

HAZARDOUS MATERIALS EVALUATION REPORT

BOW TO CONCORD I-93 IMPROVEMENTS BOW / CONCORD, NEW HAMPSHIRE

NH State Project No. 13742

Task 6.13

FOR

**McFARLAND JOHNSON, INC.
MS. JENNIFER ZORN, PROJECT MANAGER
53 REGIONAL DRIVE
CONCORD, NEW HAMPSHIRE 03301**

BY

NOBIS ENGINEERING, INC.

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**Nobis Project No. 87810.00
AUGUST 8, 2018**



August 8, 2018
File No. 87810.00

McFarland Johnson, Inc.
Ms. Jennifer Zorn, AICP
Project Manager
53 Regional Drive,
Concord, New Hampshire, 03301

Re: Hazardous Materials Evaluation Report
Bow to Concord I-93 Improvements
Task 6.13
NH State Project No. 13742

Dear: Ms. Zorn

Nobis Engineering, Inc. (Nobis) is pleased to present the attached Hazardous Materials Summary Report, supporting Task 6.13 of NH state Project No. 13742, Bow to Concord I-93 Improvements. This submittal has been revised to address comments received by Nobis on June 18, 2018.

Please contact the undersigned with questions or comments pertaining to this submittal or for further information as necessary.

Sincerely,

NOBIS ENGINEERING, INC.

A handwritten signature in blue ink, appearing to read "Joshua R. Stewart".

Joshua R. Stewart
Project Scientist

A handwritten signature in blue ink, appearing to read "Clarence 'Tim' Andrews".

Clarence "Tim" Andrews, P.G.
Senior Project Manager
Director of Environmental Services

Attachment

c: File No. 87810.00 (w/attach.)

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BOW TO CONCORD I-93 IMPROVEMENTS
BOW / CONCORD, NEW HAMPSHIRE

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1.0 INTRODUCTION

Nobis Engineering, Inc. has prepared this report to identify and summarize hazardous material concerns with the potential to impact the proposed improvements to the study corridor. This report summarizes the results of Nobis's evaluation of hazardous materials within the study corridor. Hazardous materials include contaminated soil, groundwater, and construction materials, which may be contaminated with, but not limited to, petroleum products, metals, hazardous chemicals, asbestos, and lead-based paint.

This hazardous materials evaluation was performed to support Task 6.13 of NH State Project No. 13742.

2.0 HAZARDOUS MATERIALS EVALUATION APPROACH

The screening review of the corridor provides an initial listing of the contaminated sites within the corridor boundary and within a 100-foot setback from the corridor boundary, as depicted in Figure 1. If intrusive activities are to be performed, *e.g.*, excavations that might encounter known groundwater and/or soil contamination, additional assessment of the contaminated site may be required to manage potential exposure to petroleum or hazardous substances. A commercial database search, obtained from the commercial environmental due diligence database company EDR, Inc., was generated for the entire corridor boundary area, including the "Alternatives". Following the EDR report, the NHDES OneStop Geographic Information System (GIS) website was used to identify contaminated sites within the corridor boundary and 100-foot setback areas. The website includes NHDES project sites with administrative tracking records, such as underground storage tanks (USTs) and hazardous waste generators, as well as contaminated sites with documented discharges or suspected discharges of petroleum or hazardous materials. These contaminated sites are shown on the Asbestos Disposal Sites (ADSs) and Remediation Sites GIS layers. Due to the limitations of the OneStop GIS website for this application, a conservative approach was used where interpretation of the search distance was required, *i.e.*, some NHDES project sites reviewed may be just outside the corridor boundary and 100-foot setback area. Following the NHDES OneStop GIS website review, the New Hampshire Department of Transportation (NHDOT) Risk Assessment Survey for Contamination and Appraisal of Land (RASCAL) database was consulted for any additional known hazardous material concerns within the corridor boundary and 100-foot setback area.

In reviewing the corridor through the OneStop GIS website, two basic assumptions were applied: 1) groundwater flow within the corridor boundary is generally toward the Merrimack River, and 2) sites with a status of Closed or Inactive are assumed, in the absence of other mitigating factors or information, to be in compliance with state and federal requirements with respect to soil and groundwater. It is noted that, although regulators may not require additional action, Inactive ADSs may require special management if disturbed.

Given these assumptions, the corridor was reviewed relative to the following:

Is the NHDES project site shown on the Asbestos Disposal Site or Remediation Sites GIS layers?

If No – Not considered a contaminated site and no further review performed.

If Yes – Is the contaminated site within the corridor boundary and 100-foot setback, as depicted in GIS?

If No – No further review.

If Yes – listed in Table 1; is the site status other than Closed or Inactive?

If No – No further review.

If Yes – For contaminated sites with ongoing investigations or ongoing monitoring under a Groundwater Management Permit (GMP), is the site hydrologically upgradient of the corridor?

If No – No further review.

If Yes – refer to discussion below

Contaminated sites that are hydrologically upgradient of the corridor and are monitored under a GMP may require additional assessment if intrusive activities have the potential to encounter contaminated groundwater. The assessment may consist of as little as a review of NHDES reports available online to determine the general depth to groundwater. If excavations are anticipated that have the potential to encounter contaminated groundwater, then additional assessment of existing records may be required to determine any precautions to limit worker exposure and manage contaminated water.

3.0 IDENTIFIED HAZARDOUS MATERIALS SUMMARY

A discussion of identified Hazardous Material sites is presented in the sections below; sections are broken up by corridor study area subsections as depicted in Figures 2 through 9. A complete list of the 43 sites within the corridor boundary and 100-foot setback (as shown in Figure 1) identified in accordance with the criteria above are listed in Table 1.

3.1 I-89 Exit 1

Three sites were identified within the I-89 Exit 1 section of the corridor (Table 2). Two of the sites are listed as closed in the NHDES database and include a paint thinner spill on the I-89SB ramp to I-93SB and an auto repair shop listed for underground injection control due to the presence of floor drains. The one open remediation site is a gas station for a UST petroleum release.

3.2 I-89 and I-93 Interchange

Five sites were identified within the I-89 and I-93 interchange section of the corridor (Table 3). Four of the sites are listed as closed in the NHDES database and include a diesel fuel release from a truck accident on I-93NB, a motor oil spill at Grappone Collision, and two ether releases at the Grappone facilities. The one open remediation site is the Former Grappone Honda for an ether release. The main contaminant of concern from an ether release is the gasoline additive methyl tert-butyl ether (MtBE).

3.3 I-93 Exit 12

One site was identified within the I-93 Exit 12 section of the corridor (Table 4). The site, a sheet metal facility, where solvents were likely used, was listed for underground injection control due to the presence of floor drains. The site is listed as closed since 1997 in the NHDES OneStop database.

3.4 I-93 Exit 13

Ten sites were identified within the I-93 Exit 13 section of the corridor (Table 5). Five of the sites are listed as closed in the NHDES database and include releases from a former motel, a former gas station, a former commercial building, and a former jeweler. One of the closed sites was closed with an Activity and Use Restriction (AUR) in place. The five open remediation sites include the former Store 24 and the former Johnson & Dix bulk fuel storage facility for petroleum releases,

Former Advanced Recycling for PCE and TCE releases, and the Concord Coal Gas and Exit 13 coal tar pond for releases related to coal gas production. The Concord Coal Gas and Exit 13 coal tar pond releases have created a sizable plume of groundwater contamination. The approximate plume limits are depicted on Figure 5. Additionally, two auto salvage yards (not included in the site count) were identified within this section of the corridor. No documented releases from the salvage yards were encountered during review; however, due to the nature of salvage yards, a hazardous materials condition may be present at these locations.

3.5 I-93 Exit 14 Area

Eight sites were identified within the I-93 Exit 14 Area section of the corridor (Table 6). Five of the sites are listed as closed in the NHDES database, including a motor oil release from a car accident on I-93NB at mile marker 37.9 and releases from a former gas station, a car service center, and former commercial buildings. The three open remediation sites include two gas stations with UST petroleum releases and former Concord Cleaners dry cleaner PCE release. One of the former gas station sites has an associated plume of groundwater contamination. The approximate plume limits are depicted on Figure 6.

3.6 I-93 Exits 14 and 15 Area

Sixteen sites were identified within the I-93 Exits 14 and 15 Area section of the corridor shown on Figures 7 through 9 (Table 7). Eight of the sites are listed as closed in the NHDES database and include a diesel fuel release from a truck accident on I-93SB at Exit 15 and another at the I-93/I-393 interchange, a gasoline spill on Storrs Street, releases from commercial buildings, and a former hotel. The eight open remediation sites include five gas stations with UST petroleum releases, a NHDOT facility with a UST release, an above ground storage tank release of fuel oil, and an inactive asbestos disposal site (ADS). Several of the open sites have associated plumes of groundwater contamination. The approximate plume limits are depicted on Figure 7.

4.0 FINDINGS

A contaminated site with an Activity and Use Restriction (AUR) may require additional assessment to understand the extent and limitations of the AUR if intrusive activities are required in close proximity to the AUR site. Reviewing NHDES and county records to determine the location of the AUR relative to the corridor may be all that is required. If an AUR includes or abuts

the right-of-way, the AUR limitations should be reviewed to determine any restrictions on disturbances and material management requirements.

Contaminated sites that are hydrologically upgradient of the corridor and are monitored under a GMP may require additional assessment if intrusive activities have the potential to encounter contaminated groundwater. The assessment may consist of as little as a review of NHDES reports available online to determine the general depth to groundwater. If excavations are anticipated that have the potential to encounter contaminated groundwater, then additional assessment of existing records may be required to determine any precautions to limit worker exposure and manage contaminated water.

Inactive ADSs do not require ongoing monitoring and generally do not have administrative limitations. Appropriate precautions are advisable for any activities requiring surficial disturbance near an ADS. These precautions may include the need for ADS-certified workers and consultations with NHDES personnel to determine the likely presence of asbestos waste. If encountered, waste containing asbestos will require management in accordance with State and Federal requirements.

4.1 Per- and Polyfluoroalkyl Substances (PFAS)

Upon request by McFarland Johnson, Nobis also evaluated available information on the NHDES PFAS informational webpage. The PFAS database includes a state-wide map of all current PFAS sampling sites; however, this database is in the preliminary stages and does not include all possible sites, only those where testing has been conducted and reported. Many sites under NHDES oversight, which are scheduled to be sampled in 2018, are not yet included. For privacy purposes, the map does not include ownership information or addresses of current sampling sites, but it does provide a qualitative assessment of whether there are potential PFAS issues along the study corridor.

The PFAS database indicates that there are three sites with PFAS detections just to the north of the I-89/I-93 interchange. Laboratory analysis is performed for nine PFAS compounds. Currently, an Ambient Groundwater Quality Standard (AGQS) of 70 parts per trillion has been established for PFOS, PFOA or the sum of the two; standards for PFNA and PFHxS are expected to be established by January 1, 2019. The detections at the sites reviewed in the I-89/I-93 interchange area fall below 70 ppt.

4.2 Asbestos and Lead in Bridge Materials

Nobis obtained as-built plans from NHDOT of the bridges and overpasses present within the corridor boundary. A review of the plans by Nobis did not identify any evidence of the presence of asbestos or lead-based paint in the building materials of the bridges and overpasses within the corridor. In accordance with the Scope of Work, no inspections of these structures were conducted as part of this assessment.

4.3 Initial Site Assessments (ISAs)

Nobis understands that up to five non-intrusive Initial Site Assessments (ISAs) will be conducted on a limited number of properties in association with Part C of the Corridor Study. These properties along the corridor represent sites that are not already subject to NHDES oversight and reporting. Based on the data reviewed as part of this Hazardous Materials Evaluation, Nobis recommends that those ISAs be performed for the following sites:

- Central NH Sales, Inc., Auto Salvage Yard, Hall Street, Concord, NH
- Arnold's Truck Salvage, Auto Salvage Yard, Hall Street, Concord, NH

These properties were selected based on their past and/or current uses as automotive salvage yards, lack of prior investigations or analytical data available for review, and unknown current environmental conditions. These properties may be potential sources of contaminated media and/or hazardous materials and a hazardous materials condition may be present at these locations.

TABLES

Table 1
Documented Environmental Sites Proximal to the I-93 Corridor
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
10 Fort Eddy Road (Proposed Boston Market)	199605029	10 Fort Eddy Road, Concord	No	HAZWASTE	Closed	PCE, TCE, MtBE, cis-1,2-DCE, 1,1,1-TCA	Figure 6
Agway, Inc.	198605615	650 South Commercial St, Concord	Yes - Inactive	OPUF	Closed	Fuel Oil	Figure 7
Black Jack Heavy Hauling	201106045	I-93 SB Exit 15	No	IRSPILL	Closed	Diesel	Figure 7
Cailler's Gulf	199212021	89 South Main Street, Concord	Yes - Inactive	HAZWASTE, LUST	Closed	BTEX, MtBE, Naphthalene, 1,2,4-TMB, 1,3,5-TMB	Figure 6
Car Preservation Center	198705003	74-76 South Main Street, Concord	No	LUST	Closed	BTEX, Methylene Chloride, Acetone, PCE	Figure 6
Concord Center Trust	199307012	10 Ferry Street, Concord	No	LUST, HAZWASTE Asbestos Disposal Site (Inactive)	Closed Open	PCE, Asbestos	Figure 7
Concord Cleaners	200011034	80 South Main Street, Concord	Yes - Inactive	IRSPILL UIC, HAZWASTE	Closed Open	PCE, TCE, cis-1,2-DCE	Figure 6
Concord Coal Gas Site	198904063	Gas St and South Main St, Concord	No	HAZWASTE	Open	BTEX, Napthalene, Styrene, 1,2,4-TMB, SVOCs	Figure 5
Cumberland Farms 2890	199210026	165 North Main Street, Concord	Yes - Inactive	LUST LUST	Closed Open	Benzene, Napthalene, MtBE, tBA, 1,2,4-TMB	Figure 7
Exit 13 Coal Tar Pond	199212014	Manchester Street Bridge Area	No	HAZWASTE	Open	Benzene, Napthalene, MtBE, tBA, PAHs	Figure 5
Exxon Div of CFI 2861	199007029	196 North Main Street, Concord	Yes - Inactive	IRSPILL, LUST LUST	Closed Open	BTEX, Napthalene, MtBE, tBA, tAME, 1,2,4-TMB, PCE	Figure 7
Former Econolodge	198612000	Gulf Street, Concord	No	HAZWASTE, LUST	Closed	BTEX, Napthalene, Styrene, MtBE	Figure 5
Former Gulf Station	198908007	21 Water Street, Concord	Yes - Inactive	LUST	Closed	Benzene	Figure 5
Former Highway Hotel Site	199108022	Fort Eddy Road, Concord	No	Site Assessment	Closed	PCE, TCE, 1,2-DCE, 1,1,1-TCA, Chloroform, MtBE	Figure 7
Former Johnson & Dix Bulk Fuel	199104009	1 Gulf Street, Concord	Yes - Declassified	SPILL/RLS, LUST, UIC FUEL, HAZWASTE, LUST	Closed Open	BTEX, Napthalene, 1,2,4-TMB, 1,3,5-TMB, PCE, cis-1,2-DCE	Figure 5
Former NH Business Sales Office	199304013	10 Water Street, Concord	No	HAZWASTE	Closed	BTEX, PCE, Styrene, Chloroform, PAHs	Figure 5
Getty Station 55208	199812213	242 North Main Street, Concord	Yes - Declassified	LUST	Open	BTEX, Napthalene, 1,2,4-TMB	Figure 7
Grappone Collision	200905045	594 Route 3A, Bow	Yes	IRSPILL	Closed	Oil	Figure 3
Grappone Ford	199702005	Route 3A, Bow	No	Site Assessment ETHER	Closed	MtBE, TPH-DRO, Metals	Figure 3
Grappone Honda	200304047	507 Route 3A, Bow	No	SPILL/RLS, Site Assessment ETHER	Closed Open	Oil, Toluene, Acetone, MtBE	Figure 3
Grappone Leasing, Former R&R Jewellery	198605461	4 Hall Street, Concord	No	MOST, OPUF, SPILL/RLS	Closed	PAHs, Lead	Figure 5
Grappone Toyota and Truck Center	199703048	594 Route 3A, Bow	Yes	ETHER	Closed	MtBE	Figure 3
Greenlands Corporation	199212027	8A Commercial Street, Concord	Yes - Inactive	Site Assessment	Closed	BTEX, TPH, PCE	Figure 7
Hess Station 29500	199306008	175 North Main Street, Concord	Yes	IRSPILL LUST	Closed Open	BTEX, MtBE, Napthalene	Figure 7
Jerry's Auto Clinic	199412011	521 South Street, Bow	Yes - Inactive	UIC	Closed	Closed Floor drain for rain/snow melt	Figure 2
Lockwood Young Corporation	198805015	South Commercial Street, Concord	Yes - Inactive	UIC, LUST	Closed	BTEX, MtBE, Napthalene, Isopropylbenzene	Figure 7
Lot 26-1-10	199401020	14-16 Water Street, Concord	No	HAZWASTE	Closed - AUR	Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene	Figure 5
Merrimack Sheet Metal, Inc.	199704007	119 Hall Street, Concord	Yes - Inactive	UIC	Closed	Closed Floor Drain	Figure 4
Midas Muffler	200507010	79 Fort Eddy Road, Concord	Yes - Inactive	SPILL/RLS, ETHER	Closed	MtBE	Figure 7
Mobil 10571	199102011	519 South Street, Bow	Yes - Inactive	IRSPILL (2), UIC LUST	Closed Open	MtBE, 1,1-DCE	Figure 2
Mobil Station (01-367) 5D2	198904039	129 South Main Street, Concord	Yes - Inactive	UIC LUST, UIC	Closed Open	Benzene, tBA, 1,2-DCA	Figure 6
NHDOT Highway Garage 12	199004021	11 Stickney Ave, Concord	Yes - Declassified	UIC (2), IRSPILL, OPUF HAZWASTE, LUST	Closed Open	Fuel Oil, BTEX, Napthalene, tBA, MtBE, TCE	Figure 7
Paint Thinner Release	201511018	I-89 SB Ramp to I-93 SB	No	IRSPILL	Closed	Paint Thinner	Figure 2
Penny Pitou Travel	200102053	87 South Main Street, Concord	No	LUST	Closed	BTEX, MtBE, Napthalene	Figure 6
Polarized new England Co./ Former Advanced Recycling	200606017	25 Sandquist Street, Concord	Yes	ETHER, HAZWASTE SPILL/RLS	Closed Open	PCE, TCE, MtBE, tBA	Figure 5
Prescott & Sons Oil	199407068	196 North Main Street, Concord	Yes - Inactive	LAST	Open	Fuel Oil	Figure 7
Roadside Spill	201207008	I-93 and I-393 Interchange	No	IRSPILL	Closed	Diesel, Hydraulic Oil	Figure 7
SNP Parking Associates, LLC	200110045	Storrs Street, Concord	Yes - Inactive	SPILL/RLS	Closed	Gasoline, Fuel Oil	Figure 7
South Commercial Street Mobil	198905028	32 South Commercial Street, Concord	Yes - Inactive	Site Assessment, IRSPILL LUST	Closed Open	Ethylbenzene, Xylenes, Isopropylbenzene, n-Propylbenzene, 1,2,4-TMB, 1,3,5-TMB	Figure 7
South Main Citgo	199302009	81 South Main Street, Concord	Yes - Inactive	LUST	Open	BTEX, MtBE, tBA, Napthalene, 1,2,4-TMB, 1,3,5-TMB, EDB	Figure 6
Store 24	199007032	201 South Main Street, Concord	No	LUST	Open	BTEX, MtBE, Napthalene, 1,2,4-TMB, 1,3,5-TMB, Isopropylbenzene	Figure 5
Truck Accident Diesel Release	201610204	I-93 NB	No	SPILL/RLS	Closed	Diesel	Figure 3
Vehicle Into the Merrimack River	201112041	I-93 NB, MM 37.9	No	IRSPILL	Closed	Motor Oil Spill	Figure 6

Notes:

- Project information was obtained from the NHDES OneStop database during January 2018.
- ETHER = Ether Contaminated Site, FUEL = Leaking Bulk Storage Facility Containing Heating Fuel Oil; HAZWASTE = Hazardous Waste; IRSPILL = Initial Response Spill; LAST = Leaking Aboveground Storage Tank; LUST = Leaking Underground Storage Tank; MOST = Leaking Motor Oil Storage Tank; OPUF = On-Premise Use Facility Containing Fuel Oil; SPILL/RLS = Spill/Release; UIC = Underground Injection Control
- 1,1-DCE = 1,1-Dichloroethene; 1,2-DCA = 1,2-Dichloroethane; 1,1-DCE = 1,1-Dichloroethene; 1,2,4-TMB = 1,2,4-Trimethylbenzene; 1,3,5-TMB = 1,3,5-Trimethylbenzene; cis-1,2-DCE = cis-1,2-Dichloroethene; BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes; EDB = Ethylene Dibromide; MtBE = Methyl tert-Butyl Ether; PAHs = Polycyclic Aromatic Hydrocarbons; PCE = Tetrachloroethene; tBA = tert-Butyl Alcohol; TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics; TCE = Trichloroethene;

Table 2
Documented Environmental Sites I-89 Exit 1
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
Jerry's Auto Clinic	199412011	521 South Street, Bow	Yes - Inactive	UIC	Closed	Closed Floor drain for rain/snow melt	Figure 2
Mobil 10571	199102011	519 South Street, Bow	Yes - Inactive	IRSPILL (2), UIC LUST	Closed Open	MtBE, 1,1-DCE	Figure 2
Paint Thinner Release	201511018	I-89 SB Ramp to I-93 SB	No	IRSPILL	Closed	Paint Thinner	Figure 2

Notes:

1. Project information was obtained from the NHDES OneStop database during January 2018.

2. ETHER = Ether Contaminated Site, FUEL = Leaking Bulk Storage Facility Containing Heating Fuel Oil; HAZWASTE = Hazardous Waste; IRSPILL = Initial Response Spill; LAST = Leaking Aboveground Storage Tank; LUST = Leaking Underground Storage Tank; MOST = Leaking Motor Oil Storage Tank; OPUF = On-Premise Use Facility Containing Fuel Oil; SPILL/RLS = Spill/Release; UIC = Underground Injection Control

3. 1,1-DCE = 1,1-Dichloroethene; 1,2-DCA = 1,2-Dichloroethane; 1,1-DCE = 1,1-Dichloroethene; 1,2,4-TMB = 1,2,4-Trimethylbenzene; 1,3,5-TMB = 1,3,5-Trimethylbenzene; cis-1,2-DCE = cis-1,2-Dichloroethene; BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes; EDB = Ethylene Dibromide; MtBE = Methyl tert-Butyl Ether; PAHs = Polycyclic Aromatic Hydrocarbons; PCE = Tetrachloroethene; tBA = tert-Butyl Alcohol; TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics; TCE = Trichloroethene;

Table 3
Documented Environmental Sites I-98 and I-93 Interchange
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
Grappone Collision	200905045	594 Route 3A, Bow	Yes	IRSPILL	Closed	Oil	Figure 3
Grappone Ford	199702005	Route 3A, Bow	No	Site Assessment ETHER	Closed	MtBE, TPH-DRO, Metals	Figure 3
Grappone Honda	200304047	507 Route 3A, Bow	No	SPILL/RLS, Site Assessment ETHER	Closed Open	Oil, Toluene, Acetone, MtBE	Figure 3
Grappone Toyota and Truck Center	199703048	594 Route 3A, Bow	Yes	ETHER	Closed	MtBE	Figure 3
Truck Accident Diesel Release	201610204	I-93 NB	No	SPILL/RLS	Closed	Diesel	Figure 3

Notes:

- Project information was obtained from the NHDES OneStop database during January 2018.
- ETHER = Ether Contaminated Site, FUEL = Leaking Bulk Storage Facility Containing Heating Fuel Oil; HAZWASTE = Hazardous Waste; IRSPILL = Initial Response Spill; LAST = Leaking Aboveground Storage Tank; LUST = Leaking Underground Storage Tank; MOST = Leaking Motor Oil Storage Tank; OPUF = On-Premise Use Facility Containing Fuel Oil; SPILL/RLS = Spill/Release; UIC = Underground Injection Control
- 1,1-DCE = 1,1-Dichloroethene; 1,2-DCA = 1,2-Dichloroethane; 1,1-DCE = 1,1-Dichloroethene; 1,2,4-TMB = 1,2,4-Trimethylbenzene; 1,3,5-TMB = 1,3,5-Trimethylbenzene; cis-1,2-DCE = cis-1,2-Dichloroethene; BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes; EDB = Ethylene Dibromide; MtBE = Methyl tert-Butyl Ether; PAHs = Polycyclic Aromatic Hydrocarbons; PCE = Tetrachloroethene; tBA = tert-Butyl Alcohol; TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics; TCE = Trichloroethene;

Table 4
Documented Environmental Sites I-93 Exit 12
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
Merrimack Sheet Metal, Inc.	199704007	119 Hall Street, Concord	Yes - Inactive	UIC	Closed	Closed Floor Drain	Figure 4

Notes:

1. Project information was obtained from the NHDES OneStop database during January 2018.

2. ETHER = Ether Contaminated Site, FUEL = Leaking Bulk Storage Facility Containing Heating Fuel Oil; HAZWASTE = Hazardous Waste; IRSPILL = Initial Response Spill; LAST = Leaking Aboveground Storage Tank; LUST = Leaking Underground Storage Tank; MOST = Leaking Motor Oil Storage Tank; OPUF = On-Premise Use Facility Containing Fuel Oil; SPILL/RLS = Spill/Release; UIC = Underground Injection Control

3. 1,1-DCE = 1,1-Dichloroethene; 1,2-DCA = 1,2-Dichloroethane; 1,1-DCE = 1,1-Dichloroethene; 1,2,4-TMB = 1,2,4-Trimethylbenzene; 1,3,5-TMB = 1,3,5-Trimethylbenzene; cis-1,2-DCE = cis-1,2-Dichloroethene; BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes; EDB = Ethylene Dibromide; MtBE = Methyl tert-Butyl Ether; PAHs = Polycyclic Aromatic Hydrocarbons; PCE = Tetrachloroethene; tBA = tert-Butyl Alcohol; TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics; TCE = Trichloroethene;

Table 5
Documented Environmental Sites I-93 Exit 13
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
Concord Coal Gas Site	198904063	Gas St and South Main St, Concord	No	HAZWASTE	Open	BTEX, Napthalene, Styrene, 1,2,4-TMB, SVOCs	Figure 5
Exit 13 Coal Tar Pond	199212014	Manchester Street Bridge Area	No	HAZWASTE	Open	Benzene, Napthalene, MtBE, tBA, PAHs	Figure 5
Former Econolodge	198612000	Gulf Street, Concord	No	HAZWASTE, LUST	Closed	BTEX, Napthalene, Styrene, MtBE	Figure 5
Former Gulf Station	198908007	21 Water Street, Concord	Yes - Inactive	LUST	Closed	Benzene	Figure 5
Former Johnson & Dix Bulk Fuel	199104009	1 Gulf Street, Concord	Yes - Declassified	SPILL/RLS, LUST, UIC FUEL, HAZWASTE, LUST	Closed Open	BTEX, Napthalene, 1,2,4-TMB, 1,3,5-TMB, PCE, cis-1,2-DCE	Figure 5
Former NH Business Sales Office	199304013	10 Water Street, Concord	No	HAZWASTE	Closed	BTEX, PCE, Styrene, Chloroform, PAHs	Figure 5
Grappone Leasing, Former R&R Jewelery	198605461	4 Hall Street, Concord	No	MOST, OPUF, SPILL/RLS	Closed	PAHs, Lead	Figure 5
Lot 26-1-10	199401020	14-16 Water Street, Concord	No	HAZWASTE	Closed - AUR	Benzo[a]pyrene, Indeno[1,2,3-cd]pyrene	Figure 5
Polarized new England Co./ Former Advanced Recycling	200606017	25 Sandquist Street, Concord	Yes	ETHER, HAZWASTE SPILL/RLS	Closed Open	PCE, TCE, MtBE, tBA	Figure 5
Store 24	199007032	201 South Main Street, Concord	No	LUST	Open	BTEX, MtBE, Napthalene, 1,2,4-TMB, 1,3,5-TMB, Isopropylbenzene	Figure 5

Notes:

- Project information was obtained from the NHDES OneStop database during January 2018.
- ETHER = Ether Contaminated Site, FUEL = Leaking Bulk Storage Facility Containing Heating Fuel Oil; HAZWASTE = Hazardous Waste; IRSPILL = Initial Response Spill; LAST = Leaking Aboveground Storage Tank; LUST = Leaking Underground Storage Tank; MOST = Leaking Motor Oil Storage Tank; OPUF = On-Premise Use Facility Containing Fuel Oil; SPILL/RLS = Spill/Release; UIC = Underground Injection Control
- 1,1-DCE = 1,1-Dichloroethene; 1,2-DCA = 1,2-Dichloroethane; 1,1-DCE = 1,1-Dichloroethene; 1,2,4-TMB = 1,2,4-Trimethylbenzene; 1,3,5-TMB = 1,3,5-Trimethylbenzene; cis-1,2-DCE = cis-1,2-Dichloroethene; BTEX = Benzene, Toluene, Ethylbenzene, and Xylenes; EDB = Ethylene Dibromide; MtBE = Methyl tert-Butyl Ether; PAHs = Polycyclic Aromatic Hydrocarbons; PCE = Tetrachloroethene; tBA = tert-Butyl Alcohol; TPH-DRO = Total Petroleum Hydrocarbons - Diesel Range Organics; TCE = Trichloroethene;

Table 6
Documented Environmental Sites I-93 Exit 14 Area
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
10 Fort Eddy Road (Proposed Boston Market)	199605029	10 Fort Eddy Road, Concord	No	HAZWASTE	Closed	PCE, TCE, MtBE, cis-1,2-DCE, 1,1,1-TCA	Figure 6
Cailler's Gulf	199212021	89 South Main Street, Concord	Yes - Inactive	HAZWASTE, LUST	Closed	BTEX, MtBE, Naphthalene, 1,2,4-TMB, 1,3,5-TMB	Figure 6
Car Preservation Center	198705003	74-76 South Main Street, Concord	No	LUST	Closed	BTEX, Methylene Chloride, Acetone, PCE	Figure 6
Concord Cleaners	200011034	80 South Main Street, Concord	Yes - Inactive	IRSPILL UIC, HAZWASTE	Closed Open	PCE, TCE, cis-1,2-DCE	Figure 6
Mobil Station (01-367) 5D2	198904039	129 South Main Street, Concord	Yes - Inactive	UIC LUST, UIC	Closed Open	Benzene, tBA, 1,2-DCA	Figure 6
Penny Pitou Travel	200102053	87 South Main Street, Concord	No	LUST	Closed	BTEX, MtBE, Naphthalene	Figure 6
South Main Citgo	199302009	81 South Main Street, Concord	Yes - Inactive	LUST	Open	BTEX, MtBE, tBA, Naphthalene, 1,2,4-TMB, 1,3,5-TMB, EDB	Figure 6
Vehicle Into the Merrimack River	201112041	I-93 NB, MM 37.9	No	IRSPILL	Closed	Motor Oil Spill	Figure 6

Notes:

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Table 7
Documented Environmental Sites I-93 Exits 14 and 15 Area
 Interstate 93 Corridor
 Bow/Concord, New Hampshire

NHDES Site Name	Site No.	Address	RCRA Generator	Project Type	Status	Contaminants of Concern	Reference Map
Agway, Inc.	198605615	650 South Commercial St, Concord	Yes - Inactive	OPUF	Closed	Fuel Oil	Figure 7
Black Jack Heavy Hauling	201106045	I-93 SB Exit 15	No	IRSPILL	Closed	Diesel	Figure 7
Concord Center Trust	199307012	10 Ferry Street, Concord	No	LUST, HAZWASTE Asbestos Disposal Site (Inactive)	Closed Open	PCE, Asbestos	Figure 7
Cumberland Farms 2890	199210026	165 North Main Street, Concord	Yes - Inactive	LUST LUST	Closed Open	Benzene, Napthalene, MtBE, tBA, 1,2,4-TMB	Figure 7
Exxon Div of CFI 2861	199007029	196 North Main Street, Concord	Yes - Inactive	IRSPILL, LUST LUST	Closed Open	BTEX, Naphthalene, MtBE, tBA, tAME, 1,2,4-TMB, PCE	Figure 7
Former Highway Hotel Site	199108022	Fort Eddy Road, Concord	No	Site Assessment	Closed	PCE, TCE, 1,2-DCE, 1,1,1-TCA, Chloroform, MtBE	Figure 7
Getty Station 55208	199812213	242 North Main Street, Concord	Yes - Declassified	LUST	Open	BTEX, Naphthalene, 1,2,4-TMB	Figure 7
Greenlands Corporation	199212027	8A Commercial Street, Concord	Yes - Inactive	Site Assessment	Closed	BTEX, TPH, PCE	Figure 7
Hess Station 29500	199306008	175 North Main Street, Concord	Yes	IRSPILL LUST	Closed Open	BTEX, MtBE, Napthalene	Figure 7
Lockwood Young Corporation	198805015	South Commercial Street, Concord	Yes - Inactive	UIC, LUST	Closed	BTEX, MtBE, Napthalene, Isopropylbenzene	Figure 7
Midas Muffler	200507010	79 Fort Eddy Road, Concord	Yes - Inactive	SPILL/RLS, ETHER	Closed	MtBE	Figure 7
NHDOT Highway Garage 12	199004021	11 Stickney Ave, Concord	Yes - Declassified	UIC (2), IRSPILL, OPUF HAZWASTE, LUST	Closed Open	Fuel Oil, BTEX, Napthalene, tBA, MtBE, TCE	Figure 7
Prescott & Sons Oil	199407068	196 North Main Street, Concord	Yes - Inactive	LAST	Open	Fuel Oil	Figure 7
Roadside Spill	201207008	I-93 and I-393 Interchange	No	IRSPILL	Closed	Diesel, Hydraulic Oil	Figure 7
SNP Parking Associates, LLC	200110045	Storrs Street, Concord	Yes - Inactive	SPILL/RLS	Closed	Gasoline, Fuel Oil	Figure 7
South Commercial Street Mobil	198905028	32 South Commercial Street, Concord	Yes - Inactive	Site Assessment, IRSPILL LUST	Closed Open	Ethylbenzene, Xylenes, Isopropylbenzene, n-Propylbenzene, 1,2,4-TMB, 1,3,5-TMB	Figure 7

Notes:

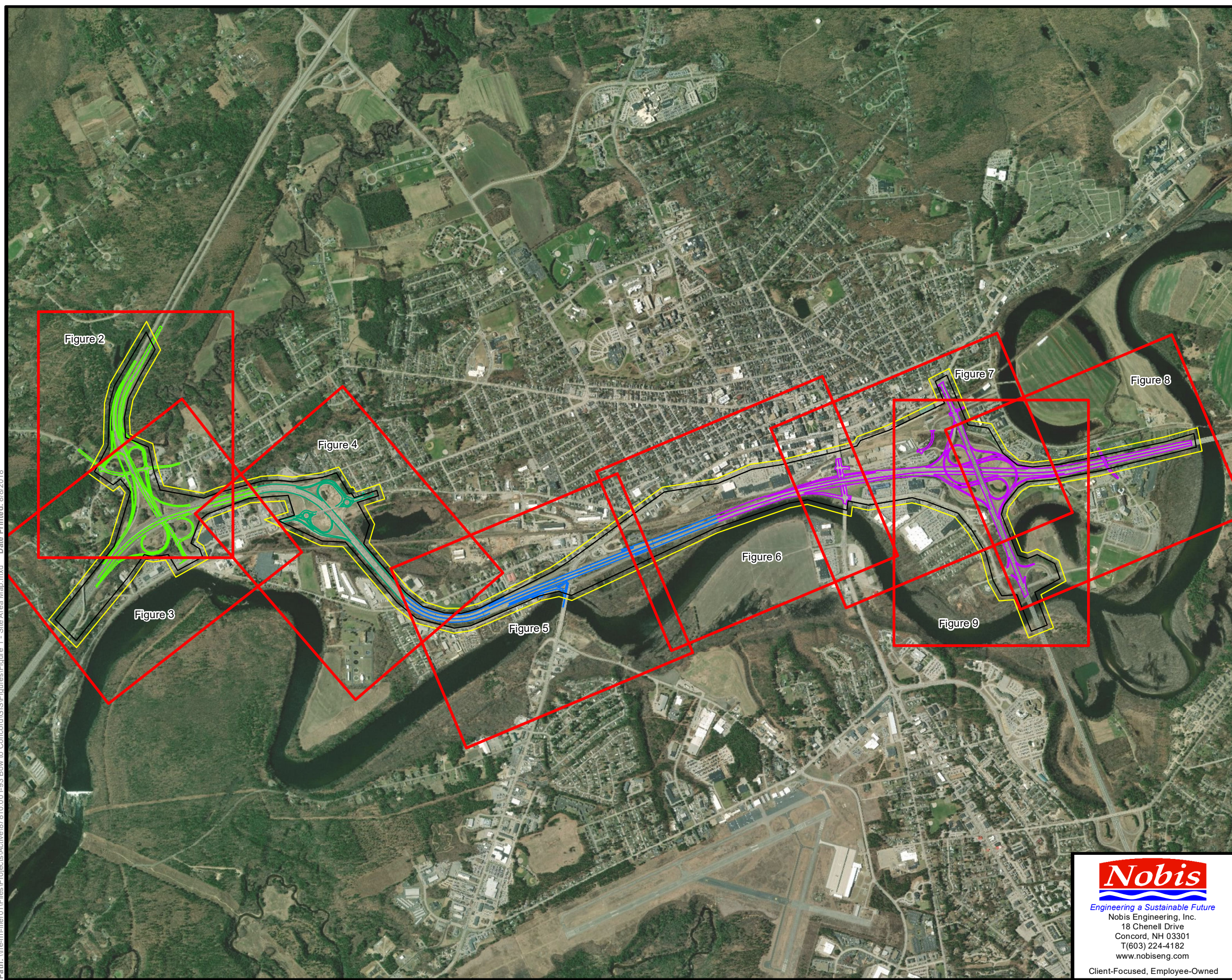
1. Project information was obtained from the NHDES OneStop database during January 2018.

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FIGURES

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 L-93 Bow to Concord\GIS\Figures\Figure 1 - Site Area Map.mxd Date Printed: 8/8/2018



Notes:

1. Site Sketch was developed from site plans available on the New Hampshire Department of Environmental Services (NHDES) OneStop database, NHDES GIS data layers downloaded on January 26, 2018, and observations by Nobis Engineering, Inc. Aerial photograph provided by ESRI.
2. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Corridor Boundary
- 100' Corridor Setback
- Map Location
- Exit 1/I-89 Area: Proposed Alt. K
- Exit 12 Area: Proposed Alt. F
- Exit 13 Area: Proposed Alt. B
- Exit 14/15 Area: Proposed Alt. F2



0 1,000 2,000 4,000



Feet

1 inch = 2,000 feet

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FIGURE 1

SITE AREA MAP
I-93 CORRIDOR
BOW/CONCORD, NEW HAMPSHIRE

PREPARED BY: NZ	CHECKED BY: JR
PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 2 - I-89 Exit 1.mxd Date Printed: 8/8/2018

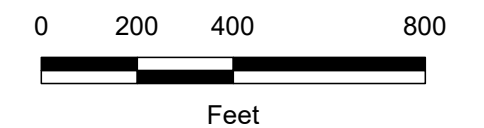


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Legend

- Closed Remediation Sites
- Active Remediation Sites
- Corridor Boundary
- 100' Corridor Setback
- Exit 1/I-89 Area: Proposed Alt. K



1 inch = 400 feet



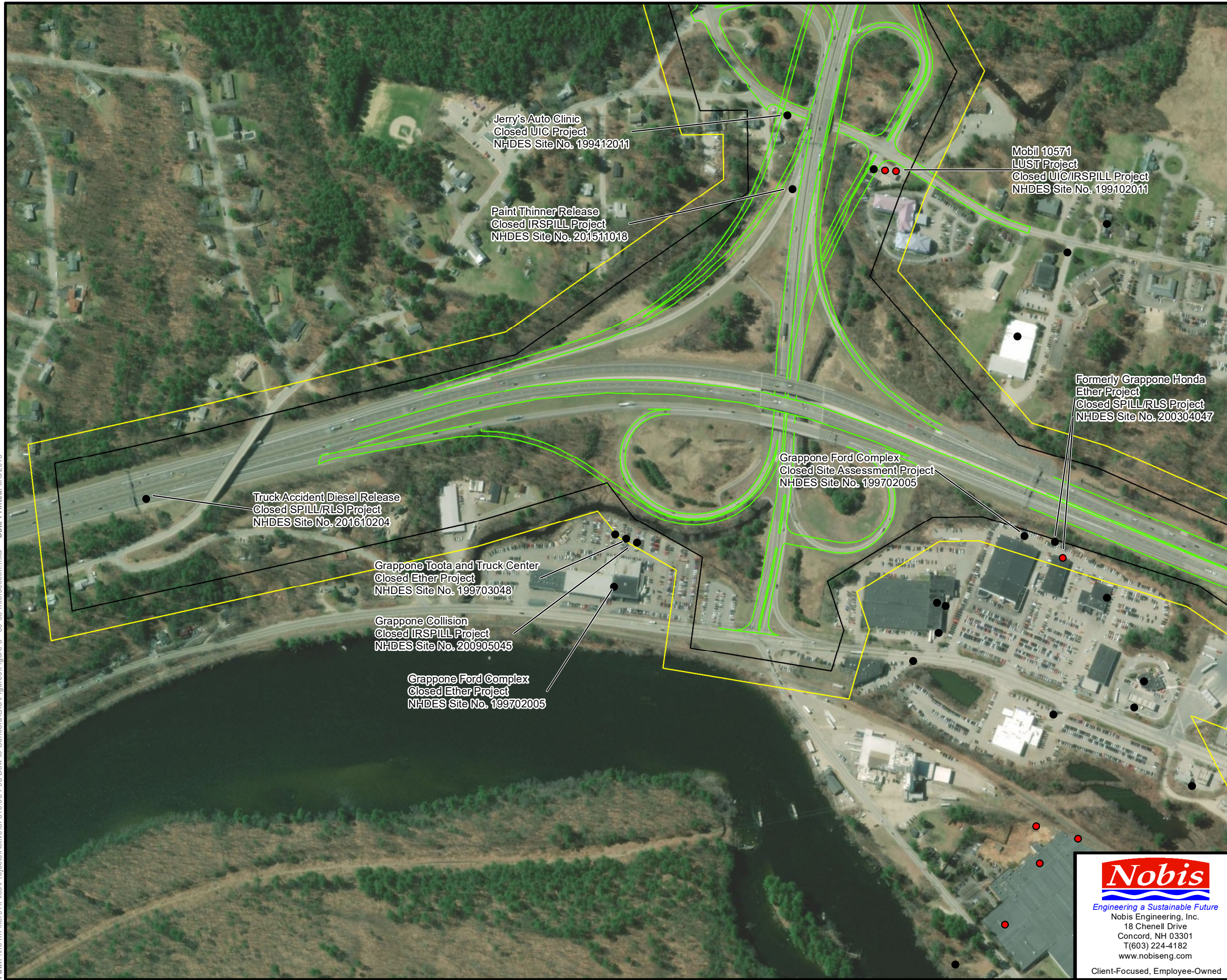
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FIGURE 2

I-89 EXIT 1
CONCEPTS C, K, AND P
I-93 CORRIDOR
BOW/CONCORD, NEW HAMPSHIRE

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PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 3 - 89-93 Intersection.mxd Date Printed: 8/8/2018

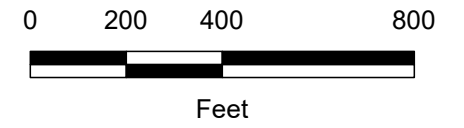
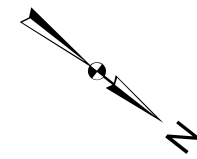


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Legend

- Active Remediation Sites selection
- Closed Remediation Sites
- Active Remediation Sites
- Corridor Boundary
- 100' Corridor Setback
- Exit 1/I-89 Area: Proposed Alt. K



1 inch = 400 feet

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FIGURE 3

I-89 AND I-93 INTERCHANGE
 CONCEPTS C, K, AND P
 I-93 CORRIDOR
 BOW/CONCORD, NEW HAMPSHIRE

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PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 4 - I-93 Exit 12.mxd Date Printed: 8/8/2018

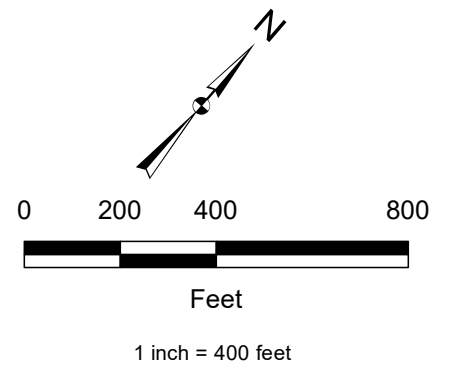


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2. Locations of site features depicted herein are approximate and given for illustrative purposes only.

Legend

- Closed Remediation Sites
- Active Remediation Sites
- Corridor Boundary
- 100' Corridor Setback
- Exit 12 Area: Proposed Alt. F



Formerly Grappone Honda
Closed SPILL/RLS Project
NHDES Site No. 200304047

Grappone Ford Complex
Closed Site Assessment Project
NHDES Site No. 199702005

Merrimack Sheet Metals
Closed UIC Project
NHDES Site No. 199704007

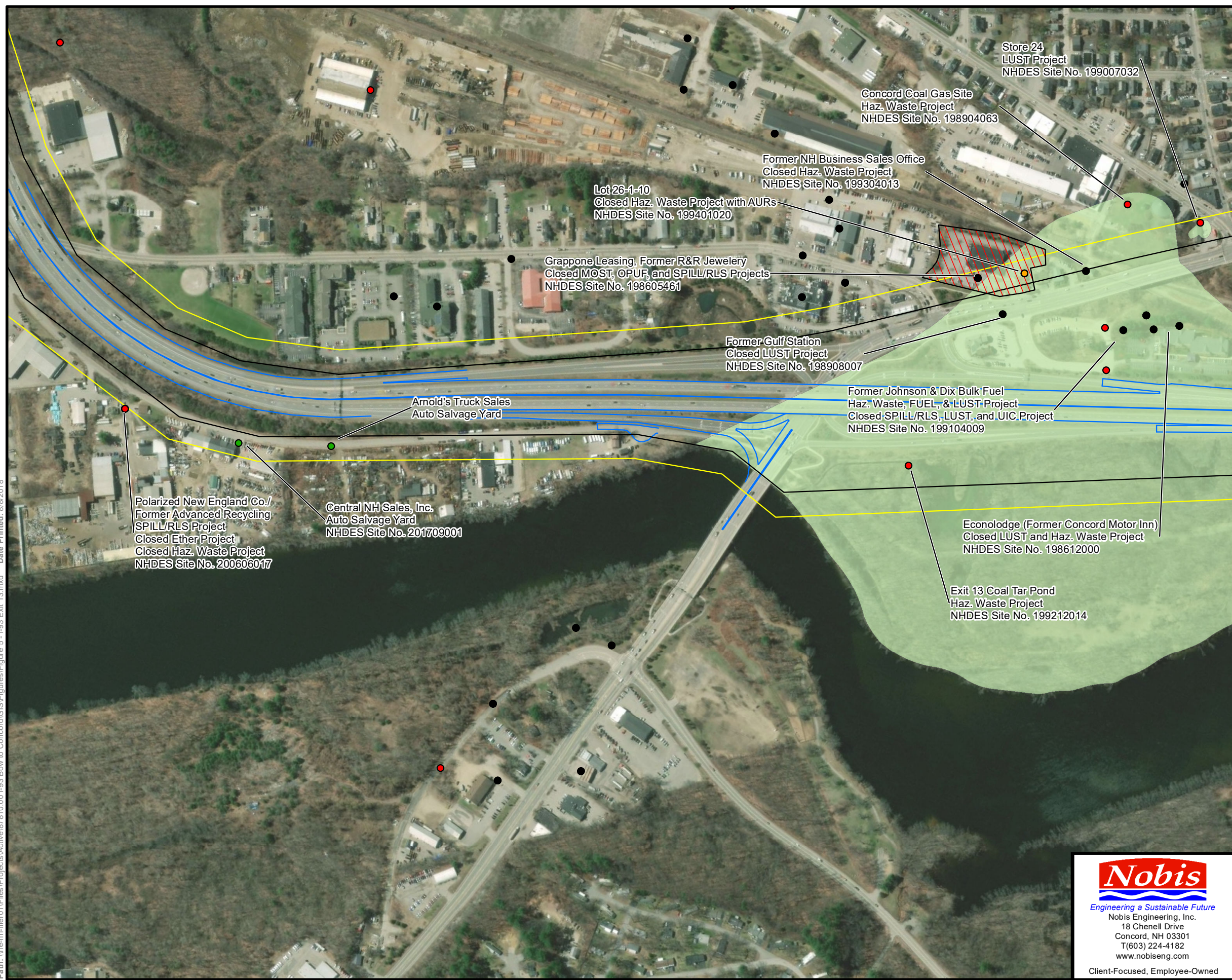
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FIGURE 4

I-93 EXIT 12
CONCEPTS E AND F
I-93 CORRIDOR
BOW/CONCORD, NEW HAMPSHIRE

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PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 5 - I-93 Exit 13.mxd Date Printed: 8/8/2018

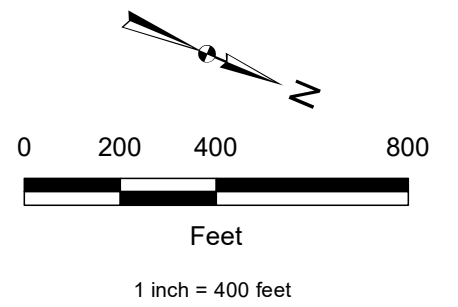


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Legend

- Active Remediation Sites selection 2
- Closed Remediation Sites
- Remediation Sites Closed with AURs
- Active Remediation Sites
- Automobile Salvage Yard
- Corridor Boundary
- 100' Corridor Setback
- ▨ Activity and Use Restrictions
- Groundwater Contaminant Plume
- Exit 13 Area: Proposed Alt. B



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FIGURE 5

I-93 EXIT 13
 CONCEPTS A AND B
 I-93 CORRIDOR
 BOW/CONCORD, NEW HAMPSHIRE

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PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 6 - I-93 Exit 14 Area.mxd Date Printed: 8/8/2018

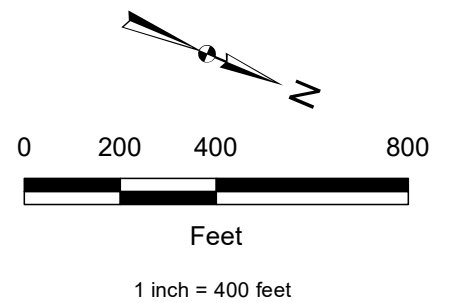


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Legend

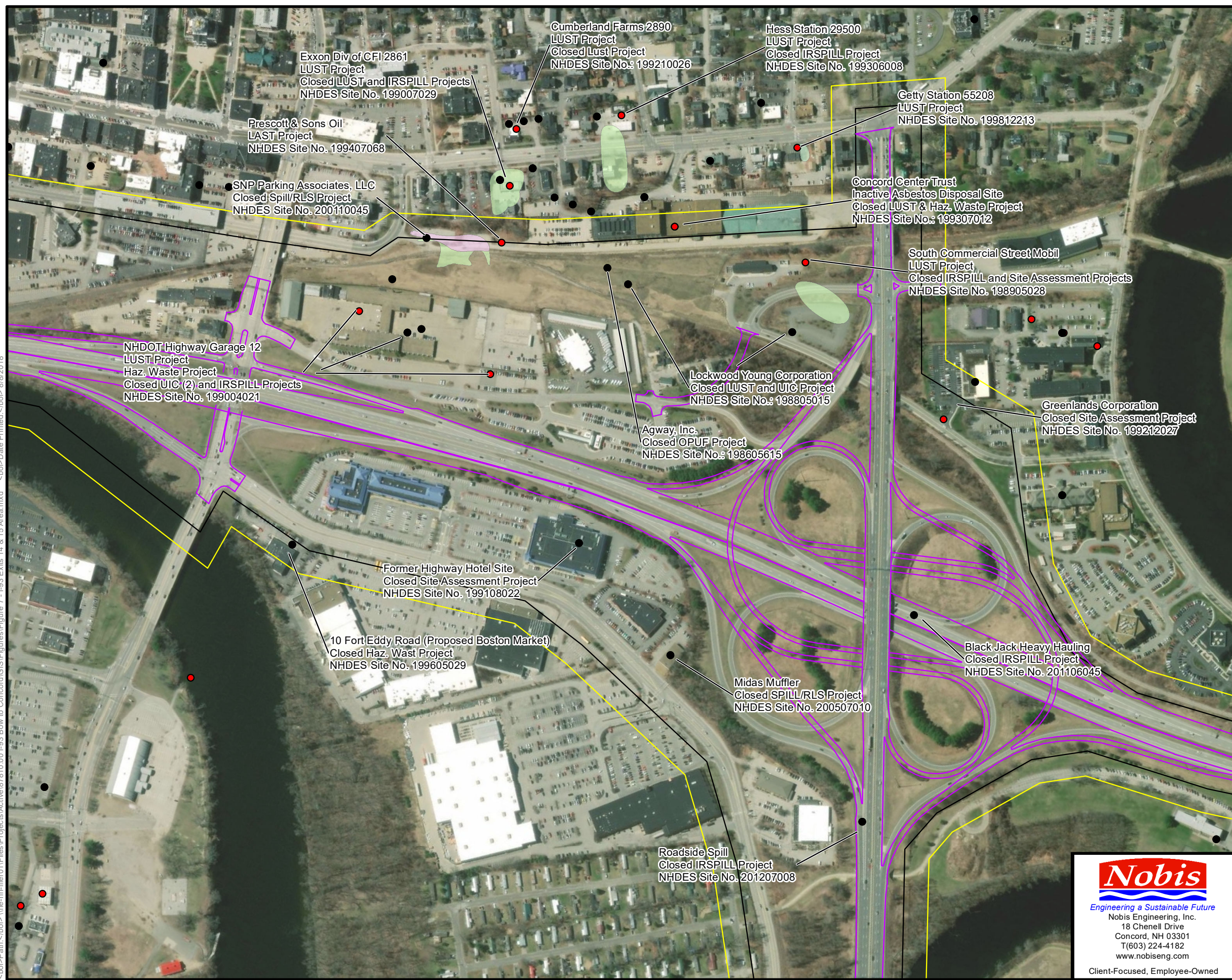
- Closed Remediation Sites
- Active Remediation Sites
- Corridor Boundary
- 100' Corridor Setback
- Groundwater Contaminant Plume
- Exit 13 Area: Proposed Alt. B
- Exit 14/15 Area: Proposed Alt. F2



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FIGURE 6	
I-93 EXIT 14 AREA CONCEPT D2 I-93 CORRIDOR BOW/CONCORD, NEW HAMPSHIRE	
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PROJECT NO. 87810.00	DATE: JANUARY 2018

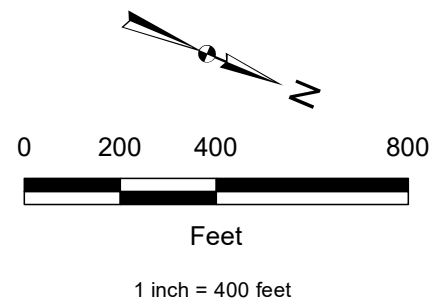
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- Legend**
- Closed Remediation Sites
 - Active Remediation Sites
 - Corridor Boundary
 - 100' Corridor Setback
 - LNAPL Plume
 - Groundwater Contaminant Plume
 - Exit 14/15 Area: Proposed Alt. F2



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FIGURE 7	
I-93 EXITS 14 AND 15 AREA CONCEPT D2 I-93 CORRIDOR BOW/CONCORD, NEW HAMPSHIRE	
PREPARED BY: NZ	CHECKED BY: JR
PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 8 - I-93 Exits 14 and 15 Area.mxd Date Printed: 8/8/2018

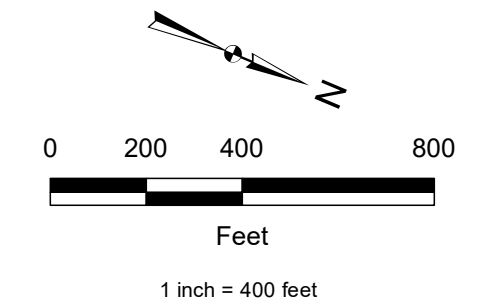


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2. Locations of site features depicted herein are approximate and given for illustrative purposes only.

Legend

- Closed Remediation Sites
- Active Remediation Sites
- Corridor Boundary
- 100' Corridor Setback
- Exit 14/15 Exit Area:
Proposed Alt. F2



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FIGURE 8	
I-93 EXITS 14 AND 15 AREA CONCEPT D2 I-93 CORRIDOR BOW/CONCORD, NEW HAMPSHIRE	
PREPARED BY: NZ	CHECKED BY: JR
PROJECT NO. 87810.00	DATE: JANUARY 2018

Path: \\ne-nh-filer01\Files\Projects\Active\87810.00 I-93 Bow to Concord\GIS\Figures\Figure 9 - Exits 14 and Area.mxd Date Printed: 8/8/2018



Notes:

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2. Locations of site features depicted hereon are approximate and given for illustrative purposes only.

Legend

- Closed Remediation Sites
- Active Remediation Sites
- Corridor Boundary
- 100' Corridor Setback
- Groundwater Contaminant Plume
- Exit 14/15 Area: Proposed Alt. F2

0 200 400 800



Feet

1 inch = 400 feet



FIGURE 9

I-93 EXITS 14 AND 15 AREA
 CONCEPT D2
 I-93 CORRIDOR
 BOW/CONCORD, NEW HAMPSHIRE

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