



Presentation Materials for Western Middle School Community Forum

27 September 2016

OPENING CLARIFICATIONS

- This is not the same situation as Greenwich High School
- Hazardous waste/conditions have not been identified at WMS fields
- Environmental assessment is an iterative process
- Source of contaminants is unknown (1960's)

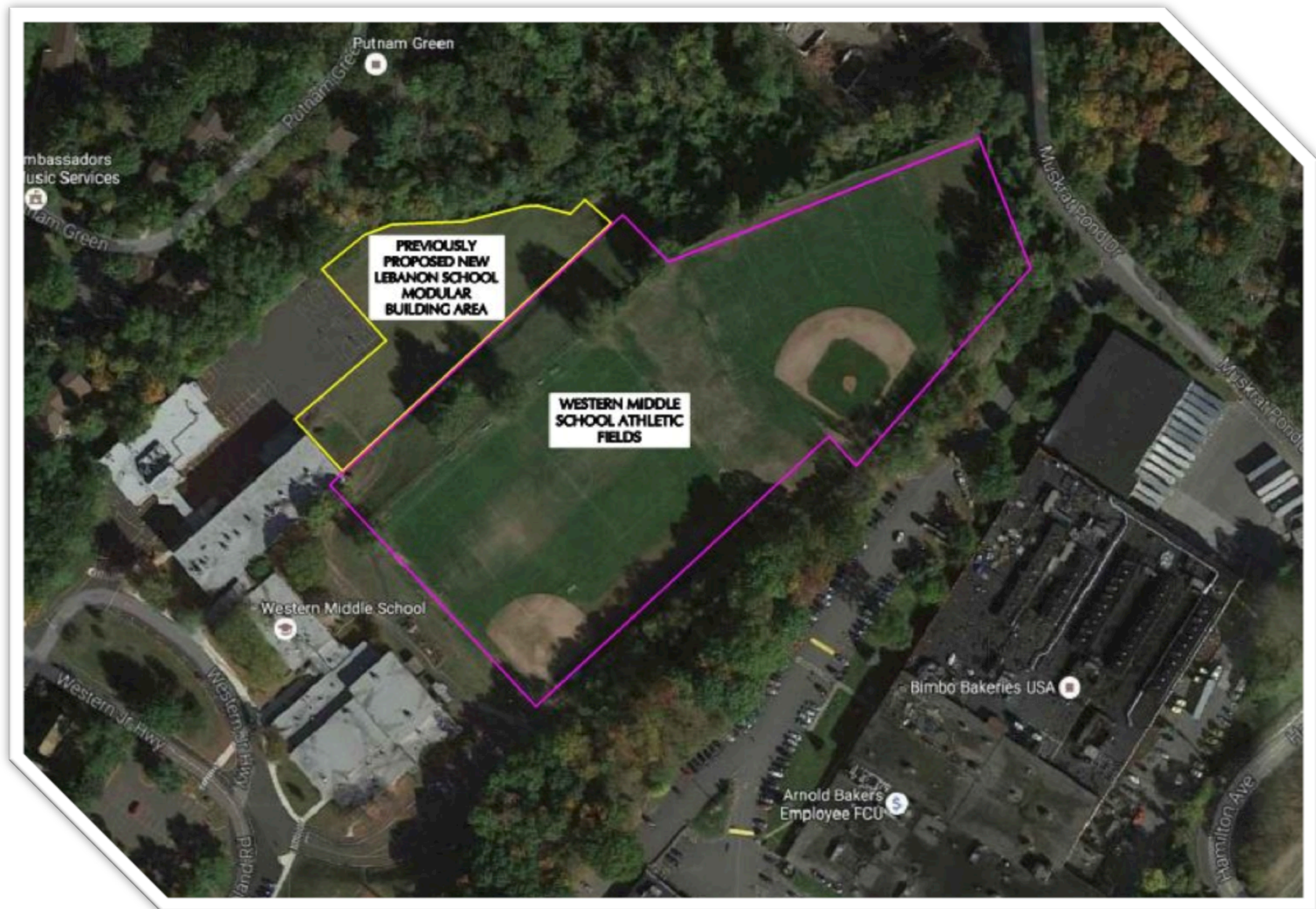
RELEVANT TERMS REFERENCED

- Regulatory Agencies:
 - Federal = USEPA
 - State = CT DEEP and CTDPH



- Standards and Guidance Criteria:
 - State: Residential Direct Exposure Criteria (RDEC)
 - State: Significant Environmental Hazards
 - Federal: EPA Acceptable Risk Values
 - Federal: EPA Hazard Index
 - Federal/State: Site-Specific Exposure Point Concentrations

PROJECT HISTORY



Technical Excellence

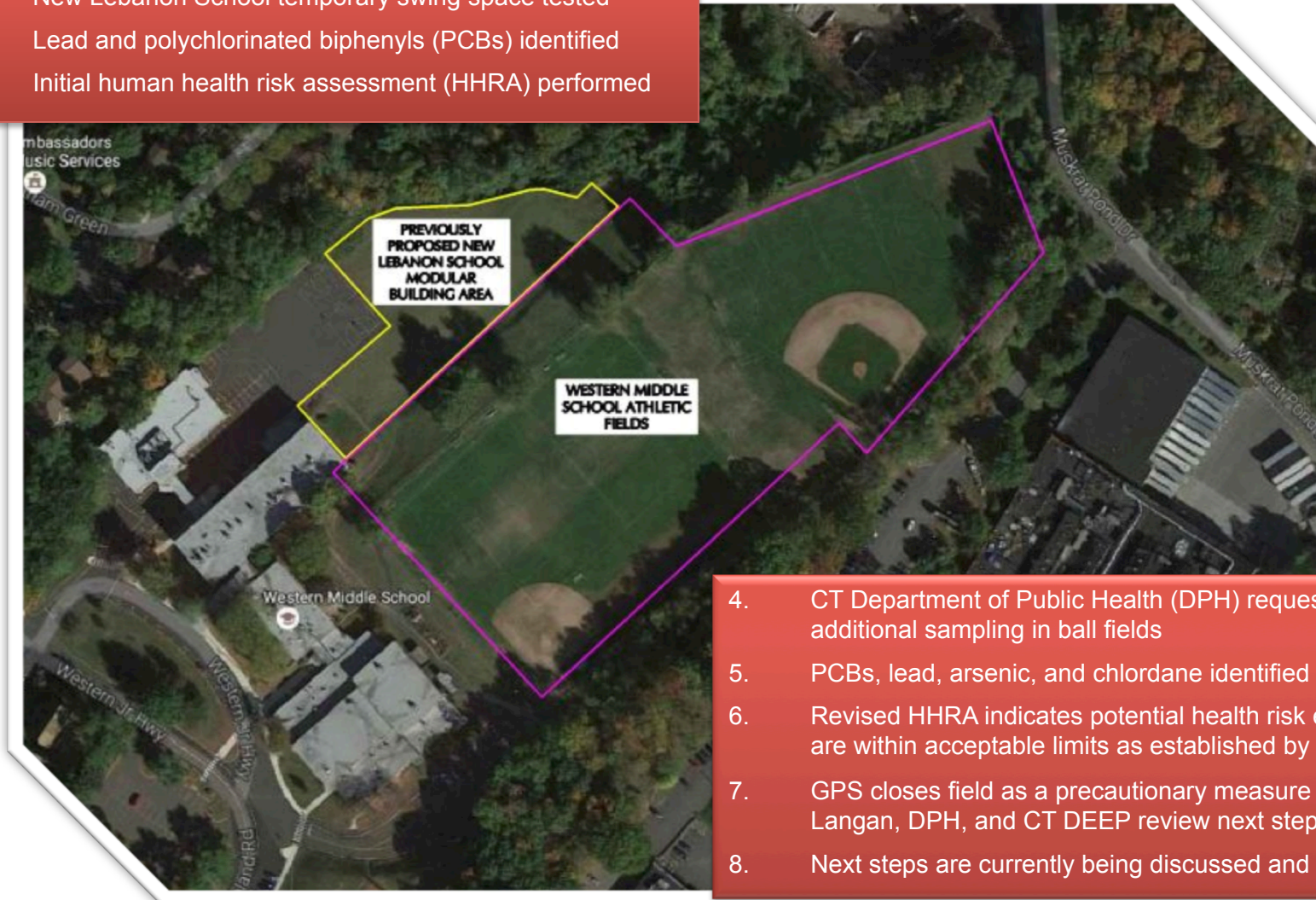
Practical Experience

Client Responsiveness

LANGAN

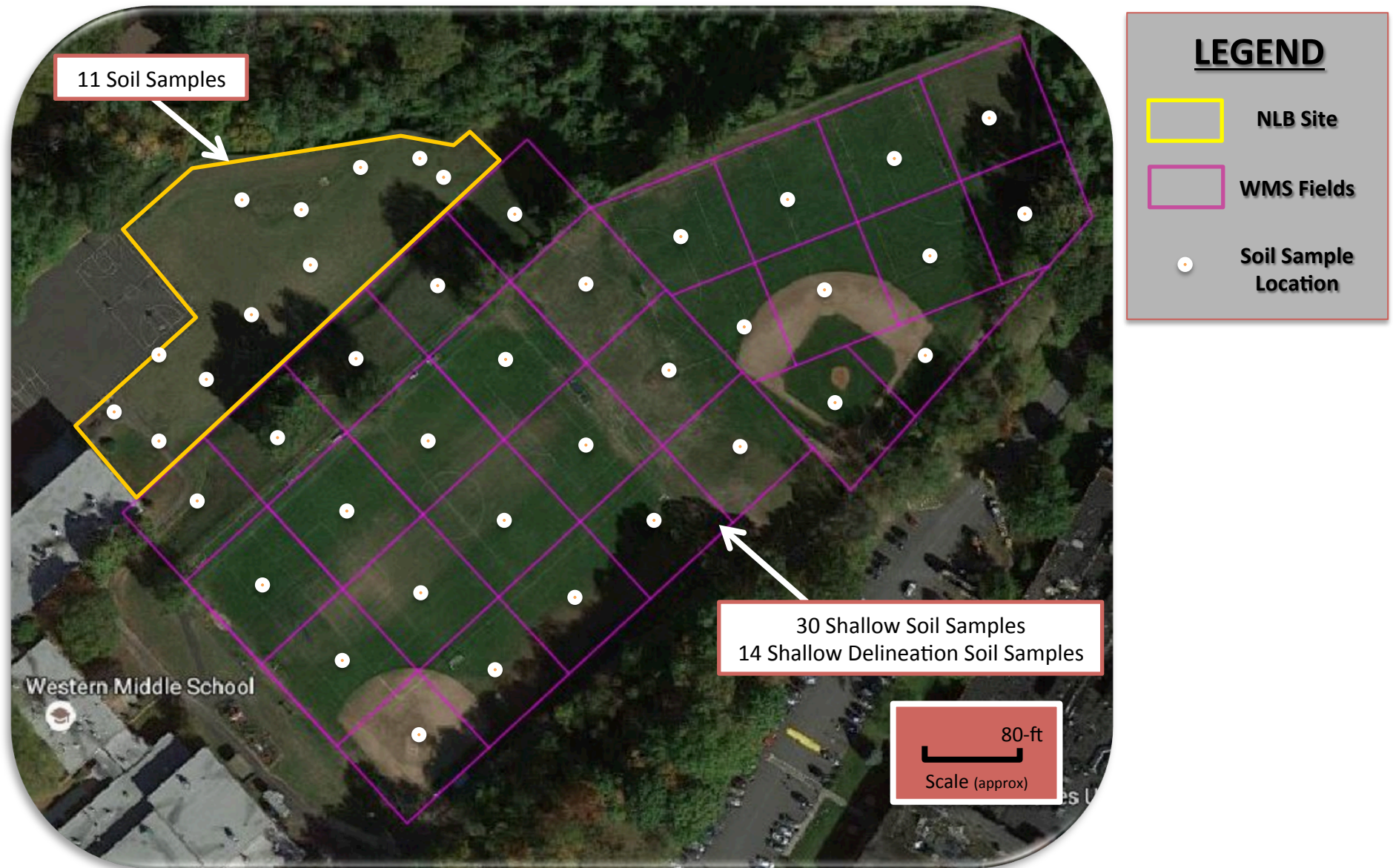
PROJECT HISTORY

1. New Lebanon School temporary swing space tested
2. Lead and polychlorinated biphenyls (PCBs) identified
3. Initial human health risk assessment (HHRA) performed



4. CT Department of Public Health (DPH) requests additional sampling in ball fields
5. PCBs, lead, arsenic, and chlordane identified
6. Revised HHRA indicates potential health risk estimates are within acceptable limits as established by the EPA
7. GPS closes field as a precautionary measure while Langan, DPH, and CT DEEP review next steps
8. Next steps are currently being discussed and finalized

SOIL SAMPLING PROGRAM



Technical Excellence

Practical Experience

Client Responsiveness

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WHAT WE FOUND

LEGEND

Constituents	Western Middle School Soil Samples (mg/kg)	CT Significant Environmental Hazard Standards (mg/kg)	CT Residential Direct Exposure Criteria (RDEC) (mg/kg)
PCBs	Non-Detect to 5.03	15	1.0
Lead	7.74 to 1,640	6,000	400
Arsenic	2.35 to 29.3	150	10
Chlordane	Non-Detect to 6.76	7.35	0.49

Technical Excellence

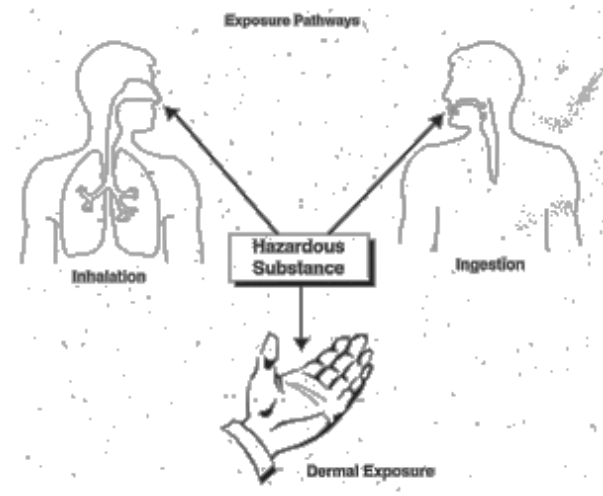
Practical Experience

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HHRA and EPA Risk Factors

- What is a Human Health Risk Assessment?
- What is Risk?
- What is an acceptable non-cancer hazard index?
- What is an acceptable cancer risk?
 - Background cancer risk = 40% (0.4)
- EPA Acceptable Risk = 10^{-4} (40.01%)



WMS RESULTS

Middle School Student

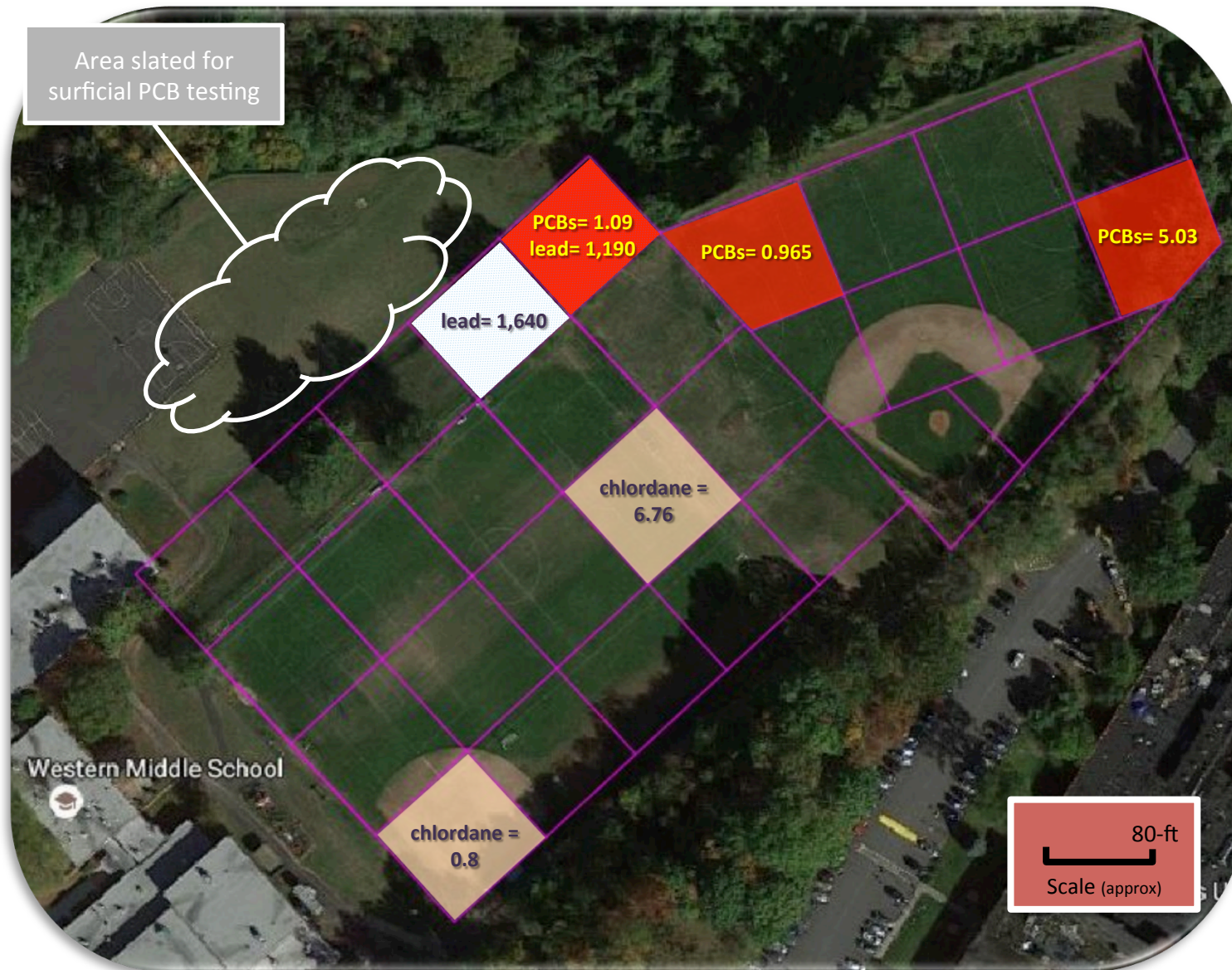
Non-Cancer HI = $0.1 < 1.0$
Cancer Risk Value = 40.0004%

Teacher

Non-Cancer HI = $0.2 < 1.0$
Cancer Risk Value = 40.0007%

Site Specific Exposure Point Concentration for Lead = 606 mg/kg

PROPOSED REMEDIATION AREAS



LEGEND

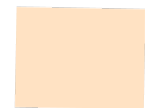
Cleanup criteria in ()'s



PCBs
(1 ppm)



lead
(606 ppm)



chlordane
(N/A)

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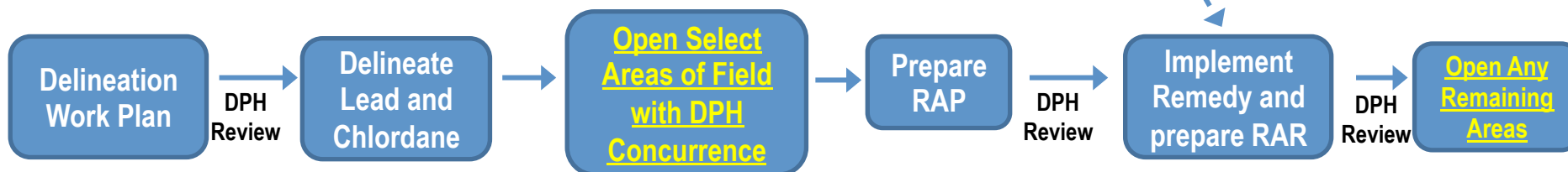
NEXT STEPS

“GPS administration is reviewing the details and timelines for securing funding for the excavation work, and developing a plan for the next phase of testing - based on these timelines, further conversations with CT DEEP, CT DPH, and Greenwich DPH, and school/community needs, we will determine if/when and which portions of the fields can be reopened.”

CT DEEP Process (for PCBs)



CT DPH Process (for lead and chlordanes)



CT DEEP = Connecticut Department of Energy and Environmental Protection
CT DPH = Connecticut Department of Public Health
RAP = Remedial Action Plan
RAR = Remedial Action Report