MTA Measure R Strategic Advisor

FINAL REPORT ON MTA POLICIES, PRACTICES AND ORGANIZATIONAL STRUCTURE TO ENSURE SUCCESSFUL MEASURE R PROJECT DELIVERY

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EXECUTIVE SUMMARY

In response to the Board Motion in December 2009, a request was made to evaluate MTA's current policies, procedures, practices and organizational structure to ensure that the agency can deliver the Measure R projects in the fastest possible time frame and that there are no institutional barriers that would prevent MTA from achieving the fastest possible project schedules. This effort was identified as Strategic Advisor on Measure R.

The motion identified eight tasks that included soliciting input from an industry panel with a perspective of MTA and other major transportation agencies, and developing recommendations for procurement, construction, project management, audit, organizational development, and funding — based on input from industry and staff — and supported by best practices in accelerated project delivery. Executive staff added a ninth task relating to efforts to secure additional funding and innovative financing.

Recognizing the urgency in formulating a strategy to secure support from the federal government to advance funding needed to accelerate Measure R projects, the format of this report is purposely intended to offer very specific recommendations and actions that MTA can take to strengthen capacity to move forward on an accelerated program. As support for accelerating Measure R moves forward, resources to implement approved recommendations can be identified through amendments to MTA's operating budget and through allocation of Measure R funds.

FINDINGS

Research and analysis of MTA's readiness for accelerating Measure R activities.

If requests for support from the federal government were granted, and the funding and cash flow challenges were resolved today, the magnitude of the procurement, planning, design and construction activity that could take place in a 10-year program, accelerating projects funded by Measure R, would be one of the largest capital improvement programs ever undertaken by a single transportation agency in the U.S.

Acceleration of Measure R changes everything; it cannot be "business as usual" for any of the entities (public or private) that will have a role in implementing this program. While there is an important role for everyone in the acceleration of Measure R, success requires strong leadership capable of creating a vision that identifies very clear goals and objectives, and understands that **securing buy-in is essential.**

The best practices proposed for consideration in this Strategic Advisor Final Report involve more than improving the capacity of MTA departments typically involved in project delivery. It requires the MTA Board, MTA staff, the private sector, and the regional stakeholders to behave with a sense of urgency comparable to the response to the 1994 Northridge earthquake and the commitment and teamwork of a major Olympic event.

Acceleration of Measure R does not look back, it looks to the future. This forward focus is best achieved with an initiative that stands out on its own and sets a new tone for how projects can

be delivered by MTA. Given the MTA Board's approval of the April 22 motion, the 30/10 Plan is the vehicle for accelerating Measure R.

RECOMMENDATIONS

There are over 20 recommendations in this report for improving MTA's capacity to accelerate Measure R. The following are three of the top recommendations proposed for immediate consideration. More details, in addition to further recommendations and specific next steps, are described in the draft report attached.

1. Establish a Measure R Program Office that reports to the MTA CEO.

- Assign dedicated leadership capable of developing a vision and securing buy-in to common goals from multiple departments within MTA and other entities needed to support successful implementation of an accelerated Measure R. The establishment of the Measure R Program Office will eventually require establishing a dedicated program team and project teams responsible for delivering the Measure R program.
- Assign to the Measure R Program Office, via a matrix management structure, individuals from procurement, audit, legal, construction, and other necessary departments to act on recommendations in this report. Establish the organizational framework for establishing integrated project teams for each of the projects funded by Measure R.
- Staffing of this office will change over time, as projects vary in stage and scope. As with most agencies that successfully use a program office, agency staff would be supplemented with consultants. The Measure R Program Office should give immediate attention to the following:
    - Allocating resources to third-party coordination and immediately beginning discussions with agencies, such as the County of Los Angeles, the City of Los Angeles, Caltrans, rail operators, and local utilities, to garner support for initiatives that will expedite permitting, approvals and advanced construction as well as delegating to the CEO the authority to enter into agreements with these agencies.
    - Coordinating the response to the Board Motion of April 15, 2010, to evaluate the project delivery methods of projects included in the 30/10 Plan and incorporate into that effort recommendations contained in this report.
    - Working with third-party agencies to compile a 10-year forecast of capital spending that can be used as the basis for coordination and improving industry preparedness.
    - Implementing the means for clear, transparent tracking and reporting of progress in delivering Measure R projects.

2. Fully develop the 30/10 Plan and pursue support for innovative programs from the federal government and other sources, recognizing that the 30/10 Plan provides a platform to promote a program but does not guarantee funding.

- Utilize MTA's unique position to justify support from the federal government and potential funding partners to accelerate delivery of Measure R.
- Implement a legislative and administrative plan to fully develop the 30/10 Plan.

- Secure federal advocacy representation as quickly as possible to ensure that the agency adequately represents its interests for the rest of this congressional session and beyond, and hire a permanent staff person located in Washington, D.C (currently being advertised).
- Ensure that MTA staff broaden their review of programs not historically associated with a transportation program and/or project, and not necessarily tied to the reauthorization process, in addition to reviewing and participating in traditional transportation programs and funding.

3. MTA CEO should direct leadership of the Measure R program office to act expeditiously to meet procurement challenges of a 30/10 Plan.

- Convene work sessions involving MTA staff from procurement, planning, construction and other strategic business units (SBUs) to translate lessons learned from MTA successes and recommendations from this report into specific and measurable goals and objectives for improving procurement activities that specifically support accelerated project delivery. This should include reconvening meetings with Industry Panel Members and industry peers, as recommended in Task 1.
- Allocate resources to this effort, including staff and/or consultants, capable of preparing the flow charts that were recommended in this study, compiling and/or re-crafting contract language, translating revised policies and procedures into clear and concise terms, and training staff so that these changes can be properly administered. Also, provide a means for communicating to outside vendors how these changes improve doing business with MTA and what these changes mean to them in terms of responding to MTA solicitations.

CRITICAL TO IMPLEMENTATION

Implementing the changes identified above requires accountability. As part of MTA's Budget and Strategic Planning process, responsibility for implementing recommendations adopted from this report, along with estimated completion dates, should be assigned to each department. The resources necessary to implement these recommendations could be allocated from Measure R funds specified for this purpose.

Establishing a sense of urgency for change at MTA.

Overwhelming, positive support for the concept of accelerating Measure R projects in Los Angeles County has been a consistent message conveyed by citizens, politicians and industry throughout the time of this study. MTA staff, however, in the face of budget cuts, express apprehension as they are asked to plan for an unprecedented challenge for project delivery.

The engineering and construction industry is supportive and believes it can mobilize the resources to take on the challenge of implementing what could average over $6 million a day in construction activity. While there are good reasons to believe the industry can meet this challenge, it also has more work to do to be prepared. One of the challenges for industry in preparing is that it does not yet know how MTA will approach the accelerated Measure R.

There is no question that acceleration of Measure R will require significantly more resources to ensure MTA and others are ready for the challenge. Strong and positive leadership at MTA is essential to help the MTA organization make a major shift toward what will be required in terms of teamwork and embracing change. The specific recommendations contained in this report are intended to jump-start this change process.

Changing MTA's approach to project delivery.

There are many lessons to be learned for accelerated project delivery from major programs that are driven by definitive deadlines, such as the preparation for Olympic events or the immediate responses needed as a result of natural disasters.

The most significant changes for MTA in how it approaches project delivery would involve 1) collaborating with industry in the decision-making process, 2) investing in more pre-construction activities to make this kind of discussion productive and, the most significant for MTA, 3) taking a much stronger role in proactively managing risk. Specific recommendations on how these changes would be accomplished are included in recommendations contained in this report.

One of the clearest examples from the Industry Panel convened was the description of how contractors sat with an owner preparing transportation improvements associated with hosting the Olympics. The owner, third-party agencies and members of industry reviewed the project plans, identified the risks and discussed how it could best be managed. The projects were delivered successfully, and this process has been duplicated, post-Olympics, with similar results. The basic philosophy is that accelerating a major program requires that risk be assigned to the entity best able to manage it. This is a major shift from how MTA currently approaches risk management. How the MTA organization translates this philosophy into action will be a major determinant in the success of an accelerated Measure R.

Overcoming the inevitable challenges that come with a massive construction program.

Accelerating construction of a program the magnitude of Measure R will not happen without difficulties, conflicts and disagreements. The uncertainty about how MTA will respond to challenges is a major concern from the private industry perspective.

Policies impacting timely decisions on change orders and resolving conflict must be firmly in place. The recommendations contained in this report also include ideas on how to improve managerial decision making and produce more proactive and timely responses to issues and challenges that, if left unresolved, could spiral into major problems resulting in unnecessary delays and costs.

Changes in MTA's approach to project delivery described in this report are part of what will assist both MTA and its vendors to work through challenges with more consistently positive outcomes. This will help build more mutual trust among the industry, MTA staff and the Board.

Creating buy-in and sustaining momentum on organizational change.

Organizational silos at MTA present one of the biggest obstacles to the acceleration of Measure R. Numerous hand-off points in the life of a project amplify challenges to planning, procurement and construction activities. Recommendations for organizational restructuring intended to reduce hand-offs and improve collaboration are included in this report.

Over the last 10+ years, MTA has undergone a number of organizational restructurings. Additionally, well-intentioned initiatives to improve collaboration, teamwork and overall performance have lacked consistent support and have impacted initiative taking. This dynamic needs to change.

The establishment of a Measure R Program Office and the assignment of a cross section of staff is the seed for making changes that would ideally be created from within MTA and guided with leadership that works with urgency to create buy-in and definitive change.

The organizational change process also includes the MTA Board, with the intent that the Board focuses on policy and allows staff to implement the policy.

I. INTRODUCTION

The passage of Measure R will generate an estimated $38 billion in new revenue over the next 30 years for transit, highway and other transportation programs. The projects specified in the measure will improve regional transportation performance, reduce greenhouse gases and connect commuters to employment centers in Los Angeles County. The magnitude of these improvements will generate significant economic impact to the region. According to a report issued in April 2010 by the Los Angeles Economic Development Corporation, the economic impact of implementing projects in Measure R will generate nearly 300,000 jobs in Los Angeles County. In order to keep faith with Los Angeles County taxpayers, MTA must deliver these projects on time and on budget, as well as explore ways to accelerate project delivery.

At the request of Board Chairman Ara Najarian and Director Antonio Villaraigosa, the MTA Board passed a motion in December 2009 asking for an evaluation of MTA's current policies, procedures, practices and organization structure to ensure that the agency can deliver Measure R projects in an accelerated time frame and that there are no institutional barriers that will prevent MTA from achieving the fastest possible project schedules. As requested by the motion, this document serves as the final report.

The findings and recommendations correspond to each of the tasks outlined in the Board's Motion. The analysis reflects observations from a snapshot of MTA during a time when the Board and staff have been pursuing federal support for the 30/10 Plan and, concurrently, developing an FY2011 budget that proposes significant reductions in staff to mitigate an operating deficit.

The observations noted about the MTA in this report are expressly intended to be constructive. While many people will be grateful for the jobs created by accelerating Measure R, the delivery of the work will come with many personal sacrifices from the people and families involved, including MTA staff, consultants, contractors and others. People are motivated not only from the sharing of a common goal, but from knowing that the organization overseeing the construction has taken a serious look at where it can improve and make changes, both at the start and throughout, to remove as many barriers as possible.

II. FINDINGS & RECOMMENDATIONS

TASK 1

ASSIST STAFF TO FORM AN INDUSTRY PEER REVIEW AND ADVISORY GROUP CONSISTING OF PRIVATE SECTOR COMPANIES THAT PROVIDE TRANSPORTATION CONSTRUCTION SERVICES – INCLUDING BUT NOT LIMITED TO ARCHITECTURE & ENGINEERING, CONSTRUCTION MANAGEMENT AND CONTRACTORS – TO PROVIDE RECOMMENDATIONS TO THE CEO ON POTENTIAL CHANGES TO MTA'S PROCUREMENT POLICIES AND PROCESSES THAT WILL SPEED UP OVERALL PROJECT DELIVERY.

MAJOR FINDINGS

The advisory group provided valuable input on accelerated project delivery, supported by industry best practices. Industry input should be seriously considered in making changes to MTA policies and procedures.

There is a lack of mutual trust between MTA and industry that signals, as a high priority, the need to proactively engage in more positive relationship building. Industry is looking for a commitment from MTA to transform the agency to respond to the needs of an accelerated Measure R and establish goals that will clearly communicate to industry the principles that will guide policy and decision making.

RECOMMENDATIONS

MTA should continue to convene industry advisory groups to provide advice on procurement policies and procedures and to support the assessment of proposed methods for delivery of Measure R projects. MTA should continue to include representatives from the design and construction industries as a core team, yet widen membership to include other industry representatives, such as labor and suppliers, specialists in operations and maintenance, and innovators and entrepreneurs, as needed and on an ad hoc basis.

Peer review panels should be established by the MTA to strengthen knowledge and implementation of best practices that support acceleration of Measure R. MTA should identify representatives to be invited to take part, including from agencies identified by the Industry Panel as the most successful models for delivery of accelerated project implementation, local agencies that have recent experience implementing mega projects, and other local entities, such as academia, think tanks, etc.

BACKGROUND

The two industry meetings held in January 2010 and February 2010, respectively, were met with expressions of cautious optimism that industry feedback was being solicited and that MTA officials might seriously consider industry input. Most of the industry participants had years of experience doing business with MTA.

The responses by MTA staff to industry recommendations could be described as both appreciative and received with some trepidation.

Questions asked at these meetings were designed to elicit specific recommendations for improving procurement and project delivery. The convened group contributed relevant and well-supported recommendations that are included in each of the tasks contained in this report.

Participants fell short of providing specifics in some areas of concern to MTA staff. For example, participants provided little detail with respect to how the supply chain could contribute to the discussions, and on questions that required legal or insurance-related subject matter expertise. Discussions also touched on subjects of technology and operations but, again, did not yield any specific recommendations, beyond soliciting more input from those areas.

There were some common themes that support continued industry involvement:

- MTA may be missing opportunities for cost savings (both capital and operating), accelerated schedules, risk reduction and achieving other agency and project-related goals by not engaging with industry earlier and more often in discussions regarding the preferred methods of project delivery;
- The technical design and construction challenges associated with accelerating Measure R projects are less of a concern to industry than are the management challenges associated with the delivery of a program of this magnitude; and
- There was consensus that attracting competitive, high quality responses from industry requires proactive outreach, good communication, as well as openness to new ideas to building positive relationships. Leadership from MTA will set the tone.

Many of MTA's peers are investing time and resources in activities that could serve as models and be applied to resolving challenges associated with accelerating Measure R projects. Based on feedback during primary interviews conducted during this study, MTA peers recognized the importance of what Los Angeles County is trying to do and expressed the desire to share their knowledge and experience.

Agencies in Utah, such as Utah Department of Transportation (UDOT) and Utah Transit Authority, were brought up a number of times as examples of agencies that recognized the urgency of a situation (preparing for the 2002 Olympics), developed and implemented an expedited procurement process that was well received and responded to by industry, and built upon that process to further enhance their transportation infrastructure programs.

New York Metropolitan Transportation Authority (NYMTA) and New Jersey Transit are pursuing the delivery of an astounding program of mega transit projects in a very short time frame.

Louisiana TIMED and South Carolina DOT are other excellent examples of accelerated highway programs.

MTA is surrounded by talent that includes major universities, think tanks, research institutions, and public agencies with massive capital improvement programs, such as Los Angeles Unified School District (LAUSD) and Los Angeles World Airports (LAWA). Rather than reinvent the wheel, MTA is encouraged to tap into more knowledge resources from peers that will support decision making and potentially add capacity to MTA. It is recommended that industry panels and peer advisory groups remain small; participation would ideally change depending on the subject matter.

Along with this effort to engage others, it will be necessary to allocate resources to exploring how ideas generated from these committees and panels can be translated into actions and incorporated into the delivery of Measure R. Based on feedback from interviews, MTA staff recognize the numerous financial, technological and organizational opportunities to leverage Measure R. At mid-management levels within MTA, there are concerns about organizational resistance to proposals that request resources be allocated to exploring innovative ideas.

NEXT STEPS

1. Convene an industry committee to provide input on refining MTA's project delivery assessment process. Include industry input into the next steps outlined in the staff report of April 15th, 2010, included in the MTA position on the 30/10 Plan: "Staff will evaluate the approved project delivery method for each of the projects and make recommendations to the Board." Include in those discussions with industry an approach to refining cost estimates that avoids having to spend, unnecessarily, on the design effort to "seek bids" to make financial decisions on the prioritization of projects.
2. Identify other major categories where industry advisory committees could continue to provide feedback. Areas recommended include professional services, construction, and operations and maintenance.
3. Elevate the role of Transportation Business Advisory Council (TBAC) and provide staff or consultant support to refine recommendations on improving small business participation in Measure R.
4. All industry committees would be supported by Board Actions providing "firewalls" for participants.
5. The Deputy CEO should make contact with leaders from at least four peer agencies and identify points of contact for communicating with MTA. It is recommended that MTA start with the review of procurement and executed contract documents and discuss materials already published on how accelerated delivery was accomplished.
6. Engage an external professional talent to support MTA executive management in planning, facilitating and following up from the sessions.

TASK 2

EVALUATE WHETHER MTA'S EXISTING PROCUREMENT DEPARTMENT IS POSITIONED TO EFFICIENTLY DELIVER MEASURE R AND OTHER CAPITAL PROJECTS IN THE NEXT DECADE, ON BOTH THE LRTP AND AN ACCELERATED 10-YEAR SCHEDULE.

MAJOR FINDINGS

There is general consensus by MTA staff, industry and the analysis of this study that procurement activities at MTA are not positioned to consistently achieve efficient delivery of Measure R and other capital projects programmed on an accelerated schedule.

MTA's procurement activities are not, however, a function of one department. Focusing exclusively on the Procurement Department would not achieve the efficiencies necessary to successfully deliver an accelerated $38 billion program.

There is significant room to improve efficiency in the Procurement Department's activities and institutionalize a major cultural shift in how procurement pursues efficiency and in how stakeholders support the checks and balances and changes needed to realize expedited procurement.

RECOMMENDATIONS

It is recommended that MTA act upon unimplemented recommendations from the 2004 Polan Report industry recommendations and certain specific recommendations by this consultant for changes in policies, procedures and organizational structure that facilitate the ability and commitment of MTA staff to accelerate delivery of Measure R in the form of quality projects.

It is also recommended that MTA conduct a comprehensive review of program/project acceleration best practices and lessons learned from MTA's own project/program implementation history to apply additional changes to MTA's policies and organizational structure to further the 30/10 Plan, preferably through a collaborative effort among the Procurement Department and other impacted departments, such as construction, audit and county counsel.

The MTA CEO should direct the leadership of the Measure R program office to convene work sessions with procurement, planning, construction and other SBUs within MTA to translate recommendations from this report into specific and measurable goals and objectives for improving procurement activities. This should include reconvening meetings with Industry Panel Members and industry peers, as recommended in Task 1.

Resources must be allocated to this effort and would include staff and/or consultants capable of preparing the flow charts that were recommended in this study, compiling and/or re-crafting contract language, translating revised policies and procedures into clear and concise terms, training staff so that these changes can be properly administered, and a means for communicating to outside vendors how these changes improve doing business with MTA and what these changes mean to them in terms of responding to MTA solicitations.

BACKGROUND

Our findings and recommendations regarding MTA's procurement practices have been culled from information gathered in two industry advisory meetings; input received from private-sector senior executives representing planning, design, construction and finance, senior managers at MTA, and city staff; an analysis and critique published as a "Procurement Operations Review" (a.k.a. the Polan Report, 2004); and a survey of over 60 reports published by more than 20 organizations regarding approaches to project management, auditing, environmental streamlining, and other critical activities associated with project/program acceleration.

Industry Advisory Group Recommendations.

The industry advisory group recommended that MTA change its policies and procedures to be more business friendly, including revising its contracting methods, documents and terms to be more business friendly; incorporating methods that avoid and/or mitigate the costs and delays associated with litigation; making a visible change in how MTA manages and allocates risk; and learning from other agencies with more contractor-friendly policies and procedures, such as the cities of Portland and Salt Lake.

The industry advisory group recommended that MTA make certain organizational changes that impact effectiveness of procurement, such as making a visible change in predictability of Board and staff-level decision making, with the goal of MTA "speaking with one voice" and not backtracking on original direction provided to contractors. The group felt that such actions would be a first step toward articulating intent to improve perceptions of MTA vis-à-vis investment community, policy makers, contractors and others.

The industry advisory group also recommended that MTA implement a major shift in the procurement culture to focus on the ultimate goal of expedited delivery of Measure R as fulfillment of a compact with Los Angeles County voters responsible for enacting Measure R. The group recommended that MTA become more fully educated in the management of risk and the relationship of extensive risk transfer to contractors.

2004 Polan Report Recommendations.

The 2004 Polan Report identified a number of changes to state legislation and MTA procurement policies and procedures that could mitigate significant project delivery bottlenecks. Most recommended legislative changes have not been implemented; many have previously been proposed by MTA.

Revisions to the MTA Acquisition Policy, putting in motion a number of Polan Report recommendations, were approved at a special meeting of the MTA Board on February 1, 2010. As a result, the limits on MTA staff's contracting authority were increased, and MTA procurement procedures that follow adopted Board policies may be modified without Board approval. Because this roadblock to circumscribed policy modifications was removed, other changes will result from revisions to procurement procedures currently underway.

The Polan Report also found that relatively high staffing levels in MTA's Procurement Department are largely due to the need to comply with complex procurement and contracting requirements imposed by state law and MTA Board policies and procedures. Recent approval of changes to MTA procurement policies and anticipated action by the state legislature may allow reallocation of staff resources to focus on delivery of an accelerated program.

There was additional consensus among interviewed program and project delivery experts that MTA's procurement policies and procedures, organization and staffing initiatives must facilitate the ability and commitment of procurement staff to accelerate delivery of the program in the form of quality projects.

These program and project delivery experts concurred that, to accelerate delivery of the Measure R program, the procurement team should be cohesive and integrated at the program level, and procurement team members should have contracting officer authority for all projects in an accelerated program. At the same time, to avoid compromising the procurement team's ability to ensure compliance with legal requirements and ethical standards, procurement team members should be matrixed into projects, reporting to a procurement team leader, who should in turn report to the head of the Procurement and Material Management Department.

These experts emphasized that MTA management must clearly understand the relationship of the capabilities of existing staff to the knowledge and skill sets necessary to effectively accelerate delivery of the program, as procurement staff at all levels must have the competence and confidence to employ innovative procurement and contracting strategies to meet unique project needs. To ensure that such competence and confidence exists, comprehensive staff training in all legal procurement and contracting methods is essential. In addition, staff reallocation and replacement may be necessary to ensure delivery of the program.

There is also a need for a shift in attitude relating to procurement opportunities. This consultant recently attended a pre-proposal conference geared to broadening the ability of small and disadvantaged businesses to participate as prime contractors. The Procurement Department staff was sincere in its approach and earnest in ensuring prospective participants were knowledgeable of the MTA process. The process, however, was not identifiably different than what a large firm, experienced in MTA procurements, would be required to commit to in order to

participate. A more innovative approach, a streamlined process, would have reduced confusion and ensured diverse and strong participation by a maximum number of firms.

NEXT STEPS

1. Establish the framework for how procurement functions will interface with and be supported by a Measure R Program Office.
2. MTA should put in place unimplemented recommendations of the Polan Report, as well as recommendations of industry experts, that will facilitate implementation of the 30/10 Plan. Changes resulting from such recommendations may include:
   - Increasing the amount of signature authority by the CEO and designated project managers ($1 million may be too low).
   - Delegating change order authority to a committee that meets frequently and is sanctioned to make final, but auditable, decisions.
   - Establishing policies that minimize change orders, such as building more contingency to accommodate the needs of fast-track delivery.
   - Strengthening policies and procedures that are intended to avoid litigation, such as instituting standard alternative dispute resolution practices and establishing change order review committees.
   - Developing and utilizing more standardized contracts that reflect industry input.
   - Coordinating with construction and county counsel on the capacity to use contractual project delivery performance incentives and disincentives, based on industry best practices.
3. MTA should also conduct a thorough analysis, using flow charts as a starting point, of time impacts associated with historical MTA procurements, distinguished by procurement methodologies, dollar amounts, funding sources, etc., and identify strategies to streamline critical path elements in future efforts to accelerate delivery of the Measure R program.
4. MTA should identify very specific goals and objectives and the resources to implement them that would support acceleration of project delivery. The Industry Panel provided many recommendations to improve efficiency of procurement and modify contract terms and conditions, some of which unnecessarily impact competitiveness of MTA procurements. Examples include:
   - Reducing the time it takes to hire professional services.
   - Reducing the time it takes to complete consultant pre-qualification.
   - Accelerating pre-award audit procedures for pre-qualified firms and/or consider pursuing a change to the pre-award audit legislation and use post-award audit procedures.
   - Increasing the use of standardized contracts, vetted by industry.
   - Streamlining reporting and reducing unnecessary paperwork.
   - Using cost reimbursable contracts that allow consultants to get started with a letter that commits limited funding so work can proceed while the contract is being finalized.

TASK 3

EVALUATE CHANGES TO MTA'S CONSTRUCTION POLICIES, PROCEDURES AND PRACTICES THAT COULD ACCELERATE PROJECT DELIVERY SCHEDULES.

MAJOR FINDINGS

The organizational and policy changes that are needed to improve the reliability of construction performance are of critical importance to ensure that there is adequate funding for all Measure R projects.

The ability of MTA's construction functions to deliver an accelerated construction program is diminished by the existing workload, the size of capital projects soon to be implemented, as well as a number of institutional barriers that require significant change.

RECOMMENDATIONS

Leadership from the Construction Department's SBU should act expeditiously with staff, consultants, or both, to mobilize resources for a number of engineering and construction-related initiatives that will be necessary to develop the overall program for delivery of an expedited Measure R while the organizational framework for a Measure R Program Office is being developed. This includes collaborating with other departments to set goals that improve efficiency in construction procurement and oversight, and taking a major role in indentifying third-party organizations and recommending initiatives that will expedite permitting, approvals and advanced construction.

The MTA should identify engineering and construction management responsibilities throughout the MTA organization and consolidate engineering and construction staff under one department. This would include not only capital projects, but facilities engineering and any other construction-related function that does not conflict with legal requirements or impact the day-to-day needs of rail or bus operations. A facilities department that deals with the day-to-day needs of MTA operations should be clearly identified.

While consolidating staff can improve capacity and efficiency, engineering and construction will have a major role in the acceleration of Measure R projects and would participate as members of integrated project teams within the organizational framework of a Measure R Program Office. Project management assignments would be made based on the needs of the project and staff capabilities. Staff would be dedicated to the projects in terms of their time and focus, but matrixed from a management standpoint. Establish a scope, schedule and budget that invest more money up front in planning, design and pre-construction planning in order to reduce risk during construction.

It is further recommended there be collaboration with the Measure R Program Office and the exploration of options for project delivery, incentives and contract terms and conditions that were recommended by the Industry Panel. The MTA should leverage the size of Measure R and challenge the construction industry by setting a high bar for innovation and sustainable construction methods.

BACKGROUND

MTA uses, or has used, many of the construction best practices identified by the Industry Panel and confirmed in the literature review. While MTA has overseen the construction of very large transportation projects and uses many of the best practices for accelerated project delivery, such as design-build, MTA projects implemented over the last 10 years have achieved mixed results as measured by the predictability of cost and schedule, the number of bidders and costs of litigation.

The Industry Panel conveyed that they and their competitors were closely watching the actions to support acceleration of Measure R. If actions to approve acceleration were taken, it is assumed that industry could mobilize their capacity in Los Angeles County to take on the volume of construction work associated with an accelerated Measure R program.

The technical construction challenges are less of a concern to industry than MTA's ability to concurrently move multiple projects forward. Uncertainty was a common theme in describing concerns about MTA; uncertainty of how 1) MTA will engage industry input, 2) the extent to which MTA will adopt best practices in the selection of project delivery, 3) the approach to management of risk and, 4) the consistency of decision making.

Due to the complex jurisdictional landscape of Los Angeles County, it is a challenging place to build. There is tremendous concern within MTA and by industry on how stakeholders will come together to improve what is well documented as one of the biggest threats to successful project delivery: the challenges of third-party coordination.

Planning for disruption is also a critical success factor to acceleration. The acceleration of Measure R, combined with the 10-year capital programs planned by other agencies and entities in Los Angeles County (including the Los Angeles Department of Water and Power, LAWA, the Ports of Los Angeles and Long Beach, Caltrans, the County of Los Angeles, hospitals, universities, and many of the local cities) will be transformative to Los Angeles County. It will also be disruptive.

It would be an understatement to say that it would be *unfortunate* if disruptive work, such as the excavation needed for tunneling or relocation of underground utilities, were duplicated because agencies did not coordinate or if the contractor responsible for a billion dollars in construction were asked to stand in line for a permit behind a homeowner.

The quality and consistency of MTA's contracts were also a major area of concern. The specificity to which they are tailored to the unique characteristics of project type (delivery

approach and type, such as transit vs. highway vs. other), the incentives for meeting complex challenges, and the spirit and consistency in which contracts are negotiated and managed will have significant impact on achieving goals for accelerating projects in Measure R.

The subject of innovation was briefly discussed during the industry panel meetings. It was mentioned in follow-up interviews that there was hesitancy on the part of MTA staff and in-house consultants to consider, for example, new construction methods for tunneling or new technologies in rail cars and systems because of concerns regarding integration. There is concern that the agency may be overlooking opportunities to improve productivity and system performance without some kind of change in how industry input and new ideas are solicited and considered.

While the question was not asked directly to the Industry Panel, the topic of sustainable construction was well documented in the literature review as part of more recent major capital programs. Local agencies, such as LAWA, are making significant progress in incorporating methods of sustainable construction within the capacity of local contractors. There may be some lessons learned and visible demonstrations within Los Angeles County and other parts of the region that should be incorporated into construction of Measure R projects.

MTA's role in construction decision making and oversight will vary for each of the project categories in Measure R. MTA is the lead agency for the rail transit projects included in the 30/10 Plan, but in the case of highways and local projects, it must coordinate with state and local agencies in decisions associated with project delivery of the other major programs in Measure R.

The greatest number of examples and achievements in terms of time savings for accelerating construction (including those cited by the Industry Panel and referenced in the literature review) exists for highway construction. Entities, such as UDOT, are utilizing such methods as accelerated bridge construction (ABC), design-build and construction management at risk, to accelerate major highway and interchange projects.

In California, many of the self-help counties are reaching out to peers to increase organizational capacity in order to implement sudden increases in scope and pace of their capital programs. San Diego Association of Government's (SANDAG's) TransNet program, for example, utilizes a corridor management approach where corridor directors come from Caltrans, but are executing projects within a more flexible set of policies and procedures prescribed by SANDAG.

There is general agreement among agency staff and the Industry Panel that MTA needs to significantly increase the capacity and improve skill sets throughout construction functions. The extent of the changes, however, must be formulated in parallel to decisions regarding project delivery. Capacity at MTA should not drive delivery decisions, but should be developed with ongoing amendments to MTA's budget to meet the needs of an accelerated program.

While MTA does not self-perform design work, oversight and input to engineering design activities will increase in scale and scope with the acceleration of Measure R. Industry participants observe that engineering design functions have diminished over the years and at

times reside in planning activities that are not staffed with engineers. Rather than creating another silo, strengthening the engineering capabilities within MTA is best combined with construction oversight responsibilities. The establishment of integrated project teams would improve collaboration on preliminary engineering and streamline hand-off points that currently interfere with expedited delivery.

As the engineering and construction organization is strengthened, the agency may consider establishing a Comprehensive Facilities Management Program that focuses on total cost of ownership, including comprehensive use of life cycle assessments and sustainability goals, and incorporates intelligence from this approach into design criteria and specifications. Other suggestions include, and the use of tools such as, enterprise asset management systems to improve maintenance activities.

NEXT STEPS

1. Strengthen the engineering and construction management capacity at MTA:
   - Review the location of construction-related functions throughout the organization, and identify if organizational changes are needed to consolidate those functions.
   - Identify and dedicate strong candidates to staff on-site construction offices.
   - Strengthen cost estimating capabilities and significantly improve the timeliness of preparing cost estimates.
   - Engage with the industry committee on strengthening how project managers can improve communication, better document field issues, etc.
   - Invest heavily in staff training.
2. The leadership assigned to a Measure R Program Office and MTA's Construction Department should collaborate between departments and identify priorities and immediate needs for engineering and construction resources to implement recommendations from this study.
3. The CEO should mobilize resources (from staff, consultants or both) to engage in discussions with entities within the County of Los Angeles, City of Los Angeles, other cities, utilities, other rail operators, etc. responsible for third-party approvals. There are dozens of agencies that will interface with Measure R projects:
   - In coordination with the Measure R Program Office, engage MTA construction staff most familiar with third-party coordination to identify agencies that require the most attention.
   - Take a hard look at Expo 1 and document third-party challenges to identify examples as a tool for meaningful problem solving.
   - Invest in resources and activities necessary to document in more detail the permits, approvals and other pre-construction activities needed to accelerate projects funded by Measure R.
   - In coordination with other agencies, prepare periodic estimates of capacity in labor, materials and logistics.

4. Representatives from construction should meet with colleagues from procurement, legal, audit and, possibly, others and set goals for policies, procedures and practices noted in the recommendations for accelerating construction. This may be the starting point for engaging with the peer committee recommended from Task 1. Examples of critical bottlenecks include:
   - Reducing the time it takes to get questions answered during an RFP/bid process.
   - Reducing the time it takes to hire and negotiate professional services contracts.
   - Reducing the time it takes to complete consultant pre-qualification.
   - Streamlining reporting and reducing unnecessary paperwork.

5. Establish a scope, schedule and budget for strengthening preconstruction planning activities:
   - Increase investments in site investigation, remediation and geotechnical engineering.
   - Develop a project management plan for each project identified in Measure R that drills down into construction tasks.
   - Establish procurement and construction contracts that maximize productivity and cost efficiencies for repetitive work and pre-purchasing materials, equipment and other services.
   - In coordination with the Measure R Program Office, roll up information from the project management plans into a Program Management Plan (PMP) that identifies where there are opportunities for advancing utility work and other enabling projects.

6. Through a collaborative combination of MTA staff and industry experts, MTA should formulate strategies for using and/or improving the use of incentives to accelerate construction. For example:
   - Incentives and award fees (Florida DOT, Pentagon Renovation Office (PENREN)).
   - Weighted guidelines where increased risk taking corresponds to higher potential profits and better risk sharing.
   - Contract payment approaches, such as reduced withholding for small businesses.

7. Consider policy changes that significantly expedite change order decision making during construction. This includes:
   - Establishing a Change Order Review Committee (e.g., one owner, one contractor and one neutral third party).
   - Increasing to $5 million the signature authority of the CEO and/or the delegation to a Board committee for change orders.
   - Establishing a program-wide reserve fund (+/- 10% of program value) as contingency for mega and/or complex projects.

8. Through a collaborative combination of MTA staff and industry experts, develop and implement recommended methods for preventing and resolving conflicts during construction. For example:
   - Partnering agreements
   - Partnering sessions
   - Project labor agreements
   - Colocating teams
   - Strengthening alternative dispute resolution language

9. Clarify MTA's responsibilities for accelerating highway projects and support any legislative, policy or other changes necessary to support an accelerated highway program.

10. In coordination with the Measure R Program Office, improve tools for managerial decision making, including:
    - Establish a more useful project control system for managing projects (efficient and real time).
    - Develop modeling tools to forecast labor and materials and support decision making on initiatives, such as pre-purchasing materials, pre-assembly and logistics.
    - Incorporate risk assessments and management into the process.

11. In coordination with the Measure R Program Office, explore options for tapping into the capacity of other public agencies to support engineering and construction management activities.

TASK 4

EVALUATE WHETHER CHANGES TO MTA'S CURRENT AUDIT POLICIES AND PRACTICES CAN BE MADE TO ACCELERATE PROJECT DELIVERY SCHEDULES WITHOUT COMPROMISING AUDIT INTEGRITY.

MAJOR FINDINGS

Changes to MTA's current audit policies and practices could have a significant impact on accelerating project delivery schedules and can be accomplished while maintaining the integrity of the audit function.

RECOMMENDATIONS

The MTA should give immediate attention and resources to significantly strengthen the capacity of the Audit Department toward planning for the acceleration of Measure R.

The MTA should broaden the Audit Department's understanding and applications of best practices associated with audit policies and procedures. In coordination with the Measure R Program Office, the MTA should establish a peer review committee focused on audit, and invite participants identified in this study as preferred clients who are also successful in delivering accelerated construction of highways and rail transit.

The MTA should improve communication and collaboration between audit and contract management staff.

BACKGROUND

Auditing plays an important role in providing the checks and balances needed to comply with state and federal guidelines. Auditing requirements can also delay the execution of contracts, change orders and project close-outs.

There are few transportation agencies in the U.S. that have capital improvement programs the size and scale of Measure R and the schedule proposed in the 30/10 Plan. The Port Authority of New York and New Jersey (PANYNJ) is one agency that comes close to MTA in the size of its capital program and its autonomy in generating funds for capital improvements. PANYNJ recently released its budget for 2010. It reports that staffing levels are at their lowest in 40 years. This coincides with a 10-year capital program that has recently been reduced from $29 billion to $24 billion. PANYNJ has budgeted 77 auditors for FY2010. While PANYNJ may have many more contracts because of the leaseholds on property, it does provide a comparison that suggests that MTA's construction audit functions may be understaffed.

NEXT STEPS

1. Assign, via a matrix structure, a representative from the Audit Department to the Measure R Project Office to work in coordination with other MTA departments to revise audit requirements in MTA Procurement Policies and Procedures, modify contract language, and further identify audit policies and practices that support accelerated construction.

2. Incorporate into MTA's policies and procedures staff recommendations for increasing audit and prequalification thresholds and extending the time allocated to prequalified firms:
   - Raise the audit threshold from $250,000 to $650,000 to match federal requirements for every Federal Highway Administration (FHWA)-funded prime or subcontractor.
   - For audits of construction change orders, increase the audit threshold to the CEO's signature authority, recently raised to $1 million.
   - To improve prequalification activities, increase the threshold for prequalification of subcontractors to $500,000.
   - Allow pre-qualification validation to continue for five years vs. existing limit of two years.

3. Incorporate Industry Panel recommendations, including one to establish/refine accelerated pre-award audit procedures for all pre-qualified firms, and consider policies that allow audits to be waived for construction change orders (NYMTA).

4. Identify where the audit department could add value to MTA's efforts to be more transparent in how it is implementing Measure R.

5. Establish a training program specifically tailored to auditing requirements and provide to both staff and vendors.

TASK 5

EVALUATE WHETHER MTA'S CURRENT PROJECT AND PROGRAM MANAGEMENT SYSTEMS CONFORM WITHIN THE BEST PRACTICES USED IN THE ARCHITECTURE & ENGINEERING, CONSTRUCTION MANAGEMENT, AND CONSTRUCTION FIELDS, AND DETERMINE WHETHER MTA SHOULD UPGRADE ITS SYSTEMS TO IMPROVE PROJECT DELIVERY.

MAJOR FINDINGS

In order to generate a sense of urgency and the capacity for project and program management systems within MTA and throughout other Measure R stakeholders, there needs to be strong leadership and a dedicated, central point of coordination at MTA for acceleration of Measure R. In order to fully implement the acceleration of the Measure R program, there is a need to end departmental silos and project handoffs and provide a more integrated and holistic approach to project delivery for the Measure R projects identified in the 30/10 Plan.

RECOMMENDATIONS

The MTA should immediately establish a Measure R Program Office to serve as a central point of coordination of near-term activities associated with realizing the 30/10 Plan and accelerating other components of Measure R. The MTA should assign dedicated leadership and, ***via a matrix structure****, assign at least one staff member from each MTA department to the Measure R Program Office to work on the development of a PMP and serve as a liaison for larger organizational initiatives that are needed to support an accelerated Measure R. This would be a first phase of the Program Office's development which could then evolve into an office with a dedicated team of professionals, augmented by matrixed staff from other departments and consultants as needed. The office will focus on the integration of existing Measure R projects and the further development of other projects identified in the 30/10 Plan (see Figure 1 on Page 29).*

The MTA should establish strong methods for communicating, internally and externally, the activities of the Program Office and include methods of recognizing staff excellence and effort in contributing to Measure R success.

In close coordination with its planning and construction functions, the MTA should establish clear definitions of when a Measure R plan officially becomes a project, and assign a project manager who will be responsible for the project through completion. Through an organizational realignment, the MTA should integrate MTA staff and consultants into an integrated project delivery team specified by the PMP for each project in the Measure R program.

The MTA should give responsibility to the Measure R Program Office to coordinate external industry and peer review committees involved in advising on changes to improve MTA's capacity to accelerate Measure R. For example, the Program Office would take a leadership role in coordinating, with industry and MTA staff, enhancements to MTA's Project Delivery Assessment Process.

In coordination with other departments matrixed into the Measure R Program Office (e.g. Communications, Construction), initiate discussions with other public agencies that may have project or program management capacity that could serve as extensions of staff.

The MTA should give responsibility to the Measure R Program Office to report on the status of recommendations in this report.

BACKGROUND

Staff and industry observers describe the project and program management activities at MTA as a sequential series of organizational silos where projects proceed through numerous hand-off points. Most projects spend significant time in a planning phase. Industry consultants familiar with MTA observe that preliminary engineering efforts often remain in planning with limited input from the engineering, construction and operations function at MTA.

The procurement process requires significantly more time than anticipated, and the performance of project delivery (cost, schedule and budget) have yielded mixed results.

As a 30/10 Plan is being promoted, MTA has ongoing capital and facilities maintenance projects and programs that require significant attention. Without some kind of dedicated focus on the unique needs and opportunities associated with Measure R, there is a risk that leadership will get side tracked into the day-to-day issues that ultimately arise.

The overwhelming consensus from industry and the literature review was that "numerous hand-off points create unnecessary delays" and pointed to the establishment of a multi-disciplinary team dedicated to the accelerated delivery of the Measure R program.

Unfortunately, there is no one model for the project and program management of an initiative the size of Measure R. Agencies responsible for delivering projects within mega programs use a variety of management approaches, such as program managers, corridor managers and construction managers.

As a result of the recent economic recession, transportation agencies with some of the largest capital programs have reduced staff and supplemented oversight functions with consultants, and in some cases, other public agencies. Staff and industry interviews also shed light on agencies with dedicated construction authorities that are now questioning their value given high levels of overhead and a lack of transparency.

There are some very clear messages from the interviews and best practices research:

- In moving mega programs forward on a fast track, there must be a dedicated team and leadership that is capable of creating buy-in to the achievement of common goals.
- The coordination with multiple stakeholders must be led by individuals who delegate to project managers and who do not get mired in project details.
- Consultants responsible for program management activities must have a vested and measurable stake in project performance. These consultant contracts would provide the holding of some risk in project delivery performance.
- Integrated project teams are essential to accelerating project delivery.
- Project managers do not have to be engineers. They must, however, be trained in project management concepts, know what is expected of them, and be recognized as a project manager throughout the organization. In addition, their skills and capabilities need to be ideally matched to the needs of the project.
- Project managers ideally participate as members of the team in the planning process, so they are prepared to move a "plan" into the project phase.

NEXT STEPS

1. Immediately establish a Measure R Program Office to serve as a central point of coordination of near-term activities associated with realizing the 30/10 Plan and accelerating other components of Measure R. Assign dedicated leadership and, via a matrix structure, dedicate at least one staff member from each of MTA's departments to the Measure R Program Office.

2. Responsibility should be given to the Measure R Program Office to coordinate the response to the Board Motion of April 15, 2010, to evaluate the project delivery methods of projects included in the 30/10 Plan and to incorporate into this effort recommendations contained in this report that include:
   - Developing, with industry and staff input, a process for decision making on project delivery methods, i.e. MTA's Project Delivery Assessment Process, for each of the major Measure R project types (rail transit, highway, operations and maintenance, local projects and programs).
   - Expanding and enhancing MTA's use of detailed risk management techniques as input into the project delivery assessments.
   - Identifying potential changes to project delivery methods that could lower costs, accelerate construction and/or improve predictability of the program.
   - Consolidate the analysis requested by the Board for the 30/10 Plan, along with assumptions for other Measure R projects, into a draft PMP.

3. Establish tools for improving near-term Measure R decisions. Create a modeling tool for generating "what if" scenarios, with outputs that include estimates for capital costs, operating costs, project schedules, economic impacts and construction capacity. Incorporate reporting features which consolidate data into easily understood management reports.

4. Mobilize resources (from staff, consultants or both) to engage in discussions with entities within the County of Los Angeles, City of Los Angeles, other cities, utilities, other rail operators, etc. responsible for third-party approvals. In coordination with MTA's planning, construction and communications staff:
    - Meet with agencies recommended by MTA's Planning and Construction departments as most critical in accelerating Measure R projects.
    - Draft an agenda that includes options for securing advanced agreements and allocating resources to improve coordination and collaboration.
    - Use these discussions to learn more about each agency's 10-year capital program and identify where planning, design and construction activities potentially interface.
    - Compile a timeline for major regional infrastructure projects that can be further developed to coordinate disruption planning, and share assumptions on the capacity of labor, materials and logistics.
    - Request an update on the proposed plan by the City of Los Angeles to streamline permits and approvals. The 12-2 Plan, recently reinitiated and being led by the Department of Building and Safety, calls for reducing the number of city agencies involved in the business and development permit process from 12 to two.
    - Develop recommendations on leadership structure for third-party coordination of Measure R. For example:
        - one individual (with staff or consultant resources), or
        - a committee reporting relationship
    - Recommend the Board authorize the CEO or his designee to enter into negotiations and third-party agreements that will solidify support for accelerated Measure R projects.

5. In close coordination with construction, legal and procurement functions, investigate and educate the MTA Board on advantages and disadvantages of other accelerated project delivery tools recommended by the Industry Panel, peers and this study that include:
    - Design-build best value
    - ABC
    - Construction management at risk
    - Job order contracting
    - Framework agreements

6. Integrate the existing consulting efforts to select, and realize projects identified for public private partnerships into the Program Office.

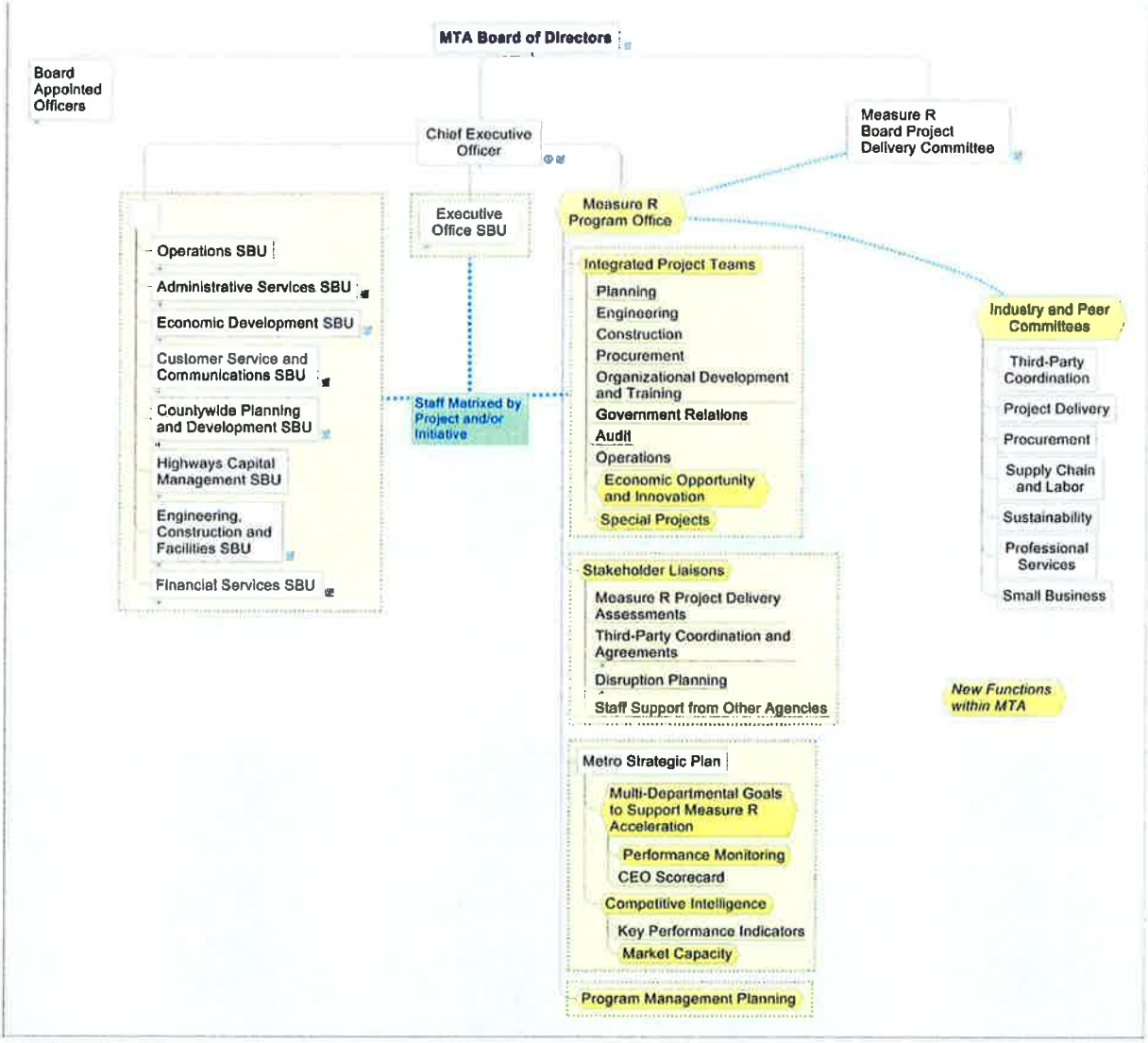
7. In close coordination with planning and construction functions at MTA, establish clear definitions for when a Measure R plan officially becomes a project and assign a project manager. For each project identified in the PMP, establish, via a matrix structure, integrated project teams that move the project through completion and bring in, as necessary, individuals from operations, communications, real estate, etc. to advise on design, construction outreach, etc. Supplement staff needs as required through amendments to MTA's capital and operating budgets.

8. Establish roles within the Measure R Program Office liaison to identify opportunities for leveraging and/or coordinating acceleration of Measure R projects with other local initiatives.

9. As the project delivery methods and timelines evolve over the next six months, define the scope of services, obligations and performance measures for a program management consultant to strengthen MTA's capacity to oversee the implementation of the 30/10 Plan and support oversight responsibilities associated with the other components of Measure R.

10. Initiate development of program and project management systems that provide real-time data on costs and schedules. Wherever feasible, integrated managerial reports on the progress of Measure R projects would provide efficiency by reducing redundant report requirements and incorporating status reports on environmental studies and other critical path activities associated with project planning, procurement financing and delivery. Communications and document control systems will also be a critical component of an accelerated Measure R. Caution is urged against piece-meal systems that could be developed through the procurement of a program manager. Systems may already exist from recent program management activities of major world-class infrastructure programs.

FIGURE 1


MTA Board of Directors
Board Appointed Officers
Chief Executive Officer
Measure R Board Project Delivery Committee
Executive Office SBU
Measure R Program Office
Operations SBU
Administrative Services SBU
Economic Development SBU
Customer Service and Communications SBU
Countywide Planning and Development SBU
Highways Capital Management SBU
Engineering, Construction and Facilities SBU
Financial Services SBU
Staff Matrixed by Project and/or Initiative
Integrated Project Teams
Planning
Engineering
Construction
Procurement
Organizational Development and Training
Government Relations
Audit
Operations
Economic Opportunity and Innovation
Special Projects
Industry and Peer Committees
Third-Party Coordination
Project Delivery
Procurement
Supply Chain and Labor
Sustainability
Professional Services
Small Business
Stakeholder Liaisons
Measure R Project Delivery Assessments
Third-Party Coordination and Agreements
Disruption Planning
Staff Support from Other Agencies
New Functions within MTA
Metro Strategic Plan
Multi-Departmental Goals to Support Measure R Acceleration
Performance Monitoring
CEO Scorecard
Competitive Intelligence
Key Performance Indicators
Market Capacity
Program Management Planning

TASK 6

DETERMINE THE PROJECT DELIVERY SCHEDULE SAVINGS IF MTA RECEIVED FEDERAL APPROVAL (E.G., IN SAFETEA-LU REAUTHORIZATION) TO STUDY PROJECTS UNDER THE CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA) IN LIEU OF THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA).

FINDINGS

Table 1 that follows indicates that, for the 12 transit projects identified in the 30/10 Plan, much of the environmental work has been completed or is in process.

RECOMMENDATION

The MTA should not pursue NEPA delegation for transit projects at this time.

BACKGROUND

Anecdotal evidence and discussions relating to environmental law at both the national and regional levels have consistently identified an up to 18-month time savings for projects solely fulfilling the requirements of CEQA as opposed to those meeting both CEQA and NEPA requirements. Industry representatives have shared with the consultant their direct experience with the time savings.

MTA's government relations staff have been exploring the possibility of pursuing a legislative initiative which would permit NEPA delegation for Measure R projects in Los Angeles County. After discussion and initial review of pursuing such a legislative initiative, this action would be challenging and potentially time consuming. Additionally, given the passage of the 30/10 Plan, the identified 12 transit projects slated for an accelerated process/funding may be far enough along within their respective environmental processes to not warrant congressional action. Table 1 identifies the points at which these projects are within their environmental processes at the time of this report. This legislative pursuit may be a long-range strategy, but it is not advisable to spend precious political capital and staff time on what could be a major campaign for congressional supporters.

Caltrans does have NEPA delegation for highway projects under current FHWA guidelines. Table 2 that follows indicates the top tier highway projects which are part of Measure R.

NEXT STEPS

MTA staff may wish to coordinate with Caltrans' staff to ensure that the delegated NEPA authority is expeditiously implemented for the highway project list. It is further recommended that staff review the NEPA delegation for transit projects in the long-term, rather than for implementation as part of the 30/10 Plan.

TABLE 1
Measure R Projects' Environmental Status

Environmental Process Status: Rail and Transit Expansion	
Exposition Boulevard Light Rail Transit	Final Environmental Impact Report (FEIR)
Crenshaw Transit Corridor	Locally Preferred Alternative, December 2010
Regional Connector	Draft Environmental Impact Statement/ Report (DEIS/DEIR) is approximately 60% complete
Westside Subway Extension	DEIS/DEIR and Advanced Conceptual Engineering nearing 70% complete.
Gold Line Eastside Extension	In early stages of environmental analysis; assessing the viability of building two shorter alignments
Gold Line Foothill Light Rail Extension	Completed environmental/ preliminary engineering for the Phase 2A alignment, including Iconic Bridge. Authority Board: April 21 Agenda: Authorize CEO to Re-Issue RFP C1133 for the Preparation of Document for phase 2B NEPA/CEQA.
Green Line Extension: Redondo Beach Station to South Bay Corridor	Initiate DEIS/DEIR Phase
Green Line Extension to LAX	Crenshaw/LAX Corridor – DEIS/EIR Meetings
San Fernando Valley East North-South Rapidways	FEIR/Under Construction – Estimated 2012
West Santa Ana Branch Corridor	March – Summer 2010 Study Initiation; Summer 2010 – Fall 2010: Alternatives Development and Refinement; Fall 2010 – Summer 2011 Alternatives Evaluation; Fall 2011 Locally Preferred Alternative
San Fernando Valley I-405 Corridor Connection	Under Construction
Orange Line Canoga Extension	FEIR/Under Construction

TABLE 2
Measure R Projects' Environmental Status

Environmental Process Status: Highway Improvements	
1-5 Capacity Enhancements: SR-134 to SR-170	Construction contract award for initial phases, Spring 2010
1-5 Capacity Enhancements: I-605 to Orange County Line	Final Design
1-5/Carmenita Rd. Interchange Improvement	Completing right-of-way acquisition; construction early 2011
1-5/SR-14 Capacity Enhancements	Construction 48% complete
I-405/I-110/I-105/SR-91	Ramp and interchange improvements, early planning stage
I-5 North Capacity Enhancements: SR-14 to Kern County Line	County Line; Truck lane from SR-14 to Pico Canyon: Design 30% completed; Discussions with Caltrans concerning high-occupancy vehicle (HOV) lanes
I-710 South Early Action Projects	Soliciting community input to identify potential projects
SR-138 Capacity Enhancements	Environmental clearance complete; developing funding plan
High Desert Corridor (Environmental)	Developing environmental clearance funding plan with partners and cooperative agreement; evaluating public/private partnership delivery
I-605 "Hot Spot" Interchanges	Scope for feasibility analysis being completed
Hwy Op. Arroyo Verdugo	Operational improvements; developing project implementation plans
Hwy Op. Las Virgenes/Malibu	Operational improvements; developing project implementation plans
SR-170 North Gap Closure	Completed Preliminary Feasibility Assessment
BNSF Grade Separations	Developing funding plan with partners
ACE Grade Separations, Phase II	Negotiating funding agreement; targeting completion Jan. 2010

TASK 7

EVALUATE WHETHER A SEMI-AUTONOMOUS OR AUTONOMOUS ORGANIZATIONAL UNIT (E.G., CONSTRUCTION AUTHORITY) WOULD ENABLE MTA TO DELIVER PROJECTS MORE EFFECTIVELY.

MAJOR FINDINGS

If the MTA is serious about expediting the Measure R program, the agency should not waste precious time trying to establish an autonomous organization. The goals of acceleration can be achieved with the basic existing MTA structure; the time and effort required to create a new entity would distract the efforts of senior leadership from the task at hand.

RECOMMENDATION

The MTA should not pursue the establishment of a semi-autonomous or autonomous organization. Instead, it is recommended that consideration be given for a smaller unit of the policy board, perhaps the Measure R Implementation Committee or a merger of the Measure R Implementation Committee and the Construction Committee, and the CEO be delegated a higher level of approval/signature authority specific to identified Measure R projects, and that the Project Management Information System (PMIS) tracking system be implemented expeditiously.

BACKGROUND

MTA has direct experience with a variety of project delivery methods and policy/project specific boards, committees and sister agencies. The experience has included significant ramp-up time for enabling bills to move through the legislative process, for boards of experts to form, for funding agreements to be developed, and for new policy boards to fully understand the nexus of their decision making authority with that of the MTA Board.

If the goal is to expedite the Measure R program, the establishment of new, specific autonomous and semi-autonomous organizations is, at best, distracting and could slow the implementation of the 30/10 Plan. Discussions in Washington, DC, continually indicate that the preference for most political and bureaucratic officials is to work with one entity.

Many on the Industry Panel convened by executive staff have fond recollections of the Los Angeles Transportation Commission's Rail Construction Corporation (RCC) and the Engineering Management Consultants (EMC) of the late 1980s and early 1990s. The literature

shows that different aspects of both organizational units have been employed around the nation on a myriad of projects and to varying effect. Positive aspects of both involve an efficient means of day-to-day approvals, an expedited and single focus approach to problem solving, and greater engineering emphasis for each project. Negative aspects of these types of organizational units include potential isolation from political and community considerations, potential lack of transparency for the policy board and the public on construction decisions which may have far-reaching consequences, and potential usurpation into the unit of those assigned to quality control, financial audit and procurement. There is also the potential for confusing or mixed messages to the public and to federal officials relating to accountability for a project and overall priorities for the transportation system within the region.

Rather than spending time, energy and political capital on creating semi-autonomous or autonomous units, policy or otherwise, the recommended course of action is to establish greater efficiency and organizational effectiveness within the staff organization and to identify where there is a need for consultant assistance.

NEXT STEPS

Another section of this report recommends the creation of a focused Measure R department with a matrixed relationship to quality control/audit/procurement functions within the agency. Additional recommendations within the report call for:

- A smaller unit of the policy board, perhaps the Measure R Implementation Committee or a merger of the Measure R Implementation Committee and the Construction Committee, to be delegated increased authority for the expeditious approval of time-sensitive policy and contractual matters.
- The delegation of increased contract authority (above $1 million) for the CEO, specific to projects within the Measure R Program.
- The implementation of a program management tool to provide tracking and transparency to the decisions of those with increased authority and those making "line" decisions.

The latter recommendation was adopted by the MTA Board upon staff recommendation. The CEO's authority was increased to $1 million on February 1 by action of the MTA Board. Discussions within the Industry Panel indicate that a $1 million limit for a nearly $38 billion program may be inadequate for expeditious implementation; a $5 million limit with specified parameters may be a more workable figure.

TASK 8

IDENTIFY THE OVERALL NEED FOR ANY OTHER ORGANIZATIONAL CHANGES THAT WILL ENSURE THE FASTEST POSSIBLE PROJECT DELIVERY.

MAJOR FINDINGS

The organizational culture at MTA needs to change to ensure the fastest possible project delivery for Measure R projects. There is significant opportunity within multiple phases of a project life at MTA to improve efficiency and add value, as well as opportunity to involve internal and external stakeholders in the accelerated delivery of Measure R.

MTA is being asked to accelerate delivery of Measure R at the same time that cost cutting decisions are being made, including elimination of full-time positions, some of which are related to project delivery.

RECOMMENDATIONS

The MTA should implement recommendations from Task 5 and matrix staff into the Measure R Program Office from a wide cross section of MTA departments to support organizational readiness for the 30/10 Plan and other acceleration opportunities for Measure R.

As discussed in Task 1, rather than reinvent the wheel, MTA is encouraged to tap into more knowledge resources, namely peers that will support decision making and potentially add capacity to MTA.

The focus of this Board Motion was on acceleration. With an acceleration of this magnitude of capital investment, however, come many other opportunities that should not be overlooked. Identifying and leveraging opportunities requires that MTA become significantly more externally focused, and actively participate in other transportation and development initiatives that leverage Measure R projects.

BACKGROUND

Over the last 10+ years, MTA has undergone a number of organizational restructurings which have limited the impact of well-intentioned initiatives to improve collaboration, teamwork and overall performance.

The MTA must learn from its successes and its mistakes, likely due in large part to these restructurings. To illustrate, the Industry Panel had difficulty understanding how concepts behind successful projects, such as the MTA Gold Line Eastside Extension, failed to be replicated within the agency. They also referred to MTA and Caltrans' responses to the Northridge earthquake, where much can be learned from the expedited and highly incentivized design and construction that followed.

Another barrier to any initiative for change perceived by many is that the culture of the MTA organization is internally focused. This is not unexpected to industry peers, given what MTA staff are responsible to deal with on a day-to-day basis and the budgetary constraints of a transit agency that maintains comparatively low fares.

Interviews, however, revealed some harsh criticisms of MTA and described the agency's weaknesses as "too much time spent on political infighting, lack of decision makers, too much time second-guessing decisions, and staff time wasted on discrediting others."

Some staff lament that many of MTA's peer agencies, most of which are much smaller in size and scope, seem to out-run the agency and often secure a greater proportion of discretionary monies that fund high-profile, innovative projects.

There are many local agencies that are investing time and resources in parallel activities that offer opportunities to leverage Measure R investments (such as, CleanTech LA, SolarLA, DWPs and other utility water and energy programs.) Based on feedback from interviews, MTA staff recognize opportunities to leverage Measure R with grants, such as those from the Environmental Protection Agency (EPA) or the Department of Energy. Coordinating construction activities more closely with other agencies also offers opportunities to reduce capital costs. At mid-management levels at MTA, there are concerns about organizational resistance to proposals that request resources be allocated to pursuing grants, increasing project costs to save on operating expenses, or to pursuing legislative changes that would allow for third-party investments, such as power purchase agreements.

Looking outside the challenges of delivering construction, Measure R projects have enormous synergies with other initiatives throughout the region, that include transit oriented development, integration with California High Speed Rail and interfaces with one of the largest U.S. international gateways, Los Angeles International Airport (LAX).

Measure R shares its home with some of the world's leading experts in renewable energy, sustainable design and manufacturing, and is one of the country's largest markets for international trade, goods movement and tourism.

Job creation should not be left solely to the discretion of the firms that directly benefit from construction. MTA policies and programs can have a significant impact on leveraging the job creation potential of an accelerated Measure R.

NEXT STEPS

1. MTA's CEO should lead an organizational transformation process that supports acceleration of Measure R. It is important to communicate the message, and back it up with resources and actions, that acceleration of Measure R cannot be "business as usual" at MTA.

   This requires changes in behavior that reflect:
   - A strong sense of urgency
   - Less policing and more focus on improving efficiency
   - Proactive problem solving
   - Timely and consistent decision making
   - Collaboration and teamwork
   - Openness to new ideas
   - A focus on the customer experience
   - Coordination with local initiatives

2. MTA is currently developing a strategic plan. It is recommended that goals and objectives that reward changes in behavior, such as those described above, be developed and incorporated into this plan.

3. It is also recommended that MTA establish a set of Guiding Principles that clearly communicate how MTA will engage with industry. For example:
   - MTA seeks to build collaborative relationships with all participants.
   - The implementation of Measure R projects will include proactive management of risk and disruption.
   - Investments will be made in programs that enhance competition and assure meaningful participation from small businesses.
   - Measure R investments should
     - spur innovation (beyond the Measure R program)
     - maximize sustainability
     - maximize the economic benefits to Los Angeles County

   Additionally, it is recommended that MTA's Guiding Principles include the MTA Board. In order to accelerate Measure R, the MTA Board bears some responsibility and must demonstrate discipline in its policy decision making. It must allow for some delegation with verification, and weather setbacks without changing course. This improves partnerships with other government entities and with industry.

4. MTA should conduct an alignment session involving MTA executive management to ensure that these goals are clearly understood and integrated into SBU goals and objectives. Integrate the results into a revised agency-wide strategic plan that communicates shared expectations for Measure R activities.

   Expand current agency-wide performance measurement efforts to:

   - Establish simple, clear and truly useful scope, schedule, budget and quality measures.
   - More fully encompass operational and strategic measures related to Measure R.
   - Clearly define and rapidly pursue a measurement baseline.
   - Incorporate a fully automated scorecard approach to easily report progress to a wide range of audiences, including the Board, executive management, staff, other key stakeholders, and the general public.

5. MTA should explore options to strengthen organizational capacity through other public agencies and consider inviting representatives from major city, county, state and/or federal entities that have project management capabilities to discuss potential methods of secunding staff, thereby supplementing MTA personnel shortfalls where needed with staff familiar with public projects, without MTA having to hire additional permanent staff.

6. MTA should allocate resources and incorporate related initiatives into design and preconstruction planning that will serve to 1) add value to the ultimate performance of Measure R projects, 2) further enhance the economic impacts of these investments and, 3) potentially serve as a resource magnet for non-traditional sources of funds. Suggested initiatives include:

   - **Improving the customer experience**
     - Identifying where immediate visible improvements can be expedited within MTA's existing system.
     - Incorporating and strengthening public outreach earlier in the process of project delivery.
     - Soliciting input from residents and businesses on how best to manage disruption.
     - Integrating public art into temporary structures necessary to implement Measure R projects.
     - Improving wayfinding and signage.
     - Improving integration with other systems, including other transit agencies, major transportation centers (e.g., airports), and major tourist destinations.

- **Elevating the role of sustainability**
  - The achievement of goals in MTA's Sustainability Implementation Plan (MSIP) should be an important component of an accelerated Measure R program. It is recommended that MTA staff and fund the activities specified in the MSIP in the FY2011 budget.
  - It is also recommended that MTA establish a coordination committee that includes sustainability contacts with cities, Los Angeles County, airports, local utilities, CleanTech LA, and others to identify points of leverage and share lessons learned that will enhance the development and implementation of the MSIP.

- **Innovation and commercialization of new technologies**
  - Measure R offers an unprecedented opportunity to attract resources for demonstration projects that foster innovation and can be linked to ongoing initiatives in the region, such as CleanTech LA, business incubators, and centers of innovation associated with major universities. Recommendations on opportunities for innovation should ideally be made before major contracts are let. This is a long-term strategy and may not result in the immediate acceleration of projects.

  - MTA might also consider allocating a small percentage of Measure R funds to a *Call for Projects* that specifically engages the local entrepreneurial community in Measure R projects.

- **Small and Disadvantaged Business participation**
  - Members of the Industry Panel identified the federal government's approach to small business participation as not only fair from the competitive perspective of a large contractor, but more effective in realizing small business participation. Small business representatives echo similar sentiments. It was suggested in the interviews that the Board unbundle large projects and set an overall target for Measure R funded contracts to be awarded to small business. The federal example is the Small Business Set-Aside Program, which permits competition on certain solicitations among small businesses only.

  - It was also suggested that specific minimum requirements be set for small business participation in large contracts. Utilizing mentorship programs, such as the US Department of Defense mentor-protégé programs, was also suggested. Local and national organizations, such as the Conference of Minority Transportation Officials (COMPTO), can support the development of Community Based Agreements and assist MTA in refining small and disadvantaged business policies. Board actions directing staff to create or explore these types of programs and outreach would set the tone for how small businesses would benefit from Measure R.

- **Safety and security**
  - Involve MTA staff responsible for safety and security in the development of each Measure R project management plan. Identify where, for example, grants from such agencies as Department of Homeland Security could be integrated with safety and/or security features of Measure R projects.

- **Education and workforce development**
  - Federal support for acceleration of Measure R is of significant interest because of its economic impact potential. Numerous institutions, non-profits, labor associations and public agencies within Los Angeles County are engaged in business-education partnerships and have developed scalable programs that could be modeled within MTA. For example, in recognition of the size and complexity of its school construction program, the Board of Education of LAUSD entered into a Project Stabilization Agreement (PSA) to maximize local economic benefits through a 50% local worker participation requirement. This participation objective is the guiding principle for the "We Build" Program, http://www.laschools.org/contractor/webuild/, which provides a 10-week pre-apprenticeship construction training program at a number of adult and career education training centers. LAUSD's "iSEE" (I'm a Student Exploring Excellence) engages high school interns by introducing them to careers in fields of architecture, engineering and construction through a partnership with the Los Angeles Trade Technical College's (LATTC) Science & Technology Academy and its Architecture and Environmental Design program, http://www.laschools.org/contractor/sbop/isee.

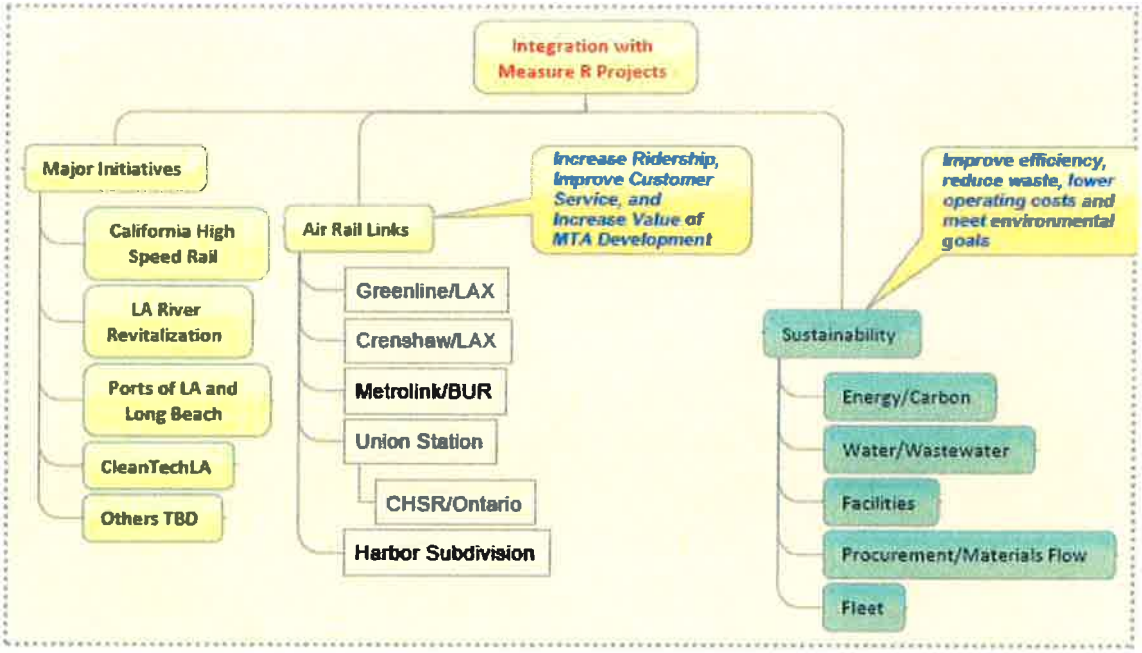
7. MTA should increase organizational capacity for measuring performance, sharing lessons learned and continuous improvement.

   No major program can be completed without making some mistakes along the way. As part of this journey, there needs to be a mechanism for looking at project and team performance and identifying where things are working well and where they are not.

   Accelerating Measure R is going to generate a lot of data. Neither staff nor the Board needs more data. Initiatives, therefore, must be in place to improve in-house capacity and capability for translating data into intelligence and intelligence into action.

   One idea might be to establish, within the Measure R Program Office, in coordination with MTA's library and research functions, a competitive intelligence (CI) unit that serves as a repository for the reports, recommendations, lessons learned and other sources of intelligence resulting from the activities of the Measure R office. Assign to this function, for example, responsibility for developing key performance indicators (KPIs) and support construction decision making by tracking market conditions relating to design and construction-related activities and coordinating with other agencies on the capacity for labor and materials.

8. There are many initiatives running parallel to the acceleration of Measure R that, if well coordinated, could improve the performance of MTA's system and Measure R investments. MTA should be prepared to increase involvement in FY2011 with initiatives identified in the figure below.



TASK 9

ADVISE AND ASSIST MTA STAFF ON STRATEGIES FOR SECURING ADEQUATE FUNDING TO DELIVER THE MEASURE R PROGRAM.

MAJOR FINDINGS

Leveraging Measure R funding with the federal government and other funding partners through innovative programs and funding mechanisms is essential.

RECOMMENDATIONS

Given the importance of issues being deliberated in Congress and within the Obama Administration, it is recommended that MTA secure federal advocacy representation as quickly as possible to ensure the agency can advocate for and protect its interests (MTA should propose projects as part of the Federal Partnership for Sustainable Communities and TIGER II. Although these programs provide relatively small amounts of funding compared to the New Starts program, it is worth the time and effort for MTA to participate in new and innovative programs championed by the Obama Administration and by Congress.

It is also advised that MTA work on parallel tracks in pursuit of innovative financing and expanded federal funding to leverage Measure R funds, seeking funds in traditional categories, such as New Starts and exploring non-traditional programs and approaches.

While MTA has managed to increase sources of funding for capital improvements through Measure R, it has yet to achieve its potential for reducing the costs of operations. It is recommended that MTA elevate the priority for designs that save on future operating costs, from which the agency could pay down debt and/or replenish capital funds.

The efforts on the part of the Board, our congressional delegation, the City, and others need to focus on mitigating the risks of insufficient funding, but not to the extent that it places an unrealistic burden on the part of the private sector in assuming the financial risks for delivering the program.

BACKGROUND

A series of discussions were conducted between MTA's government relations staff and consultant representatives over a four-month period. Discussions involved the CEQA/NEPA

question (addressed previously in this report), the perception of MTA in Washington, DC, both within Congress and within the Obama Administration, and the approach of the agency to the reauthorization of the transportation program. There was additional discussion regarding how best to promote and implement the 30/10 Plan. At present, MTA staff has indicated it will rely heavily upon City of Los Angeles staff to direct the approach and promotion of the 30/10 Plan with the federal government.

Overall, MTA staff appear reluctant to step off of established ways of conducting business. The focus is on ensuring that the two New Starts projects are recognized, receive normal increments of annual funding, and participate in the transportation reauthorization process. There is limited enthusiasm for exploring additional funding sources outside of transportation programs and/or moving ahead of potential programs within a possible transportation reauthorization bill. This is understandable, as ensuring the agency is fully engaged in securing transportation funding is a major component of the MTA legislative program and requires vigilant staff attention. There is also an apparent anxiety that moving too quickly toward the "innovative" could jeopardize MTA's standing with long-time contacts within the federal transportation bureaucracy and with MTA's traditional project-oriented congressional supporters.

The understanding, however, is that the MTA Board adopted the 30/10 Plan with a provision to incorporate the action into the agency's federal legislative program. Although the 30/10 Plan, to date, has been primarily focused on a potential loan program to support early advancement of specific projects, the spirit of 30/10 is one which begs for innovation and boldness in approach with the federal government across the board. There is a reasonable likelihood that there will not be a single funding solution. A combination of funding sources, rather, will be required, some traditional and some innovative or even unprecedented. There is, hence, a need to work on parallel tracks.

There is no reason MTA and Los Angeles County cannot be the model for new infrastructure programs and for combined funding from USDOT; departments of Labor, Housing and Education, EPA, and beyond. A 'Los Angeles model' could be replicated in urban areas around the nation, combining funding to expedite programs coordinate development and maximize both local and federal benefits. Although it may be difficult to overcome jurisdictional and subject-area barriers (as the conventional wisdom says), there exist few barriers to attempting to carve out something new and innovative with the still relatively new administration, while continuing on the necessary path for New Starts funding and positioning the agency well for transportation reauthorization. In fact, by touting the self-help nature of Measure R, there is the potential for MTA's interests to align with the administration and key leaders in Congress who are eager to see expanded investment in infrastructure. For example, MTA could become the model for effective use of various proposals for a national infrastructure bank or similar structure.

As noted during one of the discussions with MTA's government relations staff, "MTA should be raising its collective hand for any new or innovative program the administration wants to explore!" To build on that point, MTA should be raising its collective hand for any new and innovative program ANY federal department wants to explore. There is precedent in Los Angeles County for this approach. Prior to the Los Angeles County Transportation Commission

(LACTC) successfully securing a bill to permit it in the late 1980s, the state's Petroleum Violation Escrow Account had never funded a transportation-related project. The same skepticism that stunted innovative use of those state funds could occur if MTA meets with EPA officials or Housing and Urban Development (HUD) representatives to propose leveraging funds controlled by these agencies to help deliver the 30/10 Plan. At a minimum, there's nothing lost by giving this strategy a try. The Obama Administration, however, has signaled its interest in change by endorsing and implementing innovative, interdepartmental programs, such as the Partnership for Sustainable Communities Programs.

NEXT STEPS

1. Working with its federal advocates and with sophisticated program analysts, MTA should research existing and proposed federal programs and match those programs with potential transportation projects within the 30/10 Plan that could benefit from that funding. At the same time, an action plan should be formulated for approaching multiple federal departments, perhaps in tandem with Federal Transit Administration FTA/FHWA representatives, to develop adjunct funding sources to serve as a template for funding major infrastructure in urban areas.

2. MTA staff should take the lead in developing a proposal for participation in the Partnership for Sustainable Communities Programs and the TIGER II funds, focusing on green and innovative projects that implement or assist in the implementation of the 30/10 Plan. These programs are not large funding opportunities, but participation within them can provide the platform for other opportunities that may arise.

3. MTA should review its debt policies and consider changes to priorities. For example, instead of achieving the lowest cost of capital, the agency might consider prioritizing capital project decisions that achieve the lowest life cycle costs, that provide the greatest leverage of Measure R investments, and/or create the greatest number of jobs.

4. MTA should continue to give serious consideration and a supportive environment to the options proposed through the agency's pursuit of public-private partnerships, including the advocacy of federal policy changes where needed to achieve their success.

Recommendations	MTA Organizational Units Involved					Schedule: Implement Within The...			
	Exec. Mgmt.	Prog/Construc	Finance	Procurement	Others	First 6 Months	First Year	Second Year	No Action
Industry Panel									
1. Convene and expand Industry Advisory Group	X	X		X	X	X			
2. Establish peer review committees, as needed	X	X							
Procurement									
1. Act on unimplemented Polan Report recommendations	X			X			X		
2. Develop procurement program acceleration plan	X	X		X			X		
3. Develop internal flow charts on procurement processes	X			X		X			
Construction Policies, Procedures and Practices									
1. Organize engineering and construction management responsibilities	X	X			X				
2. Develop scope, budget and implementation plan for pre-construction activities	X	X				X			
3. Working with Measure R Program Office, identify options for project delivery, incentives, contract terms and conditions.	X	X				X			
Audit Policies and Procedures									
1. Review resources within department given magnitude of program	X				X	X			
2. Consider increasing audit/prequalification thresholds	X				X	X			
3. Other changes as noted							X		
4. Establish a training program for staff and vendors	X				X		X		

Recommendations	MTA Organizational Units Involved					Schedule: Implement Within The…			
	Exec. Mgmt.	Prog/Construc	Finance	Procurement	Others	First 6 Months	First Year	Second Year	No Action
Project and Program Management Systems									
1. Establish a Measure R Program Office	X	X			X	X			
Using CEQA in Lieu of NEPA									
1. Do not pursue at this time.									X
Semi-Autonomous or Autonomous Organizational Unit									
1. Do not pursue at this time.									X
Other Organizational Changes									
1. Tap into existing resources to reorganize and engage expertise necessary to expedite the program.	X					X			
Strategies to Secure Funding for Acceleration									
1. Engage Federal Representation	X					X			
2. Propose projects as part of Federal Partnership for Sustainable Communities and TIGER II	X	X	X			X			
3. Review operating costs issues associated with current program and expanded program for short-and long-term	X		X		X		X		

III. TEAM

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**Attendees listed above are based on January 2, 2010 and February 19, 2010 meeting sign in sheets. There may be other representatives that attended the industry panel meetings not reflected here.*

IV. ANNOTATED BIBLIOGRAPHY

INDUSTRY BEST PRACTICES

Documents annotated herein are a collection of best practices reflecting the many pronged approach needed to ensure successful fast-tracking of Measure R projects, including Project Management, Means for Project Delivery, Funding, Expediting Environmental Review, Audits and Procurement. Also included are successfully fast-tracked projects and programs from which Metro can glean valuable tools and lessons learned. Documents are listed alphabetically by source.

AMERICAN ASSOCIATION OF STATE HIGHWAY TRANPORTATION OFFICIALS (AASHTO)

1. Accelerating Project Delivery. (AASHTO). (2007). 56 pg.

   http://onlinepubs.trb.org/onlinepubs/nchrp/docs/nchrp20-68A_07-01.pdf

   Through case study and analysis, this report delivers two key findings relating to project acceleration: 1) During the project development stage, state and local agencies, by exercising environmental stewardship, are improving credibility with resource agencies and community stakeholders, and achieving closer collaboration on project planning and environmental permitting and, 2) During the construction stage, innovative contracting methods, advanced construction techniques and materials, and the advantages made possible by public–private partnerships can shave not months but years from project delivery. Lessons learned in swiftly restoring highways and bridges after a natural disaster are equally applicable to non-emergency projects.

2. Categorical Exclusion Agreement Yields Success for ODOT. Center for Environmental Excellence by AASHTO. 2 pg.

   http://environment.transportation.org/environmental_issues/nepa_process/case_studies.aspx#bookmarksubCategoricalExclusionAgreementYieldsSuccessforOD_OT

   The article describes how the Ohio Department of Transportation successfully formulated a programmatic agreement with the FHWA to process many of its projects as categorical exemptions, therefore requiring a lower level of environmental processing and speeding up the project delivery process. Today, 99% of ODOT's $1.3 billion program are NEPA-exempt or processed as categorical exemptions. Though Metro is dealing with a much larger scale program, other agencies across the nation, such as ODOT, have made strides in streamlining the environmental process. Because of its scope within Measure R, Metro is well positioned to further the inroads that have already been made in this respect.

3. Get In, Get Out, Stay Out – Accelerating Design and Construction. (AASHTO).

   http://www.transportation1.org/TIF7REPORT/GET_IN_OUT.HTML

The article sets forth common tools of acceleration: Expediting Environmental Permitting and Project Agreements; Application of Advanced Technologies; Peer-Based Approaches for Sharing Advances; Prefabrication of Structural Elements; Improved Materials; and Alternative Construction Schedules. It provides specific examples of acceleration, as well as discussion of overcoming stovepipes and silos.

4. Projects and Paychecks: A One Year Report on State Transportation Successes under the American Recovery and Reinvestment Act (ARRA). AASHTO. (2010). 34 pg.

   http://recovery.transportation.org/ARRA-1.pdf

   Reports how states have put ARRA funding to work, as well as the jobs created and the long term impacts of ARRA investment. The report includes a state-by-state listing of projects delivered by type. Successful application of the first round of ARRA funding bodes well for future federal investment.

5. Programmatic Agreement for NEPA Categorical Exclusions. Center for Environmental Excellence by AASHTO.

   http://environment.transportation.org/environmental_issues/nepa_process/case_studies.aspx#bookmarksubProgrammaticAgreementforNEPACategoricalExclusions

   This short article is another example of how a programmatic agreement with the FHWA for categorical exemptions has benefited project delivery while protecting the environment. Massachusetts now processes 95% of its categorical exemptions in house.

6. Streamlining the Environmental Process for Economic Recovery Projects. (2009) 4pg. (AASHTO)

   http://www.transportation.org/sites/Expediting_Projects/docs/Environmmental_Streamlin g_Economic_Stimulus012309.pdf

   This short document provides a list of environmental measures that states will use to ensure recovery projects are delivered on-time within existing environmental laws and regulations: Ensure your DOT operations are streamlined and aligned to address the Stimulus Program and ways to streamline NEPA.

AMERICAN COLLEGE OF ENVIRONMENTAL LAWYERS (ACEL)

7. Martin, B. "A Quick Economic Stimulus Meets a Slow Environmental Process - Are NEPA Waivers Needed to Reach Energy Independence?" ACEL. (2009). 2 pg.

   http://www.acoel.org/2009/01/articles/energy/a-quick-economic-stimulus-meets-a-slow-environmental-process-are-nepa-waivers-needed-to-reach-energy-independence/

   This article specifically addresses NEPA and how it will in effect slow down spending of stimulus dollars, as well as what precedent can be argued exists for NEPA exemptions in favor of economic recovery. The second page mentions specific projects.

AMERICAN INSTITUTE OF ARCHITECTS (AIA)

8. Integrated Project Delivery: A Guide. AIA. (2007). 57 pg.

   http://www.aia.org/contractdocs/AIAS077630

The guide sets forth the advantages of Integrated Project Delivery (IPD), where the owner, architect and contractor work as an integrated team throughout the life of the project, as opposed to the traditional silo approach with distinct hand-off points. Advantages seen in IPD include project savings in time and budget as well as a finished product that is better suited to the end user. IPD is gaining increasing popularity over traditional project delivery, and is a worthwhile model to study as MTA continues to organize for expedited Measure R delivery.

AMERICAN PUBLIC TRANPORTATION ASSOCIATION (APTA)

9. Putting Recovery Funds to Work. *Passenger Transport.* APTA. (2009). 1pg.

   http://newsmanager.commpartners.com/aptapt/issues/2009-04-13/1.html

   The article describes various states plans for Recovery Funds. The article is somewhat useful in terms of gauging what other states are up to regarding transportation spending.

10. The Case for Business Investment in Public Transportation. ATPA. (2009). 8 pg.

    http://www.apta.com/resources/reportsandpublications/Documents/case_business_investment_pt.pdf

    This short document synthesizes transportation funding and growth information nationally and dispels common misconceptions about the stability of investing in transportation projects.

ASSOCIATED COUNTY COMMISSIONERS OF GEORGIA (ACCG)

11. Coping with Transportation Funding Deficits: A Survey of the States. ACCG. (2009). 15 pg.

    http://www.accg.org/library/ACCG%20Transportation%20Funding%20Survey%20of%20the%20States_Fall%202009.pdf

    The purpose of the report was to inventory successes and failures of states to increase transportation funding since 2000.The data included in this report comes from 35 states surveyed. It does not include activity in the State of Georgia. The report is particularly useful because it is very recent.

CALIFORNIA DEPARTMENT OF TRANSPORTATION (Caltrans)

12. Project Delivery Acceleration Toolbox. Caltrans. (2008). 68 pg.

    http://www.transportation.org/sites/Expediting_Projects/docs/Caltrans-2008-AccelerationToolbox-Final.pdf

    The manual outlines common tools for acceleration at various stages and levels in the construction process, including: budgets, construction, design, engineering services, environmental services, local assistance, maintenance, project management, right of way and land surveys, transportation planning and transportation programming.

13. Project Delivery in 26 Days: Caltrans Shows How it's Done. Caltrans. (2007). 1 pg.

    http://www.transportation1.org/TIF7REPORT/project.html

Describes Caltrans' successful use of contractor incentives and streamlined contracting and environmental procures to finish a project ahead of schedule.

DELAWARE DEPARTMENT OF TRANSPORTATION (DOT)

14. Authorization Process for Advanced Utility Relocations. State of Delaware DOT. (2009) 4 pg.

    http://www.deldot.gov/information/business/drc/misc_files/advanced_utility_relocation_authorization_process.pdf

    As advanced utility work has been referenced as a key element in fast tracking, this document provides a roadmap for doing this successfully.

ENGINEER NEWS RECORD (ENR)

15. Ellegood, M. Seven Public Works Project Management Best Practices. *ENR*. (2008). 3 pg.

    http://enr.construction.com/opinions/viewpoint/archives/081111.asp

    Ellegood states that though typically projects are over budget (cites an AASHTO report), and though the economy has pulled the rug out from under agencies delivering projects, agencies can change their culture to be better stewards of public funds. These include: Build a culture of project management within the organization; Integrate planning, design and construction oversight into a seamless project delivery process; Develop and utilize a formal "Release for Construction Process"; Manage Right-of-way acquisition, utility relocation and environmental permitting as you would design; Establish a "shadow" project management accounting system that is an effective tool for the project manager; Never rely on software to manage your projects.; and Respect the project managers.

16. Ichniowski, T. Metro's $2.1 Billion Gamble. *ENR*. Vol. 234, No. 18 (1995) Pg. 24.

    (Link unavailable)

    Ichniowksi's article describes some of the characteristics of D.C.s FastTrack program that made it successful – including having the right people in place and making changes to procurement.

FEDERAL HIGHWAY ADMINISTRATION

17. American Recovery and Reinvestment Act (ARRA) of 2009. State DOT Strategies for Delivery Report of Findings by Domestic Scan. (07-01). 4 pg.

    http://www.transportation.org/sites/Expediting_Projects/docs/ARRAScanSummaryInfo.pdf

    Four pages of question and answer consolidating the responses of Florida, Missouri, Utah, and Washington to a questionnaire by the FHWA/AASHTO to determine how states are handling ARRA funding – including prioritization, reporting, dealing with constraints. The consolidated responses to the questionnaire provide a baseline for how funds are being handled and projects delivered.

18. Breen, T and Stuve, B. "Designing Excellence." Public Roads. (2009) Vol. 72 No. 5. 17 pg.

http://www.tfhrc.gov/pubrds/09mar/06.htm

Details award-winning road projects' use of best practices in design best in planning, design, and construction of highway improvements.

19. Excellence in Utility Relocation and Accommodation. Focus. FHWA-HRT-09-014 (2009).

http://www.tfhrc.gov/focus/june09/04.htm

This provides a description of several projects that FHWA has recognized for their "outstanding innovations that have significantly advanced how transportation agencies relocate or accommodate utilities on surface transportation improvement projects." Utility relocation is identified as a key potential schedule roadblock for any large transportation project. Early and close coordination with utilities benefits project delivery.

20. Innovative Finance: TE-045 Evaluation. US DOT. (1999). 4 pg.

http://www.fhwa.dot.gov/innovativeFinance/eval-es.htm

This report is the result of an FHWA initiative to introduce flexibility into the finance of the Federal-aid highway program. FHWA solicited state proposals for alternatives to pay as you go, grant-based funding strategies. FHWA emphasized four overriding objectives: to increase investment, to accelerate projects, to improve the utility of existing financing opportunities, and to lay the groundwork for long-term programmatic changes. Two hallmark characteristics of the initiative have been to accomplish these ends through a State-driven process, and to accomplish them without the commitment of new federal funds."

21. Legislation Limiting NEPA and Other Environmental Requirements Chart.

http://nepa.fhwa.dot.gov/ReNEPA/ReNepa.nsf/discussionDisplay?Open&id=9D8990A4F47245F885256AE000446A93&Group=Legal%20Issues&tab=DISCUSSION

This chart provides examples of when Congress has acted to limit NEPA in favor of project delivery. While there is only one transportation project listed here, it is interesting to note that regarding the Trans Alaska Pipeline System (constructed in the late 70s), the legislation cites the limiting of NEPA because it was in the "National interest for early project delivery." Given the economic climate and the magnitude of scope of Measure R projects, a similar argument can very easily be made for the expeditious delivery of Measure R projects. Note: This chart was found via a post on an FTWA discussion board regarding NEPA exemptions.

22. Process Review on Change Orders. State Department of Transportation and FHWA State Division. (2001). 28 pg.

http://www.fhwa.dot.gov/construction/reviews/revco3.cfm

The report was put together to address the fact that a number of change orders requiring FHWA approval didn't receive approval until after the change order had been completed. Findings centered on the fact the majority of change orders become necessary because of insufficient work up front in the planning process.

23. Performance Contracting Framework Fostered by Highways for LIFE: Enhance Low Bid Awards. (2008).

http://www.fhwa.dot.gov/construction/contracts/pubs/framework/08.cfm

This document provides a flow chart outlining the Enhanced Low Bid process, distinguished from traditional low bid by "embedding additional measures into Owner Agency program plans and tightening the contract requirements by establishing prequalification standards for the contractor."

FEDERAL TRANSIT ADMINISTRATION

24. Capitol Hill Hearing Testimony April 28, 1994 Gordon J. Linton Administrator, FTA Senate Appropriations.

(link unavailable)

Washington, DC, implemented its own FastTrack metro rail construction program in the 1990s, delivering 13.5 miles of metro rail by saving millions of dollars and shaving five years off of the schedule to deliver the four segments. This testimony defines fast tracking as establishing a credit facility which allows letting of construction contracts in advance of federal funding. The FastTrack program is defined generally and provides a reference for program acceleration.

FLORIDA DEPARTMENT OF TRANSPORTATION (FDOT)

25. Evaluating Alternative Contracting Techniques on FDOT Construction Projects. Department of Civil and Coastal Engineering, University of Florida for the FDOT. (2007). 115 pg.

http://www.dot.state.fl.us/researchcenter/Completed_Proj/Summary_CN/FDOT_BDC51_rpt.pdf

This report evaluates the various alternative contracting techniques the state of Florida has used (between 1999 and 2006). These include: A+B, Incentive/Disincentive, Design-build, No Excuse Bonus, CM at Risk, Lump Sum, Liquidated Savings, Lane Rental, Bid Averaging Method and Warranties. More than 1,000 alternative delivery projects were evaluated based on: cost, time, contractor performance and value contribution. Findings include that alternative contracting does deliver better cost and time performance, but does not seem to affect the performance of the contractor one way or another.

GOVERNMENT FINANCE OFFICERS ASSOCIATION (GFOA)

26. Best Practices: Audit Procurement) GFOA. (2002). 2 pg.

http://www.gfoa.org/downloads/caafr-audit-procurement.pdf

This best practices report outlines best practices for government entities conducting independent audits. These include: contracting with an independent auditor for a period of five years; auditing contract to the standards of GAO's Government Auditing Standards; and inclusion of individual funds and component units financial information in addition to basic financial statements.

INFRACONSULT

27. Public-Private Consulting Services: Project Screening Technical Memorandum. InfraConsult. (2009). 107 pg.

(Reference within MTA)

This document provides a roadmap for MTA's use of public-private partnerships (design-build, design-build with private financial participation and Pre-Development Agreements) to expedite certain projects that best lend themselves to this model of project delivery. The memorandum outlines a screening process whereby MTA can determine which projects in Measure R and the LRTP are best prepared for early consideration.

INTERNATIONAL REGISTER OF CERTIFIED AUDITORS

28. Bassu, R. and Keeling, D. (2009) Project Auditing Best Practices. INform / Issue 21. 4 pg.

http://www.irca.org/inform/issue21/RBasu.html

Outlines the various levels of project audits and provides an example of good auditing practices through the HS1 high speed rail project. Best practices include: assessing the need of auditing management systems; designing audit processes at appropriate levels covering the project teams, major contractors and sub-contractors; detailed design and documentation of audit processes supported by process charts, checklists, audit briefs, audit notification and audit forms; involvement of key stakeholders in the audit process and thus encouraging; supplier partnership and proactive involvement of contractors in monitoring and improving project quality and conformance to standards; creating audit processes and checklists that span across the key aspects of project deliverables including health and safety, environment, quality, design and procurement; aligning the audit processes with the project execution strategy, executive reports, and EFQM-based self assessment

JOURNAL OF ACCOUNTANCY

29. Dennis, A. Best Practices for Audit Efficiency. Journal of Accountancy. (2002). 7 pg.

http://www.journalofaccountancy.com/Issues/2000/Sep/BestPracticesForAuditEfficiency.htm

The main point here is that firms should try to limit procedures in low-risk areas and focus their attention on trouble spots. When it comes to audit efficiency, sometimes less is more. Many CPA firms have found it's possible to slash the amount of time involved while still meeting professional standards. They've discovered that by working smarter, they can maintain—and even improve—quality even while cutting back on the hours invested in audit engagements and enhancing profit.

LEAN CONSTRUCTION INSTITUTE (LEAN)

30. Ballard, G. Lean Project Delivery System. LEAN Research Agenda. (2000). 8 pg.

http://www.leanconstruction.org/

LEAN conducts research to develop knowledge regarding the management of project-based production systems in the construction industry. There are three primary research

areas: the theory of project-based production systems, the production system itself, and implementation of the system. This article provides a useful model that understands the need for organizations tasked with project delivery to reexamine and reassess processes and procedures.

LOS ANGELES COUNTY METROPOLITAN TRANPORTATION AUTHORITY (MTA)

31. Polan, S. and Younger, C. Manatt Phelps Procurement Operations Review. (2004). 73 pg.

    (Reference within MTA)

    The report makes recommendations regarding numerous aspects and inefficiencies of MTA's Procurement Department as of 2004, including staffing levels and the fact that the department does not delegate authority to make change orders. MTA has made changes to its Procurement Department based on the findings of this report.

MINNESOTA DEPARTMENT OF TRANSPORTATION (MNDOT)

32. Best Practices for Project Construction Streamlining Minnesota Department of Transportation. 2005-34. 55 pg.

    http://www.lrrb.org/pdf/200534.pdf

    This investigation examines the means of speeding the roadway and highway construction cycle. The Local Road Research Board's (LRRB) Research Implementation Committee (RIC) began this investigation to explore current activities, techniques and materials whose use reduces construction time, and to determine the extent of their use by city and county engineers in Minnesota. This report includes a literature review with abstracts. Streamlining methods explored include: A+B, Design-build, No Excuse Bonus, CM at Risk, Lump Sum, Liquidated Savings, Lane Rental, Bid Averaging, Contractor Milestone Incentives, Smart Compaction Technology and new testing technology.

33. Project Delivery Accountability and Transparency. MNDOT. (2009). 2 pg.

    (Link Unavailable)

    Describes what MNDOT is doing to build public trust, including upgrading the way they estimate costs and communicating with constituents.

NATIONAL PERFORMANCE MANAGEMENT ADVISORY COMMISSION (NPMAC)

34. A Performance Management Framework for State and Local Government. NPMAC. (2009) 38 pg.

    http://www.gfoa.org/downloads/PMCommissionFrameworkPUBLIC-REVIEW-DRAFT.pdf

    NPMAC has been established by public sector management organizations to provide a flexible framework for agencies to move beyond performance measurement to performance improvement on behalf of stakeholders.

NEW YORK METROPOLITAN TRANPORATION AUTHORITY (NYMTA)

35. MTA Blue Ribbon Panel for Construction Excellence. NYMTA. (2008). 155 pg.

http://www.mta.info/mta/pdf/BluRibPanel-Const_Excellence.pdf

This report was commissioned by NYMTA to improve budget and schedule while maintaining a high level of service in delivering on its more than $20 billion capital program. Topics addressed include: bonding, increasing competition through additional project delivery methods, manpower, contractual provisions, new technology and project management. NYMTA presents itself as an obvious model to study in their approach and execution.

OFFICE OF FEDERAL PROCUREMENT POLICY

36. A Guide to Best Practices for Contract Administrators. Office of Federal Procurement Policy. (1994). 18 pg.

https://www.acquisition.gov/bestpractices/bestpcont.html

Outlines techniques for procurement, including: post award orientation as well as common deficiencies in contract administration – primarily spending more time to awarding contracts rather than administering existing contracts, lack of training and defined roles, as well as lack of incentives. Includes a table outlining typical deficiencies and best practices solutions.

OHIO DEPARTMENT OF TRANSORTATION

37. Change Order Flow Chart. Ohio Department of Transportation. (2007).

http://www.dot.state.oh.us/Divisions/ConstructionMgt/Admin/Change%20Orders/ChangeOrderFlowChart_09012007.PDF

PB NETWORK

38. Alternative Project Delivery Systems Edition. *PB Network*: Issue 46

http://www.pbworld.com/news_events/publications/network/issue_46/46_Index.asp

The articles in this edition of *PB Network* were written by PB people who are engaged in leading the way with alternative project delivery systems—methods that may be new to many of us in the U.S.

39. Sela, E. (2001) New Strategy and Initiatives Enable Timely Permitting. *PB Network*. Issue 46.

http://www.pbworld.com/news_events/publications/network/issue_46/46_19_SelaE_NewStrategyInitiatives.asp

PB developed a new strategy and new initiatives to align the permit acquisition process with the aggressive design-build-operate-maintain (DBOM) schedule. Permit applications were submitted on time and permits obtained before construction as a result of early coordination with the agencies, the use of new initiatives in permit application and agency coordination efforts (summary from article).

40. Page, S. Corporate IT Tools / SCDOT *PB Network*. Issue 58. Construction and Resource Management (CRM) East Program (2004).

http://www.pbworld.com/news_events/publications/network/issue_58/58_33_eberhard_studies_manhatten.asp

This article relates to the South Carolina Department of Transportation (SCDOT) program, compressed from 27 years to seven years. When a project gets done and how it gets done, everything revolves around available resources. The CRM project provided SCDOT the financial management tools and expertise to maximize scarce resources. These tools provide up-to-date information that allows the financial managers to determine bond size, the impact of a project's costs and expenditures on the entire program, cash requirements, and project status. The tools also enable them to evaluate what-if scenarios and maximize the flexibility of funding availability. An entire section of this issue is comprised of articles about this project.

41. PB Fast Track Reference Guide (2000). 62 pg.

http://www.pbworld.com/news_events/publications/network/Issue_58/58_18_farley_construct_engineering.asp

The guide draws upon PB's experiences with a number of projects that have employed several different delivery systems, ranging from the largest design-build project in the U.S. on I-15 in Salt Lake City, to the Fort Washington Way project in Cincinnati. Both projects have experienced major accelerations in progress than had they used more conventional delivery approaches. The guide includes six articles about fast tracking as well as descriptions of 10 projects, including transit lines and highways.

42. Metropolitan Atlanta Rapid Transit Authority (MARTA) Transit System Project Profile, Atlanta, Georgia. PBworld.com.

http://www.pbworld.com/projects/featured/metropolitan_atlanta_rapid_transit_36806.asp

MARTA is an award winning transportation project and provides a model to study for what a successful program and what successful project management looks like.

43. Godowski, S and Amin, M. Hudson-Bergen Light Rail Transit System: Achieving Architectural Excellence through a DBOM Contract. *PB Network*, Issue 46

http://www.pbworld.com/news_events/publications/network/issue_46/46_20_GdowskiS_AchievingArchitectural.asp

"Projects procured by the DBOM method can deliver excellent transportation architecture. The excellence must be built in during the preliminary design phase by an independent consultant and strictly implemented by the DBOM contractor."

44. Louisiana TIMED Program Management Project Description. PBworld.com

http://www.pbworld.com/projects/featured/louisiana_timed_program_management_15995.asp

This is a featured project in PB Network and it describes very generally the Louisiana TIMED program management and the importance of having the funding in place to

execute the program at an accelerated pace. Both Chris Reseigh and Bill Goldstein of PB made reference to this project as an example of successful program acceleration.

PROJECT MANAGEMENT INSTITUTE

45. A Guide to the Project Management Body of Knowledge – Fourth Addition. Project Management Institute. (2008).

(Reference within MTA)

TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT)

46. Standard Utility Agreement Lump Sum – Local Government. TxDOT.

http://www.txdot.gov/txdot_library/consultants_contractors/forms/row.htm#8

This is a sample utility agreement lump sum for MTA to reference as a best practice for handling utilities.

TEXAS TRANSPORTATION INSTITUTE (TTI)

47. A Guide to Transportation Funding Options. TTI. (2006) 22 pg.

http://utcm.tamu.edu/tfo/highway/summary.stm

Describes the gamut of funding options from public-private partnerships to toll roads to various taxes. The report is very informative, as it describes how many states use a particular method as well as implementation issues and barriers.

48. Innovations in Managing the Surface Transportation System. TTI. (2005). 4 pg.

http://tti.tamu.edu/documents/0-1752-S.pdf

The focus of this research project was to develop innovative methods of improving the safety and efficiency of the entire surface transportation system through systems integration and use of advanced technologies. The ultimate conclusion of the research is that safety and efficiency of a system are best ensured when technology is employed to better the system, not just one aspect of the system.

49. Assessment of Public Involvement Strategies. TTI. (0-1875- S) (2001). 4 pg.

http://tti.tamu.edu/documents/1875-S.pdf

Abstract: Transportation agencies at all governmental levels are engaging in more active public participation. Project 0-1875 provides TxDOT employees with suggested approaches and tools to execute a more efficient public involvement process.

50. Evaluations of Ways and Procedures to Reduce Construction Costs and Increase Competition. TTI. (0-6011-S) (2008). 2 pg. summary.

ftp://ftp.dot.state.tx.us/pub/txdot-info/rti/psr/6011.pdf

In addressing rising construction costs, this report examines methods to reduce costs and increase competition. The top five methods, ranked by the experienced engineers, in the program-wide category are: 1) standardization of designs and provision of more design repetitions, 2) education and training of designers, consultants, and contractors, 3) evaluation and easing of restrictions on imported materials, 4) creation of material sources by TxDOT and, 5) evaluation of local market conditions for availability of resources to effectively plan construction lettings.

51. Collection, Integration and Analysis of Utility Data in the Transportation Project Development Process. TTI. (0-5475-S) (2008). 2 pg. summary.

    ftp://ftp.dot.state.tx.us/pub/txdot-info/rti/psr/5475.pdf

    This research focuses on the difficulties of effective utilities conflicts management. Out of this research came data models to facilitate work and data flows between stakeholders and a web-based prototype for managing utility conflict data as effective tools for TxDOT to improve their utilities conflicts management.

52. Promoting Local Participation on Transportation Improvement Projects. TTI. (0-5025-S) (2006). 2 pg. summary.

    ftp://ftp.dot.state.tx.us/pub/txdot-info/rti/psr/5025.pdf

    This project summary report summarizes the research performed in TxDOT Project 0-5025. The goals of this research project were:1) to develop guidelines for use by TxDOT staff for developing and promoting transportation project partnerships with local and regional leaders and, 2) to identify and provide estimation procedures to quantify economic and other benefits that derive from major transportation improvements. Researchers determined factors that prompt local governmental agencies and private entities to participate financially in state transportation projects. They also developed tools to help TxDOT attract increased local funding into its projects. The research included a charrette utilizing transportation agency representatives who had participated in transportation partnerships with local entities. The workshop produced transferable lessons learned that could help TxDOT pursue partnerships with local entities. The project also produced guidebooks on economic benefit estimation methods and guidelines for transportation project partnering, a sample benefit prospectus, a draft PowerPoint presentation, and draft brochures to help promote partnerships with local agencies and decision makers.

TRANSPORTATION RESEARCH BOARD (TRB)

53. A Guidebook for the Evaluation of Project Delivery Methods. Transit Cooperative Research Program, TRB. TCRP Report 131) (2009). 112 pg.

    http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_131.pdf

    This report describes various project delivery methods for major transit capital projects. It 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, construction manager at risk, design-build and DBOM.

54. Estimating Soft Costs for Major Public Transportation Fixed Guideway Projects. Transit Cooperative Research Program, TRB. (2010). 144 pg.

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_138.pdf

This recent report is useful particularly for projects in the earlier stages of the development/environmental process in determining what the "soft costs" – dollars not spent on bricks-and-mortar construction – of a particular rail project might be. As the estimated cost of a project is a main driver of decision making in how the project is delivered and can affect a project's eligibility for federal funding, it is critical to understand and plan appropriately for soft costs. Also of note, the report explains how the organizational setup of the delivering agency affects soft costs.

55. Local and Regional Funding Mechanisms for Public Transportation. Transit Cooperative Research Program Report 129 (2009) 81 pg.

http://onlinepubs.trb.org/onlinepubs/tcrp/tcrp_rpt_129.pdf

This report compiles a comprehensive list of funding sources that are in use or have the prospect of being used at the local and regional level to support public transportation.

56. Greene, S. (Sharon Greene and Associates) and Schneider, M. (PB Consult) Accelerating Project Development: Approaches and Techniques for Expedient Project Delivery TRB Resource Article. (2005). 111 pg.

http://onlinepubs.trb.org/onlinepubs/conf/CP33transportationfinance.pdf

This article addresses the fact that though there are tools out there to promote acceleration, there are other mechanisms that get in the way of their effective use. The article outlines impediments to project delivery (i.e. environmental review, political/institutional factors). Authors promote SPCA (Stability, Predictability, Continuity and Acceptability).

57. Best Practices in Accelerated Construction Techniques. National Cooperative Highway Research Program (NCHRP). Project 20-68A, Scan 07-02 (2009). 192 pg.

http://onlinepubs.trb.org/onlinepubs/nchrp/docs/NCHRP20-68A_07-02.pdf

The research team visited with transportation leaders in Jacksonville and Pensacola, Florida; Birmingham and Montgomery, Alabama; Houston, Texas; Salt Lake City, Utah; as well as Sacramento and Oakland, California. Transportation agency representatives, contractors, suppliers, and engineering consultants having accelerated project experience shared their viewpoints and knowledge at meetings with the scan team. The team then evaluated these practices for their potential application by other transportation agencies. A primary finding across the board is that the people and their ability to work as a team are the most significant components of successful acceleration.

58. Best Practices in Project Delivery Management. NCHRP Project 20-68A, Scan 07-01. (2009). 137 pg.

http://onlinepubs.trb.org/onlinepubs/nchrp/docs/nchrp20-68A_07-01.pdf

The scan is a 137-page response to the fact that transportation agencies across the country are under increasing pressure to deliver projects. The scan of best practices is comprised of four focus areas: Project Management, Performance Measures, Innovative

Contracting Practices, and Community Involvement Techniques. The states of Arizona, Florida, Missouri, Utah, Virginia, and Washington were chosen for visits due to a history of innovations in project delivery and management.

59. Emerging Technologies for Construction Delivery. NCHRP Synthesis 372 (2007). 121 pg.

    http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_372.pdf

    This synthesis presents information on the use of five emerging technologies for transportation: construction projects: global positioning systems for layout, machine guidance, and quantity tracking; handheld computers for construction records; automated temperature tracking for concrete maturity monitoring; four-dimensional computer-aided drafting modeling for constructability analysis and improved communications; and web-based video cameras for remote project monitoring.

60. Information Technology for Efficient Program Delivery. NCHRP Synthesis 385 (2008). 83 pg.

    http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_385.pdf

    This deals with "interoperability" and the seamless sharing of information through all phases of project delivery. The report includes case studies, but does not quantify the cost associated with interoperability issues.

61. Quality Assurance in Design Build Projects. NCHRP Synthesis 376 (2008). 139 pg.

    http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_syn_376.pdf

    Public agencies have less control over the process under design-build. This report examines how state transportation agencies have successfully approached quality assurance for design-build, including in procurement, design, construction, and post-construction operations and maintenance. Information for this study was gathered through a survey of all state DOTs, literature review, content analysis of solicitation documents from 26 DOTs, and review of policy documents from 17 DOTs.

UTAH DEPARTMENT OF TRANSPORTATION (UDOT)

62. Adler, R. UDOT Project Development Group Engineering Services and Bridge Design Section Construction Manager General Contract Annual Report. (2008). 39 pg.

    http://udot.utah.gov/main/uconowner.gf?n=1135040022049311030

    UDOT and FHWA entered into an agreement in 2006 to implement and evaluate a program of projects through the Construction Manager General Contract (CMGC) method. Findings include that this method does reduce schedule in most cases. The document includes a matrix comparing the risks and benefits of CMGC to design-build and design-bid-build that can prove helpful as MTA evaluates what delivery methods will be used for which projects for best results.

63. Lindsey, Shana 60th Annual Road Builders' Clinic: Presentation (PowerPoint) Utah Accelerated Bridge Construction "Moving Forward at 1 MPH." (2009)

    http://udot.utah.gov/main/uconowner.gf?n=3440123616071331

UDOT has an award-winning accelerated bridge construction (ABC) program, the highlights of which are covered in this power point presentation. It covers the benefits, challenges and lessons learned of using accelerated techniques – including use of Self Propelled Modular Transport. Much of what is presented here is applicable to any accelerated construction program. Examples include resistance to a new way of doing things generally comes from within the delivering agency as opposed to the general public; the benefits of shifting from a delivery that focuses on savings to the contractor to savings for everyone; the need for a decision tree to establish when to use an accelerated method; the importance of outreach to media and public; and the overall benefits of having a program of projects rather than a project by project delivery all have applications to MTA's approved 30/10 plan.

UNIVERSITY OF SOUTHERN CALIFORNIA KESTON INSTITUTE FOR PUBLIC FINANCE AND INSTRASTRUCTURE POLICY (KESTON INSTITUTE)

64. The Impacts of Design-Build on the Public Workforce. Keston Institute. (2007) Research Paper 07-01. 48 pg.

    http://www.usc.edu/schools/sppd/keston/research/index.html.

    California makes limited use of design-build and concerns have been raised that the design-build method of procuring infrastructure construction could result in major staff cutbacks within public agencies in California. The study finds that implementing design-build contracting does not shift public professional engineering jobs from state agencies to the private sector.

UNITED STATES DEPARTMENT OF TRANSPORTATION (USDOT)

65. Design-Build Effectiveness Study. USDOT FHWA. (2007). 14 pg.

    http://www.fhwa.dot.gov/reports/designbuild/designbuild.htm

    This report discusses both the advantages and disadvantages of implementing design-build. This is the first study to "focus specifically on these issues with respect to highway projects funded under the Federal-aid highway program, using completed SEP-14 projects as the primary source of information."

66. Best Practices Procurement Manual. USDOT. (2001). 664 pg.

    http://www.fta.dot.gov/news/colleague/news_events_4571.html

    This is a 664-page document covering just about every conceivable aspect of the procurement process relating to transportation. The manual is organized around explaining and discussing requirements, as well as providing best practices.

67. ARRA: Challenges Facing the Department of Transportation. USDOT Report No. MH-2009-046 (2009). 33 pg.

    http://www.oig.dot.gov/sites/dot/files/pdfdocs/Revision_of_033109_final_Oversight_Challenges_Report_042709.pdf

    Outlines the challenges facing USDOT in accounting for the dispersing of ARRA funding. These include combating fraud, waste and abuse and implementing new measures of accountability.

UNITED STATES GOVERNMENT ACCOUNTANCY OFFICE (GAO)

68. Best Practices: Using Spend Analysis to Help Agencies Take a More Strategic Approach to Procurement. GAO. (2004). 1 pg.

    https://acc.dau.mil/GetAttachment.aspx?id=30934&pname=file&aid=5533&lang=en-US

    Recognizing the potential in government purchasing, GAO examined if the departments of Agriculture, Health and Human Services (HHS), Justice, Transportation, and Veterans Affairs are using spend analysis to take a strategic approach. GAO assessed if agencies use spend analysis to obtain knowledge to improve procurement of goods and services, and how agencies' practices compare to leading companies best practices (summary from September 2004 GAO highlights).

WASHINGTON OFFICE OF FINANCIAL MANAGEMENT (WOFM)

69. Best Management Practices for Capital Projects. WOFM. (2008). 22 pg.

    http://www.ofm.wa.gov/budget/capital/best_management_practices_report.pdf

    The objectives of this report are to provide an overview and identify resources for state practices for the procurement of capital projects in the capital budgeting processes, public works contracting procedures, management of risk, and alternative financing; practices established outside of state government for the procurement of capital projects in the capital budgeting processes, public works contracting procedures, management of risk, and alternative financing; next steps that can be taken to better manage and finance state capital construction projects. Key finding is that one significant way to affect scope schedule and cost is during the early planning stages.

ADDITIONAL INFORMATION

70. Crawley, J. and Lambert, L. Government Estimates $20 Billion Highway Funding Shortfall. Reuters. (2009). 1 pg.

    http://www.reuters.com/article/idUSTRE55O57E20090625

    Describes crisis in federal funding for transportation projects, outlines potential solutions (i.e., gas tax) and their backers.