

**Environmental Management & Construction Plan  
for the  
WM Transmission Line Rebuild Project  
Orange County, New York**

**October 2007**

*Prepared by*



**TETRA TECH EC, INC.**

**133 Federal Street  
Boston, MA 02110  
617-457-8200**



## TABLE OF CONTENTS

1.0	INTRODUCTION.....	1
1.1	EM & CP Organization/Use During Construction .....	1
1.2	Project Description.....	1
2.0	ACCESS ROADS AND ACCESS WAYS .....	3
3.0	CLEARING.....	5
4.0	DANGER TREES.....	6
5.0	GRADING AND BLASTING .....	7
5.1	Grading .....	7
5.2	Blasting .....	7
5.3	Blasting Notification.....	7
6.0	AIR QUALITY AND DUST CONTROL.....	9
7.0	REMOVAL OF STRUCTURES.....	10
7.1	Wood Pole H-Frames.....	10
8.0	CONSTRUCTION SPECIFICATIONS.....	11
8.1	Wetlands .....	11
8.1.1	Wetland Delineation and Mapping.....	11
8.1.2	General Restrictions for Construction Work in or Near Wetlands .....	11
8.1.3	Techniques for Construction and Access in Wetlands .....	12
8.1.4	Clearing.....	12
8.1.5	Access Ways .....	12
8.1.6	Erosion Control .....	13
8.1.7	Spill Prevention.....	13
8.1.8	Clean-up, Restoration and Reseeding .....	14
8.1.9	Specifications for Permanent Access Across Wetlands.....	14
8.2	Streams.....	14
8.2.1	Stream Inventory .....	14
8.2.2	General Restrictions for Construction Work Near Streams.....	15
8.2.3	Specifications for Clearing Near Streams.....	15
8.2.4	Access: Stream Crossing Techniques.....	16
8.2.5	Erosion/Sedimentation Controls .....	17
8.3	Helicopter Usage.....	18
9.0	FENCES AND GATES.....	19
10.0	WORK HOURS .....	20
11.0	HERBICIDE USE .....	21
12.0	HIGHWAY AND UTILITY CROSSINGS .....	22
12.1	Notification .....	22
12.2	Highway Crossings .....	22
12.3	Other Crossings .....	22
12.4	Mud Control on Roads.....	23
13.0	BIOLOGICALLY SENSITIVE LOCATIONS .....	24
14.0	MANAGEMENT OF SOLID AND/OR HAZARDOUS SUBSTANCES AND WASTE.....	25
14.1	Handling and Disposal of Solid/Bulky Wastes .....	25
14.2	Management of Fuels, Herbicides, Hazardous Substances, Waste Oil, and Hazardous Wastes .....	25
14.3	Spill Cleanup.....	26

15.0	FINAL CLEAN-UP AND GRADING .....	27
15.1	Clean-up.....	27
15.2	Final Grading.....	27
15.2.1	Restoration of Elevations and Contours.....	27
15.2.2	Use of Fill .....	28
15.2.3	Permanent Erosion Controls.....	28
15.2.4	Repair of Disturbed Pavement .....	29
15.2.5	Removal of Temporary Access ways .....	29
16.0	RESTORATION .....	30
16.1	Specifications for Revegetation .....	30
16.2	Site Preparation .....	30
16.3	Seeding and Mulching .....	30
16.4	Shrub and Tree Planting .....	30
16.5	Timing of Reseeding and Planting .....	31
16.6	Monitoring .....	31
16.7	Over Winter Site Stabilization .....	31
16.8	Temporary Erosion Control Maintenance and Removal.....	31
17.0	CONSTRUCTION SUPERVISION AND ENVIRONMENTAL COMPLIANCE OVERSIGHT .....	33
17.1	Central Hudson Project Management.....	33
17.2	Contractor Responsibilities .....	33
17.3	Environmental Compliance Oversight Procedures.....	33
Appendix A	Construction Details	
Appendix B	Alignment Maps	

## **1.0 INTRODUCTION**

### **1.1 EM & CP Organization/Use During Construction**

This Environmental Management and Construction Plan (EM & CP) identifies the locations and types of facilities to be utilized for the East Walden Substation to the Rock Tavern Substation 69 kV Electric Transmission Line Construction Rebuild Project (WM Line Rebuild Project). General procedures included within the EM & CP describe project administration, landowner and agency notifications and consultations, construction, restoration and environmental mitigation. The EM & CP incorporates the results of various surveys and studies conducted as input to the final design of the project.

This EM & CP is formatted to provide concise information about the different elements of the construction process, ranging from construction methods to specific procedures and key mitigation measures for use in environmentally sensitive areas.

### **1.2 Project Description**

Central Hudson Gas & Electric Corporation (CHG&E) is proposing to construct the WM Line Rebuild Project in Orange County, New York. The existing 69 kV WM Line extends from the East Walden Substation in the Town of Montgomery to the Rock Tavern Substation in the Town of New Windsor, a distance of approximately 12 miles. The proposed reconstruction will utilize both the existing transmission Line right-of-way and, in certain instances, new right-of-way in order to provide a better fit with existing land use patterns within the community. The WM Line will be reconstructed for continued operation at 69 kV and generally will require a 100-foot right-of-way. The Project is planned to be constructed in two phases. Phase I includes the northern and southern sections of the line and is scheduled to start construction in 2008. Phase II will comprise the construction of the midsection and is scheduled to start construction in 2009. The northern section of the WM Line extends from the East Walden Substation to the New York State Electric and Gas (NYSEG) Tap, crossing portions of the Town of Montgomery and Village of Walden. The middle section (midsection) includes the existing WM Line and an alternate route extending from the NYSEG Tap to the Maybrook Substation, and crossing portions of the Town of Montgomery, the Village of Montgomery and the Village of Maybrook. The southern section includes the existing WM Line from the Maybrook substation to the Rock Tavern Substation, crossing portions of the Village of Maybrook, the Town of Hamptonburgh and the Town of New Windsor. These sections are described in greater detail below.

#### Northern Rebuild Section

The proposed route for the northern rebuild section of the WM Line is 3.2 miles long from the East Walden Substation south and west to the NYSEG Tap. Approximately 1.18 miles of the route is within the Village of Walden and the remaining portion of the route (1.95 miles) is in the Town of Montgomery. The Project alignment begins at the East Walden Substation and extends south along Central Hudson's existing Transmission Line right-of-way (with 345 kV & 115 kV lines) and departs from this existing right-of-way at a point approximately 0.5 miles north of Coldenham Road. The route then passes west approximately 0.25 miles along the south boundary of the Wallkill Valley Cemetery and south approximately 600 feet along the Crist Brothers Orchard property. The alignment continues west, enters the Village of Walden, rejoins the existing right-of-way, and proceeds south to the NYSEG Tap.

#### Midsection Rebuild

The WM Line midsection rebuild passes southwest from the NYSEG Tap to the Maybrook Substation, a distance of 5.8 miles. The WM Line midsection passes primarily through the Town of Montgomery. A little more than 0.5 miles of the route passes through the Village of Montgomery. From the NYSEG Tap,

the WM Line midsection follows the existing right-of-way along the active Norfolk Southern Railroad tracks southwest for approximately 3.0 miles to a point just east of Factory Road in the Village of Montgomery. From the Montgomery Substation, the midsection route is proposed to proceed southeast on new right-of-way over agricultural fields to a point where it rejoins the existing alignment approximately 0.5 miles north of I-84 on Beaver Dam Road. The Project alignment then passes south along Beaver Dam Road and existing right-of-way to I-84 and continues south from I-84 to Neeleytown Road. East of Neeleytown Road, the right-of-way turns east and south to the Maybrook Substation, remaining on existing right-of-way.

#### Southern Rebuild Section

The WM southern rebuild section begins at the Maybrook Substation located along Maybrook Road in the Town of Montgomery and extends for approximately 2.6 miles southeast to the Rock Tavern Substation, crossing parts of the Village of Maybrook, Town of Hamptonburgh and the Town of New Windsor.

## 2.0 ACCESS ROADS AND ACCESS WAYS

Access along or to the WM Line Rebuild will be required for equipment to perform right-of-way clearing; transport poles and materials; install new poles and materials; string wire; restabilize/reseed construction work areas, and perform routine inspection and maintenance, as required, in the future.

Equipment access to construction sites will be along the WM Line right-of-way and, where necessary, via private, designated off right-of-way access roads or access ways. Construction equipment and vehicles will use public roads to reach the transmission line right-of-way and private access ways or access roads.

Access locations are identified on the project alignment maps, which designate the specific areas in which equipment access ways will be located along the right-of-way and which off right-of-way access roads will be used. The alignment maps also show certain areas where no equipment access will be allowed.

Access ways will generally consist of a travel corridor approximately 16 feet wide and be of sufficient width to allow the safe movement of construction equipment.

Unless necessary for safety, access roads will not be graded. Gravel, soil, or equivalent may be added to low areas on the access ways, where necessary. The gravel, soil or equivalent will be made up of materials excavated during the removal of the existing structures. Temporary erosion and sediment controls will be installed across or along access ways in order to minimize the potential for erosion and sedimentation. The need for and placement of temporary erosion controls will be determined by Central Hudson, based on site-specific factors such as slope, proximity to wetlands or streams, and amount of effective vegetative cover on the access way.

Along the transmission line right-of-way, if an access way is not already established, one access way will be developed during initial project construction activities (generally during clearing activities). Within the right-of-way, access ways will be sited, where possible, so as to minimize environmental impacts. For example, where a wetland that must be traversed is located across the transmission line right-of-way, the access way will be located so as to provide the narrowest practical crossing. Multiple access ways will be established only to avoid environmental impact to specific areas of the right-of-way.

In some areas, construction equipment and vehicles will use off right-of-way access roads to reach the transmission line right-of-way. Such access ways typically consist of private driveways or other private roads.

Environmental surveys were conducted along all off right-of-way access roads as necessary. Prior to use, some of these access roads will require improvement, which may include some, all, or combinations of the following types of activities:

- Vegetation trimming or removal to allow equipment passage.
- Removal of fences or stone walls that may block equipment passage.
- Widening or extension of existing tracks, which may involve grading.
- Installation of culverts, as appropriate, at such locations as (but not limited to) farm ditches, bar ditches, etc.

Any landowner conditions applicable to access way use within the right-of-way or off right-of way access roads will be identified and will be conveyed to Central Hudson construction personnel prior to the commencement of clearing and/or construction of a particular segment.

If Central Hudson determines that other access roads (in addition to those identified on the EM & CP maps) are required for construction work, such additional access roads will be identified as soon as practical prior to the commencement of construction work in a particular area.

New access roads will not be used until approved by Central Hudson's environmental monitor or project manager.

Upon the completion of construction, and as part of the restoration phase, temporary access ways and access roads used during such activities will be restored to approximate pre-construction conditions, except that certain improvements made as part of the construction process may be retained. Such improvements may include culverts, minor grade modifications, berms, or similar structural measures to promote erosion control and/or drainage, etc.

Unless specifically determined prior to construction, permanent access roads will not be retained in wetlands or across streams.

Also upon completion of construction and restoration, access roads and access ways that are not required for the operation/maintenance of the transmission line will be stabilized and reseeded. In areas where permanent access ways or access roads will be maintained, gated fences, guide rail barriers, or equivalent may be used to limit unauthorized off-road vehicular use, depending on site-specific conditions and landowner requirements.

### **3.0 CLEARING**

The WM Line Rebuild line will be re-constructed on new and existing rights-of-way. Central Hudson may use company employees, clearing contractor(s), or logging contractors to remove vegetation from the WM Line rights-of-way. Any clearing required for the WM Rebuild will be done in accordance with CHG&E's normal routine vegetation maintenance and in accordance with the Company's Long Range Vegetation Management Plan (LRVMP).

In accordance with Central Hudson's LRVMP, the WM Line right-of-way is already selectively cleared of vegetation. Within the right-of-way, desirable species are preserved to the extent practical. In selected cases, certain desirable trees may be kept on the right-of-way and only trimmed to provide operational and required clearance to wires and structures.

## 4.0 DANGER TREES

Dead, dying, or otherwise dangerous trees or tree limbs located near the right-of-way that could pose a hazard to the transmission line facilities will be identified and removed as part of CHG&E's routine vegetation management program.

“Danger trees” are trees or tree limbs, although located off of the transmission line right-of-way (and thus outside of normal clearing limits), are of such height; condition (e.g., leaning, rotted); location (e.g., side hill, proximity to transmission lines, soil characteristics); and/or species type that they represent a threat to the integrity of the transmission line conductors, pole structures, or other facilities.

## **5.0 GRADING AND BLASTING**

Construction access ways and access roads may be graded, as necessary for equipment safety, to create a level work area for the passage of construction equipment/vehicles. New pole locations also will be graded or leveled, if required. Blasting will only be used to install new poles or anchors if other techniques are not practical.

### **5.1 Grading**

Grading will normally be performed on access ways only if necessary to provide a safe, level surface for the passage of construction equipment. Grading will not be required where the terrain is flat and open. However, in areas of rock outcropping or irregular terrain, more extensive rough grading may be required, both for access ways and for new pole locations.

Where grading must occur, temporary erosion control measures will be applied as necessary to stabilize disturbed soils. The temporary erosion controls established after clearing will be maintained or otherwise repositioned as appropriate after grading activities.

### **5.2 Blasting**

In areas of rock, blasting may be required to excavate holes to install some of the new poles. All blasting activities, including the transport, handling, and disposal of explosives and explosive packaging, will be in accordance with applicable safety regulations and codes, and will be performed only by certified and licensed blasters.

Construction personnel will follow standard safety requirements when blasting is performed. Such basic safety procedures include not loading holes with explosives until all holes needed at a given site are drilled; not driving equipment over loaded holes; and the use of and adherence to all warning horns signifying an imminent blast.

Blasting mats will be used as necessary and as appropriate to minimize fly rock.

In some areas of consolidated rock, pole anchors may be used to bolt the transmission poles to the rock in lieu of blasting pole holes. Similarly, rock anchors will be used instead of augured anchors in areas of consolidated rock.

Prior to performing blasting in a particular location, Central Hudson will determine if there are any underground facilities or structures (including residences) in the area close to the work location. Blasting in a particular location will not be performed if examination of the site reveals that subsurface facilities (such as wells) are located close to the work area. On a site-specific basis, Central Hudson will evaluate the need (if any) for pre-blast inspection, survey, or testing of foundations, wells, and structures in areas close to the locations where blasting will be required for pole installation.

### **5.3 Blasting Notification**

Blasting notification will consist of prior notice to affected property owners and tenants, as well as the use of appropriate warning horns (or equivalent) immediately prior to a blast to warn construction workers and others who may be near the construction site.

When requested by local authorities, Central Hudson will provide notice of planned blasting at least four hours in advance.

Precautions, including the sounding of appropriate warning horns, will be taken to ensure that all personnel (construction or otherwise) will be positioned a safe distance from the blasting operations at the time of detonation.

## **6.0 AIR QUALITY AND DUST CONTROL**

Central Hudson will take appropriate measures to minimize fugitive dust (or other airborne debris) from construction activities.

Apart from localized fugitive dust emissions as a result of the use of standard construction equipment and helicopters, the construction of the WM Line Rebuild is not expected to result in adverse air quality impacts. Burning will not be used as a vegetation disposal method, and the construction equipment used on the project in general will be maintained in accordance with standard specifications designed to limit emissions of air pollutants. All construction equipment will be maintained in good working order and will meet National Ambient Air Quality Standards and New York State emission standards.

Should dry conditions exist such that dust from construction activities could become a nuisance or hazard to adjacent homeowners, pedestrians, or motorists, Central Hudson may direct that dry areas be dampened by watering (using a truck or other appropriate means) or covered with mulch.

The Central Hudson environmental monitor and/or Construction Manager (or their designees) will assess conditions at construction sites and will specify the application of dust suppressants, as necessary.

Central Hudson does not anticipate the use of any dust suppressants other than water. Central Hudson may also use stone aprons within 50 feet of entrances to roadways to minimize mud and minimize dust on roadways as described in Section 12.4.

## **7.0 REMOVAL OF STRUCTURES**

It will be critical to minimize the amount of outage of the WM Line while the new structures and conductors are being installed. In most instances, the new structures will be constructed either to the north or south of the existing structure in the same line, and existing towers will be subsequently removed. Once the new steel poles are in place, the local distribution lines and the 69 kV WM Line may be moved onto the new poles. After new poles are in place and the new WM Line conductors have been attached, the old poles will be cut off near ground level or completely removed. The poles will be disposed in accordance with New York State solid waste regulations.

### **7.1 Wood Pole H-Frames**

After new poles are in place and the new WM Line conductors have been attached, the old poles will be cut off near ground level or completely removed. The poles will be disposed in accordance with New York State solid waste regulations.

## 8.0 CONSTRUCTION SPECIFICATIONS

Construction of the WM Line Rebuild will require construction work in or access across a variety of land uses and different types of terrain. This section details the specifications that will be followed during project construction activities. The objective of these specifications is to minimize the potential for adverse impacts to specific land use features and/or environmental or cultural resources in the project area.

### 8.1 Wetlands

Federal jurisdictional wetlands are located within the project area of the WM Line Rebuild Project. Central Hudson and its contractors have conducted field surveys to delineate wetlands and have designed the WM Line Rebuild Project to minimize impacts to wetlands to the extent practical.

#### 8.1.1 Wetland Delineation and Mapping

Wetland surveys were conducted in the fall of 2006 and the summer of 2007 along the WM Line Rebuild right-of-way and along proposed access ways. The purpose of the wetland surveys was to identify the location, type, and boundaries of both federal and state jurisdictional wetlands. Wetland boundaries were flagged in the field and subsequently surveyed.

Field delineation methods used the Routine Onsite Determination Method as described in the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987) and the 1985 New York State Freshwater Wetlands Delineation Manual (Browne et al., 1995). These methods incorporate a three-parameter approach using vegetation, soils, and hydrology to identify the presence of freshwater wetlands. Wetland boundaries were initially identified through visual assessment of vegetation and hydrology. This visual boundary was used to establish two sample points (one wetland point and one upland point) to verify the boundary of wetland by analyzing dominant vegetation, soil classification, and hydrology at each sample point. Wetland boundaries were identified in the field with pink surveyor flagging, and the location of flagged boundary points were recorded using a Trimble<sup>®</sup> GEO XTtm handheld unit.

The approximate boundaries of federal jurisdictional wetlands are illustrated on the EM & CP maps. These maps contain the following:

- Wetland location.
- Methods for vegetation (tree/shrub) removal in wetlands.
- Areas where access will be required across wetlands and the types of crossing methods that may be used (based on wetland type).
- Wetlands in which equipment access will be prohibited or restricted.

#### 8.1.2 General Restrictions for Construction Work in or Near Wetlands

The following specifications will govern construction work in or near all of the regulated wetlands identified along the corridor of the project.

1. Timber and brush (slash) vegetation in wetlands will be selectively cut only as necessary to provide access and to maintain safe clearances from conductor wires.
2. Woody wetland vegetation (either slash or timber) that is dropped and lopped will not be piled so as to block surface water flows or adversely affect the integrity of the wetland.
3. Temporary erosion controls will be installed around work sites, as necessary, in or near wetlands to minimize the potential for erosion and sedimentation.

4. Access through wetlands for equipment will be avoided or minimized to the extent practical. Access will not interfere with surface water flow or the functions of the wetland.
5. Construction equipment (apart from equipment that can not be practically moved) will not be refueled within 100 feet of a wetland.
6. Petroleum products, herbicide, or hazardous substances will not be stored within 100 feet of a wetland. Herbicides will not be applied within 100 feet of a state (DEC) designated wetland or within 100 feet of surface waters.
7. Work sites in and temporary access ways through wetlands will be cleaned up and restored following the completion of construction activities.
8. Construction and restoration work in wetlands will conform to the additional special conditions, if any, of the U. S. Army Corps of Engineers permit (as required) for the project.

### 8.1.3 Techniques for Construction and Access in Wetlands

Central Hudson is committed to avoiding or, where avoidance is not practical, to minimizing impacts to wetlands encountered along the WM Line Rebuild Project right-of-way. Extensive field reviews and engineering design adjustments were performed to locate access ways, and all structures will be located outside of wetland areas. The transmission line will span wetlands, and access through wetlands will be kept to the minimum necessary for construction purposes.

The development of permanent access ways in wetlands will be avoided to the extent practical. However, Central Hudson may require access through wetlands to maintain the transmission facilities or to respond to emergency situations after the line is operational.

### 8.1.4 Clearing

Clearing within wetlands will consist only of routine right-of-way vegetation management and will be done in accordance with the specifications in the LRVMP. Timber that must be cut will be cut selectively, diced up to lay flat for quick decomposition, and left where dropped (i.e., drop and lop method of clearing). Cut timber and slash will not be stacked or piled, and in no case will it be placed so as to block surface water or stream flow within or through a wetland or so as to change the hydrology of the wetland.

Typically, chain saws will be used to cut forested wetland vegetation. Clearing equipment will not be used to cut within forested wetlands except possibly in wetlands with no standing water and non-saturated soils (i.e., wetland soils that will support equipment). Trees will be cut at the surface water interface and stumps will be left in place except at pole sites, where stump removal may be required.

### 8.1.5 Access Ways

Where construction equipment must cross designated wetlands, a crossing method will be selected that is appropriate to the site-specific conditions pertaining to soil moisture, vegetative characteristics, and depth of topsoil layer.

The following typical crossing methods may be used singularly or by combination thereof:

1. Wetland with Saturated Soils. In wetlands with saturated soils (i.e., water at or near the surface), prefabricated wooden mats or equivalent\* will be used to provide support for equipment. Such mats or equivalent will be installed by clearing or grading crews and will remain in place until the completion of construction and, if appropriate, restoration.

If final restoration will not occur until the growing season following construction and temporary access across the wetlands will be required at that time, wooden mats or equivalent may be

removed as necessary to facilitate surface water flows during winter/spring runoff periods. Crossings will be replaced as necessary to provide access during final construction work (e.g. final restoration).

Unless required for a permanent wetland crossing, all prefabricated wooden mats or equivalent materials will be removed from temporary access ways in wetlands no later than during the final restoration of the right-of-way.

In addition, a bombardier or similar low pressure wide tracked equipment may be used in saturated wetlands, without support, depending on substrate type and degree of saturation (e.g., water depth) and on extent of rutting caused by this equipment.

2. Wetlands with Non-Saturated Soils. In areas that exhibit wetland vegetative characteristics but have a firm substrate, construction equipment may drive through the wetland. To the extent possible, low pressure tracked equipment will be used for construction activities requiring equipment access through wetlands.
3. Wetlands with Established Access Ways. Where wetlands cannot be avoided and equipment access is required, these existing access ways will be used if practical (rather than creating another access point through the wetland).

\*In wetlands that require support, various methods are available. Among the options that Central Hudson may apply are pre-fabricated wooden mats, timber and/or brush riprap (from materials cut from the right-of-way as part of clearing operations), fiberglass mats, or fiber mats, as well as the use of low ground pressure wide tracked equipment. The type of support used will depend on conditions at the time of construction, including season, water level in the wetland, and extent of disturbance associated with one support method versus another. Across one access way through the emergent wetland, a permanent culvert will be installed to maintain surface water flows. Typical culvert installation is depicted on the construction details contained in Appendix A.

#### 8.1.6 Erosion Control

Temporary erosion controls will be installed around work sites in or near wetlands and along access ways in wetlands as necessary to minimize the potential for sedimentation into undisturbed portions of a wetland. The need for and placement of temporary erosion controls will be determined on a site-specific basis, considering factors such as weather conditions during all work activities, vegetative cover, hydrologic regime, and the type of construction disturbance.

Such temporary erosion controls will be removed in a timely manner (after revegetation is deemed effective) so as to not impair the normal surface drainage of adjacent lands.

#### 8.1.7 Spill Prevention

Petroleum products, herbicides, or hazardous substances will not be stored, and construction equipment will not be refueled, within 100 feet of any wetland.

Hand-held power equipment may be refueled within 100 feet of a wetland only at a work site where it is not practical to move the equipment for refueling. In such cases, appropriate precautions, such as the placement of a plastic ground sheet and/or sorbent sheet beneath the refueling site, will be used to minimize the potential for a spill to the environment.

Equipment and/or machinery will not be washed in any wetland, or in a manner that would cause wash water runoff to enter a wetland.

### 8.1.8 Clean-up, Restoration and Reseeding

Wetland clean-up will include removal of all prefabricated wooden mats, or equivalent, from temporary access ways, as well as the removal on any construction debris.

If necessary, disturbed portions of wetlands will be regraded or raked to restore approximate pre-construction contours and hydrology. Grading of wetlands will be limited to the minimum necessary to restore the area. Typically, cleanup and restoration in wetland areas will occur when access across the wetland is no longer required.

Wetlands will be reseeded with annual ryegrass, Japanese millet, reed canarygrass, or an equivalent grass mix suitable for wetlands. No fertilizer will be used in wetlands. Mulch will only be used if necessary to enhance the revegetation or stabilization. Only straw mulch will be used in wetlands.

### 8.1.9 Specifications for Permanent Access Across Wetlands

The following general procedures apply to permanent access:

1. The addition of permanent fill (which includes crushed stone, gravel, and timber mats) will be limited to the extent possible.
2. Equipment refueling will not be conducted on roads in wetlands or within 100 feet of wetlands.
3. If maintenance activities result in soil disturbance, rutting, etc. on an access road through a wetland, appropriate measures will be taken to stabilize (e.g., use of temporary erosion controls) and reseed the site after the completion of maintenance work in a particular area.
4. Cut timber or slash will not be piled along access ways in wetlands so as to interfere with wetland surface water flows.
5. Access ways will not be used so as to impair overall surface water flows and wetland functions.
6. Permanent access ways through wetlands will be a maximum of 16 feet wide; widening the access way for equipment turnarounds or passing lanes will be prohibited

## 8.2 Streams

Thirty-two surface waters were identified in the field along the WM Line. These waterbodies consist of 29 streams (7 perennial, 22 intermittent) and 3 open water features. These waterbodies consist of 15 field identified streams (6 perennial, 9 intermittent), 2 open water features, and 9 desktop reviewed streams. Descriptive information collected during the field surveys includes flow regime, relative velocity and direction, stream width, depth, and substrate and bankside vegetation. The construction of the WM Line Rebuild Project has been designed to avoid waterbodies to the greatest extent practical.

### 8.2.1 Stream Inventory

Stream inventories were conducted in the fall of 2006 and summer of 2007. At each location where a defined watercourse channel was evident, information regarding stream name (if any) and classification was recorded.

Streams are illustrated on the alignment maps (in Appendix B) for this Project.

Stream information also is included on the alignment maps. For each stream, the maps show the approximate stream channel location, as well as the following types of data:

- Stream name (if any), type (perennial, intermittent, drain, swale), and number designator.

### 8.2.2 General Restrictions for Construction Work Near Streams

The following specifications will govern construction work in or near streams. These specifications will apply to all perennial and intermittent streams, as applicable.

1. Construction work in streams will conform to the timing requirements to protect important fisheries resources, specifically spawning and primary migration periods. In general, for cold water fisheries in the project area, construction work involving installation of stream crossings will occur between May 1 and September 30 to avoid spawning periods.
2. Neither slash nor timber will be deposited within identifiable stream channels, or stacked near such channels so as to interfere with the preservation of streamside vegetation for habitat maintenance and/or erosion control.
3. No construction debris (i.e., waste materials from the 69 kV installation) will be allowed to accumulate within 50 feet of a watercourse.
4. Where stream crossings cannot be avoided, stream banks will be maintained (and, if necessary, stabilized at vehicle crossing points) to limit erosion or degradation. Stabilization may involve the use of measures such as rock riprap (native material or otherwise), erosion control fabric, mulch, etc.
5. Where the installation of access across streams is required, clean materials will be used (e.g., clean riprap or equivalent for flume bridges with rock, rock fords).
6. No equipment or machinery will be washed in streams or refueled within 100 feet of any watercourse. No wash water runoff will be permitted to enter a stream.
7. No petroleum products, herbicides, or other chemical materials will be stored, mixed, or loaded within 100 feet of a stream.
8. To the extent possible, the installation of in-stream access will be scheduled to avoid conflicts with fish spawning/migration in streams that support trout populations.
9. Downstream water flows (if water is present at the time of construction) will be maintained at all times.
10. Concrete will not be mixed or placed so as to enter a watercourse.
11. Herbicides will not be applied within a 30-foot buffer zone around watercourses. Only basal or cut and stump herbicide application will be conducted in the additional buffer zone located between 30 and 50 feet around water bodies (other than wetlands).
12. Where poles are located near streams (e.g., within 50 feet of a stream), appropriate temporary erosion controls will be installed around the pole work site, as necessary, to minimize the potential for concrete or sediment to enter the water body. Vegetation maintenance around poles within stream buffers will be in accordance with the specified procedures for herbicide use and application in general (refer to (11), above).

### 8.2.3 Specifications for Clearing Near Streams

Vegetation removal will be minimized within a 50-foot-wide buffer around streams. Within this buffer, only the minimum amount of vegetation necessary for the construction and safe operation of the transmission facilities will be removed.

The objective of Central Hudson's clearing program near streams will be to preserve desirable streamside vegetation for habitat enhancement, shading, bank stabilization, and erosion/sedimentation control. Ultimately, the long-range vegetation maintenance program will select for species that provide these attributes and that are compatible with transmission line operation.

Within the 50-foot wide stream buffer area, vegetation removal will be restricted. Specifically, except for access ways (if required), only tall-growing vegetation that currently or in the near future has the potential to interfere with transmission line reliability will be selectively cut or trimmed.

On access ways across streams, additional vegetation removal may be required to allow the safe passage of construction equipment. To the extent possible, this vegetation removal will be minimized by limiting the width of access ways and by utilizing existing access tracks, trails, or roads, if already present along the right-of-way.

Within the 50-foot wide stream buffer area, the disposition of vegetation after cutting will depend on factors such as the volume of timber and slash, terrain and slope characteristics, and access. Where possible, timber and slash will be stacked outside of the 50-foot buffer area.

Timber and slash may be cut and dropped if removal and/or stacking would result in undue disturbance (scarification) to the right-of-way as a whole and to the stream buffer in particular. If there is a potential for the cut vegetation to enter the stream channel (e.g., as a result of flooding), slash and/or timber will be moved to a suitable location, away from the stream.

#### 8.2.4 Access: Stream Crossing Techniques

To the extent possible, equipment crossings of streams will be avoided or restricted. However, in certain locations along the WM Line Rebuild transmission line right-of-way, both temporary and permanent equipment access ways across streams will be required. The EM & CP maps indicate the streams that must be traversed by equipment, along with the preferred method for the crossing.

Six basic methods may be used to provide equipment access or other access (e.g., for wire) across streams. These methods, along with the code used to identify them on the alignment maps, are referenced to typical construction details in Appendix A of this volume and include the following:

- (F) Ford crossing without stone. Using this method, equipment will drive through the stream. Typically applied where the stream bottom is firm, water depth is relatively shallow, and minimal equipment movements through the stream channel will be required.
- (G) Ford crossing with stone. This method involves the placement of stone (typically clean gravel, riprap, or equivalent) in the bottom of the stream bed at the access point in order to provide additional equipment support.

Equipment will drive through the stream at the stone ford. Stone will not be piled or otherwise placed so as to block stream flow. The stone crossing will not be removed after the completion of construction, but rather will be retained for use by equipment during operation and maintenance activities. Stone also may be placed on the stream banks, if necessary, to minimize the potential for erosion.

- B(GC) Culvert/flume with stone (temporary). In certain streams where flows are such that an equipment type bridge is necessary, culverts will be installed at least 6" below existing grade on both the up and downstream end. Culverts (or flumes) will typically consist of lengths of pipe. One or more culverts will be installed, depending on stream flows. The culverts will be sized to carry predictable flows, including routine storm events.

Clean stone riprap may be placed around the culverts to create a level access way for the passage of equipment across the stream. Where required to provide access only

during construction, culverts will typically be removed during transmission segment restoration.

- CF Culvert/flume with stone (permanent). At some stream crossings, the culverts installed during construction will be retained to provide permanent access for operation and maintenance activities along the right-of-way. The culverts will be sized to carry predictable flows, including routine storm events.
- B(MC) Mat span with or without culverts (temporary). Mats placed from bank-to- bank to span a stream may be used for access. Mats also may be placed on top of culverts.
- (S) Span. In some areas, equipment crossings of a stream will not be necessary, although the transmission line (wires) will span the watercourse.

The culvert/flume with stone (permanent) crossing method was selected based on the stream characteristics (slopes, bottom type, and bank type) and the frequency and duration of the required access (i.e., anticipated number of equipment crossings during construction, and whether the access will be needed on a permanent or a temporary basis).

However, conditions at the time of construction may warrant the use of a stream crossing method that is different from that identified on the EM & CP maps. Different methods from that listed on the maps (or combinations thereof), if necessary and environmentally appropriate for a particular stream at the time of construction, will be selected by Central Hudson.

#### 8.2.5 Erosion/Sedimentation Controls

Temporary erosion and sedimentation controls, consisting primarily of silt fence and/or hay bales, will be installed as necessary to minimize impacts to streams. Such temporary controls will typically be installed no later than 24 hours after the completion of clearing (depending on the ground cover remaining), but may be installed in selected situations, prior to clearing. Temporary erosion controls will be installed immediately after clearing in the event of impending inclement weather (e.g., rain events that could lead to erosion of soils from which vegetation has been cleared).

In general, temporary erosion controls will be installed:

- Across disturbed portions of the right-of-way leading to streams;
- At the top of stream banks;
- At the bottom of slopes leading to streams; and/or
- Across access ways leading to streams.

During equipment crossings of streams, some sedimentation and turbidity can be expected to occur in localized areas downstream of the crossing. In an effort to minimize sediment transport during equipment crossings of certain streams, hay bales or silt fence may be placed temporarily across the stream, downstream of the equipment crossing, but within the reach of stream encompassed by the transmission right-of-way.

These in-stream erosion controls may be installed during various phases of the project (e.g., clearing, construction), depending on the stream, the type of crossing, and the potential for downstream sedimentation. Where deemed to appropriate for use, in most cases, these sedimentation controls will be installed prior to the initiation of work activities (e.g., clearing, construction).

The hay bales or silt fence may assist in trapping some, but not all, sediment. These temporary controls will be removed after equipment access across the stream is no longer required, or as appropriate to maintain downstream flow.

Temporary erosion controls on slopes leading to streams, access ways, and other areas where sedimentation or erosion could reach a stream will be maintained until revegetation and site stabilization is determined to be effective. Sediment that may accumulate behind the silt fence or hay bales will be removed periodically, as necessary to maintain the functionality of the erosion controls.

### **8.3 Helicopter Usage**

Central Hudson may use helicopters for removing existing structures and lifting and transporting framed poles from established staging areas to each pole/structure location. Additionally, helicopters may be used for installing wire, pulling ropes, and removing timber from the right-of-way, where practical.

All Federal Aviation Association required flight rules will be in effect and will consist of:

- Prior notification to emergency response agencies including State and local Police, Sheriff, Fire Department and 911 Central Office
- Flight route(s) with and without external loads
- Refueling procedures and notification of refueling area including fuel storage with Local Fire Department

Additionally, traffic control personnel will be deployed at public road crossings to ensure safe passage of the public. Local town officials will be notified as to time and duration of the flight operations. All flights would occur during daylight hours.

Central Hudson personnel will supervise all helicopter operations on the WM Line right-of-way.

## 9.0 FENCES AND GATES

Construction of the WM Line Rebuild rights-of-way will require the temporary removal of some fences, stone walls, guard rails, etc. to allow access for construction equipment and personnel.

In areas where fences, guard rails, or similar barriers must be removed, Central Hudson will apply the following procedures as appropriate to specific situations:

1. To the extent possible, remove only the portions of fences, stone walls, or guard rails necessary to permit the passage of construction vehicles and equipment. Brace areas on either side of the section to be removed, as necessary, in order to maintain the integrity of the remainder of the barrier.
2. Install temporary gates, as appropriate and if necessary, to maintain the original purpose of the barrier, while still allowing access for construction vehicles and equipment.
3. Keep gates closed when not in use, as necessary.
4. After the completion of construction and restoration in an area, replace barrier equivalent to pre-construction condition unless otherwise specified by landowner. If necessary, install permanent gate for operation/maintenance purposes.
5. If identified in landowner agreements, restore stone walls to equivalent pre-construction condition.

## **10.0 WORK HOURS**

Normal construction work will occur in daylight, generally between 7:00 a.m. and 7:00 p.m. Construction work performed in the fall or winter will be adjusted accordingly to conform to shorter periods of daylight. Generally, work weeks will include Monday through Friday however work may occur during weekends.

## 11.0 HERBICIDE USE

In conjunction with vegetation clearing on the transmission line right-of-way, herbicides will be applied to cut stumps. In addition, in the first growing season after clearing, herbicide will be applied to vegetation along the right-of-way as a low volume foliar spray. All spraying will be accomplished manually, using backpack sprayers.

The following procedures will be followed strictly when applying herbicides:

1. Only herbicides approved for use by the U.S. Environmental Protection Agency will be used.
2. All herbicide applications will be performed under the supervision of a certified Applicator registered with DEC for the current application year.
3. Directions for application as indicated on labels will be followed, as well as strict adherence to Central Hudson's Long Range Vegetation Management Plan.

Herbicides will not be stored, mixed or loaded into backpack or hand held sprayers within designated buffer areas around streams, wetlands, or other water bodies.

## **12.0 HIGHWAY AND UTILITY CROSSINGS**

The WM Line Rebuild will cross various state and local roads, as well as utility lines (e.g., water, cable television, telephone, water/sewer lines, and gas). Prior to construction over or near these corridors, Central Hudson will notify and, as necessary, coordinate with the representatives of the affected utilities and highway departments.

### **12.1 Notification**

At least two days prior to excavation work in the vicinity of buried utilities, Central Hudson will notify utilities through the “Call Before You Dig” program. If the utility is not registered with this program, Central Hudson will notify the utility operator directly.

Central Hudson will notify affected highway departments at least five days prior to construction over or within the right-of-way of a local or state road.

Central Hudson will consult with the appropriate authorities to ensure that the proposed construction method and specifications are acceptable, and to determine whether the affected agencies desire to have representatives in the area when transmission line construction activities are occurring across the affected highway.

Central Hudson will consult with representatives of all of the affected highway departments (state, county, and town) to inform them of the project road crossing locations and the approximate schedule for the construction work. Additional consultation will occur immediately prior to construction work, as noted above.

### **12.2 Highway Crossings**

When installing transmission wires over roads and when working at new pole locations adjacent to roads, Central Hudson will adhere to standard procedures designed to minimize impacts on normal traffic flow and to limit delays or public inconvenience.

Prior to the commencement of construction at each road crossing, Central Hudson will notify local highway departments of the approximate date on which work will begin. All work within state highway rights-of-way will be in accordance with the traffic and safety standards and other requirements contained in 17 NYCRR Part 131, “Accommodation of Utilities Within State Highway Rights-of-Way.”

Appropriate safety procedures also will be implemented to minimize the potential for injuries to workers or to the public at large. Devices to notify the public of construction, such as flag persons, signs, traffic controls, night flashers, and markers, will be used as required by the applicable safety regulations. Adequate signs, barricades, and lights will be provided and suitable guardrails or barricades will be erected and maintained around construction areas while work is in progress. No construction equipment or material will be placed in any manner or location that will obstruct highway warning or directional signs or signals.

### **12.3 Other Crossings**

Pole locations near and crossings of other utilities also will be reviewed with representatives of such utilities prior to construction.

No direct impacts to underground utilities are anticipated because the construction of the WM Line Rebuild will not require excavation except at new pole locations. However, underground utility crossings (e.g., cable television, telephone, water lines) will be flagged prior to the commencement of transmission line construction excavation in a particular area in order to avoid any potential for conflicts.

## **12.4 Mud Control on Roads**

In areas where there is a potential for construction equipment to track excessive amounts of mud onto local or state roads, Central Hudson will implement measures to control or to clean up the mud, as appropriate. For example, stone may be placed on access ways (in non-wetland areas) within approximately 50 feet of entrances to state and local roads in order to minimize the amount of mud on vehicles and equipment entering the road. Alternatively, roads in the immediate vicinity of an access point may be swept periodically to remove significant amounts of mud. The objective of the mud control program will be to avoid safety hazards that may be associated with significant accumulations of mud on a particular stretch of roadway.

### 13.0 BIOLOGICALLY SENSITIVE LOCATIONS

Central Hudson has consulted with the U.S. Fish and Wildlife Service (USFWS) and DEC to identify biologically sensitive resources in the project area and has developed this EM & CP to ensure appropriate mitigation measures to avoid impacts to those resources. The USFWS indicates that the following federally protected species are known to occur in Orange County: one threatened species the Bog turtle (*Clemmys muhlenbergii*), and three endangered species including Dwarf wedge mussel (*Alasmodonta heterodon*), the summer population of Indiana bat (*Myotis sodalis*), and Shortnose sturgeon (*Acipenser brevirostrum*) (NOAA Fisheries has principal responsibility for the Shortnose sturgeon). New York Natural Heritage Program (NYNHP) identifies one species, the Indiana bat, which may be found in the project area. Note the bald eagle was originally listed as a threatened species but is no longer on the list. However, the bald eagle still receives protection under the Bald and Golden Eagle Protection Act and Migratory Bird Treaty Act. Of these species, the Indiana Bat and Bog Turtle could be encountered within the project area. The NYSDEC indicates that concerns regarding the Indiana Bat focus on destruction of roost trees, such as shagbark hickory and dead snags during the clearing process. The NYSDEC also mentions that as long as those trees are removed between September and April, there should be no impacts to Indiana Bats, and the measure should suffice as a mitigation measure.

Regarding the Bog Turtle, NYSDEC mentions that the use of standard wetland mitigation measures should suffice for mitigation measures.

At the request of George Proufos of NYSDEC, a plant survey for Purple Milkweed was conducted in June 2007. Although Purple Milkweed is not considered a rare, threatened or endangered species, New York State represents its northern habitat range. A small area was identified along the WM Line that contained three plants within the proposed right-of-way. The location of these plants is identified in Appendix B. The Contractor shall flag the location in the field prior to the start of construction to ensure equipment does not disturb the plants.

During the construction project, Central Hudson will brief construction personnel on the sensitive biological resources that could occur in the project area; the state and federal legislation that protects such species; and on the importance of checking for, preserving, and protecting such species during construction activities.

## **14.0 MANAGEMENT OF SOLID AND/OR HAZARDOUS SUBSTANCES AND WASTE**

Central Hudson and its contractors will comply with all applicable regulations regarding the management of wastes and hazardous substances. Central Hudson will require that all contractors follow appropriate waste management regulations, and that any reportable spills or incidents involving waste oils, fuels or hazardous wastes are handled appropriately in compliance with both Central Hudson's spill procedures and relevant legislation.

### **14.1 Handling and Disposal of Solid/Bulky Wastes**

Construction work areas (e.g., transmission line rights-of-way, staging areas, materials yards) will be maintained in a clean and neat condition at all times. At no time will litter be permitted to accumulate for more than one day at any location on the right-of-way. Central Hudson's construction personnel (including contractor personnel, as appropriate) will be responsible for policing construction areas and for removing all construction-generated debris. Solid wastes will be stored in materials yards or at Central Hudson's maintenance facilities and disposed of in accordance with applicable regulations.

### **14.2 Management of Fuels, Herbicides, Hazardous Substances, Waste Oil, and Hazardous Wastes**

The handling, transportation, storage and disposal of oil, fuels, used oils, herbicides, and (if any) hazardous wastes will be in an environmentally safe manner. Any hazardous substances will be transported, stored, and handled as recommended by the suppliers and/or manufacturers and in compliance with all applicable federal or state regulations and Central Hudson's Long Range Vegetation Management Plan (LRVMP).

Disposal of used oil, other petroleum products, and hazardous wastes (if any) will be in accordance with the following:

- Disposal of these wastes in sanitary landfills is not permitted.
- Waste oils must be stored in appropriate, properly labeled drums or tanks, with appropriate secondary containment, until shipment to waste oil recycling centers, incinerators, or secure disposal facilities approved for such wastes.
- Used oil filters will be drained into designated containers for accumulation of liquids and placed in separate storage containers (properly labeled), as detailed above, until transported to approved disposal facilities.

All fuel handling and storage facilities will comply with applicable federal and state regulations. Above-ground bulk storage, with the exception of mobile tank trucks, will be adequately bermed with impervious material to contain a potential loss from complete tank failure. Bulk storage sites and caches of fuel oil drums will be located so that potential spills cannot enter a watercourse or wetland, and in any case will not be within 100 feet of any identified wetland or water body. The area around storage sites and fuel lines will be distinctly marked and kept clear of debris to allow for routine inspection for possible leaks.

Fuels used in the construction process will be stored at specified equipment staging areas. Where practical, refueling will be conducted at the staging areas. If refueling along the right-of-way is required, fuel will be trucked in using appropriate equipment.

Refueling of construction equipment will not be conducted within 100 feet of any stream or wetland. No equipment refueling will be conducted beneath trees. Construction personnel responsible for the handling of large quantities of fuel will be familiar with proper refueling procedures.

During construction, no liquid or solid wastes or fuels will be deposited on the ground or into water bodies. When equipment servicing must be performed at staging areas or on the right-of-way and requires the drainage or pumping of lubricating oils or other fluids from the equipment, a groundsheet of suitable material and size will be spread on the ground to catch the fluid in the event of a leak or spill.

An adequate supply of suitable absorbent material and any other supplies and equipment necessary to immediately clean-up inadvertent waste or fuel spills also will be available during construction. Spill kits are expected to be carried on major pieces of construction equipment, as well as kept at construction staging areas where equipment is stored.

### **14.3 Spill Cleanup**

If a spill of fuel, oil, chemicals, or hazardous substance occurs during any phase of the construction, the affected area will be cleaned up expeditiously, in accordance with the procedures appropriate to the material spilled and with the specifications of Central Hudson's spill procedures. All spills (no matter the size) must be reported promptly to the Central Hudson Environmental Monitor.

State and federal environmental agencies have established standards for reporting and clean-up of releases of specified hazardous substances and petroleum oils. Central Hudson will comply fully with all of the relevant regulations.

## 15.0 FINAL CLEAN-UP AND GRADING

Clean-up activities will be ongoing through the construction of the WM Line Rebuild Project. Final clean-up will be performed in conjunction with final grading restoration activities, as described below.

### 15.1 Clean-up

Clean-up will be an ongoing function as the construction crews involved in clearing, grading and 69 kV facility installation will be directed to police the right-of-way for construction-related debris and trash, and to remove such materials, if possible, when leaving a work area. After the completion of construction on a transmission line segment, Central Hudson will inspect all of the work areas within the project segment and remove any remaining construction-generated debris and trash.

Final clean-up inspections will be performed prior to final grading to minimize the potential for debris to be graded into the right-of-way or construction work areas. Clean-up inspections will not be performed when snow cover is present and visibility of construction areas could be limited. If construction ends late in the season or in the winter and there is snow cover, final clean-up inspections will be delayed until the following spring, when the snow cover is gone.

Clean-up will include an inspection for all types of debris, including but not limited to the following:

- General trash (e.g., wrapping papers, pieces of silt fence).
- Scraps of debris including insulators, conductors, static wires, guy wires, anchors, and other miscellaneous material (e.g. flagging).
- Empty reels used for static wire or conductors.

All scrap materials and rubbish will be removed from the right-of-way and associated construction sites, and designated for reuse or recycling (by Central Hudson or others) or for disposal in an approved manner, consistent with the characteristics of the waste.

Temporary erosion control devices will be maintained throughout the clean-up phase of a project segment. Clean-up personnel will be instructed to repair temporary erosion controls (e.g., silt fence, hay bales), as needed. Such repairs may include restaking, removal of accumulated silt from behind the devices (and spreading across upland areas of the right-of-way), and/or replacement.

After revegetation/site stabilization is deemed effective, all used silt fence, silt fence pieces, and silt fence/hay bale stakes are considered debris and will be removed from the right-of-way and other construction work sites. Depending on conditions, some of the silt fence and stakes may be reused. Used hay/straw bales will be broken up and spread on the right-of-way. This material will be spread out to the maximum extent practical and will not be spread in environmentally sensitive areas (e.g. drainage swales) without approval from the environmental monitor.

### 15.2 Final Grading

#### 15.2.1 Restoration of Elevations and Contours

Final grading will be performed after the clean-up inspection of a particular transmission line segment. The objective of final grading will be to return both upland and wetland areas disturbed during construction to approximate pre-construction elevations and contours, except in selected areas where the restoration of original grade is not practical. The areas where grade will not be restored to pre-construction conditions are:

- Where different elevations or contours are needed to enhance permanent erosion control (e.g., the installation of diversion berms across the right-of-way or broad-based dips in access roads).

- Where different elevations are required for permanent access roads or for permanent access ways along the transmission line right-of-way (for example, as in the case of slope cuts at selected stream crossings or where access parallels the right-of-way in a slope cut).
- Depending on the time of year when construction activities (line installation/removal) are completed, final grading may be either performed as soon as practical after clean-up inspections or delayed until weather conditions are favorable. Conditions that could affect the timing of final grading include, among others, inclement weather and saturated or frozen soils. If construction ends in the late fall or winter and sites are not to be final graded and reseeded until the following spring or summer, over winter site stabilization measures will be implemented.

Grading may not be required in all locations, particularly if construction activities do not involve subsoil/topsoil segregation, cut and fill, elevation changes, or rutting damage. As part of or prior to the clean-up inspection, Central Hudson will assess the need to grade areas along the transmission line segment, and will determine the specific areas where grading is required. To the extent possible, Central Hudson will attempt to avoid grading of areas where construction-related soil disturbance is minimal and vegetative ground cover is well established.

Grading will be performed as necessary to:

- Restore elevations and contours on work sites (including staging areas, structure sites, parking areas, storage yards) to approximate pre-construction conditions and to be consistent with adjacent, undisturbed areas.
- Smooth deep ruts on access ways (on right-of-way) and on access roads (off right-of-way).
- Restore areas where construction equipment caused soil compaction or loss of soil profile.
- Grading will be performed with small backhoes, bulldozers, grade-alls, or equivalent. In areas of limited construction disturbance, small work areas may be smoothed using hand-held equipment.
- Appropriate temporary erosion controls will be maintained during the grading process. If temporary erosion controls have to be removed in order to perform grading in a particular area, Central Hudson will direct construction crews to replace the controls by the end of the same work day.

### 15.2.2 Use of Fill

If necessary in selected non-wetland locations, fill from onsite excavation areas will be used to re-establish grade to approximate pre-construction conditions.

### 15.2.3 Permanent Erosion Controls

As part of final grading, permanent erosion controls may be left across or along permanent access roads or the transmission line right-of-way. The need for such erosion controls will be determined by Central Hudson on a site-specific basis. The primary types of permanent erosion controls that may be applied include:

- Diversion berms (also referred to as water bars).
- Broad-based dips.
- Stone stream bank protection.
- Stone stream bottoms at ford crossing.
- Stone ditches where access roads have made a slope cut.

Because most of these types of permanent erosion controls require extensive soil disturbance, Central Hudson will not install these controls unless warranted to enhance the long-term stability of portions of the right-of-way or permanent access roads.

#### 15.2.4 Repair of Disturbed Pavement

Any pavement, curbs, or sidewalks affected by the installation of the new facilities will be restored to pre-construction or better conditions, and will conform to applicable state, county, or local specifications.

#### 15.2.5 Removal of Temporary Access ways

Temporary access ways (i.e., those not required to provide permanent access for transmission line maintenance) will be regraded, as necessary, as part of final restoration.

Materials used for access way construction, such as temporary bridges across streams, wooden mats, wooden boards, or equivalent, will be removed either as part of final grading or as part of seeding and mulching, depending on the availability of other access for seeding equipment. Temporary access ways will be reseeded, as required.

Materials removed from temporary access ways will be transported off site. To the extent possible, these materials will be salvaged and reused or recycled. Materials that cannot be otherwise productively reused or recycled will be disposed of appropriately.

## 16.0 RESTORATION

Restoration consists of the stabilization and revegetation of areas disturbed during transmission line construction. Temporary erosion controls will be maintained (and replaced if necessary) until revegetation is determined to be effective.

### 16.1 Specifications for Revegetation

The goal of Central Hudson's restoration and revegetation program will be to stabilize areas disturbed from construction activities. Along the transmission line right-of-way, the long-term objective is to achieve vegetative cover similar to existing WM Line conditions.

Specifications for right-of-way stabilization and initial revegetation were developed based on federal, state, and local guidelines and specifications for site stabilization.

### 16.2 Site Preparation

Site preparation to restore disturbed areas (including temporary and permanent access roads, rights-of-way, storage yards, etc.) may involve the following activities, depending on site-specific requirements:

- Disking and Raking. Where soils are severely compacted, Central Hudson may disc or scarify soils with a brush drag or york rake prior to seeding.
- Liming and Fertilizing. In residential lawn areas, lime and/or fertilizer may be applied as required by site-specific conditions. The need for such materials will be determined based on the extent of disturbance, landowner requests, and Natural Resource Conservation Service (NRCS) recommendations.

No fertilizer or lime will be applied in wetland areas or riparian corridors (i.e., within 50 feet of streams).

### 16.3 Seeding and Mulching

After disturbed areas have been restored to grade, scarified, limed, and fertilized (as necessary), a seed mixture appropriate for the area will be applied.

On slopes with highly erodible soils and/or extremely steep grade, the use of soil erosion control blankets may be required (i.e., jute matting, curlex, or equivalent). Seed may be applied by hand or a hand crank seeder, cyclone seeder, or hydroseeder. Hydroseeding may be used where extensive seeding is needed and where good access and water supply is available. A seed drill may also be used in areas where access is available for seeding equipment. If seed is applied using vehicles, efforts will be made to avoid rutting areas that have been final graded.

Hay or straw will typically be used for general mulching purposes at road crossings, stream and wetland approaches, and on steep slopes. On slopes over 15% and along stream banks, Central Hudson may direct that mulch be pegged, crimped, or otherwise secured to the right-of-way or access roads. Mulch can be applied in a slurry if hydroseeding operations are used.

In most cases it is anticipated that seed will be applied either by hand or with some form of a hand crank seeder. Special seeding applications must be approved, in advance, by the environmental monitor.

### 16.4 Shrub and Tree Planting

Shrubs and trees may be planted as replacements for damaged or destroyed vegetation, and/or at sites designated for landscaping. These plants will be considered in locations outside the normal clearing for the right-of-way (access roads, danger tree removal, etc.).

## 16.5 Timing of Reseeding and Planting

Unless otherwise directed by Central Hudson, based on site-specific requirements and on weather conditions at the time of site restoration, seeding and landscape planting will be performed to the extent possible as quickly as practical after final grading is complete. As a guideline, soil and water conservation districts recommend the following spring and fall planting dates:

- April 1 – June 1.
- August 15 – October 15.

Seeding outside of the above-referenced standard timing windows may be performed with the understanding that if the seeding fails, reseeded subsequently will be performed. In addition, winter ryegrass or similar type of temporary conservation seed mix may be used to stabilize the right-of-way until additional seeding can be performed.

## 16.6 Monitoring

The effectiveness of the restoration work will be evaluated after initial seeding. Any areas where seeding is not effective or where further stabilization methods are required will be identified and remediated (via application of additional seed, fertilizer, mulch, and/or temporary erosion controls, as appropriate) as soon as practical.

## 16.7 Over Winter Site Stabilization

In the event that construction activities for a transmission line segment (or part thereof) are completed too late in the season to perform final clean-up, final grading, and/or reseeded, Central Hudson will implement procedures designed to temporarily stabilize the right-of way and associated access roads and work sites. Among the procedures that may be used are:

- Verify the effectiveness of all existing temporary erosion and sedimentation controls.
- Replace or repair damaged control devices as appropriate, and ensure that all controls are properly staked and secured into the ground.
- Install additional temporary erosion controls across disturbed slopes as necessary, at the direction of Central Hudson's environmental monitor or construction supervisor.

Temporary bridges, culverts or flumes, and other equipment support on access ways may be left in place over the winter, at Central Hudson's discretion.

Central Hudson will periodically inspect the effectiveness of the over winter mulch, taking particular care to inspect the temporary erosion controls during periods of spring runoff and snow melt. Temporary erosion controls will be maintained and replaced as necessary.

## 16.8 Temporary Erosion Control Maintenance and Removal

Temporary erosion controls will be maintained throughout restoration, until revegetation is determined to be effective or until sites are otherwise stabilized. As a guideline, reseeded will be deemed effective when perennial vegetation covers approximately 70% of disturbed areas.

In areas where reseeded will not be possible (e.g. areas of rock), temporary erosion controls may not be required or may be removed after nearby disturbed areas are revegetated.

Silt fence, stakes, and wire/string hay bale binders will be removed from construction areas upon the completion of restoration and transported off-site for disposal or reuse. Hay bales will be broken up on site and scattered as mulch on the right-of-way. This material will be spread out to the maximum extent practical. Such material will not be spread in environmentally sensitive areas without approval from the environmental monitor.

## 17.0 CONSTRUCTION SUPERVISION AND ENVIRONMENTAL COMPLIANCE OVERSIGHT

The construction of the WM Line Rebuild Project will be managed by Central Hudson. Specifications for assuring environmental compliance, both through pre-construction training and on-site monitoring (and, if necessary, modification) of construction activities, have been developed for all phases of this project. These procedures include environmental monitoring by Central Hudson; a detailed EM & CP, which must be strictly followed by Central Hudson and contractor work forces; and stop/start work authority on the part of designated environmental personnel.

The following identifies the principal elements of the construction supervision and oversight program.

### 17.1 Central Hudson Project Management

Central Hudson personnel will be directly involved in all construction work. All contract work will be closely supervised by Central Hudson personnel, who may be supplemented by specialized consultants, including, as needed, firms with expertise in surveying, environmental services, engineering, and cultural resources.

Central Hudson management personnel will supervise this project. A Construction Manager will direct all aspects of the project for Central Hudson, and will be responsible for overall compliance with the EM & CP. Other key personnel, including representatives of Central Hudson's right-of-way department and environmental monitors, will report to the Construction Manager. All Central Hudson construction crews and contractors involved in the project also will report to the Construction Manager.

### 17.2 Contractor Responsibilities

Central Hudson anticipates that some construction related work activities will be performed by contractors.

All project contractors will be provided with a copy of the EM & CP, including appropriate plans and alignment drawings. Contractor personnel will receive environmental training prior to start of construction. Central Hudson's environmental monitor(s) will review the environmental aspects of the contractors' work.

Contractors will be responsible for complying with all portions of the EM & CP relevant to their work. Central Hudson personnel will audit the work of the contractors and will have the authority to direct the contractor to perform activities to maintain compliance, as necessary.

Contractors will report to Central Hudson's Construction Manager and will be closely monitored during all phases of their work.

### 17.3 Environmental Compliance Oversight Procedures

Central Hudson's environmental compliance program will focus on five key elements:

1. **Environmental Provisions in Construction Specifications or Contracts**, including incorporation of EM & CP into contract documents.
2. **Pre-Construction Environmental Training and EM & CP Awareness**, to assure that all personnel involved in construction activities are aware of the environmental documents, permits, and certificate conditions that will govern work on the project, as well as of the role of the environmental personnel assigned to the project.

3. **Use of Qualified Personnel and Environmental Monitoring During Construction**, to verify that construction is performed in accordance with environmental requirements.
4. **Availability of Central Hudson Oversight Personnel as Points of Contact**, to assure that regulatory authorities, law enforcement personnel, and municipal officials have direct access to company personnel (e.g., names and telephone numbers of personnel during and after normal work hours) to facilitate prompt coordination and follow-up in the event that concerns arise during the course of the construction.
5. **Emphasis on the Consequences of Non-Compliance**, to assure that all construction personnel, including contractors, are aware of the penalties for not adhering to any environmental permit(s) and EM & CP conditions.

# APPENDIX A

## Construction Details

# APPENDIX B

## Alignment Maps