Memorandum

To: Board Chair Constantine
        Board Vice Chair Keel
        Board Vice Chair Somers
        SEC Chair Balducci

From: David A. Peters, Independent Consultant to the Sound Transit Board of Directors

Date: March 17, 2023
Re: Transit Agency Best Practices

Attachment: Survey of Transit Agency Best Practices

My scope of work as the Board's Independent Consultant includes assessing best practices and lessons-learned from similar public agencies.

There is extensive recent literature related to mega-project delivery. I have reviewed many of these reports, studies, and analyses with a specific focus on transit projects undertaken by public agencies. Links to these documents, as well as capsule summaries, are provided in the attached spreadsheet. I have also characterized the key take-aways (both best *and* worst practices) as follows:

- Organizational
- Planning
- Project Delivery
- Stakeholders
- Cost Control
- Scope Control
- Execution
- Operations

It should be noted that Sound Transit is somewhat unique compared to other North American transit agencies based on the extent of its capital program, cost, and duration. While Sound Transit employs many of the best practices observed in peer agencies, the program's uniqueness mandates continuous improvement, scale-up, and adoption of new and improved approaches by the agency.

Following is a summary of peer agency best practices (with additional detail provided in the attached spreadsheet and source documents).

Organizational

- Establish an independent, focused agency megaproject team (i.e., a "special purpose delivery vehicle"). Examples include the Oregon Bridge Program, MTA Capital Construction Co., Boston's Big Dig, Via Rail's High-Frequency Rail Team, Amtrak's Northeast Corridor Improvement Program, and WSDOT's Urban Corridors and Mega-Programs offices.
- The megaproject director should report directly to the agency's top leadership and have authority for on-the-spot decisions.
- Change order approvals should be made within the megaproject team unless the amount will exceed the overall project budget.

Planning
- Avoid overoptimism and overcomplexity; use "reference-class forecasting" which considers examples that don't necessarily justify the preferred course of action.
- Use proven, scalable, and modular technologies. Examples include Tesla's Gigafactories, Ørsted's offshore wind farms, and Madrid Metro's megaprojects.
- Forthrightly address risks:
  - Megaprojects are inherently risky due to long lead-times and complexity.
  - The decision process involves multiple stakeholders with conflicting interests.
  - Technology and design are usually non-standard, leading to "uniqueness bias."
  - There is often early commitment to a specific project concept, leaving analysis of alternatives weak or absent.
  - Megaprojects involve large budgets, which encourages rent-seeking behavior.
  - The scope typically changes significantly over time.
  - Delivery is a high-risk activity with overexposure to massive negative outcomes.
- Introducing new or untested project elements (e.g., technology and workforce) increases risks. Give preference to service-proven designs, components, labor markets, and supply chains.

Project Delivery
- Use delivery methods that emphasize early collaboration and place greater risk on designers and contractors to deliver more accurate designs and schedules.
- Contracts should not be too large to be effectively managed. Split project tasks among multiple, smaller contractors to avoid ceding too much leverage to one contractor.
- If considering Public-Private Partnership (P3) project delivery:
  - A primary rationale for using a P3 is to transfer risk; however, this may be counter to an agency's traditional hands-on, leading role on projects. Also, the agency must still provide oversight and conduct due diligence to understand the level of risk transfer.
  - With a private P3 entity having increased control, procurement and project delivery can be expedited.
  - Avoid creating a zero-sum game where one party bears all the risk and "loses" if that risk materializes.

- o Fill agency management positions with professionals who are highly experienced in P3s.
    - o Prior to procurement, hold meetings with stakeholders such as vendors, financiers, and railcar manufacturers to better understand the project's risk.
    - o A strong legal and financial counsel team is necessary for a P3 since "it is at the core a business deal rather than a traditional construction contract."
- Design-build (DB) and design-build-operate-maintain-finance (DBOMF) project delivery methods can maximize contractor innovation and lead to earlier completion.
- General Contractor Construction Manager (GCCM) project delivery requires early agency buy-in but can lead to disagreements about project details. Also, negotiations can be challenging and "there is no substitute for the discipline of the marketplace through competitive bidding."
- Design-bid-build (DBB) is best used for smaller projects or those with high levels of risk.
- Use build-to-suit development for structured parking facilities. In addition to being more cost-effective, this approach would free up financial capacity and key agency staff.
- Early resolution of disputes should be incentivized in project agreements.
- Advance some project designs and place them "on the shelf" in anticipation of a future economic stimulus.

Stakeholders
- Enact a policy for when and how stakeholders can request project betterments:
    - o Formalize a process to evaluate whether to grant a request.
    - o Require the requesting entity to cover the cost in most circumstances.
    - o Use community benefit agreements to address community concerns.
- Push back on politically driven restrictions on construction operations (i.e., lane closures, construction windows, and haul routes).
- Provide dedicated staff with utility relocation expertise during the planning phase. Remove difficult utility relocations from contractors' scopes of work to reduce risk and relocate or identify as many utilities as practical prior to construction.
- Develop ongoing structures to communicate and coordinate among multiple agencies.
- Form an early stakeholder coalition to build support for the route/design, streamline negotiations, and minimize the risk of costly delays.
- Establish time limits for public review.
- Organize "one stop shop" permitting; engage agency leadership when necessary; and develop model agreements to achieve early concurrence.
- For critical right-of-way, make early parcel acquisitions (consistent with FTA policies).
- Consider legislation similar to Metrolinx in Toronto that protects the transit corridor from development; provides for early parcel access and testing; requires utility company cooperation on relocations; and facilitates municipal services and right-of-way access.

Cost Control
- Maintain strict budgetary discipline and stick to the core goals of the project.
- Use construction cost models and a "design to cost" philosophy.
- Do not routinely "push the yes button" for stakeholder requests for additions.

- Eliminate iconic headhouses, personnel rooms, fare vending, escalators, and redundant elevators (i.e., less ornate and bespoke stations).
- Provide ongoing and robust risk-analysis and risk-management protocols.
- Standardize sizes, materials, and components using standard drawings and specifications (i.e., a "kit of parts") to save on construction costs and speed up delivery.
- Pre-purchase systems equipment and other long lead-time and critical path items. Also, pre-purchase bulk items such as traction power poles, cable, rail, concrete ties, etc.

Scope Control
- Limit the growth of the project scope and right-size design.
- Work with stakeholders to identify necessary project enhancements and high-cost items during planning.
- Question all design criteria and their applicability over many miles of construction.

Execution
- Tighten timeframes for all project phases to yield schedule and cost savings. Incentives for early completion have also proven effective.
- A single, qualified systems integrator should be engaged from design through construction with well-defined roles and responsibilities.
- Focus on speed in project delivery using replicable, modular designs.
- Avoid customized project designs, highly integrated components, and new technologies; apply regular, tested technologies.

Operations
- Use cost-benefit analyses to screen requests for additional items from Operations (crossovers, pocket tracks, support facilities, etc.).