A BETTER CITY

REPORT | FEBRUARY 2023

PUBLIC-PRIVATE PARTNERSHIPS

STATION REDEVELOPMENT FOR THE MBTA

REPORT TEAM

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This report was made possible through the generous support of the Barr Foundation (Grant #19-07816)

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A Better City represents a multi-sector group of nearly 130 business leaders united around a common goal: to enhance the Greater Boston region's economic health, competitiveness, equitable growth, sustainability, and quality of life for all communities. By amplifying the voice of the business community through collaboration and consensus-building, A Better City develops solutions and influences policy in three critical areas: 1. transportation and infrastructure, 2. land use and development, and 3. energy and the environment. A Better City is committed to building an equitable and inclusive future for the region that benefits and uplifts residents, workers, and businesses in Greater Boston.

EXECUTIVE SUMMARY

The MBTA is always seeking innovative ways to monetize its land holdings in and around Boston to generate funding to improve stations, provide operational flexibility, and/or make new investments. Simultaneously, it could facilitate solutions to the housing crisis enveloping Boston. The Commonwealth's housing challenges can be solved in part by investment in equitable and sustainable development around transit. The MBTA, by working with partners to provide this infrastructure, can help to improve own-source revenue while affecting this very real challenge. Typically, the MBTA takes a project-by-project approach to real estate deals, maximizing the immediate monetary value of sites based on market interest, especially with high-profile developments such as Back Bay Station, Hynes Station and Ashmont Station. This leaves the MBTA with more challenging irregular sites formed by curves in rights-of-way, small station footprints or historical artifact.

Taking a more strategic and programmatic approach to developing these challenging land holdings by bundling together parcels, combining small and irregular parcels with adjacent properties for sale or lease, may result in more developable sites of scale, thus increasing their value and generating more revenue for the MBTA. The MBTA can also consider working with local authorities on zoning changes before going to market to better enable development as put forward in the Housing Choice and MBTA Communities legislation. This approach can also address community needs like affordable (market rate and deed restricted) housing near transit and increase ridership potential due to the increase in households proximate to the MBTA's stations.

Partnering with the private sector opens a number of doors for the MBTA's real estate portfolio. Joint development, in which the MBTA and a private partner work together to create value, can mitigate risk for each side and create long-term relationships that benefit the bottom line. Utilizing public-private-partnership ("P3") structures, the MBTA, in partnership with local jurisdictions and adjacent private property owners, can generate revenue through sales, leases, direct investment in station area improvements in exchange for development rights, and enhancement of district area land values to increase fiscal revenue potential.

The Commonwealth is on the path to solving the housing crisis, however the MBTA's structural deficit only grows. While municipalities are being mandated to allow denser development around transit, the MBTA cannot be left on the side-line. By proactively defining the types of projects it wants to undertake, setting deal parameters, and publicizing the need for partnerships, the MBTA can open its arms to a wide community of potential partners and find solutions for the communities it serves while engendering investment in the bottom line and reducing the reliance on fare revenue.

This paper proposes two distinct methods of collaboration: one for suburban rail sites with limited current development, and another for remnant parcels in urban areas. Within constrained urban areas, the MBTA may be able to sell surplus land for up to $140 per square foot, providing a significant income stream. In addition, four framing recommendations establish how the MBTA can develop structured, organized approaches, with clearly laid out goals, objectives, limits, and

contracts, which have the potential to improve the MBTA's own-source revenue and the housing crisis within our community.

RECOMMENDATIONS:

1. Review the **MBTA's inventory of available land**, examining and categorizing to match sites to potential joint development and bundling applications, along with assessing the community's needs.

2. Apply **Joint Development** principals to suburban sites around Commuter Rail stations to amplify the impact of new legislation requiring multi-family housing near transit. Development of a P3 approach may both capture increased revenue streams while also getting station improvements financed and delivered as part of the private development processes.

3. Consider packaging smaller parcels for **Transit Oriented Development ("TOD") opportunities,** bid out to one private developer whose objectives for the development are aligned with community and MBTA goals. This programmatic approach can increase land value and help the MBTA and local communities set clear objectives for private development around stations. It may also spur some additional speculative investment around stations on adjacent parcels that can increase land values and improve project economics. The MBTA's Ashmont Branch of the Red Line is one such area, where favorable development conditions and potential surplus land may lead to a significant gain for the Authority if packaged appropriately.

4. Develop an organized P3 program with clear goals and risk transfer allowances to take full advantage of the **P3 model** and get the greatest long-term benefit. This will build capacity within the agency and allow easier partnerships with the private sector.

INTRODUCTION: THE MBTA'S UNCERTAIN FUTURE

Even before the onset of the COVID-19 pandemic in 2020, the MBTA faced a wide variety of operational, investment, and financial challenges. As one of the oldest subway systems in the nation, the T's infrastructure has extensive deferred maintenance needs. Before the November 2020 federal elections, the MBTA projected a massive structural deficit to the operating budget that is only now being solved through the COVID relief funding. In terms of capital maintenance, the MBTA currently lacks financial resources to meet their own goal of eliminating a state of good repair backlog by 2032. Two years ago, the MBTA estimated this maintenance backlog to exceed $10 billion. There is also growing demand to modernize the region's transit system and address issues related to electrification and digitization. These competing priorities put further pressure on MBTA's limited resources.

To address the growing capital needs of the system and the demand to modernize significant infrastructure, including stations, the MBTA must unlock funding to finance and deliver these critical projects. Generating own-source-revenue, revenue which can be gained for the system through elements controlled by the MBTA directly, i.e. advertising, parking, and partnerships, but most significantly real estate, is one way for the MBTA reduce reliance on fare revenue and support from centralized government budgets.

The MBTA is one of the largest single landowners in the state, and for years, the Authority has pursued options to transform land assets into financial value. However, most of the simple projects have now been executed meaning that the MBTA must look to capitalize on more challenging real estate deals, all while protecting the bottom line and working with the community. Public-private-partnerships ("P3s") may be effective in helping the MBTA to maximize new revenue generation from real estate projects while generating new partnerships to help grow the Authority's own-source revenue over many years.

LAND MONETIZATION & REAL ESTATE DEVELOPMENT MODELS

Land monetization can take the form of long-term leases for linear infrastructure like pipelines and fiber, advertising signage (e.g. billboards), or even for solar energy production. Public uses, such as linear parks, can make use of long irregular parcels along tracks that raise adjacent land values, some of which can be captured through increases in ad valorem revenue (tax revenue based on the assessed value of the property) or benefit assessments to pay for the improvements, such as Atlanta's Beltline.

Real estate development, the focus of this paper, is also an important form of land monetization that can have co-benefits to the rail system such as increased ridership, increased tax revenue, and station improvements as part of the physical development. Real estate development can be complex to the extent that the proposed development affects adjacent communities, requires building over a rail line or station, or requires assembly of adjacent land not controlled by MBTA.

Table 1 summarizes most options for land monetization—many of which have been used by the MBTA in one form or another over the last decade or more. Each of the real estate development strategies in Table 1 rely on a variety of P3s that require varying levels of expertise and involvement by the MBTA.[1] The level of risk and reward, and the commensurate expertise required to manage risk and capture value, is an essential factor in selecting and implementing these strategies.

The history of deals and the current real estate asset management program suggests that the MBTA mostly uses ground leases and rent to generate revenue streams that can be used flexibly. In some cases, land disposition has been used to receive one-time revenue sources. In the case of certain downtown locations like the South Station Air Rights Project and Back Bay Station, MBTA has used Joint Development to finance and deliver station improvements (and other public benefits) as part of the developer responsibilities, providing an example of how P3s can both create revenue ***and*** deliver needed improvements.

As the demand for revenue continues to grow and the available parcels for monetizing become more difficult, the MBTA will need to tackle more challenging projects and take more risk in creating projects outside the downtown core. This will take a concerted effort to evaluate potential value and delivery models, increased capacity and expertise within the MBTA, as well as strong community engagement.

1. In recent years, MBTA has outsourced to attain necessary property asset management expertise, which currently is provided by the Massachusetts Realty Group (MRG), a partnership between Greystone Management Solutions, a division of Greystone & Co., Inc., and JLL.

TABLE I: Options for Land Monetization

ASSET TYPE	DEVELOPMENT TYPE	DEVELOPMENT DESCRIPTION	HOW VALUE IS CREATED
REAL ESTATE DEVELOPMENT	• Joint Development	• Private development on or over MBTA land. Could also include public infrastructure integrated with the private development.	• Residual land value enhancement and capitalized value of lease revenue or sale proceeds of agency land and air rights, plus property tax fiscal revenue from market rate development.
	• Transit Oriented Development ("TOD") • Transit Oriented Communities ("TOC")	• Private development on private land adjacent to MBTA stations (TOD). • District development, anchored by a transit station, with urban design & mobility emphasis on first/last mile connections and design (TOC).	• Real estate value enhancement from entitlement increases and development, with associated increases in property assessed valuation. • Portion of property value lift can be captured through net fiscal growth, tax increment, district special funding (assessments, special taxes, or property-based business improvement districts, etc.), impact fees, or incentive zoning/development agreements. • Requires coordination with local land use jurisdiction.
	• Assemblage	• Amassing a site using TOD and Joint Development strategies.	• Increased development potential and enhancement of residual land value and air rights by assembling adjacent properties to create larger development opportunities with economies-of-scale, improve under-performing adjacent properties, and increase net fiscal revenue potential, including tax increment. • Could be tied with a density bonus incentive, implemented through zoning or negotiated development agreements, to fund public improvements. • Requires coordination with local land use jurisdiction if adjacent property is privately held.
	• Bundling	• Issuing Development RFP for a bundle of non-contiguous sites	• Combine highly valued site opportunities with less valuable (but still feasible) opportunities for a joint development RFP, resulting in cross-subsidy between sites. • Surplus revenue proceeds from highly valued sites may subsidize station area improvements in lower valued markets.
ENERGY PRODUCTION	• Solar PV	• Support structures over rails, stations, parking lots, and rail yards	• Lease revenue of land and air rights; energy cost offsets, cap & trade mitigation, and grants.
COMMUNITY ASSET CO-BENEFITS	• Linear Recreation Parks	• Adjacent to or decking over rails.	• Enhances the real estate value and marketability of adjacent and nearby properties, some of which can be captured through benefit assessments, special taxes, tax increment, impact fees, incentive zoning, etc., combined with grants and park capital improvement funds to pay for public improvements, including the linear park and station area. • Availability of funds for the station area depends on the cost of creating the linear park.
UTILITY EASEMENTS	• Telecom	• Fiber trunk lines, cell towers (support 5G roll out).	• Ground and building lease revenue and franchise agreements. Helps position a district for digital infrastructure and to attract tech-oriented companies and users.
BUILDING CONCESSIONS	• Station Leases & Concessions	• Leasing space within station areas and lots.	• If market supported, concession leases within station facilities and lots for miscellaneous commercial services
ADVERTISING	• Billboards, signage	• Leasing land for signage structures	• Ground and/or building lease revenue, possible share of advertisement revenue.

MBTA'S TRADITIONAL MODELS

MBTA has historically approached monetizing land through traditional real estate development deals with the private market. Some of the existing real estate deals the MBTA has conducted include:

- **Private Land Dispositions:** MBTA has sold parcels of agency-owned land for private development, transferring permanent ownership to the private developer. Any land that MBTA sells must go to bid through the public procurement process. This method is especially valuable for larger, regular-shaped parcels in downtown and central locations, which are more desirable to developers and can yield more sales revenue for the agency. For example, Forest Hills Parcel U, a rectangular-shaped parcel adjacent to the station and tracks, was sold by the MBTA in 2012 to a site-specific LLC led by Urbanica for $900,000. The site went under construction in 2016.[2]

- **Ground Leases**: MBTA uses long-term leases to transfer land to a private party for development in return for lease revenue and other benefits (e.g. increased ridership). Ground lease agreements are typically the most common form of governing agreement for TOD projects. The tenor of the leases is generally anywhere from 25 to 99 years; the long-term nature of these leases allows for the lessees to amortize development costs. The elimination of associated land acquisition costs and potential tax advantages related to rent, can improve the financial profile of a project for a developer. Given that the transit agency retains ownership of the land, ground leases can ensure that development is aligned with the agency's transit operations and desired outcomes. For example, in 2008 the MBTA leased former station area around a renovated Ashmont Station for the development of a mixed-use building.[3]

- **Air Rights Development Projects**: MBTA has sold the air rights over stations to private developers interested in constructing office, residential, hotel, and retail space over the transit stations. The air rights help create more value on the site enabling the project to generate additional capital to pay for public improvements that are delivered as part of the private development project. For example, MBTA sold the South Station Air Rights and this project will bring a tower, with 700,000 square foot of office space and 166 housing units, over the historic building while providing station and track upgrades to benefit the transit riders.[4]

2. http://www.bostonplans.org/projects/development-projects/parcel-u
3. https://www.mbtarealty.com/wp-content/uploads/projects/1270/The-Carruth-2.pdf
4. https://www.mbta.com/projects/south-station-transportation-center-improvements

P3 CONCEPTS

Public-Private Partnerships (P3) are long-term agreements between public sector agencies and private sector partners to share both the risks and rewards of delivering physical infrastructure and/or a public service. P3s are used for both horizontal and vertical infrastructure. Successful P3s appropriately allocate risk to the party best suited to manage that risk. This principal is critical to achieving a risk/reward balance that makes the transaction suitably attractive to the public owner and private partner.

The spectrum of P3 delivery models, shown in **Figure 1** ranges from design-build ("DB") to design-build-finance-operate-maintain ("DBFOM"). P3s do not necessarily include privatization.[5] While the MBTA has engaged in some P3 arrangements (such as design-build for construction contracts), the MBTA is not currently permitted by regulation to engage in the full suite of P3 options without additional legislative approval.

Each P3 project does come with potential risk to the public and private partners. The intent of P3 projects is to properly align and mitigate/distribute that risk such each party is taking on the risk and incentives that best line up with their capabilities and goals. Major risk categories include:

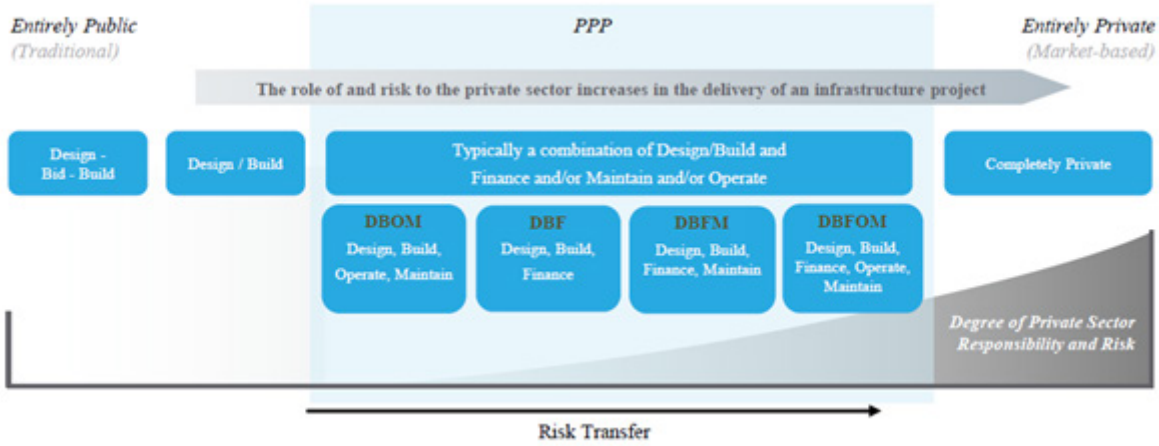
i. Design build delivery risk

ii. Finance risk

iii. Market/demand risk (where relevant)

iv. Ongoing performance risk (e.g. ongoing operations, routine maintenance, and/or life cycle/ major replacement)

FIGURE 1: Spectrum of Delivery Models



SOURCE: Arup

5. In the case of MBTA selling land to a developer fee simple or through a 99-year ground lease, privatization will effectively occur. However, there may be a number of performance requirements attached to the sale or lease agreement that will deliver public benefits.

In the real estate and station area / TOD context, P3s are often structured to deliver a number of benefits to the agency, including additional development expertise (in comparison to the transportation agency), value capture, private financing (freeing up agency financing), performance-based payments, and mitigation.

The public owner typically contributes one or more of the following:

- Public project requirements and performance outcomes
- Land (that is up-zoned or through air rights)
- Taxing authority
- Creditworthiness and commitment to pay
- Retention of certain risks like owner-directed changes, change in law, certain unknown site risks, and force majeure
- Maintains legal ownership of the asset through the project life

The private developer takes the project development risk, which may include one or more of the following:

- Detailed design and construction
- Financing and re-financing
- Certain development entitlements and approvals, and building permits
- Delivery of public assets (in the case of joint development)
- Mitigation of off-site impacts
- Maintenance and operations of certain public assets (e.g. stations, plazas, halls, malls, parks)

P3 MODEL BENEFITS

For the procuring public-sector authority (in this case the MBTA), the financial, project delivery and operations benefits of using a P3 model include the following:

- **Cost Certainty and Elimination of Risks:** In traditional procurement, private providers often bid low to win the contract knowing that they will be able to make claims for additional fees during construction. In P3 procurement the private provider bids a more realistic price and is much more likely to stick to it, knowing that claims will be much more difficult. Additionally, the private partner assumes responsibility for design, construction and maintenance, which means that the risk during those phases of the project delivery is transferred away from the public agency to the private partner, which further reduces the likelihood of claims from the private partner for additional fees.

- **Faster Project Delivery:** In the traditional procurement process, each phase of the project (e.g. design, construction, etc.) is procured separately with its own procurement process. This process takes time and extends the project schedule, which often leads to time and budget overruns. In a P3 model, the private partner is awarded all phases of the project in one procurement process. Because the private partner finances the construction period, there is an incentive to reach completion as quickly as possible and start collecting revenue.

- **Improved Commitment to Regular Maintenance:** In traditional procurement, the public agency takes over a piece of infrastructure at the operations and management stages. Some public agencies are diligent about funding ongoing infrastructure operations and maintenance, but many are not. With P3s, public agencies effectively commit to funding a certain level of operations and maintenance at the outset of the project. Because they are committed to a given level of infrastructure maintenance and investment over a long period, this ensures that the infrastructure is effectively maintained and lasts to its full potential life, avoiding the need for costly early replacement. This is enforced through the payment mechanism in the case of availability payment based projects or through covenant restrictions and penalties on revenue positive projects. Importantly, policymakers and citizens know how to hold the private partner accountable through these mechanisms.

- **Lower Risk Retained:** The P3 model structure optimally allocates risk to the party better able to manage it. As such, the public-sector entity retains a lower level of risk than in the event of the project being procured through the traditional design-bid-build model.

- **Long-term Responsibility Transferred:** The private partner retains long term (typically 30 years) responsibility for maintenance and operation of the infrastructure.

- **No Payment Until Completion**: Payments can be structured to commence at the end of the construction period. Moreover, these payments are linked with operational performance and subject to performance deductions. Penalties may be incurred for non-performance.

Some benefits accrue to the community or the agency-at-large, and are not specific to the real-estate transaction:

- **Community Benefits:** Projects can be structured to include important community benefits by providing incentives to the private sector entity. This can include delivery of more affordable housing, involvement of small businesses, disadvantaged businesses, women and minority-owned businesses, local developers/non-profits/etc., training "match" between big developers and smaller/local NGOs. Also, projects can bring investment into communities that otherwise may not see much development from the private sector.

- **Innovation:** Projects may result in more innovation in project implementation that can be structured to benefit the public agency and community.

- **Faster Delivery Frees Financial Capacity:** Timelines for projects can be reduced through quicker project delivery, resulting in and less costly overruns. This can mean freeing up money and capacity for more projects to be delivered in the long-term by the public sector entity.

CASE STUDY: Denver Performance-Based Infrastructure (PBI) Program

Driven by the need for a systematic approach to procuring infrastructure projects, the City and County of Denver (the "City") engaged Arup to help establish institutional capability and capacity within the City to evaluate and execute partnerships with private parties to deliver performance-based infrastructure ("PBI").

In conjunction with the City, Arup developed the PBI programmatic framework (the "PBI Program" or the "Program") for delivering public infrastructure using alternative delivery models in which there is a substantial risk transfer from the public agency to the private sector through the project life cycle, from design and construction, financing, operation, and long term maintenance/life cycle.

The PBI Program defines a process by which potential projects can be screened, vetted, structured, procured, and implemented as Public-Private Partnerships. It systematically considers each element of the Program and defines key procedures and approvals, and who is responsible for each. It also provides an overview of additional guidelines and documents within the Program and a set of eligibility and screening guidelines.

One of the key objectives of the PBI Program was to establish a centralized unit responsible for the oversight of all projects in the Program and develop institutional capacity to help manage alternative delivery of public infrastructure for the City.

OBJECTIVES OF DENVER'S PBI PROGRAM

- Defining public infrastructure and performance-based infrastructure;
- Developing a transparent, neutral, effective, and efficient process to evaluate project delivery methods for major capital and renewal projects;
- Providing clear and objective criteria for screening projects for inclusion in the Program;
- Establishing guidelines for a City procurement option that can do the following:
  - Harness private-party innovation and financing;
  - Have a net-positive socioeconomic impact for the City and its residents;
  - Minimize risk for the taxpayer measured over time;
  - Effectively capture value for the City; and
  - Leverage public funds (if required).
- Creating a PBI Office to oversee all projects in the Program;
- Measuring performance of infrastructure over time;
- Centralizing project information and status on a PBI Pipeline; and
- Leveraging existing City processes and resources.

KEY TAKEAWAYS

The following are some of the key takeaways that helped to ensure the successful implementation of the PBI Program:

- Ultimately, the goal of a program is to offer another tool in the toolbox. The aim should be embedding the program into the organization's existing departments such as capital planning, so that the goals of the program and the department are aligned, allowing for a successful implementation.
- A political champion who will support the efforts in developing the program for the long-term ensures longevity and successful implementation.
- The program should clearly identify and define its goals and objectives.
- Integration of best practice with each jurisdiction's standards (requires a legal/regulatory analysis of the charter/bylaws).
- During the development of the program, there should be a multi-level of engagement within the agency that includes executives and operational/support staff.

P3 MODEL BENEFITS

There are some disadvantages of pursing a P3 delivery model; however, many of these disadvantages can be mitigated with clearly defined program delivery objectives and effective program management.

- **Increased upfront costs:** P3 projects typically involve increased risk for the private entity; that entity will want to be compensated for accepting a greater level of risk. This can increase public costs for the project at the outset in some cases; however, as noted above, P3 projects typically reduce unexpected cost overruns in the long-term by reducing the number of change orders over the lifetime of the project, leading to a more cost-effective project overall.

- **Reduced competition:** There may be less competition for the project due to limited numbers of private entities that have the capabilities to deliver the project and are also willing to take on the additional risk. Reduced competition can lead to less cost-effective pricing.

- **Less diverse pool of bidders:** The complexity of these projects and the increased risk can make it difficult for small, local developers to deliver the project and can lead to a less diverse pool of bidders.

CONCLUSION

The MBTA will need to continue to invest in real estate in order to help fund necessary modernizations to the transit system. In addition, savvy investments can create new ridership for the MBTA by placing homes and communities close to transit. The MBTA's approach to-date has been primarily to divest themselves of unnecessary real estate. However, P3 approaches may allow the MBTA to ensure longer-term streams of revenue and provide greater community benefits in exchange for the land assets, and over time can help maximize the MBTA's return and contribution to Greater Boston's housing shortage.

RECOMMENDATIONS FOR THE MBTA

Based on the needs of the MBTA, we recommend that the Authority explore a variety of options for increasing the financial return of real estate investments (and thus own-source revenue), while working closely with the community to provide needed housing and station improvements.

LAND INVENTORY

The MBTA should undertake a comprehensive land review process, potentially in conjunction with MassDOT or other state agencies. The intent of this review is to determine parcels, or combinations of parcels, which may be directly applicable to the below recommendations. This review should align with the state's review of municipal land adjacent to transit stations to determine which communities have a need to upzone in response to recent legislation requiring multi-family housing by right.

The MBTA already has a comprehensive understanding of available parcels and may have already completed the assessment of each parcel for alignment with the below proposals. We further recommend that the MBTA make this assessment public such that public and private partners can look to complete independent investigations and prepare plans for the MBTA's review. This process can relieve the Authority of the burden of maximizing each parcel by incentivizing interested parties to complete their own processes.

SUBURBAN JOINT DEVELOPMENT

Joint development projects involve a transportation infrastructure project, typically station development / improvement, linked to an adjacent and complementary real estate development. They are governed by contractual arrangements, with common agreements ranging from ground leases to air-rights development to cost sharing agreements. For transit agencies, joint development is becoming increasingly common as a means through which to implement TOD projects and anchor TOCs.

For example, in a station redevelopment project, the public agency will procure a private partner to develop and manage a station area (covering transit / transportation infrastructure), an adjoining real estate development(s), as well as ancillary infrastructure such as a parking garage. Joint development is a development method that has been implemented by the MBTA in recent projects like the delivery of Back Bay Station in partnership with Boston Properties and South Station with Hines.

Community and state interests are aligned with this approach. Massachusetts recently passed legislation requiring that cities and towns allow multi-family zoning around MBTA stations by right.[6] This gives an opening for the MBTA to team with municipalities and developers to grow

6. https://www.bostonglobe.com/2021/01/11/business/new-law-would-require-high-density-housing-near-t-stations

these station areas. While based on the MBTA's goals and interests, a joint development approach would have significant benefits to the agency, private developer, and the community. This approach allows the MBTA to realize the monetization of the land in a shorter time frame and can use the revenue from the land sale to invest back into the stations and transit system. The MBTA transfers development risk to the private party.

While the MBTA permanently loses ownership of this land, the agency gains capital up front to invest in agency goals and initiatives, while possibly having the private developer provide additional community benefits realized by the transit riders. The developer receives the long-term reward of land development and future revenue from the land. The developer benefits from the proximity to the transit station and the project can potentially support reduced parking, and thus reduced constructions costs, for having transit access which can enhance the residual property value.

The MBTA also has the option to use its unique regional role to help up-zone parcels prior to putting them onto the market. The negotiations between the MBTA and local communities about what should be supported on a site are likely to be less contentious than those between a community and developer. This minimal investment will help the MBTA grow value in each site before reaching the marketplace, increasing the return the Authority will receive.

Finally, the community receives subsequent benefits of more housing opportunities, including 13% of the units being restricted to affordable units, and offsite improvements from the private development. The community will realize any of the benefits from the MBTA's investment in the transit system.

The MBTA's Real Estate office should develop a formal system for welcoming joint development around and above transit stations as imagined in the new legislation. By creating a formal process, this reduces the barrier to entry for potential bidders, and allows the host municipality to participate. Other transit agencies have implemented formal processes that oversee the disposition of agency-owned land while also ensuring their goals are realized on these parcels in a prescribed manner, welcoming project ideas that meet shared goals.

- Los Angeles County Metropolitan Transit Authority has a Joint Development Department that handles the sale of agency-owned land.[7]

- Bay Area Rapid Transit TOD Program oversees the real estate assets of BART. Projects must include 20% affordable units.[8]

- Santa Clara Valley Transit Authority TOD Program oversees the policy to promote public-private and public-public partnerships on VTA-owned sites.[9]

7. https://www.metro.net/projects/joint_dev_pgm/
8. https://www.bart.gov/about/business/tod
9. https://www.vta.org/business-center/transit-oriented-development

BUNDLE TOD OPPORTUNITIES OVER MULTIPLE LOCATIONS

The MBTA should consider taking a programmatic approach to packaging a series of smaller parcels that are bid out to one private developer whose objectives for the development are aligned with the MBTA's goals for the parcels. The MBTA currently takes a project-by-project approach, maximizing the value of the less difficult sites. The remaining parcels, however, risk becoming a portfolio of irregular sites around the system that are challenging to monetize.

Taking a more programmatic approach to how the MBTA develops its land holdings can increase their value by creating a select pool of parcels that, when bundled together as a portfolio for sale or lease that combines small and irregular parcels with adjacent properties to create more developable sites of scale, may help the MBTA generate more revenue. Also, this approach can address community needs like affordable (market rate and deed restricted) housing near transit and increase ridership potential due to the increase in households proximate to the MBTA's stations.

In order to take full advantage of the P3 model and get the greatest long-term benefit, the MBTA should consider developing a P3 program as part of the programmatic approach, in order to establish expertise within the agency to structure various types of transactions, including P3s that can generate revenue for the system and off-site improvements that enhance the system, such as improved first-last-mile connections to the stations. The MBTA, in partnership with local jurisdictions and adjacent private property owners, can generate revenue through sales, leases, direct investment in station area improvements in exchange for development rights, and enhancement of district area land values to increase fiscal revenue potential.

To test the concept of a programmatic approach of bundling parcels for TOD, we modeled hypothetical residential development scenarios to illustrate the residual land value enhancement potential of increasing scale through a programmatic approach. The summary of this example is located in the Appendix.

DEVELOP P3 MODEL GUIDELINES

The MBTA's real estate program will benefit from clearer guidelines and an understanding with the private sector. The goals of the program should not be a mystery to potential partners. In developing the P3 program, the MBTA should look to create and publicize clear goals, risk tolerances and conditions for partnerships with the private sector. This will enable said partnerships to develop naturally and on an even playing field for all developers.

Clearly defining goals, tolerances and conditions will also allow the public to participate in the MBTA's real estate program with greater transparency, without the need to subject every individual deal to extensive scrutiny. If the communities can be assured that the MBTA is making deals in accordance with published, vetted standards, costly and confusing incidents can be avoided, and the speed of development can be increased. This will allow the entire program to be a win-win for the Authority and the partners it seeks.

APPENDIX A

DETERMINING A VIABLE P3 OPPORTUNITY FOR STATION REDEVELOPMENT

A Better City has produced a parallel report discussing the benefits and characteristics of a P3 model, "Public-Private Partnerships for the Massachusetts Bay Transportation Authority". This Appendix supplements that report, focusing specifically on the viability of P3 projects for real estate and station redevelopment.

The MBTA has successfully performed P3 projects in a variety of circumstances. The information below is intended only to lay out key elements of a successful station redevelopment P3 and is not specifically related to the MBTA's current capabilities or past performance.

PROJECT VIABILITY

In determining whether a particular station redevelopment project is best suited for a P3 structure, the MBTA, in conjunction with their advisors, may conduct a screening of the project to assess its feasibility both qualitatively and quantitatively.

Qualitatively, some measures to assess include, but are not limited to:

- Project size / contract value
- Contract duration
- Technical scope
- Potential for private partner to achieve greater efficiency than if the MBTA were to procure the project traditionally and operate and maintain in-house

Quantitatively, the MBTA will need to demonstrate both an economic / business case for procuring the project as a P3 as well as a financial case. With respect to the former, in order to attract public investment of funds that extends beyond the capital funding the Authority receives, the MBTA will need to demonstrate that the project has the potential to achieve value-for-money ("VFM"), i.e. that P3 represents a lower cost (over the long term) method of procurement.

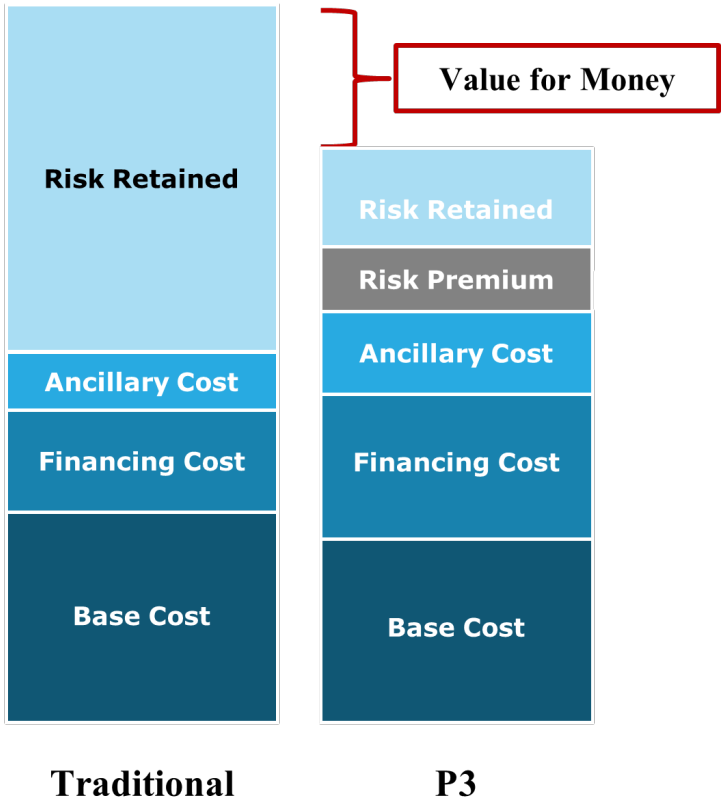
An initial VFM analysis may be conducted, comparing the relationship between the cost and value for different procurement methods. The analysis compares the aggregate benefits and the aggregate costs of a P3 procurement to that of the traditional model. It conceptually assesses the delivery model best suited for the project.

The VFM is comprised of the following:

- **Base Cost:** includes the estimated construction, operations, maintenance and life cycle costs
- **Financing Cost:** the cost of borrowing and financing the project
- **Retained Risk:** the value of the risk that is non-transferable to the private party
- **Risk Premium:** the cost of risk that is incorporated into the bid cost to compensate the developer for taking on the additional risk that would have been exposed to the owner under the traditional method, and costs associated with keeping the project on budget and time
- **Ancillary Cost:** the cost borne by the public agency through the planning, development, structuring, and construction phases of the project

As demonstrated in **Figure 2**, VFM is achieved when the net present value of the costs associated with the P3 procurement delivery model are lower than the costs associated with the traditional procurement model. When the higher costs of the P3 model are more than offset by the reduction of retained risk, there is value for money.

FIGURE 2: Value for Money



As part of the VFM analysis, another key factor in determining the project's suitability for the P3 structure is analyzing the risk profile. An appropriate allocation and transfer of risk will help achieve value for money. An initial risk assessment and allocation will be based on the project's profile and the MBTA's in-house capabilities.

A quantitative risk analysis may be performed to estimate the risk inputs to the VFM analysis. A Monte Carlo risk analysis may be conducted, simulating a range of cost and schedule impacts for each risk item and combining them to obtain an overall project risk distribution.

The two core components of a VFM analysis are the public-sector comparator ("PSC") and the P3 viability financial model. These are financial models that quantify the cash flows for each procurement method (traditional and P3, respectively) being considered.

PUBLIC-SECTOR COMPARATOR

A risk register will be created identifying key project risks with qualitative assessments of the consequences. The risk matrix will include assumptions on the allocation of each risk item between the public and private parties, assessing the potential cost impacts, as well as schedule impacts. An example of a sample risk matrix is demonstrated below in **Table 2** and **Table 3**. In the case of the example below, the schedule impacts are quantified into monetary values by either the overall escalation of project costs due to the delay of initial construction or indirect burn rates of stalling construction.

TABLE 2: Sample PSC Risk Matrix with Quantified Cost Impacts

PUBLIC SECTOR COMPARATOR – ILLUSTRATIVE ONLY							
RISK IDENTIFICATION		ALLOCATION		OCCURRENCE LIKELIHOOD	COST IMPACT RANGE (% OF COST ESTIMATE)		
ID#	RISK NAME	PUBLIC	PRIVATE		LOW	MOST LIKELY	HIGH
DESIGN & CONSTRUCTION PHASE							
1	Construction permits & approvals	50%	50%	20%	5%	7%	10%
2	Cost overrun	100%	0%	35%	0%	25%	50%
3	Cost overrun	100%	0%	0%	-	-	-

TABLE 3: Sample PSC Risk Matrix with Quantified Schedule Impacts

PUBLIC SECTOR COMPARATOR – ILLUSTRATIVE ONLY							
RISK IDENTIFICATION		ALLOCATION		OCCURRENCE LIKELIHOOD	SCHEDULE IMPACT RANGE (MONTHS)		
ID#	RISK NAME	PUBLIC	PRIVATE		LOW	MOST LIKELY	HIGH
DESIGN & CONSTRUCTION PHASE							
1	Construction permits & approvals	50%	50%	20%	4	6	8
2	Cost overrun	100%	0%	0%	-	-	-
3	Schedule overrun	100%	0%	50%	3	10	18

With the fully populated PSC risk matrix, a Monte Carlo analysis is conducted to generate a probability distribution for each risk item and in aggregate to obtain the overall project risk associated with the traditional delivery. The appropriate confidence level to use for the risk adjustment in the VFM is a matter of choice. The higher the confidence level selected for the analysis, the greater the confidence that the risk-adjusted cost is adequate (i.e. it is not exceeded).

The choice depends on multiple factors, such as the public sector's risk appetite. For example, it is common in the industry to use a 70% or 80% confidence level for construction cost estimating and to set budgets inclusive of risk contingency. With the selection of the appropriate confidence level, the risk impact is applied to the PSC cash flows.

P3 VIABILITY MODEL

The Monte Carlo risk analysis conducted for the P3 viability model is the same as for the PSC, but with relevant inputs that reflect the parameters of a P3 delivery. The P3 viability model assesses the impact of shifting key project-related risk from the public sector to the private sector. The qualitative assessment of the specific risk items should be identical for the two models. The difference lies in the inputs.

Using a P3 risk matrix, Monte Carlo simulations are conducted to generate a probability distribution for each risk item and in aggregate to obtain the overall project risk associated with the P3 delivery. When applying the risk-adjustment to the P3 viability model cash flows in the VFM analysis, the level of confidence selected should be the same as for the PSC above. The quantitative risk analysis for both the PSC and P3 viability model will then be inputs into the VFM analysis conducted to determine the optimal allocation of risk between the MBTA and the private partner.

In addition to building the economic case for the station redevelopment project, the MBTA will need to consider a financial assessment as well to determine the project's affordability. A financial advisor may be procured by the Authority to help conduct a preliminary financial feasibility study that includes building a financial model. The shadow financial model will indicate and predict the potential private partner's cost and financial structure. For the MBTA, one of the key determinants of the delivery model decision will be the value of the cash flows for the various procurement methods.

Following the assessment of the project's viability as a P3, the MBTA may pursue the issuance of a Request for Information ("RFI"). The RFI aims to:

- Formally provide the market with notification of the upcoming project to gauge and stimulate interest
- Provide the market with information on the anticipated procurement timelines and requirements to allow the private sector to start the process of forming teams and plan accordingly
- Obtain feedback from the market on the project definition and business case

The responses to the RFI are then collated by the MBTA and may serve as inputs in the development of the procurement documents. Both the qualitative and quantitative assessments completed will be synthesized into a report that will then be presented to the Board for approval to procure the project as a P3.

Moreover, in considering the project's viability, the procuring agency needs to assess whether they will have access to available public funding. Potential funding may be from federal agencies such as the Federal Transit Administration ("FTA") or Federal Highway Administration ("FHWA"), or state and local grants. The amount of public funding will determine the level of private investment, while improving the ability to finance the project.

The FTA promotes joint development projects by allowing funding / grants to be used towards the project. FTA and other capital grants programs that can support joint development include, but is not limited to:

- Urbanized Area Formula Grants
- Fixed Guideway Capital Investment Grants
- Formula Grants for Rural Areas; and
- State of Good Repair Grants.

DELIVERY OF P3 PROJECTS

A delivery authority, such as the MBTA, may need to assemble new teams and amend this procurement approach to focus on P3 methods. This section supplements further reporting by A Better City in "Public-Private Partnerships for the Massachusetts Bay Transportation Authority".

PROCUREMENT TEAM

A Procurement Team may be complemented with external advisors to aid internal staff. The Team should generally include:

- Project Manager. This individual is critical to the procurement process and consequently should have relevant rail experience in addition to the project procurement development and marketing process; and
- Specialists in relevant financial, technical, and legal topics. This may be complemented with external advisors.

The key roles of the Procurement Team include:

- Developing and implementing a procurement plan for the project
- Identifying the need for external advisors and procuring the needed advisors
- Coordinating and engaging with the Real Estate Department and other agencies as necessary, regarding questions, approvals, follow-up, and actions related to the project
- Leading interactions with the private sector
- Considering pathway to entitlement considering the agency's existing land development policy
- Developing the procurement documentation and the Project Agreement, with input from external advisors

DEVELOP PROCUREMENT STRATEGY & INITIAL PROCUREMENT DOCUMENTS

Following the approval to procure the project as a P3 and the establishment of the Procurement Team, the next step is to develop the procurement strategy. During this stage, it is important to develop the procurement strategy that best achieves the goals of the project and those of the MBTA. Prior to developing the procurement strategy, the MBTA should define the project's goals and objectives as well as expected outcomes. The project's goals may range from revenue generation to upgrading the asset or maximizing ridership. These outcomes are input to the risk

allocation and commercial structure; therefore, it is imperative that they are well defined, and the procuring authority is clear about the goals as they consider the appropriate strategy.

In considering approaches to develop the procurement strategy, there are two categories the strategies may be categorized as:

- Co-development Bid Solicitation Process: The procurement team plans to select a private partner with whom to co-develop the project based on the performance requirements of a Predevelopment Agreement or similar document. The selection can be done based on an RFQ and/or RFP.

- Firm-Bid Solicitation Process: The procurement team issues the procurement documents to which interested parties respond to with a firm bid, generally including firm price and financing commitments. The bids are then reviewed and evaluated by the procurement team in order to select a private partner that offers the procuring authority the most value. This process may have one step consisting solely of an RFP, or it may be comprised of two steps, consisting of an RFQ and an RFP.

This two-step process generally attracts more competitive proposers by expanding market awareness of the project and procurement. RFIs and other means of engaging the private sector are encouraged as part of this process. Within this process, the technical aspects of the project are presented as performance specifications and objectives. This enables the proposers to use innovative strategies to develop fully integrated technical and financial proposals with the total asset life cycle performance in mind at the most competitive price. The Procurement Team evaluates price, scope, quality, and innovation in the proposal, selecting the winner based on best value to the City. This approach encourages innovation and appropriate transfer of risk.

A workshop may be conducted to determine the appropriate procurement strategy. Generally, the strategy is defined based on several key factors, including, but not limited to:

- Project profile and its complexity as it pertains to the (i) specifics and limitations of the design and technological solutions brought by the market; and (ii) absence of local firms with sufficient experience and capacity to take on the project

- Institutional capacity of the relevant, applicable public agencies

- The MBTA's primary objectives (i.e. maximize the possible scope and quality for a given budget or obtain the lowest price for a defined project scope and quality)

- The procurement process' budget and schedule

Following the decision of the procurement strategy, a project-specific procurement plan is developed to define the intended process, objectives, and schedule to guide the overall procurement. The procurement plan includes (i) a general overview of the project and objects; (ii) mechanism for the selection process / evaluation; (iii) schedule / timeline for the process with the proposed dates for the procurement documents; and (iv) overview of the standard disclosure approach.

The selection process discussion is to determine the evaluation criteria, either qualitative or quantitative. This set of criteria will be formulated by the MBTA with its advisors and will ensure that those responding to the RFP align with the Authority's interests and meet the project objectives. With respect to the procurement schedule, the duration of the procurement will depend on the complexity of the project and how much notification is given prior to the RFP. Generally, a well-managed procurement, commencing with the issuance of an RFI and concluding with an executed project agreement, takes approximately six to twelve months.

TABLE 4: Model Procurement Schedule

PROCUREMENT PHASE	TYPICAL DURATION (AFTER PRECEDING PHASE)
Responses to RFI and industry forum	4 weeks
Creation of Request for Qualifications ("RFQ")	4 weeks
Responses to RFQ	4–6 weeks
Selection of short list	2–6 weeks
Preparation and approval of Project Agreement and RFP	8–12 weeks
Responses to RFP	8–14 weeks
Selection of winner	2–4 weeks
Final works to signing	2–8 weeks

DEVELOP RFQ

Following the development of the procurement plan, the next step is to begin drafting and developing the RFQ This task may be completed either in-house if their procurement office has capacity, or with an external advisor. Broadly, the RFQ aims to solicit Statement of Qualification ("SOQ") from qualified and interested parties. The MBTA then selects and shortlists a pool of respondents to submit a complete proposal.

The RFQ will state the minimum technical and financial requirements, amongst other criteria. The RFQ will include the following items:

- Clear project definition / description
- Explanation of the P3 project including goals and scope
- Minimum technical qualifications / experience as well as capacity to develop either (i) station redevelopment projects or (ii) projects with similar characteristics
- Adequate financial and commercial capacity
- P3 project schedule and draft procurement schedule including the RFQ schedule
- Confirmation of no conflicts of interest
- Organization and structure of the firm/consortium

- Experience of the consortium members to work together
- Experience of the firm/consortium in similar types of infrastructure/services and in projects of a similar size and complexity (e.g. meeting specified minimum qualification requirements)
- Past project delivery performance track-record of the firm/consortium (e.g. on-time and on-budget delivery, achieving quality goals, achieving diversity and local hire goals, achieving sustainability goals, etc.)
- Organization of proposed project team
- Information on key project team members meeting specified minimum experience and location requirements

DEVELOP THE PROJECT AGREEMENT

The Project Agreement is the key, governing contract (or suite of contracts) that oversees the relationship between the selected private partner and the MBTA following the award and execution of the contract. It defines the contractual obligations of the parties while also allocating risk between the two parties.

Drafting of the Project Agreement will draw on the project definition, business case, the Term Sheet, and other key documents. The Project Agreement will generally include:

- The contractual term
- Detailed performance-based technical specifications
- Reporting and monitoring requirements, including requirements for access, use of independent engineers, etc.
- Key performance indicators and the regime of payment deductions, penalties, and/or incentives associated with meeting the performance requirements throughout the life cycle of the project
- Breach-of-contract definitions and mechanisms
- Mechanisms for change orders
- Definition of relief and force majeure events, and their corresponding cure and/or compensation mechanisms
- Termination rights for each party for failure to perform, relief events, and force majeure events
- Conditions and requirements regarding the conclusion of the agreement such as asset hand back conditions.

Under a Firm-Bid Solicitation Process, the Procurement Team issues drafts of the Project Agreement and solicits feedback when the RFP is released (draft project agreement released with the RFP) and during negotiations with the selected private partner.

DEVELOPING & EVALUATING THE RFP

After the SOQs are evaluated and a pool of respondents are shortlisted, the RFP phase of the procurement process commences. The RFP is intended to ensure the best value for the public through competition among the most qualified proposers. The scoring and ranking results of the RFQ phase is not considered when evaluating the responses to the RFP.

The RFP is typically the longest phase of the procurement process. Given that the preparation of a proposal requires a significant level of effort in terms of time and money on the part of short-listed proposers, the Procurement Team establishes a schedule tailored to the project's complexity and service requirements.

The RFP is often amended via addenda issued based on feedback from proposers. A schedule is developed for submitting comments and questions, which is included in the RFP. Therefore, the schedule should allow time for issuance of addenda to the RFP in response to feedback from proposers or other reasons.

A workshop should be held with proposers early in the process to clarify the RFP's components, including technical requirements and performance specifications, and to receive feedback from the proposers (e.g. regarding the level of effort and cost of proposal development).

The Procurement Team also holds meetings with each proposer to discuss commercial terms of the RFP, as well as any alternative technical concepts they wish to propose. Possible changes resulting from these meetings are formalized and updates are issued to all proposers.

The three main components of the RFP include (i) a clear project definition and performance requirements; (ii) clear evaluation criteria and instructions to proposers; and (iii) the proposed Project Agreement. All three components are more comprehensive versions of documents produced in earlier stages of the procurement and are updated considering comments received during the procurement process. In drafting the RFP, it is imperative that the technical, financial, and legal teams coordinate their inputs as necessary for the RFP.

The RFP details the selection and evaluation criteria that responses will be evaluated against. In the event that the station redevelopment is procured as a P3 with an availability payment structure as a revenue source, a project affordability limit may be used.

The RFP will include the following items:

- Presentation of preliminary due diligence reports from the investors, covering technical, legal, and financial aspects of the project

- Explanation and justification of alternative technical concepts

- Request for underwriting letters from lenders (e.g. banks and/or bond underwriters) and suppliers of equity capital

- Development of a financial model that supports the financial offer, including the assumptions of costs (both CapEx and OpEx including life cycle), income, capital structure, and financing structure and costs

Proposals may be submitted as an integrated proposal or in two parts: a technical component and a financial component. When the two parts are submitted as standalone proposals, the financial and technical proposals are evaluated separately so that one does not influence the other.

In preparation for the evaluation, the procurement team will:

- Define a committee to evaluate the proposals, which may be subdivided into a technical committee and a financial committee. If there are two committees, establishes the type of interaction between the committee that evaluates the technical proposals and the committee that evaluates the financial proposals. The two evaluations should be conducted independently, and the procurement team is responsible for coordinating consistency in the evaluation of each aspect.

- Coordinate with the team of advisors (from the Procurement Stage and the Structuring Stage) regarding the assistance that they will be providing during the evaluation of the proposals.

- Establish a protocol to request clarifications and additional information from the proposers and a schedule for the evaluation and adjudication, both of which will form part of the RFP and will be communicated to the proposers in advance.

Proposals are first reviewed for completion to determine if it is responsive and addresses all the requirements of the RFP. Afterwards, there will be a detailed proposal review and evaluation, in accordance with the evaluation criteria defined in the RFP. On this basis, the proposals can be ranked.

Review of the technical proposals is conducted first. As noted above, any proposed alternative technical concepts are reviewed and either accepted or rejected previously, during the RFP process. The evaluation requirements for the financial proposal vary significantly depending on the project delivery method, the project components the proposer is required to finance, and market conditions. Minimizing the need for a public sector contribution of public funds is a primary objective in evaluating financial proposals.

The timeline for evaluation should be at least 4 weeks. Additional time may be necessary based on the complexity of the project. The evaluation process concludes with a ranking of the proposers based on the combined best value results of the technical and financial proposals. In most cases this results in the selection of the Preferred Proposer; however, in some cases the

Procurement Team may determine a need for further discussions. In certain cases, it may be necessary to reject all proposals.

AWARD & COMMERCIAL CLOSE

Following the evaluation and ranking of the received proposals, the MBTA may select the preferred partner with whom the negotiation process will commence. Commercial Close should be achieved within the established time frame. By signing the final Project Agreement, the MBTA and the preferred private partner agree to comply with the conditions and requirements established in the final Project Agreement, including two critical aspects:

- The financial model of the project — audited by a third party contracted by the proposer, and reviewed by the Department of Finance's financial advisor, and conforming to the requirements established in the RFP — will be included in the Project Agreement and used in future contractual negotiations and whenever the economic/financial equilibrium is re-established.

- Performance guarantees — to ensure the Preferred Proposer complies with project obligations as determined in the RFP and through negotiations (if applicable).

ENSURE SUCCESSFUL PERFORMANCE MONITORING AND OVERSIGHT

The key performance indicators ("KPIs") established in the Project Agreement govern the operations phase as the private partner's performance is evaluated against these indicators. The private partner is primarily responsible for the risk of achieving performance; the MBTA may retain a limited number of risks if they are the party better suited to manage those risks.

KPIs ensure that both parties understand how the project is evaluated to determine whether it provides the desired services and meets certain performance objectives. The Agreement provides a reasonable period of time for the private partner to resolve any performance issues that may arise. In the event that the performance failure is not resolved, the private partner may have to pay a deduction payment that may be accrued on an hourly, daily, or monthly basis until the issue is resolved.

The private partner will be responsible for reporting the KPI achievement as outlined in the Project Agreement. Performance monitoring is best carried out through a systematic approach as follows:

- KPIs are established based on measurable project performance goals and strategies and management systems to meet those goals. Performance measures are results-oriented, comparable with benchmarks, diverse enough to provide an all-encompassing view of the project, relevant over long time periods, straightforward, verifiable, and realistic.

- Performance is monitored against these KPIs. Objective and accepted methods and metrics for measuring and monitoring performance are required. The effectiveness of the management strategies under the impact of external environments or the stakeholders' internal environments is also considered.

- Measured results are reported with reference to the expected results and explanations of any variations.

- Results are evaluated to confirm whether they accomplish the goal of correctly reporting and quantifying performance over the life of the project.

APPENDIX B

BUNDLING APPROACH EXAMPLE PACKAGE & PRO-FORMA

BUNDLING APPROACH EXAMPLE PACKAGE – ASHMONT BRANCH

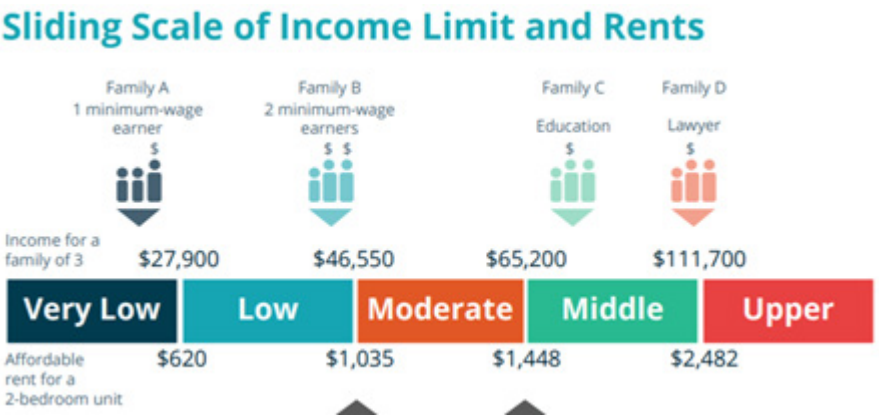
To test the concept of a programmatic approach of bundling parcels for TOD, we modeled hypothetical residential development scenarios to illustrate the residual land value enhancement potential of increasing scale through a programmatic approach, using local rent and square footage of new construction along the red line near select station area markets (JFK/UMass), and Boston area capitalization rates and development costs as reported by Colliers and Cumming, respectively. We focused on the real estate development monetization tools as utility easements and advertising may already be part of the MBTA strategy and less complex.

FIGURE 3: Past development on surplus MBTA property at Ashmont Station (c) Greater Ashmont Main Street

Given the station areas analysed and their community markets, we focused on development prototypes that are consistent with recent market rate development – from small residential, attached housing infill to larger 5-6 story buildings (Type 3, 5 construction) over podiums or tuck-under parking. We did not model higher cost, high-rise, Type 1 construction for these markets to stay within affordable rent and price parameters. This analysis was not conducted for any particular sites and parcels; rather, it is meant to provide insights that may be applied to future evaluation of specific sites and parcels.

Our approach began with looking at a small building of 24 units, similar to the types of projects currently located in the study area, and then increasing the number of units to 80, 140, and 250 units. We reserved 13% of units of each scenario for affordable housing for moderate income renters (no more than $65,200/year for a family of three) with a maximum rent of $1,448 for a two-bedroom unit, based on information provided by the Boston Planning & Development Agency (Figure 4). The impact fee rate and permitting costs are also based on the City's official rates as of 2020.

FIGURE 4: Sliding Scale of Income Limits and Rents in Boston



SOURCE: BDPA

Other key assumptions used in the pro forma analysis include the parking income at $200/month per space (based on a market comparison) and parking construction costs of $24,486 per parking space in an above ground structure in Boston in 2019, as reported by WGI. We assumed that .25 spaces would be built per unit. Operating expenses were estimated at 35% of the effective gross income, as reported by the National Apartment Association for rental apartments less than five years old. To complete the pro forma, development assumptions were used for the vacancy rate, unleveraged developer/investor profit, design costs, and financing costs.

We ran the pro forma model and Table 5 below shows the results of this conceptual analysis for the four hypothetical residential development scenarios.

TABLE 5: Residual Land Value by Unit Scenarios

UNITS	TOTAL SF	RLV/BLDG SF	RLV LAND SF	NOI
24	18,758	$116	$50	$512,150
80	68,146	$101	$89	$1,806,764
140	131,008	$88	$141	$3,379,891
250	230,212	$89	$141	$5,957,663

Our findings indicate that potentially:

- The MBTA-owned land, even parcels outside of downtown and in less dense areas, can have a monetary value to private developers. While a private developer would likely recreate the pro forma with its own assumptions yielding different land values, there

is a way for development to pencil on this land at current market conditions. Based on this pro forma model and its assumptions:

  - If the site could support 24 units, then the MBTA might sell the land for $50/SF
  - If the site could support 80 units, then the MBTA might sell the land for $89/SF
  - If the site could support 140-250 units, then the MBTA might sell the land for $141/SF

- Scale increases residual land value per square foot of land area generally up to a threshold where there are diminishing marginal returns where adding more scale does not necessarily increase land value per square foot. In this example project, once the development reaches 140 units, there are diminishing marginal returns for adding more units. Additional scale may require land assembly.

- Assembling and possibly bundling parcels to allow a developer to build 140 units or more could be more valuable to both the agency and developer, than individual parcels that could support 24 or 80 units.

- Rather than high-rise, Type 1 vertical development, scale should be achieved through a series of 5-6 story developments at Type V construction that keep development costs per square foot affordable and support residential mixed use, which the markets are more likely to support in the target locations. In this case, additional scale requires larger parcels. Assembling housing along lower ridership lines might be targeted to help general additional ridership as well.

- The residual value analysis assumes Boston's 13% inclusionary housing requirement. Without this requirement, residual land values would be greater. A bundling approach, perhaps linked with a density bonus program, may facilitate compliance with inclusionary housing objectives by providing more flexibility on how affordable units are delivered, especially if the bundled parcels are within the same community or along the same transit line. For example, inclusionary unit obligations for different parcels could be combined to create a deed-restricted affordable housing project to develop more efficiently on one of the parcels. This would have to be considered against balanced community policies, if any, that encourage mixed-income developments.

There may be concern that this programmatic approach to development will only benefit the large, prominent development firms. However, small and local developers should be encouraged to participate, and the agency can engage them through targeted outreach; if the agency has a list of certified SBEs/DBEs, it can send out targeted emails to this group and host webinars about the upcoming opportunities. Also, the MBTA should write SBE/DBE inclusionary requirements into the Request for Proposals ("RFP"), so that larger firms need to partner with local SBE/DBE sub-consultants to deliver the project and/or manage the project after it's built, including providing services to low-income tenants – similar to Massport's approach to development.[10]

10. https://www.bostonglobe.com/2021/02/24/business/state-toughens-diversity-criteria-it-looks-sell-prime-downtown-boston-site/

Through these development projects, the communities will benefit from new housing units being constructed. All projects would have to adhere to the 13% inclusionary housing requirement, which would ensure the community would see some new affordable housing. The MBTA could also require a higher threshold for affordable housing on these parcels, as other transit agencies have done, in exchange for added density bonuses and other bonuses.