Baltimore City Department of Public Works

FY 2023 Capital Improvement Program Presentation, Bureau of Solid Waste

January 2022

Department of Public Works

Mission

We support the health, environment, and economy of our City and the region by providing customers with safe drinking water and keeping neighborhoods and waterways clean.

Department of Public Works

Vision

To be a strong proponent and protector of our environment and the health and vitality of our communities.

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Office of the Director - Organizational Chart

Director
Jason W. Mitchell

Deputy Director
Matthew W. Garbark

Chief Administrative Officer
Julie Day

Chief of Staff
Audree Jones-Taylor

Acting Bureau Head-Solid Waste
Yvonne Moore-Jackson

Bureau Head-Water and Wastewater
Yosef Kebede

Acting Chief OEEJ
Marco Merrick

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Long Term Capital Needs

Project	Appropriation (Millions)	FY Start
[517-024] Rail Transfer Station	$25.5	FY 23
[517-012] Quarantine Road Landfill Expansion	$21.7	FY 23
[517-500] Renovation of Solid Waste Facilities	$10.8	FY 23
[517-031] Aerated Static Pile Compost Facility	$16.3	Future
[517-010] Eastside Transfer Station	$11.4	FY 23
[517-034] Inner Harbor Facility Yard Site Acquisition	$12.0	FY 24
[517-033] Mandatory QRL Regulatory Compliance Projects	$2.1	FY 23
[517-025] Mini Recycling Materials Recycling Facility (Mini MRFs)	$16.3	Future
Total Funding Needed:	**$116.1**	

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FY23 CIP Total Funding Requests

Priority	Program	($ in Millions)
1	[517-012] Quarantine Road Landfill Expansion	$3.0
2	[517-033] Mandatory QRL Regulatory Compliance Projects	$2.1
3	[517-500] Renovation of Solid Waste Facilities	$10.8
4	[517-010] Eastside Transfer Station	$1.0
5	[517-500] Rail Transfer Station	$0.5
	Total:	**$17.4**

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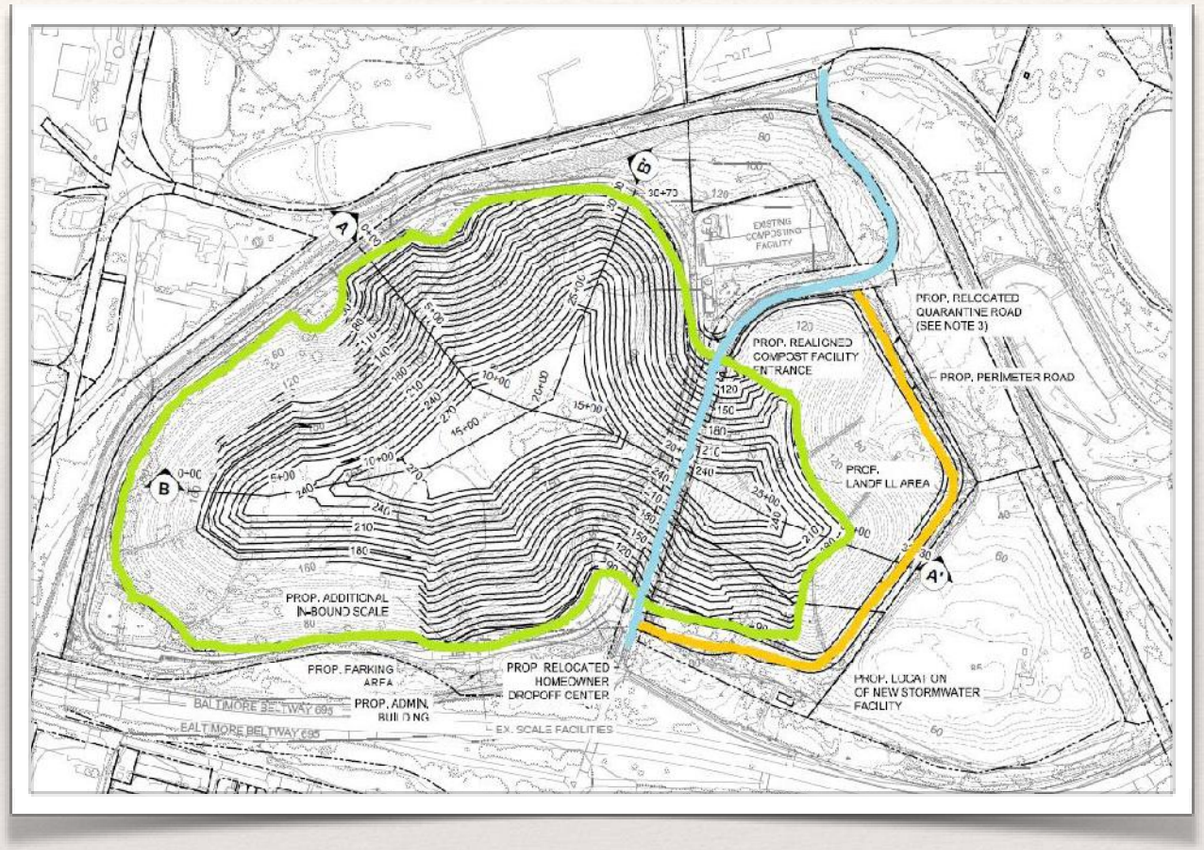
Recent CIP Accomplishments

- Approval of the Phase Two Hydrogeological Report from the Maryland Department of Environment. This approval provided the Bureau with the ability to move onto the Phase Three Engineering Plans and Specifications Report.
- Task proposal was submitted to perform a siting and feasibility analysis on inactive and closed landfills. This closed landfill assessment will assist the City in evaluating each site for future use as a transfer station, composting facility, or mini-MRF.
- Task proposal and contract between the Northeast Maryland Waste Disposal Authority was drafted to renovate solid waste facilities in accordance to OSHA requirements.
- Improvements were completed on the Quarantine Road Landfill's landfill gas collection well network, leachate collection system, and to the geotechnical landfill liner system.
- Engineering design and planning was completed and approved to upgrade the Quarantine Road Landfill's erosion and sediment control facilities and structures.

Quarantine Road Landfill Expansion

- Quarantine Road Landfill (QRL) is expected to reach full capacity by the end of FY 2027.
- The City plans to increase the existing landfill capacity by expanding QRL over the existing Quarantine Road and over a portion of the Millennium Landfill. The expansion will increase QRL's capacity to approximately 2048.
- The City is currently preparing the Phase 3 Engineering Plans and Specifications Report for submittal to the Maryland Department of Environment.
- Current expansion costs are $85.5M, but resource and supply chain issues will likely influence the final construction cost.
- The initial expansion and first cell construction will begin in FY 24 and finish in FY 26.

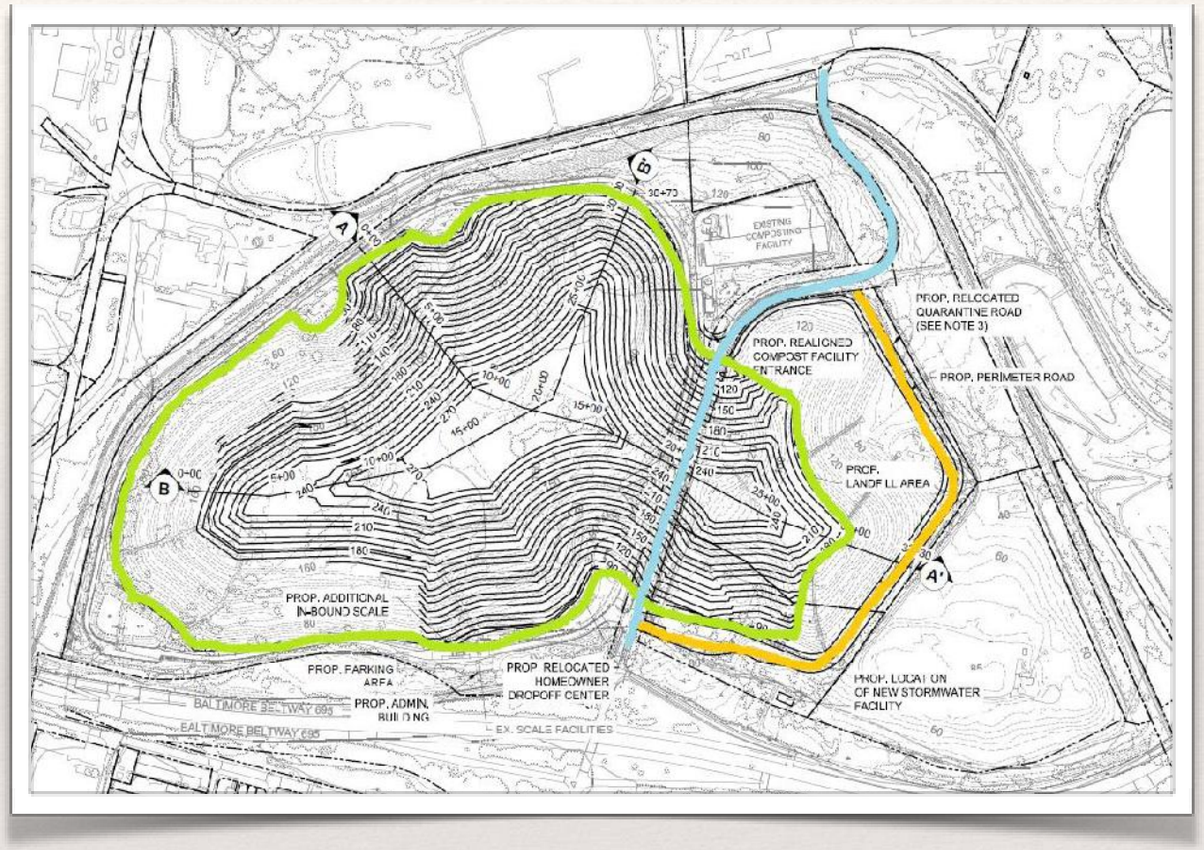


Legend

Expansion Area	Original Road	Realigned Road

Quarantine Road Relocation

- The QRL expansion involves filling over the existing Quarantine Road to obtain additional capacity.
- Quarantine Road is a two-lane city street that separates the QRL and the Millennium Landfill by approximately 36 feet wide and within a 120-foot wide right-of-way.
- Quarantine Road will need to be relocated to allow other properties to maintain access to their facilities.
- Utilities, like the water main, gas lines, and underground and overhead power lines, will also need to be relocated.
- DPW is collaborating with DOP, DOT and BGE to ensure all utilities and road design constraints are met.
- Construction bid for road relocation will begin in FY 2023.



Legend

Expansion Area	Original Road	Realigned Road

Mandatory QRL Regulatory Compliance Projects

Landfill gas well with grading repaired to prevent standing water

Installation of replacement pipe for the Intermediate Pumping Station Forcemain

The landfill's liner was damaged in 2018. The liner was replaced

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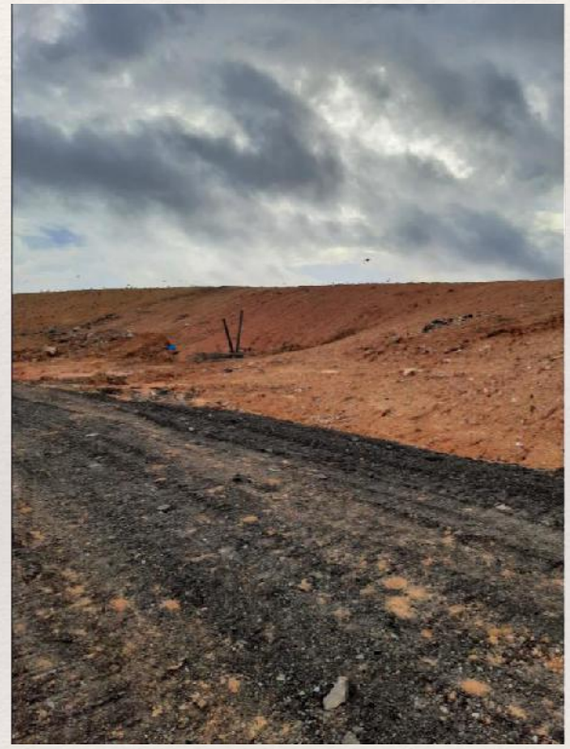
Mandatory QRL Regulatory Compliance Projects

Leachate issues are a continuous issue in landfills that can result in contaminated stormwater discharge if they are not immediately addressed. The Bureau of Solid Waste requires CIP funding to procure an experienced on-call contractor to provide emergency construction services.

Photo of leachate seep documented during the latest September 2021 MDE inspection

Leachate trench seep created by Kinsley Construction crews. The trench was created to allow leachate to drain to the bottom of the landfill.

Leachate seep trench with drainage stones filled in.



Leachate seep repaired and covered in dirt. Standing water and leachate are no longer visible.

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Mandatory QRL Regulatory Compliance Projects

Photo of exposed waste and inadequate daily and intermediate cover.

Side slopes repaired and regraded by a dozer.

Side slopes were hydroseeded and covered with straw mulch as part of a stabilization effort on October 2021.

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Mandatory QRL Regulatory Compliance Projects

Source: Photographs from November 2020 Maryland Department of Environment's site inspection

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Renovation of Solid Waste Facilities

Facilities for renovation include:

1. **Special Services Facility**
   111 Kane Street

2. **Western Sanitation Yard**
   701 Reedbird Ave

3. **Eastern Sanitation Yard**
   6101 Bowleys Lane

4. **Sisson Street Drop-Off Center**
   2840 Sisson Street

5. **Quarantine Road Landfill**
   6100 Quarantine Road

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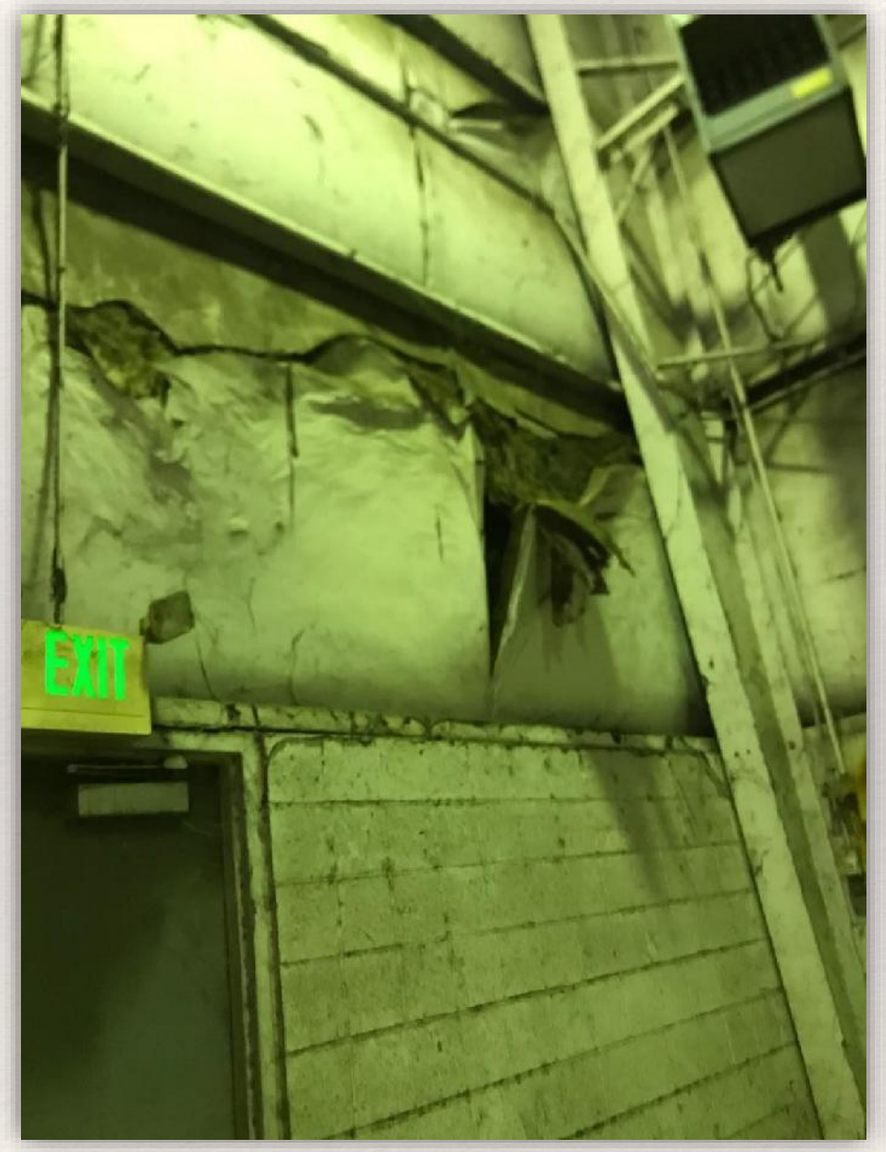
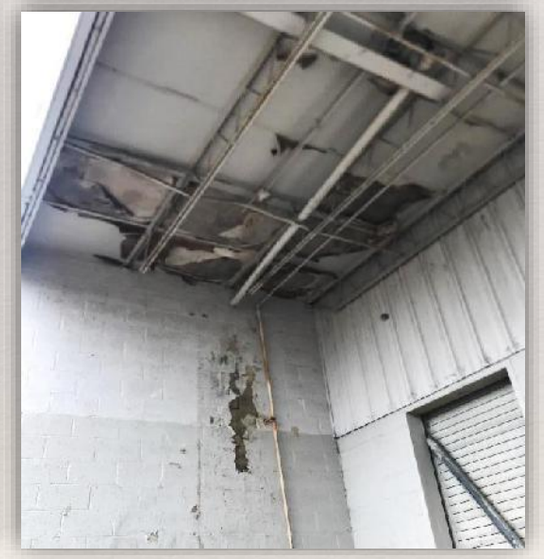
Renovation of Solid Waste Facilities
Special Services Facility – 111 Kane Street





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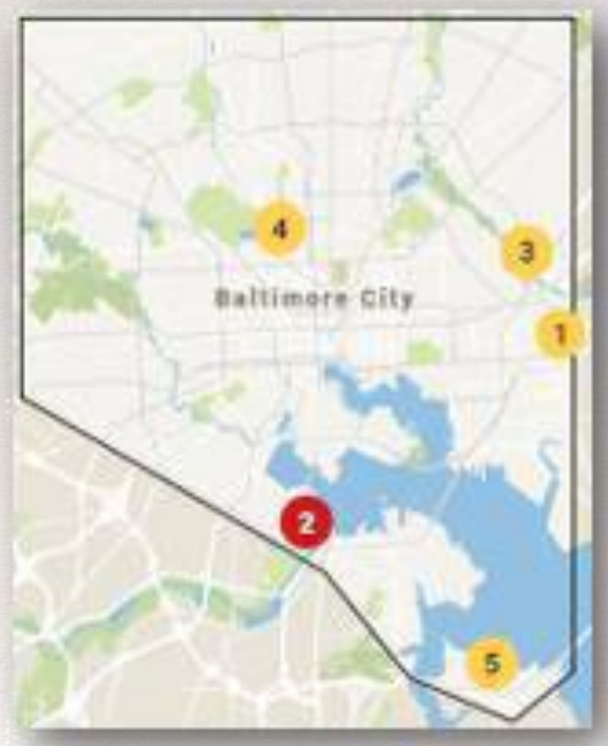
Renovation of Solid Waste Facilities
Western Sanitation Yard – 701 Reedbird Avenue



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Renovation of Solid Waste Facilities
Eastern Sanitation Yard – 6101 Bowleys Lane

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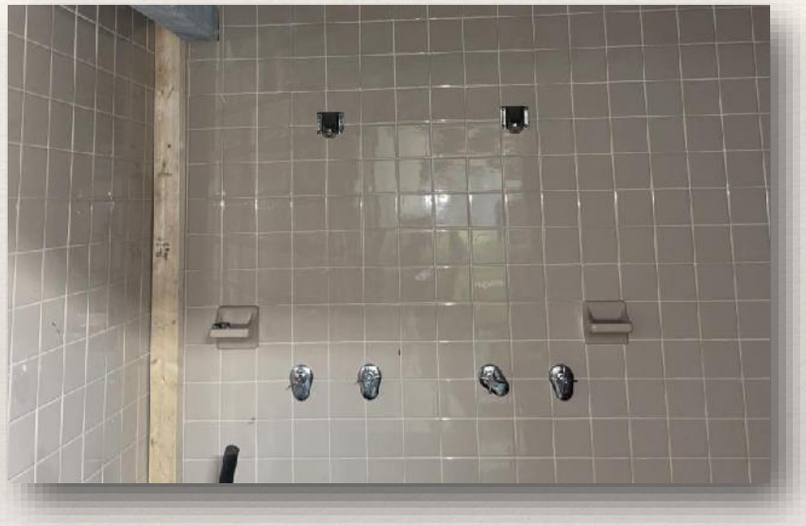
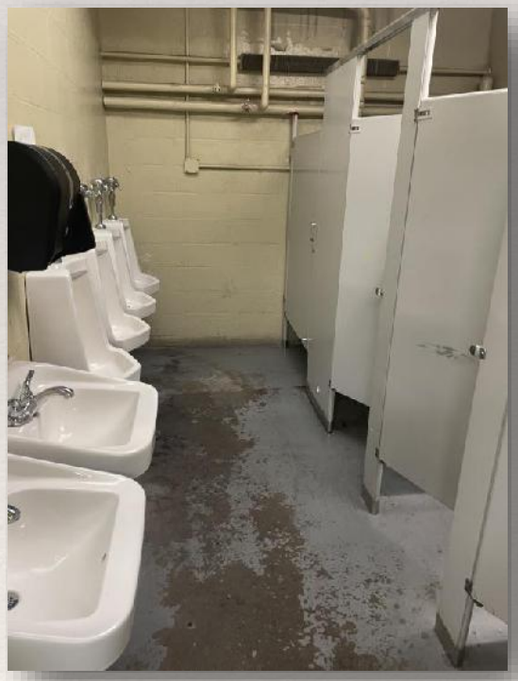
Renovation of Solid Waste Facilities
Sisson Street Drop-Off – 2840 Sisson Street





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Renovation of Solid Waste Facilities
Quarantine Road Landfill – 6100 Quarantine Road

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"Less Waste, Better Baltimore" Master Plan

- A planning process completed in 2020 to help the City improve efficiencies and increase the capacity of the Bureau's future operations, both short and long-term.
- Recommendations for the final "Less Waste, Better Baltimore" plan were based upon technical plans, stakeholder input, and research conducted during the planning process.
- These projects will have annual disposal savings relative to disposal at QRL.
- Recommended projects include:
  - Eastside Transfer Station
  - Rail Transfer Station

Eastside Transfer Station

- The distribution of Citywide recycling carts is expected to increase recycling participation rates, which will have negative consequences for operations and small haulers
- Currently, recycling operations are completely disrupted when the Northwest Transfer Station needs to close for repairs. The creation of a second transfer station would create redundancy in the system and remove all operational necessity from the Northwest Transfer Station, ensuring that operations may continue without much disturbance.
- The Less Waste, Better Baltimore Plan recommends constructing a second transfer station in East Baltimore to provide the following benefits:
  - Increased operational efficiency and productivity by allowing crews to dispose waste and return to their routes faster
  - Increased accessibility for small haulers by adding a third small hauler program, and the potential to decrease illegal dumping;
  - Modernized convenience drop-off center

Conceptual Layout of New Truck Transfer Facility at Bowleys Lane

Estimated Capital Cost: $11.4M

Rail Transfer Station

- The Less Waste, Better Baltimore Plan recommends constructing a rail transfer station to transfer the waste outside of the city when the landfill reaches capacity. In the interim, it would be used as a contingency waste disposal option in the event the expanded Quarantine Road Landfill volume capacity becomes limited.
- A rail transfer station would be constructed along a rail spur to allow for containerization and rail shipment of waste to multiple regional landfills or even more distant facilities as needed.
- Rail transfer would provide a more efficient, cost-effective, and environmentally friendly service than the Northwest Transfer Station or Northeast Transfer Station.

Screenshot of Waste Management's Annapolis Junction Transfer Station in Jessup, MD, showing Rail Spur Connection to Main Railroad

Estimated Capital Cost: $81.5M

Source: Google Earth

Conclusion

In the future, the Bureau hopes to receive capital funding for immediate needs as well as long-term capital needs. The completion of the Less Waste, Better Baltimore Plan recommended waste diversion and waste management strategies that will take time to assume full implementation. In the meantime, the City's waste stream will continue to grow at an annual rate of 0.7% per year based on historical waste generation models. Investment in different strategies is necessary to provide the Department with the flexibility to manage the City's future waste needs.

The proposed FY 23 capital projects will support the Bureau's ability to:

- Continue to provide waste and recycling collection and disposal services;
- Maintain regulatory compliance with State and Federal requirements;
- Create a healthy and safe work environment for employees; and
- Pursue waste diversion initiatives

Questions?