.3D	Quarry and Ceramic Tile Finishes		$379,883					**$379,883**
MD-A.3E	Painted Concrete Flooring		$113,208			$161,404		**$274,611**
MD-A.3F	Acosutic Ceiling Tiles		$153,871				$254,331	**$408,202**
MD-A.4	Conveying Systems							
MD-A.4A	Elevator Replacement		$805,170					**$805,170**
MD-A.4B	Lobby Stair tread	$66,798						**$66,798**
	Architectural/Structural Work Item Summary	**$560,417**	**$3,751,350**	**$352,201**	**$108,383**	**$161,404**	**$1,406,158**	**$6,339,913**

Work Item	Description	FY 2010	FY 2013	FY 2015	FY 2020	FY 2025	FY 2030	Total
MD-M	**Mechanical/Plumbing Work Items**							
MD-M.1	Heating System							
MD-M.1A	Replace Boilers and Pumps					$412,117		**$412,117**
MD-M.1B	Replace Fuel Oil Storage Tanks					$127,186		**$127,186**
MD-M.1D	Replace Inline Blend Pumps				$3,518			**$3,518**
MD-M.1E	Replace Fuel Oil Pumps			$4,472				**$4,472**
MD-M.2	Chiller System							
MD-M.2A	Replace Chiller and Pumps					$81,122		**$81,122**
MD-M.2B	Replace Cooling Tower and Pumps					$76,878		**$76,878**
MD-M.3	Air Distribution System							
MD-M.3A	Replace DX Packaged RTU's					$727,547		**$727,547**
MD-M.3B	Replace Multizone AHU		$410,435					**$410,435**
MD-M.3C	Replace Exhaust Fans		$62,599					**$62,599**
MD-M.3D	Replace Duct, Diffusers and Grilles		$802,676					**$802,676**
MD-M.3E	Replace Makeup Air Unit					$31,879		**$31,879**
MD-M.4	Replace Building Automation		$525,862					**$525,862**
MD-M.5	Plumbing System							
MD-M.5A	Domestic, Storm and Sanitary Piping		$379,756					**$379,756**
MD-M.5B	Mechanical Room Piping		$144,507					**$144,507**
MD-M.5C	Grease Trap	$8,393						**$8,393**
MD-M.5D	Domestic Water Heaters					$42,123		**$42,123**
MD-M.5E	Domestic Hot Water Storage Tank			$37,631				**$37,631**
MD-M.5F	Plumbintg Fixtures		$133,622					**$133,622**
MD-M.6	Service Station HVAC							
MD-M.6A	Replace Boilers	$74,786						**$74,786**
MD-M.6B	Replace DX Packaged RTU's	$16,767						**$16,767**
MD-M.7	Replace Underground Strorage Tanks					$2,507,413		**$2,507,413**
	Mechanical/Plumbing Work Item Summary	**$99,946**	**$2,459,456**	**$42,103**	**$3,518**	**$4,006,265**	**$0**	**$6,611,288**
MD-E	**Electrical/Lighting Work Items**							
MD-E.1	Utility Power Distribution Upgrades						$83,442	**$83,442**
MD-E.2	Emergency Power Distribution Upgrades	$388,080						**$388,080**
MD-E.3	Building Power Distribution System							
MD-E.3A	Replace Original Building Panels	$155,925						**$155,925**
MD-E.3B	Replace Panels Installed in 1986					$809,719		**$809,719**
MD-E.4	Lighting Systems							
MD-E.4A	Exterior Lighting					$3,385,823		**$3,385,823**
MD-E.4B	Exterior Lighting, Corroded Poles	$96,250						
MD-E.4C	Interior Lighting			$602,531				**$602,531**
MD-E-5	Fire Alarm		$321,827					**$321,827**
MD-E.6	Special Systems						$465,883	**$465,883**
MD-E.7	Service Station Electrical						$1,077,790	**$1,077,790**
	Electrical/Lighting Work Item Summary	**$640,255**	**$321,827**	**$602,531**	**$0**	**$4,195,542**	**$1,627,115**	**$7,291,020**
	Total Per Period	**$1,300,618**	**$15,693,147**	**$4,122,373**	**$950,117**	**$9,475,854**	**$5,280,570**	**$36,726,430**

PROJECT COST ESTIMATE

Maryland House Travel Plazas - JFK Highway

Work Item: MD-C.1

Description: Mill and Overlay of Bituminous Parking Surfaces (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2015)	LS	$814,125.00	1	$814,125.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$814,125.00	
Construction Contingency	40%			$325,650.00	
SUBTOTAL B				$1,139,775.00	
Estimated Design Fee	15%			$170,966.25	
Estimated CM/I Fee	10%			$113,977.50	
SUBTOTAL C				$1,424,718.75	
Constrution Extra Work Order	10%			$142,471.88	
***GRAND TOTAL* (Program Cost Estimate)**				**$1,567,190.63**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Mill and Overlay**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2015)**								
	Mill and Overlay of Bituminous Surface	83,500	SY	$9.75		$814,125	$0	$814,125	
2	**Total**					**$814,125**	**$0**	**$814,125**	
	GRAND TOTAL					**$814,125**	**$0**	**$814,125**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.2

Description: Miscellaneous Site Repair and Replacement (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$586,460.00	1	$586,460.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$586,460.00	
Construction Contingency	40%			$234,584.00	
SUBTOTAL B				$821,044.00	
Estimated Design Fee	15%			$123,156.60	
Estimated CM/I Fee	10%			$82,104.40	
SUBTOTAL C				$1,026,305.00	
Constrution Extra Work Order	10%			$102,630.50	
GRAND TOTAL **(Program Cost Estimate)**				**$1,128,935.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Misc Site Repairs (2015)**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
3	**CONCRETE (FY 2015)**								
	Replace up to 50% of Concrete Curb	10,000	LF	$40		$400,000	$0	$400,000	
		5,430	SF	$11		$59,730	$0	$59,730	
	Replace up to 15% of Concrete Paver Walkway	6,670	SF	$19		$126,730	$0	$126,730	
3	**Total**					**$586,460**	**$0**	**$586,460**	
	GRAND TOTAL					**$586,460**	**$0**	**$586,460**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.3

Description: Miscellaneous Site Repair and Replacement (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$324,010.00	1	$324,010.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$324,010.00	
Construction Contingency	40%			$129,604.00	
SUBTOTAL B				$453,614.00	
Estimated Design Fee	15%			$68,042.10	
Estimated CM/I Fee	10%			$45,361.40	
SUBTOTAL C				$567,017.50	
Constrution Extra Work Order	10%			$56,701.75	
GRAND TOTAL **(Program Cost Estimate)**				**$623,719.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Misc Repairs (2020)**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
3	**CONCRETE (FY 2020)**								
		3,000	LF	$40		$120,000	$0	$120,000	
	Replace up to 50% of Concrete Sidewalk	10,860	SF	$11		$119,460	$0	$119,460	
	Replace up to 10% of Concrete Paver Walkway	4,450	SF	$19		$84,550	$0	$84,550	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$324,010**	**$0**	**$324,010**	
	GRAND TOTAL					**$324,010**	**$0**	**$324,010**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.4

Description: Miscellaneous Site Repair and Replacement (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$371,010.00	1	$371,010.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$371,010.00	
Construction Contingency	40%			$148,404.00	
SUBTOTAL B				$519,414.00	
Estimated Design Fee	15%			$77,912.10	
Estimated CM/I Fee	10%			$51,941.40	
SUBTOTAL C				$649,267.50	
Constrution Extra Work Order	10%			$64,926.75	
GRAND TOTAL **(Program Cost Estimate)**				**$714,194.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Misc Repairs (2025)**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
3									
	Replace up to 10% of Concrete Curb	2,000	LF	$40		$80,000	$0	$80,000	
	Replace up to 25% of Concrete Sidewalk	5,430	SF	$11		$59,730	$0	$59,730	
	Replace up to 25% of Concrete Paver Walkway	11,120	SF	$19		$211,280	$0	$211,280	
	Replace up to 10% Drainage Inlets	5	EA	$4,000		$20,000	$0	$20,000	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$371,010**	**$0**	**$371,010**	
	GRAND TOTAL					**$371,010**	**$0**	**$371,010**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.5

Description: Miscellaneous Site Repair and Replacement (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
0	LS	$421,380.00	1	$421,380.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$421,380.00	
Construction Contingency	40%			$168,552.00	
SUBTOTAL B				$589,932.00	
Estimated Design Fee	15%			$88,489.80	
Estimated CM/I Fee	10%			$58,993.20	
SUBTOTAL C				$737,415.00	
Constrution Extra Work Order	10%			$73,741.50	
GRAND TOTAL **(Program Cost Estimate)**				**$811,156.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Misc Repairs (FY 2030)**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
3									
	Replace up to 10% of Concrete Curb	2,000	LF	$40		$80,000	$0	$80,000	
	Replace up to 25% of Concrete Sidewalk	5,430	SF	$11		$59,730	$0	$59,730	
	Replace up to 30% of Concrete Paver Walkway	13,350	SF	$19		$253,650	$0	$253,650	
	Replace up to 15% Drainage Inlets	7	EA	$4,000		$28,000	$0	$28,000	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$421,380**	**$0**	**$421,380**	
	GRAND TOTAL					**$421,380**	**$0**	**$421,380**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.6A

Description: Water System Improvements (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2013)	LS	$4,355,000.00	1	$4,355,000.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$4,355,000.00	
Construction Contingency	40%			$1,742,000.00	
SUBTOTAL B				$6,097,000.00	
Estimated Design Fee	15%			$914,550.00	
Estimated CM/I Fee	10%			$609,700.00	
SUBTOTAL C				$7,621,250.00	
Constrution Extra Work Order	10%			$762,125.00	
GRAND TOTAL **(Program Cost Estimate)**				**$8,383,375.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Water System Repair**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2013)**								
	Replace Water System	14,520	LF	$0	$250.00	$0	$3,630,000	$3,630,000	
	Clean and Paint above Ground Storage Tank	1	LS	$225,000		$225,000	$0	$225,000	
	Replace the Flow Meter			$0		$0	$0	$0	
	Inspect and Repair the Booster Station			$0		$0	$0	$0	
	Additional Cost	1	LS	$500,000		$500,000	$0	$500,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$725,000**	**$3,630,000**	**$4,355,000**	
	GRAND TOTAL					**$725,000**	**$3,630,000**	**$4,355,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.6B

Description: Water and Sewer System Improvements (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2013)	LS	$225,000.00	1	$225,000.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$225,000.00	
Construction Contingency	40%			$90,000.00	
SUBTOTAL B				$315,000.00	
Estimated Design Fee	15%			$47,250.00	
Estimated CM/I Fee	10%			$31,500.00	
SUBTOTAL C				$393,750.00	
Constrution Extra Work Order	10%			$39,375.00	
GRAND TOTAL **(Program Cost Estimate)**				**$433,125.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Water System Repair**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2									
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
	SITE WORK (FY 2030)								
	Clean and Paint above Ground Storage Tank	1	LS	$225,000		$225,000	$0	$225,000	
	Replace the Flow Meter			$0		$0	$0	$0	
	Inspect and Repair the Booster Station			$0		$0	$0	$0	
2	**Total**					**$225,000**	**$0**	**$225,000**	
	GRAND TOTAL					**$225,000**	**$0**	**$225,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.7

Description: Signage Improvements (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2020)	LS	$600,000.00	1	$600,000.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$600,000.00	
Construction Contingency	40%			$240,000.00	
SUBTOTAL B				$840,000.00	
Estimated Design Fee	15%			$126,000.00	
Estimated CM/I Fee	10%			$84,000.00	
SUBTOTAL C				$1,050,000.00	
Constrution Extra Work Order	10%			$105,000.00	
GRAND TOTAL **(Program Cost Estimate)**				**$1,155,000.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Signage Improvements**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2020)**								
	Signage Improvements (Furnish & Install)	1	LS	$0	$600,000.00	$0	$600,000	$600,000	
2	**Total**					**$0**	**$600,000**	**$600,000**	
	GRAND TOTAL					**$0**	**$600,000**	**$600,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-C.7

Description: Signage Improvements (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2020)	LS	$600,000.00	1	$600,000.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$600,000.00	
Construction Contingency	40%			$240,000.00	
SUBTOTAL B				$840,000.00	
Estimated Design Fee	15%			$126,000.00	
Estimated CM/I Fee	10%			$84,000.00	
SUBTOTAL C				$1,050,000.00	
Constrution Extra Work Order	10%			$105,000.00	
GRAND TOTAL **(Program Cost Estimate)**				**$1,155,000.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Signage Improvements**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2020)**								
	Signage Improvements (Furnish & Install)	1	LS	$0	$600,000.00	$0	$600,000	$600,000	
2	**Total**					**$0**	**$600,000**	**$600,000**	
	GRAND TOTAL					**$0**	**$600,000**	**$600,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.1

Description: Super Structure (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$17,800.00	1	$17,800.00	
METALS:	LS	$26,100.00	1	$26,100.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$43,900.00	
Construction Contingency	40%			$17,560.00	
SUBTOTAL B				$61,460.00	
Estimated Design Fee	15%			$9,219.00	
Estimated CM/I Fee	10%			$6,146.00	
SUBTOTAL C				$76,825.00	
Constrution Extra Work Order	10%			$7,682.50	
GRAND TOTAL **(Program Cost Estimate)**				**$84,507.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Steel and CMU Painting**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	MD-A1 CMU painting	20,000	sf	$0.89		$17,800	$0	$17,800	
4	**Total**					**$17,800**	**$0**	**$17,800**	
5	**METALS:**								
	MD-A1 Structural Steel Painting	30,000	SF	$0.87		$26,100	$0	$26,100	
5	**Total**					**$26,100**	**$0**	**$26,100**	
	GRAND TOTAL					**$43,900**	**$0**	**$43,900**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.2A

Description: Chimney Repairs (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$115,543.30	1	$115,543.30	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$115,543.30	
Construction Contingency	40%			$46,217.32	
SUBTOTAL B				$161,760.62	
Estimated Design Fee	15%			$24,264.09	
Estimated CM/I Fee	10%			$16,176.06	
SUBTOTAL C				$202,200.78	
Constrution Extra Work Order	10%			$20,220.08	
GRAND TOTAL **(Program Cost Estimate)**				**$222,420.85**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Chimney Repairs**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	MD-A.2A Chimney Repair	2	ea		$57,771.65	$0	$115,543	$115,543	
4	**Total**					**$0**	**$115,543**	**$115,543**	
5	**METALS:**								
						$0	$0	$0	
5	**Total**					**$0**	**$0**	**$0**	
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$0**	**$115,543**	**$115,543**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.2B

Description: Brick Repointing (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$651,826.26	1	$651,826.26	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$651,826.26	
Construction Contingency	40%			$260,730.50	
SUBTOTAL B				$912,556.76	
Estimated Design Fee	15%			$136,883.51	
Estimated CM/I Fee	10%			$91,255.68	
SUBTOTAL C				$1,140,695.96	
Constrution Extra Work Order	10%			$114,069.60	
GRAND TOTAL **(Program Cost Estimate)**				**$1,254,765.55**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Brick Repointing**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	MD-A.2B Brick Repointing	72,660	SF	$7.53		$547,130	$0	$547,130	
	MD-A.2B Scaffolding	726	CS	$144.21		$104,696	$0	$104,696	
4	**Total**					**$651,826**	**$0**	**$651,826**	
5	**METALS:**								
						$0	$0	$0	
5	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$651,826**	**$0**	**$651,826**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.2C

Description: Refinishing of EIFS (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$75,600.00	1	$75,600.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$75,600.00	
Construction Contingency	40%			$30,240.00	
SUBTOTAL B				$105,840.00	
Estimated Design Fee	15%			$15,876.00	
Estimated CM/I Fee	10%			$10,584.00	
SUBTOTAL C				$132,300.00	
Constrution Extra Work Order	10%			$13,230.00	
GRAND TOTAL **(Program Cost Estimate)**				**$145,530.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Wall Repairs**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	MD-A.2C EIFS repair	30,000	SF	$2.52		$75,600	$0	$75,600	
7	**Total**					**$75,600**	**$0**	**$75,600**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$75,600**	**$0**	**$75,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.2D

Description: Replacement of all Wood Window Trim of EIFS (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$25,400.00	1	$25,400.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$25,400.00	
Construction Contingency	40%			$10,160.00	
SUBTOTAL B				$35,560.00	
Estimated Design Fee	15%			$5,334.00	
Estimated CM/I Fee	10%			$3,556.00	
SUBTOTAL C				$44,450.00	
Constrution Extra Work Order	10%			$4,445.00	
GRAND TOTAL **(Program Cost Estimate)**				**$48,895.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:			**90% Estimate**
Task:			**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
7	THERMAL AND MOISTURE PROTECTION								
						$0	$0	$0	
7	Total					$0	$0	$0	
8	DOORS AND WINDOWS								
	MD-A.2D Repair of Wood Window Trim	20,000	LF	$1.27		$25,400	$0	$25,400	
8	Total					$25,400	$0	$25,400	
9	FINISHES								
						$0	$0	$0	
9	Total					$0	$0	$0	
	GRAND TOTAL					$25,400	$0	$25,400	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.2E

Description: Replacement of all Wood Window Trim in Service Station (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$82,225.00	1	$82,225.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$82,225.00	
Construction Contingency	40%			$32,890.00	
SUBTOTAL B				$115,115.00	
Estimated Design Fee	15%			$17,267.25	
Estimated CM/I Fee	10%			$11,511.50	
SUBTOTAL C				$143,893.75	
Constrution Extra Work Order	10%			$14,389.38	
GRAND TOTAL **(Program Cost Estimate)**				**$158,283.13**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Service Station Wood Windows**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
7	**THERMAL AND MOISTURE PROTECTION**								
						$0	$0	$0	
7	**Total**					**$0**	**$0**	**$0**	
8	**DOORS AND WINDOWS**								
	MD-A.2E Replacement of Wood Windows in Service Station	26	SF	$3,162.50		$82,225	$0	$82,225	
8	**Total**					**$82,225**	**$0**	**$82,225**	
9	**FINISHES**								
						$0	$0	$0	
9	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$82,225**	**$0**	**$82,225**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.2F

Description: Replacement of Roofing, Flashing, Gutters and Downspourts in Service Station (FY 2013)

ESTIMATING LEVEL: ☑ Planning

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$109,950.00	1	$109,950.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$109,950.00	
Construction Contingency	40%			$43,980.00	
SUBTOTAL B				$153,930.00	
Estimated Design Fee	15%			$23,089.50	
Estimated CM/I Fee	10%			$15,393.00	
SUBTOTAL C				$192,412.50	
Constrution Extra Work Order	10%			$19,241.25	
***GRAND TOTAL* (Program Cost Estimate)**				**$211,653.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Roofing Systems**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
7	**THERMAL AND MOISTURE PROTECTION**								
	MD-A.2F Replacement of Roofing	300	SQ	$225.63		$67,689	$0	$67,689	
	MD-A.2F Replacement of Gutters	1,500	LF	$6.16		$9,240	$0	$9,240	
	MD-A.2F Roofing and Siding Demolition	30,000	SF	$0.62		$18,600	$0	$18,600	
	MD-A.2F Scaffolding	300	CS	$48.07		$14,421	$0	$14,421	
7	**Total**					**$109,950**	**$0**	**$109,950**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$109,950**	**$0**	**$109,950**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.3A

Description: Replacement of Roofing, Flashing, Gutters and Downspourts in Service Station (FY 2010)

ESTIMATING LEVEL: ☑ Planning

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$71,582.00	1	$71,582.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$71,582.00	
Construction Contingency	40%			$28,632.80	
SUBTOTAL B				$100,214.80	
Estimated Design Fee	15%			$15,032.22	
Estimated CM/I Fee	10%			$10,021.48	
SUBTOTAL C				$125,268.50	
Constrution Extra Work Order	10%			$12,526.85	
***GRAND TOTAL* (Program Cost Estimate)**				**$137,795.35**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Wall Repairs**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	MD-A.3A Plaster Wall Repairs	2,400	SY	$25.82		$61,968	$0	$61,968	
	MD-A.3A Scaffolding	200	CS	$48.07		$9,614	$0	$9,614	
9	**Total**					**$71,582**	**$0**	**$71,582**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$71,582**	**$0**	**$71,582**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.3B

Description: Metal Stud Framing Replacement (FY 2013, FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$289,400.00	1	$289,400.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$289,400.00	
Construction Contingency	40%			$115,760.00	
SUBTOTAL B				$405,160.00	
Estimated Design Fee	15%			$60,774.00	
Estimated CM/I Fee	10%			$40,516.00	
SUBTOTAL C				$506,450.00	
Constrution Extra Work Order	10%			$50,645.00	
GRAND TOTAL **(Program Cost Estimate)**				**$557,095.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	X	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Wall Replacement**		**100% Estimate**

FY 2013, FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	MD-A.3B Metal Stud Framing Relpacement	20,000	SF	$11.97		$239,400	$0	$239,400	
	MD-A.3B Hazardous Materials Allowance	1	EA	$50,000.00		$50,000	$0	$50,000	
9	**Total**					**$289,400**	**$0**	**$289,400**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$289,400**	**$0**	**$289,400**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.3C

Description: Metal Stud Framing Replacement in Restrooms (FY 2013, FY 2020, FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$41,895.00	1	$41,895.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$41,895.00	
Construction Contingency	40%			$16,758.00	
SUBTOTAL B				$58,653.00	
Estimated Design Fee	15%			$8,797.95	
Estimated CM/I Fee	10%			$5,865.30	
SUBTOTAL C				$73,316.25	
Constrution Extra Work Order	10%			$7,331.63	
GRAND TOTAL **(Program Cost Estimate)**				**$80,647.88**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	MdTA Travel Plaza	X	Planning
AE Firm:	Johnson, Mirmiran and Thompson		30% Estimate
Date:	Friday, September 26, 2008		60% Estimate
Site:	Maryland House		90% Estimate
Task:	Restrooms		100% Estimate

FY 2013, FY 2020, FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
7	THERMAL AND MOISTURE PROTECTION								
						$0	$0	$0	
7	Total					$0	$0	$0	
8	DOORS AND WINDOWS								
						$0	$0	$0	
8	Total					$0	$0	$0	
9	FINISHES								
	MD-A.3C Metal Stud Framing Relpacement	3,500	SF	$11.97		$41,895	$0	$41,895	
						$0	$0	$0	
9	Total					$41,895	$0	$41,895	
10	SPECIALTIES								
						$0	$0	$0	
10	Total					$0	$0	$0	
	GRAND TOTAL					$41,895	$0	$41,895	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.3D

Description: Quarry and Ceramic Tile Finishes (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$180,600.00	1	$180,600.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$180,600.00	
Construction Contingency	40%			$72,240.00	
SUBTOTAL B				$252,840.00	
Estimated Design Fee	15%			$37,926.00	
Estimated CM/I Fee	10%			$25,284.00	
SUBTOTAL C				$316,050.00	
Constrution Extra Work Order	10%			$31,605.00	
GRAND TOTAL **(Program Cost Estimate)**				**$347,655.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Flooring Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	MD-A.3D Quarry Tile Replacement	20,000	SF	$9.03		$180,600	$0	$180,600	
						$0	$0	$0	
9	**Total**					**$180,600**	**$0**	**$180,600**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$180,600**	**$0**	**$180,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.3E

Description: Painted Concrete Floor Finishes (FY 2013, FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$53,820.00	1	$53,820.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$53,820.00	
Construction Contingency	40%			$21,528.00	
SUBTOTAL B				$75,348.00	
Estimated Design Fee	15%			$11,302.20	
Estimated CM/I Fee	10%			$7,534.80	
SUBTOTAL C				$94,185.00	
Constrution Extra Work Order	10%			$9,418.50	
GRAND TOTAL **(Program Cost Estimate)**				**$103,603.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Concrete Floor Finishes**		**100% Estimate**

FY 2013, FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	MD-A.3E Painted Concrete Floor Finishes	39,000	SF	$1.38		$53,820	$0	$53,820	
						$0	$0	$0	
9	**Total**					**$53,820**	**$0**	**$53,820**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$53,820**	**$0**	**$53,820**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.3F

Description: Replacement of Acoustic Ceiling Tile and Grid (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$73,152.00	1	$73,152.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$73,152.00	
Construction Contingency	40%			$29,260.80	
SUBTOTAL B				$102,412.80	
Estimated Design Fee	15%			$15,361.92	
Estimated CM/I Fee	10%			$10,241.28	
SUBTOTAL C				$128,016.00	
Constrution Extra Work Order	10%			$12,801.60	
GRAND TOTAL **(Program Cost Estimate)**				**$140,817.60**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Ceiling Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	MD-A.3F Replacement of Acoustic Ceiling Tile	28,800	SF	$2.54		$73,152	$0	$73,152	
						$0	$0	$0	
9	**Total**					**$73,152**	**$0**	**$73,152**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$73,152**	**$0**	**$73,152**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.4A

Description: Elevator Replacements (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$352,785.96	1	$352,785.96	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$30,000.00	1	$30,000.00	
SUBTOTAL A				$382,785.96	
Construction Contingency	40%			$153,114.38	
SUBTOTAL B				$535,900.34	
Estimated Design Fee	15%			$80,385.05	
Estimated CM/I Fee	10%			$53,590.03	
SUBTOTAL C				$669,875.43	
Constrution Extra Work Order	10%			$66,987.54	
GRAND TOTAL **(Program Cost Estimate)**				**$736,862.97**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	X	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Elevator Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
13	SPECIAL COSTRUCTION								
						$0	$0	$0	
13	Total					$0	$0	$0	
14	CONVEYING SYSTEMS								
	MD-A.4A Elevatior Replacement	3	EA	117,595.32		$352,786	$0	$352,786	
14	Total					$352,786	$0	$352,786	
15	MECHANICAL								
						$0	$0	$0	
15	Total					$0	$0	$0	
16	ELECTICAL								
	Electrical Modifications	3	EA		$10,000.00	$0	$30,000	$30,000	
16	Total					$0	$30,000	$30,000	
	GRAND TOTAL					$352,786	$30,000	$382,786	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-A.4B

Description: Lobby Stair Tread Replacement (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$34,700.40	1	$34,700.40	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$34,700.40	
Construction Contingency	40%			$13,880.16	
SUBTOTAL B				$48,580.56	
Estimated Design Fee	15%			$7,287.08	
Estimated CM/I Fee	10%			$4,858.06	
SUBTOTAL C				$60,725.70	
Constrution Extra Work Order	10%			$6,072.57	
GRAND TOTAL **(Program Cost Estimate)**				**$66,798.27**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Stair Repair**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	MD-A.4B Lobby Stair Tread Replacement	540	LF	$64.26		$34,700	$0	$34,700	
						$0	$0	$0	
9	**Total**					**$34,700**	**$0**	**$34,700**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$34,700**	**$0**	**$34,700**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.1A

Description: Replace Boilers, Hot Water Heating Pumps, & Incline Circulating Pumps (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$137,420.00	1	$137,420.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$137,420.00	
Construction Contingency	40%			$54,968.00	
SUBTOTAL B				$192,388.00	
Estimated Design Fee	15%			$28,858.20	
Estimated CM/I Fee	10%			$19,238.80	
SUBTOTAL C				$240,485.00	
Constrution Extra Work Order	10%			$24,048.50	
GRAND TOTAL **(Program Cost Estimate)**				**$264,533.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task	**Boilers**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Boiler Removal	2	EA	$4,775.00	$0.00	$9,550	$0	$9,550	
	Boiler Installation	2	EA	$9,775.00	$49,000.00	$19,550	$98,000	$117,550	
	Base Mounted Sunction Pump Removal	2	EA	$125.00	$0.00	$250	$0	$250	
	Base Mounted Sunction Pump Installation	2	EA	$450.00	$3,975.00	$900	$7,950	$8,850	
	Inline Circulating Pump Removal	1	EA	$75.00	$0.00	$75	$0	$75	
	Inline Circulating Pump Installation	1	EA	$165.00	$980.00	$165	$980	$1,145	
						$0	$0	$0	
15	**Total**					**$30,490**	**$106,930**	**$137,420**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$30,490**	**$106,930**	**$137,420**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.1B

Description: Replace Fuel Oil Storage Tank (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$42,410.00	1	$42,410.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$42,410.00	
Construction Contingency	40%			$16,964.00	
SUBTOTAL B				$59,374.00	
Estimated Design Fee	15%			$8,906.10	
Estimated CM/I Fee	10%			$5,937.40	
SUBTOTAL C				$74,217.50	
Constrution Extra Work Order	10%			$7,421.75	
GRAND TOTAL **(Program Cost Estimate)**				**$81,639.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Boiler Fuel Tanks**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Fuel Tank Removal	1	EA	$645.00	$415.00	$645	$415	$1,060	
	Fuel Tank Installation	1	EA	$1,150.00	$30,000.00	$1,150	$30,000	$31,150	
	Excavation Trench Box	3000	BCY	1.30	2.10	$3,900	$6,300	$10,200	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$5,695**	**$36,715**	**$42,410**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$5,695**	**$36,715**	**$42,410**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.1C

Description: Incline Blend Pumps (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$1,360.00	1	$1,360.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$1,360.00	
Construction Contingency	40%			$544.00	
SUBTOTAL B				$1,904.00	
Estimated Design Fee	15%			$285.60	
Estimated CM/I Fee	10%			$190.40	
SUBTOTAL C				$2,380.00	
Constrution Extra Work Order	10%			$238.00	
GRAND TOTAL **(Program Cost Estimate)**				**$2,618.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task	**In-Line Pumps**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Inline Blend Pump Removal	2	EA	$55.00	$0.00	$110	$0	$110	
	Inline Blend Pump Installation	2	EA	$120.00	$505.00	$240	$1,010	$1,250	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$350**	**$1,010**	**$1,360**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$350**	**$1,010**	**$1,360**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.1D

Description: Fuel Oil Pumps (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$2,004.00	1	$2,004.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$2,004.00	
Construction Contingency	40%			$801.60	
SUBTOTAL B				$2,805.60	
Estimated Design Fee	15%			$420.84	
Estimated CM/I Fee	10%			$280.56	
SUBTOTAL C				$3,507.00	
Constrution Extra Work Order	10%			$350.70	
GRAND TOTAL **(Program Cost Estimate)**				**$3,857.70**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task	**Fuel Pumps**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Fuel Pump Removal	2	EA	$37.00	$0.00	$74	$0	$74	
	Fuel Pump Installation	2	EA	$115.00	$850.00	$230	$1,700	$1,930	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$304**	**$1,700**	**$2,004**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$304**	**$1,700**	**$2,004**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.2A

Description: Replace Chiller & Base Mounted Chilled Water Pumps (FY 2025)

ESTIMATING LEVEL: ☑ Planning

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$27,050.00	1	$27,050.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$27,050.00	
Construction Contingency	40%			$10,820.00	
SUBTOTAL B				$37,870.00	
Estimated Design Fee	15%			$5,680.50	
Estimated CM/I Fee	10%			$3,787.00	
SUBTOTAL C				$47,337.50	
Constrution Extra Work Order	10%			$4,733.75	
***GRAND TOTAL* (Program Cost Estimate)**				**$52,071.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Chiller System**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Scroll Chiller Removal	1	EA	$1,700.00	$0.00	$1,700	$0	$1,700	
	Scroll Chiller Installation	1	EA	$4,500.00	$11,750.00	$4,500	$11,750	$16,250	
	Base Mounted Sunction Pump Removal	2	EA	$125.00	$0.00	$250	$0	$250	
	Base Mounted Sunction Pump Installation	2	EA	$450.00	$3,975.00	$900	$7,950	$8,850	
15	**Total**					**$7,350**	**$19,700**	**$27,050**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$7,350**	**$19,700**	**$27,050**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.2B

Description: Replace Cooling Tower, Base Mounted Glycol Pump & Inline Glycol Circulating Pump (FY 2025)

ESTIMATING LEVEL: ☑ Planning

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$25,635.00	1	$25,635.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$25,635.00	
Construction Contingency	40%			$10,254.00	
SUBTOTAL B				$35,889.00	
Estimated Design Fee	15%			$5,383.35	
Estimated CM/I Fee	10%			$3,588.90	
SUBTOTAL C				$44,861.25	
Constrution Extra Work Order	10%			$4,486.13	
***GRAND TOTAL* (Program Cost Estimate)**				**$49,347.38**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Cooling Tower System**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Closed Circuit Cooling Tower Removal	1	EA	$1,325.00	$0.00	$1,325	$0	$1,325	
	Closed Circuit Cooling Tower Installation	1	EA	$1,665.00	$16,875.00	$1,665	$16,875	$18,540	
	Base Mounted Sunction Pump Removal	1	EA	$125.00	$0.00	$125	$0	$125	
	Base Mounted Sunction Pump Installation	1	EA	$450.00	$3,975.00	$450	$3,975	$4,425	
	Inline Circulating Pump Removal	1	EA	$75.00	$0.00	$75	$0	$75	
	Inline Circulating Pump Installation	1	EA	$165.00	$980.00	$165	$980	$1,145	
15	**Total**					**$3,805**	**$21,830**	**$25,635**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$3,805**	**$21,830**	**$25,635**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.3A

Description: DX Packaged Roof Top Units w/Natural Gas Heat (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$242,600.00	1	$242,600.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$242,600.00	
Construction Contingency	40%			$97,040.00	
SUBTOTAL B				$339,640.00	
Estimated Design Fee	15%			$50,946.00	
Estimated CM/I Fee	10%			$33,964.00	
SUBTOTAL C				$424,550.00	
Constrution Extra Work Order	10%			$42,455.00	
GRAND TOTAL **(Program Cost Estimate)**				**$467,005.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Packaged RTU**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Packaged RTU Removal	8	EA	$1,050.00	$0.00	$8,400	$0	$8,400	
	Packaged RTU Installation	8	EA	$2,975.00	$26,300.00	$23,800	$210,400	$234,200	
						$0	$0	$0	
15	**Total**					**$32,200**	**$210,400**	**$242,600**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$32,200**	**$210,400**	**$242,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.3B

Description: Multizone Air Handling Units (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$195,125.00	1	$195,125.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$195,125.00	
Construction Contingency	40%			$78,050.00	
SUBTOTAL B				$273,175.00	
Estimated Design Fee	15%			$40,976.25	
Estimated CM/I Fee	10%			$27,317.50	
SUBTOTAL C				$341,468.75	
Constrution Extra Work Order	10%			$34,146.88	
GRAND TOTAL **(Program Cost Estimate)**				**$375,615.63**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Multi-Zone AHU**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Multizone AHU Removal	7	EA	$450.00	$0.00	$3,150	$0	$3,150	
	Multizone AHU Installation	7	EA	$1,325.00	$26,100.00	$9,275	$182,700	$191,975	
						$0	$0	$0	
15	**Total**					**$12,425**	**$182,700**	**$195,125**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$12,425**	**$182,700**	**$195,125**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.3C

Description: Exhaust Fans (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$29,760.00	1	$29,760.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$29,760.00	
Construction Contingency	40%			$11,904.00	
SUBTOTAL B				$41,664.00	
Estimated Design Fee	15%			$6,249.60	
Estimated CM/I Fee	10%			$4,166.40	
SUBTOTAL C				$52,080.00	
Constrution Extra Work Order	10%			$5,208.00	
GRAND TOTAL **(Program Cost Estimate)**				**$57,288.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Exhaust Fans**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Exhaust Fan Removal	8	EA	$155.00	$0.00	$1,240	$0	$1,240	
	Exhaust Fan Installation	8	EA	$465.00	$3,100.00	$3,720	$24,800	$28,520	
						$0	$0	$0	
15	**Total**					**$4,960**	**$24,800**	**$29,760**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$4,960**	**$24,800**	**$29,760**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.3D

Description: Ductwork, Diffusers & Grilles (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$381,600.00	1	$381,600.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$381,600.00	
Construction Contingency	40%			$152,640.00	
SUBTOTAL B				$534,240.00	
Estimated Design Fee	15%			$80,136.00	
Estimated CM/I Fee	10%			$53,424.00	
SUBTOTAL C				$667,800.00	
Constrution Extra Work Order	10%			$66,780.00	
GRAND TOTAL **(Program Cost Estimate)**				**$734,580.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Duct, Diffusers, Registers**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Duct, Diffusers, & Grilles Removal	1	LS	$35,600.00	$0.00	$35,600	$0	$35,600	
	Duct, Diffusers, & Grilles Installation	1	LS	$46,000.00	$300,000.00	$46,000	$300,000	$346,000	
						$0	$0	$0	
15	**Total**					**$81,600**	**$300,000**	**$381,600**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$81,600**	**$300,000**	**$381,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.3E

Description: Make Up Air Unit (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$10,630.00	1	$10,630.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$10,630.00	
Construction Contingency	40%			$4,252.00	
SUBTOTAL B				$14,882.00	
Estimated Design Fee	15%			$2,232.30	
Estimated CM/I Fee	10%			$1,488.20	
SUBTOTAL C				$18,602.50	
Constrution Extra Work Order	10%			$1,860.25	
GRAND TOTAL **(Program Cost Estimate)**				**$20,462.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Make-Up Air Unit**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Make Up Air Unit Removal	1	EA	$425.00	$0.00	$425	$0	$425	
	Make Up Air Unit Installation	1	EA	$705.00	$9,500.00	$705	$9,500	$10,205	
						$0	$0	$0	
15	**Total**					**$1,130**	**$9,500**	**$10,630**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$1,130**	**$9,500**	**$10,630**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.4

Description: Building Automation Control System (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$250,000.00	1	$250,000.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$250,000.00	
Construction Contingency	40%			$100,000.00	
SUBTOTAL B				$350,000.00	
Estimated Design Fee	15%			$52,500.00	
Estimated CM/I Fee	10%			$35,000.00	
SUBTOTAL C				$437,500.00	
Constrution Extra Work Order	10%			$43,750.00	
GRAND TOTAL **(Program Cost Estimate)**				**$481,250.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Control System**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Control System Installation	1	LS	$50,000.00	$200,000.00	$50,000	$200,000	$250,000	
15	**Total**					**$50,000**	**$200,000**	**$250,000**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$50,000**	**$200,000**	**$250,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.5A

Description: Domestic, Storm & Sanitary Piping (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$180,540.00	1	$180,540.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$180,540.00	
Construction Contingency	40%			$72,216.00	
SUBTOTAL B				$252,756.00	
Estimated Design Fee	15%			$37,913.40	
Estimated CM/I Fee	10%			$25,275.60	
SUBTOTAL C				$315,945.00	
Constrution Extra Work Order	10%			$31,594.50	
GRAND TOTAL **(Program Cost Estimate)**				**$347,539.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Plumbing Piping**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Domestic, Storm & Sanitary Pipe Removal	4,900	LF	$8.50	$0.00	$41,650	$0	$41,650	
	Domestic, Storm & Sanitary Pipe Installation	1	LS	$49,100.00	$54,790.00	$49,100	$54,790	$103,890	
	Miscellaneous Floor and Ceiling Removal	1	LS	$25,000.00	$10,000.00	$25,000	$10,000	$35,000	
15	**Total**					**$115,750**	**$64,790**	**$180,540**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$115,750**	**$64,790**	**$180,540**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.5B

Description: Mechanical Pipe (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$68,700.00	1	$68,700.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$68,700.00	
Construction Contingency	40%			$27,480.00	
SUBTOTAL B				$96,180.00	
Estimated Design Fee	15%			$14,427.00	
Estimated CM/I Fee	10%			$9,618.00	
SUBTOTAL C				$120,225.00	
Constrution Extra Work Order	10%			$12,022.50	
GRAND TOTAL **(Program Cost Estimate)**				**$132,247.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Mechanical/HVAC Piping**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Mechanical Pipe Removal	1,200	LF	$3.75	$0.00	$4,500	$0	$4,500	
	Mechanical Pipe and Insulation Installation	1,200	LF	$35.00	$18.50	$42,000	$22,200	$64,200	
						$0	$0	$0	
15	**Total**					**$46,500**	**$22,200**	**$68,700**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$46,500**	**$22,200**	**$68,700**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.5C

Description: Grease Trap w/1000 Gallon Storage (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$4,360.00	1	$4,360.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$4,360.00	
Construction Contingency	40%			$1,744.00	
SUBTOTAL B				$6,104.00	
Estimated Design Fee	15%			$915.60	
Estimated CM/I Fee	10%			$610.40	
SUBTOTAL C				$7,630.00	
Constrution Extra Work Order	10%			$763.00	
GRAND TOTAL **(Program Cost Estimate)**				**$8,393.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Grease Trap**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Grease Trap Removal	1	EA	$600.00	$350.00	$600	$350	$950	
	Grease Trap Installation	1	EA	$335.00	$3,075.00	$335	$3,075	$3,410	
						$0	$0	$0	
15	**Total**					**$935**	**$3,425**	**$4,360**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$935**	**$3,425**	**$4,360**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.5D

Description: Water Heaters (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$14,046.00	1	$14,046.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$14,046.00	
Construction Contingency	40%			$5,618.40	
SUBTOTAL B				$19,664.40	
Estimated Design Fee	15%			$2,949.66	
Estimated CM/I Fee	10%			$1,966.44	
SUBTOTAL C				$24,580.50	
Constrution Extra Work Order	10%			$2,458.05	
GRAND TOTAL **(Program Cost Estimate)**				**$27,038.55**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Water Heater**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Water Heater Removal	2	EA	$420.00	$0.00	$840	$0	$840	
	Water Heater Installation	2	EA	$353.00	$6,250.00	$706	$12,500	$13,206	
						$0	$0	$0	
15	**Total**					**$1,546**	**$12,500**	**$14,046**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$1,546**	**$12,500**	**$14,046**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.5E

Description: Storage Tanks (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$14,546.00	1	$14,546.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$14,546.00	
Construction Contingency	40%			$5,818.40	
SUBTOTAL B				$20,364.40	
Estimated Design Fee	15%			$3,054.66	
Estimated CM/I Fee	10%			$2,036.44	
SUBTOTAL C				$25,455.50	
Constrution Extra Work Order	10%			$2,545.55	
GRAND TOTAL **(Program Cost Estimate)**				**$28,001.05**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Hot Water Storage Tank**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Storage Tank Removal	2	EA	$105.00	$0.00	$210	$0	$210	
	Storage Tank Installation	2	EA	$168.00	$7,000.00	$336	$14,000	$14,336	
						$0	$0	$0	
15	**Total**					**$546**	**$14,000**	**$14,546**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$546**	**$14,000**	**$14,546**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.5F

Description: Plumbing Fixtures (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$63,525.00	1	$63,525.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$63,525.00	
Construction Contingency	40%			$25,410.00	
SUBTOTAL B				$88,935.00	
Estimated Design Fee	15%			$13,340.25	
Estimated CM/I Fee	10%			$8,893.50	
SUBTOTAL C				$111,168.75	
Constrution Extra Work Order	10%			$11,116.88	
GRAND TOTAL **(Program Cost Estimate)**				**$122,285.63**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Plumbing/Bathroom Fixtures**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Plumbing Fixture Removal	105	EA	$55.00	$0.00	$5,775	$0	$5,775	
	Plumbing Fixture Installation	105	EA	$450.00	$100.00	$47,250	$10,500	$57,750	
						$0	$0	$0	
15	**Total**					**$53,025**	**$10,500**	**$63,525**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$53,025**	**$10,500**	**$63,525**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.6A

Description: Oil Fired Cast Iron Boilers (Year 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$38,850.00	1	$38,850.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$38,850.00	
Construction Contingency	40%			$15,540.00	
SUBTOTAL B				$54,390.00	
Estimated Design Fee	15%			$8,158.50	
Estimated CM/I Fee	10%			$5,439.00	
SUBTOTAL C				$67,987.50	
Constrution Extra Work Order	10%			$6,798.75	
GRAND TOTAL **(Program Cost Estimate)**				**$74,786.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Service Station Boiler**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Cast Iron Boiler Removal	2	EA	$2,875.00	$0.00	$5,750	$0	$5,750	
	Cast Iron Boiler Installation	2	EA	$3,550.00	$13,000.00	$7,100	$26,000	$33,100	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$12,850**	**$26,000**	**$38,850**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$12,850**	**$26,000**	**$38,850**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.6B

Description: DX Air Conditioning Units (Year 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$8,710.00	1	$8,710.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$8,710.00	
Construction Contingency	40%			$3,484.00	
SUBTOTAL B				$12,194.00	
Estimated Design Fee	15%			$1,829.10	
Estimated CM/I Fee	10%			$1,219.40	
SUBTOTAL C				$15,242.50	
Constrution Extra Work Order	10%			$1,524.25	
GRAND TOTAL **(Program Cost Estimate)**				**$16,766.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Service Station HVAC**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	DX Air Conditioning Unit Removal	2	EA	$550.00	$0.00	$1,100	$0	$1,100	
	DX Air Conditioning Unit Installation	2	EA	$680.00	$3,125.00	$1,360	$6,250	$7,610	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$2,460**	**$6,250**	**$8,710**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$2,460**	**$6,250**	**$8,710**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-M.7

Description: Underground Fuel Oil Storage Tank (Year 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$772,095.00	1	$772,095.00	
ELECTICAL	LS	$64,000.00	1	$64,000.00	
SUBTOTAL A				$836,095.00	
Construction Contingency	40%			$334,438.00	
SUBTOTAL B				$1,170,533.00	
Estimated Design Fee	15%			$175,579.95	
Estimated CM/I Fee	10%			$117,053.30	
SUBTOTAL C				$1,463,166.25	
Constrution Extra Work Order	10%			$146,316.63	
GRAND TOTAL **(Program Cost Estimate)**				**$1,609,482.88**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Contract:	**Underground Fuel Storage Tanks**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL-USTs**								
	New 15,000 gal tanks (fiberglass doublewall)	6	EA	1,300.00	37,000.00	$7,800	$222,000	$229,800	
	New 12,000 gal tanks (fiberglass doublewall)	6	EA	1,100.00	32,000.00	$6,600	$192,000	$198,600	
	New 1,000 gal tanks (fiberglass doublewall)	5	EA	400.00	15,000.00	$2,000	$75,000	$77,000	
	New 550 gal tanks or smaller (fiberglass doublewall)	3	EA	365.00	13,000.00	$1,095	$39,000	$40,095	
	New Dispensers	32	EA	0.00	5,000.00	$0	$160,000	$160,000	
	Piping (fiberglass doublewall)	1500	LF	4.00	20.00	$6,000	$30,000	$36,000	
	Excavation Trench Box	9000	BCY	1.30	2.10	$11,700	$18,900	$30,600	
15	**Total**					**$23,495**	**$718,000**	**$772,095**	
16	**ELECTICAL**								
	Electrical Connections for Large UST	12			$2,000.00	$0	$24,000	$24,000	
	Electical connections for Small UST	8			$1,000.00	$0	$8,000	$8,000	
	Electrical Connections for Dispensers	32			$1,000.00	$0	$32,000	$32,000	
16	**Total**					**$0**	**$64,000**	**$64,000**	
	GRAND TOTAL					**$23,495**	**$782,000**	**$805,495**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.1

Description: Utility Power Distribution System (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$24,000.00	1	$24,000.00	
SUBTOTAL A				$24,000.00	
Construction Contingency	40%			$9,600.00	
SUBTOTAL B				$33,600.00	
Estimated Design Fee	15%			$5,040.00	
Estimated CM/I Fee	10%			$3,360.00	
SUBTOTAL C				$42,000.00	
Constrution Extra Work Order	10%			$4,200.00	
GRAND TOTAL **(Program Cost Estimate)**				**$46,200.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Utility Power**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Utility Power Distribution Removal	1	LS	$5,000.00	$1,000.00	$5,000	$1,000	$6,000	
	Utility Power Distribution Installation	1	LS	$10,000	$8,000.00	$10,000	$8,000	$18,000	
16	**Total**					**$15,000**	**$9,000**	**$24,000**	
	GRAND TOTAL					**$15,000**	**$9,000**	**$24,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.2

Description: Emergency Power Distribution System (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$201,600.00	1	$201,600.00	
SUBTOTAL A				$201,600.00	
Construction Contingency	40%			$80,640.00	
SUBTOTAL B				$282,240.00	
Estimated Design Fee	15%			$42,336.00	
Estimated CM/I Fee	10%			$28,224.00	
SUBTOTAL C				$352,800.00	
Constrution Extra Work Order	10%			$35,280.00	
GRAND TOTAL **(Program Cost Estimate)**				**$388,080.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Emergency Power**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Emergency Generator and Components Removal	1	LS	$3,000.00	$600.00	$3,000	$600	$3,600	
	Emergency Generator and Components Installation	1	LS	$8,000	$190,000.00	$8,000	$190,000	$198,000	
16	**Total**					**$11,000**	**$190,600**	**$201,600**	
	GRAND TOTAL					**$11,000**	**$190,600**	**$201,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.3A

Description: Replace original panels and electrical equipment (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$81,000.00	1	$81,000.00	
SUBTOTAL A				$81,000.00	
Construction Contingency	40%			$32,400.00	
SUBTOTAL B				$113,400.00	
Estimated Design Fee	15%			$17,010.00	
Estimated CM/I Fee	10%			$11,340.00	
SUBTOTAL C				$141,750.00	
Constrution Extra Work Order	10%			$14,175.00	
GRAND TOTAL **(Program Cost Estimate)**				**$155,925.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Building Power Distribution**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Original Building Panels and Components Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Building Panels and Components Installation	1	LS	$18,000	$60,000.00	$18,000	$60,000	$78,000	
16	**Total**					**$21,000**	**$60,000**	**$81,000**	
	GRAND TOTAL					**$21,000**	**$60,000**	**$81,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.3B

Description: Replace 1986 panels and electrical equipment (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$270,000.00	1	$270,000.00	
SUBTOTAL A				$270,000.00	
Construction Contingency	40%			$108,000.00	
SUBTOTAL B				$378,000.00	
Estimated Design Fee	15%			$56,700.00	
Estimated CM/I Fee	10%			$37,800.00	
SUBTOTAL C				$472,500.00	
Constrution Extra Work Order	10%			$47,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$519,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Building Power Distribution (Original)**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	1986 Building Panels and Components Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Building Panels and Components Installation	1	LS	$59,000	$208,000.00	$59,000	$208,000	$267,000	
16	**Total**					**$62,000**	**$208,000**	**$270,000**	
	GRAND TOTAL					**$62,000**	**$208,000**	**$270,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.4A

Description: Lighting Systems (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	###########	1	$1,129,000.00	
SUBTOTAL A				$1,129,000.00	
Construction Contingency	40%			$451,600.00	
SUBTOTAL B				$1,580,600.00	
Estimated Design Fee	15%			$237,090.00	
Estimated CM/I Fee	10%			$158,060.00	
SUBTOTAL C				$1,975,750.00	
Constrution Extra Work Order	10%			$197,575.00	
GRAND TOTAL **(Program Cost Estimate)**				**$2,173,325.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Exterior Lighting**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Exterior Lighting Removal	1	LS	$40,000.00	$5,000.00	$40,000	$5,000	$45,000	
	Exterior Lighting Installation	1	LS	$169,000	$915,000.00	$169,000	$915,000	$1,084,000	
16	**Total**					**$209,000**	**$920,000**	**$1,129,000**	
	GRAND TOTAL					**$209,000**	**$920,000**	**$1,129,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.4B

Description: Exterior Lighting, corroded lighting poles (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$50,000.00	1	$50,000.00	
SUBTOTAL A				$50,000.00	
Construction Contingency	40%			$20,000.00	
SUBTOTAL B				$70,000.00	
Estimated Design Fee	15%			$10,500.00	
Estimated CM/I Fee	10%			$7,000.00	
SUBTOTAL C				$87,500.00	
Constrution Extra Work Order	10%			$8,750.00	
GRAND TOTAL **(Program Cost Estimate)**				**$96,250.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Exterior Lighting - Corroded**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Corroded Light Poles Removal	1	LS	$2,000.00	$2,000.00	$2,000	$2,000	$4,000	
	New Light Poles Installation	1	LS	$11,000	$35,000.00	$11,000	$35,000	$46,000	
16	**Total**					**$13,000**	**$37,000**	**$50,000**	
	GRAND TOTAL					**$13,000**	**$37,000**	**$50,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.4C

Description: Interior Lighting (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$270,000.00	1	$270,000.00	
SUBTOTAL A				$270,000.00	
Construction Contingency	40%			$108,000.00	
SUBTOTAL B				$378,000.00	
Estimated Design Fee	15%			$56,700.00	
Estimated CM/I Fee	10%			$37,800.00	
SUBTOTAL C				$472,500.00	
Constrution Extra Work Order	10%			$47,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$519,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Interior Lighting**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Interior Light Removal	1	LS	$20,000.00		$20,000	$0	$20,000	
	Interior Light Installation	1	LS	$120,000	$130,000.00	$120,000	$130,000	$250,000	
16	**Total**					**$140,000**	**$130,000**	**$270,000**	
	GRAND TOTAL					**$140,000**	**$130,000**	**$270,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.5

Description: Fire Alarm System (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$153,000.00	1	$153,000.00	
SUBTOTAL A				$153,000.00	
Construction Contingency	40%			$61,200.00	
SUBTOTAL B				$214,200.00	
Estimated Design Fee	15%			$32,130.00	
Estimated CM/I Fee	10%			$21,420.00	
SUBTOTAL C				$267,750.00	
Constrution Extra Work Order	10%			$26,775.00	
GRAND TOTAL **(Program Cost Estimate)**				**$294,525.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Fire Alarm**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Fire Alarm Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Fire Alarm Installation	1	LS	$70,000	$80,000.00	$70,000	$80,000	$150,000	
16	**Total**					**$73,000**	**$80,000**	**$153,000**	
	GRAND TOTAL					**$73,000**	**$80,000**	**$153,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.6

Description: Special System (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$134,000.00	1	$134,000.00	
SUBTOTAL A				$134,000.00	
Construction Contingency	40%			$53,600.00	
SUBTOTAL B				$187,600.00	
Estimated Design Fee	15%			$28,140.00	
Estimated CM/I Fee	10%			$18,760.00	
SUBTOTAL C				$234,500.00	
Constrution Extra Work Order	10%			$23,450.00	
GRAND TOTAL **(Program Cost Estimate)**				**$257,950.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Special Systems**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Special System Removal	1	LS	$4,000.00		$4,000	$0	$4,000	
	Special System Installation	1	LS	$30,000	$100,000.00	$30,000	$100,000	$130,000	
16	**Total**					**$34,000**	**$100,000**	**$134,000**	
	GRAND TOTAL					**$34,000**	**$100,000**	**$134,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: MD-E.7

Description: Sunoco and Exxon Service Stations (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$310,000.00	1	$310,000.00	
SUBTOTAL A				$310,000.00	
Construction Contingency	40%			$124,000.00	
SUBTOTAL B				$434,000.00	
Estimated Design Fee	15%			$65,100.00	
Estimated CM/I Fee	10%			$43,400.00	
SUBTOTAL C				$542,500.00	
Constrution Extra Work Order	10%			$54,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$596,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Maryland House**		**90% Estimate**
Task:	**Service Station Power**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Service Station Removal	1	LS	$8,000.00	$2,000.00	$8,000	$2,000	$10,000	
	Service Station Installation	1	LS	$50,000	$250,000.00	$50,000	$250,000	$300,000	
16	**Total**					**$58,000**	**$252,000**	**$310,000**	
	GRAND TOTAL					**$58,000**	**$252,000**	**$310,000**	

Project	**Travel Plaza Long-Range Planning**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Overall Projected Costs**		**100% Estimate**

Work Item	Description	FY 2010	FY2013	FY2015	FY 2020	FY 2025	FY 2030	Total
MD-C	**Civil/Site Work Items**							
CH-C.1	Bituminous Asphalt			$1,861,401				**$1,861,401**
CH-C.2	Misc Site Repairs			$433,800				**$433,800**
CH-C.3	Misc Site Repairs and Replacement				$1,755,285			**$1,755,285**
CH-C.4	Misc Site Repairs and Replacement					$1,034,250		**$1,034,250**
CH-C.5	Misc Site Repairs and Replacement						$1,075,252	**$1,075,252**
CH-C.6	Water System Improvements							
CH-C.6A	Water System Improvements		$5,343,808					**$5,343,808**
CH-C.6B	Water System Improvements						$1,079,529	**$1,079,529**
CH-C.7	Signage Improvements							
CH-C.7A	Signage Improvements				$1,552,205			**$1,552,205**
	Civil/Site Work Item Summary	**$0**	**$5,343,808**	**$2,295,201**	**$3,307,489**	**$1,034,250**	**$2,154,781**	**$14,135,529**
MD-A	**Architectural/Structural Work Items**							
CH-A.1	Super Structure	$83,638						**$83,638**
CH-A.2	Exterior Enclosures							
CH-A.2A	Brick Veneer Repair	$134,853						**$134,853**
CH-A.2B	Vestibule Repair		$70,977					**$70,977**
CH-A.2C	Refinishing EFIS	$242,550						**$242,550**
CH-A.2D	Service Station Roofing	$422,580						**$422,580**
CH-A.3	Interior Enclosures							
CH-A.3A	Metal Stud Framing Replacment		$608,738				$1,006,169	**$1,614,907**
CH-A.3B	Metal Stud Framing/Bathrooms		$138,480		$170,316		$228,891	**$537,687**
CH-A.3C	Quarry and Ceramic Tile Finishes		$418,165					**$418,165**
CH-A.3D	Painted Concrete Flooring		$87,083		$107,102			**$194,185**
CH-A.3E	Acosutic Ceiling Tiles		$163,381			$232,938		**$396,319**
CH-A.4	Conveying Systems - Elevator Replacement						$342,195	**$342,195**
	Architectural/Structural Work Item	**$883,621**	**$1,486,824**	**$0**	**$277,418**	**$232,938**	**$1,577,256**	**$4,458,057**

Work Item	Description	FY 2010	FY 2013	FY 2015	FY 2020	FY 2025	FY 2030	Total
MD-M	**Mechanical/Plumbing Work Items**							
CH-M.1	Air Distribution System							
CH-M.1A	Packaged RTU's, Split System AHU's & MAU		$358,133					**$358,133**
CH-M.1B	Supply & Exhaust Fans		$101,723					**$101,723**
CH-M.1C	Duct & Insulation		$728,582					**$728,582**
CH-M.1D	Diffusers & Grilles		$12,045					**$12,045**
CH-M.2	Plumbing System							
CH-M.2A	Sanitary Pipe		$271,871					**$271,871**
CH-M.2B	Domestic & Storm Water Pipe		$167,434					**$167,434**
CH-M.2C	Hot Water Heaters		$47,222					**$47,222**
CH-M.2D	Grease Trap	$8,393						**$8,393**
CH-M.2E	Plumbing Fixtures		$150,659					**$150,659**
CH-M.3	Chesapeake House Service Centers							
CH-M.3A	Split System Air Handling Units				$77,481			**$77,481**
CH-M.3B	Electric Duct & Unit Heaters				$49,929			**$49,929**
CH-M.3C	Plumbing Fixtures						$83,963	**$83,963**
CH-M.4	Replace Underground Strorage Tanks					$2,451,033		**$2,451,033**
	Mechanical/Plumbing Work Item Summary	**$8,393**	**$1,837,669**	**$0**	**$127,410**	**$2,451,033**	**$83,963**	**$4,508,468**
MD-E	**Electrical/Lighting Work Items**							
CH-E.1	Utility Power Distribution Upgrades			$53,558				**$53,558**
CH-E.2	Emergency Power Distribution Upgrades						$276,749	**$276,749**
CH-E.3	Building Power Distribution System							
CH-E.3A	Replace Original Building Panels	$71,225						**$71,225**
CH-E.3B	Replace Panels Installed in 1986				$607,947			**$607,947**
CH-E.4	Lighting Systems							
CH-E.4A	Exterior Lighting		$1,987,758					**$1,987,758**
CH-E.4B	Interior Lighting			$602,531				**$602,531**
CH-E-5	Fire Alarm	$292,600						**$292,600**
CH-E.6	Special Systems						$465,883	**$465,883**
CH-E.7	Service Station Electrical						$1,077,790	**$1,077,790**
	Electrical/Lighting Work Item Summary	**$363,825**	**$1,987,758**	**$656,089**	**$607,947**	**$0**	**$1,820,422**	**$5,436,041**
	Total Per Period	**$1,255,839**	**$10,656,060**	**$2,951,290**	**$4,320,264**	**$3,718,221**	**$5,636,422**	**$28,538,096**

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.1

Description: Mill & Overlay of Bituminous Parking Surfaces (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2015)	LS	$834,112.50	1	$834,112.50	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$834,112.50	
Construction Contingency	40%			$333,645.00	
SUBTOTAL B				$1,167,757.50	
Estimated Design Fee	15%			$175,163.63	
Estimated CM/I Fee	10%			$116,775.75	
SUBTOTAL C				$1,459,696.88	
Constrution Extra Work Order	10%			$145,969.69	
GRAND TOTAL **(Program Cost Estimate)**				**$1,605,666.56**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Mill and Overlay**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2015)**								
	Mill and Overlay of Bituminous Surface	85,550	SY	$9.75		$834,113	$0	$834,113	
2	**Total**					**$834,113**	**$0**	**$834,113**	
	GRAND TOTAL					**$834,113**	**$0**	**$834,113**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.2

Description: Miscellaneous Site Repair and Replacement (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$194,390.00	1	$194,390.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$194,390.00	
Construction Contingency	40%			$77,756.00	
SUBTOTAL B				$272,146.00	
Estimated Design Fee	15%			$40,821.90	
Estimated CM/I Fee	10%			$27,214.60	
SUBTOTAL C				$340,182.50	
Constrution Extra Work Order	10%			$34,018.25	
GRAND TOTAL **(Program Cost Estimate)**				**$374,200.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Site Repairs (2015)**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
3	**CONCRETE (FY 2015)**								
	Replace up to 10% of Concrete Curb	1,975	LF	$40		$79,000	$0	$79,000	
	Replace up to 25% of Concrete Sidewalk	8,970	SF	$11		$98,670	$0	$98,670	
	Replace up to 5% of Concrete Paver Walkway	880	SF	$19		$16,720	$0	$16,720	
3	**Total**					**$194,390**	**$0**	**$194,390**	
	GRAND TOTAL					**$194,390**	**$0**	**$194,390**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.3

Description: Miscellaneous Site Repair and Replacement (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$36,000.00	1	$36,000.00	
CONCRETE	LS	$642,500.00	1	$642,500.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$678,500.00	
Construction Contingency	40%			$271,400.00	
SUBTOTAL B				$949,900.00	
Estimated Design Fee	15%			$142,485.00	
Estimated CM/I Fee	10%			$94,990.00	
SUBTOTAL C				$1,187,375.00	
Constrution Extra Work Order	10%			$118,737.50	
GRAND TOTAL **(Program Cost Estimate)**				**$1,306,112.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Repairs (2020)**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK**								
	Landscape Improvements	1	LS	$36,000		$36,000	$0	$36,000	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$36,000**	**$0**	**$36,000**	
3	**CONCRETE (FY 2020)**								
	Replace up to 50% of Concrete Curb	9,875	LF	$40		$395,000	$0	$395,000	
	Replace up to 50% of Concrete Sidewalk	17,940	SF	$11		$197,340	$0	$197,340	
	Replace up to 15% of Concrete Paver Walkway	2,640	SF	$19		$50,160	$0	$50,160	
						$0	$0	$0	
3	**Total**					**$642,500**	**$0**	**$642,500**	
	GRAND TOTAL					**$678,500**	**$0**	**$678,500**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.4

Description: Miscellaneous Site Repair and Replacement (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$36,000.00	1	$36,000.00	
CONCRETE	LS	$308,870.00	1	$308,870.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$344,870.00	
Construction Contingency	40%			$137,948.00	
SUBTOTAL B				$482,818.00	
Estimated Design Fee	15%			$72,422.70	
Estimated CM/I Fee	10%			$48,281.80	
SUBTOTAL C				$603,522.50	
Constrution Extra Work Order	10%			$60,352.25	
GRAND TOTAL **(Program Cost Estimate)**				**$663,874.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Repairs (2025)**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK**								
	Landscape Improvements	1	LS	$36,000		$36,000	$0	$36,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$36,000**	**$0**	**$36,000**	
3									
	Replace up to 15% of Concrete Curb	2,965	LF	$40		$118,600	$0	$118,600	
	Replace up to 25% of Concrete Sidewalk	8,970	SF	$11		$98,670	$0	$98,670	
	Replace up to 25% of Concrete Paver Walkway	4,400	SF	$19		$83,600	$0	$83,600	
	Replace up to 10% Drainage Inlets	2	EA	$4,000		$8,000	$0	$8,000	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$308,870**	**$0**	**$308,870**	
	GRAND TOTAL					**$344,870**	**$0**	**$344,870**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.5

Description: Miscellaneous Site Repair and Replacement (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$36,000.00	1	$36,000.00	
0	LS	$273,270.00	1	$273,270.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$309,270.00	
Construction Contingency	40%			$123,708.00	
SUBTOTAL B				$432,978.00	
Estimated Design Fee	15%			$64,946.70	
Estimated CM/I Fee	10%			$43,297.80	
SUBTOTAL C				$541,222.50	
Constrution Extra Work Order	10%			$54,122.25	
GRAND TOTAL **(Program Cost Estimate)**				**$595,344.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Repairs (FY 2030)**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK**								
	Landscape Improvements	1	LS	$36,000		$36,000	$0	$36,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$36,000**	**$0**	**$36,000**	
3									
	Replace up to 10% of Concrete Curb	1,975	LF	$40		$79,000	$0	$79,000	
	Replace up to 25% of Concrete Sidewalk	8,970	SF	$11		$98,670	$0	$98,670	
	Replace up to 25% of Concrete Paver Walkway	4,400	SF	$19		$83,600	$0	$83,600	
	Replace up to 15% Drainage Inlets	3	EA	$4,000		$12,000	$0	$12,000	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$273,270**	**$0**	**$273,270**	
	GRAND TOTAL					**$309,270**	**$0**	**$309,270**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.6A

Description: Water System Improvements (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2010)	LS	$2,540,500.00	1	$2,540,500.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$2,540,500.00	
Construction Contingency	40%			$1,016,200.00	
SUBTOTAL B				$3,556,700.00	
Estimated Design Fee	15%			$533,505.00	
Estimated CM/I Fee	10%			$355,670.00	
SUBTOTAL C				$4,445,875.00	
Constrution Extra Work Order	10%			$444,587.50	
GRAND TOTAL **(Program Cost Estimate)**				**$4,890,462.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Water System Repair**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2010)**								
	Replace Water System	7,920	LF	$0	$250.00	$0	$1,980,000	$1,980,000	
	Clean and Paint above Ground Storage Tank	1	LS	$310,500	$0.00	$310,500	$0	$310,500	
	Additional Cost	1	LS	$0	$250,000.00	$0	$250,000	$250,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$310,500**	**$2,230,000**	**$2,540,500**	
	GRAND TOTAL					**$310,500**	**$2,230,000**	**$2,540,500**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.6B

Description: Water System Improvements (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2010)	LS	$310,500.00	1	$310,500.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$310,500.00	
Construction Contingency	40%			$124,200.00	
SUBTOTAL B				$434,700.00	
Estimated Design Fee	15%			$65,205.00	
Estimated CM/I Fee	10%			$43,470.00	
SUBTOTAL C				$543,375.00	
Constrution Extra Work Order	10%			$54,337.50	
GRAND TOTAL **(Program Cost Estimate)**				**$597,712.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Water System Repair**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2030)**								
	Clean and Paint above Ground Storage Tank	1	LS	$310,500		$310,500	$0	$310,500	
				$0		$0	$0	$0	
				$0		$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$310,500**	**$0**	**$310,500**	
	GRAND TOTAL					**$310,500**	**$0**	**$310,500**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.7

Description: Signage Improvements (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2020)	LS	$600,000.00	1	$600,000.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$600,000.00	
Construction Contingency	40%			$240,000.00	
SUBTOTAL B				$840,000.00	
Estimated Design Fee	15%			$126,000.00	
Estimated CM/I Fee	10%			$84,000.00	
SUBTOTAL C				$1,050,000.00	
Constrution Extra Work Order	10%			$105,000.00	
GRAND TOTAL **(Program Cost Estimate)**				**$1,155,000.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Signage Improvements**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2020)**								
	Signage Improvements	1	LS	$600,000		$600,000	$0	$600,000	
2	**Total**					**$600,000**	**$0**	**$600,000**	
	GRAND TOTAL					**$600,000**	**$0**	**$600,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.1

Description: Super Structure (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$17,522.32	1	$17,522.32	
METALS:	LS	$25,926.00	1	$25,926.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$43,448.32	
Construction Contingency	40%			$17,379.33	
SUBTOTAL B				$60,827.65	
Estimated Design Fee	15%			$9,124.15	
Estimated CM/I Fee	10%			$6,082.76	
SUBTOTAL C				$76,034.56	
Constrution Extra Work Order	10%			$7,603.46	
GRAND TOTAL **(Program Cost Estimate)**				**$83,638.02**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Steel and CMU Painting**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	MD-A1 CMU painting	19,688	sf	$0.89		$17,522	$0	$17,522	
4	**Total**					**$17,522**	**$0**	**$17,522**	
5	**METALS:**								
	MD-A1 Structural Steel Painting	29,800	SF	$0.87		$25,926	$0	$25,926	
5	**Total**					**$25,926**	**$0**	**$25,926**	
	GRAND TOTAL					**$43,448**	**$0**	**$43,448**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2A

Description: Brick Veneer Repair (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$69,485.60	1	$69,485.60	
METALS:	LS	$428.60	1	$428.60	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$139.26	1	$139.26	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$70,053.46	
Construction Contingency	40%			$28,021.38	
SUBTOTAL B				$98,074.84	
Estimated Design Fee	15%			$14,711.23	
Estimated CM/I Fee	10%			$9,807.48	
SUBTOTAL C				$122,593.56	
Constrution Extra Work Order	10%			$12,259.36	
GRAND TOTAL **(Program Cost Estimate)**				**$134,852.91**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Brick Façade Repairs**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	CH-A.2A Brick Demolition	8	EA	$59.95	$0.00	$480	$0	$480	
	CH-A.2A Brick Replacement	200	SF	$12.18		$2,436	$0	$2,436	
	Contraction Joint Installation	1,500	LF		$44.38	$0	$66,570	$66,570	
4	**Total**					**$2,916**	**$66,570**	**$69,486**	
5	**METALS:**								
	CH-A.2A Brick Lintels	200	LB	$1.80		$360	$0	$360	
	CH-A.2A Flashing	20	SF	$3.43		$69	$0	$69	
5	**Total**					**$429**	**$0**	**$429**	
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	CH-A.2A Backer Rod	1	CLF	$90.76		$91	$0	$91	
	CH-A.2A Caulking and Sealants	25	LF	$1.94		$49	$0	$49	
7	**Total**					**$139**	**$0**	**$139**	
	GRAND TOTAL					**$3,483**	**$66,570**	**$70,053**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2B

Description: Vestibule Ceiling Repair (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$33,089.26	1	$33,089.26	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$653.90	1	$653.90	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$33,743.16	
Construction Contingency	40%			$13,497.26	
SUBTOTAL B				$47,240.42	
Estimated Design Fee	15%			$7,086.06	
Estimated CM/I Fee	10%			$4,724.04	
SUBTOTAL C				$59,050.53	
Constrution Extra Work Order	10%			$5,905.05	
GRAND TOTAL **(Program Cost Estimate)**				**$64,955.58**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Vestibule Repair**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
6	**WOOD AND PLASTICS**								
	Framing	1	MB	$1,252.51		$1,253	$0	$1,253	
	Sheathing	525	SF	$1.27		$667	$0	$667	
	Furring	375	LF	$1.32		$495	$0	$495	
	Vestibule Demolition	500	EA	$61		$30,675	$0	$30,675	
6	**Total**					**$33,089**	**$0**	**$33,089**	
7	**THERMAL AND MOISTURE PROTECTION**								
						$0	$0	$0	
7	**Total**					**$0**	**$0**	**$0**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	CH-A.2B Building Paper and Shingles	5	SQ	$130.78		$654	$0	$654	
9	**Total**					**$654**	**$0**	**$654**	
	GRAND TOTAL					**$33,743**	**$0**	**$33,743**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2C

Description: Refinishing of EIFS (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$126,000.00	1	$126,000.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$126,000.00	
Construction Contingency	40%			$50,400.00	
SUBTOTAL B				$176,400.00	
Estimated Design Fee	15%			$26,460.00	
Estimated CM/I Fee	10%			$17,640.00	
SUBTOTAL C				$220,500.00	
Constrution Extra Work Order	10%			$22,050.00	
GRAND TOTAL **(Program Cost Estimate)**				**$242,550.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**EFIS Wall Repairs**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	EIFS repair	50,000	SF	$2.52		$126,000	$0	$126,000	
7	**Total**					**$126,000**	**$0**	**$126,000**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$126,000**	**$0**	**$126,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2D

Description: Service Station Roofing Replacement (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$219,522.00	1	$219,522.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$219,522.00	
Construction Contingency	40%			$87,808.80	
SUBTOTAL B				$307,330.80	
Estimated Design Fee	15%			$46,099.62	
Estimated CM/I Fee	10%			$30,733.08	
SUBTOTAL C				$384,163.50	
Constrution Extra Work Order	10%			$38,416.35	
GRAND TOTAL **(Program Cost Estimate)**				**$422,579.85**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Service Stations - Roof Replacement**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	Roofing Removal	60,000	SF	$0.00	$0.62	$0	$37,200	$37,200	
	Roofing Replacement	600	SQ		$225.00	$0	$135,000	$135,000	
	Gutter Replacement	3,000	LF		$6.16	$0	$18,480	$18,480	
	Scalfolding	600	CS		$48.07	$0	$28,842	$28,842	
7	**Total**					**$0**	**$219,522**	**$219,522**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$0**	**$219,522**	**$219,522**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3A

Description: Metal Stud Framing Replacement (FY 2013, FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$289,400.00	1	$289,400.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$289,400.00	
Construction Contingency	40%			$115,760.00	
SUBTOTAL B				$405,160.00	
Estimated Design Fee	15%			$60,774.00	
Estimated CM/I Fee	10%			$40,516.00	
SUBTOTAL C				$506,450.00	
Constrution Extra Work Order	10%			$50,645.00	
GRAND TOTAL **(Program Cost Estimate)**				**$557,095.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Interior Wall Replacement**		**100% Estimate**

FY 2013, FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Metal Stud Framing Relpacement	20,000	SF	$11.97		$239,400	$0	$239,400	
	Hazardous Materials Allowance	1	EA	$50,000.00		$50,000	$0	$50,000	
9	**Total**					**$289,400**	**$0**	**$289,400**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$289,400**	**$0**	**$289,400**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3B

Description: Metal Stud Framing Replacement in Restrooms (FY 2013, FY 2020, FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$65,835.00	1	$65,835.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$65,835.00	
Construction Contingency	40%			$26,334.00	
SUBTOTAL B				$92,169.00	
Estimated Design Fee	15%			$13,825.35	
Estimated CM/I Fee	10%			$9,216.90	
SUBTOTAL C				$115,211.25	
Constrution Extra Work Order	10%			$11,521.13	
GRAND TOTAL **(Program Cost Estimate)**				**$126,732.38**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	MdTA Travel Plaza	X	Planning
AE Firm:	Johnson, Mirmiran and Thompson		30% Estimate
Date:	Friday, September 26, 2008		60% Estimate
Site:	Chesapeake House		90% Estimate
Task:	Restrooms		100% Estimate

FY 2013, FY 2020, FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
7	THERMAL AND MOISTURE PROTECTION								
						$0	$0	$0	
7	Total					$0	$0	$0	
8	DOORS AND WINDOWS								
						$0	$0	$0	
8	Total					$0	$0	$0	
9	FINISHES								
	Metal Stud Framing Relpacement	5,500	SF	$11.97		$65,835	$0	$65,835	
						$0	$0	$0	
9	Total					$65,835	$0	$65,835	
10	SPECIALTIES								
						$0	$0	$0	
10	Total					$0	$0	$0	
	GRAND TOTAL					$65,835	$0	$65,835	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3C

Description: Quarry and Ceramic Tile Finishes (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$198,800.00	1	$198,800.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$198,800.00	
Construction Contingency	40%			$79,520.00	
SUBTOTAL B				$278,320.00	
Estimated Design Fee	15%			$41,748.00	
Estimated CM/I Fee	10%			$27,832.00	
SUBTOTAL C				$347,900.00	
Constrution Extra Work Order	10%			$34,790.00	
GRAND TOTAL **(Program Cost Estimate)**				**$382,690.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Flooring Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Quarry Tile Replacement	20,000	SF	$9.94		$198,800	$0	$198,800	
						$0	$0	$0	
9	**Total**					**$198,800**	**$0**	**$198,800**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$198,800**	**$0**	**$198,800**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3D

Description: Painted Concrete Floor Finishes (FY 2013, FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$41,400.00	1	$41,400.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$41,400.00	
Construction Contingency	40%			$16,560.00	
SUBTOTAL B				$57,960.00	
Estimated Design Fee	15%			$8,694.00	
Estimated CM/I Fee	10%			$5,796.00	
SUBTOTAL C				$72,450.00	
Constrution Extra Work Order	10%			$7,245.00	
GRAND TOTAL **(Program Cost Estimate)**				**$79,695.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	X	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Concrete Floor Finishes**		**100% Estimate**

FY 2013, FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Painted Concrete Floor Finishes	30,000	SF	$1.38		$41,400	$0	$41,400	
						$0	$0	$0	
9	**Total**					**$41,400**	**$0**	**$41,400**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$41,400**	**$0**	**$41,400**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3E

Description: Replacement of Acoustic Ceiling Tile and Grid (FY 2013, FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$77,673.00	1	$77,673.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$77,673.00	
Construction Contingency	40%			$31,069.20	
SUBTOTAL B				$108,742.20	
Estimated Design Fee	15%			$16,311.33	
Estimated CM/I Fee	10%			$10,874.22	
SUBTOTAL C				$135,927.75	
Constrution Extra Work Order	10%			$13,592.78	
GRAND TOTAL **(Program Cost Estimate)**				**$149,520.53**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	X	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Ceiling Replacement**		**100% Estimate**

FY 2013, FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Replacement of Acoustic Ceiling Tile	30,000	SF	$2.54		$76,200	$0	$76,200	
	Ceiling Tile Replacement - Pans	300	SF	$4.91		$1,473	$0	$1,473	
9	**Total**					**$77,673**	**$0**	**$77,673**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$77,673**	**$0**	**$77,673**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.4

Description: Conveying Systems - Elevator replacements (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$88,424.16	1	$88,424.16	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$10,000.00	1	$10,000.00	
SUBTOTAL A				$98,424.16	
Construction Contingency	40%			$39,369.66	
SUBTOTAL B				$137,793.82	
Estimated Design Fee	15%			$20,669.07	
Estimated CM/I Fee	10%			$13,779.38	
SUBTOTAL C				$172,242.28	
Constrution Extra Work Order	10%			$17,224.23	
GRAND TOTAL **(Program Cost Estimate)**				**$189,466.51**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Elevator Replacement**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
13	**SPECIAL COSTRUCTION**								
						$0	$0	$0	
13	**Total**					**$0**	**$0**	**$0**	
14	**CONVEYING SYSTEMS**								
	Elevator Replacement	1	EA	88,424.16		$88,424	$0	$88,424	
14	**Total**					**$88,424**	**$0**	**$88,424**	
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Electrical Modifications	1	EA		$10,000.00	$0	$10,000	$10,000	
16	**Total**					**$0**	**$10,000**	**$10,000**	
	GRAND TOTAL					**$88,424**	**$10,000**	**$98,424**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1A

Description: Replace Packaged RTU's, Split System AHU's & Make-Up Air Unit (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$170,260.00	1	$170,260.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$170,260.00	
Construction Contingency	40%			$68,104.00	
SUBTOTAL B				$238,364.00	
Estimated Design Fee	15%			$35,754.60	
Estimated CM/I Fee	10%			$23,836.40	
SUBTOTAL C				$297,955.00	
Constrution Extra Work Order	10%			$29,795.50	
GRAND TOTAL **(Program Cost Estimate)**				**$327,750.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task	**HVAC Equipment Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Packaged Roof Top Unit Removal	5	EA	$1,050.00	$0.00	$5,250	$0	$5,250	
	Packaged Roof Top Unit Installation	5	EA	$1,925.00	$10,800.00	$9,625	$54,000	$63,625	
	Split System AHU Removal	6	EA	$1,250.00	$0.00	$7,500	$0	$7,500	
	Split System AHU Installation	6	EA	$1,725.00	$8,500.00	$10,350	$51,000	$61,350	
	Make-Up Air Unit Removal	1	EA	$475.00	$0.00	$475	$0	$475	
	Make-Up Air Unit Installation	1	EA	$460.00	$6,600.00	$460	$6,600	$7,060	
	Miscellanous Duct/Equipment	1	LS	$0.00	$25,000.00	$0	$25,000	$25,000	
15	**Total**					**$33,660**	**$136,600**	**$170,260**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$33,660**	**$136,600**	**$170,260**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1B

Description: Replace Supply & Exhaust Fans (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$48,360.00	1	$48,360.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$48,360.00	
Construction Contingency	40%			$19,344.00	
SUBTOTAL B				$67,704.00	
Estimated Design Fee	15%			$10,155.60	
Estimated CM/I Fee	10%			$6,770.40	
SUBTOTAL C				$84,630.00	
Constrution Extra Work Order	10%			$8,463.00	
GRAND TOTAL **(Program Cost Estimate)**				**$93,093.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Supply and Exhaust Fans**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Supply & Exhaust Fan Removal	13	EA	$155.00	$0.00	$2,015	$0	$2,015	
	Supply & Exhaust Fan Installation	13	EA	$465.00	$3,100.00	$6,045	$40,300	$46,345	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$8,060**	**$40,300**	**$48,360**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$8,060**	**$40,300**	**$48,360**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1C

Description: Duct & Insulation (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$346,375.00	1	$346,375.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$346,375.00	
Construction Contingency	40%			$138,550.00	
SUBTOTAL B				$484,925.00	
Estimated Design Fee	15%			$72,738.75	
Estimated CM/I Fee	10%			$48,492.50	
SUBTOTAL C				$606,156.25	
Constrution Extra Work Order	10%			$60,615.63	
GRAND TOTAL **(Program Cost Estimate)**				**$666,771.88**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task	**Duct and Insulation**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Duct & Insulation Removal	1	LS	$17,875.00	$0.00	$17,875	$0	$17,875	
	Duct & Insulation Installation	1	LS	$215,000.00	$63,500.00	$215,000	$63,500	$278,500	
	Asbestos Allowance	1	LS	$0.00	$50,000.00	$0	$50,000	$50,000	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$232,875**	**$113,500**	**$346,375**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$232,875**	**$113,500**	**$346,375**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1D

Description: Diffusers & Grilles (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$5,726.25	1	$5,726.25	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$5,726.25	
Construction Contingency	40%			$2,290.50	
SUBTOTAL B				$8,016.75	
Estimated Design Fee	15%			$1,202.51	
Estimated CM/I Fee	10%			$801.68	
SUBTOTAL C				$10,020.94	
Constrution Extra Work Order	10%			$1,002.09	
GRAND TOTAL **(Program Cost Estimate)**				**$11,023.03**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task	**Diffusers and Grilles**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Diffusers & Grilles Removal	45	EA	$7.25	$0.00	$326	$0	$326	
	Diffusers & Grilles Installation	45	EA	$35.00	$85.00	$1,575	$3,825	$5,400	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$1,901**	**$3,825**	**$5,726**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$1,901**	**$3,825**	**$5,726**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2A

Description: Sanitary Pipe (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$129,250.00	1	$129,250.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$129,250.00	
Construction Contingency	40%			$51,700.00	
SUBTOTAL B				$180,950.00	
Estimated Design Fee	15%			$27,142.50	
Estimated CM/I Fee	10%			$18,095.00	
SUBTOTAL C				$226,187.50	
Constrution Extra Work Order	10%			$22,618.75	
GRAND TOTAL **(Program Cost Estimate)**				**$248,806.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Sanitary Pipe**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Sanitary Pipe Removal	2,500	LF	$8.50	$0.00	$21,250	$0	$21,250	
	Sanitary Pipe Installation	2,500	LF	$12.25	$10.95	$30,625	$27,375	$58,000	
	Miscellaneous Floor and Ceiling Removal	1	LS	$25,000.00	$25,000.00	$25,000	$25,000	$50,000	
15	**Total**					**$76,875**	**$52,375**	**$129,250**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$76,875**	**$52,375**	**$129,250**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2B

Description: Domestic & Storm Water Pipe (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$79,600.00	1	$79,600.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$79,600.00	
Construction Contingency	40%			$31,840.00	
SUBTOTAL B				$111,440.00	
Estimated Design Fee	15%			$16,716.00	
Estimated CM/I Fee	10%			$11,144.00	
SUBTOTAL C				$139,300.00	
Constrution Extra Work Order	10%			$13,930.00	
GRAND TOTAL **(Program Cost Estimate)**				**$153,230.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Domestic Water Pipe**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Domestic & Storm Water Pipe Removal	2,000	LF	$8.50	$0.00	$17,000	$0	$17,000	
	Domestic & Storm Water Pipe Installation	2,000	LF	$9.50	$11.80	$19,000	$23,600	$42,600	
	Miscellaneous Floor and Ceiling Removal	1	LS	$10,000.00	$10,000.00	$10,000	$10,000	$20,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$46,000**	**$33,600**	**$79,600**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$46,000**	**$33,600**	**$79,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2C

Description: Hot Water Heaters & Inline Circulating Pumps (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$22,450.00	1	$22,450.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$22,450.00	
Construction Contingency	40%			$8,980.00	
SUBTOTAL B				$31,430.00	
Estimated Design Fee	15%			$4,714.50	
Estimated CM/I Fee	10%			$3,143.00	
SUBTOTAL C				$39,287.50	
Constrution Extra Work Order	10%			$3,928.75	
GRAND TOTAL **(Program Cost Estimate)**				**$43,216.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Hot Water Heating System**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Hot Water Heater Removal	2	EA	$420.00	$0.00	$840	$0	$840	
	Hot Water Heater Installation	2	EA	$2,500.00	$6,250.00	$5,000	$12,500	$17,500	
	Inline Circulating Pump Removal	2	EA	$75.00	$0.00	$150	$0	$150	
	Inline Circulating Pump Installation	2	EA	$1,000.00	$980.00	$2,000	$1,960	$3,960	
15	**Total**					**$7,990**	**$14,460**	**$22,450**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$7,990**	**$14,460**	**$22,450**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2D

Description: Grease Trap (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$4,360.00	1	$4,360.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$4,360.00	
Construction Contingency	40%			$1,744.00	
SUBTOTAL B				$6,104.00	
Estimated Design Fee	15%			$915.60	
Estimated CM/I Fee	10%			$610.40	
SUBTOTAL C				$7,630.00	
Constrution Extra Work Order	10%			$763.00	
GRAND TOTAL **(Program Cost Estimate)**				**$8,393.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Grease Trap**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Grease Trap Removal	1	EA	$600.00	$350.00	$600	$350	$950	
	Grease Trap Installation	1	EA	$335.00	$3,075.00	$335	$3,075	$3,410	
						$0	$0	$0	
15	**Total**					**$935**	**$3,425**	**$4,360**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$935**	**$3,425**	**$4,360**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2E

Description: Plumbing Fixtures (2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$71,625.00	1	$71,625.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$71,625.00	
Construction Contingency	40%			$28,650.00	
SUBTOTAL B				$100,275.00	
Estimated Design Fee	15%			$15,041.25	
Estimated CM/I Fee	10%			$10,027.50	
SUBTOTAL C				$125,343.75	
Constrution Extra Work Order	10%			$12,534.38	
GRAND TOTAL **(Program Cost Estimate)**				**$137,878.13**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Plumbing/Bathroom Fixtures**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Plumbing Fixture Removal	75	EA	$55.00	$0.00	$4,125	$0	$4,125	
	Plumbing Fixture Installation	75	EA	$450.00	$100.00	$33,750	$7,500	$41,250	
	Miscellaneous Piping	75	EA	$100.00	$250.00	$7,500	$18,750	$26,250	
15	**Total**					**$45,375**	**$26,250**	**$71,625**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$45,375**	**$26,250**	**$71,625**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.3A

Description: Split System Air Handling Units (Year 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$29,950.00	1	$29,950.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$29,950.00	
Construction Contingency	40%			$11,980.00	
SUBTOTAL B				$41,930.00	
Estimated Design Fee	15%			$6,289.50	
Estimated CM/I Fee	10%			$4,193.00	
SUBTOTAL C				$52,412.50	
Constrution Extra Work Order	10%			$5,241.25	
GRAND TOTAL **(Program Cost Estimate)**				**$57,653.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Service Station AHU**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Split System AHU Removal	2	EA	$1,250.00	$0.00	$2,500	$0	$2,500	
	Split System AHU Installation	2	EA	$1,725.00	$8,500.00	$3,450	$17,000	$20,450	
	Miscellanous Duct/Equipment	2	EA	$1,000.00	$2,500.00	$2,000	$5,000	$7,000	
15	**Total**					**$7,950**	**$22,000**	**$29,950**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$7,950**	**$22,000**	**$29,950**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.3B

Description: Electric Duct & Unit Heaters (Year 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$19,300.00	1	$19,300.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$19,300.00	
Construction Contingency	40%			$7,720.00	
SUBTOTAL B				$27,020.00	
Estimated Design Fee	15%			$4,053.00	
Estimated CM/I Fee	10%			$2,702.00	
SUBTOTAL C				$33,775.00	
Constrution Extra Work Order	10%			$3,377.50	
GRAND TOTAL **(Program Cost Estimate)**				**$37,152.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Service Station Duct Heater**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Electric Duct & Unit Heater Removal	2	LS	$650.00	$0.00	$1,300	$0	$1,300	
	Electric Duct & Unit Heater Installation	2	LS	$1,200.00	$7,800.00	$2,400	$15,600	$18,000	
						$0	$0	$0	
15	**Total**					**$3,700**	**$15,600**	**$19,300**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$3,700**	**$15,600**	**$19,300**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.3C

Description: Plumbing Fixtures (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$24,150.00	1	$24,150.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$24,150.00	
Construction Contingency	40%			$9,660.00	
SUBTOTAL B				$33,810.00	
Estimated Design Fee	15%			$5,071.50	
Estimated CM/I Fee	10%			$3,381.00	
SUBTOTAL C				$42,262.50	
Constrution Extra Work Order	10%			$4,226.25	
GRAND TOTAL **(Program Cost Estimate)**				**$46,488.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Service Station Plumbing Fixtures**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Plumbing Fixture Removal	30	EA	$55.00	$0.00	$1,650	$0	$1,650	
	Plumbing Fixture Installation	30	EA	$450.00	$100.00	$13,500	$3,000	$16,500	
	Piping (Miscellaneous)	30	EA	$100.00	$100.00	$3,000	$3,000	$6,000	
15	**Total**					**$18,150**	**$6,000**	**$24,150**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$18,150**	**$6,000**	**$24,150**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.4

Description: Underground Fuel Oil Storage Tank (Year 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$760,295.00	1	$760,295.00	
ELECTICAL	LS	$57,000.00	1	$57,000.00	
SUBTOTAL A				$817,295.00	
Construction Contingency	40%			$326,918.00	
SUBTOTAL B				$1,144,213.00	
Estimated Design Fee	15%			$171,631.95	
Estimated CM/I Fee	10%			$114,421.30	
SUBTOTAL C				$1,430,266.25	
Constrution Extra Work Order	10%			$143,026.63	
GRAND TOTAL **(Program Cost Estimate)**				**$1,573,292.88**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Underground Fuel Storage Tanks**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL-USTs**								
	New 20,000 gal tanks (fiberglass doublewall)	10	EA	$1,600	$44,000	$16,000	$440,000	$456,000	
	New 1,000 gal tanks (fiberglass doublewall)	2	EA	$400	$15,000	$800	$30,000	$30,800	
	New 600 gal tanks (fiberglass doublewall)	3	EA	$365	$13,000	$1,095	$39,000	$40,095	
	New Dispensers	32	EA	$0	$5,000	$0	$160,000	$160,000	
	Piping (fiberglass doublewall)	1500	Ft	$4	$20	$6,000	$30,000	$36,000	
	Excavation/Trench Box	11000	BCY	1.30	2.10	$14,300	$23,100	$37,400	
15	**Total**					**$38,195**	**$722,100**	**$760,295**	
16	**ELECTICAL**								
	Electrical Connections for Large UST	10			$2,000.00	$0	$20,000	$20,000	
	Electical connections for Small UST	5			$1,000.00	$0	$5,000	$5,000	
	Electrical Connections for Dispensers	32			$1,000.00	$0	$32,000	$32,000	
16	**Total**					**$0**	**$57,000**	**$57,000**	
	GRAND TOTAL					**$38,195**	**$779,100**	**$817,295**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.1

Description: Utility Power Distribution System (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$24,000.00	1	$24,000.00	
SUBTOTAL A				$24,000.00	
Construction Contingency	40%			$9,600.00	
SUBTOTAL B				$33,600.00	
Estimated Design Fee	15%			$5,040.00	
Estimated CM/I Fee	10%			$3,360.00	
SUBTOTAL C				$42,000.00	
Constrution Extra Work Order	10%			$4,200.00	
GRAND TOTAL **(Program Cost Estimate)**				**$46,200.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Utility Power**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Utility Power Distribution Removal	1	LS	$5,000.00	$1,000.00	$5,000	$1,000	$6,000	
	Utility Power Distribution Installation	1	LS	$10,000	$8,000.00	$10,000	$8,000	$18,000	
16	**Total**					**$15,000**	**$9,000**	**$24,000**	
	GRAND TOTAL					**$15,000**	**$9,000**	**$24,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.2

Description: Emergency Power Distribution System (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$79,600.00	1	$79,600.00	
SUBTOTAL A				$79,600.00	
Construction Contingency	40%			$31,840.00	
SUBTOTAL B				$111,440.00	
Estimated Design Fee	15%			$16,716.00	
Estimated CM/I Fee	10%			$11,144.00	
SUBTOTAL C				$139,300.00	
Constrution Extra Work Order	10%			$13,930.00	
GRAND TOTAL **(Program Cost Estimate)**				**$153,230.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Emergency Power**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Emergency Generator and Components Removal	1	LS	$3,000.00	$600.00	$3,000	$600	$3,600	
	Emergency Generator and Components Installation	1	LS	$6,000	$70,000.00	$6,000	$70,000	$76,000	
16	**Total**					**$9,000**	**$70,600**	**$79,600**	
	GRAND TOTAL					**$9,000**	**$70,600**	**$79,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.3A

Description: Replace original panels and electrical equipment (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$37,000.00	1	$37,000.00	
SUBTOTAL A				$37,000.00	
Construction Contingency	40%			$14,800.00	
SUBTOTAL B				$51,800.00	
Estimated Design Fee	15%			$7,770.00	
Estimated CM/I Fee	10%			$5,180.00	
SUBTOTAL C				$64,750.00	
Constrution Extra Work Order	10%			$6,475.00	
GRAND TOTAL **(Program Cost Estimate)**				**$71,225.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Building Power Distribution**		**100% Estimate**

FY 2010

	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Original Building Panels and Components Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Building Panels and Components Installation	1	LS	$4,000	$30,000.00	$4,000	$30,000	$34,000	
16	**Total**					**$7,000**	**$30,000**	**$37,000**	
	GRAND TOTAL					**$7,000**	**$30,000**	**$37,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.3B

Description: Replace 1982 panels and electrical equipment (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$235,000.00	1	$235,000.00	
SUBTOTAL A				$235,000.00	
Construction Contingency	40%			$94,000.00	
SUBTOTAL B				$329,000.00	
Estimated Design Fee	15%			$49,350.00	
Estimated CM/I Fee	10%			$32,900.00	
SUBTOTAL C				$411,250.00	
Constrution Extra Work Order	10%			$41,125.00	
GRAND TOTAL **(Program Cost Estimate)**				**$452,375.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Building Power Distribution (Original)**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	1982 Building Panels and Components Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Building Panels and Components Installation	1	LS	$52,000	$180,000.00	$52,000	$180,000	$232,000	
16	**Total**					**$55,000**	**$180,000**	**$235,000**	
	GRAND TOTAL					**$55,000**	**$180,000**	**$235,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.4A

Description: Exterior Lighting (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$945,000.00	1	$945,000.00	
SUBTOTAL A				$945,000.00	
Construction Contingency	40%			$378,000.00	
SUBTOTAL B				$1,323,000.00	
Estimated Design Fee	15%			$198,450.00	
Estimated CM/I Fee	10%			$132,300.00	
SUBTOTAL C				$1,653,750.00	
Constrution Extra Work Order	10%			$165,375.00	
GRAND TOTAL **(Program Cost Estimate)**				**$1,819,125.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Exterior Lighting**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Exterior Lighting Removal	1	LS	$40,000.00	$5,000.00	$40,000	$5,000	$45,000	
	Exterior Lighting Installation	1	LS	$100,000	$800,000.00	$100,000	$800,000	$900,000	
16	**Total**					**$140,000**	**$805,000**	**$945,000**	
	GRAND TOTAL					**$140,000**	**$805,000**	**$945,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.4B

Description: Interior Lighting (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$270,000.00	1	$270,000.00	
SUBTOTAL A				$270,000.00	
Construction Contingency	40%			$108,000.00	
SUBTOTAL B				$378,000.00	
Estimated Design Fee	15%			$56,700.00	
Estimated CM/I Fee	10%			$37,800.00	
SUBTOTAL C				$472,500.00	
Constrution Extra Work Order	10%			$47,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$519,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Interior Lighting**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Interior Light Removal	1	LS	$20,000.00		$20,000	$0	$20,000	
	Interior Light Installation	1	LS	$120,000	$130,000.00	$120,000	$130,000	$250,000	
16	**Total**					**$140,000**	**$130,000**	**$270,000**	
	GRAND TOTAL					**$140,000**	**$130,000**	**$270,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.5

Description: Fire Alarm System (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$152,000.00	1	$152,000.00	
SUBTOTAL A				$152,000.00	
Construction Contingency	40%			$60,800.00	
SUBTOTAL B				$212,800.00	
Estimated Design Fee	15%			$31,920.00	
Estimated CM/I Fee	10%			$21,280.00	
SUBTOTAL C				$266,000.00	
Constrution Extra Work Order	10%			$26,600.00	
GRAND TOTAL **(Program Cost Estimate)**				**$292,600.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Fire Alarm**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Fire Alarm Removal	1	LS	$2,000.00		$2,000	$0	$2,000	
	Fire Alarm Installation	1	LS	$70,000	$80,000.00	$70,000	$80,000	$150,000	
16	**Total**					**$72,000**	**$80,000**	**$152,000**	
	GRAND TOTAL					**$72,000**	**$80,000**	**$152,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.6

Description: Special System (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$134,000.00	1	$134,000.00	
SUBTOTAL A				$134,000.00	
Construction Contingency	40%			$53,600.00	
SUBTOTAL B				$187,600.00	
Estimated Design Fee	15%			$28,140.00	
Estimated CM/I Fee	10%			$18,760.00	
SUBTOTAL C				$234,500.00	
Constrution Extra Work Order	10%			$23,450.00	
GRAND TOTAL **(Program Cost Estimate)**				**$257,950.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Special Systems**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Special System Removal	1	LS	$4,000.00		$4,000	$0	$4,000	
	Special System Installation	1	LS	$30,000	$100,000.00	$30,000	$100,000	$130,000	
16	**Total**					**$34,000**	**$100,000**	**$134,000**	
	GRAND TOTAL					**$34,000**	**$100,000**	**$134,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.7

Description: Sunoco and Exxon service stations (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$310,000.00	1	$310,000.00	
SUBTOTAL A				$310,000.00	
Construction Contingency	40%			$124,000.00	
SUBTOTAL B				$434,000.00	
Estimated Design Fee	15%			$65,100.00	
Estimated CM/I Fee	10%			$43,400.00	
SUBTOTAL C				$542,500.00	
Constrution Extra Work Order	10%			$54,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$596,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Service Station Power**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Service Station Removal	1	LS	$8,000.00	$2,000.00	$8,000	$2,000	$10,000	
	Service Station Installation	1	LS	$50,000	$250,000.00	$50,000	$250,000	$300,000	
16	**Total**					**$58,000**	**$252,000**	**$310,000**	
	GRAND TOTAL					**$58,000**	**$252,000**	**$310,000**	

Project	**Travel Plaza Long-Range Planning**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Overall Projected Costs**		**100% Estimate**

Work Item	Description	FY 2010	FY2013	FY2015	FY 2020	FY 2025	FY 2030	Total
MD-C	**Civil/Site Work Items**							
CH-C.1	Bituminous Asphalt			$1,861,401				**$1,861,401**
CH-C.2	Misc Site Repairs			$433,800				**$433,800**
CH-C.3	Misc Site Repairs and Replacement				$1,755,285			**$1,755,285**
CH-C.4	Misc Site Repairs and Replacement					$1,034,250		**$1,034,250**
CH-C.5	Misc Site Repairs and Replacement						$1,075,252	**$1,075,252**
CH-C.6	Water System Improvements							
CH-C.6A	Water System Improvements		$5,343,808					**$5,343,808**
CH-C.6B	Water System Improvements						$1,079,529	**$1,079,529**
CH-C.7	Signage Improvements							
CH-C.7A	Signage Improvements				$1,552,205			**$1,552,205**
	Civil/Site Work Item Summary	**$0**	**$5,343,808**	**$2,295,201**	**$3,307,489**	**$1,034,250**	**$2,154,781**	**$14,135,529**
MD-A	**Architectural/Structural Work Items**							
CH-A.1	Super Structure	$83,638						**$83,638**
CH-A.2	Exterior Enclosures							
CH-A.2A	Brick Veneer Repair	$134,853						**$134,853**
CH-A.2B	Vestibule Repair		$70,977					**$70,977**
CH-A.2C	Refinishing EFIS	$242,550						**$242,550**
CH-A.2D	Service Station Roofing	$422,580						**$422,580**
CH-A.3	Interior Enclosures							
CH-A.3A	Metal Stud Framing Replacment		$608,738				$1,006,169	**$1,614,907**
CH-A.3B	Metal Stud Framing/Bathrooms		$138,480		$170,316		$228,891	**$537,687**
CH-A.3C	Quarry and Ceramic Tile Finishes		$418,165					**$418,165**
CH-A.3D	Painted Concrete Flooring		$87,083		$107,102			**$194,185**
CH-A.3E	Acosutic Ceiling Tiles		$163,381			$232,938		**$396,319**
CH-A.4	Conveying Systems - Elevator Replacement						$342,195	**$342,195**
	Architectural/Structural Work Item	**$883,621**	**$1,486,824**	**$0**	**$277,418**	**$232,938**	**$1,577,256**	**$4,458,057**

Work Item	Description	FY 2010	FY 2013	FY 2015	FY 2020	FY 2025	FY 2030	Total
MD-M	**Mechanical/Plumbing Work Items**							
CH-M.1	Air Distribution System							
CH-M.1A	Packaged RTU's, Split System AHU's & MAU		$358,133					**$358,133**
CH-M.1B	Supply & Exhaust Fans		$101,723					**$101,723**
CH-M.1C	Duct & Insulation		$728,582					**$728,582**
CH-M.1D	Diffusers & Grilles		$12,045					**$12,045**
CH-M.2	Plumbing System							
CH-M.2A	Sanitary Pipe		$271,871					**$271,871**
CH-M.2B	Domestic & Storm Water Pipe		$167,434					**$167,434**
CH-M.2C	Hot Water Heaters		$47,222					**$47,222**
CH-M.2D	Grease Trap	$8,393						**$8,393**
CH-M.2E	Plumbing Fixtures		$150,659					**$150,659**
CH-M.3	Chesapeake House Service Centers							
CH-M.3A	Split System Air Handling Units				$77,481			**$77,481**
CH-M.3B	Electric Duct & Unit Heaters				$49,929			**$49,929**
CH-M.3C	Plumbing Fixtures						$83,963	**$83,963**
CH-M.4	Replace Underground Strorage Tanks					$2,451,033		**$2,451,033**
	Mechanical/Plumbing Work Item Summary	**$8,393**	**$1,837,669**	**$0**	**$127,410**	**$2,451,033**	**$83,963**	**$4,508,468**
MD-E	**Electrical/Lighting Work Items**							
CH-E.1	Utility Power Distribution Upgrades			$53,558				**$53,558**
CH-E.2	Emergency Power Distribution Upgrades						$276,749	**$276,749**
CH-E.3	Building Power Distribution System							
CH-E.3A	Replace Original Building Panels	$71,225						**$71,225**
CH-E.3B	Replace Panels Installed in 1986				$607,947			**$607,947**
CH-E.4	Lighting Systems							
CH-E.4A	Exterior Lighting		$1,987,758					**$1,987,758**
CH-E.4B	Interior Lighting			$602,531				**$602,531**
CH-E-5	Fire Alarm	$292,600						**$292,600**
CH-E.6	Special Systems						$465,883	**$465,883**
CH-E.7	Service Station Electrical						$1,077,790	**$1,077,790**
	Electrical/Lighting Work Item Summary	**$363,825**	**$1,987,758**	**$656,089**	**$607,947**	**$0**	**$1,820,422**	**$5,436,041**
	Total Per Period	**$1,255,839**	**$10,656,060**	**$2,951,290**	**$4,320,264**	**$3,718,221**	**$5,636,422**	**$28,538,096**

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.1

Description: Mill & Overlay of Bituminous Parking Surfaces (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2015)	LS	$834,112.50	1	$834,112.50	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$834,112.50	
Construction Contingency	40%			$333,645.00	
SUBTOTAL B				$1,167,757.50	
Estimated Design Fee	15%			$175,163.63	
Estimated CM/I Fee	10%			$116,775.75	
SUBTOTAL C				$1,459,696.88	
Constrution Extra Work Order	10%			$145,969.69	
GRAND TOTAL **(Program Cost Estimate)**				**$1,605,666.56**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Mill and Overlay**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2015)**								
	Mill and Overlay of Bituminous Surface	85,550	SY	$9.75		$834,113	$0	$834,113	
2	**Total**					**$834,113**	**$0**	**$834,113**	
	GRAND TOTAL					**$834,113**	**$0**	**$834,113**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.2

Description: Miscellaneous Site Repair and Replacement (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$194,390.00	1	$194,390.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$194,390.00	
Construction Contingency	40%			$77,756.00	
SUBTOTAL B				$272,146.00	
Estimated Design Fee	15%			$40,821.90	
Estimated CM/I Fee	10%			$27,214.60	
SUBTOTAL C				$340,182.50	
Constrution Extra Work Order	10%			$34,018.25	
GRAND TOTAL **(Program Cost Estimate)**				**$374,200.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Site Repairs (2015)**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
3	**CONCRETE (FY 2015)**								
	Replace up to 10% of Concrete Curb	1,975	LF	$40		$79,000	$0	$79,000	
	Replace up to 25% of Concrete Sidewalk	8,970	SF	$11		$98,670	$0	$98,670	
	Replace up to 5% of Concrete Paver Walkway	880	SF	$19		$16,720	$0	$16,720	
3	**Total**					**$194,390**	**$0**	**$194,390**	
	GRAND TOTAL					**$194,390**	**$0**	**$194,390**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.3

Description: Miscellaneous Site Repair and Replacement (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$36,000.00	1	$36,000.00	
CONCRETE	LS	$642,500.00	1	$642,500.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$678,500.00	
Construction Contingency	40%			$271,400.00	
SUBTOTAL B				$949,900.00	
Estimated Design Fee	15%			$142,485.00	
Estimated CM/I Fee	10%			$94,990.00	
SUBTOTAL C				$1,187,375.00	
Constrution Extra Work Order	10%			$118,737.50	
GRAND TOTAL **(Program Cost Estimate)**				**$1,306,112.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Repairs (2020)**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK**								
	Landscape Improvements	1	LS	$36,000		$36,000	$0	$36,000	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$36,000**	**$0**	**$36,000**	
3	**CONCRETE (FY 2020)**								
	Replace up to 50% of Concrete Curb	9,875	LF	$40		$395,000	$0	$395,000	
	Replace up to 50% of Concrete Sidewalk	17,940	SF	$11		$197,340	$0	$197,340	
	Replace up to 15% of Concrete Paver Walkway	2,640	SF	$19		$50,160	$0	$50,160	
						$0	$0	$0	
3	**Total**					**$642,500**	**$0**	**$642,500**	
	GRAND TOTAL					**$678,500**	**$0**	**$678,500**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.4

Description: Miscellaneous Site Repair and Replacement (FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$36,000.00	1	$36,000.00	
CONCRETE	LS	$308,870.00	1	$308,870.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$344,870.00	
Construction Contingency	40%			$137,948.00	
SUBTOTAL B				$482,818.00	
Estimated Design Fee	15%			$72,422.70	
Estimated CM/I Fee	10%			$48,281.80	
SUBTOTAL C				$603,522.50	
Constrution Extra Work Order	10%			$60,352.25	
GRAND TOTAL **(Program Cost Estimate)**				**$663,874.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Repairs (2025)**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK**								
	Landscape Improvements	1	LS	$36,000		$36,000	$0	$36,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$36,000**	**$0**	**$36,000**	
3									
	Replace up to 15% of Concrete Curb	2,965	LF	$40		$118,600	$0	$118,600	
	Replace up to 25% of Concrete Sidewalk	8,970	SF	$11		$98,670	$0	$98,670	
	Replace up to 25% of Concrete Paver Walkway	4,400	SF	$19		$83,600	$0	$83,600	
	Replace up to 10% Drainage Inlets	2	EA	$4,000		$8,000	$0	$8,000	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$308,870**	**$0**	**$308,870**	
	GRAND TOTAL					**$344,870**	**$0**	**$344,870**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.5

Description: Miscellaneous Site Repair and Replacement (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$36,000.00	1	$36,000.00	
0	LS	$273,270.00	1	$273,270.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$309,270.00	
Construction Contingency	40%			$123,708.00	
SUBTOTAL B				$432,978.00	
Estimated Design Fee	15%			$64,946.70	
Estimated CM/I Fee	10%			$43,297.80	
SUBTOTAL C				$541,222.50	
Constrution Extra Work Order	10%			$54,122.25	
GRAND TOTAL **(Program Cost Estimate)**				**$595,344.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Misc Repairs (FY 2030)**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK**								
	Landscape Improvements	1	LS	$36,000		$36,000	$0	$36,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$36,000**	**$0**	**$36,000**	
3									
	Replace up to 10% of Concrete Curb	1,975	LF	$40		$79,000	$0	$79,000	
	Replace up to 25% of Concrete Sidewalk	8,970	SF	$11		$98,670	$0	$98,670	
	Replace up to 25% of Concrete Paver Walkway	4,400	SF	$19		$83,600	$0	$83,600	
	Replace up to 15% Drainage Inlets	3	EA	$4,000		$12,000	$0	$12,000	
	Landscape Improvements					$0	$0	$0	
3	**Total**					**$273,270**	**$0**	**$273,270**	
	GRAND TOTAL					**$309,270**	**$0**	**$309,270**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.6A

Description: Water System Improvements (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2010)	LS	$2,540,500.00	1	$2,540,500.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$2,540,500.00	
Construction Contingency	40%			$1,016,200.00	
SUBTOTAL B				$3,556,700.00	
Estimated Design Fee	15%			$533,505.00	
Estimated CM/I Fee	10%			$355,670.00	
SUBTOTAL C				$4,445,875.00	
Constrution Extra Work Order	10%			$444,587.50	
GRAND TOTAL **(Program Cost Estimate)**				**$4,890,462.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Water System Repair**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2010)**								
	Replace Water System	7,920	LF	$0	$250.00	$0	$1,980,000	$1,980,000	
	Clean and Paint above Ground Storage Tank	1	LS	$310,500	$0.00	$310,500	$0	$310,500	
	Additional Cost	1	LS	$0	$250,000.00	$0	$250,000	$250,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$310,500**	**$2,230,000**	**$2,540,500**	
	GRAND TOTAL					**$310,500**	**$2,230,000**	**$2,540,500**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.6B

Description: Water System Improvements (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2010)	LS	$310,500.00	1	$310,500.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$310,500.00	
Construction Contingency	40%			$124,200.00	
SUBTOTAL B				$434,700.00	
Estimated Design Fee	15%			$65,205.00	
Estimated CM/I Fee	10%			$43,470.00	
SUBTOTAL C				$543,375.00	
Constrution Extra Work Order	10%			$54,337.50	
GRAND TOTAL **(Program Cost Estimate)**				**$597,712.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Water System Repair**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2030)**								
	Clean and Paint above Ground Storage Tank	1	LS	$310,500		$310,500	$0	$310,500	
				$0		$0	$0	$0	
				$0		$0	$0	$0	
						$0	$0	$0	
2	**Total**					**$310,500**	**$0**	**$310,500**	
	GRAND TOTAL					**$310,500**	**$0**	**$310,500**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: C.7

Description: Signage Improvements (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK (FY 2020)	LS	$600,000.00	1	$600,000.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$600,000.00	
Construction Contingency	40%			$240,000.00	
SUBTOTAL B				$840,000.00	
Estimated Design Fee	15%			$126,000.00	
Estimated CM/I Fee	10%			$84,000.00	
SUBTOTAL C				$1,050,000.00	
Constrution Extra Work Order	10%			$105,000.00	
GRAND TOTAL **(Program Cost Estimate)**				**$1,155,000.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Signage Improvements**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
2	**SITE WORK (FY 2020)**								
	Signage Improvements	1	LS	$600,000		$600,000	$0	$600,000	
2	**Total**					**$600,000**	**$0**	**$600,000**	
	GRAND TOTAL					**$600,000**	**$0**	**$600,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.1

Description: Super Structure (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$17,522.32	1	$17,522.32	
METALS:	LS	$25,926.00	1	$25,926.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$43,448.32	
Construction Contingency	40%			$17,379.33	
SUBTOTAL B				$60,827.65	
Estimated Design Fee	15%			$9,124.15	
Estimated CM/I Fee	10%			$6,082.76	
SUBTOTAL C				$76,034.56	
Constrution Extra Work Order	10%			$7,603.46	
GRAND TOTAL **(Program Cost Estimate)**				**$83,638.02**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Steel and CMU Painting**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	MD-A1 CMU painting	19,688	sf	$0.89		$17,522	$0	$17,522	
4	**Total**					**$17,522**	**$0**	**$17,522**	
5	**METALS:**								
	MD-A1 Structural Steel Painting	29,800	SF	$0.87		$25,926	$0	$25,926	
5	**Total**					**$25,926**	**$0**	**$25,926**	
	GRAND TOTAL					**$43,448**	**$0**	**$43,448**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2A

Description: Brick Veneer Repair (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$69,485.60	1	$69,485.60	
METALS:	LS	$428.60	1	$428.60	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$139.26	1	$139.26	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$70,053.46	
Construction Contingency	40%			$28,021.38	
SUBTOTAL B				$98,074.84	
Estimated Design Fee	15%			$14,711.23	
Estimated CM/I Fee	10%			$9,807.48	
SUBTOTAL C				$122,593.56	
Constrution Extra Work Order	10%			$12,259.36	
GRAND TOTAL **(Program Cost Estimate)**				**$134,852.91**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Brick Façade Repairs**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
3	**CONCRETE**								
						$0	$0	$0	
3	**Total**					**$0**	**$0**	**$0**	
4	**MASONRY**								
	CH-A.2A Brick Demolition	8	EA	$59.95	$0.00	$480	$0	$480	
	CH-A.2A Brick Replacement	200	SF	$12.18		$2,436	$0	$2,436	
	Contraction Joint Installation	1,500	LF		$44.38	$0	$66,570	$66,570	
4	**Total**					**$2,916**	**$66,570**	**$69,486**	
5	**METALS:**								
	CH-A.2A Brick Lintels	200	LB	$1.80		$360	$0	$360	
	CH-A.2A Flashing	20	SF	$3.43		$69	$0	$69	
5	**Total**					**$429**	**$0**	**$429**	
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	CH-A.2A Backer Rod	1	CLF	$90.76		$91	$0	$91	
	CH-A.2A Caulking and Sealants	25	LF	$1.94		$49	$0	$49	
7	**Total**					**$139**	**$0**	**$139**	
	GRAND TOTAL					**$3,483**	**$66,570**	**$70,053**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2B

Description: Vestibule Ceiling Repair (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$33,089.26	1	$33,089.26	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$653.90	1	$653.90	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$33,743.16	
Construction Contingency	40%			$13,497.26	
SUBTOTAL B				$47,240.42	
Estimated Design Fee	15%			$7,086.06	
Estimated CM/I Fee	10%			$4,724.04	
SUBTOTAL C				$59,050.53	
Constrution Extra Work Order	10%			$5,905.05	
GRAND TOTAL **(Program Cost Estimate)**				**$64,955.58**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Vestibule Repair**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
1	**GENERAL CONDITIONS**								
						$0	$0	$0	
1	**Total**					**$0**	**$0**	**$0**	
6	**WOOD AND PLASTICS**								
	Framing	1	MB	$1,252.51		$1,253	$0	$1,253	
	Sheathing	525	SF	$1.27		$667	$0	$667	
	Furring	375	LF	$1.32		$495	$0	$495	
	Vestibule Demolition	500	EA	$61		$30,675	$0	$30,675	
6	**Total**					**$33,089**	**$0**	**$33,089**	
7	**THERMAL AND MOISTURE PROTECTION**								
						$0	$0	$0	
7	**Total**					**$0**	**$0**	**$0**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	CH-A.2B Building Paper and Shingles	5	SQ	$130.78		$654	$0	$654	
9	**Total**					**$654**	**$0**	**$654**	
	GRAND TOTAL					**$33,743**	**$0**	**$33,743**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2C

Description: Refinishing of EIFS (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$126,000.00	1	$126,000.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$126,000.00	
Construction Contingency	40%			$50,400.00	
SUBTOTAL B				$176,400.00	
Estimated Design Fee	15%			$26,460.00	
Estimated CM/I Fee	10%			$17,640.00	
SUBTOTAL C				$220,500.00	
Constrution Extra Work Order	10%			$22,050.00	
GRAND TOTAL **(Program Cost Estimate)**				**$242,550.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**EFIS Wall Repairs**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	EIFS repair	50,000	SF	$2.52		$126,000	$0	$126,000	
7	**Total**					**$126,000**	**$0**	**$126,000**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$126,000**	**$0**	**$126,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.2D

Description: Service Station Roofing Replacement (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$219,522.00	1	$219,522.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$219,522.00	
Construction Contingency	40%			$87,808.80	
SUBTOTAL B				$307,330.80	
Estimated Design Fee	15%			$46,099.62	
Estimated CM/I Fee	10%			$30,733.08	
SUBTOTAL C				$384,163.50	
Constrution Extra Work Order	10%			$38,416.35	
GRAND TOTAL **(Program Cost Estimate)**				**$422,579.85**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Service Stations - Roof Replacement**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
6	**WOOD AND PLASTICS**								
						$0	$0	$0	
6	**Total**					**$0**	**$0**	**$0**	
7	**THERMAL AND MOISTURE PROTECTION**								
	Roofing Removal	60,000	SF	$0.00	$0.62	$0	$37,200	$37,200	
	Roofing Replacement	600	SQ		$225.00	$0	$135,000	$135,000	
	Gutter Replacement	3,000	LF		$6.16	$0	$18,480	$18,480	
	Scalfolding	600	CS		$48.07	$0	$28,842	$28,842	
7	**Total**					**$0**	**$219,522**	**$219,522**	
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$0**	**$219,522**	**$219,522**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3A

Description: Metal Stud Framing Replacement (FY 2013, FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$289,400.00	1	$289,400.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$289,400.00	
Construction Contingency	40%			$115,760.00	
SUBTOTAL B				$405,160.00	
Estimated Design Fee	15%			$60,774.00	
Estimated CM/I Fee	10%			$40,516.00	
SUBTOTAL C				$506,450.00	
Constrution Extra Work Order	10%			$50,645.00	
GRAND TOTAL **(Program Cost Estimate)**				**$557,095.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Interior Wall Replacement**		**100% Estimate**

FY 2013, FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Metal Stud Framing Relpacement	20,000	SF	$11.97		$239,400	$0	$239,400	
	Hazardous Materials Allowance	1	EA	$50,000.00		$50,000	$0	$50,000	
9	**Total**					**$289,400**	**$0**	**$289,400**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$289,400**	**$0**	**$289,400**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3B

Description: Metal Stud Framing Replacement in Restrooms (FY 2013, FY 2020, FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$65,835.00	1	$65,835.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$65,835.00	
Construction Contingency	40%			$26,334.00	
SUBTOTAL B				$92,169.00	
Estimated Design Fee	15%			$13,825.35	
Estimated CM/I Fee	10%			$9,216.90	
SUBTOTAL C				$115,211.25	
Constrution Extra Work Order	10%			$11,521.13	
GRAND TOTAL **(Program Cost Estimate)**				**$126,732.38**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	MdTA Travel Plaza	X	Planning
AE Firm:	Johnson, Mirmiran and Thompson		30% Estimate
Date:	Friday, September 26, 2008		60% Estimate
Site:	Chesapeake House		90% Estimate
Task:	Restrooms		100% Estimate

FY 2013, FY 2020, FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
7	THERMAL AND MOISTURE PROTECTION								
						$0	$0	$0	
7	Total					$0	$0	$0	
8	DOORS AND WINDOWS								
						$0	$0	$0	
8	Total					$0	$0	$0	
9	FINISHES								
	Metal Stud Framing Relpacement	5,500	SF	$11.97		$65,835	$0	$65,835	
						$0	$0	$0	
9	Total					$65,835	$0	$65,835	
10	SPECIALTIES								
						$0	$0	$0	
10	Total					$0	$0	$0	
	GRAND TOTAL					$65,835	$0	$65,835	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3C

Description: Quarry and Ceramic Tile Finishes (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$198,800.00	1	$198,800.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$198,800.00	
Construction Contingency	40%			$79,520.00	
SUBTOTAL B				$278,320.00	
Estimated Design Fee	15%			$41,748.00	
Estimated CM/I Fee	10%			$27,832.00	
SUBTOTAL C				$347,900.00	
Constrution Extra Work Order	10%			$34,790.00	
GRAND TOTAL **(Program Cost Estimate)**				**$382,690.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Flooring Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Quarry Tile Replacement	20,000	SF	$9.94		$198,800	$0	$198,800	
						$0	$0	$0	
9	**Total**					**$198,800**	**$0**	**$198,800**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$198,800**	**$0**	**$198,800**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3D

Description: Painted Concrete Floor Finishes (FY 2013, FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$41,400.00	1	$41,400.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$41,400.00	
Construction Contingency	40%			$16,560.00	
SUBTOTAL B				$57,960.00	
Estimated Design Fee	15%			$8,694.00	
Estimated CM/I Fee	10%			$5,796.00	
SUBTOTAL C				$72,450.00	
Constrution Extra Work Order	10%			$7,245.00	
GRAND TOTAL **(Program Cost Estimate)**				**$79,695.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	X	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Concrete Floor Finishes**		**100% Estimate**

FY 2013, FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Painted Concrete Floor Finishes	30,000	SF	$1.38		$41,400	$0	$41,400	
						$0	$0	$0	
9	**Total**					**$41,400**	**$0**	**$41,400**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$41,400**	**$0**	**$41,400**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.3E

Description: Replacement of Acoustic Ceiling Tile and Grid (FY 2013, FY 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$77,673.00	1	$77,673.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$77,673.00	
Construction Contingency	40%			$31,069.20	
SUBTOTAL B				$108,742.20	
Estimated Design Fee	15%			$16,311.33	
Estimated CM/I Fee	10%			$10,874.22	
SUBTOTAL C				$135,927.75	
Constrution Extra Work Order	10%			$13,592.78	
GRAND TOTAL **(Program Cost Estimate)**				**$149,520.53**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	X	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Ceiling Replacement**		**100% Estimate**

FY 2013, FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
8	**DOORS AND WINDOWS**								
						$0	$0	$0	
8	**Total**					**$0**	**$0**	**$0**	
9	**FINISHES**								
	Replacement of Acoustic Ceiling Tile	30,000	SF	$2.54		$76,200	$0	$76,200	
	Ceiling Tile Replacement - Pans	300	SF	$4.91		$1,473	$0	$1,473	
9	**Total**					**$77,673**	**$0**	**$77,673**	
10	**SPECIALTIES**								
						$0	$0	$0	
10	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$77,673**	**$0**	**$77,673**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: A.4

Description: Conveying Systems - Elevator replacements (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$88,424.16	1	$88,424.16	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$10,000.00	1	$10,000.00	
SUBTOTAL A				$98,424.16	
Construction Contingency	40%			$39,369.66	
SUBTOTAL B				$137,793.82	
Estimated Design Fee	15%			$20,669.07	
Estimated CM/I Fee	10%			$13,779.38	
SUBTOTAL C				$172,242.28	
Constrution Extra Work Order	10%			$17,224.23	
GRAND TOTAL **(Program Cost Estimate)**				**$189,466.51**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Elevator Replacement**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
13	**SPECIAL COSTRUCTION**								
						$0	$0	$0	
13	**Total**					**$0**	**$0**	**$0**	
14	**CONVEYING SYSTEMS**								
	Elevator Replacement	1	EA	88,424.16		$88,424	$0	$88,424	
14	**Total**					**$88,424**	**$0**	**$88,424**	
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Electrical Modifications	1	EA		$10,000.00	$0	$10,000	$10,000	
16	**Total**					**$0**	**$10,000**	**$10,000**	
	GRAND TOTAL					**$88,424**	**$10,000**	**$98,424**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1A

Description: Replace Packaged RTU's, Split System AHU's & Make-Up Air Unit (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$170,260.00	1	$170,260.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$170,260.00	
Construction Contingency	40%			$68,104.00	
SUBTOTAL B				$238,364.00	
Estimated Design Fee	15%			$35,754.60	
Estimated CM/I Fee	10%			$23,836.40	
SUBTOTAL C				$297,955.00	
Constrution Extra Work Order	10%			$29,795.50	
GRAND TOTAL **(Program Cost Estimate)**				**$327,750.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task	**HVAC Equipment Replacement**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Packaged Roof Top Unit Removal	5	EA	$1,050.00	$0.00	$5,250	$0	$5,250	
	Packaged Roof Top Unit Installation	5	EA	$1,925.00	$10,800.00	$9,625	$54,000	$63,625	
	Split System AHU Removal	6	EA	$1,250.00	$0.00	$7,500	$0	$7,500	
	Split System AHU Installation	6	EA	$1,725.00	$8,500.00	$10,350	$51,000	$61,350	
	Make-Up Air Unit Removal	1	EA	$475.00	$0.00	$475	$0	$475	
	Make-Up Air Unit Installation	1	EA	$460.00	$6,600.00	$460	$6,600	$7,060	
	Miscellanous Duct/Equipment	1	LS	$0.00	$25,000.00	$0	$25,000	$25,000	
15	**Total**					**$33,660**	**$136,600**	**$170,260**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$33,660**	**$136,600**	**$170,260**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1B

Description: Replace Supply & Exhaust Fans (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$48,360.00	1	$48,360.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$48,360.00	
Construction Contingency	40%			$19,344.00	
SUBTOTAL B				$67,704.00	
Estimated Design Fee	15%			$10,155.60	
Estimated CM/I Fee	10%			$6,770.40	
SUBTOTAL C				$84,630.00	
Constrution Extra Work Order	10%			$8,463.00	
GRAND TOTAL **(Program Cost Estimate)**				**$93,093.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Supply and Exhaust Fans**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Supply & Exhaust Fan Removal	13	EA	$155.00	$0.00	$2,015	$0	$2,015	
	Supply & Exhaust Fan Installation	13	EA	$465.00	$3,100.00	$6,045	$40,300	$46,345	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$8,060**	**$40,300**	**$48,360**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$8,060**	**$40,300**	**$48,360**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1C

Description: Duct & Insulation (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$346,375.00	1	$346,375.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$346,375.00	
Construction Contingency	40%			$138,550.00	
SUBTOTAL B				$484,925.00	
Estimated Design Fee	15%			$72,738.75	
Estimated CM/I Fee	10%			$48,492.50	
SUBTOTAL C				$606,156.25	
Constrution Extra Work Order	10%			$60,615.63	
GRAND TOTAL **(Program Cost Estimate)**				**$666,771.88**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task	**Duct and Insulation**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Duct & Insulation Removal	1	LS	$17,875.00	$0.00	$17,875	$0	$17,875	
	Duct & Insulation Installation	1	LS	$215,000.00	$63,500.00	$215,000	$63,500	$278,500	
	Asbestos Allowance	1	LS	$0.00	$50,000.00	$0	$50,000	$50,000	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$232,875**	**$113,500**	**$346,375**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$232,875**	**$113,500**	**$346,375**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.1D

Description: Diffusers & Grilles (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$5,726.25	1	$5,726.25	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$5,726.25	
Construction Contingency	40%			$2,290.50	
SUBTOTAL B				$8,016.75	
Estimated Design Fee	15%			$1,202.51	
Estimated CM/I Fee	10%			$801.68	
SUBTOTAL C				$10,020.94	
Constrution Extra Work Order	10%			$1,002.09	
GRAND TOTAL **(Program Cost Estimate)**				**$11,023.03**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task	**Diffusers and Grilles**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Diffusers & Grilles Removal	45	EA	$7.25	$0.00	$326	$0	$326	
	Diffusers & Grilles Installation	45	EA	$35.00	$85.00	$1,575	$3,825	$5,400	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$1,901**	**$3,825**	**$5,726**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$1,901**	**$3,825**	**$5,726**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2A

Description: Sanitary Pipe (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$129,250.00	1	$129,250.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$129,250.00	
Construction Contingency	40%			$51,700.00	
SUBTOTAL B				$180,950.00	
Estimated Design Fee	15%			$27,142.50	
Estimated CM/I Fee	10%			$18,095.00	
SUBTOTAL C				$226,187.50	
Constrution Extra Work Order	10%			$22,618.75	
GRAND TOTAL **(Program Cost Estimate)**				**$248,806.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Sanitary Pipe**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Sanitary Pipe Removal	2,500	LF	$8.50	$0.00	$21,250	$0	$21,250	
	Sanitary Pipe Installation	2,500	LF	$12.25	$10.95	$30,625	$27,375	$58,000	
	Miscellaneous Floor and Ceiling Removal	1	LS	$25,000.00	$25,000.00	$25,000	$25,000	$50,000	
15	**Total**					**$76,875**	**$52,375**	**$129,250**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$76,875**	**$52,375**	**$129,250**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2B

Description: Domestic & Storm Water Pipe (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$79,600.00	1	$79,600.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$79,600.00	
Construction Contingency	40%			$31,840.00	
SUBTOTAL B				$111,440.00	
Estimated Design Fee	15%			$16,716.00	
Estimated CM/I Fee	10%			$11,144.00	
SUBTOTAL C				$139,300.00	
Constrution Extra Work Order	10%			$13,930.00	
GRAND TOTAL **(Program Cost Estimate)**				**$153,230.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Domestic Water Pipe**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Domestic & Storm Water Pipe Removal	2,000	LF	$8.50	$0.00	$17,000	$0	$17,000	
	Domestic & Storm Water Pipe Installation	2,000	LF	$9.50	$11.80	$19,000	$23,600	$42,600	
	Miscellaneous Floor and Ceiling Removal	1	LS	$10,000.00	$10,000.00	$10,000	$10,000	$20,000	
						$0	$0	$0	
						$0	$0	$0	
						$0	$0	$0	
15	**Total**					**$46,000**	**$33,600**	**$79,600**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$46,000**	**$33,600**	**$79,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2C

Description: Hot Water Heaters & Inline Circulating Pumps (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$22,450.00	1	$22,450.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$22,450.00	
Construction Contingency	40%			$8,980.00	
SUBTOTAL B				$31,430.00	
Estimated Design Fee	15%			$4,714.50	
Estimated CM/I Fee	10%			$3,143.00	
SUBTOTAL C				$39,287.50	
Constrution Extra Work Order	10%			$3,928.75	
GRAND TOTAL **(Program Cost Estimate)**				**$43,216.25**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Hot Water Heating System**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Hot Water Heater Removal	2	EA	$420.00	$0.00	$840	$0	$840	
	Hot Water Heater Installation	2	EA	$2,500.00	$6,250.00	$5,000	$12,500	$17,500	
	Inline Circulating Pump Removal	2	EA	$75.00	$0.00	$150	$0	$150	
	Inline Circulating Pump Installation	2	EA	$1,000.00	$980.00	$2,000	$1,960	$3,960	
15	**Total**					**$7,990**	**$14,460**	**$22,450**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$7,990**	**$14,460**	**$22,450**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2D

Description: Grease Trap (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$4,360.00	1	$4,360.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$4,360.00	
Construction Contingency	40%			$1,744.00	
SUBTOTAL B				$6,104.00	
Estimated Design Fee	15%			$915.60	
Estimated CM/I Fee	10%			$610.40	
SUBTOTAL C				$7,630.00	
Constrution Extra Work Order	10%			$763.00	
GRAND TOTAL **(Program Cost Estimate)**				**$8,393.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Grease Trap**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Grease Trap Removal	1	EA	$600.00	$350.00	$600	$350	$950	
	Grease Trap Installation	1	EA	$335.00	$3,075.00	$335	$3,075	$3,410	
						$0	$0	$0	
15	**Total**					**$935**	**$3,425**	**$4,360**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$935**	**$3,425**	**$4,360**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.2E

Description: Plumbing Fixtures (2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$71,625.00	1	$71,625.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$71,625.00	
Construction Contingency	40%			$28,650.00	
SUBTOTAL B				$100,275.00	
Estimated Design Fee	15%			$15,041.25	
Estimated CM/I Fee	10%			$10,027.50	
SUBTOTAL C				$125,343.75	
Constrution Extra Work Order	10%			$12,534.38	
GRAND TOTAL **(Program Cost Estimate)**				**$137,878.13**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Plumbing/Bathroom Fixtures**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Plumbing Fixture Removal	75	EA	$55.00	$0.00	$4,125	$0	$4,125	
	Plumbing Fixture Installation	75	EA	$450.00	$100.00	$33,750	$7,500	$41,250	
	Miscellaneous Piping	75	EA	$100.00	$250.00	$7,500	$18,750	$26,250	
15	**Total**					**$45,375**	**$26,250**	**$71,625**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$45,375**	**$26,250**	**$71,625**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.3A

Description: Split System Air Handling Units (Year 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$29,950.00	1	$29,950.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$29,950.00	
Construction Contingency	40%			$11,980.00	
SUBTOTAL B				$41,930.00	
Estimated Design Fee	15%			$6,289.50	
Estimated CM/I Fee	10%			$4,193.00	
SUBTOTAL C				$52,412.50	
Constrution Extra Work Order	10%			$5,241.25	
GRAND TOTAL **(Program Cost Estimate)**				**$57,653.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Service Station AHU**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Split System AHU Removal	2	EA	$1,250.00	$0.00	$2,500	$0	$2,500	
	Split System AHU Installation	2	EA	$1,725.00	$8,500.00	$3,450	$17,000	$20,450	
	Miscellanous Duct/Equipment	2	EA	$1,000.00	$2,500.00	$2,000	$5,000	$7,000	
15	**Total**					**$7,950**	**$22,000**	**$29,950**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$7,950**	**$22,000**	**$29,950**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.3B

Description: Electric Duct & Unit Heaters (Year 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$19,300.00	1	$19,300.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$19,300.00	
Construction Contingency	40%			$7,720.00	
SUBTOTAL B				$27,020.00	
Estimated Design Fee	15%			$4,053.00	
Estimated CM/I Fee	10%			$2,702.00	
SUBTOTAL C				$33,775.00	
Constrution Extra Work Order	10%			$3,377.50	
GRAND TOTAL **(Program Cost Estimate)**				**$37,152.50**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Service Station Duct Heater**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Electric Duct & Unit Heater Removal	2	LS	$650.00	$0.00	$1,300	$0	$1,300	
	Electric Duct & Unit Heater Installation	2	LS	$1,200.00	$7,800.00	$2,400	$15,600	$18,000	
						$0	$0	$0	
15	**Total**					**$3,700**	**$15,600**	**$19,300**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$3,700**	**$15,600**	**$19,300**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.3C

Description: Plumbing Fixtures (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$24,150.00	1	$24,150.00	
ELECTICAL	LS	$0.00	1	$0.00	
SUBTOTAL A				$24,150.00	
Construction Contingency	40%			$9,660.00	
SUBTOTAL B				$33,810.00	
Estimated Design Fee	15%			$5,071.50	
Estimated CM/I Fee	10%			$3,381.00	
SUBTOTAL C				$42,262.50	
Constrution Extra Work Order	10%			$4,226.25	
GRAND TOTAL **(Program Cost Estimate)**				**$46,488.75**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Service Station Plumbing Fixtures**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
	Plumbing Fixture Removal	30	EA	$55.00	$0.00	$1,650	$0	$1,650	
	Plumbing Fixture Installation	30	EA	$450.00	$100.00	$13,500	$3,000	$16,500	
	Piping (Miscellaneous)	30	EA	$100.00	$100.00	$3,000	$3,000	$6,000	
15	**Total**					**$18,150**	**$6,000**	**$24,150**	
16	**ELECTICAL**								
						$0	$0	$0	
16	**Total**					**$0**	**$0**	**$0**	
	GRAND TOTAL					**$18,150**	**$6,000**	**$24,150**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: M.4

Description: Underground Fuel Oil Storage Tank (Year 2025)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$760,295.00	1	$760,295.00	
ELECTICAL	LS	$57,000.00	1	$57,000.00	
SUBTOTAL A				$817,295.00	
Construction Contingency	40%			$326,918.00	
SUBTOTAL B				$1,144,213.00	
Estimated Design Fee	15%			$171,631.95	
Estimated CM/I Fee	10%			$114,421.30	
SUBTOTAL C				$1,430,266.25	
Constrution Extra Work Order	10%			$143,026.63	
GRAND TOTAL **(Program Cost Estimate)**				**$1,573,292.88**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Contract:	**Underground Fuel Storage Tanks**		**100% Estimate**

FY 2025

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL-USTs**								
	New 20,000 gal tanks (fiberglass doublewall)	10	EA	$1,600	$44,000	$16,000	$440,000	$456,000	
	New 1,000 gal tanks (fiberglass doublewall)	2	EA	$400	$15,000	$800	$30,000	$30,800	
	New 600 gal tanks (fiberglass doublewall)	3	EA	$365	$13,000	$1,095	$39,000	$40,095	
	New Dispensers	32	EA	$0	$5,000	$0	$160,000	$160,000	
	Piping (fiberglass doublewall)	1500	Ft	$4	$20	$6,000	$30,000	$36,000	
	Excavation/Trench Box	11000	BCY	1.30	2.10	$14,300	$23,100	$37,400	
15	**Total**					**$38,195**	**$722,100**	**$760,295**	
16	**ELECTICAL**								
	Electrical Connections for Large UST	10			$2,000.00	$0	$20,000	$20,000	
	Electical connections for Small UST	5			$1,000.00	$0	$5,000	$5,000	
	Electrical Connections for Dispensers	32			$1,000.00	$0	$32,000	$32,000	
16	**Total**					**$0**	**$57,000**	**$57,000**	
	GRAND TOTAL					**$38,195**	**$779,100**	**$817,295**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.1

Description: Utility Power Distribution System (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$24,000.00	1	$24,000.00	
SUBTOTAL A				$24,000.00	
Construction Contingency	40%			$9,600.00	
SUBTOTAL B				$33,600.00	
Estimated Design Fee	15%			$5,040.00	
Estimated CM/I Fee	10%			$3,360.00	
SUBTOTAL C				$42,000.00	
Constrution Extra Work Order	10%			$4,200.00	
GRAND TOTAL **(Program Cost Estimate)**				**$46,200.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Utility Power**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Utility Power Distribution Removal	1	LS	$5,000.00	$1,000.00	$5,000	$1,000	$6,000	
	Utility Power Distribution Installation	1	LS	$10,000	$8,000.00	$10,000	$8,000	$18,000	
16	**Total**					**$15,000**	**$9,000**	**$24,000**	
	GRAND TOTAL					**$15,000**	**$9,000**	**$24,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.2

Description: Emergency Power Distribution System (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$79,600.00	1	$79,600.00	
SUBTOTAL A				$79,600.00	
Construction Contingency	40%			$31,840.00	
SUBTOTAL B				$111,440.00	
Estimated Design Fee	15%			$16,716.00	
Estimated CM/I Fee	10%			$11,144.00	
SUBTOTAL C				$139,300.00	
Constrution Extra Work Order	10%			$13,930.00	
GRAND TOTAL **(Program Cost Estimate)**				**$153,230.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Emergency Power**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Emergency Generator and Components Removal	1	LS	$3,000.00	$600.00	$3,000	$600	$3,600	
	Emergency Generator and Components Installation	1	LS	$6,000	$70,000.00	$6,000	$70,000	$76,000	
16	**Total**					**$9,000**	**$70,600**	**$79,600**	
	GRAND TOTAL					**$9,000**	**$70,600**	**$79,600**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.3A

Description: Replace original panels and electrical equipment (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$37,000.00	1	$37,000.00	
SUBTOTAL A				$37,000.00	
Construction Contingency	40%			$14,800.00	
SUBTOTAL B				$51,800.00	
Estimated Design Fee	15%			$7,770.00	
Estimated CM/I Fee	10%			$5,180.00	
SUBTOTAL C				$64,750.00	
Constrution Extra Work Order	10%			$6,475.00	
GRAND TOTAL **(Program Cost Estimate)**				**$71,225.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Building Power Distribution**		**100% Estimate**

FY 2010

	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Original Building Panels and Components Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Building Panels and Components Installation	1	LS	$4,000	$30,000.00	$4,000	$30,000	$34,000	
16	**Total**					**$7,000**	**$30,000**	**$37,000**	
	GRAND TOTAL					**$7,000**	**$30,000**	**$37,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.3B

Description: Replace 1982 panels and electrical equipment (FY 2020)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$235,000.00	1	$235,000.00	
SUBTOTAL A				$235,000.00	
Construction Contingency	40%			$94,000.00	
SUBTOTAL B				$329,000.00	
Estimated Design Fee	15%			$49,350.00	
Estimated CM/I Fee	10%			$32,900.00	
SUBTOTAL C				$411,250.00	
Constrution Extra Work Order	10%			$41,125.00	
GRAND TOTAL **(Program Cost Estimate)**				**$452,375.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Building Power Distribution (Original)**		**100% Estimate**

FY 2020

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	1982 Building Panels and Components Removal	1	LS	$3,000.00		$3,000	$0	$3,000	
	Building Panels and Components Installation	1	LS	$52,000	$180,000.00	$52,000	$180,000	$232,000	
16	**Total**					**$55,000**	**$180,000**	**$235,000**	
	GRAND TOTAL					**$55,000**	**$180,000**	**$235,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.4A

Description: Exterior Lighting (FY 2013)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$945,000.00	1	$945,000.00	
SUBTOTAL A				$945,000.00	
Construction Contingency	40%			$378,000.00	
SUBTOTAL B				$1,323,000.00	
Estimated Design Fee	15%			$198,450.00	
Estimated CM/I Fee	10%			$132,300.00	
SUBTOTAL C				$1,653,750.00	
Constrution Extra Work Order	10%			$165,375.00	
GRAND TOTAL **(Program Cost Estimate)**				**$1,819,125.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Exterior Lighting**		**100% Estimate**

FY 2013

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Exterior Lighting Removal	1	LS	$40,000.00	$5,000.00	$40,000	$5,000	$45,000	
	Exterior Lighting Installation	1	LS	$100,000	$800,000.00	$100,000	$800,000	$900,000	
16	**Total**					**$140,000**	**$805,000**	**$945,000**	
	GRAND TOTAL					**$140,000**	**$805,000**	**$945,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.4B

Description: Interior Lighting (FY 2015)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$270,000.00	1	$270,000.00	
SUBTOTAL A				$270,000.00	
Construction Contingency	40%			$108,000.00	
SUBTOTAL B				$378,000.00	
Estimated Design Fee	15%			$56,700.00	
Estimated CM/I Fee	10%			$37,800.00	
SUBTOTAL C				$472,500.00	
Constrution Extra Work Order	10%			$47,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$519,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Interior Lighting**		**100% Estimate**

FY 2015

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Interior Light Removal	1	LS	$20,000.00		$20,000	$0	$20,000	
	Interior Light Installation	1	LS	$120,000	$130,000.00	$120,000	$130,000	$250,000	
16	**Total**					**$140,000**	**$130,000**	**$270,000**	
	GRAND TOTAL					**$140,000**	**$130,000**	**$270,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.5

Description: Fire Alarm System (FY 2010)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$152,000.00	1	$152,000.00	
SUBTOTAL A				$152,000.00	
Construction Contingency	40%			$60,800.00	
SUBTOTAL B				$212,800.00	
Estimated Design Fee	15%			$31,920.00	
Estimated CM/I Fee	10%			$21,280.00	
SUBTOTAL C				$266,000.00	
Constrution Extra Work Order	10%			$26,600.00	
GRAND TOTAL **(Program Cost Estimate)**				**$292,600.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Fire Alarm**		**100% Estimate**

FY 2010

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Fire Alarm Removal	1	LS	$2,000.00		$2,000	$0	$2,000	
	Fire Alarm Installation	1	LS	$70,000	$80,000.00	$70,000	$80,000	$150,000	
16	**Total**					**$72,000**	**$80,000**	**$152,000**	
	GRAND TOTAL					**$72,000**	**$80,000**	**$152,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.6

Description: Special System (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$134,000.00	1	$134,000.00	
SUBTOTAL A				$134,000.00	
Construction Contingency	40%			$53,600.00	
SUBTOTAL B				$187,600.00	
Estimated Design Fee	15%			$28,140.00	
Estimated CM/I Fee	10%			$18,760.00	
SUBTOTAL C				$234,500.00	
Constrution Extra Work Order	10%			$23,450.00	
GRAND TOTAL **(Program Cost Estimate)**				**$257,950.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Special Systems**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Special System Removal	1	LS	$4,000.00		$4,000	$0	$4,000	
	Special System Installation	1	LS	$30,000	$100,000.00	$30,000	$100,000	$130,000	
16	**Total**					**$34,000**	**$100,000**	**$134,000**	
	GRAND TOTAL					**$34,000**	**$100,000**	**$134,000**	

PROJECT COST ESTIMATE

MdTA Travel Plazas - JFK Highway

Work Item: E.7

Description: Sunoco and Exxon service stations (FY 2030)

ESTIMATING LEVEL: ☑ **Planning**

DESCRIPTION	*UNIT*	*UNIT COST*	*QUANTITY*	*TOTAL*	*COMMENT*
CATEGORY A - COST BY DISCIPLINE					
SITE WORK	LS	$0.00	1	$0.00	
CONCRETE	LS	$0.00	1	$0.00	
MASONRY	LS	$0.00	1	$0.00	
METALS:	LS	$0.00	1	$0.00	
WOOD AND PLASTICS	LS	$0.00	1	$0.00	
THERMAL AND MOISTURE PROTECTION	LS	$0.00	1	$0.00	
DOORS AND WINDOWS	LS	$0.00	1	$0.00	
FINISHES	LS	$0.00	1	$0.00	
SPECIALTIES	LS	$0.00	1	$0.00	
EQUIPMENT	LS	$0.00	1	$0.00	
FURNISHINGS	LS	$0.00	1	$0.00	
SPECIAL COSTRUCTION	LS	$0.00	1	$0.00	
CONVEYING SYSTEMS	LS	$0.00	1	$0.00	
MECHANICAL	LS	$0.00	1	$0.00	
ELECTICAL	LS	$310,000.00	1	$310,000.00	
SUBTOTAL A				$310,000.00	
Construction Contingency	40%			$124,000.00	
SUBTOTAL B				$434,000.00	
Estimated Design Fee	15%			$65,100.00	
Estimated CM/I Fee	10%			$43,400.00	
SUBTOTAL C				$542,500.00	
Constrution Extra Work Order	10%			$54,250.00	
GRAND TOTAL **(Program Cost Estimate)**				**$596,750.00**	

Level of Accuracy	**Budgetary Estimate**		
List of Sole Source Items Included in this	1	3	5
Contract	2	4	6
List of Assumptions			

Project	**MdTA Travel Plaza**	**X**	**Planning**
AE Firm:	**Johnson, Mirmiran and Thompson**		**30% Estimate**
Date:	**Friday, September 26, 2008**		**60% Estimate**
Site:	**Chesapeake House**		**90% Estimate**
Task:	**Service Station Power**		**100% Estimate**

FY 2030

CSI Div	Description	Qty	Unit	Unit Cost Labor	Unit Cost Material / System	Labor Total	Material/System Total	Labor and Materials Total Cost	Comments
15	**MECHANICAL**								
						$0	$0	$0	
15	**Total**					**$0**	**$0**	**$0**	
16	**ELECTICAL**								
	Service Station Removal	1	LS	$8,000.00	$2,000.00	$8,000	$2,000	$10,000	
	Service Station Installation	1	LS	$50,000	$250,000.00	$50,000	$250,000	$300,000	
16	**Total**					**$58,000**	**$252,000**	**$310,000**	
	GRAND TOTAL					**$58,000**	**$252,000**	**$310,000**	