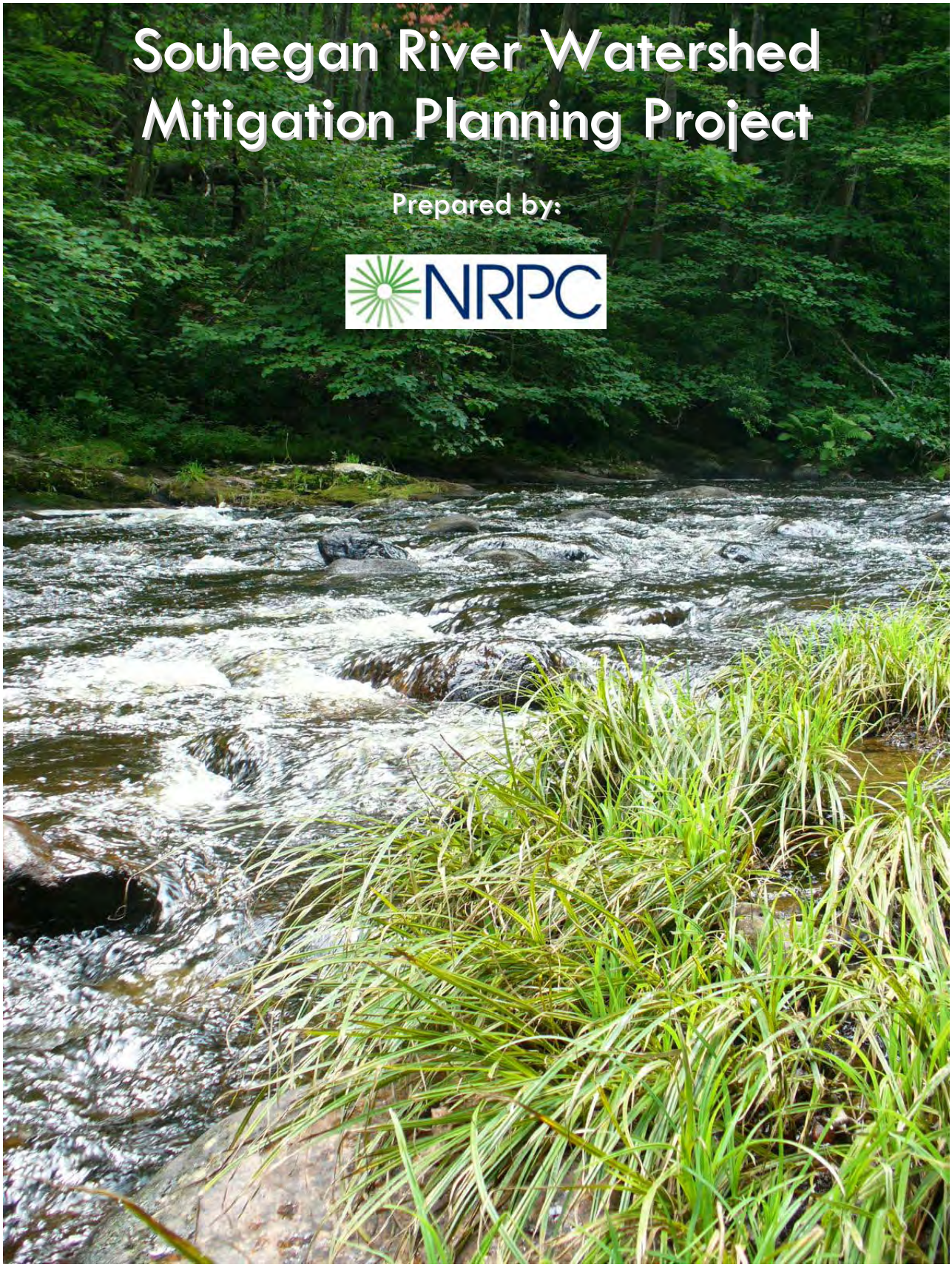
Souhegan River Watershed Mitigation Planning Project

Prepared by:

NRPC



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I. EXECUTIVE SUMMARY

The Souhegan River Watershed Mitigation Planning Project (SRWMPP) uses an innovative effort to unite transportation, land use, and environmental planning on a watershed basis. This project provides a list of suitable areas where environmental impacts incurred through the development of planned transportation projects can be mitigated. This planning process also achieves the following goals:

- Strengthen collaboration, partnership and data-sharing among state agencies, non-profits and other organizations;
- Identify the potential impacts of specific transportation projects on the watershed;
- Develop proposed mitigation sites based a variety of factors and mapping; and,
- Create a model framework of integrated planning for New Hampshire and beyond.

Historically, coordination between affected parties when considering mitigation options has been difficult, and rarely has the mitigation element of a planned project achieved significant attention before the onset of detailed environmental reviews. Of course, while avoidance and minimization of environmental impacts is still the preferred and recommended option when planning project developments, acceptable mitigation solutions are still often necessary. Additionally, onsite mitigation is sometimes unavailable, and in other cases is not even the environmentally preferred alternative. Since off-site mitigation may be best achieved using a watershed-based approach, the SRWMPP was developed to provide this missing toolset.

The SRWMPP is an attempt to provide information on suitable mitigation opportunities, delivered at the watershed scale, prior to the detailed analysis and disclosure phase of a typical transportation project. In this way, watershed stakeholder groups may be more prepared to engage in meaningful discussions regarding environmental mitigation as the need arises.

Additionally, the SRWMPP was designed to provide information in such a way that the results can be useful for more than the 21 transportation projects analyzed in the final report. It is the intent of this effort to allow local stakeholders to expand the application of the mitigation areas identified in the Final Report to local projects, regional cooperatives, and enhancement of the watershed area as a whole through innovative approaches to meeting environmental mitigation needs.

II. PROJECT DESCRIPTION

The Souhegan River Watershed Mitigation Planning Project (SRWMPP) is designed to provide communities within Souhegan River Watershed (Amherst, Bedford, Brookline, Greenfield, Greenville, Goffstown, Lyndeborough, Mason, Merrimack, Milford, Mont Vernon, New Boston, New Ipswich, Temple, and Wilton) with meaningful mitigation sites, developed through the integration of identified transportation project impacts, existing resources, and desirable features of off-site mitigation areas. This project takes the next step in improving coordination between local, state, and federal agencies when mitigation for project impacts becomes necessary. While NRPC strongly encourages avoidance and minimization of impacts to environmental resources when it comes to transportation project planning, sometimes these impacts still occur, and on-site mitigation may not be practicable or feasible. The SRWMPP was created with this intent, to provide a tool when off-site mitigation becomes necessary in respect to the transportation projects included here, as well as other local projects which may develop in the future.

For the development of this model, NRPC focused on the Souhegan River Watershed. Located in a rapidly growing area of the state, the Souhegan River Watershed ecosystem is facing numerous threats to both water quality and quantity from future highway improvement projects, stormwater runoff concerns, scattered residential development, and numerous wetland crossings. The State Transportation

Improvements Plan (STIP) identifies specific projects in the watershed which will have a varying impact on environmental resources.

The main goals of the SRWMPP are to accomplish the following:

- Strengthen collaboration, partnership and data-sharing among agencies, non-profits and other organizations
- Identify the potential impacts of specific projects on the watershed
- Develop proposed mitigation strategies
- Create a model framework of integrated planning for other New Hampshire communities, watersheds, or coalitions.

Through the Souhegan River Watershed Mitigation Planning Project, the Nashua Regional Planning Commission (NRPC) developed a New Hampshire model for integrating transportation, land use, and environmental planning. This model was based on *Eco-Logical: An Ecosystem Approach to Infrastructure Projects*, a framework created by the Federal Highway Administration and its partners. For more information on the Ecol-Logical model please see the following site: www.environment.fhwa.dot.gov/ecological/eco_toc.asp

A. ECOLOGICAL MODEL

Eco-logical is a collaborative planning process that agencies and partners undertake to define ecological resources of highest concern, understand where their work interacts, and recommend a framework outlining locally appropriate strategies for mitigating the impacts of infrastructure improvements. In addition, this model can play a significant role in the effort to meet the environmental mitigation requirements of SAFETEA-LU, by allowing transportation plans to be integrated with available state conservation plans, maps, and inventories. It will also fulfill the requirement for Metropolitan and Statewide Transportation Plans to include a generalized discussion of potential regional or ecosystem mitigation activities.

The *Eco-Logical* planning model consists of an eight-step iterative process that builds on the pursuit of common activities. Through each iteration, the rationale for future planning and development decisions is strengthened and the responsiveness to both infrastructure and ecosystem needs is improved. NRPC used the following integrated planning steps to develop a watershed model for integrated planning:

1. Build and Strengthen Collaborative Partnerships: Given the diversity of the watershed and the multiple municipalities it traverses, a broad array of project partners, including the municipalities or Regional Planning Commissions as appropriate, NHDOT, NHDES, Souhegan River Watershed Advisory Committee, and others were invited to participate in this effort. This collaboration amongst the diverse groups will help to identify where interests and concerns overlap, and thus help to form the basis for an integrated planning process

2. Identify Management Plans: Information and resources available through the stakeholders include: ongoing and proposed transportation projects, existing open space and conservation land, significant hydrological features, wildlife habitat, environmental and transportation data sources, and other planning tools.

3. Integrate Plans: Individual plans were reviewed and an overlay of important resources, transportation projects and other significant features were mapped. The maps and accompanying text in this document serve as the Regional Ecosystem Framework (REF) that documents proposed projects, conservation opportunities, and goals.

4. Assess Effects: At this point in the planning process, it is not necessary to determine the ecosystem effects with the thoroughness of a NEPA analysis. Using the REF, staff determined whether a project will likely have a significant affect on important ecological resources. This process helped identify where infrastructure impacts may be avoided or where mitigation would be most effective.

5. Establish and Prioritize Opportunities: The valuation process and outcomes are based on decisions made through the stakeholder review process. Stakeholders remain active and engaged in determining the outcomes throughout the duration of the project, with key involvement taking place through informing the document review stage, determining Priority Resources, and determining characteristics of ideal mitigation sites.

6. Document Agreements: A letter and project packet will be mailed out to the conservation commission of each town in the watershed as well as the Souhegan River Local Advisory Committee. This letter requests that boards and or towns include this process in relevant development review checklists.

7. Design Projects Consistent with Regional Ecosystem Framework: The benefits of integrated planning should be apparent at the project level. With this approach, planned infrastructure projects that go forward should not surprise stakeholders. Although new information about the ecosystem may have become available since the plans were integrated, site-specific project issues can be addressed as they arise (e.g., during the NEPA process); they do not have to slow down the entire project development process.

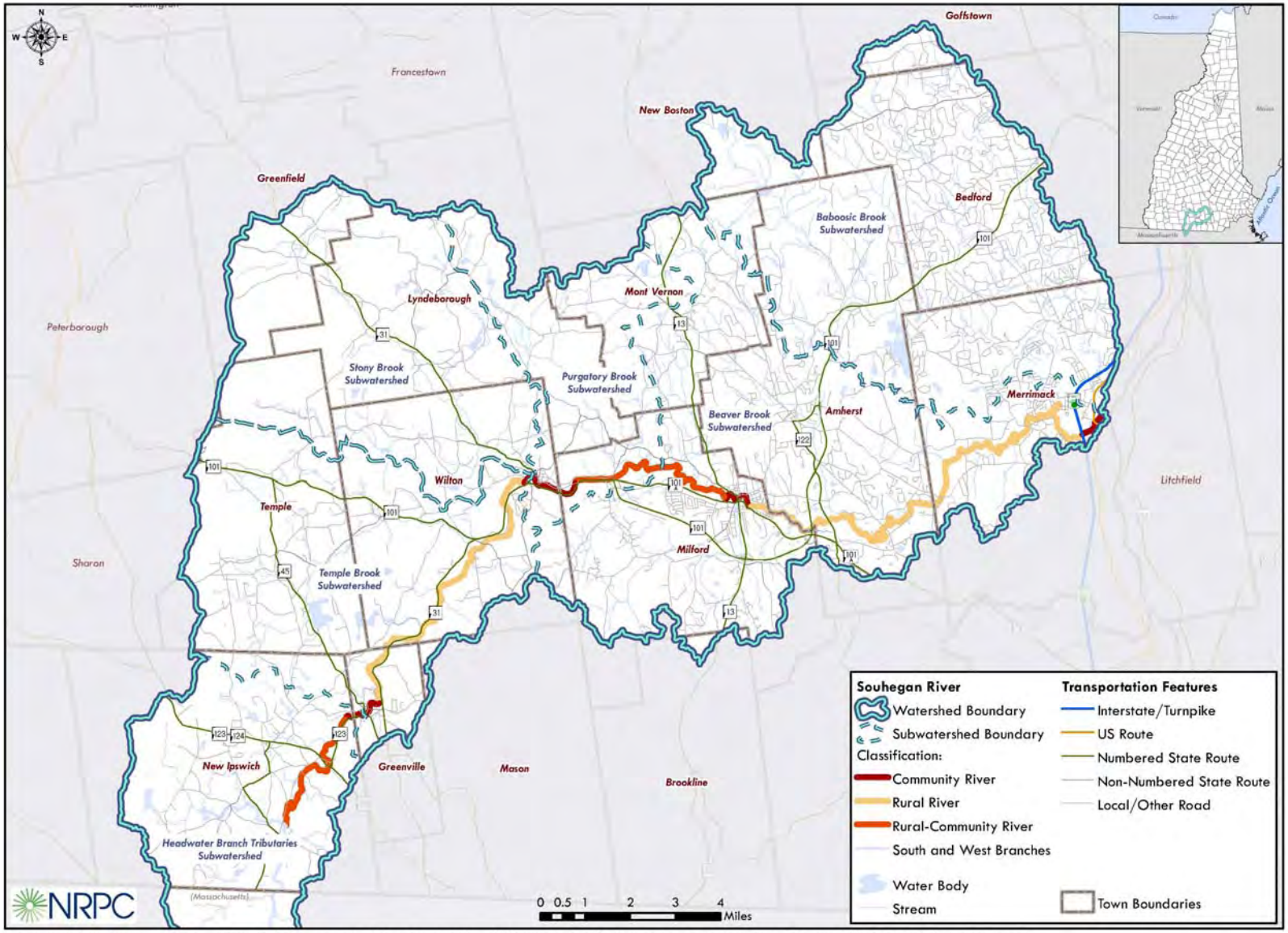
8. Balance Predictability and Adaptive Management: Adaptive management offers a process to ensure that the plans developed to address the concerns of today can rise to the challenge of the concerns of tomorrow. As new information on the changing status of an ecosystem becomes available, agencies can look beyond the project horizon to consider how that information can be applied to promote long-term sustainability; improved understanding of an ecosystem could lead to a revision of REF priorities.

B. USING THE SOUHEGAN RIVER WATERSHED

The Souhegan River Watershed (Figure 1) contains a significant portion of the southern New Hampshire's regional population. Critical public and private drinking water supplies are also located within the watershed, which is currently facing numerous threats to both water quality and quantity including highway improvement projects, wetland crossings, and sprawling development. In part due to these threats, over the past 10 years considerable attention has been given to the Souhegan River Watershed by many agencies, communities, and non-profit organizations, which has resulted in the production of many plans and reports focusing on a variety of transportation, environmental, and land use features. (These documents are described in Table 3 below.)

These plans each provided a unique perspective on issues and resources within the watershed. Individually, however, they represented a variety of different goals, objectives, and management concerns. To date there has not been a concerted effort to compile the diverse array of recommendations that each of these documents contained. One of the main outcomes of the SRWMPP is therefore to document the common themes and priorities that already exist within each of these documents and reports.

FIGURE 1: SOUHEGAN RIVER WATERSHED BOUNDARY



Maps prepared by the Nashua Regional Planning Commission are for planning purposes only. NRPC uses data gathered from multiple sources at various scales of accuracy. No warranties, expressed or implied, are provided for the data herein, its use, or its interpretation.

C. TRANSPORTATION PROJECTS IN THE SOUHEGAN RIVER WATERSHED

Existing transportation planning documents were used to identify potential transportation projects in the Souhegan River Watershed, which were then used as inputs for the SRWMPP integrated model. The Transportation Improvement Program (TIP), the Ten-year Transportation Plan, Long Range Transportation Plan, NH 101 Corridor Plan, NH Route 13 Access Management Plan, and Transportation and Community Systems Preservation Plan formed the basis of identifying applicable projects. Only projects within the Souhegan River Watershed were considered for this analysis. Additionally, only projects that had not yet been completed or were not substantially completed by Summer 2009 were considered. Table 1 shows all of the projects which were identified as having the potential to significantly affect one or more important natural resources within the watershed. Each of the projects is also shown in Figure 2. (Note that conceptual projects are shown by approximation only).

TABLE 1: TRANSPORTATION PROJECTS WITHIN THE SOUHEGAN RIVER WATERSHED.

Map ID	Town	Project Description	Project Source	Project notes:
A	Amherst	NH 101/Horace Greeley Rd: Local overpass from Horace Greeley to Stockwell Road providing north-south connection and allowing access to the highway in both directions without left turns	101 Corridor Plan: Prepared for NRPC by Wallace Floyd Design Group, VHB, and RKG Associates, Inc. (2002)	LRTP FY2022 - 2025
B	Amherst	NH 101/Walnut Hill Road and Blueberry Hill Road: Provide a parallel service road north of NH 101 from Limbo Lane to Blueberry Hill Road and crossing over the highway to Walnut Hill Road on a local overpass	101 Corridor Plan: Prepared for NRPC by Wallace Floyd Design Group, VHB, and RKG Associates, Inc. (2002)	LRTP FY2022 - 2025
C	Merrimack	Merrill's Marauders Bridge: Bridge rehabilitation and safety work on FEE TPK northbound and southbound over the Souhegan River	TIP[1] (12105): Prepared by NRPC consistent with NHDOT.	Construction starts in Sept 2008. Work substantially completed Sept 2010. Final completion date Jun 2011.
D	Merrimack	McGaw Bridge Road Bridge Replacement: Bridge Replacement over Baboosic Brook	TIP (13923): Prepared by NRPC consistent with NHDOT.	FY2012
E	Merrimack	US 3 Intersection Improvements: Capacity improvements to improve traffic flow at intersections as identified in studies by the Town	LRTP[2]: Prepared by NRPC consistent with NHDOT.	FY2021 and FY2023
F	Milford	Milford Oval Improvements: Improvements in the area known as the "Oval" to improve traffic flow based on ongoing traffic studies with the town	TIP (14492): Prepared by NRPC consistent with NHDOT.	Advertise Nov 2010
G	Milford	Union Street Rail Crossing: Reconstruct crossing and signals at B & M Railroad crossing	TIP: Prepared by NRPC consistent with NHDOT.	FY2009 Construction funding; Current status not available

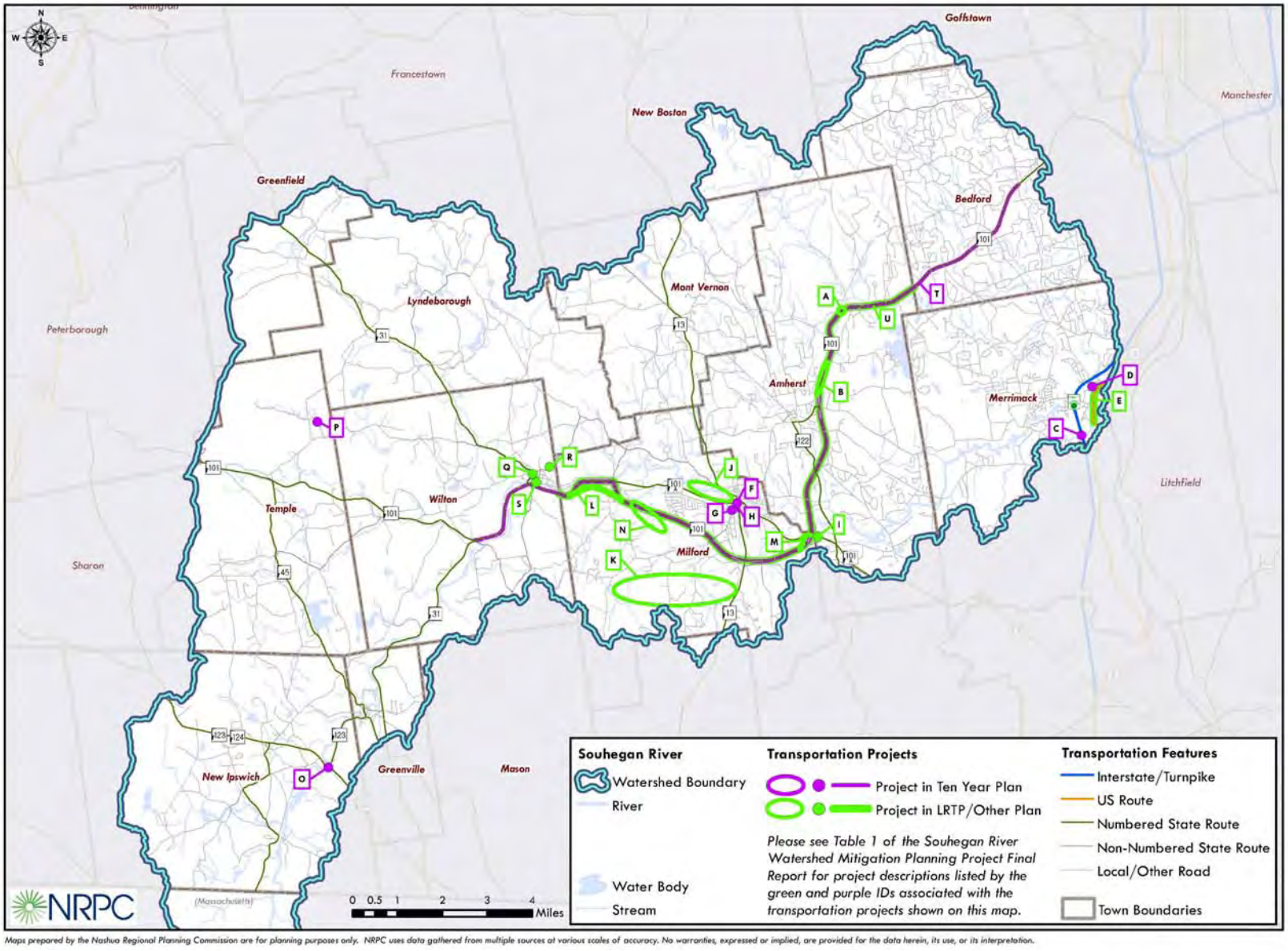
Map ID	Town	Project Description	Project Source	Project notes:
H	Milford	South Street Improvement Project: Construct the Phase 2 portion of the downtown revitalization plan to improve overall safety, physical/ADA accessibility, functionality, design and general aesthetic of the intersection	TIP (14837): Prepared by NRPC consistent with NHDOT.	Advertise Sept 2009
I	Milford	NH 101A Improvements: 101/101A interchange - Reconstruct eastbound ramps to provide additional right turn lane exiting off ramp and signalize intersection	101 Corridor Plan: Prepared for NRPC by Wallace Floyd Design Group, VHB, and RKG Associates, Inc. (2002)	LRTP FY2022 - 2025
J	Milford	Third Souheghan River Crossing: Feasibility study of 3rd crossing of the Souhegan River to be incorporated into the preliminary design and engineering process of the NH 101 widening effort	Milford TCSP[3]: NRPC (2006)	Conceptual
K	Milford	East-West Collector in South Milford: A feasibility study of a collector in south Milford to aid access to new residential developments in the south part of Milford	Milford TCSP: NRPC (2006)	Conceptual
L	Milford	NH 101 Milford Bypass Extension: Extend the existing bypass at the State Police barracks around the north side of Dram Cup Hill to the Wilton town line	Milford TCSP: NRPC (2006)	LRTP FY2023 - 2025
M	Milford	A flyover ramp is recommended from westbound Route 101A to westbound Route 101 bypass to facilitate more drivers utilizing the bypass rather than going through downtown Milford	101 Corridor Plan: Prepared for NRPC by Wallace Floyd Design Group, VHB, and RKG Associates, Inc. (2002). 101A Corridor Plans: Prepared for NRPC with assistance from VHB, Terrance J. DeWan and Associates, Terry Szold, and CEI (2002).	Conceptual
N	Milford	Multi-Use Path: Locate a multi-use path on Brox site as it is redeveloped to an industrial park	101 Corridor Plan: Prepared for NRPC by Wallace Floyd Design Group, VHB, and RKG Associates, Inc. (2002).	LRTP FY2022 - 2025
O	New Ipswich	NH 123/124 Bridge Replacement: Replace bridge over the Souhegan River	TIP (14465): Prepared by NRPC consistent with NHDOT.	FY2010-2013
P	Temple	Putnam Road Bridge Replacement	TIP (14937): Prepared by NRPC consistent with NHDOT.	FY2013
Q	Wilton	Bridge over Stony Brook: Feasibility of widening bridge over Stony Brook at Main Street/Burns Hill Rd/NH 31	Wilton TCSP: NRPC((2006)	Long Term: 2009 - 2014

Map ID	Town	Project Description	Project Source	Project notes:
R	Wilton	Bike/Pedestrian path to Carnival Hill Recreation Area: Explore the feasibility of a shared access path	Wilton TCSP: NRPC (2006)	Future goal
S	Wilton	Riverwalk: Create a Riverwalk along the Souhegan River behind the main street businesses	Wilton TCSP: NRPC (2006)	Future goal
T	Wilton, Milford, Amherst	NH 101 Improvements: Safety improvements at various locations from Wilton to Wallace Road in Bedford as determined by corridor study	TIP (13692): Prepared by NRPC consistent with NHDOT.	ROW funding allocated for FY2012; construction funding not yet allocated
U	Wilton, Milford, Amherst	NH 101 Improvements: Widening of NH 101 between west end of bypass and Bedford town line to a 4 lane access controlled highway	LRTP: NRPC consistent with NHDOT.	FY2022 - 2025

1. TIP = Transportation Improvement Plan (funding has been allocated)
2. LRTP = Long Range Transportation Plan
3. TCSP = Transportation and Community and Systems Preservation Study

Purple Map IDs: Project is in the Ten-Year Transportation Plan (with funding)
Green Map IDs: Project is in the Long Range Transportation Plan or Other Plan

FIGURE 2: TRANSPORTATION PROJECTS IN THE SOUHEGAN RIVER WATERSHED



D. PROJECT PARTNERS AND STAKEHOLDERS

The integrated planning process allowed stakeholders within the watershed to collaborate and participate in developing sustainable planning goals and priorities, and ensure that projects are designed and mitigated in the most responsible manner possible. The model created for the SRWMPP is described in detail so that it may be replicated in other watersheds in New Hampshire. The broad base of stakeholder groups ensured that project impacts and mitigation are considered in terms of the watershed rather than individual parcels, towns, or agency agendas. The stakeholders invited to participate in the planning process are shown in Table 2 below:

TABLE 2: STAKEHOLDERS AND REPRESENTATIVES IN THE SRWMPP

Statewide Representatives:
NHDES Watershed Management Bureau
NHDES Wetlands Bureau
NHDES Rivers Program
NH Office of Energy and Planning
NH Department of Fish and Game
NH Audubon Society
NHDOT Bureau of Environment
NH Fish and Game

Regional Representatives
Nashua Regional Planning Commission
Southern NH Regional Planning Commission
Southwest Region Planning Commission
Hillsborough County Conservation District
Regional Open Space Team
Souhegan Valley Land Trust
Souhegan Valley Chamber of Commerce
Souhegan Watershed Association
Souhegan River Local Advisory Committee

Local Representatives:
Town of Amherst Conservation Commission
Town of Bedford Conservation Commission
Town of Greenville Conservation Commission
Town of Lyndeborough Conservation Commission
Town of Merrimack Conservation Commission
Town of Milford Conservation Commission
Town of Mont Vernon Conservation Commission
Town of New Ipswich Conservation Commission
Town of Temple Conservation Commission
Town of Wilton Conservation Commission

III. REVIEW OF EXISTING INFORMATION

As mentioned in Section II above, one of the desired outcomes of the SRWMPP is to integrate and understand the diverse array of recommendations given in each of the plans that have already been completed within the watershed area. To begin the process, stakeholders were caucused at the onset of the project to provide NRPC with planning resources, including spatial data, which would be important in completing the impact assessment and resource identification model. Existing information primarily came in two forms: physical documents and spatial data. Each of these categories is discussed in the following sections.

A. PLANS AND RESOURCE DOCUMENTS

In general, NRPC reviewed in detail community Master Plans, open space planning documents, Natural Resource Inventories, and river and watershed management plans. The complete list of documents that NRPC utilized is contained in Table 3, below.

TABLE 3. EXISTING PLANS AND DOCUMENTS CONCERNING THE SOUHEGAN RIVER WATERSHED

Plan or Study	Date Completed	Description
Community-based Plans		
Master Plans (by community)	1999-2005	Comprehensive plans for all communities in the watershed
Natural Resource Inventories (by community)	1998-2006	Inventories available for many of the communities in the watershed
Open Space Plans (by community)	2002-2006	Describes open space needs and opportunities within many of the communities in the watershed.
Wilton Downtown Sidewalk Improvements	In progress	Downtown sidewalk improvements within the Town of Wilton
Regional Plans		
Transportation and Community and Systems Preservation Plan	2006	Study of secondary roads w/recommended improvements
Transportation Improvement Plan	2006	Specifics for 15 future projects located in the Souhegan River watershed
Long Range Transportation Plan	2005	Lists specific transportation projects for 2005-2025 as well as well as transportation policy
Locally Coordinated Transportation Plan	2006	Coordinates human services-related transportation in the Nashua Region
NH Route 13 Access Management Study (Brookline and Mont Vernon)	2007	Study of the corridor, which bisects the watershed, that recommends improvements
NH Route 101 Corridor Plan	2002	Study of the corridor and recommended improvements
NH 101A Corridor Master Plan & Improvements Program	2002	Study of the corridor and recommended improvements
Regional Bicycle/Pedestrian Plan	2005	Regional bicycle plan and policy document w/infrastructure improvements
Regional Plans for NRPC and SWRPC	In progress	Outline strategies for addressing the growth needs of each Region
Souhegan River Watershed Management Plan	2005	Includes priority resource areas and action items needed to protect the watershed
Souhegan River Protected Instream Flow Report	2008	Describes the development of the instream flow values for each flow-dependent protected entity on the Souhegan River.
Souhegan River Water Management Plan	In progress	Provides water conservation, water use, and dam management plans for Souhegan River in association with the protected instream flow.
NRPC Regional Open Space Strategy	2005	Includes current resource priorities, current protection strategies and tools needed to continue protecting open space
Nashua Regional Environmental Plan	2000	Identifies local/ regional resources priorities

While each of the existing documents was generated for a different purpose, certain themes were recurrent across transportation, land use, open space, and water resource references which were extracted and then presented in summary form to the stakeholders group for review and comment. These emergent themes are described in detail in Section IV-A below.

B. SPATIAL DATA

Many federal, state, and local spatial data layers were reviewed in the SRWMPP, including aerial imagery, natural resource and cultural data, topography, and infrastructure features. Table 4 lists the spatial data layers that were used in the model to support resource identification and prioritization.

TABLE 4. DESCRIPTION OF SPATIAL DATA LAYERS USED IN THE SRWMPP

Layer Name	Description	Data Source (file name)	Date	Purpose	Comment
Watershed Boundary	Souhegan River Watershed and Subwatershed Boundaries	USGS (NHDH01070006)	Sep-06	Study watershed	
River Classification	Souhegan River Classification (Community, Rural, Rural-Community)	NRPC (SouheganRiver)	Jul-09	Study River	Generated in-house using descriptions from DES "The Souhegan River: A Report to the General Court (January 2000)"
Transportation Projects	Funded and conceptual transportation projects	NRPC (projects_lines/pts/polys)	Jun-09	Potential Impacts Assessment	Generated in-house from the Transportation Improvement Plan, Long Range Transportation Plan, 101 and 101A Corridor Plans and various published municipal plans
Riparian Buffer	50' Buffer around 1st, 2nd, and 3rd order streams	GRANIT (NHDFlowline)	Jan-06	Resource/ Co-Occurrence	Grouped into one "buffer" layer for Co-Occurrence score
Shoreland Zoning	250' Buffer around features (i.e., rivers)	GRANIT (NHDArea)			
	250' Buffer around 4th order and higher streams	GRANIT (NHDFlowline)			
	250' Buffer around ponds and lakes >= 10 acres	GRANIT (NHDWaterbody)			
Forest Blocks	This dataset represents forested blocks for New Hampshire. In most cases blocks represent a largely forested mosaic of natural habitat types (and may not be entirely forested, as the name suggests). Blocks were generated from fragmenting features (represented in vector GIS data) including: roads, railroads, utility line rigHta-of-way, and major hydrographic features (major rivers and lakes).	NH Fish and Game Wildlife Action Plan (foblock)	Apr-06	Resource/ Co-Occurrence	This dataset was generated by the New Hampshire chapter of The Nature Conservancy
Flood Storage Lands	100-year floodplains identified by FEMA and lacustrine (associated with lakes), riverine (associated with rivers), and palustrine (other non-tidal) wetlands identified by the USFWS National Wetlands Inventory.	GRANIT (nsn07)	Apr-07	Resource/ Co-Occurrence	These features were identified by the New Hampshire Natural Services Network (NH NSN) as lands that provide important ecological services and that are difficult and/or expensive to replicate.

Layer Name	Description	Data Source (file name)	Date	Purpose	Comment
Productive Soils	Prime farmland and farmland of statewide importance identified by the Natural Resource Conservation Service.				
Water Supply Lands	Highly transmissive aquifers identified by the US Geological Survey and favorable gravel well sites identified by the NH Department of Environmental Services.				
Wildlife Habitats	Habitat of statewide priority and habitat of ecoregional priority identified by the NH Fish & Game Department Wildlife Action Plan.				
Water Body, Stream	Rivers, Lakes, Ponds and Streams	GRANIT (NHHD dataset)	Jan-06	Resource	
NWI	National Wetlands Inventory	GRANIT (nwinh)	Summer 2001	Resource	
Prime Wetlands	Prime wetlands designated by Brookline, Goffstown and New Ipswich according to DES Administrative rules.	DES (primewetlands_ newipswich_brookline_ goffstown)	not provided	Resource	Only one designated wetland (in Brookline) is located within the watershed.
Stratified Drift Aquifers	NSN Water Supply Lands features with transmissivity >= 4000 sq feet/day	GRANIT (nsn07)	Apr-07	Mitigation site identification	
Corridor/Streams Quarter Mile Buffer	1/4 mile buffer around the Souhegan River and named tributaries	GRANIT (NHDFlowline)	Jan-06	Mitigation site identification	
Conservation Land	Parcels of land that are largely undeveloped and protected from future development	GRANIT (consnh) + NRPC (nrpc_conserved_lands, parcels)	State: Feb-09 NRPC: 2009	Mitigation site identification	Three sources of data were used: parcels in the state conservation land dataset, parcels reported to the NRPC as being held in conservation easement, and parcels identified as permanent open space or recreational. Parcel data available for NRPC member municipalities only.

Layer Name	Description	Data Source (file name)	Date	Purpose	Comment
Vacant Parcels within 100' of Conservation Land	Parcels from NRPC municipalities that are within 100' of Conservation Land (as defined above) and identified as being vacant	NRPC (parcels_*municipality name*)	2009 (updated quarterly)	Mitigation site identification	
Recommended Conservation Land	Land recommended for conservation in various reports and plans, including the NRPC Regional Environmental Planning Program Report, which identified lands recommended for conservation by local conservation commissions.	NRPC (Conservation Wish List)	Jul-09	Mitigation site identification	Generated in-house from a variety of reports; separate spreadsheet available for more information.
Resource/ Significant Feature	Features identified in various municipal plans (such as Natural Resource Inventory and Open Space) as being significant natural resources.				
High Priority Wetland Restoration Sites	Wetlands identified using the Merrimack River Watershed Wetland Restoration GIS model that may be impacted by past land uses and which may benefit the most from restoration. Sites categorized as High Priority were included in this assessment.	VHB, Inc. (Candidate Sites)	Mar-09	Mitigation site identification	
Wildlife Habitat Connections	Wildlife connectivity zones in New Hampshire developed for use in conservation and land use planning.	NH Audubon (*blockname*_0_5_percent_corridor)	Jun-09	Mitigation site identification	
Transportation Features	Public road network	GRANIT (Roads_DOT)	Sep-08	Reference	
Town Boundaries	Town boundaries	GRANIT (pbp)	Apr-09	Reference	

IV. STAKEHOLDER INPUT

Gathering input from local and state stakeholder groups was important in several stages of the project's development: document review and information sharing, generation of priority watershed resources, and identification of ideal mitigation site characteristics. At each of these project stages, stakeholders were contacted and invited to participate in generating the necessary project outputs. Two stakeholder meetings were held during the project, where participants had an active opportunity to provide information, share ideas, and inform the ultimate mitigation site identification model.

A. RESOURCE PRIORITIZATION

Prior to the first stakeholder meeting, NRPC requested a number of physical and spatial data sources from project stakeholders, including many of the documents and data layers listed in Tables 3 and 4 (described in Section III, above). Stakeholders were given a list of all the data sources being compiled, and were asked to provide any additional references that would be important to consider. At this time NRPC also began compiling resource data layers that might be important to consider in identifying areas where resources co-occur, and where development therefore might be of special concern.

NRPC then began the task of compiling the diverse array of information contained within each of these reference plans, documents, and data pieces to develop common themes and management objectives that surfaced repeatedly throughout several data sources. The purpose of this effort was to give voice to the many references which had already gone through professional peer review and public comment, not to create a new set of objectives or goals, but instead to utilize the knowledge and lessons already learned. Instead of a new plan, the SRWMPP should be thought of as a process which *integrates* a variety of transportation, water resource, and land use planning documents into a unique set of watershed objectives.

These common elements were grouped into themes and management objectives. Themes tended to include generalized resource areas that were perceived to have importance and management objectives included discrete statements about actions that should be taken to preserve or protect certain resources or areas. The resource themes and management objectives are shown in Table 5 below.

TABLE 5. SOUHEGAN RIVER WATERSHED AREA LITERATURE REVIEW SUMMARY

Common Themes	Common Management Objectives:
– Corridors connecting existing protected lands – High elevation areas – Forested environments – Riparian buffers (150 feet - 400 feet) – Lakes and ponds – Agricultural soils / lands – Aquifer recharge areas and drinking water resources	– Connect existing protected lands – Encourage practices that limit impervious cover – Conserve and guide development away from sensitive lands – Formalize, extend, and encourage trail connections – Avoid development in aquifer recharge areas and public water supply areas – Preserve and protect prime agricultural lands

Meeting notes from the March 2009 stakeholders meeting (Appendix 1) document the discussions held with stakeholders regarding the identification of Priority Resources, including answers to the following questions:

- What resources do you or your agency represent or find to be of greatest importance / concern?
- Which resources in the Souhegan River Watershed are of greatest concern?
- What indicators of environmental quality are important when utilizing a "watershed perspective?"
- What *one* resource should be given the highest level of consideration?

Stakeholders agreed that water quality, scenic values, and riparian buffers were the top priority resource considerations for understanding the Souhegan River Watershed as a whole, in evaluating project impacts, and when considering mitigation opportunities. These values were then given top consideration in identifying transportation project impacts and developing the mitigation site characteristics.

B. IMPACT ASSESSMENT

In order to identify impacts of the 22 transportation projects (described in Table 2), these projects were first mapped along with the seven identified Priority Resources described above. Impacts were then developed from the available project descriptions for each of the transportation projects as related to the seven priority resource areas. Due to the fact that many of these planned transportation projects are still very conceptual in nature, with no engineering or site design studies even yet begun, project impacts are purely qualitative. A quantitative assessment of transportation impacts was not possible at this time and only a broad assessment of the expected extent of ground disturbing activities is given. Impacts were grouped into categories of ground disturbing activities, impacts to wildlife habitat, and impacts to water resources. Results of the impact assessment were reviewed and accepted by the stakeholder group during the second stakeholder meeting, and are included in Table 6.

TABLE 6. TRANSPORTATION PROJECTS IMPACT SUMMARY

ID	Location	Ground Disturbing Activities					Wildlife Impacts		Water Resources Impacts				Ag	Impact Code
		Previously Disturbed	Previously Undisturbed	> 100,000 sq ft impact	50,000 - 100,000 sq ft impact	< 50,000 sq ft impact	(Wh) WAP Wildlife Habitat	(Fb) Forest Fragmentation	(Wet) Wetlands	(Fp) Floodplain	(B) Riparian Buffer	(Ws) Water Supply Lands	(S) Productive Soils	
A	Amherst	x		x						x	x			BFp
B	Amherst	x		x					x	x	x			BFpWet
C	Merrimack	x			x						x			B
D	Merrimack	x			x						x	x		WsB
E	Merrimack	x				x						x		Ws
F	Milford	x		x										NA*
G	Milford	x				x								NA*
H	Milford	x			x									NA*
I	Milford	x		x								x		Ws
J	Milford		x	x			x			x	x	x	x	WsBSFpWh
K	Milford		x	x				x	x		x		x	BSFbWet
L	Milford		x	x						x	x	x		WsBFp
M	Milford	x		x					x			x		WsWet
N	Milford		x		x				x					Wet
O	New Ipswich	x			x				x		x		x	BSWet
P	Temple		x		x		x		x		x		x	BSWhWet
Q	Wilton		x		x						x			B
R	Wilton		x		x								x	S
S	Wilton	x			x						x			B
T	Wilton	x		x					x	x	x			BFpWet

ID	Location	Ground Disturbing Activities					Wildlife Impacts		Water Resources Impacts				Ag	Impact Code
		Previously Disturbed	Previously Undisturbed	> 100,000 sq ft impact	50,000 - 100,000 sq ft impact	< 50,000 sq ft impact	(Wh) WAP Wildlife Habitat	(Fb) Forest Fragmentation	(Wet) Wetlands	(Fp) Floodplain	(B) Riparian Buffer	(Ws) Water Supply Lands	(S) Productive Soils	
T	Milford	x		x					x	x	x			BFpWet
T	Amherst	x		x					x	x	x			BFpWet
T	Bedford	x		x					x	x	x			BFpWet
U	Amherst		x	x					x	x			x	SFpWet
U	Bedford		x	x					x	x			x	SFpWet
U	Milford		x	x					x	x			x	SFpWet
U	Wilton		x	x					x	x			x	SFpWet

**NA = Project involves ground-disturbing activities only in a previously disturbed area. No resources impacts.*

C. MITIGATION SITE CHARACTERISTICS

A second stakeholders meeting was held in July 2009 to review the transportation project impact assessment as well as to typify what an ideal mitigation site within the watershed might look like or where it might be located. The ultimate goal of this meeting was to be able to identify mitigation site characteristics which would predict the locations of potential mitigation sites, ranked by priority for the watershed region as a whole, and for individual communities. The stakeholders present at the July 1 meeting identified the following characteristics as being part of an ideal mitigation site:

- Connectivity between existing conservation areas
- Position of impact site should relates to position of mitigation site within the watershed (i.e. headwaters vs. near channel)
- Resource impacts should match mitigation sites, value for value
- Degraded sites offer an opportunity for enhancement / restoration
- Mitigation sites should occur within ¼ mile of the corridor and ¼ mile of named tributaries
- Land above stratified drift aquifers
- Locate mitigation in lower threshold impervious surface areas where "tipping point" could be avoided
- Size of parcel should not be a factor; it is too difficult to relate resource benefits to parcel size. Functionality is what is important.

NRPC then began the process of identifying mitigation sites based on the input received from the stakeholder's meeting, literature review, and resource priority concerns.

V. MAPPING AND INFORMATION ANALYSIS

A significant portion of the deliverable products contained in the SRWMPP involve mapped resources. These maps were informed by both the existing body of developed information already produced within the Souhegan River Watershed, as well as stakeholder input on how these resources should be considered

together in a watershed perspective. With "water quality" resulting as the foremost resource of concern, NRPC began the task of combining spatial data in ways that would help inform and construct priority mitigation sites within the region, using individual resources of concern and mitigation site characteristics as drivers of spatial data combinations.

A. RESOURCE OVERLAYS AND CO-OCCURRENCE ANALYSIS (JULIE)

NRPC and project stakeholders identified a total of seven Priority Resources which describe the natural environment of the watershed area. The seven Priority Resources chosen to represent the watershed area include:

- Water Supply Lands: Proper management of lands overlying groundwater resources is an important tool for preserving existing water quality in both groundwater and surface water systems. For our purposes, we have included stratified-drift aquifers identified by the US Geological Survey and favorable gravel well sites identified by the NH Department of Environmental Services.

- Flood Storage Lands: Flood storage areas reduce flood velocities, peak flows, sediment loads, and excess nutrients, while also affecting the recharge, storage, and discharge capacity of groundwater systems, as well as support valuable riparian and wildlife habitats. 100-year floodplains identified by FEMA and lacustrine (associated with lakes), riverine (associated with rivers), and palustrine (other non-tidal) wetlands identified by the USFWS National Wetlands Inventory were included as flood storage lands in this assessment.

- Productive Soils: Prime farmland and farmland of statewide importance identified by the Natural Resource Conservation Service. With agricultural lands rapidly declining in scope and diminishing in size, these soils provide an assessment of the potentially available agricultural lands throughout the study area.

- Wildlife Habitat: Important wildlife habitats were identified through inclusion of habitats of statewide priority and habitat of eco-regional priority identified by the NH Fish & Game Department Wildlife Action Plan.

- Forest Blocks: This dataset represents forested blocks for New Hampshire. In most cases blocks represent a largely forested mosaic of natural habitat types (and may not be entirely forested, as the name suggests). Blocks were generated from fragmenting features (represented in vector GIS data) including: roads, railroads, utility line right-of-way, and major hydrographic features (major rivers and lakes). Large blocks of undisturbed, natural environments are important for a variety of wildlife species. Areas with diminished forest blocks can be linked to sprawl and increasingly fragmented environments.

- Riparian Areas: Riparian environments are those which are physically adjacent to and most closely linked with surface water conditions, wildlife habitat opportunities, and are often most sought after in terms of developmental, recreational, and scenic human uses. In order to provide consistency with both the Comprehensive Shoreland Protection Act and Alteration of Terrain Permit, buffers were applied to riparian areas in the following manner:

    - 50' Buffer around 1st, 2nd, and 3rd order streams
    - 250' Buffer around 4th order and higher streams
    - 250' Buffer around ponds and lakes greater than or equal to 10 acres

- Wetlands: Wetland environments are those that typically support wetland vegetation, soils, and hydrology for a portion of the growing season. Wetland habitats are important for a variety of hydrologic functions and often provide high quality wildlife habitat for a variety of species. Wetland habitats were defined using the National Wetlands Inventory mapping data, available for the entire Souhegan River Watershed region.

A co-occurrence layer was created using GIS software to overlay spatial representations of the seven Priority Resources (Figure 3). Each resource was given a weight of one, and using geoprocessing functionality, the layers were merged together into one dataset, and the weights were summed to determine the total number of co-occurring resources in each resulting polygon. The merged data was symbolized on a map to show where the resources co-occurred, with lighter shades having fewer overlaps, and darker shades representing the highest number of co-occurrences (Figure 4). The resource mapping, along with project descriptive information, was then used to develop the impact assessment shown above in Table 6.

B. IDENTIFICATION OF MITIGATION SITES

1. Mitigation Site Selection Criteria

In order to locate acceptable mitigation sites, a set of selection criteria was needed to inform whether or not a particular parcel or land area would meet stakeholders' mitigation needs, beyond simply offering a high degree of resource value. The mitigation site selection criteria were developed at the July 2009 stakeholders meeting and were then translated into spatial data layers which could be used to physically locate potential mitigation sites within the Souhegan River Watershed:

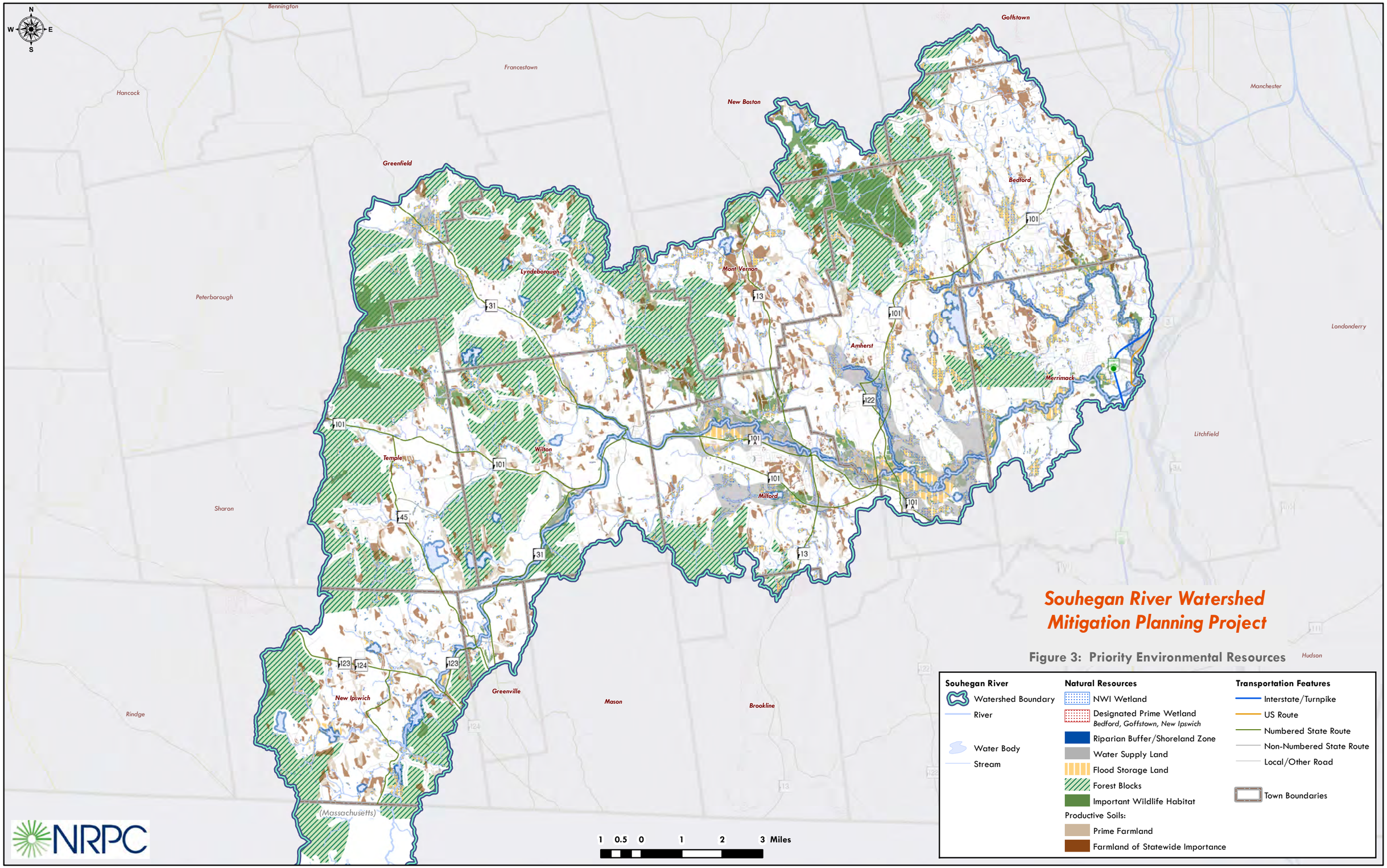
- Stratified Drift Aquifers: Stakeholder's felt that land areas above high transmissivity stratified drift aquifers were at considerable pressure for development, and represent areas important in protection of both groundwater and surface water resources within the watershed. Zones with transmissivities greater than or equal to 4,000 sq ft per day were selected as representing the highest quality aquifers in the Souhegan River Watershed project area.

- Riparian Buffer: A 1/4 mile buffer around the Souhegan River and its named tributaries was chosen by stakeholder representatives to represent areas in the watershed having both a high potential for development as well as importance for protection of shoreland areas and management of impervious surfaces.

- Adjacency to Existing Conservation Lands: Parcels within 100 feet of existing conservation land (which includes lands identified as "permanent open space" or "recreational") represent areas where contiguity of protected lands could be extended and linked together to form larger, more contiguous blocks of protected lands.

- Conservation Lands Wish List: Includes parcels or land areas identified within existing reference documents. These parcels have not been dedicated as conservation land, but are specifically called out as sites that local or state planning committees felt to be valuable and worth pursuing as conservation goals. (Since many of these existing reports are some years old, some of the identified parcels have already been developed or subdivided as of the date of this report, and were therefore excluded from this analysis when they could be easily identified.)

- Merrimack River Watershed Wetlands Restoration Strategy Sites: As part of the NHDES Aquatic Resource Mitigation fund, these data provide potential wetland restoration sites which were identified using a GIS model of wetland areas impacted by past land uses and which may benefit from environmental restoration.



Souhegan River Watershed Mitigation Planning Project

Figure 4: Co-occurrence of Environmental Resources

Transportation Projects Included on Map

Map ID	Town	Project Description	Project Source
A	Amherst	NH 101/Horace Greeley Rd: Local overpass from Horace Greeley to Stockwell Road providing north-south connection and allowing access to the highway in both directions without left turns	101 Corridor Plan
B	Amherst	NH 101/Walnut Hill Road and Blueberry Hill Road: Provide a parallel service road north of NH 101 from Limbo Lane to Blueberry Hill Road and crossing over the highway to Walnut Hill Road on a local overpass	101 Corridor Plan
C	Merrimack	Merrill's Marauders Bridge: Bridge rehabilitation and safety work on FEE TPK northbound and southbound over the Souhegan River	TIP (12105)
D	Merrimack	McGaw Bridge Road Bridge Replacement: Bridge Replacement over Baboosic Brook	TIP (13923)
E	Merrimack	US 3 Intersection Improvements: Capacity improvements to improve traffic flow at intersections as identified in studies by the Town	LRTP
F	Milford	Milford Oval Improvements: Improvements in the area known as the "Oval" to improve traffic flow based on ongoing traffic studies with the town	TIP (14492)
G	Milford	Union Street Rail Crossing: Reconstruct crossing and signals at B & M Railroad crossing	TIP ()
H	Milford	South Street Improvement Project: Construct the Phase 2 portion of the downtown revitalization plan to improve overall safety, physical/ADA accessibility, functionality, design and general aesthetic of the intersection	TIP (14837)
I	Milford	NH 101A Improvements: 101/101A interchange - Reconstruct eastbound ramps to provide additional right turn lane exiting off ramp and signalize intersection	101 Corridor Plan
J	Milford	Third Souhegan River Crossing: Feasibility study of 3rd crossing of the Souhegan River to be incorporated into the preliminary design and engineering process of the NH 101 widening effort	Milford TCSP[3]
K	Milford	East-West Collector in South Milford: A feasibility study of a collector in south Milford to aid access to new residential developments in the south part of Milford	Milford TCSP
L	Milford	NH 101 Milford Bypass Extension: Extend the existing bypass at the State Police barracks around the north side of Dram Cup Hill to the Wilton town line	Milford TCSP
M	Milford	A flyover ramp is recommended from westbound Route 101A to westbound Route 101 bypass to facilitate more drivers utilizing the bypass rather than going through downtown Milford	101 and 101A Corridor Plans
N	Milford	Multi-Use Path: Locate a multi-use path on Brox site as it is redeveloped to an industrial park	101 Corridor Plan
O	New Ipswich	NH 123/124 Bridge Replacement: Replace bridge over the Souhegan River	TIP (14465)
P	Temple	Putnam Road Bridge Replacement	TIP (14937)
Q	Wilton	Bridge over Stony Brook: Feasibility of widening bridge over Stony Brook at Main Street/Burns Hill Rd/NH 31	Wilton TCSP
R	Wilton	Bike/Pedestrian path to Carnival Hill Recreation Area: Explore the feasibility of a shared access path	Wilton TCSP
S	Wilton	Riverwalk: Create a Riverwalk along the Souhegan River behind the main street businesses	Wilton TCSP
T	Wilton, Milford, Amherst	NH 101 Improvements: Safety improvements at various locations from Wilton to Wallace Road in Bedford as determined by corridor study	TIP (13692)
U	Wilton, Milford, Amherst	NH 101 Improvements: Widening of NH 101 between west end of bypass and Bedford town line to a 4 lane access controlled highway	LRTP

1. TIP = Transportation Improvement Plan (funding has been allocated)
2. LRTP = Long Range Transportation Plan
3. TCSP = Transportation and Community and Systems Preservation Study

Co-Occurrence Score
Insets show evenly weighted layers used in score

1 2 3 4 5 6 7

Souhegan River
- Watershed Boundary
- River
- Water Body
- Stream

Transportation Projects
- Project in Ten Year Plan
- Project in LRTP/Other Plan

Transportation Features
- Interstate/Turnpike
- US Route
- Numbered State Route
- Non-Numbered State Route
- Local/Other Road
- Town Boundaries

1 0.5 0 1 2 3 Miles

Riparian Buffers/ Shoreland Zoning

National Wetlands Inventory/ Designated Prime Wetlands

Water Supply Lands

Flood Storage Lands

Productive Soils

Forest Blocks

Important Wildlife Habitats

NRPC

Maps prepared by the Nashua Regional Planning Commission are for planning purposes only. NRPC uses data gathered from multiple sources at various scales of accuracy. No warranties, expressed or implied, are provided for the data herein, its use, or its interpretation.

- Wildlife Corridors: Using a model developed by the NH Audubon, wildlife movement corridors were identified with in the Souhegan River Watershed. The corridors represent contiguous pathway areas estimated to be the best route for one or more species to use for travel. The Audubon model used sixteen focal species to provide an umbrella for connectivity analysis, and select conservation land blocks identified as suitable wildlife habitat were used as the starting and ending points between which those species traveled. For the purposes of identifying priority mitigation sites, corridor widths ("slices") representing one-half of one percent of the study area land were used.

The six site selection criteria were then joined together into a single layer to show all locations which are considered favorable mitigation sites. These sites each contain at least one of the mitigation site selection criteria. Many areas contained more than one selection criteria. Areas that contained *no* selection criteria were excluded from the range of potential mitigations sites, even if they contained a valuable arrangement of resources. Finally, undeveloped parcels (codified as "vacant" within the GIS database) were used to show the relative political feasibility of obtaining an area as a mitigation site. In summary, vacant parcels including at least one mitigation site selection criteria formed the range of potential mitigation sites (Figure 5). This analysis yielded approximately 570 parcels. This raw set of potential mitigation sites were then adjusted to provide a refined set of Mitigation Areas. Adjustments to the raw data included:

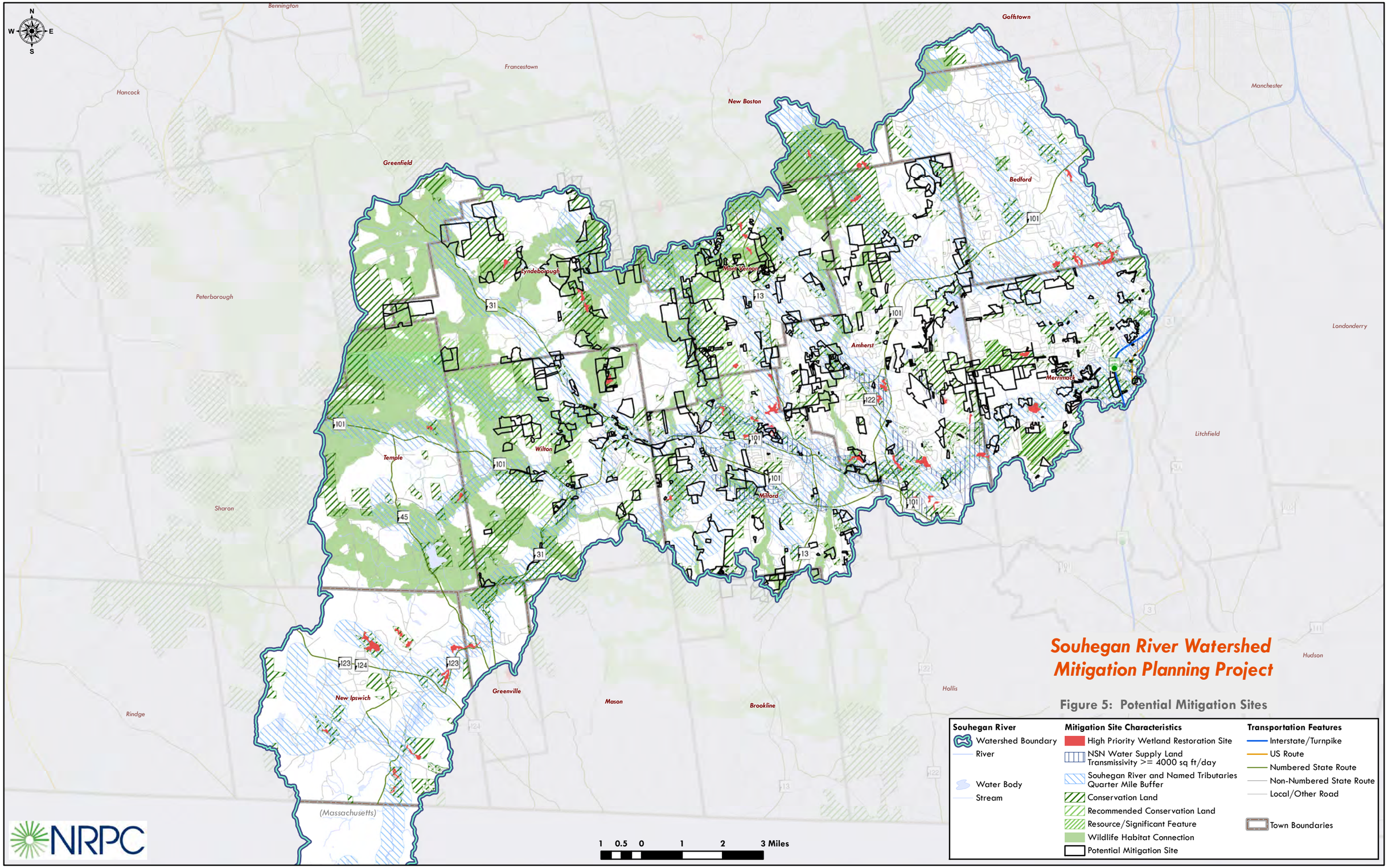
- Joining vacant parcels that were adjacent, contiguous, or otherwise separated by less than 200 linear feet to develop larger Mitigation Areas.
- Excluding parcels where the mitigation selection criteria occupy less than 20 percent of the total parcel area.
- Excluding isolated, non-adjacent parcels ("island parcels") less than 5 acres.
- Excluding parcels which contain none of the seven priority resource amenities.

The intent of these modifications was to provide a large number of potential sites without including those having only marginal utility in relation to the feasibility of actually using a site to satisfy a mitigation goal. These adjustments allowed approximately 106 mitigation areas to remain in the detailed analysis.

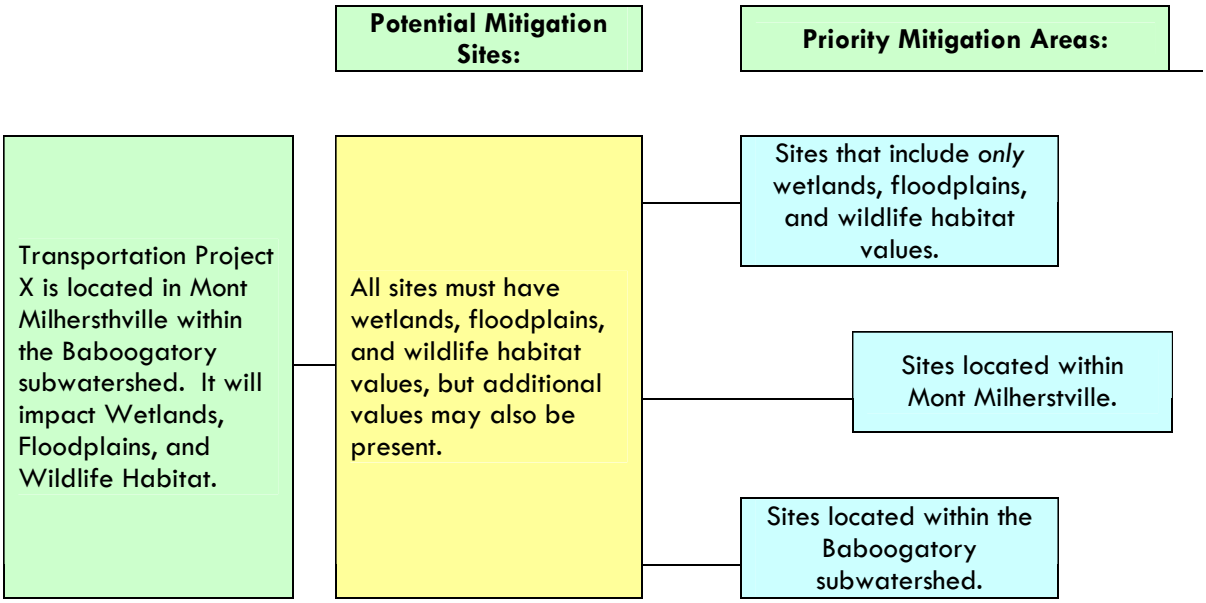
2. Priority Mitigation Areas

Priority Mitigation Areas were then derived for each transportation project using criteria developed through the stakeholder process. Acceptable mitigation areas for each transportation project included all those mitigation areas which included *at least but not limited to* the resource values potentially being impacted by development of the transportation project. Priority mitigation areas are simply a refined subset of the potential mitigation areas that have at least one of the following characteristics:

- The mitigation area contains exactly the same types of resources being impacted by the transportation project being considered; and/or
- The mitigation area is located within the same sub-watershed area (HUC) as the transportation project impact; and/or
- The mitigation area is located within the same municipality as the transportation project impact.

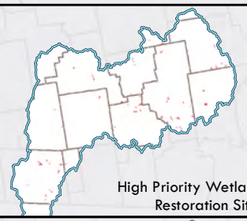


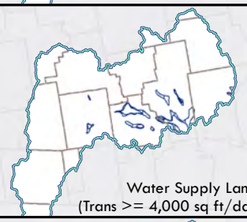
As a result the 106 potential mitigation areas were condensed down to 79 Priority Mitigation Areas. Be aware that this summary number misleading in the context of the entire watershed. Since priority mitigation areas *are based upon* the individual transportation project being considered, there is no single subset of Priority Mitigation Areas that will fit *all transportation projects* or *all project impacts* within the watershed area. In other words, while there are 79 total priority mitigation areas within the Souhegan River Watershed, they are not all interchangeable between all of the transportation projects. Each transportation project has its own set of priority mitigation areas. Figure 6 displays each of the transportation resources, along with the priority resource co-occurrence and mitigation site selection criteria co-occurrence mapping. This Figure is useful for displaying the relative interaction between the affected resource areas, and potential mitigation opportunities throughout the watershed. The following diagram helps to illustrate the process of deriving priority mitigation areas for each transportation project considered in the SRWMPP.

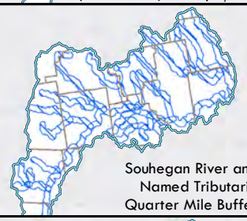


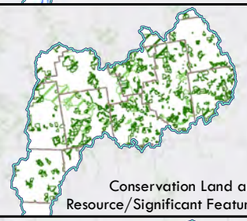
Note that a separate methodology was required for communities within the Souhegan River Watershed outside of the NRPC region (Bedford, Greenfield, Greenville, Goffstown, New Ipswich, New Boston, and Temple). GIS Parcel data showing vacant lands was not available for these communities, and therefore potential mitigation sites were determined using simply the resource co-occurrence values. Instead of using vacant land as the final determination of site suitability, Priority Mitigation Areas in communities outside the NRPC region are those with the highest resource co-occurrence values. The Priority Mitigation Areas outside the NRPC region each contain at least three of the seven priority resource values and at least one mitigation site selection criteria. (These mitigation areas are represented with ID numbers greater than 200.) All of the Priority Mitigation Areas are shown in Figure 7 and described in Table 7.

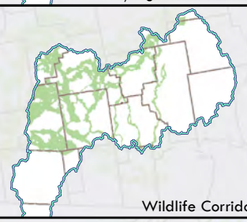
Mitigation Site Characteristics Co-Occurrence Layers


High Priority Wetland Restoration Sites

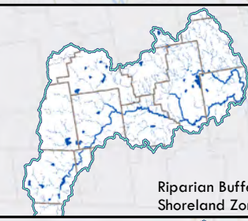

Water Supply Lands (Trans >= 4,000 sq ft/day)

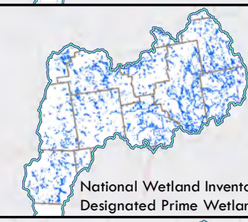

Souhegan River and Named Tributaries Quarter Mile Buffers

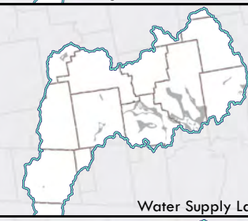

Conservation Land and Resource/Significant Features

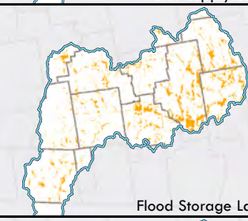

Wildlife Corridors

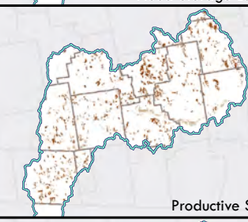
Natural Resource Co-Occurrence Layers

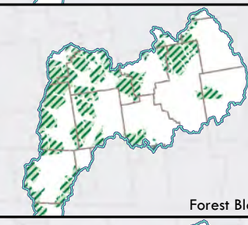

Riparian Buffers/ Shoreland Zoning

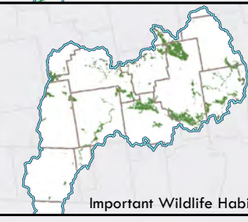

National Wetland Inventory/ Designated Prime Wetlands


Water Supply Lands


Flood Storage Lands


Productive Soils


Forest Blocks


Important Wildlife Habitats

Bennington
Francestown
Goffstown
New Boston
Greenfield
Bedford
Peterborough
Lyndeborough
Mont Vernon
Amherst
Merrimack
Wilton
Temple
Milford
Sharon
Greenville
Mason
Brookline
New Ipswich
Rindge
(Massachusetts)

Souhegan River Watershed Mitigation Planning Project

Figure 6: Mitigation Criteria and Resource Co-Occurrence

Co-Occurrence Layers
- Mitigation Site Characteristics: 1 2 3 4 5
- Natural Resources: 1 2 3 4 5 6 7
- Mitigation Area

Souhegan River
- Watershed Boundary
- River
- Water Body
- Stream

Transportation Features
- Interstate/Turnpike
- US Route
- Numbered State Route
- Non-Numbered State Route
- Local/Other Road
- Town Boundaries

1 0.5 0 1 2 3 Miles

NRPC

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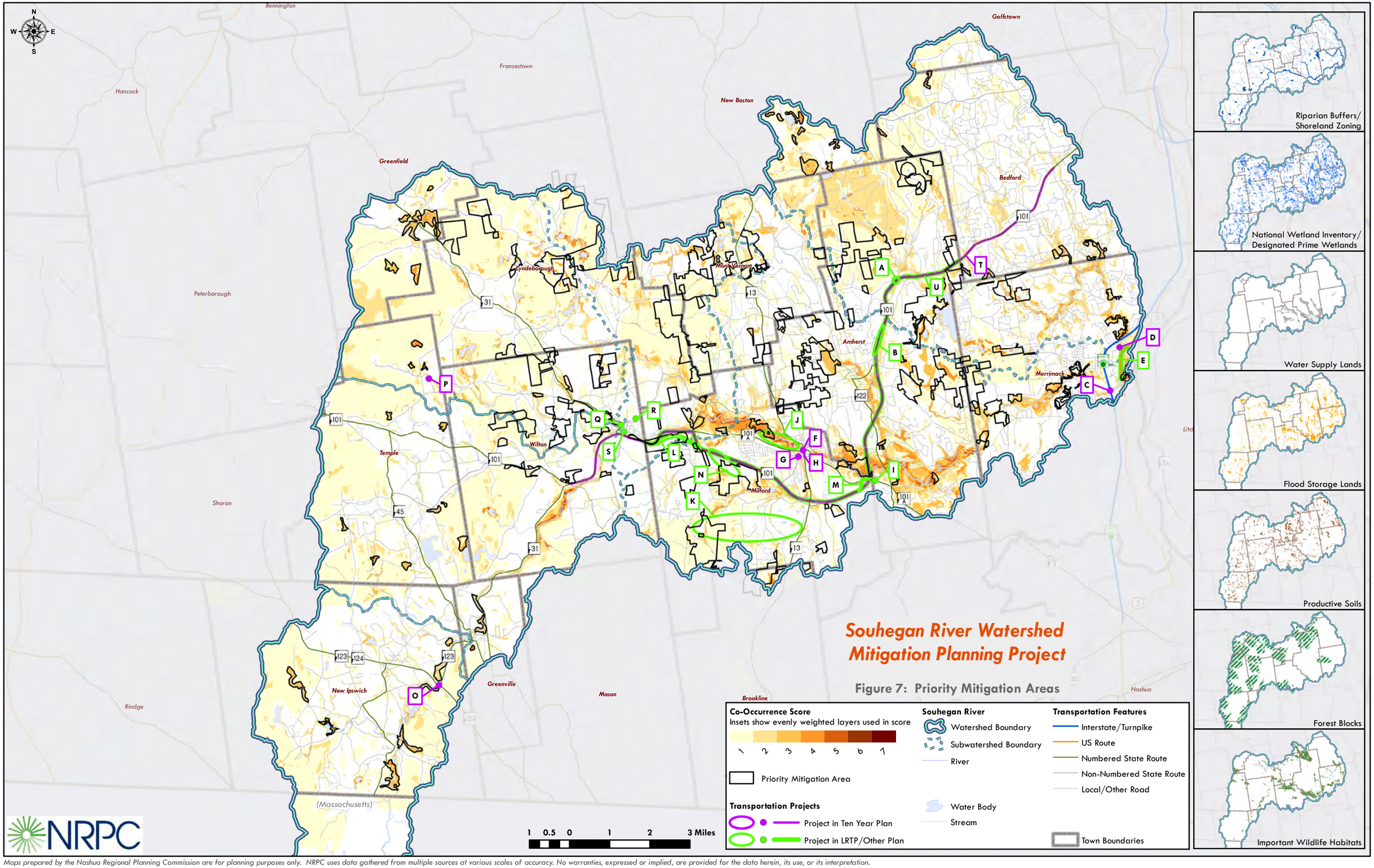
Souhegan River Watershed Mitigation Planning Project

Figure 7: Priority Mitigation Areas



Co-Occurrence Score
Insets show evenly weighted layers used in score

1 2 3 4 5 6 7

Priority Mitigation Area

Transportation Projects

Project in Ten Year Plan

Project in LRTP/Other Plan

Souhegan River

Watershed Boundary

Subwatershed Boundary

River

Water Body

Stream

Transportation Features

Interstate/Turnpike

US Route

Numbered State Route

Non-Numbered State Route

Local/Other Road

Town Boundaries

Riparian Buffers/ Shoreland Zoning

National Wetland Inventory/ Designated Prime Wetlands

Water Supply Lands

Flood Storage Lands

Productive Soils

Forest Blocks

Important Wildlife Habitats

NRPC

TABLE 7. PRIORITY MITIGATION AREAS LISTED BY TRANSPORTATION PROJECT ID.

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
A	Amherst	Baboosic Brook	BFp	1, 2, 6, 7, 8, 10-18, 20, 22-24, 26, 28, 29, 30, 32-35, 37, 39, 40, 42, 43, 47, 49, 50, 51, 53-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 78, 81, 89, 98, 99, 100, 103, 104, 111, 114, 122, 135, 145, 146, 156, 158, 162, 200-206, 208-210, 212, 215, 216, 218-222, 224-234, 237, 238, 239, 242, 243, 244	78	78	53-57, 60, 66, 72, 74, 76, 89, 103, 104, 122, 200-206, 208, 209, 218-222, 224, 225, 226	
B	Amherst	Beaver Brook	BFpWet	1, 2, 6, 7, 8, 10-14, 18, 20, 22, 23, 24, 26, 28, 29, 30, 32-35, 37, 39, 40, 42, 43, 47, 49, 50, 51, 53-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 81, 89, 98, 99, 100, 103, 104, 111, 114, 122, 135, 145, 146, 16, 158, 162	11, 20, 28, 103, 111, 209, 228, 234	103	23, 26, 30, 33-35, 39, 40, 42, 43, 47, 49-51, 58, 60, 61, 63-65, 68, 69, 70, 72, 81, 98, 99, 100, 1033, 111, 145	

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
C	Merrimack	Beaver Brook	B	1, 2, 6, 7, 8, 10-18, 20, 22, 23, 24, 26-30, 32, 33, 34, 35, 37, 39, 40, 42, 43, 47, 49-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 78, 80, 81, 85, 89, 98, 99, 100, 103, 104, 111, 114, 117, 122, 133, 134, 135, 145, 146, 148, 149, 156, 158, 162, 181, 200-206, 208-210, 212, 215, 216, 218-222, 224-234, 237-239, 242, 244	134, 181	None	23, 26, 27, 28, 30, 32, 33, 34, 35, 39, 40, 42, 43, 47, 49-52, 58, 60, 61, 63, 64, 65, 68, 69, 70, 81, 85, 98, 99, 100, 103, 145, 146, 148, 181, 72, 37, 111	
D	Merrimack	Baboosic Brook	WsB	10, 14, 17, 29, 30, 32, 34, 35, 40, 42, 43, 47, 58, 60, 61, 72, 74, 98, 99, 100, 135, 145, 210, 212, 228	NA	60, 61, 72, 74	74, 60	No mitigation areas had only WsB.
E	Merrimack	Baboosic Brook	Ws	9, 10, 14, 17, 29, 30, 32, 34, 35, 40, 42, 43, 47, 58, 59, 60, 61, 72, 74, 98, 99, 100, 135, 138, 145, 210, 212, 228	138	60, 61, 72, 74	53-57, 66, 72, 76, 89, 103, 104, 108, 122, 125, 129, 133, 149, 150, 153, 154	
F	Milford	Beaver Brook	NA	NA	NA	NA	NA	NA

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
G	Milford	Beaver Brook	NA	NA	NA	NA	NA	NA
H	Milford	Beaver Brook	NA	NA	NA	NA	NA	NA
I	Milford	Beaver Brook	Ws	9, 10, 14, 17, 29, 30, 32, 34, 35, 40, 42, 43, 47, 58, 59, 60, 61, 72, 74, 98, 99, 100, 135, 138, 145, 210, 212, 228	138	29, 30, 32, 34, 35, 40, 42, 135, 138, 145	30, 32, 34, 35, 40, 42, 43, 47, 58, 59, 61, 98, 99, 100, 138, 145, 72	
J	Milford	Beaver Brook	WsBSFpWh	14, 29, 30, 35, 40, 42, 60, 61, 72, 74, 98, 99	NA	29, 30, 35, 40, 42	30, 35, 40, 42, 60, 61, 72, 98, 99	No mitigation areas had only WsBSFpWh.
K	Milford	Beaver Brook	BSFbWet	1, 2, 7, 13, 14, 18, 22, 23, 24, 26, 29, 30, 33, 35, 39, 40, 42, 47, 49, 50, 51, 53, 55, 56, 60, 61, 63-65, 68, 72, 74, 81, 89, 98, 99, 104, 114, 156, 158, 201, 218, 220, 231, 233, 238	22, 39, 49, 50, 51, 55, 56, 156, 158	39	23, 26, 30, 33, 35, 39, 40, 42, 47, 49, 50, 51, 60, 61, 63, 64, 65, 68, 72, 81, 98, 99	
L	Milford	Purgatory Brook	WsBFp	10, 14, 17, 29, 30, 32, 34, 35, 40, 42, 43, 47, 58, 60, 61, 72, 74, 98, 99, 100, 135, 145, 210, 212, 228	NA	29, 30, 32, 34, 35, 40, 42, 135, 145	29, 30, 135	

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
M	Milford	Beaver Brook	WsWet	9, 10, 14, 29, 30, 32, 34, 35, 40, 42, 43, 47, 58, 59, 60, 61, 72, 74, 98, 99, 100, 135, 145, 210, 212, 228	NA	29, 30, 32, 34, 35, 40, 42, 145	30, 32, 34, 35, 40, 42, 43, 47, 58, 59, 60, 61, 72, 98, 99, 100, 145	No mitigation areas had only WsWet.
N	Milford	Beaver Brook	Wet	1-14, 18-26, 28-37, 39, 40, 42, 43, 47, 49, 50, 51, 53-61, 63-66, 68, 69, 70, 72, 74, 76, 77, 81, 89, 98, 99, 100, 103, 104, 108, 111, 114, 115, 116, 122, 125, 129, 135, 145, 146, 150, 153, 154, 156, 158, 162, 200-214, 216-234, 236-245	NA	24, 28-37, 39, 40, 42, 81, 111, 135, 145	23, 26, 28, 30-37, 39, 40, 42, 43, 47, 49, 50, 51, 58, 59, 60, 61, 63, 64, 65, 68, 69, 70, 72, 81, 98, 99, 100, 103, 111, 145, 146, 150	
O	New Ipswich	Headwater Branch Tributaries	BSWet	1, 2, 7, 13, 14, 18, 22, 23, 24, 26, 29, 30, 33, 35, 39, 40, 42, 47, 49-51, 53, 55, 56, 60, 61, 63-65, 68, 72, 74, 81, 89, 98, 99, 104, 114, 156, 158, 201, 203-206, 216, 218, 220, 221, 224, 230, 231, 233, 237, 238	NA	230, 231, 233	230, 231, 233	No mitigation areas had only BSWet.
P	Temple	Stony Brook	BSWhWet	1, 2, 13, 14, 18, 23, 24, 26, 29, 30, 33, 35, 40, 42, 53, 60, 61, 63, 64, 65, 68, 72, 74, 89, 98, 99	NA	237, 238	1, 2, 13, 14, 18, 237	No mitigation areas had only BSWhWet.

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
Q	Wilton	Stony Brook	B	1, 2, 6, 7, 8, 10-18, 20, 22, 23, 24, 26-30, 32, 33, 34, 35, 37, 39, 40, 42, 43, 47, 49-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 78, 80, 81, 85, 89, 98, 99, 100, 103, 104, 111, 114, 117, 122, 133, 134, 135, 145, 146, 148, 149, 156, 158, 162, 181, 200-206, 208-210, 212, 215, 216, 218-222, 224-234, 237-239, 242,-244	134, 181	181	1, 2, 6, 7, 11, 13, 14, 15, 20, 114, 156, 210, 212, 237	
R	Wilton	Purgatory Brook	S	1, 2, 5, 7, 13, 14, 16, 18, 22-27, 29, 30, 33, 35, 39, 40, 42, 47, 49-53, 55, 56, 60, 61, 63, 64, 65, 67, 68, 72, 74, 77, 80, 81, 85, 89, 98, 99, 104, 108, 114, 117, 129, 133, 143, 148, 149, 156, 158, 195, 201-203-207, 213, 216-218, 220, 221, 223, 224, 230, 231, 233, 235, 237, 238	67, 143	None	18, 22-26, 29, 30, 33, 77, 117, 195	

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
S	Wilton	Purgatory Brook	B	1, 2, 6, 7, 8, 10-18, 20, 22, 23, 24, 26-30, 32, 33, 34, 35, 37, 39, 40, 42, 43, 47, 49-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 78, 80, 81, 85, 89, 98, 99, 100, 103, 104, 111, 114, 117, 122, 133, 134, 135, 145, 146, 148, 149, 156, 158, 162, 181, 200-206, 208-210, 212, 215, 216, 218-222, 224-234, 237-239, 242,-244	134, 181	181	18, 22, 23, 24, 26, 29, 30, 33, 78, 117, 134, 135	
T	Wilton	Baboosic Brook	BFpWet	1, 2, 6, 7, 8, 10-14, 18, 20, 22, 23, 24, 26, 28, 29, 30, 32-35, 37, 39, 40, 42, 43, 47, 49, 50, 51, 53-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 81, 89, 98, 99, 100, 103, 104, 111, 114, 122, 135, 145, 146, 16, 158, 162, 200-206, 208, 209, 210, 212, 216, 218-222, 224-234, 237-239, 242-244	11, 20, 28, 103, 111, 209, 228, 234	6-8, 10-14, 20, 30, 156, 158, 162	53-57, 60, 66, 72, 74, 76, 89, 103, 104, 122, 200-206, 208, 209, 218-222, 224-226	No mitigation areas had only BWet.

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
T	Milford	Baboosic Brook	BFpWet	1, 2, 6, 7, 8, 10-14, 18, 20, 22, 23, 24, 26, 28, 29, 30, 32-35, 37, 39, 40, 42, 43, 47, 49, 50, 51, 53-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 81, 89, 98, 99, 100, 103, 104, 111, 114, 122, 135, 145, 146, 16, 158, 162, 200-206, 208, 209, 210, 212, 216, 218-222, 224-234, 237-239, 242-244	11, 20, 28, 32, 34, 103, 111, 209, 228, 234	28, 29, 30, 32-35, 37, 39, 40, 42, 11, 135, 145	53-57, 60, 66, 72, 74, 76, 89, 103, 104, 122, 200-206, 208, 209, 218-222, 224-226	
T	Amherst	Baboosic Brook	BFpWet	1, 2, 6, 7, 8, 10-14, 18, 20, 22, 23, 24, 26, 28, 29, 30, 32-35, 37, 39, 40, 42, 43, 47, 49, 50, 51, 53-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 81, 89, 98, 99, 100, 103, 104, 111, 114, 122, 135, 145, 146, 16, 158, 162, 200-206, 208, 209, 210, 212, 216, 218-222, 224-234, 237-239, 242-244	11, 20, 28, 32, 34, 103, 111, 209, 228, 234	42, 43, 47, 49-51, 53-56, 58, 60, 89, 98, 99, 100, 103, 104	53-57, 60, 66, 72, 74, 76, 89, 103, 104, 122, 200-206, 208, 209, 218-222, 224-226	

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
T	Bedford	Baboosic Brook	BFpWet	1, 2, 6, 7, 8, 10-14, 18, 20, 22, 23, 24, 26, 28, 29, 30, 32-35, 37, 39, 40, 42, 43, 47, 49, 50, 51, 53-58, 60, 61, 63-66, 68, 69, 70, 72, 74, 76, 81, 89, 98, 99, 100, 103, 104, 111, 114, 122, 135, 145, 146, 16, 158, 162, 200-206, 208, 209, 210, 212, 216, 218-222, 224-234, 237-239, 242-244	11, 20, 28, 32, 34, 103, 111, 209, 228, 234	54, 55, 56, 200-206, 208, 209	53-57, 60, 66, 72, 74, 76, 89, 103, 104, 122, 200-206, 208, 209, 218-222, 224-226	
U	Amherst	Baboosic Brook	SFpWet	1, 2, 5, 7, 13, 14, 18, 22-26, 29, 30, 33, 35, 39, 40, 42, 47, 49, 50, 51, 53, 55, 56, 60, 61, 63, 64, 65, 68, 72, 74, 77, 81, 89, 98, 99, 104, 108, 114, 129, 156, 158, 201, 203-207, 213, 216, 217, 218, 220, 221, 223, 224, 230, 231, 233, 237, 238	25, 129	None	53, 55, 56, 60, 72, 74, 89, 104, 108, 129, 210, 203-207, 218, 220, 221, 223, 224	
U	Bedford	Baboosic Brook	SFpWet	1, 2, 5, 7, 13, 14, 18, 22-26, 29, 30, 33, 35, 39, 40, 42, 47, 49, 50, 51, 53, 55, 56, 60, 61, 63, 64, 65, 68, 72, 74, 77, 81, 89, 98, 99, 104, 108, 114, 129, 156, 158, 201, 203-207, 213, 216, 217, 218, 220, 221, 223, 224, 230, 231, 233, 237, 238	25, 129	None	53, 55, 56, 60, 72, 74, 89, 104, 108, 129, 210, 203-207, 218, 220, 221, 223, 224	

Project ID	Location	HUC Name	Impact Type	Global Resource Matches (May include additional resource values)	Exact Resource Mitigation Type Matches	Mitigation Areas within Municipality	Mitigation Areas within Subwatershed	Notes
U	Milford	Baboosic Brook	SFpWet	1, 2, 5, 7, 13, 14, 18, 22-26, 29, 30, 33, 35, 39, 40, 42, 47, 49, 50, 51, 53, 55, 56, 60, 61, 63, 64, 65, 68, 72, 74, 77, 81, 89, 98, 99, 104, 108, 114, 129, 156, 158, 201, 203-207, 213, 216, 217, 218, 220, 221, 223, 224, 230, 231, 233, 237, 238	25, 129	None	53, 55, 56, 60, 72, 74, 89, 104, 108, 129, 210, 203-207, 218, 220, 221, 223, 224	
U	Wilton	Baboosic Brook	SFpWet	1, 2, 5, 7, 13, 14, 18, 22-26, 29, 30, 33, 35, 39, 40, 42, 47, 49, 50, 51, 53, 55, 56, 60, 61, 63, 64, 65, 68, 72, 74, 77, 81, 89, 98, 99, 104, 108, 114, 129, 156, 158, 201, 203-207, 213, 216, 217, 218, 220, 221, 223, 224, 230, 231, 233, 237, 238	25, 129	None	53, 55, 56, 60, 72, 74, 89, 104, 108, 129, 210, 203-207, 218, 220, 221, 223, 224	

Global Resource Matches: Includes all of the mitigation areas which contain *at least but not limited to* the Impact Type included as column 4.

VI. SUMMARY RESULTS

Table 7 above presents the summary results of the SRWMPP. Resource impacts of transportation projects are connected to resource values of mitigation sites, and mitigation sites can be selected based upon municipality or subwatershed of interest. In some cases, more than one mitigation site would satisfy impact needs, as noted. In those cases where several mitigation areas are available, project decision-makers have the ability to select sites based on other factors which have not been included in this study, such as local knowledge about particular parcels, access and ownership issues, and ability to connect to other local efforts or priorities.

Using satellite imagery, the Priority Mitigation Areas have been individually assessed to determine whether or not any obvious issues persist on any of the contributing parcels. All of the potential Mitigation Areas are listed in Table 8 by town and map, lot, and sublot identification number, including any important notes regarding the individual properties. Priority Mitigation Areas derived through the SRWMPP are also identified.

TABLE 8. RESOURCE VALUES AND SITE SELECTION CRITERIA FOR ALL MITIGATION AREAS AND PRIORITY MITIGATION AREAS IN THE SOUHEGAN RIVER WATERSHED.

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	B	S	Fp	Fb	Wh	Wet		Cl	Cwl	Wrs	Hta	Qmb	Wc		
1	Lyndeborough	Stony Brook	186.4		x	x	x	x	x	x	BSFpFbWhWet	x	x			x		ClCwlQmb	x
2	Lyndeborough	Stony Brook	57.3		x	x	x	x	x	x	BSFpFbWhWet	x					x	ClWc	x
3	Lyndeborough	Stony Brook	36.9				x	x		x	FpFbWet	x					x	ClWc	
4	Greenfield, Lyndeborough, Temple	Stony Brook	352.2				x	x	x	x	FpFbWhWet	x	x				x	ClCwlWc	
5	Lyndeborough, Temple	Stony Brook	134.1			x	x		x	x	SFpWhWet	x	x				x	ClCwlWc	
6	Lyndeborough, Wilton	Stony Brook	255.6		x		x	x		x	BFpFbWet	x	x			x	x	ClCwlQmbWc	x
7	Wilton	Temple Brook, Stony Brook	246.7		x	x	x	x		x	BSFpFBWet		x			x	x	CwlQmbWc	x
8	Wilton	Temple Brook	50.0		x		x	x		x	BFpFBWet	x				x	x	ClQmbWc	x
9	Wilton	Temple Brook	35.3	x			x		x	x	WsFpWhWet	x	x		x	x		ClCwlHtaQmb	
10	Wilton	Temple Brook	44.0	x	x		x			x	WsBFpWet				x	x	x	HtaQmbWc	x
11	Wilton	Stony Brook	145.3		x		x			x	BFpWet		x			x	x	CwlQmbWc	x
12	Wilton	Temple Brook	56.0		x		x		x	x	BFpWhWet					x		Qmb	x
13	Wilton	Temple Brook, Stony Brook	143.2		x	x	x		x	x	BSFpWhWet		x			x	x	CwlQmbWc	x
14	Wilton	Stony Brook	20.7	x	x	x	x		x	x	WsBSFpWhWet					x		Qmb	x
15	Wilton	Stony Brook	9.2		x		x		x		BFpWh	x				x		ClQmb	x

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
16	Wilton	Temple Brook	31.7		x	x	x	x	x		BSFpFbWh	x				x	x	ClQmbWc	
17	Wilton	Temple Brook	17.8	x	x		x	x	x		WsBFpFbWh	x				x	x	ClQmbWc	
18	Lyndeborough	SB Piscataquog, Purgatory Brook, Stony Brook	1008.5		x	x	x	x	x	x	BSFpFbWhWet	x		x		x	x	ClWrsQmbWc	x
19	Lyndeborough	Stony Brook	78.7				x			x	FpWet						x	Wc	
20	Wilton	Stony Brook	216.6		x		x			x	BFpWet	x		x			x	ClWrsWc	x
21	Mont Vernon	SB Piscataquog, Purgatory Brook	22.5				x		x	x	FpWhWet		x			x	x	ClwlQmbWc	
22	Mont Vernon	SB Piscataquog, Purgatory Brook	69.8		x	x	x			x	BSFpWet	x	x			x		ClClwlQmb	x
23	Lyndeborough, Mont Vernon	Purgatory Brook, Beaver Brook	538.5		x	x	x	x	x	x	BSFpFbWhWet	x	x			x	x	ClClwlQmbWc	x
24	Mont Vernon, Milford	Purgatory Brook	641.3		x	x	x	x	x	x	BSFpFbWhWet	x	x			x	x	ClClwlQmbWc	x
25	Mont Vernon	Purgatory Brook	48.1			x	x			x	SFpWet	x	x				x	ClClwlWc	x
26	Mont Vernon	Purgatory Brook, Beaver Brook	199.6		x	x	x		x	x	BSFpWhWet	x	x			x	x	ClClwlQmbWc	x
27	Mont Vernon	Beaver Brook	14.6		x	x					BS	x				x		ClQmb	
28	Mont Vernon, Milford	Beaver Brook	80.3		x		x			x	BFpWet					x		Qmb	x
29	Milford	Purgatory Brook	68.8	x	x	x	x		x	x	WsBSFpWhWet	x			x	x		ClHtaQmb	x

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
30	Milford, Wilton	Purgatory Brook, Beaver Brook	300.9	x	x	x	x		x	x	WsBSFpWhWet	x			x	x	x	ClHtaQmbWc	x
31	Milford	Beaver Brook	91.8				x			x	FpWet					x		Qmb	x
32	Milford	Beaver Brook	33.3	x	x		x			x	WsBFpWet	x			x	x		ClHtaQmb	x
33	Milford	Purgatory Brook, Beaver Brook	18.4		x	x	x		x	x	BSFpWhWet					x	x	QmbWc	x
34	Milford	Beaver Brook	328.3	x	x		x			x	WsBFpWet		x		x	x	x	CwlHtaQmbWc	x
35	Milford	Beaver Brook	79.2	x	x	x	x		x	x	WsBSFpWhWet	x		x	x	x		ClWrsHtaQmb	x
36	Amherst, Milford	Beaver Brook	176.2				x			x	FpWet	x				x	x	ClQmbWc	x
37	Brookline, Milford	Nissitissit River, Beaver Brook	254.6		x		x	x		x	BFpFbWet	x					x	ClWc	x
39	Milford	Beaver Brook	38.2		x	x	x			x	BSFpWet					x		Qmb	x
40	Milford	Beaver Brook	9.7	x	x	x	x		x	x	WsBSFpWhWet	x				x		ClQmb	x
42	Amherst, Milford	Beaver Brook	115.5	x	x	x	x		x	x	WsBSFpWhWet	x	x		x	x	x	ClCwlHtaQmbWc	x
43	Amherst	Beaver Brook	31.0	x	x		x		x	x	WsBFpWhWet		x	x	x	x	x	CwlWrsHtaQmbWc	x
47	Amherst	Beaver Brook	404.3	x	x	x	x			x	WsBSFpWet	x			x	x	x	ClHtaQmbWc	x
49	Amherst	Beaver Brook	43.0		x	x	x			x	BSFpWet					x		Qmb	x
50	Mont Vernon, Amherst	Beaver Brook	86.4		x	x	x			x	BSFpWet					x		Qmb	x
51	Mont Vernon, Amherst	Beaver Brook	49.2		x	x	x			x	BSFpWet					x	x	QmbWc	x
52	Mont Vernon	Beaver Brook	44.4		x	x					BS					x		Qmb	

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
53	Amherst	Baboosic Brook	522.3		x	x	x	x	x	x	BSFpFbWhWet	x	x			x	x	ClCwlQmbWc	x
54	Amherst, Bedford	Baboosic Brook	277.6		x		x	x		x	BFpFBWet					x		Qmb	x
55	Amherst, Bedford	Baboosic Brook	69.8		x	x	x			x	BSFpWet	x				x		ClQmb	x
56	Amherst, Bedford, Merrimack	Baboosic Brook	89.0		x	x	x			x	BSFpWet					x		Qmb	x
57	Merrimack	Baboosic Brook	114.5		x		x		x	x	BFpWhWet	x				x		ClQmb	x
58	Amherst	Beaver Brook	8.5	x	x		x			x	WsBFpWet				x			Hta	x
59	Amherst	Beaver Brook	190.3	x			x			x	WsFpWet		x		x			CwlHta	x
60	Amherst, Merrimack	Baboosic Brook, Beaver Brook	588.7	x	x	x	x	x	x	x	WsBSFpFbWhWet	x	x	x	x	x		ClCwlWrsHtaQmb	x
61	Merrimack	Beaver Brook	38.3	x	x	x	x		x	x	WsBSFpWhWet	x			x	x		ClHtaQmb	x
63	Merrimack	Beaver Brook	73.9		x	x	x		x	x	BSFpWhWet	x				x		ClQmb	x
64	Merrimack	Beaver Brook	57.7		x	x	x		x	x	BSFpWhWet	x				x		ClQmb	x
65	Merrimack	Beaver Brook	31.8		x	x	x		x	x	BSFpWhWet					x		Qmb	x
66	Merrimack	Baboosic Brook	82.5		x		x	x	x	x	BFpFBWhWet	x		x				ClWrs	x
67	Merrimack	Beaver Brook	38.8			x					S	x				x		ClQmb	x
68	Merrimack	Beaver Brook	87.3		x	x	x		x	x	BSFpWhWet	x				x		ClQmb	x
69	Merrimack	Beaver Brook	53.5		x		x		x	x	BFpWhWet	x				x		ClQmb	
70	Merrimack	Beaver Brook	67.2		x		x		x	x	BFpWhWet	x				x		ClQmb	

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
72	Merrimack	Baboosic Brook, Beaver Brook, Londonderry Tribs	55.6	x	x	x	x		x	x	WsBSFpWhWet	x			x	x		ClHtaQmb	x
74	Merrimack	Baboosic Brook	59.7	x	x	x	x		x	x	WsBSFpWhWet				x	x		HtaQmb	x
76	Merrimack	Baboosic Brook	24.3		x		x		x	x	BFpWhWet					x		Qmb	x
77	Lyndeborough	SB Piscataquog, Purgatory Brook	241.8			x	x	x		x	SFpFbWet	x				x		ClQmb	x
78	Lyndeborough, Milford	Purgatory Brook	9.5		x		x				BFp	x						Cl	
80	Wilton	Temple Brook	35.2		x	x					BS	x					x	ClWc	
81	Milford	Beaver Brook	445.4		x	x	x	x		x	BSFpFBWet					x	x	QmbWc	x
85	Mont Vernon	Beaver Brook	46.6		x	x					BS	x				x		ClQmb	
89	Amherst	Baboosic Brook	375.5		x	x	x		x	x	BSFpWhWet		x			x		CwlQmb	x
98	Amherst	Beaver Brook	9.1	x	x	x	x		x	x	WsBSFpWhWet				x	x		HtaQmb	x
99	Amherst	Beaver Brook	14.3	x	x	x	x		x	x	WsBSFpWhWet		x		x	x		CwlHtaQmb	x
100	Amherst	Beaver Brook	11.6	x	x		x		x	x	WsBFpWhWet				x	x		HtaQmb	x
103	Amherst	Baboosic Brook, Beaver Brook	33.2		x		x			x	BFpWet						x	Wc	x
104	Amherst	Baboosic Brook	12.7		x	x	x	x		x	BSFpFbWet						x	Wc	x
108	Amherst	Baboosic Brook	17.3			x	x	x	x	x	SFpFbWhWet					x		Qmb	x
110	Brookline, Milford	Nissitissit River, Beaver Brook	112.0					x			Fb	x					x	ClWc	

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				Ws	B	S	Fp	Fb	Wh	Wet		Cl	Cwl	Wrs	Hta	Qmb	Wc		
111	Brookline, Milford	Nissitissit River, Beaver Brook	29.3		x		x			x	BFpWet						x	Wc	x
113	Lyndeborough	SB Piscataquog, Purgatory Brook	10.7					x			Fb						x	Wc	
114	Greenfield, Lyndeborough	Stony Brook	242.7		x	x	x	x		x	BSFpFbWet	x				x	x	ClQmbWc	x
115	Lyndeborough	Purgatory Brook	33.6				x	x	x	x	FpFbWhWet					x	x	QmbWc	
116	Lyndeborough	Purgatory Brook, Stony Brook	34.4				x		x	x	FpWhWet	x					x	ClWc	
117	Lyndeborough	Purgatory Brook	53.9		x	x			x		BSWh						x	Wc	x
122	Merrimack	Baboosic Brook	68.2		x		x		x	x	BFpWhWet	x				x		ClQmb	x
125	Merrimack	Baboosic Brook	7.2				x			x	Fp					x		Qmb	
129	Merrimack	Baboosic Brook	5.3			x	x			x	SFpWet					x		Qmb	x
133	Merrimack	Baboosic Brook	17.0		x	x					BS	x				x		ClQmb	
134	Lyndeborough, Milford	Purgatory Brook	20.7		x						B					x	x	QmbWc	x
135	Lyndeborough, Milford	Purgatory Brook	12.2	x	x		x	x	x	x	WsBFpFBWhWet		x			x		CwlQmb	x
138	Milford	Beaver Brook	29.6	x							Ws					x		Qmb	
141	Milford	Nissitissit River, Beaver Brook	60.6					x			Fb					x		Qmb	
143	Milford	Beaver Brook	5.8			x					S					x		Qmb	x

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				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
145	Milford	Beaver Brook	27.3	x	x		x			x	WsBFpWet						x	Wc	x
146	Mont Vernon	Beaver Brook	14.2		x		x		x	x	BFpWhWet					x		Qmb	x
148	Mont Vernon	Beaver Brook	18.7		x	x					BS					x		Qmb	
149	Mont Vernon, Amherst	Baboosic Brook	11.2		x	x		x			BSFb						x	Wc	
150	Mont Vernon, Amherst	Baboosic Brook, Beaver Brook	42.3				x	x		x	FpFbWet	x					x	ClWc	x
153	Mont Vernon	Baboosic Brook, S. Piscataquog River	10.7				x	x		x	FpFbWet	x					x	ClWc	
154	Mont Vernon	SB Piscataquog, Baboosic Brook	16.8				x	x		x	FpFBWet	x					x	ClWc	
156	Wilton	Stony Brook	11.4		x	x	x			x	BSFpWet		x			x	x	CwlQmbWc	x
158	Wilton	Temple Brook	23.5		x	x	x			x	BSFpWet						x	Wc	x
162	Wilton	Temple Brook	13.5		x		x		x	x	BFpWhWet					x		Qmb	x
181	Wilton	Beaver Brook	26.5		x						B	x						Cl	x
195	Mont Vernon	Purgatory Brook	9.1			x			x		SWh		x					Cwl	x
200	Bedford	Baboosic Brook	21.8		x		x	x	x	x	BFpFbWhWet					x	x	QmbWc	x
201	Bedford	Baboosic Brook	10.8		x	x	x	x	x	x	BSFpFbWhWet	x						Cl	x
202	Bedford	Baboosic Brook	10.1		x		x	x	x	x	BFpFbWhWet					x		Qmb	x
203	Bedford	Baboosic Brook	27.5		x	x	x		x	x	BSFpWhWet	x		x		x		ClWrsQmb	x
204	Bedford	Baboosic Brook	8.3		x	x	x		x	x	BSFpWhWet	x		x		x		ClWrsQmb	x

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				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
205	Bedford	Baboosic Brook	33.7		x	x	x		x	x	BSFpWhWet	x		x		x		ClWrsQmb	x
206	Bedford	Baboosic Brook	15.0		x	x	x		x	x	BSFpWhWet	x				x		ClQmb	x
207	Bedford	Baboosic Brook	5.8			x	x		x	x	SFpWhWet	x		x		x		ClWrsQmb	x
208	Bedford	Baboosic Brook	21.6		x		x		x	x	BFpWhWet					x		Qmb	x
209	Bedford	Baboosic Brook	13.0		x		x			x	BFpWet	x				x		ClQmb	x
210	Greenfield	Stony Brook	169.3	x	x		x	x		x	WsBFpFbWet					x	x	QmbWc	x
211	Greenfield	Stony Brook	45.6				x	x	x	x	FpFbWhWet						x	Wc	x
212	Greenfield	Stony Brook	16.8	x	x		x			x	WsBFpWet						x	Wc	x
213	Greenfield	Stony Brook	34.5			x	x	x		x	SFpWFbWet						x	Wc	x
214	Greenfield	Stony Brook	6.4				x	x		x	FpFbWet	x					x	ClWc	x
215	Greenville	Temple Brook	21.6		x		x		x		BFpWh	x				x	x	ClQmbWc	x
216	Greenville	Temple Brook	35.3		x	x	x		x	x	BSFpWhWet					x		Qmb	x
217	Greenville	Temple Brook	5.8			x	x	x	x	x	SFpFbWhWet					x		Qmb	x
218	New Boston	Baboosic Brook	81.8		x	x	x	x	x	x	BSFpFbWhWet	x				x	x	ClQmbWc	x
219	New Boston	Baboosic Brook	10.0		x		x	x	x	x	BFpFbWhWet	x				x	x	ClQmbWc	x
220	New Boston	Baboosic Brook	30.6		x	x	x	x	x	x	BSFpFbWhWet					x	x	QmbWc	x
221	New Boston	Baboosic Brook	15.4		x	x	x		x	x	BSFpWhWet	x				x	x	ClQmbWc	x
222	New Boston	Baboosic Brook	9.5		x		x	x	x	x	BFpFbWhWet	x				x	x	ClQmbWc	x
223	New Boston	Baboosic Brook	14.2			x	x	x	x	x	SFpFbWhWet	x					x	ClWc	x
224	New Boston	Baboosic Brook	8.8		x	x	x		x	x	BSFpWhWet					x		Qmb	x
225	New Boston	Baboosic Brook	10.4		x		x		x	x	BFpWhWet					x		Qmb	x
226	New Boston	Baboosic Brook	16.5		x		x		x	x	BFpWhWet	x					x	ClWc	x

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
227	New Ipswich	Headwater Branch Tributaries	68.1		x		x	x		x	BFpFbWet					x		Qmb	x
228	New Ipswich	Headwater Branch Tributaries	11.1	x	x		x			x	WsBFpWet	x				x		ClQmb	x
229	New Ipswich	Headwater Branch Tributaries	58.3		x		x	x		x	BFpFbWet	x		x		x		ClWrsQmb	x
230	New Ipswich	Headwater Branch Tributaries	49.2		x	x	x			x	BSFpWet	x		x		x		ClWrsQmb	x
231	New Ipswich	Headwater Branch Tributaries	23.6		x	x	x	x		x	BSFpFbWet					x		Qmb	x
232	New Ipswich	Headwater Branch Tributaries	13.9		x		x		x	x	BFpWhWet			x		x		WrsQmb	x
233	New Ipswich	Headwater Branch Tributaries	89.8		x	x	x	x		x	BSFpFbWet	x		x		x		ClWrsQmb	x
234	New Ipswich	Headwater Branch Tributaries	12.3		x		x			x	BFpWet	x		x		x		ClWrsQmb	x
235	Temple	Stony Brook	7.4			x		x	x		SFbWh		x			x	x	CwlQmbWc	x
236	Temple	Stony Brook	18.5				x	x	x	x	FpFbWhWet		x				x	CwlWc	x
237	Temple	Stony Brook	6.2		x	x	x		x	x	BSFpWhWet		x			x	x	CwlQmbWc	x
238	Temple	Temple Brook	12.5		x	x	x	x		x	BSFpFbWet						x	Wc	x
239	Temple	Temple Brook	36.8		x		x	x		x	BFpFbWet	x	x				x	ClCwlWc	x
240	Temple	Temple Brook	17.5				x		x	x	FpWhWet					x	x	QmbWc	x

ID	Town	Subwatershed	Total Acres	Water Supply	Buffer	Productive Soils	Floodplains	Forest Blocks	Wildlife Habitat	NWI Wetlands	Resource Values Summary	Conservation Land	Wish List	Wetland Restoration Site	High Transmissivity Aquifer (>4000 sqft/day)	Quarter-mile Buffer	Wildlife Corridor	Site Selection Criteria Summary	Priority Site
				Ws	**B**	**S**	**Fp**	**Fb**	**Wh**	**Wet**		**Cl**	**Cwl**	**Wrs**	**Hta**	**Qmb**	**Wc**		
241	Temple	Temple Brook	11.9				x	x		x	FpFbWet						x	Wc	x
242	Temple	Temple Brook	17.4		x		x	x		x	BFpFbWet	x				x	x	ClQmbWc	x
243	Temple	Temple Brook	18.1		x		x	x		x	BFpFbWet						x	Wc	x
244	Temple	Temple Brook	13.5		x		x	x		x	BFpFbWet						x	Wc	x
245	Temple	Temple Brook	5.4				x	x		x	FpFbWet					x	x	QmbWc	x

VII. INFORMATION INTEGRATION AND ADAPTIVE MANAGEMENT

A. APPLICATIONS AND USES

As with any plan that has involved a significant level of effort, community participation, public comment, and interagency collaboration, the ultimate goal is to see the effort utilized and incorporated into practice or policy. Final reporting of the SRWMPP was distributed to all watershed community conservation commissions, as well as to stakeholders who actively participated in the project development process. In addition, NRPC formally requested that watershed community Conservation Commissions incorporate the SRWMPP into development review checklists, to give the SRWMPP life both within the context of larger, regionally based transportation projects, but also in relation to smaller community-level developments and subdivisions. These checklists are typically used at a local level for all project development applications involving any kind of State or Federal permit or review by the local planning board. (A sample development review checklist, including modifications incorporating the SRWMPP, has been included as Appendix 2 of this report.)

The potential mitigation areas developed for the SRWMPP can easily be applied to projects that have not yet been considered, or even developed, since the key to identifying a suitable mitigation area for any particular project lies within linking resource impacts to resource amenities of mitigation areas. Table 8 provides the ability for watershed stakeholders to link their own, local-level projects to potential mitigation sites both within their community and across the Souhegan River Watershed. NRPC hopes that watershed communities will embrace the information synthesized within the SRWMPP and apply it in innovative ways. Appendix 3 provides detail maps of each community within the Souhegan River Watershed wherein potential mitigation areas were identified for this specific purpose.

To encourage innovation, NRPC has provided stakeholder communities with electronic files which allow users to sort spreadsheet information to suit their own purposes, as well as view mapping layers at will. Map layers can be turned on and off in the electronic versions of the SRWMPP mapping inserts, and will hopefully empower local users with additional information that cannot be easily relayed in a static reporting document. In this way, users will be able to develop their own impact assessments, and be able to apply it in the same manner as the transportation projects included here. Users will already have available a relevant set of mitigation sites to choose from that have been screened for appropriateness since the mitigation site selection criteria can still apply to new projects.

B. MITIGATION TRACKING

As projects develop and mitigation sites are selected and adopted into local projects and transportation developments, NRPC will take the lead in sharing information with other watershed stakeholders though updates on method, process, and mitigation site selection through the NRPC website. Project impacts, mitigation needs, and lessons learned can be shared through the online resource, as well as contact information for ongoing coordination efforts. Until individual mitigation sites are evaluated on a case-by-case basis, we will not know the full capacity of the predictive model. Sharing information as it becomes available will be a mechanism for ensuring that the model remains alive and incorporates new feedback.