

Yearly Operational Plan 2010 Holyoke Gas & Electric

Holyoke Gas & Electric Department



gas | electric | steam | telecom

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78 Interstate Drive
West Springfield, MA 01089

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



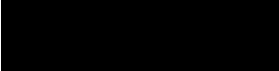
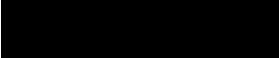
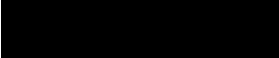
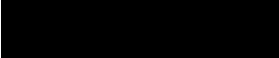
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1 Introduction

This Yearly Operational Plan (YOP) has been prepared in accordance with 333 CMR 11.00, Rights of Way Management. The YOP is based on the Vegetation Management Plan (VMP) prepared for the period 2008 – 2012, which is attached to this document as *Appendix A*. This 1-year plan provides a detailed program for vegetation management for the calendar year 2010 for the Rights-of-Way (ROWs) associated with the hydroelectric, steam, gas, and electric utility operations of the City of Holyoke Gas and Electric Department (hereafter referred to as "HG&E") and ROWs associated with pathways in a proposed recreational park owned and maintained by HG&E.

A YOP must be submitted to the Massachusetts Department of Agricultural Resources (DAR) every year that herbicides are intended for use to maintain ROWs. The DAR publishes a notice of receipt of the YOP in the *Environmental Monitor* (<http://www.state.ma.us/envir/mepa/secondlevelpages/currentissue.htm>). The applicant, HG&E, must provide the notice that appeared in the *Environmental Monitor* to the Boards of Health, the Conservation Commissions, and the chief elected officials for the City of Holyoke, the City of Chicopee, and the Town of South Hadley. This YOP will also be posted on the Holyoke Gas & Electric Website as allowed in 333 CMR 11.06(3). There is a 45-day comment period on the YOP that begins when the YOP and *Environmental Monitor* notice is received by the municipalities. The public notice period is expected to begin on February 10, 2010 and conclude on March 29, 2010. Any comments on this YOP should be directed to the contact person listed in *Section 9*.

Public notice of actual herbicide application in the ROWs is made at least 21 days in advance of the planned application. Notice is sent to the DAR, the Boards of Health, the Conservation Commissions, and the chief elected officials for the City of Holyoke, the City of Chicopee, and the Town of South Hadley. In addition, notice of the herbicide application will be published in at least one newspaper of general circulation in Holyoke, Chicopee, and South Hadley at least 48 hours prior to the herbicide application. The notice will appear in the "local section" of the newspaper and will measure at least 4 inches by 5 inches in size. This published notice will include information regarding:

- The method and location of herbicide application.
- The approximate dates on which herbicide application will begin and conclude, but the application will commence not more than 10 days before nor conclude more than 10 days after the approximate dates published.
- A list of the potential herbicides to be used.
- A description of the purpose of the application.
- The name, title, business address and telephone number of a designated contact person that can be contacted for information about the herbicide application.

2 Location of Rights of Way

The majority of ROWs included in this YOP are located within the City of Holyoke, with some electric transmission/distribution lines located in the adjacent City of Chicopee and the park ROWs located across the Connecticut River in South Hadley. The ROWs can be divided into five categories:

1. ROWs associated with the HG&E electrical system.
 - These consist of electrical transmission and distribution lines located within the City of Holyoke, with a limited amount of lines extending into the adjacent City of Chicopee. The location of the lines included in this YOP are shown in the mapping in *Appendix B* and are listed in *Table 1*.
2. ROWs associated with above-ground steam/condensate lines
 - These ROWs are located within the City of Holyoke. They are shown in the mapping in *Appendix C* and are listed in *Table 1* below by street location.
3. ROWs associated with above-ground portions of gas distribution vaults.
 - Areas to be maintained consist of locations within a 10-foot radius of the above-ground structures. They are shown as point locations in the mapping in *Appendix D* and are listed in *Table 1* by street location. All are located within the City of Holyoke.
4. ROWs adjacent to the canal system owned and operated by HG&E (*Appendix E*).
 - Areas to be maintained consist of ROWs located on either side of the canals that are fenced in most locations. The three-level canal system extends through the southeastern areas of the City of Holyoke and provides water for industrial and hydropower generation. The canal ROWs total approximately 8 miles in length.
5. ROWs associated with public access pathways in Lower Riverside Park.
 - Areas subject to 333 CMR 11.00 include the pathways that provide public and emergency vehicle access to the park (*Appendix Q*). The ROW total row area is approximately 1,300 linear feet. Other vegetation management activities outside of the ROWs, but within the park may occur. These include removal of invasive species, removal of woody species threatening the structural integrity of stone masonry wells, and vista pruning to create viewsheds of the Connecticut River and Holyoke Dam (*Appendix P*).

Table 1 – Gas, Steam/Condensate, and Electric Transmission/Distribution ROW Locations Potentially Scheduled for Herbicide Treatment or Mowing in 2010

ROW Type	Location
Gas Distribution Vaults	<ul style="list-style-type: none"> • Apremont Highway at Dupuis Road • Hampden Street at Lincoln Street • Lincoln Street • Nick Cosmos Way at Essex Street • Appleton Street at First Level Canal • Gatehouse Road near Flood Control Locks • Arbor Way in Polaski Park • South Canal Street at South Bridge Street • Beaulieu Street at Main Street • Garfield Street • Peltiah Street at Main Street • Whiting Farms Road at Northampton Street • Bobala Road at Whitney Avenue • Homestead Road at Westfield Road • Old Jarvis Avenue near Bassett Road • Hampden Street at Northampton Street • Apremont Highway at Rock Valley Road • Mueller Road • County Road at Weiser Drive • Northampton Street at Vadnais Street
ROW Type	Location
Steam/Condensate Lines	<ul style="list-style-type: none"> • Hampshire Street between Beech Street and Pine Street • Commercial Street between Sargeant Street and Plymouth Place • Sargeant Street from Commercial Street across First Level Canal • Southwest side of First Level Canal Between Sargeant Street and Cabot Street • Southwest side of First Level Canal between Dwight Street and Gate House Road • Along Railroad Tracks adjacent to Front Street between Jackson Street and Hampshire Street • Adjacent to Railroad Tracks southeast of Appleton Street to between Winter Street and North Canal Street • Crossing Third Level Canal near Sargeant Street • Along Connecticut River from approximately 950' southwest to 2500' northeast of Cabot Street • North side of Water Street from approximately 400' west to 1400' east of Appleton Street • Second Level Canal crossing in-line with Center Street • South of Hadley Mills Road between Gate House Road and



ROW Type	Location
	<p>Valley Mill Road (Rt. 116)</p> <ul style="list-style-type: none"> • Area approximately 600' north of Cabot Street parallel to Railroad tracks • Area crossing Second Level Canal approximately 1250' north of Appleton Street extending approximately 300' toward Connecticut River
ROW Type	Location
<p>Electric Transmission/ Distribution Lines</p>	<p>Sheet E-1 in Appendix B</p> <ul style="list-style-type: none"> • Pioneer Valley Railroad line from Papineau St. to Lower Westfield Road near Ashley Reservoir. <p>Sheet E-2 in Appendix B</p> <ul style="list-style-type: none"> • From Front Street/railroad line to Race Street, across from end of Hampshire Street, except over canals. Includes connection to substation between First and Second Level Canals. • Along Race Street from approximately Hamilton Street to just beyond Appleton Street. • Along Appleton Street from Race Street to North Canal Street. • Along North Canal Street from Appleton Street approximately 1200 feet northeast. • Near Prospect Street Substation approximately 800 feet northwest of Buckley Boulevard (Chicopee). • Approximately 100 feet southeast of Water Street, parallel to Water Street, from Appleton Street and northeast approximately 1100 feet. <p>Sheet E-3 in Appendix B</p> <ul style="list-style-type: none"> • Rock Valley Road to Apremont Highway • An interval of approximately 600 feet where a distribution line deviates from Mountain Road approximately 600 feet south of Cherry Street. • Along Apremont Highway to Westfield Road near the High Service Reservoir, east along Westfield Road for approximately 400 feet, then south, cross country, to access road (Dailey's Road) west of Ashley Reservoir (these areas are MOW ONLY). <p>Sheet E-4 in Appendix B</p> <ul style="list-style-type: none"> • From the end of Mount Tom Ski Road, up Mount Tom, to telecommunications infrastructure located at the Mount Tom summit (approximately 5,200 feet). <p>Sheet E-5 in Appendix B</p> <p>No additional mowing or application areas</p>

3 Identification of Sensitive Areas and Flagging Methods to Designate Sensitive Areas on the Row

Sensitive areas defined in 333 CMR 11.04 are identified as public groundwater supplies, public surface water supplies, private drinking water supplies, surface waters, wetlands, stated-listed species habitat, inhabited areas and agricultural areas. For the purpose of identification, sensitive areas can be separated into two categories:

- areas not readily identifiable in the field; and
- areas that are readily identifiable in the field.

Each sensitive area has a defined limit for special protection to further minimize environmental and public health risks. Within most sensitive areas, there is an area in which herbicide use is prohibited (no spray zones). Within those portions of the sensitive area where herbicide application is allowed, the use of herbicides and application methods recommended jointly by the DAR and DEP is required. The general characteristics of the sensitive area herbicides are: low toxicity to humans and other animal species; short term soil persistence; biodegradation of active ingredients; and low soil mobility. Details on these characteristics are discussed in the DAR Herbicide Fact Sheets included in *Appendix F*.

It is the intent of HG&E to use only herbicides and application methods recommended for use in sensitive areas, as per 333 CMR 11.04 (d), on the full length and width of all ROW areas it shall treat. The operational effect of this policy is that outer limits of sensitive areas need not be identified in the field by treatment crews.

The following is a description of how the sensitive areas will be identified for required protection:

- Consult the appropriate reference materials and sources to determine the precise location of these areas.
- Place the boundaries of these sensitive areas on US Geological Survey (USGS) topographical maps or other HG&E mapping.
- Prior to commencement of herbicide application operations, the treatment crew will be provided the marked-up mapping with which to mark boundaries of these sensitive areas.
- The treatment crew will deploy a cutting crew or point person in advance of the main herbicide application operation to locate and mark these.

Sensitive areas readily identifiable in the field include surface waters, inhabited areas, wetlands, agricultural areas and major road crossings. The method utilized to identify these sensitive areas will be as follows:

- Consult USGS topographic maps to locate any of these sensitive areas that may already be identified on these maps.

- Prior to commencement of herbicide application operations, the treatment crew will be provided the marked mapping.
- The treatment crew will visually survey the area to be treated for any sensitive areas.
- Appropriate distances will be measured from sensitive areas to identify no herbicide treatment zones and limited herbicide treatment zones.

Table 2 – Sensitive Area Restriction Guide (333 CMR 11.04)

Sensitive Area	No Spray Zone	Limited Use Zone	Where Identified
Wetlands and Water Over Wetlands	Within 10 feet (unless provisions of 333 CMR 11.04(4)(c) are followed)	10 – 100 feet; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps ¹ and identify on site ²
Certified Vernal Pool	Within 10 feet	10 feet to the outer boundary of any Certified Vernal Pool Habitat; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps ¹ and identify on site ²
Public Ground Water Supply	Within 400 feet (Zone I)	Zone II or IWPA (Primary Recharge Area); 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps ¹
Public Surface Water Supply	Within 100 feet of any Class A public surface water source	100 feet to the outer boundary of the Zone A; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps ¹
	Within 10 feet of any tributary or associated surface water body located outside of the Zone A	10 feet to the outer boundary of the Zone A; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	
	Within 100 feet of any tributary or associated surface water body located		

¹Maps are located in *Appendices B, C, D, and E*

²Methods are shown in *Appendix G*.

Sensitive Area	No Spray Zone	Limited Use Zone	Where Identified
	within the Zone A of a Class A public surface water source ----- Within a lateral distance of 100 feet for 400 feet upstream of any Class B Drinking Water Intake	Within a lateral distance of between 100 -200 feet for 400 feet upstream of intake; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	
Private Water Supply	Within 50 feet	50 – 100 feet; 24 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	In YOP well list ³ and identify on site ²
Surface Waters	Within 10 feet from mean annual high-water line	10 feet from the mean annual high water line and the outer boundary of the Riverfront Area; 12 months must elapse between applications; Selective low pressure, using foliar techniques or basal or cut-stump applications	YOP Maps ¹ and identify on site ²
Agricultural and Inhabited Areas	N/A	0 – 100 feet 12 months must elapse between application; Selective low pressure, using foliar techniques or basal or cut-stump applications.	Identify on site ²
State-listed Species Habitat	No application within habitat area except in accordance with a Yearly Operational Plan approved in writing by the Division of Fisheries and Wildlife		YOP Maps ¹

Flagging Methods to Mark Sensitive Areas

As shown in the diagrams in *Appendix G*, RED flagging will identify the outer boundary of the NO HERBICIDE TREATMENT ZONE surrounding surface waters, private water supplies, and public surface and groundwater supplies. If the herbicide treatment to be used is different within the LIMITED USE ZONE than in the adjacent non-sensitive area, then YELLOW flagging will be used to mark the outer boundary of the LIMITED USE ZONE. If herbicides approved for use in sensitive areas are to be used in adjacent non-sensitive areas, no flagging of the outer boundary of the LIMITED USE ZONE is necessary.

³ Well list is contained in *Appendix N*.

If herbicide treatment on or within 10 feet of a wetland will be used in the adjacent LIMITED USE ZONE, the 10' boundary from the wetland will be flagged RED and YELLOW. If the adjacent LIMITED USE ZONE and non-sensitive area will be treated as a wetland, then no flagging is necessary.

4 Vegetation Management Activities in Priority Habitat Areas

The Massachusetts Endangered Species Act (MESA) (M.G.L. c. 131A) and regulations found at 321 CMR 10.00 protect rare species and their habitats by prohibiting the "take" of any plant or animal listed as Endangered, Threatened or of Special Concern by the Department of Fisheries and Wildlife (DFW). The regulations require that work in the areas mapped as Priority Habitats (PHs) be subject to review and approval by DFW. Portions of the HG&E rights-of-way are located within areas identified as Priority Habitat areas by the Natural Heritage Endangered Species Program (NHESP) of the DFW.

The following notification requirements to NHESP must be observed:

- Prior to work with ROWs containing PH areas, NHESP shall be provided with written notification of the following:
 - anticipated start and end date for the vegetation management,
 - anticipated start location
 - name, phone number and email address for project manager that will be performing on-site supervision of work crews.
- Should vegetation management be necessary in areas that are not shown in the YOP mapping, NHESP must be provided with a minimum 72 hours notice.
- Emergency maintenance and repair activities within PHs may be conducted without prior notification, but NHESP must be notified within 24 hours of the onset of such activities through the submission of an "Emergency ROW Work within Priority Habitat" in *Appendix M*. If possible, NHESP should be notified in advance of emergency activities. Note that mitigation may be required for damage done to state-listed species habitat due to emergency activities.

The following procedures must be incorporated for vegetation management within PHs and within portions of the ROWs indicated in the mapping in *Figures 1, 2, 3, 4, 5, 6, 7, 7a, 7b, and 7c* and *Appendices B, C, and D*:

1. No cutting or use of herbicides shall occur within wetland Resource Areas or Certified Vernal Pools, except as noted in the NHESP guidance provided in *Appendices K and L*.
2. Scrub oak less than 15 feet tall shall not be cut or have herbicide applied except:
 - a. within a 30-foot diameter area surrounding electrical towers and pole structures
 - b. within an existing vehicle access road

following the recommendations provided in *Appendix K*, "ROW Vegetation Management in State-listed [REDACTED]" and "ROW Vegetation Management in [REDACTED]" and listed on *Figures 3 and 4*. These recommendations for [REDACTED] include:

- a. [REDACTED]
- b. [REDACTED]
- c. [REDACTED]
- d. [REDACTED]
- e. [REDACTED]
- f. [REDACTED]
- g. [REDACTED]

[REDACTED]

- a. [REDACTED]
- b. [REDACTED]
- c. [REDACTED]

Any state-listed reptiles and amphibians that are encountered shall be photographed and reported to the NHESP on Rare Animal Observation Forms (available at www.nhesp.org) and included in *Appendix M*. A Scientific Collection Permit is required to handle state-listed species, and appropriate training of crews will be required if mowing in state-listed [REDACTED] habitat will occur without raising the mower blades. Previous experience searching for [REDACTED] or appropriate hands-on training with such an experienced person will be required

- 7. A subset of ROW areas proposed for vegetation management activities are mapped, in part, for the presence of state-listed [REDACTED].

species. Many state-listed [REDACTED] are host specific, feeding exclusively on one or two plant species as caterpillars. Within these ROW areas, extra care should be taken to avoid direct impacts to state-listed plants and [REDACTED] by following the recommendations provided in the attached document in *Appendix L*, "[REDACTED]

[REDACTED]. Vegetation management activities occurring within these areas between 2 November and 31 March will pose little risk to the state-listed [REDACTED] identified in *Figure 5*. For all operation and maintenance activities occurring between 1 April and 1 November within these ROW areas, extra care should be taken to avoid direct impacts to rare plants or [REDACTED] by following the recommendations presented in the attached document (*Appendix L*) and mapping, including:

- a. No herbicides shall be applied to the host plants in Priority Habitat areas identified in the YOP mapping, nor shall herbicides be allowed to reach the host plants when targeting other species.
 - b. On a case by case basis, the NHESP may request that Holyoke Gas & Electric employ a trained botanist to survey work areas identified as rare plant or [REDACTED]. Botanical surveys shall focus on the state-listed plant species or host plants for state-listed [REDACTED] identified within portions of ROW, but any and all rare plant species found shall be identified, reported, and flagged by the botanist and avoided by the work crews.
8. A subset of ROW areas proposed for vegetation management activities are mapped, in part, for the presence of state-listed plant species. In general, vegetation management activities, excluding broadcast application of herbicides, occurring between 2 November and 14 May pose minimal or no risk to state-listed plant species and can proceed as described elsewhere in this YOP. For activities between 15 May and 1 November, care must be taken to avoid harm to state-listed plant species. Work crews must carefully review the information in *Appendix L* and *Figures 7, 7a, 7b, and 7c*. Management requirements for these areas include:
- a. Date Sensitive Species – NHESP must be contacted by the botanist working on the project for specific information.
 - b. Mow, preferably in dormant season
 - c. No herbicides on grasses
 - d. No herbicides on grasses or sedges
 - e. Delineate population and avoid – Requires delineation by NHESP-approved botanist.
9. The Riverside Park ROW areas are within or adjacent to resource habitat area of the state- and federally-listed [REDACTED]

The ROWs in Riverside Park are unlikely to require the removal of trees that would involve habitat for [REDACTED]. Nevertheless, the following procedures address habitat for all listed-species:

- a. All trees over 18" DBH shall be visually inspected by a candidate biologist for the presence of [REDACTED] (occupied or unoccupied), young, or adults within the 7 days prior initiation of any tree removal, thinning, pruning, etc.
 - i. The NHESP MUST pre-approve the candidate biologist before work begins. The ability to locate and identify [REDACTED] requires significant experience. The resume/curriculum vitae of the candidate biologist shall be sent to the NHESP for written pre-approval.
 - b. If any use is observed by a [REDACTED] (occupied or unoccupied) is observed by a qualified biologist, the NHESP must be contacted for consultation and no tree removal, topping or substantially thinning may occur within 500 feet of the potential nest until alternate NHESP guidance is provided.
 - c. Further, no use of heavy machinery shall occur with 500 feet of the potential [REDACTED] until alternate NHESP guidance is provided.
 - d. Within 10 days of the completion of searches by the biologist, a report must be submitted to the NHESP indicating: the dates of each pre-work search clearly stating the name of the individual(s) conducting work at each search period; the number of hours searched per date; information on any [REDACTED] found; and the condition of the barrier and any repairs.
 - e. Mowing of the meadow areas is critical to ensure that the areas remain as habitat for state-listed [REDACTED].
10. For ROW areas mapped, in part, for the presence of state-listed aquatic species ([REDACTED]), management recommendations indicated in the attached mapping (Figures 1 through 7, as applicable) and described in *Appendix L*, must be followed:
- a. Utilize appropriate erosion control measures – Haybales, silt fencing or other appropriate erosion control measures should be utilized when excavations or other ground-breaking activities will occur near wetlands.
 - b. Minimize loss of native vegetation to allow [REDACTED] to forage as adults in close proximity to their breeding areas and to provide erosion control benefits.
11. Reporting requirements – NHESP requires the following reporting requirements:
- a. On an annual basis, HG&E shall provide to NHESP a written summary of vegetation management activities which occurred in mapped state-listed [REDACTED] habitat. This summary shall include dates, approximate work area boundaries, description of vegetation management techniques at each work site, and the best management practices (BMPs) implemented.

- b. On an annual basis, HG&E shall provide to NHESP a written summary of vegetation management activities which occurred in vernal pool habitat areas. This summary shall include dates, description of vegetation management techniques at each work site, and information on any vernal pools identified.
- c. All observed state-listed plants must be identified, reported, and mapped following the guidelines in *Appendix L*.
- d. The following activities that may be related to vegetation management for utility ROWs are exempt from the review requirements outlined in 321 CMR 10.18 through 10.23:
 - o construction, repair, replacement or maintenance of septic systems, utility lines, sewer lines, wastewater treatment systems, or residential water supply wells within existing paved areas and lawfully developed and maintained lawns or landscaped areas.
 - o installation, repair, replacement, and maintenance of utility lines (gas, water, sewer, phone, electrical) for which all associated work is within ten feet from the edge of existing paved roads.
 - o the maintenance or replacement but not the expansion of existing lawns and landscaped areas.

The following activities that may be related to vegetation management for pathway ROWs are exempt from the review requirements outlined in 321 CMR 10.18 through 10.23:

- the maintenance or replacement but not the expansion of existing lawns and landscaped areas.
- performance of customary land surveying activities, wetland resource area delineations, environmental assessments and investigations performed in accordance with M. G. L. c. 21E, and other customary preliminary site investigations.
- The active management of State-listed Species habitat, including but not limited to mowing, cutting, burning, or pruning of vegetation, or removing exotic or invasive species, for the purpose of maintaining or enhancing the habitat for the benefit of rare species, provided that the management is carried out in accordance with a habitat management plan approved in writing by the Division of Fisheries and Wildlife.

5 Herbicides Proposed Including Application Rates, Carriers, and Adjuvants

Herbicides that may be used on the ROWs during the calendar year 2010 are limited to the following:

Table 3 – Herbicides Proposed for Use

Trade Name	EPA Reg.	Active Ingredient(s)	Application Method	Carrier/ Adjuvant*	Percent Solution	Application Rates
Arsenal	241-346	Imazapyr	Foliar	Nonionic surfactant	0.05–5%	Manufacturer label recommendations, not to exceed 3 pints/acre every 3 rd year OR 2 pints/acre every other year
Accord Concentrate	62719-324	Glyphosate	Foliar	Nonionic surfactant	0.75-10%	Manufacturer's label recommendations; lowest labeled rates
Accord Concentrate	62719-324	Glyphosate	Cut Stump	None (mix with water only)	50-100%	Manufacturer's label recommendations; lowest labeled rates
Escort	352-439	Metsulfuron-methyl	Foliar	Surfactant	0.25%-2%	Manufacturer's label recommendations; lowest labeled rates
Garlon 4	62719-40	Triclopyr, butoxyethyl ester	Foliar Cut Stump	Surfactant	0.25–50%	Manufacturer's label recommendations, Lowest of the following rates: lowest labeled rate or 0.5 pints/acre between 10 – 50 feet of resource; Lowest labeled rate or 3.0 pints/acre between 50 feet and boundary of spray zone

*Adjuvants and drift control agents may be included in application mixtures according to label requirements.

6 Herbicide Application Techniques and Alternative Control Procedures Proposed

Vegetation along the ROWs will involve IPM, including mechanical control methods (e.g., hand cutting, mowing, selective trimming) and chemical control (e.g., foliar herbicide treatments and cut stump treatments). The method chosen for a given vegetation problem will attempt to achieve a long-term, low maintenance vegetation management program through the encouragement of a stable herbaceous community.

Hand Cutting

Hand cutting consists of the mechanical cutting of target species using chain saws or brush cutters. Target species are cut as close to the ground as practical with stump heights usually not exceeding three inches. Hand cutting is used in order to protect environmentally sensitive sites or on target vegetation greater than twelve feet tall where herbicide use is prohibited by regulation. Hand cutting is used on those restricted sites where terrain, site size or sensitivity render mowing impossible or impractical. Hand cutting may be used at any time of the year.

Mowing

Mowing consists of the mechanical cutting of target vegetation using machines. Depending upon the resources available, mechanical cutting may be made using a consumer-type push mower, a large self-propelled or rider mower, brush hog, edgers, and "Weed Whackers". Selection of specific equipment is based on terrain, target vegetation size and equipment availability. Mowing is used on sites where herbicide use is prohibited by regulation, where a large number of target species stems have exceeded maximum control heights, or where access is inhibited by high woody vegetation density and that access is required in the short term. The use of mowing as a treatment method is restricted by steep slopes, rocky terrain, and wet sites with deep soft soils. Mowing shall be used in most areas where terrain, site size and sensitivity permit efficient use of the equipment. Mowing may be used at any time of the year except when snow precludes operations.

Selective Trimming

Selective trimming consists of the mechanical pruning of the tops or encroaching limbs of trees. This trimming will be accomplished using aerial lifts mounted on trucks or tractors or, if terrain or obstructions prevent equipment access, climbing crews.

Foliar Treatments

Foliar treatments involve the selective application of a herbicide diluted in water to the foliage of target vegetation. The two types of equipment used for foliar treatments are the hand-held pump sprayers and motorized truck-mounted sprayer. Both treatments use low pressure (i.e., below 60 psi at the nozzle) for application. Foliar treatments with hand-held pump sprayers are used on low-density target vegetation. Motorized application equipment is used on higher density target vegetation. Truck-mounted hydraulic sprayers are used to apply the herbicide solution to lightly wet the target plant.

Foliar treatments are used on woody plants, grasses, weeds and conifer species. Only hardwood species less than 12 feet in height will be foliar herbicide treated. Treatments will take place when plants are in full leaf and actively growing, or in accordance with the manufacturer's recommendations. Foliar treatments are incorporated into the VMP because, when used according to the HG&E application program, they are an effective and efficient method to control the whole target plant. Controlling the whole target plant reduces competition from sprout growth.

Cut Stump Treatment

Cut stump treatments consist of mechanical cutting of target species using chain saws immediately followed by a herbicide treatment applied with a squirt bottle or painted on the freshly cut surface of the stump within 2 hours after cutting. The herbicide is limited to the

freshly cut surface of the remaining stump. The cutting procedure is identical to the outlined in Hand Cutting. Hardwoods greater than 12 feet tall will be cut stump treated. Cut stump application is preferred during the dormant period.

Vista Pruning

Vista pruning, as defined in 310 CMR 10.04, is the selective thinning of tree branches of understory shrubs to establish a specific "window" to improve visibility. Vista pruning does not include the cutting of trees which would reduce the leaf canopy to less than 90% of the existing crown cover and does not include the mowing or removal of understory brush. Vista pruning activities in the Lower Riverside Park will be conducted from the bottom of the slope.

Cutting will be minimized by evaluating the visual effects of cutting practices as work is conducted.

7 Companies Which will Perform Herbicide Treatment

One or more of the following companies will apply herbicides, under contract to HG&E. The specific company or companies will be identified in the notification given at least 21 days prior to herbicide treatment, in accordance with 333 CMR 11.07, Public Notification.

Asplundh Tree Expert Co.
P.O. Box 207 (1044 Main Street)
Watertown, CT 06795
(860) 274-0615
Local Contact: Barry P. Croke
65 Maple Street
Belchertown, MA 01007
Telephone (Day) 860-307-4998

Northern Tree Service
290 Park
Palmer, MA 01069
(413) 596-6132

Lewis Tree Service, Inc.
Walt Dodge
89 Brookfield Rd.
Brookfield, MA 01010
Telephone 413-245-6166

CMS Landscaping
175 Suffolk Street,
Holyoke, MA 01040
(413) 533-3300
Contact: Bob Cameron

Country View Lawn Care
14 Ernest Lane,
Holyoke, MA 01040
(413) 532-8355
Contact: Bob McKenzie

8 Identification of Target Vegetation

For the purposes of this plan, plant species are divided into two groups, undesirable species that have the potential to impede access to public pathways or fault overhead conductors on the ROW or are capable of damaging or interfering with physical and visual access to above-ground lines and equipment for inspection, maintenance and repair, and desirable species which cannot. It is the responsibility of the vegetation control contractor to be knowledgeable about and to instruct crews in the identification of desirable and undesirable species and the various herbicide control techniques necessary for integrated vegetation management. In general, undesirable species include trees, tall maturing shrubs and vines. This includes, but is not limited to the following species:

<u>Common Name</u>	<u>Scientific Name</u>
Grape Vines	<i>Vitis</i> spp.
Virginia creeper	<i>Parthenocissus quinquefolia</i>
Bittersweet	<i>Solanum dulcamara</i>
Poison ivy	<i>Rhus radicans</i>
Mulberry	<i>Morus</i> spp.
Staghorn sumac	<i>Rhus typhina</i>
Catalpa	<i>Chilopsis linearis</i>
Ailanthus	<i>Ailanthus altissima</i>
White ash	<i>Fraxinus Americana</i>
Cottonwood	<i>Populus deltoids</i>
Poplar	<i>Populus</i> spp.
Silver maple	<i>Acer saccharinum</i>
Red oak	<i>Quercus falcate</i>
American elm	<i>Ulmus Americana</i>
Russian olive	<i>Elaeagnus angustifolia</i>
Box elder	<i>Acer negundo</i>
Black cherry	<i>Prunus serotina</i>
Black birch	<i>Betula nigra</i>
Japanese bamboo	<i>Polygonum cuspidatum</i>
Dogwood	<i>Cornus</i> spp.
Black Locust	<i>Robinia pseudoacacia</i>
Norway maple	<i>Acer platanoides</i>
Northern catalpa	<i>Catalpa speciosa</i>
Tree of Heaven	<i>Ailanthus altissima</i>
Autumn olive	<i>Elaeagnus umbellate</i>
Japanese barberry	<i>Berberis thunbergii</i>
Exotic bush honeysuckle	<i>Lonicera</i> sp
Oriental bittersweet	<i>Celastrus orbiculata</i>

Control of woody species is critical because they have the potential to short circuit overhead electrical conductors on the ROWs. Removal of other invasive species is necessary to facilitate physical and visual access to the ROW for inspection, maintenance and repair.

Desirable species in the ROWs typically include low maturing shrubs (less than 12 feet), ferns, grasses, herbs, and wildflowers. In the 10-foot radius surrounding the gas distribution vaults, only low-growing grasses are desirable.

9 Individuals Representing Applicant Supervising YOP

The applicant is represented by Fuss & O'Neill, Inc. Consulting Engineers. The contact person at Fuss & O'Neill is:

Diane M.L. Mas, PhD
Senior Environmental Engineer
Fuss & O'Neill Inc. Consulting Engineers
78 Interstate Drive
West Springfield, MA 01089
Telephone: 413-452-0445
dmas@FandO.com

The individual responsible for supervision of the YOP implementation is:

Charles L. Martel
Environmental Health and Safety Coordinator
City of Holyoke Gas & Electric Department
99 Suffolk Street
Holyoke, MA 01040-5082
Telephone: 413-536-9369
Fax: 413-532-4305
Email: cmartel@hged.com

10 Procedures and Locations for Handling, Mixing, and Loading Herbicide Concentrates

No herbicide concentrates shall be handled, mixed or loaded on a ROW within 100 feet of a sensitive area. The following guidance is provided for the handling, mixing and loading of herbicide concentrates.

1. Follow all manufacturers' label directions.
2. Wear protective clothing as specified on the manufacturer's label, i.e., rubber gloves, hat, respirator, goggles, face shield.
3. Immediately change clothes if herbicide concentrate is spilled or splashed on clothing.

4. Have soap and water available for clean up.
5. While pouring herbicides, keep head above the container opening and positioned so that winds do not carry concentrate onto face or body.
6. Do not overfill sprayer.
7. Triple rinse empty containers and use the rinsings when possible.

In order to minimize the potential for spills of herbicide concentrate and mitigate the impact of any accidental spills, the following procedures will be followed.

Only the amount of herbicide necessary to carry out the vegetation control, based on the monitoring results, will ensure that there will be no waste and minimize potential problems. Any vehicle carrying out a spray operation will be equipped with a bag of adsorbent, activated charcoal, leak-proof containers, a broom and a shovel in case of minor spills. A clipboard log of the herbicides on the vehicle will be kept on the vehicle. Herbicide labels and fact sheets should be carried on-site by the applicator.

As soon as any spill is observed, immediate action will be taken to contain the spill and protect the spill area. The cause of the spill must be identified and secured. Spill containment will be accomplished by covering the spill with adsorptive clay or other adsorptive material or, for large spills, building clay or soil dikes to impede spill progress. Until completely clean, protection of the spill area will be accomplished by placing barriers, flagging or crewmember at strategic location. If a fire is involved, care will be taken to avoid breathing fumes from any burning chemicals.

EMERGENCY CONTACTS

In the event of a spill or emergency, information on safety precautions and cleanup procedures may be gathered from the following sources:

<u>Source Number</u>	<u>Telephone</u>
Herbicide Label	See Appendix H
Herbicide Fact Sheet	See Appendix F
Herbicide Material Safety Data Sheet	See Appendix H
Herbicide Manufacturer	
BASF (Arsenal)	(800) 832-4357
Dow AgroSciences	
(Accord Concentration and Garlon 4)	(800) 992-5994
EI DuPont (Escort)	(800) 441-7515
Holyoke, Chicopee, and South Hadley Fire and/or Police Departments	911
Holyoke Gas & Electric Department (EH&S Coordinator)	(413) 536-9352
Holyoke Board of Health	(413) 322-5595
Holyoke Conservation Commission	(413) 322-5615
Chicopee Health Department	(413) 594-1660
Chicopee Conservation Commission	(413) 594-1515
South Hadley Board of Health	(413) 538-5013
South Hadley Conservation Commission	(413) 538-5052
Holyoke Medical Center	(413) 534-2500
Massachusetts Pesticide Bureau	(617) 626-1700
Massachusetts Dept. of Environmental Protection (DEP)	(413) 784-1100 or (888) 304-1133
Massachusetts Dept. of Public Health, Board of Environmental Health Assessment, Toxicology Program	(617) 624-5757
Massachusetts Poison Control Center	(800) 222-1222
CHEMTREC	(800) 262-8200
US Environmental Protection Agency (EPA)	
National Pesticide Information Center	(800) 858-7378



Appendix A

Vegetation Management Plan 2008-2012

Appendix B

Electrical Transmission/Distribution ROW Maps



Appendix C

Steam Distribution/Condensate Collection ROW Map

Appendix D

Gas Distribution Vault ROW Map

Appendix E

Canal Right of Way Map

Appendix F

Herbicide Fact Sheets

Appendix G

Methods For Flagging In Sensitive Areas

Appendix H

Herbicide Labels and MSDS

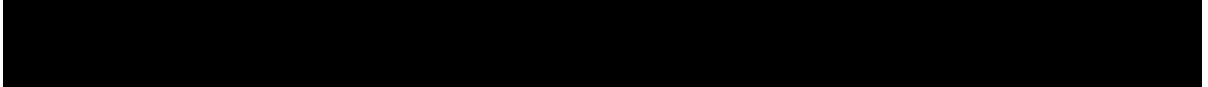
Appendix I

HG&E Summary of Canal Wall Maintenance Responsibilities

Appendix J

Endangered and Threatened Species Protection Plan

Appendix K



Appendix L



Appendix M

NHESP Species Observation Forms and Emergency Work Form

Appendix N

Well Area/List

Appendix O

Public Notice

Appendix P

Lower Riverside Park Vegetation Operation And Maintenance Plan

Appendix Q

Lower Riverside Park ROW Map