DENVER
PERFORMANCE BASED INFRASTRUCTURE

Value for Money Analysis for the Triangle Project

City and County of Denver

March 2019

Contents

1. Executive Summary

The City and County of Denver (the "City") and the National Western Center Authority (the "Authority", together the "Public Sponsors") are partnering to undertake an effort to develop Phases 3-8 of the Master Plan for the 250-acre National Western Center ("NWC") Campus ("NWC Campus"). Phases 3-8 consist of the mixed-use development of approximately sixty acres on the southeast corner of the NWC Campus (the "Triangle").

Development of the Triangle will include construction of a new arena and a new exposition hall, rehabilitation of the historic 1909 stadium building, and construction of supporting parking, construction of an RTD Transit Plaza, and other site infrastructure ("Public Elements"). These Public Elements are anticipated to occupy approximately eighteen acres of the Triangle site. The remaining approximately forty-two acres will be developed as private commercial, residential, retail and other real estate ("Private Development") to generate upfront and ongoing revenues to cover capital and operating costs associated with the Public Elements (when combined with the Public Elements, "Project" or the "Triangle Project"). An indicative site plan is shown at right.[1]

[1] Note: Land available for Triangle Public Elements and Private Development identified by dotted orange line.

City and Authority Project Goals

The Public Sponsors have outlined a series of goals for the Triangle Project in the context of the overall goals for the NWC Campus. The selection of the preferred approach to the delivery of the Triangle Project should be the approach most aligned with the achievement of these goals in both the near-term and the long-term. Project Goals are not listed in any order of importance.

Project Delivery

Advance the vision and mission of the NWC and contribute toward its long-term success by building on the strong tradition and rich history of the site to increase year-round program opportunities for education, entertainment, food and food production, art, agriculture and livestock, water resources, and recreational activities, while seeking to generate revenues for the City and the Authority wherever possible.

Innovative Approach

Activate the campus with a mix of uses to serve local neighborhoods and the regional market by creating flexible, efficient, and vibrant public spaces, including spaces for markets, festivals, conferences, concerts, and sporting events that foster active use throughout the year and serve the needs of multiple stakeholders, from the neighboring community to visitors from around the world.

World-Class Operations

Implement world-class operations and venue management practices to maximize the value of the Public Elements and ensure long term economic viability of the Triangle and the NWC Campus as a whole.

Financial Responsibility

Minimize financial obligations for the City through an innovative partnership with the private sector to leverage the opportunity for private real estate development on the Triangle to facilitate the timely and cost-effective completion of the NWC Phases 3-8 and the NWC Campus vision with minimal fiscal impact and risk to the City.

Site Coordination

Align with current construction phasing and on-going operations to ensure careful interface with existing infrastructure and with National Western Stock Show operations in the month of January each year.

Community Connectivity

Seamlessly integrate with NWC Phases 1 & 2 and the surrounding neighborhoods by ensuring the Triangle development's design, construction, and venue operations will integrate with and enhance connections to and among the other NWC Campus facilities, the South Platte River, the RTD rail station, and the Globeville, Elyria, and Swansea neighborhoods, helping to establish the NWC Campus and the Triangle as a new center for the surrounding communities.

Sustainability

Embrace an ethic of regeneration by contributing to the NWC Campus position as a center for responding to global challenges around food, water, energy and the environment. The Triangle Project will support the NWC goal of a low-carbon campus through the use of renewable energy sources and sustainable building design and operation.

Delivery Options Analysis

This report (the "Report") has been developed to analyze the strengths and weaknesses of traditional and performance-based infrastructure ("PBI", also public-private partnership or P3) delivery strategies for the Project in the context of the achievement of project goals. The approaches were analyzed on a qualitative basis relative to the Project Goals and, where possible, on a quantitative basis to help inform an overall comparison, the "value for money" analysis, and recommend an approach. A high-level description of the delivery approaches analyzed in this report is provided in Figure 1 below.

Figure 1 – Project Delivery Approach Summary

Traditional Delivery	PBI Delivery
• **City procures Public Elements and Private Development under separate contracts with development of Public Elements under multiple contracts overseen by a Program Manager** • Program Manager oversees design and construction of Public Elements in approximately four phases • Construction Manager for each phase is hired on a best value basis and subsequently agrees to a guaranteed maximum price for each Public Element construction scope and retains responsibility for delivering within budget • Separate procurement process for a Master Developer to undertake Private Development • City separately procures operations and maintenance providers for the Public Elements once completed • Multiple, sequential procurements lead to an overall longer process (assumed to be 9 months longer) • City retains responsibility for financing project costs through low-cost public financing • City anticipated to offset debt service with Tax Increment and Metropolitan District revenues with the possibility of capturing upfront development rights value through land sales to reduce overall borrowing need	• **City procures a single private entity ("Developer") to Design, Build, and Finance the Project and to Operate & Maintain the Public Elements over the term of an agreement** • Approach minimizes upfront City design and provides Developer with performance-based specifications • Procurement and agreement incentivize Developer to propose approaches that minimize lifecycle costs of Public Elements while meeting the City's performance requirements • Developer to develop Public Elements consistent with technical requirements • Developer to undertake Private Development, committing to a takedown schedule and payment(s) to the city for development rights • City makes payments to Developer over the term of the agreement, contingent upon facility availability and meeting performance specifications • Higher cost of capital reflecting level of risk transferred to the Developer • City anticipated to offset payments to Developer with Tax Increment and Metropolitan District revenues, while capturing upfront development rights value through land sales to reduce overall private financing need

Qualitative Analysis

The two delivery options were evaluated based on the likelihood of achieving the Project Goals outlined above. The PBI delivery approach was found to have various advantages over traditional delivery, especially as it relates to overall site integration, schedule and long-term performance of the Public Elements. In particular, PBI offered the qualitative benefits outlined in Figure 2 below. A complete analysis including both strengths and weaknesses each option is included in Section 4.

Figure 2 – Summary of PBI Qualitative Benefits

- More fully transfer construction cost and schedule risk by transferring schedule and cost responsibility to a single Developer at the center of delivery of the full Triangle site
- More opportunities for innovation by incentivizing collaboration across design, construction and operating disciplines
- More opportunities to optimize site planning, access economies of scale in costs and reduce interface risks
- More opportunities for further enhancements to the overall vision and plan
- More likely to achieve asset design optimized for long-term lifecycle cost management and revenue generation
- Greater certainty with respect to long-term operations and maintenance costs
- Contractual requirement to meet specified performance standards on an ongoing basis
- Contractual requirement to return the Public Elements to the City in a specified condition

Quantitative Analysis

The analysis identified certain key differences between delivery approaches that could be quantified in terms of potential impact on the total cost to the City. These differences served as adjustments to the expected cost of each delivery option to provide an overall quantified comparison that more fully captures the expected cost to the City. The bar chart below summarizes the expected present value total cost to the City under each approach.

As illustrated in the Figure 3, the analysis results in an overall expected lower cost to the City under the PBI approach of roughly $12 million on a present value basis. In this case, the benefits realized from improved delivery over the term of the agreement more than offset the relative higher cost of capital under PBI, representing potential "value for money" from pursuing the approach. It is important to note that the analysis did not assume any lower construction costs under the PBI approach that could come from innovation and further improve the relative cost to the City. Further details on the calculations above are included in Section 4.

Figure 3 – Quantitative Results (Present Value)[2]

Conclusion

PBI delivery is being explored as an option for this project for a variety of reasons. In the right context and with proper execution, PBI delivery may be able to achieve greater public sector budget certainty, improve project schedule outcomes, transfer certain project risks to the private sector, generate incremental project revenues, ensure long-term facility maintenance and performance and drive a consistent site vision for the Triangle as a whole. These benefits must be weighed against higher financing costs and increased transaction costs which may impact overall financial outcomes.

This Report analyzes a traditional and a PBI delivery option determined by the project team to represent the most viable delivery scenarios given the legal and financial framework of the Triangle Project and presents these alternatives in the Report. The Report summarizes potential benefits

[2] Note: Development rights sales for Private Development used to offset Base Capital Costs. Development rights sales represent estimated value in current state and condition. Market appreciation and project influence will need to be taken into consideration at time of transaction. Final value will be supported by appraisal.

and costs of different delivery options, quantifying total values when possible, and arrives at quantitative and qualitative comparisons of the strengths and weaknesses offered by the proposed delivery methods. These conclusions offer direction on a preferred delivery approach for the Project.

Conclusions

- The PBI delivery for the Triangle Project outperforms the traditional delivery on nearly all factors that could be analyzed only qualitatively.
- Based on an analysis of a subset of quantitative factors, the PBI delivery is anticipated to reduce total expected City costs by approximately $12 million on a net present value basis.
- The results of both the qualitative and quantitative analysis would support the Public Sponsors initiating a PBI procurement for the Triangle Project.
- This analysis should be updated at major decision points during and at conclusion of the procurement process to help refine the transaction structure and confirm value for money objectives are achieved.

2. Project and Delivery Options Overview

The Project includes development of four required Public Elements:

Arena
A new arena which will include, at a minimum, 9,500 seats (in rodeo configuration) and be able to accommodate the functions currently held in the Denver Coliseum.

Expo Hall
A new trade show and exposition hall with a minimum of 200,000 square feet of net useable exposition space which will replace the functions currently held in the Hall of Education.

1909 Market
Rehabilitation of the historic 1909 Building which is intended to be adaptively reused to serve as a community asset to benefit the surrounding neighborhoods and greater Denver. The City is studying the feasibility of using the historic 1909 Building as a public market.

Site Development
All other necessary infrastructure improvements including site work, transportation and other supporting infrastructure work.

Long-term operations and maintenance of the Public Elements are taken into account, in addition to construction, including facility programming, concessions and maintenance as well as operations and maintenance of the Triangle more broadly. Anticipated design and construction costs for the Public Elements are $528 million.

The Project also includes development of commercial, residential, retail and other private real estate opportunities on the remainder of the site.

The Private Development is complementary to the Public Elements, adding activity and energy to the site as a whole, bringing new residents, shops, and other businesses to the neighborhood. Any development must comply with specified National Western Center Zone development limitations and other site-specific requirements and must be consistent with the fabric of the NWC Campus and neighborhood.

The City is committed to diversity and inclusiveness, sustainability, partnership and community goals for the NWC Campus and will require any selected Developer to fulfill all of these goals as part of its approach to the Project.

Sources of Funding

The development of the Public Elements and Private Development will be funded through a combination of public and private sources. The Private Development will be constructed with private investment to be repaid by real estate revenues over time; the Public Elements will be funded with a combination of "value capture" revenues generated from the Private Development and additional City and Authority sources as needed.

Land Development Rights. The opportunity to develop the Private Development is anticipated to be sold to one or more firms. This will generate cash proceeds which can be used to cover costs associated with the Public Elements.

Property Tax Increment (TIF). The City is pursuing establishment of an urban renewal area at the Triangle site in cooperation with the Denver Urban Renewal Authority ("DURA") to mitigate blight factors on the site. If established, the City anticipates receiving available tax increment revenues ("TIF") generated on the Triangle site, including revenues generated in respect of the Private Development, to defray the costs of any availability payments made for the construction and operation of the Public Elements. The available tax increment revenues are assumed to be available for twenty-five years. TIF revenues will not be available to the Developer.

Metropolitan District Revenues (District). The City also anticipates organizing Title 32 metropolitan districts to encompass the Private Development area. Capital mill levy revenues imposed and collected by any such metropolitan districts are expected to be made available to defray the cost of any annual payments made to the Developer by the City. District revenues will not be retained by the Developer.

Project Delivery Options

The traditional and PBI procurement approaches under consideration for the Triangle Project are summarized below. The approaches vary in allocation of scope responsibility, contract structure and transfer of risk.

Traditional Delivery

Under a traditional delivery, the Public Sponsors would deliver the Project through a series of individual contracts similar to the approach taken for Phases 1 and 2 at the NWC Campus. This traditional approach is assumed to include several discrete procurement processes for different roles and scopes to deliver.

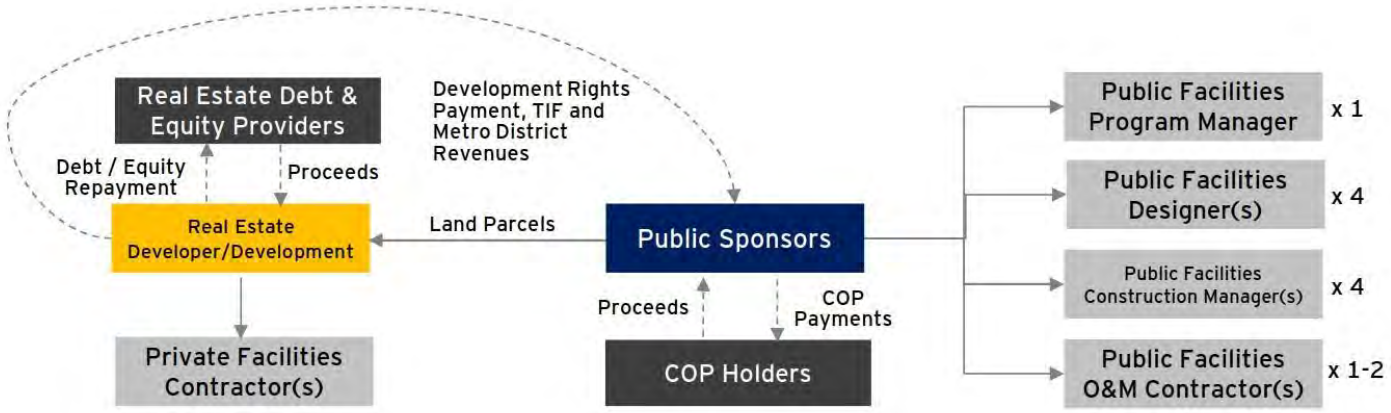
The Public Sponsors would first hire a program manager ("Program Manager") to oversee all of the contracts and work related to the Public Elements. The Public Sponsors would separately procure engineering design firms for each individual subproject included in the Public Elements (arena, expo hall, parking, infrastructure, etc.) to be overseen by the Program Manager and design each project element. Once design is nearly complete, the Public Sponsors would procure a construction manager ("Construction Manager" or "CM") to build each component. The CM is generally selected on a best value basis reflecting qualifications and proposed management fees. The selected CM may provide feedback to

the Public Sponsors on refinements to the design which may allow for innovative methods and concepts enhancing technical or price outcomes. Once the designs are complete, the Public Sponsors and the CM would negotiate a "guaranteed maximum price" for the construction based on the defined scope and schedule and the CM would then be responsible for contracting with subcontractors and managing the delivery of a subproject.

Upon completion of construction, the Public Elements would be operated by the Authority and/or pursuant to one or more separately procured operating agreements which may include arena operations, facility maintenance and other campus services.

The Public Sponsors would separately undertake a parallel procurement for a master developer ('Master Developer") to undertake the Private Development. Proposers would be provided with an indication of land available for sale for Private Development consistent with the site plan which would exclude the land used for the Public Elements. The Master Developer would be selected based on a combination of site vision and value of development rights payments and other value capture sources to be generated by the proposed program. The Master Developer would coordinate with the Program Manager and other contractors working on the site, but would be responsible for securing and managing its contractors.

Figure 4 – Traditional Project Delivery Structure[3]



To finance costs related to construction of the Public Elements, the City would employ a low interest, tax-exempt financing tool, Certificates of Participation ("COPs"), whereby the City would make annual payments (subject to appropriation) which would be used to cover long-term interest and principal repayment on the financing. The Public Elements would be pledged as collateral to the certificate holders in the event of non-payment by the City. COPs are not deemed as debt for purposes of TABOR and would not require voter approval. It is the City's Debt Policy to use COPs for essential capital projects, and the City has used COPs for similar facilities in the past.

Proceeds from development rights sales, TIF and Metropolitan District revenues are assumed to be available to fund project costs. Any upfront land sale proceeds would be expected to be used to directly pay Public Element construction costs, reducing the total

[3] Note: For simplicity, the diagram does not include certain legal structures required for a COP financing.

amount of COPs issued by the City. TIF and Metropolitan District revenues would be used to defray annual payments related to the COPs. The City would retain the risk that these projected long-term revenues are realized.

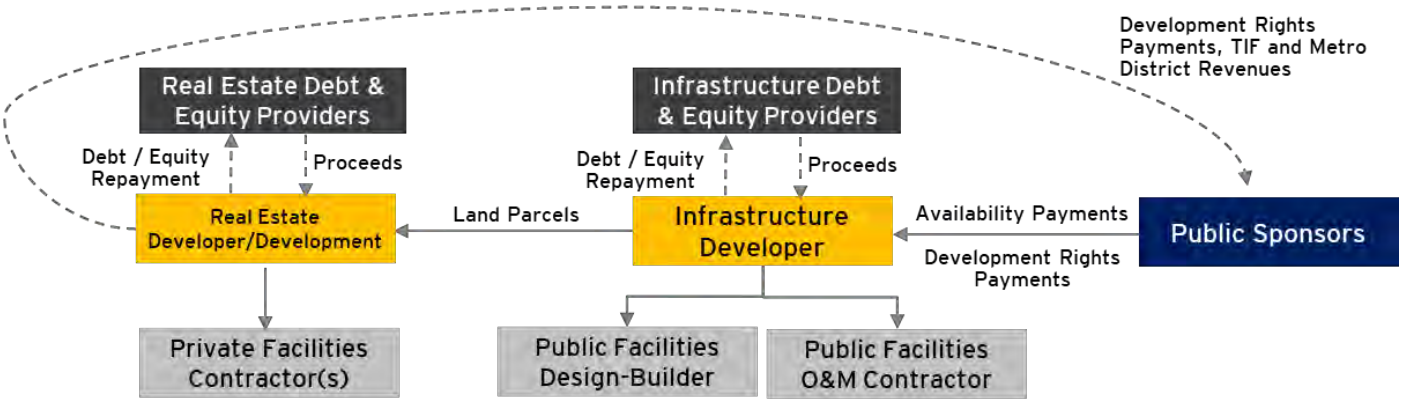
Performance-Based Infrastructure Delivery

Under the PBI structure, the Public Sponsors would deliver the Project through a single hybrid design-build-finance-operate-maintain ("DBFOM") structure which would include both the Public Elements and the Private Development.

The Project would be designed, constructed, operated, maintained and financed through a single DBFOM contract with a developer ("P3 Developer") owned by one or more infrastructure investors. The P3 Developer is typically selected through a two-part procurement process with an initial qualifications phase followed by a detailed request for proposals from a prequalified shortlist. In the second phase, the winning P3 Developer is selected based on a "best value" approach combining technical and financial criteria.

The P3 Developer would partner with a design-build contractor and an operator to deliver the Public Elements. The P3 Developer would also partner with one or more real estate firms for the Private Development. Much like the traditional delivery, under this approach, the Public Sponsors would provide preliminary engineering and project specifications to guide the development of technical proposals for the Public Elements and would allow pre-qualified contractors to propose innovative methods and concepts enhancing technical or price outcomes. Proposers would provide a committed bid that would include a fixed annual cost ("Availability Payment") that the Public Sponsor would pay to cover long-term capital and operations and maintenance costs over thirty years. The selection of a winner would be undertaken using a best-value approach considering both technical and price components.

Figure 5 – PBI Project Delivery Structure



The selected P3 Developer would assume responsibility for the majority of the design work and responsibility for all construction, operations (excluding certain activities retained by the Public Sponsors and other NWC partners) and maintenance activities (and the risk of providing these services) for the Public Elements for a fixed fee by a fixed delivery date. The P3 Developer would be responsible for ensuring the long-term performance of the assets meets specified standards and for returning the Public Elements to the Public Sponsors in a

satisfactory condition at the end of the term. The City would commence making Availability Payments upon completion of construction, and these payments would be subject to deduction if the operating performance standards are not met.

The P3 Developer and its real estate partner(s) would pursue development of the Private Development in parallel, and coordination of private real estate development with the public asset construction (and associated risks) would be the responsibility of the private partners.

As with the traditional structure, land development rights sales, property tax increment and Metropolitan District revenues are assumed to be available to fund project costs, with upfront sales paying for a portion of the construction costs to reduce the private financing required by way of milestone payments to the infrastructure developer. Longer-term revenues like TIF and Metropolitan District revenues would be used to make the Availability Payments over the concession term. The City would retain the risk that these projected long-term revenues are realized.

Comparison of Delivery Structures

A side-by-side comparison of the two delivery structures is provided below describing the potential allocation of key scope and risk items.

Figure 6 – Project Risks & Responsibilities

	Traditional	PBI
Design and Construction		
Public Element Design	Public Sponsors	P3 Developer
Public Element Construction	Construction Manager	P3 Developer
Public Element Cost/Schedule	Public Sponsors/Construction Manager	P3 Developer
Private Development Design	Master Developer	P3 Developer
Private Development Construction	Master Developer	P3 Developer
Private Development Cost/Schedule	Master Developer	P3 Developer
Site Coordination	Program Manager	P3 Developer
Operations and Maintenance[4]		
Facility Operations	Facility Operator	P3 Developer
Campus Operations	Public Sponsors	P3 Developer
Operating Cost Risk	Public Sponsors	P3 Developer
Facility Revenues/Risk	Public Sponsors	Shared
Lifecycle Maintenance	Public Sponsors	P3 Developer
Funding and Financing		
Financing	Public Sponsors	P3 Developer
Funding	Public Sponsors	Public Sponsors
Other		
Community	Public Sponsors	Shared
Sustainability	Public Sponsors	Shared

[4] Note: Final operations and maintenance scope to be determined.

3. Project Delivery Options Evaluation Criteria

The two delivery options have been evaluated based on the likelihood of achieving the Project Goals outlined in Section 1. This evaluation considers twelve key criteria each of which relates to one or more Project Goals. The relative benefit of each delivery method against each criteria has been evaluated on both a qualitative and, where possible, quantitative basis to arrive at a detailed comparison of the strengths and weaknesses of the delivery options under consideration relative to the stated Project Goals. A summary of these critiera follows.

Design and Construction

Successful design and construction of the Triangle is core to realization of Project Goals. Key design and construction criteria and the goals they address are summarized below.

Construction cost and schedule risk

Ability to transfer cost and schedule risks related to design and construction to private partners. Private partners would agree to contractual responsibility to pay under various delays or unexpected cost overruns.

Project Delivery
Financial Responsibility

Innovative technical concepts

Use of innovative approaches for design and construction which can reduce costs and/or improve project characteristics, including enhanced aesthetic, operational and community outcomes.

Innovative Approach
Community Connectivity
Financial Responsibility
Sustainability

Integrated site planning and interface

Allocation of responsibility for overlapping elements and implications for cost and interface risk, including coordination of construction for the various elements within the Triangle as well as Phases 1 and 2.

Project Delivery
Site Coordination
Community Connectivity
Financial Responsibility
Partnership

Additional design and construction risks

Ability to transfer risks related to other design and construction items, including environmental, geotechnical and other site risks.

Project Delivery
Financial Responsibility

Operations and Maintenance

Sustainable, high quality facility operations is also a key component of the Project vision. These essential Public Elements are core community assets which the Public Sponsors want to ensure are appropriately maintained into the future. A summary of operations and maintenance criteria follows.

Long-term operations and maintenance cost risk

Transfer of financial risk around long-term operations and maintenance and implications for budget certainty and level of service.

World-Class Operations
Financial Responsibility

Lifecycle costing strategies

Alignment of responsibility for long-term asset costs with initial asset design and construction, resulting in approaches that incorporate full cost of ownership considerations.

Project Delivery
Innovative Approach
Financial Responsibility

Handback condition

Requirement to maintain asset in a satisfactory condition over the long-term and incentivize timely major maintenance replacement, including building systems and structural elements.

World-Class Operations
Financial Responsibility

Facility performance and ongoing maintenance

Enhancement of facility operations to simultaneously meet public goals for the project, maximize revenues, and minimize maintenance costs through contractual provisions and financial incentives related to profitability.

World-Class Operations
Innovative Approach
Financial Responsibility

Funding and Financing

Funding and financing considerations are also critical to achievement of Project Goals. A summary of key financial criteria follows.

Project funding opportunities

Ability of the City and Authority to meet short- and long-term cost obligations of the project from the public revenues generated by the Triangle (see Sources of Funding section). Revenues could be affected by the quantity, quality, and timeline for Private Development.

Project Delivery
Financial Responsibility
Site Coordination

Cost of capital

Difference between public and private cost of capital to fund the upfront investment, and the resulting impacts on total financing costs, total Project costs, and overall affordability.

Project Delivery
Financial Responsibility

Other

Equally important to the construction, operations and financial goals for the Project are the core public values underlying the initiative. A summary of these additional key factors follows.

Community

Incorporation of needs of the surrounding communities – and consideration of ways to provide additional benefits and synergies – into the project's design and execution. This includes a consideration of balancing maximizing benefit and mitigating impact to surrounding neighborhoods in design, construction, and operations of both Private Development and Public Elements.

Community Connectivity
Sustainability
Partnership

Sustainability

Likelihood that the project will design and operate buildings within the Triangle in a way that maximizes progress towards the NWC's regeneration and low carbon energy goals.

Innovative Approach
Sustainability

These twelve comparison criteria cover all stated goals for the Triangle Project and provide a foundation for comparing the strengths, weaknesses, opportunities and challenges associated with the traditional and PBI delivery models. The delivery method which is expected to perform better against these criteria would also be expected to have a higher likelihood of achieving (and exceeding) all eight Project Goals and delivering the best value for the Public Sponsors, other partner agencies, local communities and the City at large.

4. Analysis of Project Delivery Options

The traditional and PBI delivery options have been analyzed based on the potential to achieve (or exceed) Project Goals. The qualitative assessment considers the full range of criteria which may influence Project outcomes; the quantitative assessment focuses on a subset of quantifiable differences and estimates an anticipated total risk-adjusted cost difference between the delivery structures.

Qualitative Assessment

The PBI delivery approach has various advantages over traditional delivery, especially for overall site integration and long-term Public Elements performance. However, these benefits must be weighed against the higher anticipated cost of capital under PBI delivery, as total project costs are a key factor in selection of a delivery method.

In design and construction, the PBI delivery offers an opportunity to more fully transfer construction cost and schedule risk to a private partner and offers more opportunities for innovation by incentivizing collaboration across design, construction and operating disciplines within the P3 Developer to define an overall project approach. The PBI option also allows for a single construction procurement and a single contract counterparty operating across the Triangle Project site to optimize site planning, access economies of scale in costs and reduce interface risks among multiple parties. The traditional approach does not provide the same opportunities for innovation, risk transfer or coordination and will necessitate several sequential procurements which may result in delays in overall program delivery.

Both methods provide an opportunity to deliver a cohesive vision across the Triangle based on the current site plan. However, the more unified PBI structure is more suited to provide opportunities for further enhancements to the overall vision and plan; a single contract party may be better placed to optimize utilization of the site as a whole, fully integrating Public Elements and Private Development for improved site planning, revenue generation and community outcomes.

With respect to operations and maintenance, the PBI incentivizes an approach to construction of the Public Elements which optimizes asset design for long-term lifecycle cost management and revenue generation, rather than minimizing construction costs and maximizing profits under a guaranteed maximum price like the traditional model. A PBI proposer commits to an all-in long-term annual cost; a traditional delivery procures each component separately and cannot capture this incentive.

A PBI approach also provides more certainty with respect to long-term operations and maintenance costs, as the P3 Developer will provide committed costs for thirty years. The traditional delivery leaves the Public Sponsors exposed to changes in costs over time. A PBI approach may also offer benefits from an asset performance perspective as well, as the P3 Developer will be required to meet specified performance standards on an ongoing basis and return the facility to the Public Sponsors at a specified condition at the conclusion of the operating term. Annual Availability Payments to the developer will be subject to deduction for non-performance, and the developer will be required to provide financial commitments to secure the required asset condition for the Public Elements at "handback" upon expiration of the DBFOM agreement.

Figure 7 – Summary of Qualitative Analysis

	Traditional	PBI
Design and Construction		
Construction cost and schedule risk	🟡	🟢
Innovative technical concepts	🟡	🟢
Integrated site planning and interface	🔴	🟢
Additional design and construction risks	🔴	🟡
Operations and Maintenance		
Long-term operations and maintenance cost risk	🟡	🟢
Lifecycle costing strategies	🔴	🟢
Handback requirements	🔴	🟢
Facility performance and ongoing maintenance	🟡	🟢
Funding and Financing		
Project funding opportunities	🔴	🟡
Cost of capital	🟢	🔴
Other		
Community	🟢	🟢
Sustainability	🟢	🟢

🟢 - Likely to Achieve 🟡 - May or May Not Achieve 🔴 - Unlikely to Achieve

Finally, the two options differ with respect to cost of capital. Given nearly all of the major sources of funding for the Public Elements are anticipated to be received well after the construction of the Public Elements (e.g., TIF, District revenues, etc.), a portion of the upfront construction costs will need to be financed. Under the traditional delivery, the financing would use a low interest rate tax exempt financing tool (i.e., COPs). The PBI delivery would rely on more expensive private debt and equity financing, but these private investors would be assuming substantial risks related to construction cost and schedule and ongoing facility performance. This is the key financial tradeoff between the scenarios – weighing higher cost of capital against increased certainty and quality of outcomes and the potential value of the incentives of equity investors to improve Project outcomes over the term of the agreement.

The PBI delivery for the Triangle Project outperforms the traditional delivery on all qualitative factors except cost of capital. More detailed commentary on the strengths, opportunities, weaknesses and challenges of each delivery method follows in Figure 8.

Figure 8 –Summary of Delivery Method Strength & Weakness

	Strengths/Opportunities	Weaknesses/Challenges
Design and Construction		
Traditional	‣ Builds on prior City experience and traditional approach has worked successfully on Phases 1 and 2 to date which are being delivered on time and on budget ‣ Maximizes Public Sponsor control over site planning and selection of individual contract partners versus selecting a unified team with many members	‣ Exposes the Public Sponsors to substantial risk of delay from multiple, interrelated procurements ‣ Exposes the Public Sponsors to interface risk across elements which may have direct cost and schedule impacts ‣ Limits opportunity for innovative technical concepts to be incorporated into overall construction and operating approach through sequential project development ‣ Uses fee-based construction pricing approach whereby construction partner is selected based on fees not on overall construction price
PBI	‣ Allows for an integrated approach to site development which may enhance technical/site planning outcomes ‣ Transfers interface risk to a single private entity for the whole Triangle which could provide significant value for the City in project management costs and schedule overrun responsibility ‣ Transfers other unforeseen risks during construction to a private partner	‣ Requires a more intensive, extended initial procurement process ‣ Reduces somewhat Public Sponsor control over specific technical details
Operations and Maintenance		
Traditional	‣ Provides flexibility for the Public Sponsors to negotiate operations contracts under shorter terms, accepting more risk but also allowing flexibility to renegotiate contract terms for service adjustments or expansion, or if the facilities prove more profitable than forecasted	‣ Does not provide upfront committed operations and maintenance costs ‣ Disaggregates design, construction and operating parties which limits the ability to develop a "total cost of ownership" approach ‣ Allows for variable commitment to fund facility maintenance, causing deferred maintenance similar to the current Coliseum

	Strengths/Opportunities	Weaknesses/Challenges
PBI	‣ Incentivizes managing long-term costs and operational risks throughout the life of the project, both in lifecycle approach and day to day operations ‣ Provides an effective "warranty" on facility performance and condition for the duration of the concession, as the developer is paid for construction over the life of the contract based on asset performance ‣ Allows the Public Sponsors to deduct from Availability Payments if performance is not met ‣ Encourages an experienced private operator to manage the venues to a world-class standard	‣ Commits the Public Sponsors to fund maintenance of the public facilities over time, reducing some flexibility to adjust maintenance funding based on City budget constraints ‣ Reduces flexibility to change operations of the facilities over time if priorities or technologies change
Funding and Financing		
Traditional	‣ Minimizes the cost of financing for the Public Elements ‣ Builds on prior City experience with COP financing	‣ Requires that Public Elements are pledged as collateral until the COPs are retired ‣ Constrains ability to optimize real estate value at the Triangle by prescribing facility locations and resulting private real estate parcels
PBI	‣ Provides the Public Sponsors with budget certainty, as the private debt and equity capital is at risk if construction cost and facility operating cost and revenue projections are overly optimistic ‣ Creates the opportunity for a more attractive real estate opportunity with a single partner across the entire site, driving increased real estate value to cover costs of the Public Elements ‣ Allows for potential financing innovations, including the use of tax-exempt financing, which may reduce the difference in financing costs between delivery methods	‣ Requires a higher rate of return to cover private debt and equity cost, increasing the overall cost of capital ‣ Introduces additional contingency into pricing to account for risk transfer, offsetting a portion of the benefits of transferring these risks

	Strengths/Opportunities	Weaknesses/Challenges
Other		
Traditional	‣ Incorporates community input into the project development process ‣ Allows for sustainability goals to be defined and implemented	‣ Requires Public Sponsors to manage several interrelated procurements
PBI	‣ Incorporates community input into the project development process ‣ Allows for sustainability goals to be defined and implemented	‣ Requires the Public Sponsors to execute a complex PBI procurement for a unique project ‣ Increases risk that some firms may not participate in the bidding process due to complexity of transaction structure and procurement process

The more specific qualitative distinctions outlined in Figure 8 highlight specific circumstances where outcomes under the two delivery scenarios may vary. While the exact outcomes are uncertain, these comments are based on historical procurement experience of the City as well as experience across the U.S. and internationally with the traditional and PBI delivery models and how they perform.

Quantitative Assessment

The quantitative assessment focuses on the six criteria for comparison across delivery methods that can be quantified based on available information; the remaining six criteria are discussed exclusively in the qualitative section above. The quantitative assessment compares anticipated total project costs under the two project delivery scenarios on a net present value basis. This analysis has not incorporated any type of specific risk-adjusted cost analysis. A summary of key quantitative assumptions follows below, detailed further in Figures 9 and 10.

Design & Construction

Base capital construction costs for the Public Elements developed by Jacobs and Cummings are assumed to be the same under both scenarios. Some value for money analyses include baseline capital savings for PBI delivery resulting from potential design and construction innovations; this analysis has taken a more conservative approach by not doing so.

However, there are quantifiable adjustments made to the traditional case which relate to design and construction. First, this approach will require the Public Sponsors to hire a Program Manager to oversee the site which will introduce an additional direct capital expense. Second, the additional time required to implement and coordinate the traditional procurements – i.e., a sequential series phased contracts to perform various work phases across the site – is expected to result in a nine-month extension of the schedule for delivery of the Public Elements, increasing capital costs with inflation during the delay.

Operations and Maintenance

As with design and construction, the two delivery methods assume the same baseline operations and maintenance costs developed by Icon (for the Arena and Expo Hall) and Jacobs (for the remainder of the campus wide services).

The analysis makes two adjustments to long-term operations and maintenance costs based on historical data on the performance of the existing Coliseum. First, consistent with the historical approach to the Coliseum, it is assumed that preventative maintenance is not fully addressed each year under Traditional delivery, resulting in extra long-term costs of $750,000/year to address extraordinary events related to failure of building components, after accounting for the "savings" from deferring preventative maintenance. This figure is based on actual budgetary history at the Coliseum and the City and County of Denver Infrastructure Assessment completed in February 2017. Second, it is assumed that the approach to operations in the traditional delivery model performs worse than the projected privately-led approach in the PBI structure. Based on historical City experience at the Coliseum and the revenue and operating cost projections prepared by ICON, it is anticipated that the traditional structure will have a net operating income of $400,000/year lower than the PBI option, increasing overall net costs of the Project.

Funding & Financing

The Traditional and PBI plans of finance differ in a few key ways. First, the cost of capital under Traditional delivery is lower given the use of more highly-rated, tax-exempt financing. The PBI option assumes higher-cost private debt and equity funds upfront construction of the Public Elements to account for the additional project-related risk being transferred to the Developer. The City also would not incur the additional private management costs that a PBI Developer would in creating an ongoing entity to manage its obligations with respect to the Project.

Second, the PBI delivery is assumed to generate additional real estate development related to a single developer designing the site to optimize use of the limited acreage and enhances real estate revenues over the term. It is assumed that an additional 5 acres of developable area become available and enhanced site planning drives almost $25 million in revenues beyond the Traditional scenario. This benefit of the PBI delivery is added to the Traditional delivery case as an additional incremental "cost" of that option.

Summary of Quantitative Results

We summarize the assumptions and results of the quantitative analysis below. The difference between the expected cost of a PBI approach and that of a Traditional approach is referred to as the "value for money" from pursuing a PBI delivery. After conducting a detailed risk analysis, further quantitative assessment incorporating the effects of risk transfer to the P3 Developer into this analysis would likely increase the PBI delivery's value for money.

These results show an estimate of the total thirty-year capital, operating and financing costs of each delivery option discounted to current dollars at a rate of 5%. As illustrated in the chart, the PBI option is anticipated to result in roughly $12 million lower total costs to the City on a present value basis.

Figure 9 – Summary of Quantitative Approach – Traditional Delivery Adjustments

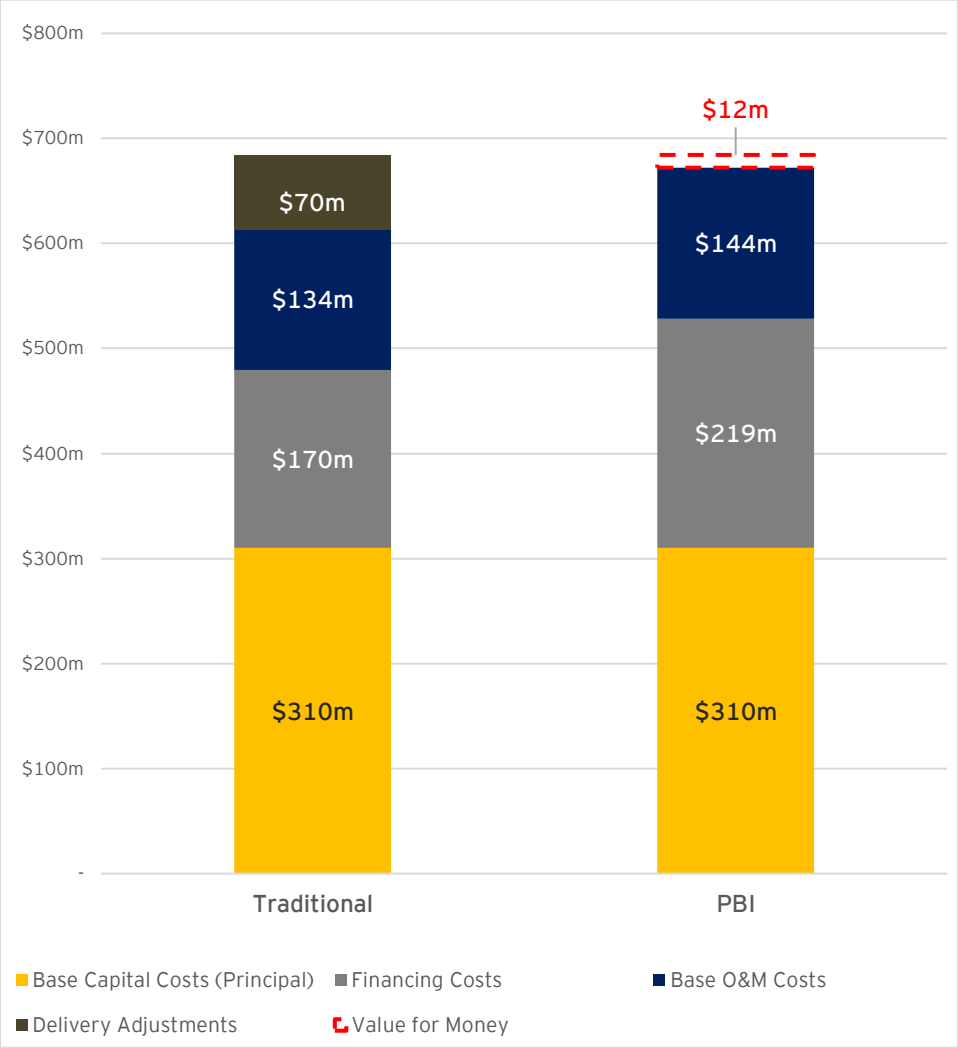
	Quantitative Approach
Design and Construction	
Construction cost and schedule risk (a)	Delayed Delivery of Public Elements
Innovative technical concepts	N/A - Qualitative Only
Integrated site planning and interface (b)	Additional Project Management Costs
Additional design and construction risks	N/A - Qualitative Only
Operations and Maintenance	
Long-term operations and maintenance cost risk	N/A - Qualitative Only
Lifecycle costing strategies	N/A - Qualitative Only
Handback requirements (c)	Incremental Deferred Maintenance Costs
Facility performance and ongoing maintenance (d)	Less Efficient Operations
Funding and Financing	
Project funding opportunities (e)	Constrained Master Plan Optimization
Cost of capital (f)	Management and Financing Costs
Other	
Community	N/A - Qualitative Only
Sustainability	N/A - Qualitative Only

Figure 10 – Traditional Delivery Adjustments

	Approach	Source	Quantification
Quantitative Adjustment			(Present Value $ Millions)
a. Delayed Delivery of Public Elements	Nine months of cost inflation	Jacobs	9.3
b. Additional Program Management Costs	Estimate of fee on construction costs payable to Program Manager	Jacobs	12.4[5]
c. Incremental Deferred Maintenance Costs	Additional annual cost of $750,000 ($2019)	City	14.3
d. Less Efficient Operations	Net operating income performance lower by $400,000 ($2019)	Icon/City	9.6
e. Constrained Master Plan Optimization	Additional five acres of developable area (and land sales) due to improved site coordination	Jacobs/Strae	24.8
	Subtotal Delivery Adjustments		**70.4**
f. Management and Financing Costs	Lower all-in cost of debt, no private equity return, and no private management costs	City/EYIA	(58.5)
	Total Estimated Value for Money		**11.9**

[5] Note: Program management figure does not include project management services that would be required to construct the Public Elements under either delivery method.

Figure 11 – Quantitative Results (Present Value)[6]



Based on the quantifiable differences between delivery methods described above, PBI delivery provides value in design and construction and operations that offset higher financing costs. This assessment is based on current information and the City's best estimates for valuation of key differences between delivery methods and does not include any quantitative adjustment for project cost and the majority of the key qualitative criteria for which PBI would be expected to outperform traditional delivery.

[6] Note: Development rights sales for Private Development used to offset Base Capital Costs. Development rights sales represent estimated value in current state and condition. Market appreciation and project influence will need to be taken into consideration at time of transaction. Final value will be supported by appraisal.

5. Recommendations and Conclusions

The qualitative and quantitative analyses both indicate that the PBI delivery approach has a higher likelihood of achieving Project Goals, as it outperforms the traditional delivery across nearly all Project Goals based on the criteria evaluated in this Report.

The likelihood of achieving the Project Goals can be mapped back to likelihood of each delivery method achieving the related criteria described in Section 3 and analyzed in Section 4. The table below summarizes the qualitative and quantitative results related to each of the Project Goals; multiple ratings under each goal indicate differing performance on related criteria.

Figure 12 – Mapping of Analysis to Project Goals

	Traditional	PBI
Project Delivery	🔴🟡	🟡🟢
Innovative Approach	🔴🟡🟢	🟢
World-Class Operations	🔴🟡	🟢
Financial Responsibility	🟡🟢	🔴🟡🟢
Site Coordination	🔴	🟡🟢
Community Connectivity	🔴🟡🟢	🟢
Sustainability	🟡🟢	🟢

🟢 - Likely to Achieve 🟡 - May or May Not Achieve 🔴 - Unlikely to Achieve

In order to access the anticipated benefits of the PBI method, the Public Sponsors could pursue a competitive procurement process to select a multi-disciplinary team to develop the Triangle Project. This procurement would evaluate both technical and financial elements of proposals and incorporate processes for allowing proposers to bring innovative design, construction, operations and financial concepts.

This analysis can be updated as the final transaction structure is more fully developed and can also be updated upon selection of a preferred proposer to confirm value for money is being achieved based on actual project outcomes instead of the estimates underlying the analysis prior to the procurement.

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