

Northgate Park

Soil Contamination Remediation Update

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The NC Pre-Regulatory Landfill (PRLF) Program

Program Background

- Before 1983, solid & hazardous waste regulations were nearly non-existent
- The NC General Assembly created the PRLF Program in 2007 to identify, assess, and remediate pre-1983 landfill sites
- Uses a risk-based approach: cap contamination with clean soil and record land-use restrictions
- \$1/ton of a statewide disposal tax funds the program
- 688 PRLFs identified statewide; 43 fully remediated to date
- Average remediation cost: ~\$1.9M per site
- NCDEQ selects and funds the approved remediation method

The 5 Durham Parks in the Program

East End Park

Larger waste footprint

East Durham Park

Larger waste footprint

Lyon Park

Moderate extent

Walltown Park

Significant stream bank impacts

Northgate Park

★ *Smallest contamination footprint*

Northgate Park: What Was Found

The Source: A Pre-Regulatory Landfill

- Northgate Park sits atop a pre-1983 municipal solid waste incinerator landfill — buried waste from the mid-20th century
- Waste identified as incinerator ash, ceramic, brick fragments, glass — typical of incinerated municipal solid waste
- Lead is the primary contaminant of concern, originating from incinerated household waste (paint, metals, etc.)
- USEPA & NCDEQ health-based screening level for lead in soil: 200 mg/kg (ppm)
- Elevated lead levels confirmed in subgrade soil beneath playground surfaces
- No volatile organic compounds (VOCs) detected above detection limits during field screening
- Air monitoring during all investigation activities: no lead exceedances detected

Key Site Data

1.79 acres
total waste footprint

0 – 1.5 ft
typical waste depth

200 mg/kg
NCDEQ lead screening level exceeded in playground soil

Investigation Timeline: What Has Been Done

2022	Initial Testing	Duke University & City of Durham DPR identify soil concerns at playgrounds; internal DPR communications document awareness
2023	PRLF Program Begins	NCDEQ formally engages all 5 Durham parks under the PRLF Program; S&ME engaged as environmental contractor
Jun 2024	Playground Sampling	S&ME samples existing playground mulch/gravel; lead levels characterized for disposal; preliminary cost estimates issued (~\$2.19M for Northgate)
Sep 2024	Playground Materials Removed	178.52 tons of mulch, gravel & soil removed from Northgate playgrounds; disposed at certified landfill; stone cover placed over geotextile fabric
Nov 2024	Waste Delineation Borings	110 soil borings installed by Geoprobe across investigation area to map horizontal extent and depth of buried waste
Jan–Feb 2025	Test Pits & Additional Borings	7 excavator test pits to confirm waste boundaries; 2 additional hand borings in limited-access areas; waste delineation confirmed
Mar 2025	Waste Delineation Report	S&ME submits final waste delineation report to NCDEQ: ~1.79 acres around playground area, waste 0–1.5 ft deep (typical), max 5 ft at 2 locations
2025–2026	Final RI Sampling Rounds	3rd and 4th round sampling underway; includes groundwater, landfill gas, additional soil analysis to complete Remedial Investigation

Where Is the Waste? — Delineation Results (Not Finalized)

Key Delineation Findings

- Waste confined to the area surrounding the three playgrounds — does NOT extend into the broader park or across Acadia St
- Waste not identified in the northern or southern portions of Northgate Park
- Waste not detected near Ellerbee Creek or in the stream buffer area
- Typical waste composition: incinerator ash with fragments of ceramic, glass, and brick
- Typical depth: 0–1.5 ft below ground surface across most of the footprint
- Only 2 borings (WD-33, WD-63) showed waste extending to maximum 5 ft bgs
- No VOCs detected above reporting limits during investigation activities
- Air lead monitoring during all drilling & excavation: no exceedances

Site Statistics

1.79 acres
delineated waste area

3 of 14
composite soil samples >200 mg/kg lead

Playground Area
waste confined to playground vicinity only

0 – 1.5 ft
typical waste depth (most of site)

Where We Are Now — Spring 2026 Status

Update from City of Durham DPR — March 11, 2026

NCDEQ now anticipates final Remedial Investigation Summary Reports ready for public release by mid-April 2026 (originally March 2026)

Current Sampling Status

- 3rd-round sampling reports expected in NCDEQ's hands by end of this week (mid-March 2026)
- 4th-round sampling reports expected by end of March 2026
- NCDEQ requires 1–2 weeks following final reports for risk calculation verification and internal review
- Final RI Summary Reports targeted: mid-April 2026
- Reports will explain contamination, migration pathways, risks, future land use & any land-use restrictions

What the Reports Will Cover

- Full delineation of contamination extent, type, and concentrations
- Assessment of migration pathways (soil → groundwater → streams)
- Human health and ecological risk evaluation
- Land-use restrictions (if any) needed for future park use
- Information used to design the Remedial Action Plan (RAP)
- City has \$12M CIP funding available to act promptly once reports arrive

The Remedial Action Plan (RAP) & Your Opportunity to Participate

What Is a Remedial Action Plan?

- A site-specific, formal document that details the strategy and engineering approach to manage contamination to NCDEQ standards
- Developed by NCDEQ's engineering contractor (S&ME) based on completed Remedial Investigation data
- Specifies: what will be removed or contained, how, using what materials, to what standards
- Includes any land-use restrictions (LURs) required for the chosen remedy
- Development timeline: estimated 4–12 months following RI Summary Reports
- Will determine when construction funding can be obligated

30-Day Public Comment Period

- Under NCGS 130A-310.9 and 15A NCAC 13C .0306, NCDEQ is required to issue a 30-day public comment period before finalizing the RAP
- NCDEQ prepares a public notice and mails it to interested parties
- The public may submit written comments on the proposed remediation approach
- The engineering contractor must formally respond to all public comments received
- This is your formal opportunity to weigh in — comments become part of the official record
- Comments must be substantive and technically grounded to influence the final RAP
- **Advocacy for more expensive options (e.g., full excavation) must identify a funding source — the State only funds its approved remedy**

Remediation Options: Side-by-Side Comparison

Criteria	Option 1: Cap & Cover	Option 2: Partial Removal + Cover	Option 3: Full Removal
Approach	Geotextile fabric + clean soil cover placed over contaminated areas in place	Excavate highest-risk zones; cover remainder with cap system	Excavate ALL contaminated waste and soil; backfill with clean material
State Funded?	✓ YES — PRLF program funds this option	X NO — City/other sources must fund the difference	X NO — City/other sources fund entirely
Approx. Cost (Northgate)	~\$2.2M (June 2024 preliminary estimate)	Higher — additional excavation, disposal & restoration costs	Substantially higher — full excavation, off-site disposal, full restoration
Waste Remains?	Yes, in place beneath cover + geotextile demarcation fabric	Partially — low-risk areas remain; high-risk areas removed	No — all contaminated material removed from site
Land-Use Restrictions (LURs)	Required over covered areas — no deep anchoring (playgrounds, trees, structures)	Required over any remaining covered areas	None — full unrestricted reuse possible
Park Flexibility After Remedy	Walking paths, benches, ball fields OK; structures/trees not in covered zone	Moderate — flexibility in excavated areas; limits over covered areas	Full flexibility — any use, any structure, any planting
Timeline	Fastest — RAP + permitting + construction	Moderate — additional design, permitting complexity	Longest — maximum excavation, disposal, and permitting time
Key Risk	Long-term institutional control required; cap integrity monitoring	Partial risk: requires clear delineation of removal vs. cover zones	Highest construction impact; off-site disposal classification uncertainty (hazardous vs. non-hazardous)

RISK-BASED REMEDIAL ACTION PLAN

a.k.a. "Containment & Cover" or Cap & Cover"

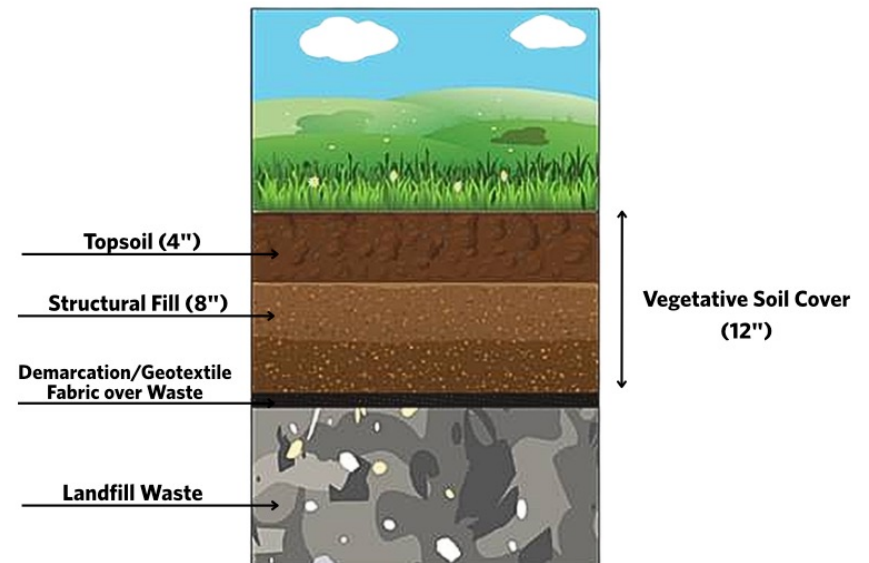
What is "Containment & Cover?"

NCDEQ's Pre-Regulatory Landfill Program will design and offer a "risk-based remedial action plan" for each park, which includes:

- Removal of trees within waste boundary
- Stream bank stabilization
- Covering the landfill with 12 inches of clean soil where needed
- Posting signs about the presence of buried waste

Unknowns

- Risk-based remedial action plans have not been completed by NCDEQ - testing continues until end of 2025
- When remediation will take place
- How much remediation will cost
- Options for preserving trees
- Community preference



Option 1: Cap & Cover System (State-Funded)

How the Cap & Cover System Works

6" Topsoil / Finished Grade

6" Clean Structural Backfill

Non-Woven Geotextile
Demarcation Fabric (orange)

Existing Contaminated Soil / Waste
(remains in place)

- Stormwater / Erosion & Sediment control measures installed during construction
- Land-Use Restrictions (LURs) recorded with County Register of Deeds
- Future excavation in covered area requires prior NCDEQ approval
- Proven approach used at parks, schools, and commercial sites across NC

Advantages

- State-funded through the PRLF Program
- Lowest cost & fastest implementation timeline
- Effective exposure pathway interruption
- Park can reopen — surface uses intact
- Meets NCDEQ risk standards for human health

Limitations / Land-Use Restrictions

- Waste remains in place — institutional controls required in perpetuity
- No deep-anchored structures over covered area (playgrounds, lights, trees)
- Future excavation requires NCDEQ notification/approval
- Surface uses (paths, benches, ball fields, open turf) are permitted

Options 2 & 3: Partial and Full Excavation / Removal

Option 2: Partial Excavation + Cover (Hybrid)

- Excavate and remove waste/contaminated soil from highest-risk areas (e.g., current playground footprints, areas with deepest waste)
- Install cap & cover system over remaining lower-risk contaminated areas
- Backfill excavated areas with clean material — allows unrestricted reuse in those zones
- More design complexity: requires precise boundary demarcation between removal and cap zones
- Excavated material must be classified (hazardous vs. non-hazardous) and disposed at certified facility
- NOT state-funded — additional costs above the cap & cover baseline must be covered by City of Durham or other sources
- Provides partial flexibility: structures and plantings possible in excavated areas; LURs still required over remaining covered areas
- Intermediate cost and timeline compared to Options 1 and 3

Option 3: Full Waste Removal

- Excavate and remove ALL waste and contaminated soil across the entire ~1.79-acre waste footprint
- Backfill entirely with clean material to existing grades — no LURs required
- Full unrestricted reuse: playgrounds, trees, structures, any surface use permitted
- Highest construction impact — significant earthwork, vegetation removal, grading across playground area
- Most complex waste disposal: volume and classification must be fully characterized; disposal at permitted Class D or potentially Class III facility
- Disposal cost uncertainty: if any portion is classified hazardous, disposal costs rise sharply
- NOT state-funded — full cost must be secured separately
- Longest timeline — most permitting, design, and construction complexity of any option
- At depths of 0–5 ft, excavation is feasible but significant

Bingham Park (Greensboro): Cost Comparison

Site Characteristics vs. Northgate Park

Characteristic	Bingham Park (Greensboro)	Northgate Park (Durham)
Total park / waste area	~12.7 acres	~1.79 acres
Typical waste depth	Up to 20 ft	0 – 1.5 ft
Max waste depth	Bedrock (~20 ft)	5 ft (2 locations)
Avg. lead concentration	2,007 mg/kg	~200 mg/kg (threshold)
Stream bank impacts	1,200 ft impacted	None confirmed
Waste volume (full removal)	206,000 CY	Much less — shallow
Investigation started	2011	2023

Waste non-hazardous?

Remediation Cost Comparison (Preliminary Estimates)

BINGHAM PARK, GREENSBORO | 12.7 acres | waste up to 20 ft deep

Option 1: Cap & Cover

\$6.69M

Option 2: Cap & Cover (protect trees)

\$6.86M

Option 3: Partial Removal + Cover

\$8.05M

Option 4A: FULL WASTE REMOVAL

\$39.86M

NORTHGATE PARK, DURHAM | 1.79 acres | 0 – 1.5 ft deep

Cap & Cover (state-funded) — June 2024 preliminary estimate

\$2.19M

At Bingham, full removal costs **6× more** than cap & cover (\$39.9M vs \$6.7M). State funds cap & cover only — city funds the rest.

What Full Remediation *Could* Cost Durham Residents

Per-Park Cost Breakdown Estimated from Bingham Park Comparison (All 5 Durham Parks)

Park	Cap & Cover (State Pays)	Full Removal (5-6× est.)	City Gap (above CIP)
East End Park	\$724K	\$3.6M – \$4.3M	\$2.9–3.6M
East Durham Park	\$1.82M	\$9.1M – \$10.9M	\$7.3–9.1M
Lyon Park	\$1.21M	\$6.0M – \$7.3M	\$4.8–6.1M
Northgate Park ★	\$2.19M	\$11.0M – \$13.1M	\$8.8–10.9M
Walltown Park	\$4.52M	\$22.6M – \$27.1M	\$18.1–22.6M
TOTAL (all 5 parks)	\$10.47M	\$52.4M – \$62.8M	\$41.9M – \$52.4M

★ Northgate | Cap & cover = state-funded; gap = city/other funding needed above state contribution | Full removal 5-6× based on Bingham Park comparison

\$10.47M

State pays — cap & cover fully funded by PRLF program

\$42M–\$52M Additional Durham must fund if all 5 parks go full removal

\$349 – \$436

additional cost per Durham household (120,000 households · 2024 ACS)

5.4%–6.8%

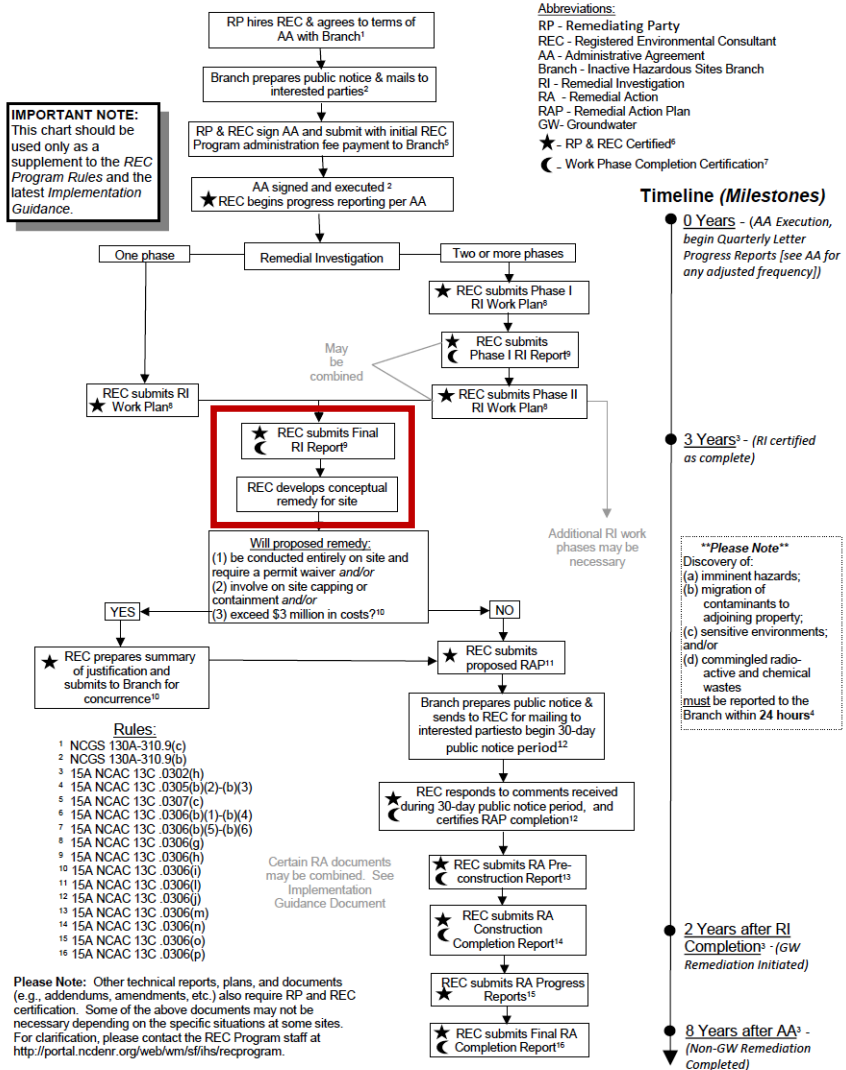
of Durham's \$772M annual city budget

\$30M–\$40M

unfunded gap even after existing \$12M CIP

REC PROGRAM SITE CLEANUP PROCESS OVERVIEW

Rev. 1/2/18



Anticipated Timeline and Next Steps

1	Mid-April 2026	RI Summary Reports Released NCDEQ publishes Remedial Investigation Summary Reports for all 5 parks. Community meeting scheduled with NCDEQ to review findings and plain-language summary.
2	Spring–Fall 2026	Remedial Action Plan (RAP) Development S&ME develops site-specific RAP for Northgate. Estimated 4–12 months depending on site complexity and contractor availability. City's \$12M CIP available to act immediately.
3	During RAP Development	30-Day Public Comment Period Opens NCDEQ issues public notice. Written comments submitted to NCDEQ. Engineering contractor must formally respond. This is the community's formal voice in the remediation decision.
4	After RAP Finalized	Permitting & Pre-Construction Erosion & Sediment control plans, construction permits. Pre-construction report submitted to NCDEQ. Contractor procurement and mobilization.
5	Construction Phase	Remediation Implementation Cap & cover installation with air monitoring, CQA oversight. Stormwater controls. LUR plat submitted to Durham County Register of Deeds.
6	Post-Construction	Park Reopening & Monitoring Construction completion report submitted to NCDEQ. Park redesign (surface amenities compatible with cap). Long-term LUR compliance monitoring.

How to Participate & Make Your Voice Count

The 30-day public comment period is your formal opportunity to shape the Remedial Action Plan. Here's how to engage effectively.

1. Stay Informed

- Monitor the City of Durham DPR webpage for RI Summary Report release (mid-April 2026)
- Review the plain-language summary and full technical report when published
- Attend the community meeting with NCDEQ scheduled for April 2026

2. Engage During Public Comment

- Submit written comments to NCDEQ within the 30-day window
- Focus comments on specific technical or community impact concerns
- Express support for cap & cover as the funded, fastest, risk-protective remedy
- Note that alternative options require separate funding not currently identified

3. Coordinate Across Parks — With Caution

- Other parks have larger, more complex contamination and different community dynamics
- EJ-based arguments for full excavation apply differently across sites
- Northgate's limited footprint makes it most suitable for efficient cap & cover
- Unified neighborhood support for NCDEQ's proposed RAP will expedite approval

Questions & Discussion

NCDEQ PRLF Program · NCDEQ ID: NONCD0000825 · S&ME Project No. 23050630