Lexington High School

School Building Committee Meeting

02.05.2024

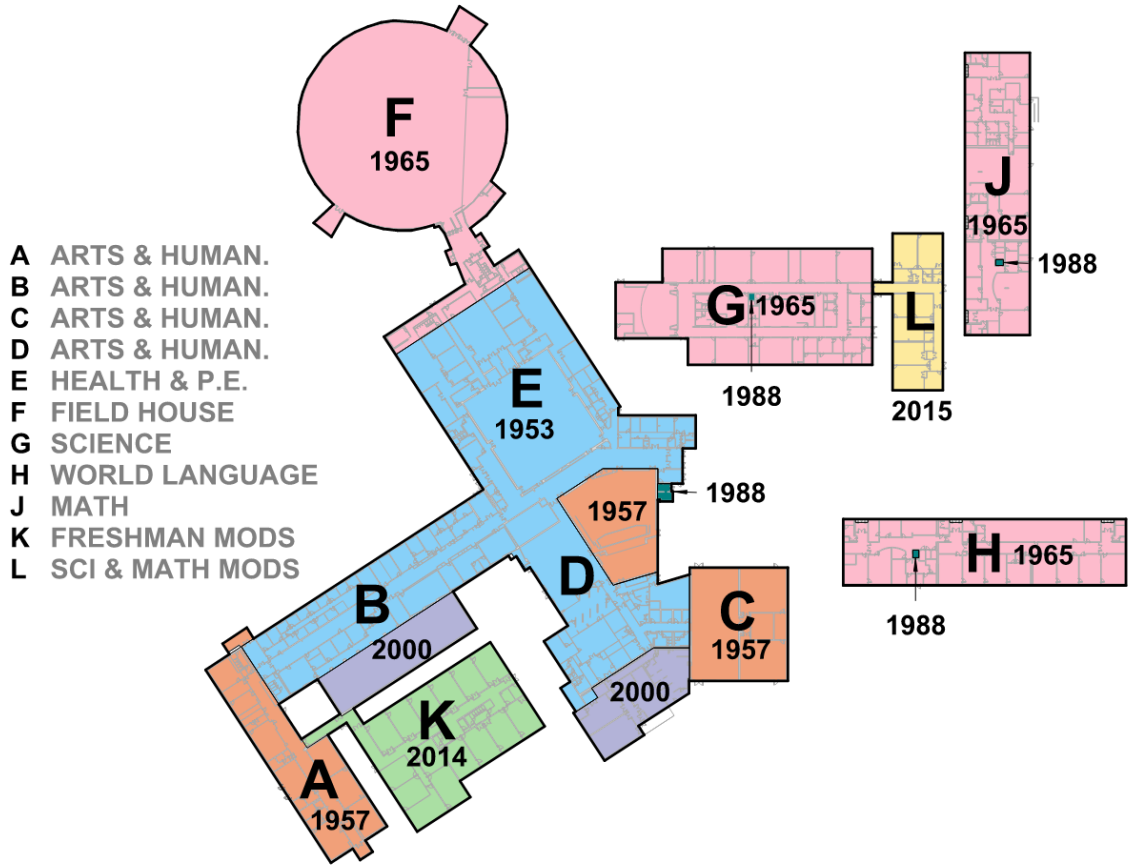
DORE + WHITTIER

SMMA

Existing Conditions Update

SMMA

- Building & Site Investigations:
  - Architects and Engineers completed field work on 12/19 & 12/20
  - Campus is 56.5 Acres, High School portion is 28 acres
  - No structures are listed under Historic Places with the State or local inventories



Existing Conditions Update

SMMA

- Building Investigation: Architecture
  - Exterior building envelope is in varying states of condition, from fair to poor.
    - Post-2000 buildings are in better shape but beginning to break down.
    - Pre-2000 building enclosures perform very poorly due to lack of insulated wall and window assemblies, and thermal bridging of exposed concrete structure.
    - Weathered and damaged masonry was observed on all buildings.
    - Flashing and seals at doors, roof edges and windows are deteriorated.
    - Roofing and drain systems are failing on several buildings, leading to ponding, leaks and constant patching efforts by maintenance staff.
  - Interior finish systems are dated, damaged and provide generally poor acoustics.
    - Door hardware, VCT flooring and ACT ceilings need constant repair.
    - Elevators are outdated and undersized.
    - Stair railings and guardrails do not meet current codes.
    - Casework and furniture do not provide adequate accessibility and flexibility.

Existing Conditions Update

SMMA

- Building Investigation: Structure
  - Mainly cast in place concrete with some steel framing
  - Field House is geodesic dome with wood members and steel connectors
  - Ground floor is mainly a reinforced concrete slab over a crawl space.
    - Some slabs on grade exhibit settlement.
  - Generally the superstructure appears to be in good condition
  - Expansion joints between building wings allow for seismically separate buildings
  - Since original construction, code requirements have changed
    - Snow loads increased
    - Wind loads increased
    - Seismic analysis introduced
  - Any proposed renovations or additions will be evaluated and could require structural upgrades and reinforcement.

Existing Conditions Update

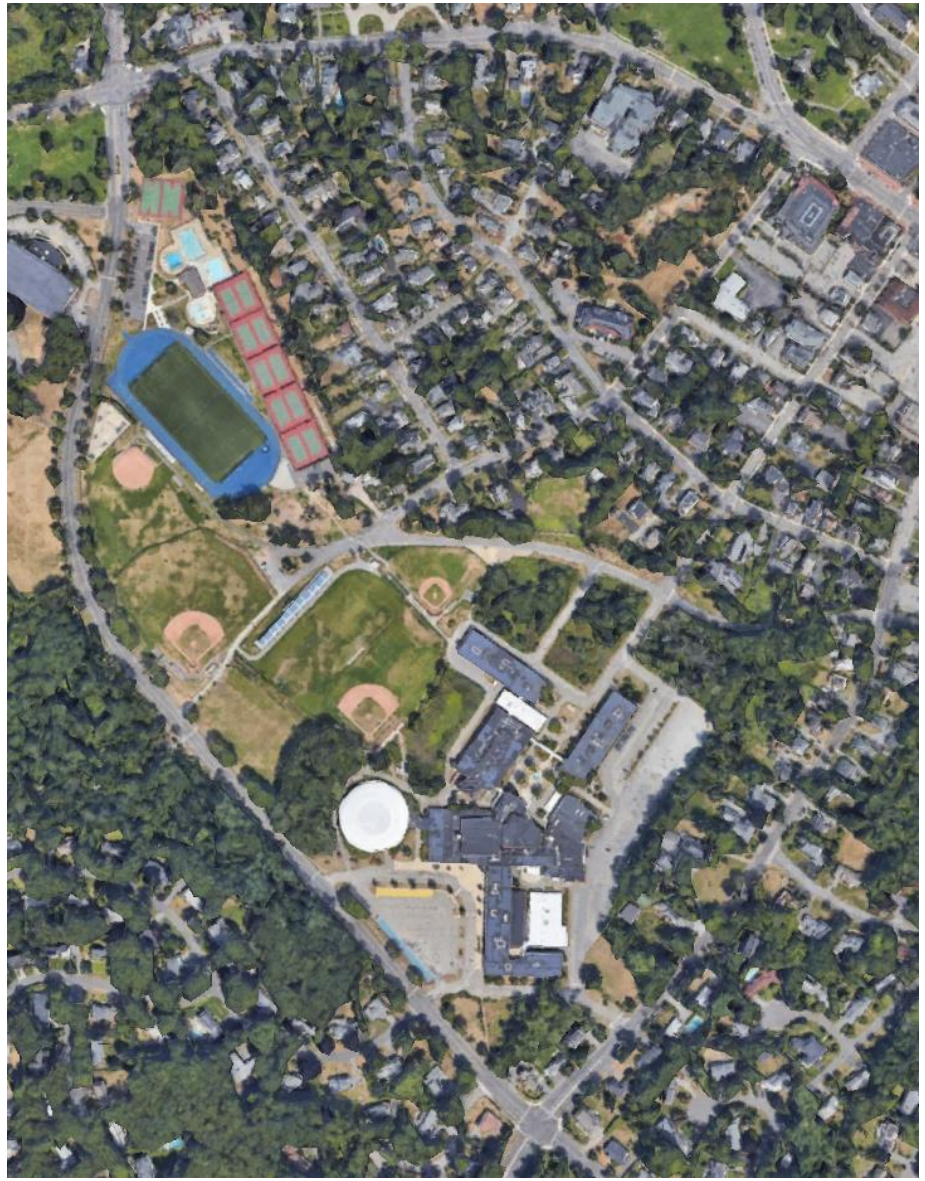
SMMA

- Mechanical – extensive update in 2000 but equipment is at/near end of useful life
  - Gas-fired Steam system serves A,B,C,D,E; Gas-fired Hot Water serves G,J,F,H
  - Most classrooms served from Unit Ventilators for heating and ventilation
  - VRF heat pumps provide heating and cooling of Library and modulars
  - Selected air conditioning of some spaces from rooftop units or split systems
  - Controls are a mix of pneumatic and digital
- Plumbing / Fire Protection
  - Fixtures do not meet the water saving requirements of LEED certification
  - Piping and valving does not meet current lead-free regulations
  - Buildings are sprinklered throughout (except Building F and Modular Building L)
- Electrical – normal and life safety distribution gear replaced & upgraded in the 2000s
  - Overall good working condition. Expected remaining serviceable life: 10-20 years
  - All lighting has been retrofitted to LED with automatic lighting controls and dimmers.
    - Does not meet current energy code requirements
  - Minimal electrical capacity and physical space available for future growth

Existing Conditions Update

SMMA

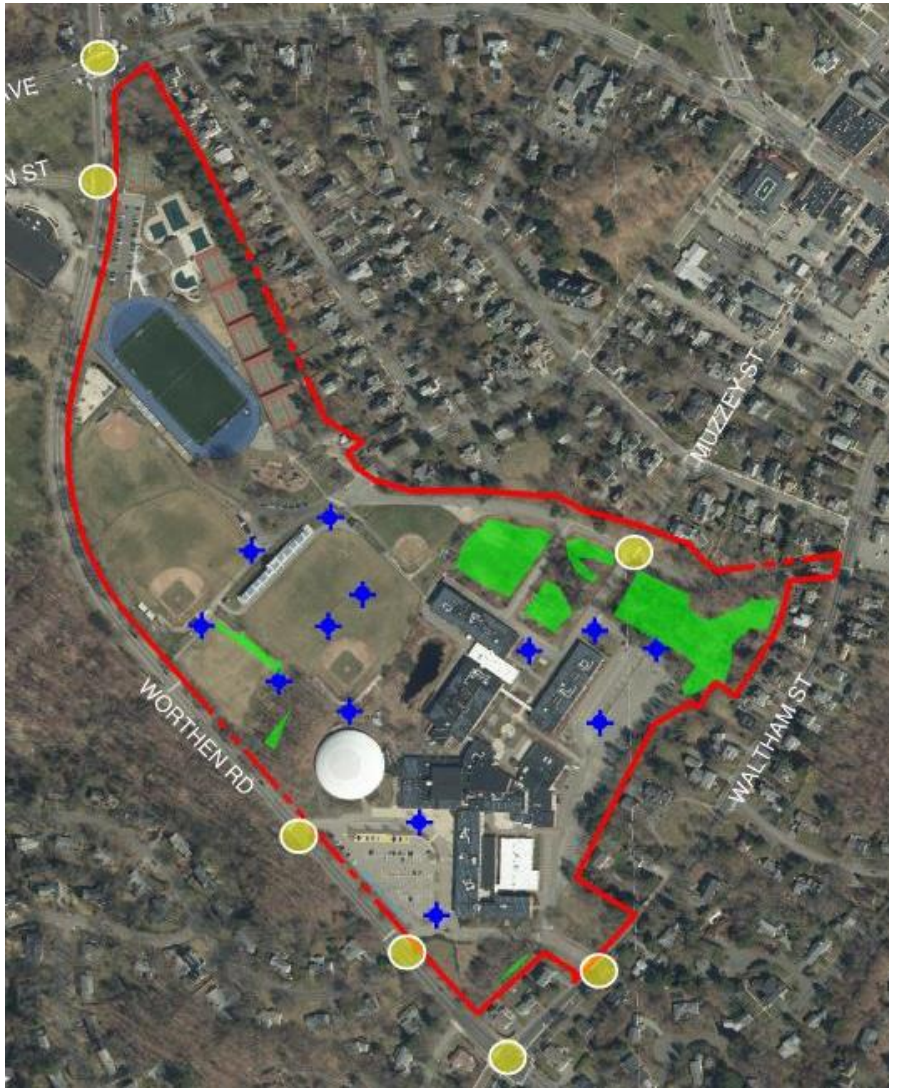
- Site Observations:
  - 450 Parking Spaces. Pavement is in generally fair to poor condition throughout.
  - 32 Buses, 20-30 LABBB taxi/rideshare vehicles, 6 LABBB vans. Afternoon pickup is as well coordinated as possible, but there is a tremendous amount of strain on the site and on the faculty to safely choreograph the quantity of vehicles
  - The site contains pockets of Urban Forest to the north and east of the existing building and to the west of the field house. The mature forest vegetation appears to be in good condition. Urban forest and other existing trees will be preserved as much as possible.
  - Current parent drop off/pick up is accessed from Waltham Street and Park Drive. Circulation appears sufficient, but numerous conflicts with students were observed in both locations.
  - Current bus drop off/pick up is accessed from Worthen Road. The quantity of vehicles in the relatively restricted area causes a great deal of vehicle and student conflicts.
  - Outdoor student quad at heart of building is heavily used, but is in fair to poor condition.
  - Current athletic facilities and recreation assets are all in good to very good condition, and are heavily used by physical education, the athletics programs, and the community.



Existing Conditions Update

SMMA

- Wetlands Identification:
  - Wetland Scientist completed field work on 12/15
  - Survey team added exact flag locations
    - Survey expected 2/16
  - Recommendation from Conservation Commission to File an ANRAD (Abbreviated notice of Resource Area Delineation)

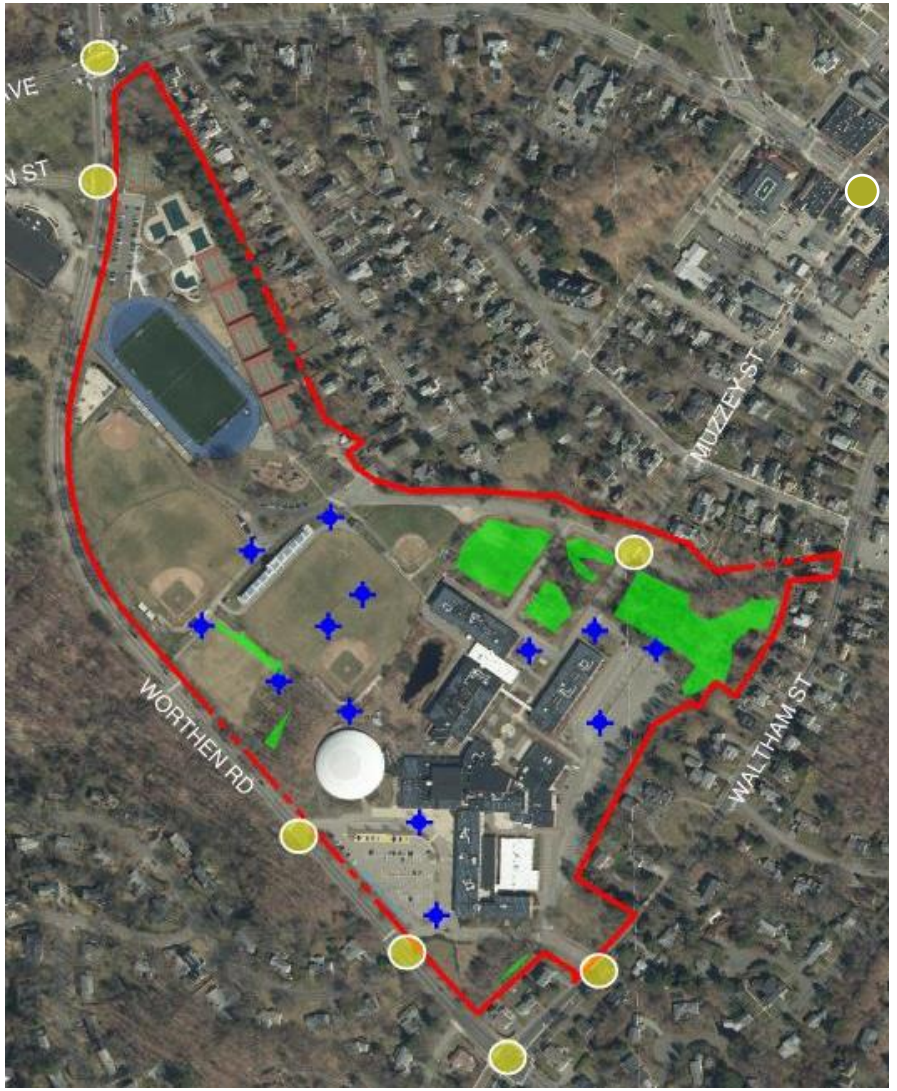


Wetlands: Existing Wetland Resources Flagged

Existing Conditions Update

SMMA

- Geotech Exploration:
  - Field work completed 12/21 & 12/22
  - Survey added exact boring locations – survey expected 2/16
  - Preliminary report due 2/16
  - Findings:
    - 13 borings completed
    - 10 extended to 20-30 ft deep
    - 3 encountered refusal at 6-7 ft
    - Generally granular fill over native very soft peat/organic deposits
  - Preliminary Analysis:
    - Ground Improvements or
    - Deep foundations necessary
    - Shallow groundwater

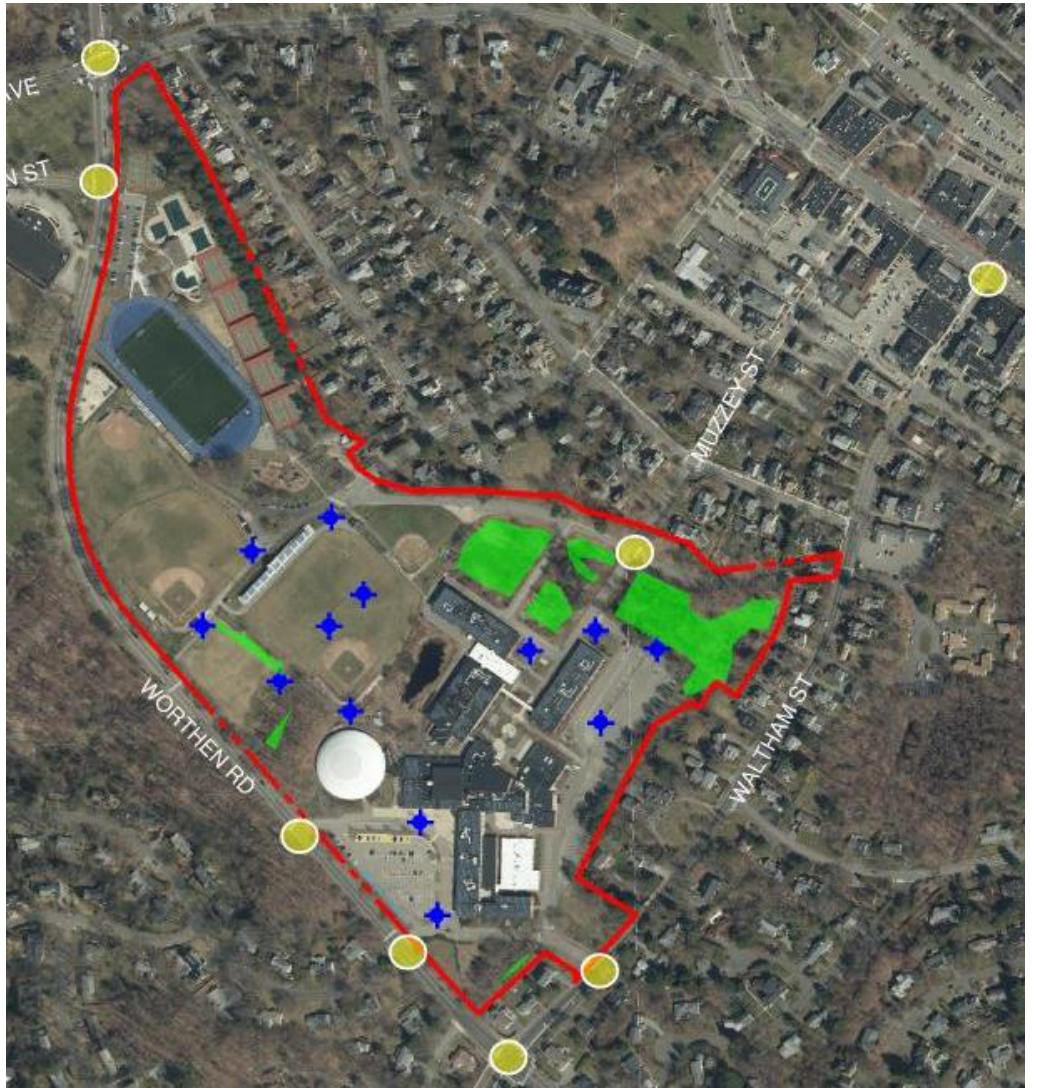


● Geotech: Borings Performed

Existing Conditions Update

SMMA

- Traffic Study:
  - Field work completed 12/14 & 12/15
  - Existing Conditions report complete
  - Findings:
    - Crash data reviewed indicated crash rates lower than District 4 and statewide averages
    - Sight distances are sufficient at vehicular drives
    - 89% parking utilization
    - Signalized intersections studied operate at an acceptable level of service

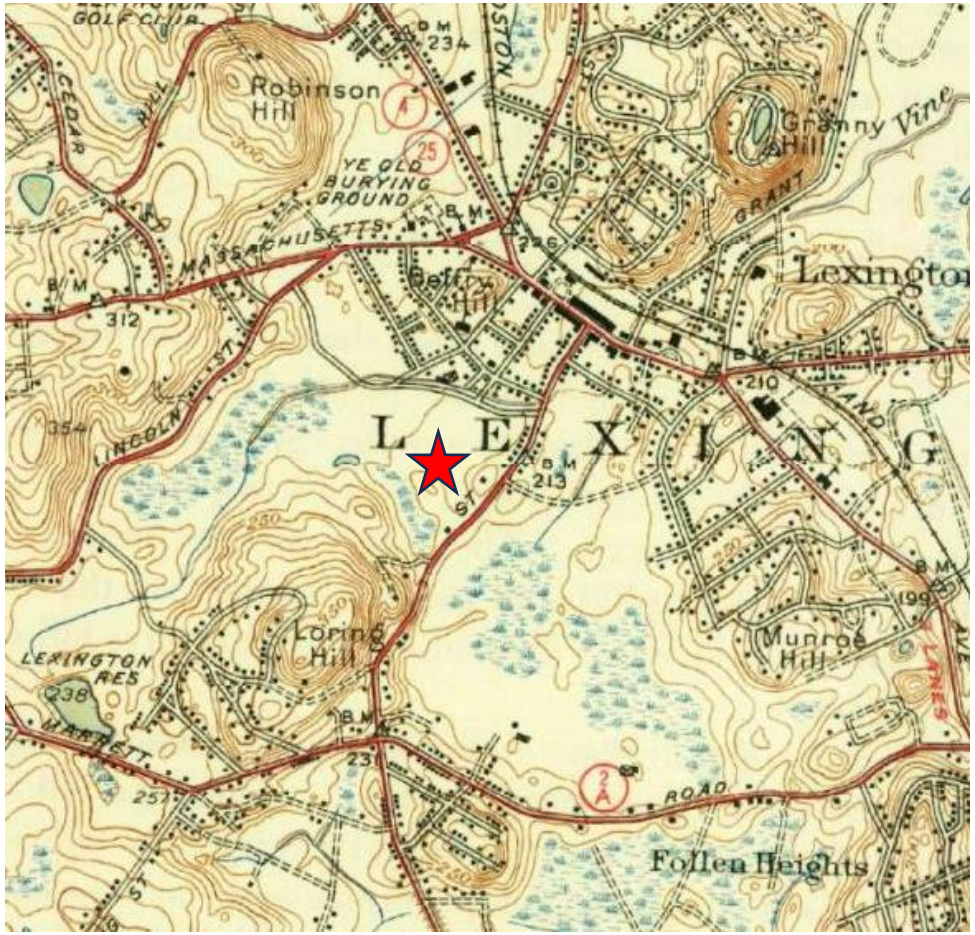


Traffic: Existing Intersections Studied

Existing Conditions Update

SMMA

- Phase 1 Environmental Assessment:
  - Field work completed 12/26 & 12/27
  - Findings:
    - Site is <u>not</u> within any FEMA flood zones
    - Site is <u>not</u> located in a National heritage Endangered Species program
    - Several former and existing underground storage tanks (UST) observed/documented
    - A Phase II Environmental Assessment has been recommended including groundwater and soils sampling.
    - Radon testing was conducted and levels are very low, no mitigation is required



1946 USGS Topographic Map

★ Location of current High School

Existing Conditions Update

SMMA

- Hazardous Materials:
  - Field work completed 12/26 & 12/27
  - Findings:
    - Some presence of asbestos containing materials (ACM) as expected for buildings of these era's
    - Many ACM's have been removed from the building over the years
    - No immediate areas of concern
    - Any remaining ACM's will be addressed as part of a renovation project or removed in the event of demolition in accordance with EPA requirements