

Area-Wide Assessment

Bay Street Redevelopment Project

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Stone Environmental, Inc.

Stakeholder Meeting, Saint Johnsbury Planning Commission

December 29, 2011



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- Scope of Work



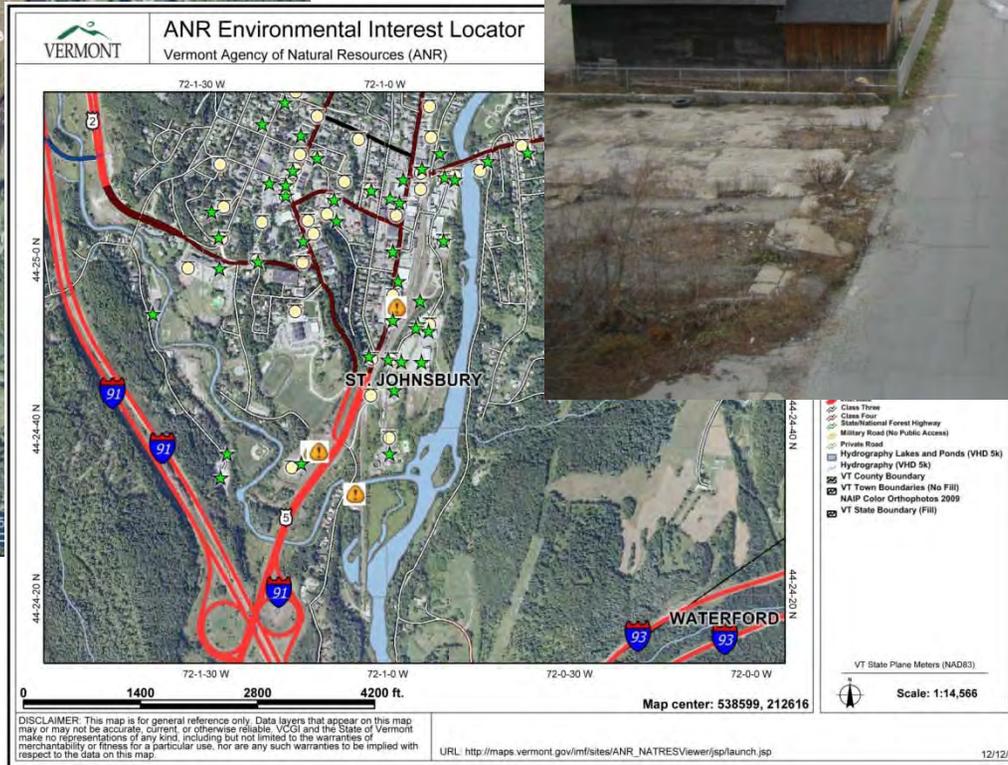
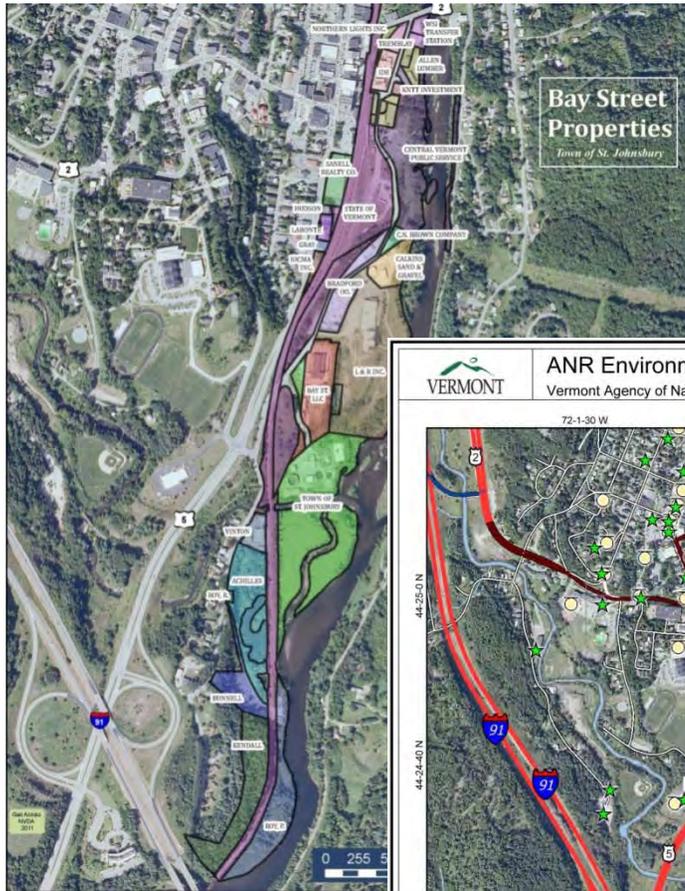
- Findings

- Recommendations



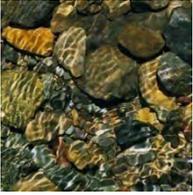


Bay Street Project Area



Bay Street from Portland St. overpass

Managed Environmental Sites, St. Johnsbury, Vermont. VTDEC EIL 12/12/11



Scope of Work

- Historical Land Use Assessment
- Data Gap Analysis
- Managed Environmental Site Review
 - State Hazardous Sites Files
 - State and Federal Hazardous Waste Generators
 - Underground Storage Tank Program Records
- Site Walkover and Interviews



Historic Land Use Assessment



St. Johnsbury, Vermont 1884, Beers Atlas

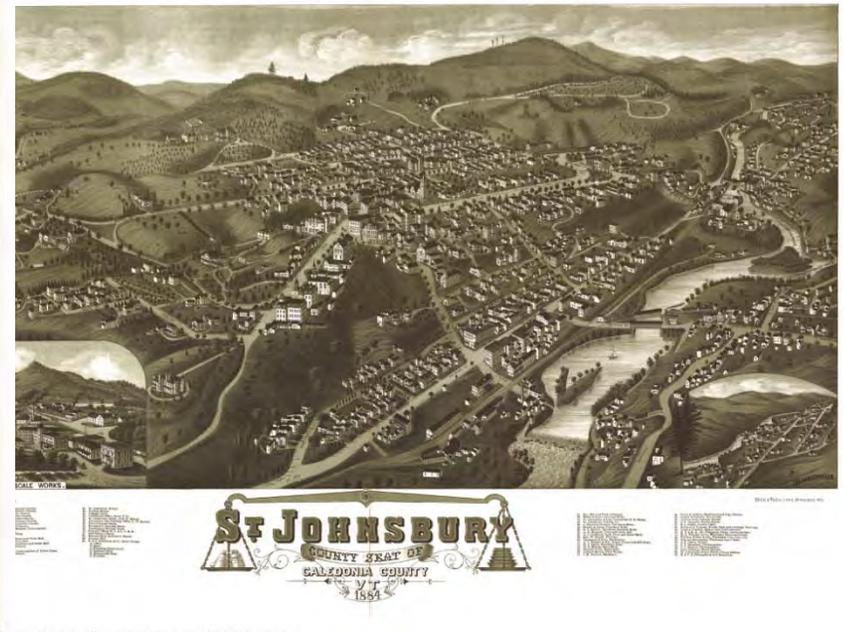
Mannings City Directories

Sanborn Maps

Town Historical Resources

Land Use Change Project, UVM

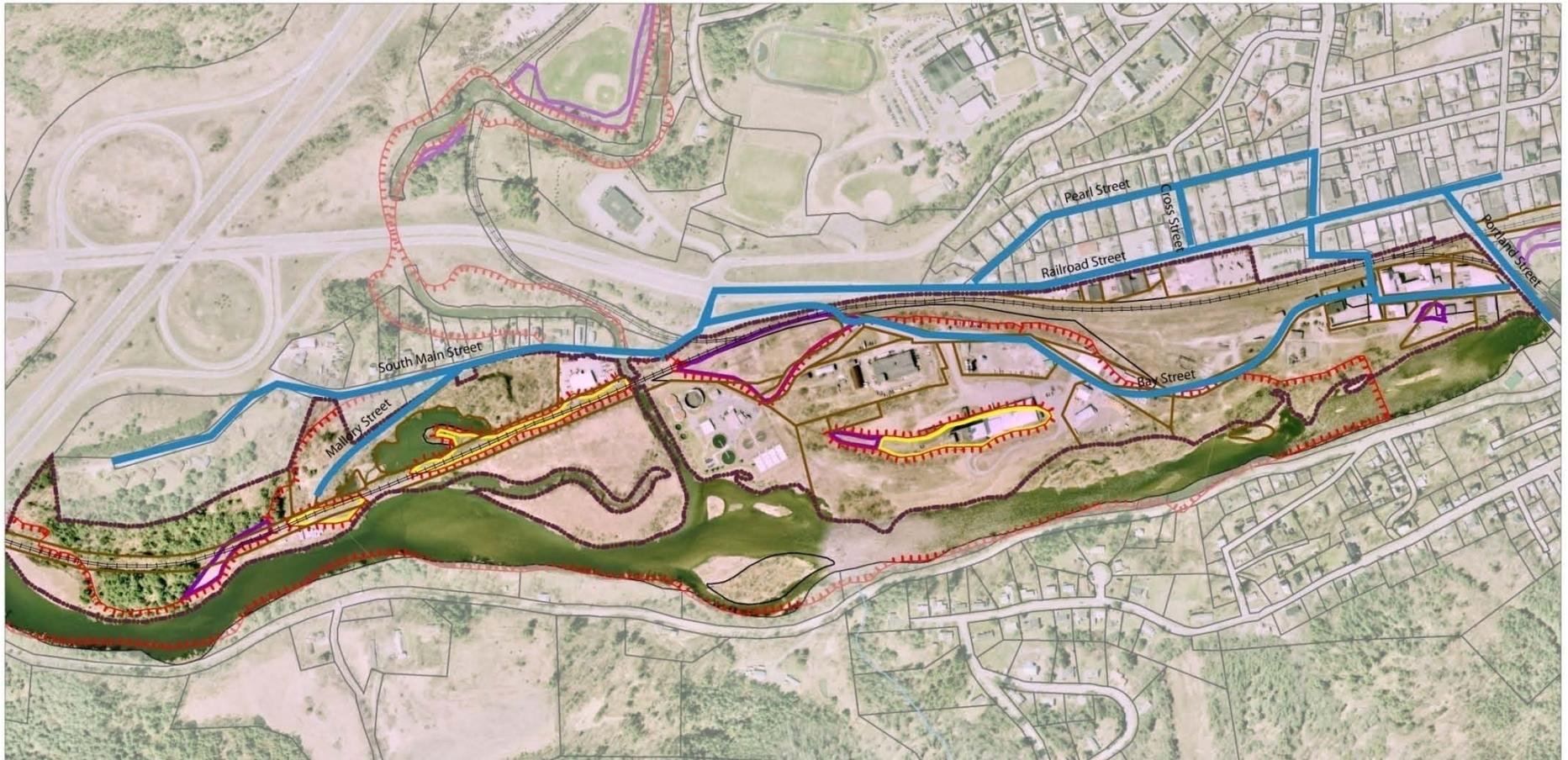
Online Sources



Birds-eye view of St. Johnsbury, St. Johnsbury Illustrated, 1900



Historic Land Use Assessment



Area-wide Assessment Area of Interest for Sanborn and Manning Reviews



Historic Land Use

Town of St. Johnsbury, Vermont

The Only St. Johnsbury in the World



Chartered November 1, 1786

The Home of Fairbanks Scales
Since 1830

The Maple Sugar Center of the
World

Cary Maple Sugar Co.

Town Officers, Selectmen
Carl D. Hovey, Chairman
Fred G. Johnson
Milton F. Kumpf

Town Clerk and Treasurer
William A. Bemis

Asst. Town Clerk
Calvin H. Knowlton

Town Manager
Charles S. Sumner

Secretary to Town Manager
Marion Barney

We have fine Churches, Schools,
Stores, Public Buildings, Hospitals
and New Trade School

■ Mannings City Directories

- Coverage extends from ~1900 through 1980s, roughly biannual
- Reviewed approximately every 5 years from 1919 through 1984.

Occupant Listings
by Street Number

14 Kenneth B Williamson	NORTH MAIN STREET. D-6
14 George Brigham	From City park north to city
14 Vacant	limits
MOUNT VERNON PLACE. D-8	Right side
From 83 Hill to Webster	Tourist Information Booth
Left side	City Park
10 Julius J Wolfson	— Elm begins
14 John C Wyllie	47-53 Aldrich Block
6 Vacant	49 The Peoples National Bank of
4 Charles Adams	Barre
4 John Shores	51 Granite Mut Ins Co (3)
Right side	51 Celia's Beauty Studio (7)
13 Mrs Ethel B Hathaway	51 Vacant (8)
15 Edward J West	51 Nat Life Ins Co (9)
17 Nelson R Wilfore	51 Norman J Morrison, granite
MURRAY STREET. D-9	(9)
From 26 Ayers northerly	51 Benjamin Gover (19)
Right side	51 Vacant (11-12)
5 Mrs Catherine M Davidson	51 Vacant (13)
7 Robert Sinclair	51 Union Granite Co, office (14)
11 Frank J Blouin	51 Mrs Wilhelmina Knox (15-
Left side	16)
6 James A Murray	51 Mrs Doris A Fowler, piano
6 Mrs Minnie Robertson	teacher (18)
10 Antonio E Abbiati	57-65 The Wood Block
MYRTLE AVENUE. C-3	59-61 F D Ladd Co
From Brookside av northeast-	57 Emslie & Co Inc, florists
erly to Grandview av	63 Abare & Sargent lawyers(1-2-3)
NELSON STREET. C-9	63 R Barton Sargent, lawyers
	(1-2-3)
	63 Reginald T Abare, lawyer (3)
	63 Mrs Josephine H Perry, music

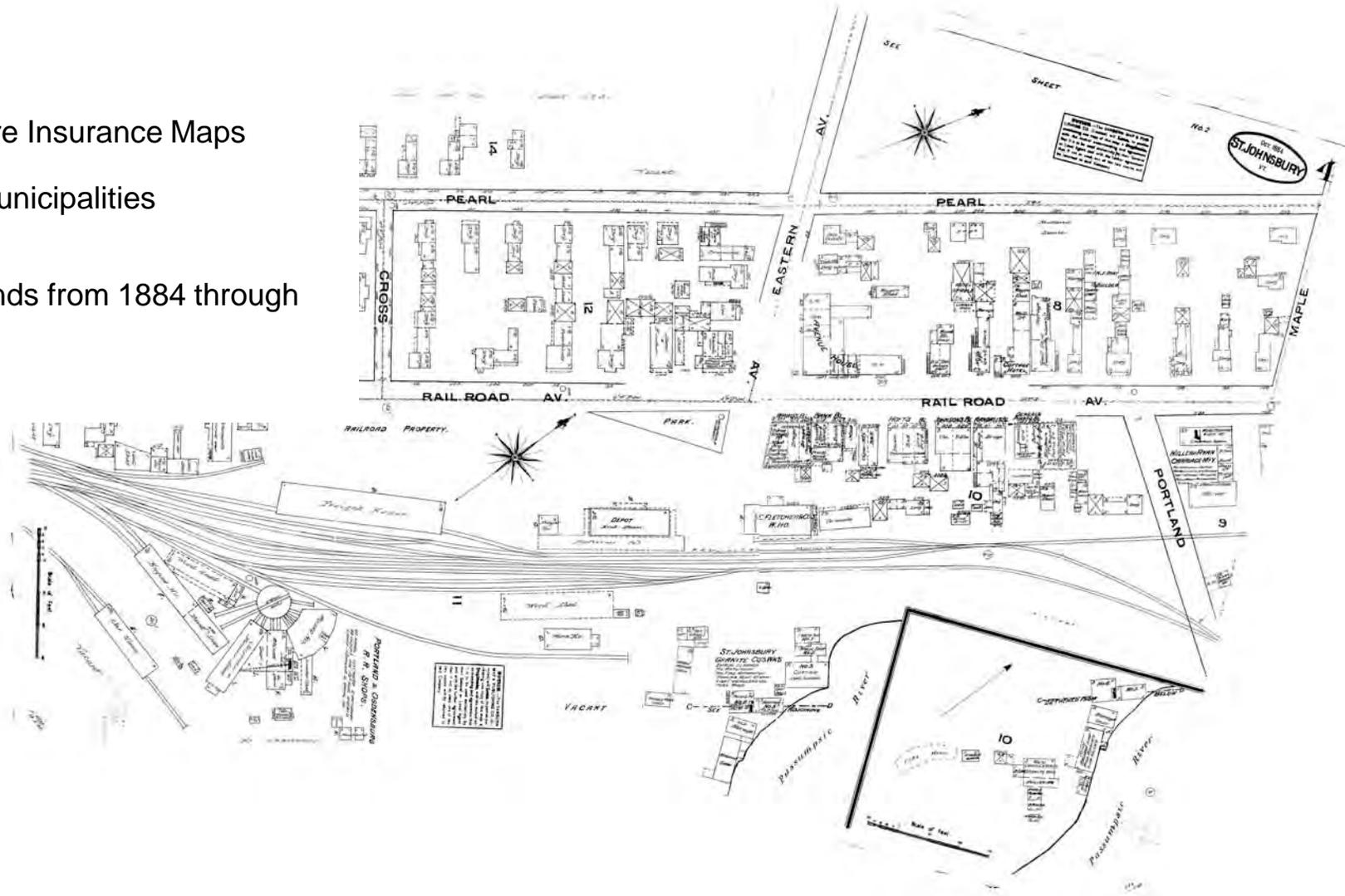
Cross Streets



Sanborn Fire Insurance Maps

■ Sanborn Maps

- Hand-drawn Fire Insurance Maps produced for municipalities
- Coverage extends from 1884 through 1964.



Sanborn Map, 1884



Historic Use Captured in GIS (1934 and 1958)





Industry Types and Contaminants of Concern

Industry Type	Occurrences	Petroleum VOCs	Chlorinated Solvents	PCBs	Metals	PAHs	Herbs/ Pests	PCP
Bulk Fuel Storage	287	✓				✓		
Automotive Service	529	✓	✓	✓	✓	✓		
Manufactured Gas Plant	5	✓				✓		
Blacksmith/ Coal	20/65				✓	✓		
Dry Cleaning	50	✓	✓ (>1940)					

Railroad Street Service Station
 Frank Thurston, Prop.
 Complete Tire, Battery and Lubrication Service
 Accessories at Low Prices
 TYDOL VEEDOL
 Opposite Railroad Station
 48 RAILROAD STREET ST. JOHNSBURY, VT.

McKEE'S GARAGE, INC.
 GENERAL AUTOMOBILE REPAIRING
 BODY AND FENDER WORK AND PAINTING
 BEAR WHEEL ALIGNMENT, FRAMES,
 AXLES, WHEELS STRAIGHTENED
 SAFETY GLASS INSTALLED
 ROAD TOWING SERVICE
 21 RAILROAD STREET Phone 535 ST. JOHNSBURY, VT.



1941 Mannings Directory advertisement



Industry Types and Contaminants of Concern

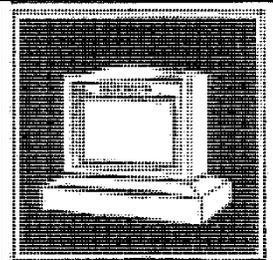
Industry Type	Occurrences	Petroleum VOCs	Chlorinated Solvents	PCBs	Metals	PAHs	Herbs/Pests	PCP
Machining	28	✓	✓	✓	✓			
Stone Manufacturing	40	✓	✓		✓	✓		
Paints/ Painting	114	✓		✓ (1940-78)	✓			
Printing	41	✓	✓	✓ (1940-78)	✓			
Railroad	128	✓	✓	✓	✓	✓	✓	✓

FRIZZELL PAINT & WALLPAPER STORE
 C. H. FRIZZELL, Proprietor
 PAINTS, OILS, VARNISHES
 PAINTING
 Phone
 63 EASTERN AVENUE

P. B. HARTWELL, Jr., D.D.S.
DENTIST
 Office Hours 9:00 to 12:00 and 1:30 to 5:00 p. m.
 EVENINGS BY APPOINTMENT
 Phone 1375
 105 RAILROAD STREET ST. JOHNSBURY, VT.

Art Embroidery of All Kinds
 Silk Underwear and Dressing

Dutil Millinery Co.
 87 Railroad St.
 ST. JOHNSBURY, VT.
 Telephone 423-11



Star Granite Works
 Office Yard:
 Granite Sq., 32 Bay
 MONUMENTS AND
 MEMORIALS
 Phone 846
 ST. JOHNSBURY, VT



Potential Sources of Petroleum in the Environment (Cumulative 1884 to 2011)





Specific Uses Integrated into GIS



Identify

Identify from: Historic Use

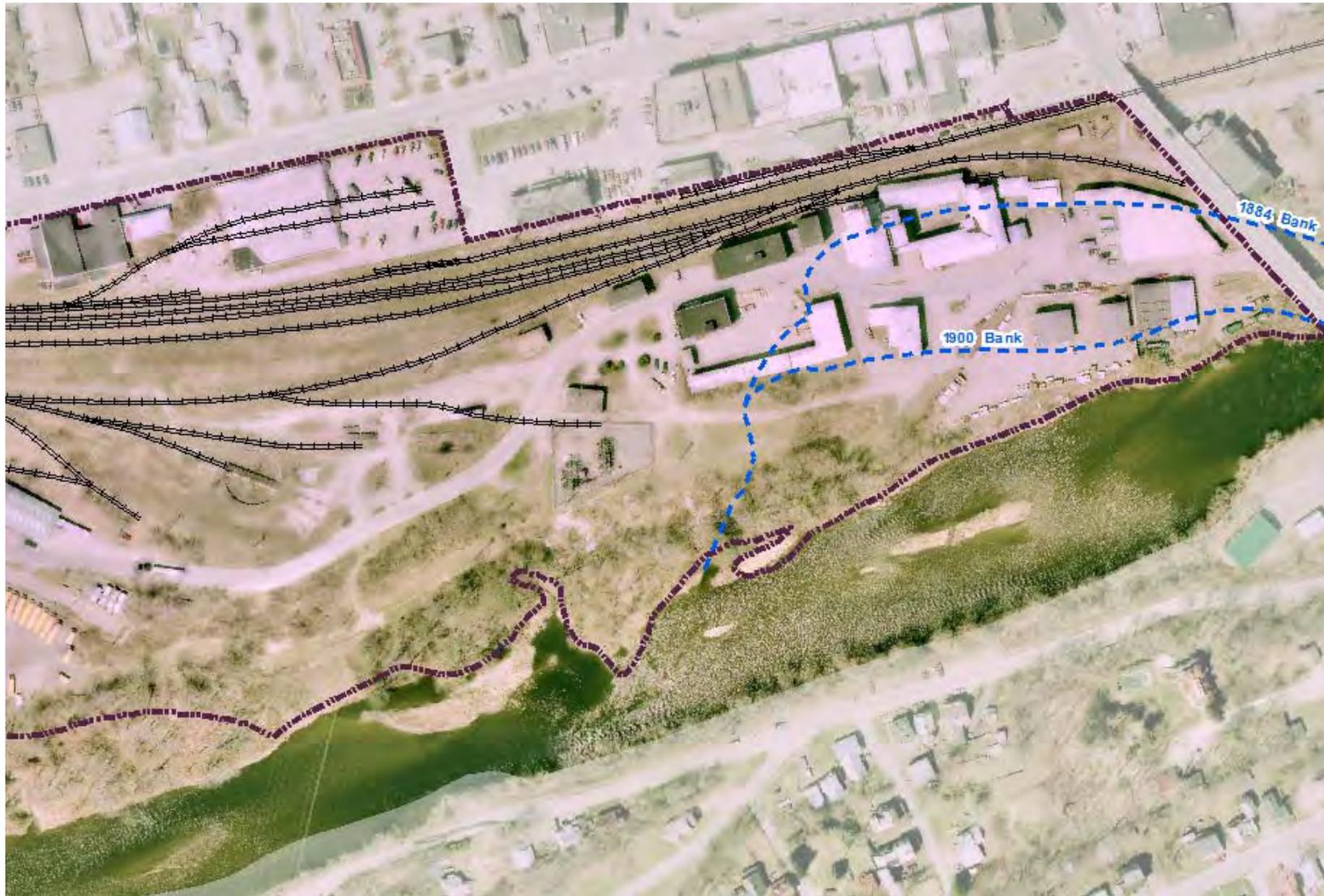
- Historic Use
 - 1934 to 1958 Building Use
 - 392
 - tblUseByYear
 - <null>
 - <null>
 - <null>
 - EN Burnell Storage
 - Hagar hardware and Paint Co
 - MW Debereaux Auto Agency
 - Hagar hardware Co.
 - Hagar hardware and Paint

Location:

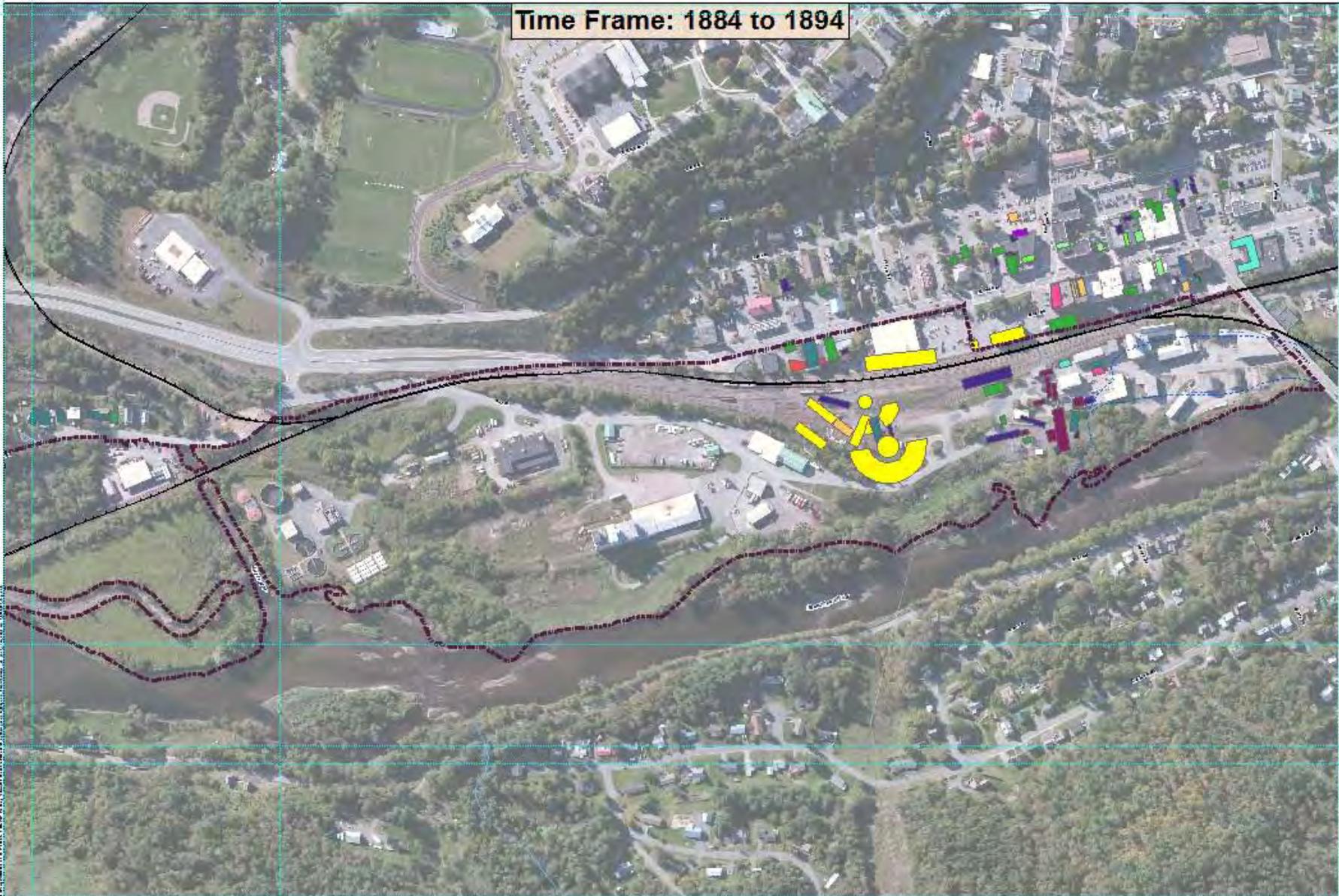
Field	Value
OBJECTID	699
UseID	723
FootprintID	971
Use	Paints/Painting
YearOfUse	1967
BusinessName	Hagar hardware and Paint Co
BusinessAddress	13-15 Portland Street
Advertisement	<null>
Source	Mannings Review
Notes	<null>
NeedConfirmation	0
Map_FootprintID	392
rskClSolvent	0
rskKetones	1
rskMetals	1
rskPAHs	0
rskPCBs	1
rskPesticide	0
rskPetro	1
FootprintType	Building

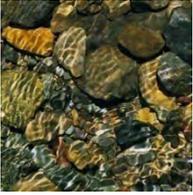


Historic Landscape Tracked in GIS



Time Frame: 1884 to 1894





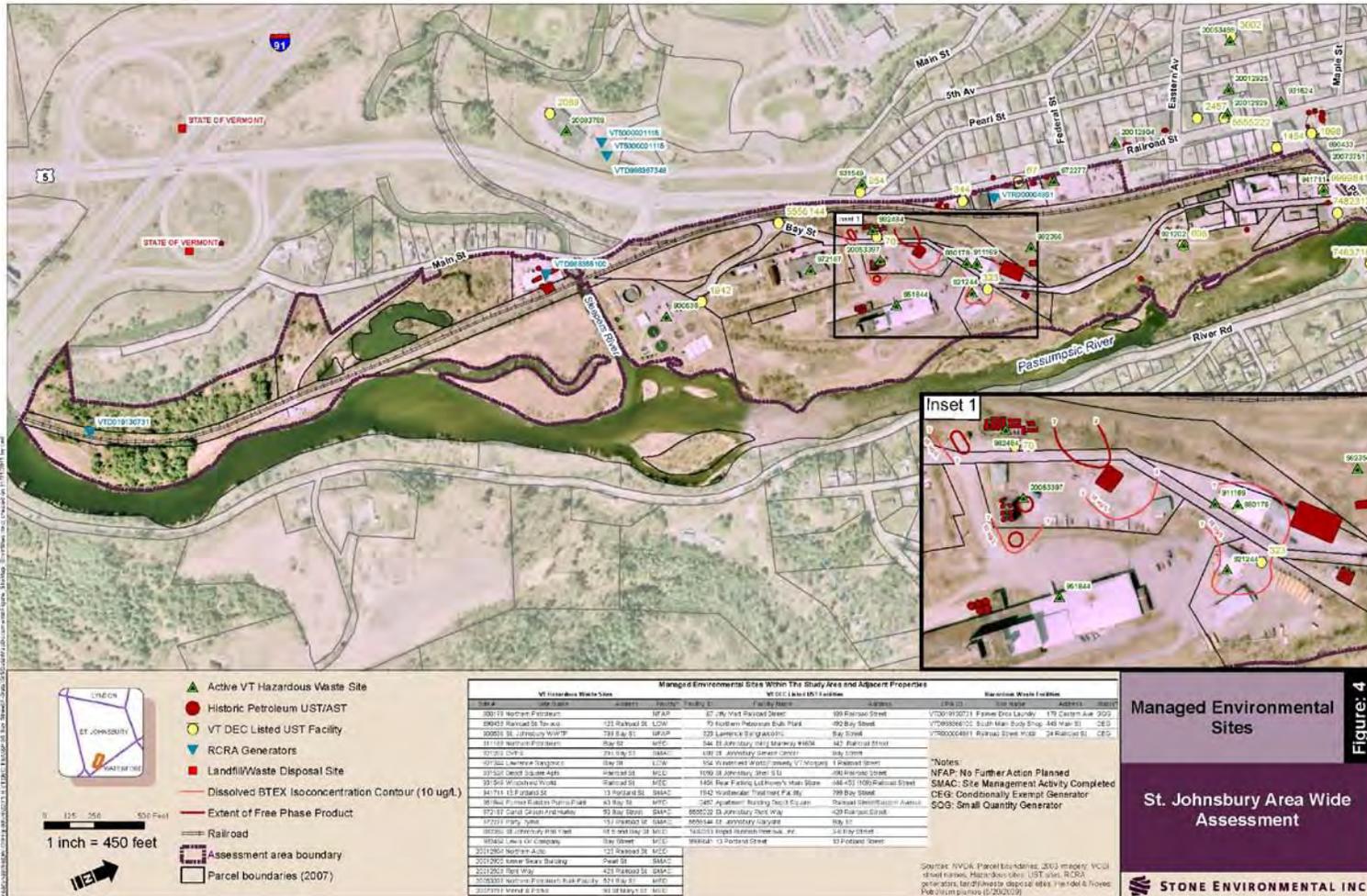
Managed Environmental Sites

VTDEC File Reviews:

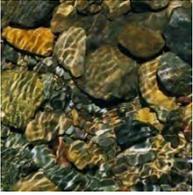
- 20 VT DEC, Sites Management Section Hazardous Sites
 - 10 of which have been given a SMAC designation
 - Most are related to Gasoline or Fuel Oil USTs
- 5 Hazardous Waste Generators
 - Two are located within the Project Area
- 14 Properties in VT DEC Underground Storage Tank (UST) Database
 - 55 Total USTs
 - 8 Active USTs



Known Sites

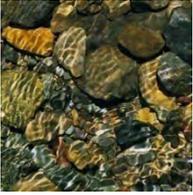


Locations of known contamination in groundwater within the project area



Data Gaps

- Petroleum-Specific Investigations
 - Water table wells,
 - VOC and TPH analyses
- Extent of groundwater contamination and/or free product not well understood.
- Vapor Intrusion Pathway has not been assessed
- Decisions on approach to remedial action have been based on current use and may not be appropriate for desired redevelopment objectives.



Site Inspection

- Access 7 properties throughout Project Area via established industry practices
 - 220 Railroad St.
 - St. Johnsbury Paper
 - Former Ralston Purina
 - Allen Lumber
 - Bay Street Holdings, LLC
 - E.T. and H.K. Ide
 - 2-8 Bay St (Interstate Waste)
- Performed “windshield inspection” from roadways, rights-of-way, the river corridor, and uncontrolled properties (e.g., Lewis Oil and CVPS).



Site Inspection Findings

SITE INSPECTION FORM		STONE ENVIRONMENTAL INC	
Project Title	Bay Street Area-wide Assessment		
Client	Vermont Department of Environmental Conservation		
Project Manager	Dan Voisin		
SEI Study Number	092271-R/06		
Site Address:	249, 146, 256 and 258 Bay St.	Town:	St. Johnsbury
Owner/Representative:	Thomas Allen	Other:	Allen Lumber
Contact Info:	802 748 2341	Figure 5 Parcel ID	2
Road Front Photo			
		<p>Site Description: Three parcel property on the east and west sides of Bay Street. Parcel 1 is the main office and primary lumber yard on the eastern side of the road. Parcel 2 is north of the KC Rentals property and east of the road and contains lumber sheds. Parcel 3 is on the west side of Bay Street and contains a lumber shed.</p> <p>Current Use: Lumber yard.</p> <p>Past Uses: Allens have owned the property since 1960, when they bought the property from Caldbeck & Cosgrove (C&C), which also operated a lumber yard on Parcel 1. Parcel 3 formerly contained a three-story building where C&C manufactured windows and doors.</p>	
Surrounding Properties:			
			
South: CVPS		North: KC Rentals property is between Parcels 1 & 2. Ide property is northwest of each.	
			
East: Former CVPS utility pole drying yard.		West: Rail yard	

Recognized Environmental Conditions (RECs):		
REC 1: 275-gallon diesel AST in main lumber yard.		
Contaminants of Concern: diesel fuel (VOCs and PAHs)		
Other Site RECs, based on interviews, etc.		
REC #	Description	Contaminants of Concern
REC 2:	Location of the Site downgradient of the St. Johnsbury rail yard	All
REC 3:	Location of the Site adjacent to CVPS	PAHs, cresols, metals, PCBs
REC 4:	Past manufacturing on Parcel 3 by Caldbeck and Cosgrove.	Varnish & ketones (VOCs), metals
REC 5:	Past granite manufacturing	Metals, chlorinated solvents, petroleum solvents
REC 6:	Past Coal storage	PAHs
Site Address: _____ Date: _____		
Link to other site photos: _____		



Supporting Documents & GIS



Identify

Identify from: Building footprints

- 1959 to 1988 Petroleum Tanks
- tblSupportingFiles
 - Lumber shed on parcel 3 of the Allen properties.
 - Site Inspection Form
 - Historic birds-eye photo of the Allen Lumber property
 - Central yard at Allens
 - Diesel AST
 - Adjacent property to the north (Ide Grain elevator)
 - KNTT Property, located between Allen parcels

Location:

Field	Value
FileID	136
UseID	2026
FileName	IMG_1148.JPG
Type	Photo
Description	Diesel AST
Hyperlink	O:\Proj-09\IR\2271-R_VTDEC TBA\SP 06 Bay Street\F-Data\GISData\Supp...

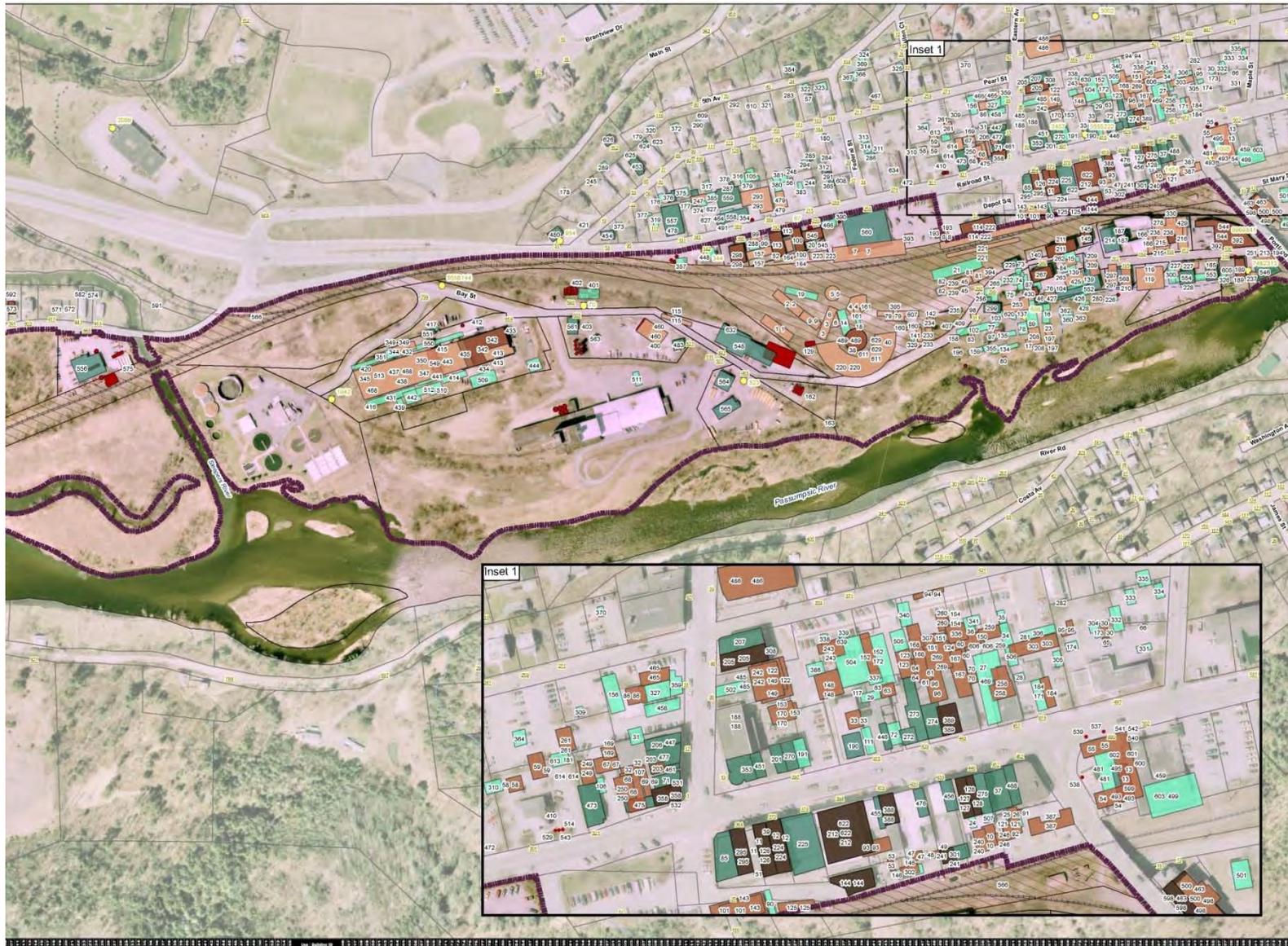
IMG_1148.JPG - Windows Photo Viewer

File Print E-mail Burn Open

Navigation controls: Home, Back, Forward, Refresh, Close



Potential Sources of Petroleum and Ketones





Potential Sources of Chlorinated VOCs





Potential Sources of PAHs





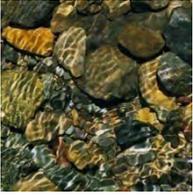
Potential Sources of Metals





Potential Sources of PCBs and Pesticides





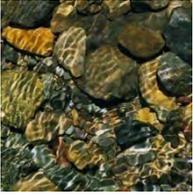
Conclusions

Landscape Change

- Infilling of the Passumpsic River occurred in stages between 1880 and 1900
- The nature of this fill is unknown.

Long Running Industrial and Commercial Use (+150 years)

- Historic industries have included wood product manufacturing, grain milling and storage, the rail yard and ancillary rail operations, coal gasification, stone manufacturing, electrical power generation, and bulk fuel storage.
- Nearby Land use has included automotive service, dry cleaning, and manufacturing.
- Past practices may have resulted in release(s) of several types of contaminants.



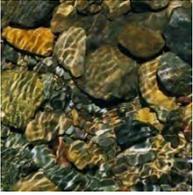
Conclusions (continued)

Known Hazardous Sites

- Widespread petroleum contamination in the middle third of the Project Area
- Full extent of contamination remains unknown.

Data Gaps

- Presence of other Contaminants of Concern has not been assessed.
- Potential impact to receptors from other COCs or via other media, specifically indoor air, has not been assessed.



Recommendations

- Prior to proceeding with redevelopment activities within the Project Area, complete Phase II ESAs to assess whether RECs identified here have resulted in a release of hazardous materials to the environment.
 - Phase II ESA should augment existing data sets in a way that exposure risk may be evaluated and effective remedial planning can occur.
 - A focus should be made to assess other potential COCs and impacted media that present risk to future users (e.g. vapor intrusion and surface soil).
- Prior to purchasing properties within the Project Area, the Town or prospective purchasers should perform a Phase I ESA in strict accordance with ASTM 05-1527.
- Incorporate all existing and new data using GIS.