PORT AUTHORITY NY NJ

Green Public Procurement (GPP)

Clean Construction Pilot

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Amy Cole

AIR LAND RAIL SEA

Agenda

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Background	Key Characteristics & Considerations	GPP Bid Sheet	GPP Pilot	What's Next

Background

Green Public Procurement (GPP)

Environmental Product Declarations (EPDs)

Potential Strategies

“Green Public Procurement”(GPP): What is it?

- **First, we asked the industry to meet our new sustainable concrete standard.**

  2023 -"*PORT AUTHORITY ADOPTS NEW INDUSTRY-LEADING, SUSTAINABLE CONCRETE STANDARDS (panynj.gov)"*

- **Now we are asking the industry if they can beat a sustainable construction material standard. But why would they?**

- ***GPP is an incentive incorporated into the selection process to allow for a bidder who proposes "greener" construction materials than specified to get an adjustment of their bid amount up to a Port Authority "Maximum Willingness to Pay".***

- **Has anybody done this before?** GPP for construction works is common in northern Europe, but no public transportation entity in the US has executed a GPP—we are believed to be the first.

- **Has the Port Authority used sustainable criteria in a selection process before?** MANY TIMES. Yes – JFK Roadways - Sustainability through a Sustainable Design Plan under Management Approach. JFK Developer Selection Process had Sustainability as a criteria. World Trade Center Chiller Plant had an "Energy Cost Adjustment". MTBT Ramps and Staging Storage Facility– Sustainable Construction Practices under Management Approach.

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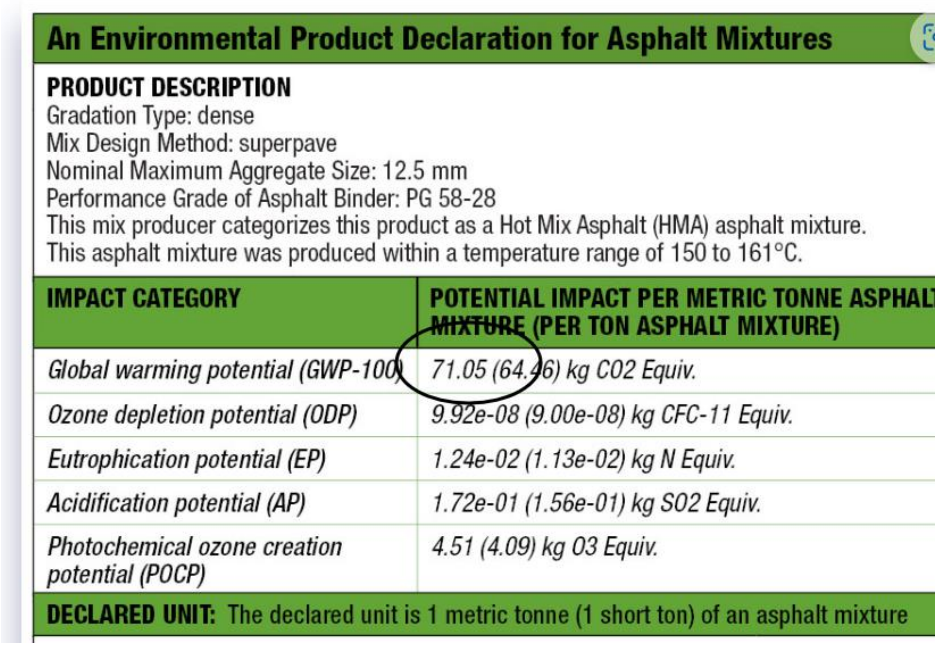
What is An EPD

- **What is an EPD?** An Environmental Product Declaration is essentially a third-party verified nutrition label for materials, available commonly now for concrete and asphalt.
- EPDs communicate a material's environmental impact throughout part of its life cycle. This includes greenhouse gas (GHG) emissions determined by a material's "Global Warming Potential" (GWP).
- The EPD will provide a single number by which the material can be evaluated against others – in this case we are looking at the GWP.



An Environmental Product Declaration for Asphalt Mixtures

PRODUCT DESCRIPTION
Gradation Type: dense
Mix Design Method: superpave
Nominal Maximum Aggregate Size: 12.5 mm
Performance Grade of Asphalt Binder: PG 58-28
This mix producer categorizes this product as a Hot Mix Asphalt (HMA) asphalt mixture.
This asphalt mixture was produced within a temperature range of 150 to 161°C.

IMPACT CATEGORY	POTENTIAL IMPACT PER METRIC TONNE ASPHALT MIXTURE (PER TON ASPHALT MIXTURE)
Global warming potential (GWP-100)	*71.05 (64.46) kg CO2 Equiv.*
Ozone depletion potential (ODP)	*9.92e-08 (9.00e-08) kg CFC-11 Equiv.*
Eutrophication potential (EP)	*1.24e-02 (1.13e-02) kg N Equiv.*
Acidification potential (AP)	*1.72e-01 (1.56e-01) kg SO2 Equiv.*
Photochemical ozone creation potential (POCP)	*4.51 (4.09) kg O3 Equiv.*

DECLARED UNIT: The declared unit is 1 metric tonne (1 short ton) of an asphalt mixture

Potential PANYNJ GPP Strategies

Element	Strategy: Data *Collect data to build a foundation for future GPP*	Strategy: Bidder Differentiation *Differentiate bidders by establishing "fictive price" (actual bid – GWP reduction credit)*	Strategy: Post-Bid GWP Reduction *Incentivize reductions after award*
Third-Party Verification of Material GWP *Environmental Product Declarations (EPDs)*	• Collect during construction for all "significant" material streams	• Require at bidding for "core" material(s) • Collect during construction for all core and significant material streams	• Require for all incentive bonus claims
Performance Baseline *Minimum acceptable GWP*	• None	• Comparative among bidders (established by highest GWP, per material)	• Established by agency based on GWP "estimate"
Carbon Valuation *Value of GWP reductions*	• None	• Percentage-based (% reduction over baseline * estimated value of material stream)	• Based on value/unit of GWP
Maximum Willingness to Pay *Agency-determined maximum*	• None	• Maximum credit (premium) established at bid	• Maximum bonus specified at bid
Compliance *Holding contractors accountable*	• EPDs required as part of payment terms	• Penalty for failure to achieve GWP bid value (% based)	• No bonus paid if contractor fails to reduce GWP beyond agency targets

Mix, match, and/or modify based on project, program, agency, or industry needs

Key Characteristics & Considerations

GPP Pilot Project Characteristics

Ideal (not necessarily requirements)

- **Simple scope:** Single-discipline focused (e.g., a paving job, sidewalks or pads, etc.) and typical (a project type with which we have a lot of experience)
- **Concrete- and/or asphalt-centric:** Because they have the most mature 3rd-party verifications (EPDs), ideally concrete and/or asphalt are the dominant material streams
- **Procurement priority:** Project team desires Procurement focus to accelerate process.
- **Robust bidder pool:** We expect responses from three (3) or more qualified bidders and anticipated bidders are reasonably sophisticated.

Key Considerations

- **Is contractor participation mandatory?** NO. Contractors may opt-in to seek an advantage in the comparison of bids, but they are welcome to bid regardless of whether they participate.
- **What happens if the winning bidder falls short of its commitments?** To ensure fairness, the PA would recover funds equivalent to the delta of committed performance and actual performance plus 10%.
- **How will we support a successful response?** Especially given that this is a Small Business Enterprise (SBE) procurement, Engineering and Procurement will engage firms through a detailed pre-bid meeting and other support.
- **What's the cost to the PA?** Minimal. A modest "maximum willingness to pay" will be established for candidate pilots, subject to approvals. The GWB pilot project's price preference is capped at 1% of TPC.
- **What's the best/worst bid outcome?** Best**:** alignment between the low bid and best GHG performance. Worst**:** No bidders choose to opt-in (proceeds as a regular procurement).

GPP Bid Sheet

How will we calculate the low bid?

- **We have provided a pre-populated and locked calculator so bidders will be able to calculate their adjustment.**
- Participating bidders only need to insert the name of their supplier plant and the GWP of the asphalt mix from an EPD, and the net adjustment, if any, will be calculated.
- **A zero-dollar value is possible for bidders that don't opt to seek the Adjustment, or they provide EPDs with GWPs above the Target GWP.**

GWP ADJUSTMENT OF BID		
Target GWP (kg/MT)	64	
Max GWP Adjustment	$ 100,000	
MATERIAL SUMMARY		
Materials	**Material Subtype**	**Asphalt Mix Ratio**
Asphalt	Mix PA-5 (PG 76-22)	64%
Asphalt	Plant Mix Macadam	36%
	Total	**100%**
Fill in the Yellow hightlighted fields		
BID ADJUSTMENT CALCULATION		
Name of Plant		**GWP (kg/MT)**
Mix PA-5 (PG 76-22)		
Plant ABC		62
Plant Mix Macadam		
Plant ABC		42
Blended GWP	**GWP Reduction**	**GWP ADJUSTMENT (Dollars)**
54.800	**16.8%**	**$ 68,857**

Key Terms

- **Target GWP** taken from FHWA's *Low Carbon Transportation Materials Grants Program Thresholds* ***Average GWP***
- **Max GWP Adjustment** is 1% of Total Project Cost (TPC)
- **Asphalt Mix Ratio** based on estimated quantities of materials and is used for the **Blended GWP** value
  - Ex. GWP*Ratio+GWP*Ratio
  - 62 kg/MT * 64% + 42 kg/MT * 36% = 55 KG/MT
- **GWP Reduction** is the % difference between Blended GWP and Target GWP
- **GWP Adjustment ($)** is the adjustment amount of the potential bid

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GPP Pilot

Overview

How Did It Work?

How Did We Do?

GPP Pilot Overview

- **Why are we pursuing GPP?** GPP addresses Scope 3 GHG emissions from construction. As a complement to stricter material specifications, it offers a market-based mechanism for reducing Greenhouse Gas (GHG) emissions, in alignment with the PA's Net Zero commitment and Clean Construction program.

- **What was the first pilot?** A pavement rehabilitation job at the George Washington Bridge (recent bid). The estimated Total Project Cost is about $10 million. The project is designated for SBE participation. The Tunnels, Bridges & Terminals (TB&T) Department supported the use of GPP for this project.

GPP Pilot: How Did it Work?

- Bidders were invited (optionally) to seek a "Sustainable Materials" adjustment (up to 1% of TPC) by committing to reducing the carbon intensity of asphalt supplied to the job.
- PA established a target GWP for asphalt based on federal thresholds.
- Participating bidders had to beat the target to receive an adjustment.
- The adjustment was considered only in the comparison of bids and did NOT affect the contract price.

Contract Price

This is what the selected bidder gets paid (sum of classified and unclassified items)

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Sustainable Materials Adjustment

A calculated value based on the bidder's commitment to reducing the carbon intensity of asphalt

(Minimum $0 - Maximum $100k)

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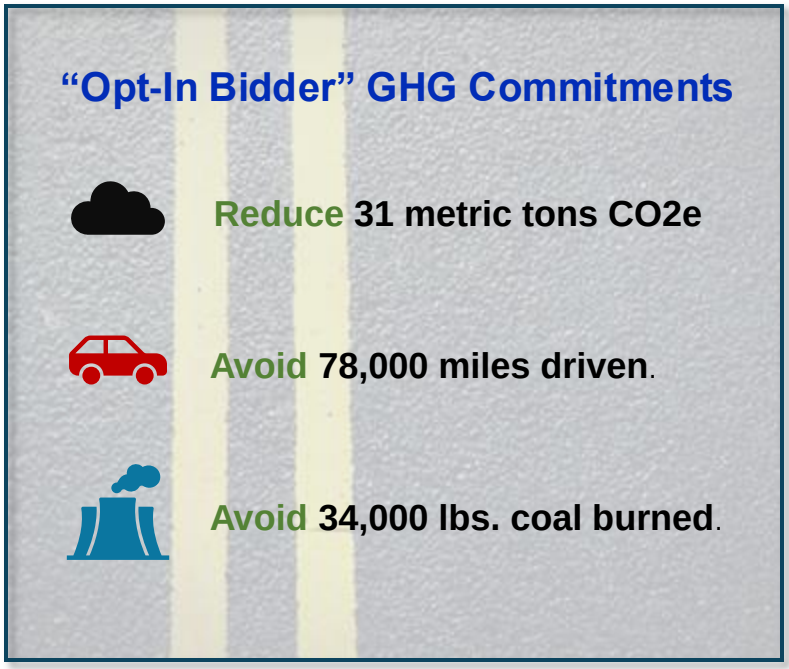
Adjusted Bid Price

The value used for selecting the contractor

GPP Pilot: How Did We Do?

- **Five (5) bidders submitted**. The low bid won.
- Two bidders "opted in", one **receiving a 2% bid adjustment** (the GWP Adjustment did not change the bid result).
- The GWP performance commitments made by opt-in bidders would have resulted in up to an estimated **GHG emissions reduction of 30,600 kg of CO2e (~15%).**
- **This is a promising outcome** that we can build on.



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What’s Next

What's Next?

- **Debrief contactors [ONGOING].** Why did/didn't you opt-in? For opt-outs: Did you attempt to source lower-carbon asphalt? Would a larger adjustment have changed your decision (how large)? Were the intent and process clear?

- **Try again. And again.** Target low-risk/high-reward project opportunities. Continue to tweak/refine our GPP strategy and actively engage the contractor and supplier communities.

- **Continue updating material specifications.** Follow the successful formula established by our groundbreaking concrete specification by:
  1. Establishing minimum GHG performance targets (e.g., Global Warming Potential limits)
  2. Requiring Environmental Product Declarations (e.g., mandatory for concrete as of 1/1/25)
  3. Add flexibility, where possible, to provide more reduction pathways (e.g., increased use of RAP and/or WMA)

  NEXT UP: Asphalt

Broader Benefits

- **Environmental:** As a complement to our existing “Clean Construction” toolbox, GPP is a procurement mechanism to harness market competition to advance environmental goals aligned with Net Zero.

- **Reputational:** Being first comes with big reputational benefits.

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Thank You!

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