



## USING PUBLIC BID AS BENCHMARK: A FAIR AND TRANSPARENT APPROACH TO MANAGED PUBLIC-PRIVATE COMPETITION

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**ABSTRACT:** Managed public-private competition (MPPC) models have not been widely utilized for infrastructure delivery despite their potential to leverage the expertise and experience of public owners for cost-effectiveness. In MPPC, part of the public owner's organization competes with private firms, often for operations and maintenance contracts. However, direct competition between public and private entities may lead to perceived unfairness towards private bidders mainly due to disparities in cost structures and bid requirements, as demonstrated in the Charlotte-Mecklenburg Utility Department case. In this paper, we introduce a public bid benchmarking (PBB) model, an alternative approach to managed competition designed to address these challenges. Under PBB, the public entity submits a bid before soliciting private-sector bids. This audited public bid serves as a benchmark, requiring private firms to demonstrate cost savings to secure contracts. By decoupling the public entity's involvement from direct competition and requiring independent audits of public bids, PBB enhances fairness, transparency, and competitive neutrality. We discuss PBB's benefits, implementation considerations, and potential risks and compare it with other procurement models concerning procurement factors including transparency, information symmetry, market participation, cost savings potential, public-sector efficiency gains, fairness to private-sector, and administrative complexity.

**Keywords:** Public-Private Partnerships; Managed Competition; Benchmarking in Procurement; Infrastructure Delivery; Public Sector Innovation.

### 1. INTRODUCTION

The world will need to spend \$57 trillion on infrastructure by 2030 to keep up with global GDP growth (Dobbs 2013). However, the delivery of infrastructure projects is often impacted by budget constraints, program delays, quality and safety concerns, and an increasingly complex stakeholder environment (Agarwal et al. 2016). In response, governments worldwide have placed a growing emphasis on cost efficiency and transparency in public service infrastructures, recognizing the need to maximize limited budgets while ensuring high service quality and equitable access (World Bank 2020). This prioritization is reflected in various global initiatives and reports, including the OECD's Principles for Public Governance of Public-Private Partnerships (2012), which emphasize transparency and efficiency in procurement; the European Union's 2021 Public Procurement Strategy, which sets guidelines for competitive and transparent procurement of infrastructure projects; the IMF's Fiscal Transparency Code (2019), which establishes best practices for governments in managing public expenditures, including infrastructure investments; and the

U.S. Federal Infrastructure Investment and Jobs Act (IIJA) also known as the Bipartisan Infrastructure Law (2021), which includes provisions for competitive and transparent procurement processes.

The need for efficiency and transparency is particularly critical in water and wastewater infrastructure projects, as these assets differ from other infrastructure types in two key ways (Kessides 2004). First, the supply of water is finite and location-specific, meaning that its availability depends on geographical and environmental constraints. Unlike roads or energy grids, water resources cannot simply be relocated or expanded at will, requiring careful management and sustainable planning. Second, access to safe water is fundamental to public health and welfare, making its affordability and reliability a significant social and political issue. Governments must ensure that procurement practices for water and wastewater services promote cost-effective service delivery without compromising quality, sustainability, or public accessibility.

Most infrastructure practitioners and policymakers view efficiency and transparency as by-products of the selected procurement mode (Tawiah & Russell 2008). In the context of water and wastewater infrastructure, the procurement and delivery of operations and maintenance services can follow various models, each with distinct implications for efficiency, equity, and transparency. One such model, known as Managed Public-Private Competition (MPPC), takes a unique approach by allowing public agencies to compete directly with private firms for contracts.

MPPC models offer potential advantages by leveraging the expertise and operational experience of public agencies to promote competition and enhance cost-effectiveness. However, their adoption has remained limited due to concerns regarding fairness and transparency. One key issue is information asymmetry, as public entities often have superior knowledge of existing infrastructure, giving them an advantage over private firms. Additionally, public bidders may have lower administrative overhead and access to government resources that private firms do not, creating an uneven cost structure. As a result, private firms may avoid participating in MPPCs due to skepticism about fairness in the competition. This challenge was evident in the Charlotte-Mecklenburg Utility Department (CMUD) case, where private bidders expressed concerns that the competition did not provide a level playing field (Miller 2002).

This paper critically examines MPPC models and their application in infrastructure delivery, with a focus on operations and maintenance services. It explores the key advantages and shortcomings of these models, using the CMUD and other cases as empirical references. Based on these insights, the paper introduces a Public Bid Benchmarking (PBB) MPPC Model, which aims to improve upon existing approaches by using the public bid as a benchmark rather than engaging in direct competition. This approach promotes fairer procurement practices that balance efficiency with transparency. Finally, the paper compares the PBB model with existing procurement models and evaluates its potential implications for policy and practice in infrastructure procurement. This paper contributes to the infrastructure procurement literature by addressing gaps in competitive procurement models and proposing a structured alternative that enhances fairness and efficiency. While procurement models have a significant impact on project outcomes, the construction industry lags behind others in adopting best procurement practices to drive innovation and efficiency (Marques et al. 2023).

## **2. BACKGROUND**

### **2.1 Managed Public-Private Competition: Models, Process, and History**

Managed Public-Private Competition (MPPC) is a procurement model where public-sector entities compete with private firms to deliver infrastructure services, typically for operations and maintenance (O&M) contracts. MPPC focuses on efficiency by allowing in-house units of public organizations to bid against private contractors under controlled competitive conditions (Civic Federation 2013). The core idea behind MPPC is that by fostering competition, both public and private entities are incentivized to improve cost efficiency, service quality, and innovation while ensuring taxpayer dollars are used effectively.

The MPPC approach is most commonly applied to infrastructure services such as water and wastewater treatment, solid waste management, road maintenance, and municipal fleet management. Its effectiveness

depends on the design of the competitive process, the ability to maintain a level playing field, and the mechanisms in place to evaluate bids fairly (Civic Federation 2013).

MPPC can take different forms depending on how the competition between public and private bidders is structured. Three primary approaches to managed competition exist (Civic Federation, 2013): Ad Hoc Approach, which involves comparing in-house costs of service delivery with market processes without conducting a formal bidding process; Informal Bidding, in which the government obtains pricing information or bids from private firms and compares them with internal cost estimates; and Formal Bidding, the most structured form of MPPC, where in-house service providers and private firms submit competitive bids under a defined procurement process. Formal bidding is often the most expensive and time-consuming but the most rigorous approach to implement.

An MPPC process typically consists of three key phases. Phase One involves identifying which functions or services will be subjected to competition, evaluating legal constraints, available service providers and contractors, total costs, risks, feasibility, and required capital investments. Phase Two establishes the competition framework by setting clear guidelines, defining participants and timelines, and determining service level criteria. This phase concludes with comparing bids from internal units and external, private-sector bidders to select the most competitive bid. Phase Three focuses on implementation, requiring a transition plan that addresses budgeting, personnel, procurement, and communication adjustments. Post-implementation, ongoing monitoring through a performance evaluation system ensures service quality and efficiency.

First introduced by the City of Phoenix, AZ in the 1970s, MPPC has since been used in several North American cities, primarily for municipal services. As of 2010, \$38 million has been saved in Phoenix's solid waste collection. The City of San Diego, CA adopted a managed competition model following the passage of Proposition C in 2006 (City of San Diego 2010). Competitions were conducted for services such as fleet maintenance, street sweeping, and landfill operations. The city estimated annual savings of \$12.2 million through managed competition, with public agencies winning five out of seven competitions (Halverstadt 2013). The City of Chicago, IL has implemented MPPC for recycling services, custodial work at O'Hare Airport, and tree trimming (Mack 2011). In the Blue Cart Recycling Program, private companies initially provided services at a lower cost than city workers, but adjustments to work rules allowed public crews to remain competitive (Civic Federation 2013). As a result, Chicago's spending on the program under managed competition decreased from \$31.1 million to \$19.2 million, a 38% cost saving. Between 1994 and 2010, Charlotte, NC conducted approximately 60 managed competition processes for services including water treatment, solid waste collection, and transportation. Of these, 46 contracts were awarded to city departments, while 14 went to private firms. The program reportedly saved over \$10 million in administrative and program costs (Civic Federation, 2013).

## **2.2 Charlotte-Mecklenburg Utility Department Case**

In this paper, we focus on the Charlotte-Mecklenburg Utility Department (CMUD) case, which serves as a prominent example of MPPC for municipal services. Key facts of this case are adopted from Miller (2002). CMUD, created in 1972 and now known as Charlotte Water, is a municipally owned and operated public utility functioning as an enterprise department within the City of Charlotte. It is the largest public water and wastewater utility in the Carolinas, serving more than a million customers in the City of Charlotte and greater Mecklenburg County. While it is not a separate legal entity, CMUD operates under a self-sustaining enterprise fund model, relying on user fees rather than tax revenue. This structure gives it financial autonomy and operational flexibility akin to quasi-governmental entities, while remaining under direct public oversight. In 1995, the city initiated a competitive process for operations and maintenance of three CMUD facilities: the Vest Water Treatment Plant, the Irwin Creek Wastewater Treatment Plant, and the Residuals Management Facility. This competition was part of a broader initiative by the City of Charlotte to improve efficiency in public service delivery. The effort was set in motion after the city received an unsolicited proposal from Wheelabrator to purchase the McAlpine Creek Wastewater Treatment Plant in 1995. Rather than selling the facility, Charlotte opted for a competitive bidding strategy, forming a Competition/Privatization Advisory Committee to oversee the process and ensure fairness in bid evaluation. The city divided the bidding process within CMUD into two teams: a procurement team responsible for

managing the competition and a bidding team that prepared the internal bid on behalf of the public utility. The CMUD bidding team was not required to provide additional insurance, performance bonds, or guarantees for cost overruns, meaning taxpayers would bear any excess costs. Private-sector firms, on the other hand, were contractually bound to fixed-price agreements, absorbing any financial risks if costs exceeded their bid. While this approach was designed to create a level playing field between public and private bidders, concerns quickly emerged regarding differences in cost structure.

In the final bid evaluation, the CMUD bidding team secured the contract with a bid of \$7.1 million, significantly lower than its private-sector competitors. JMM Operational Services, OMI Inc., Duke Engineering, and PSG submitted bids ranging from \$8.8 million to \$14.6 million, all failing to outbid the public bidder. The CMUD bidding team attributed its cost competitiveness to operational efficiencies through labor cost reductions, a ten-month optimization process, and other innovations and preparations (site visits, employee training, and new incentive and compensation systems), projecting \$4 million in savings over five years. However, private firms raised concerns that CMUD's bid was artificially low due to missing cost components such as maintenance expenses. Also, the cost allocations between the public and private bids were structured differently. CMUD's bid included charges for city overhead and administrative expenses but not for additional insurance or performance bonds, whereas private-sector bidders were required to incorporate costs for insurance, performance bonds, pre- and post-operations condition assessments, contract negotiations, and administration. In the end, the disparity in financial, administrative, and overhead requirements as well as the public agency's superior institutional knowledge of the facilities led to allegations of an unfair competitive advantage, which in turn discouraged many private firms from participating in future MPPC processes (Miller 2002).

Despite the cost savings achieved, the CMUD case illustrates fundamental flaws in MPPC that can deter private participation and undermine the credibility of managed competition in the long term. It underscores the need for alternative procurement models that balance public-sector efficiency with fair market competition. This paper introduces a novel Public Bid Benchmarking (PBB) MPPC Model as a solution to these challenges.

### **2.3 Advantages and Disadvantages of Managed Public-Private Competition**

MPPC presents distinct advantages and challenges depending on the perspective of the key stakeholders involved: the public sector, private firms, and taxpayers, the ultimate beneficiaries of the services provided by either the public or private sector.

From the viewpoint of the public sector, MPPC offers an opportunity to innovate and demonstrate operational efficiency and cost-effectiveness. As discussed in the Civic Federation (2013) and evident in the CMUD case (Miller 2002), when public agencies are allowed to compete, they often identify inefficiencies, implement process improvements, and adopt private-sector management techniques to optimize service delivery. Additionally, winning a competitive bid allows the public-sector entity to retain control over essential infrastructure services, avoiding the risks associated with full privatization. However, the process can also create internal conflicts, as employees may fear job losses if the bid is unsuccessful. Furthermore, preparing a competitive bid requires substantial time and resources from both the public and private sectors, diverting attention from routine service operations.

For private firms, MPPC can theoretically create business opportunities by allowing them to compete for government service contracts. However, MPPC can introduce structural and financial disparities between public and private bidders as seen in the CMUD case. Unlike private firms, public-sector entities are often exempt from taxes, do not need to generate profits, and are not required to provide performance bonds or financial guarantees (Eggers 1998). In MPPC, when public bidders win, they enter into a Memorandum of Understanding, which is not legally binding, rather than a formal contract. Private firms operate under profit-driven models and must account for market risks, whereas public agencies may have access to subsidies or indirect financial support. These discrepancies create an uneven playing field where private bidders bear financial risks that public entities do not, discouraging participation and limiting competition.

From the taxpayers' perspective, MPPC has the potential to lower service costs and improve efficiency by fostering competition between public and private entities. As argued in the Civic Federation (2013) and seen in the CMUD case, competitive pressures can drive innovation and cost savings, ultimately benefiting taxpayers by reducing the financial burden on government budgets. However, taxpayers also have a vested interest in ensuring that the competition process is fair and that the long-term quality and affordability of service is maintained. If private firms are discouraged from bidding due to an uneven playing field, the competition level may decrease, limiting the true cost-saving potential of MPPC. Furthermore, if a public entity wins a bid based on underestimated costs or hidden inefficiencies, taxpayers may bear the burden of future cost overruns or service disruptions. Thus, while MPPC offers a promising mechanism for improving public service delivery, its effectiveness depends on the fairness and transparency of the bidding process.

### **3. CONCEPT OF PUBLIC BID BENCHMARKING**

The Public Bid Benchmarking (PBB) model is an alternative procurement approach designed to address the shortcomings of MPPC. While the traditional MPPC model requires public agencies to bid directly against private firms, PBB removes the element of direct competition and instead uses the public bid as a benchmark for private-sector evaluation. This approach allows private firms to compete against a known reference point rather than participating in an opaque bid process, thereby increasing transparency, reducing conflicts over fairness, and fostering an environment where private bidders must focus on demonstrating superior cost savings.

PBB differs from ad hoc and informal managed competition in its structured and binding nature. In ad hoc competition, governments internally assess the cost of in-house service delivery but do not open the process to formal external bidding. Informal managed competition involves soliciting prices from private firms and comparing them to internal estimates without a structured evaluation framework. PBB, by contrast, is a formal, competitive, and binding process that requires the public entity to submit an auditable bid before private-sector bidding begins. By formalizing the public bid as a benchmark, PBB ensures that all bidders operate within a clear and predefined procurement framework, reducing the risk of subjective evaluations or post-bid negotiations that could compromise fairness. The PBB process is divided into three structured phases:

1. **Public Benchmarking Phase:** The process begins with the public entity preparing an internal bid for the service contract in question. This bid must include full cost accounting, including administrative overhead, maintenance expenses, and risk factors typically accounted for in private-sector bids. Also, the cost of preparing the public bid should be accounted for to establish an accurate and comparable benchmark. Once the public bid is ready, a third-party audit is conducted to validate cost estimates, feasibility, and the overall integrity of the public bid and to ensure accuracy and fairness. Specifically, the audit checks whether the benchmark is artificially low or high, preventing distortions in the competitive bidding process. Once verified, the public bid is formally set as the benchmark against which private firms will compete.
2. **Competitive Bidding Phase:** Once the public benchmark is established, private firms are invited to submit competitive bids, with full access to the public bid and its details as a reference. Any questions or need for clarification from private firms can be addressed by the procurement team of the owner and the third-party audit firm.
3. **Selection Phase:** The final phase involves evaluating all submitted bids against the public benchmark. Similar to the traditional low-bid procurement, the lowest responsible bid wins the contract. However, if the lowest private bid does not outperform the public bid in terms of cost, the contract remains with the public entity. This ensures that the public sector retains control over service delivery only when it is truly the most efficient option, while still providing opportunities for private firms to contribute innovation and efficiency.

The PBB model incorporates several critical features designed to balance fairness, efficiency, and competition in public infrastructure procurement:

**Transparency:** One of the most significant advantages of PBB is its full transparency in the procurement process. Unlike MPPC, where private firms may be unaware of how public bids are structured, PBB discloses the public bid upfront, giving private firms a clear reference point. This eliminates concerns about hidden costs, unequal cost allocations, and bid manipulation, creating a level playing field for all participants.

**Fair Competition:** By removing direct competition between public and private bidders, PBB avoids many of the fairness issues associated with MPPC. Public entities do not need to “defend” their service provision against private-sector challengers; instead, they serve as the baseline for competition. This structure reduces conflicts of interest while still encouraging public-sector efficiency improvements, as agencies must submit competitive internal bids.

**Third-Party Audit:** A key safeguard in the PBB process is the requirement for a third-party audit of the public benchmark bid. This ensures that the public bid is neither artificially inflated nor underestimated, reducing concerns about bid manipulation. The audit process also increases trust and confidence among private firms, as they can be assured that the competition is based on an accurate and verified cost estimate. Additionally, it mitigates risks of post-bid cost overruns by ensuring that all necessary operational and maintenance expenses are accounted for in the benchmark bid.

#### **4. COMPARATIVE ANALYSIS OF PUBLIC BID BENCHMARKING AND OTHER PROCUREMENT MODELS**

The procurement of infrastructure services, particularly for operations and maintenance, follows different models, each with distinct advantages and limitations. The following table provides a comparative analysis of the proposed public bid benchmarking (PBB) model against the formal managed public-private competition (MPPC), traditional private-only procurement (TP), and in-house (IH) delivery models based on key procurement factors. As explained in the previous section and presented in Table 1, the PBB model addresses major shortcomings of MPPC mainly by leveling the playing field for private firms and encouraging market participation. PBB promotes efficiency improvements within the public sector by requiring agencies to refine their internal service delivery before submitting a benchmark bid. In contrast, in-house service delivery without competition lacks external market pressure, leading to limited innovation and inefficiency over time. Public entities operating without competitive benchmarks may fail to identify cost-saving opportunities and lack accountability for performance improvements.

#### **5. IMPLEMENTATION CONSIDERATIONS**

There are some considerations in the implementation of the proposed PBB model. One key concern is public bid cost distortion, where a public agency deliberately underestimates its internal bid in an attempt to secure the contract or discourage private-sector competition. This can create an unfair competitive advantage by excluding legitimate cost components such as risk contingencies, insurance, and performance bonds—costs that private firms must include. PBB addresses this issue through independent third-party audits. This, however, adds to the overall procurement cost and duration. Additionally, legal and regulatory barriers also pose a challenge, as some procurement laws may not allow a pre-set public benchmark to be disclosed before competitive bidding begins. In certain jurisdictions, transparency requirements and competition laws may need to be adjusted to accommodate PBB’s approach. Advocating for regulatory adjustments will be essential for the broader adoption of PBB, ensuring that public agencies can implement it within existing legal frameworks while maintaining the integrity of the procurement process. Finally, there may be concern over the credibility of the public sector bid in managed competitions. Public bidders do not face the same financial penalties as private firms if they fail to meet their bid commitments. Private firms are bound to a fixed price and a date certain in their contract and must cover cost overruns through corporate assets or reduced profits. On the other hand, public agencies typically rely on budget

reallocations, meaning taxpayers ultimately absorb the excess costs. Unless there is a mechanism that ties performance to public sector salaries or continued employment, there is minimal downside for public bidders to submit a rock-bottom bid. To mitigate this, PBB could incorporate provisions for loss sharing (as well as gainsharing) for public bidders, apply severe sanctions for nonperformance, or require a contingency reserve fund for public bids, similar to risk allocation in private contracts (Eggers 1998).

Table 1: Comparison of Public Bid Benchmarking and Other Procurement Models Across Key Procurement Factors

Procurement Factor	PBB	MPPC	TP	IH
Competition Type	Indirect competition; public bid as a benchmark	Direct public and private competition	Competition only among private bidders	No competition; public agency retains control
Bid Transparency	High; public bid disclosed upfront	Moderate; public bid components may be different	Moderate to high; clear process but no public-sector reference bid	Low; no external cost comparison
Information Symmetry Between Public & Private	High; all bidders have access to public bid	Low; public agency often has an informational advantage	Not applicable	Not applicable
Market Participation	Moderate to high; private firms encouraged to compete with public benchmark	Low to moderate; private firms often discouraged by perceived bias	High; fully open to private firms	None; no external competition
Potential Cost Savings	High; private firms must outperform public benchmark	Moderate; cost savings depend on competition fairness and private participation	Moderate to high; depends on level of private competition	Low to moderate; depends on internal efficiency and whether it is compared against private prices
Public-Sector Efficiency Gains	High; public agencies refine service delivery before bidding	High; efficiency depends on competition structure	None; public sector is not involved in competition	Low; no competitive pressure
Fairness to Private Firms	High; public bid serves as a neutral reference point	Low; direct competition often favors public entity	High; private firms compete under standardized conditions	Not applicable
Administrative Complexity, Cost, & Duration	High; requires public bid preparation and auditing	Moderate to high; requires dual internal teams (procurement & bidding)	Low to moderate; standard procurement process	Low; no formal bidding process

## 6. CONCLUSION

Governments worldwide face increasing budget constraints and growing demands for high-quality public services. The procurement of infrastructure services plays a crucial role in determining cost efficiency, service quality, and long-term sustainability. While managed competition was designed to introduce competition into public service delivery, its effectiveness has been challenged by fairness concerns, information asymmetry, and structural advantages favoring public-sector bidders. The Charlotte-Mecklenburg Utility Department case highlights these limitations, demonstrating how disparities in cost allocation, bid transparency, and financial requirements can distort competition and discourage future private-sector participation. Addressing these shortcomings requires a more structured and transparent procurement model that fosters competition without compromising fairness.

Our paper contributes to the infrastructure procurement literature by introducing a public bid benchmarking model as a novel alternative to managed competition, traditional procurement, and in-house service delivery. Rather than placing public and private entities in direct competition, PBB establishes the public bid as a benchmark against which private firms must demonstrate cost savings. By incorporating third-party audits and transparent bid disclosure, PBB promotes competitive bidding while maintaining cost accountability and market participation. The PBB model addresses the need for a structured, fair, and transparent approach to managed competition, encouraging public agencies and private firms to compete and operate under clearly defined parameters.

While the PBB model is conceptually robust, its practical effectiveness must be tested through empirical research. A future phase of this study will examine the adoption of the PBB model through a comprehensive survey of both public and private-sector practitioners involved in infrastructure procurement, in particular those with managed competition experience. The survey responses can provide insights on the perceived fairness, feasibility, and challenges of PBB from government agencies, private contractors, and procurement specialists, and help refine the model to address industry concerns and develop policy recommendations that support its adoption in real-world procurement settings. In addition to the survey, future work may include simulation-based comparisons and pilot projects as tools to validate the PBB model's applicability and performance. Also, most procurement models tend to prioritize lowest-cost bids, which can result in long-term inefficiencies and compromises in service quality. Shifting the focus from cost to value enables a multi-dimensional evaluation framework that considers factors beyond price alone. For example, including innovation as a selection criterion as demonstrated in the procurement of California State Route 91 (Fisher & Babbar 1996) can incentivize bidders to propose new technologies or management strategies that enhance efficiency and performance. However, incorporating such value-based criteria may further complicate the already complex process of MPPC. Future work could explore how value-based evaluation, when integrated with PBB model, affects procurement outcomes and whether it can be implemented without compromising fairness or transparency. Finally, future research can establish the services and sectors best suited to MPPC.

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