

## **2.0 DESCRIPTION OF THE PROPOSED ACTION**

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The FERC is the federal agency responsible for authorizing applications to construct and operate interstate natural gas transmission facilities. The proposed action before the FERC is to consider issuing to Guardian a Section 7 Certificate of Public Convenience and Necessity (Certificate) to construct, own, operate, and maintain a new interstate natural gas pipeline and associated ancillary facilities.

### **2.1 PROPOSED FACILITIES**

Guardian proposes to expand the delivery capacity of its existing pipeline by constructing two new compressor stations along its current pipeline facilities in Illinois and Wisconsin. In addition, Guardian proposes to extend its pipeline facilities by constructing 115.2 miles of new pipeline consisting of 30-inch and 20-inch-diameter pipeline from its current pipeline terminus in Ixonia, Wisconsin to a new terminus west of Green Bay in Oneida, Wisconsin. Guardian would also construct three branch lines in Brown and Outagamie Counties, Wisconsin to interconnect with the proposed WPS Denmark, Southwest Green Bay, and West Green Bay delivery points. Additional facilities would include modification to one existing meter station, and the construction and operation of seven new meter stations, six MLVs, and two sets of launcher/receiver facilities in the counties of Walworth, Jefferson, Dodge, Fond du Lac, Calumet, Brown, and Outagamie, Wisconsin and De Kalb County, Illinois. A general location plan is shown on figure 1.1-1. Detailed pipeline route and facility maps are included in appendix B.

The following section describes the proposed pipeline facilities, land requirements, construction procedures and schedule, environmental compliance and inspection monitoring, operation and maintenance procedures, safety controls, and nonjurisdictional facilities.

#### **2.1.1 Pipeline and Branch Lines**

The natural gas pipeline proposed by Guardian would consist of approximately 83.9 miles of 30-inch-diameter pipeline in Jefferson, Dodge, Fond du Lac, Calumet, Brown, and Outagamie Counties, Wisconsin and 31.3 miles of 20-inch-diameter pipeline in Brown and Outagamie Counties, Wisconsin. This pipeline would be capable of transporting about 537.2 MMcfd of natural gas. Of this amount, Guardian would transport 100 MMcfd of natural gas to points along its existing pipeline and 437.2 MMcfd of natural gas to Wisconsin intrastate markets, via seven new delivery points/interconnects (see table 2.1.1-1).

Pipeline facilities would also include a total of approximately 4.0 miles of 16-inch and 20-inch-diameter branch line, including the 1.4-mile 16-inch-diameter Denmark Branch Line, the 1.8-mile 20-inch-diameter Southwest Green Bay Branch Line, and the 0.8-mile 20-inch-diameter West Green Bay Branch Line, to interconnect the Denmark, Southwest Green Bay, and West Green Bay Meter Stations in Brown and Outagamie Counties, Wisconsin with the proposed WPS Denmark, Southwest Green Bay, and West Green Bay delivery points.

TABLE 2.1.1-1

**Proposed Delivery Points/Interconnects and Meter Station Locations**

<b>Delivery Point/Interconnection</b>	<b>Pipeline Milepost <u>a/</u>, <u>b/</u></b>
We Energies Hartford/West Bend	13.8
We Energies Fox Valley	83.7
WPS Sheboygan	43.9
WPS Chilton	66.4
WPS Denmark	NA <u>c/</u>
WPS Southwest Green Bay	NA <u>d/</u>
WPS West Green Bay	NA <u>e/</u>

a/ Milepost location from which a lateral pipeline to the delivery point/interconnect would leave the G-II Pipeline.  
b/ The discrepancy between the length of the pipeline (115.2 miles) and the mileposting system is the result of route modifications that were adopted by Guardian after the mileposting system for the Project was established.  
c/ The G-II Pipeline will interconnect with the WPS Denmark delivery point via Guardian's proposed 1.4 mile 16-inch-diameter Denmark Branch Line, which would extend from Guardian's Denmark Meter Station located at MP 90.7.  
d/ The G-II Pipeline will interconnect with the WPS Southwest Green Bay delivery point via Guardian's proposed 1.8 mile 20-inch-diameter Southwest Green Bay Branch Line, which would extend from Guardian's Southwest Green Bay Meter Station located at MP 92.7.  
e/ The G-II Pipeline will interconnect with the WPS West Green Bay delivery point via Guardian's proposed 0.8 mile 20-inch-diameter West Green Bay Branch Line, which would extend from Guardian's West Green Bay Meter Station located at MP 117.4.

**2.1.2 Aboveground Facilities**

**2.1.2.1 Compressor Stations**

The aboveground facilities proposed by Guardian include two new 39,000-hp electric-motor-driven, compressor stations—the Sycamore Compressor Station located within the Sycamore Township in DeKalb County, Illinois, and the Bluff Creek Compressor Station located within the Town of LaGrange in Walworth County, Wisconsin. Each compressor station facility would include:

- a compressor building (approximately 70 feet by 60 feet, housing one 39,000-hp compressor, variable speed hydraulic drive, and electric motor);
- gas coolers;
- an electrical substation;
- an auxiliary building (approximately 140 feet by 40 feet);
- an emergency generator;
- foundations, pipe supports, and landscaping that includes fencing and crushed stone ground cover;
- a permanent access road; and
- a 30-inch launcher/receiver setting and suction and discharge piping.

Suction and discharge piping would also be constructed in support of each new compressor station. This piping would be constructed entirely within the property that Guardian plans to acquire for each new compressor station and Guardian's existing pipeline right-of-way.

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### **2.1.2.2 Meter Stations**

Guardian would modify its existing Ixonia Meter Station in Jefferson County, Wisconsin and construct seven new meter stations at each of the delivery points/interconnects along the proposed pipeline route in Dodge, Fond du Lac, Calumet, Brown, and Outagamie Counties, Wisconsin. Detailed maps of the pipeline route and meter station locations are provided in appendix B.

### **2.1.2.3 Launcher/Receiver Facilities**

In addition to the 30-inch launcher/receiver setting and suction and discharge piping that would be constructed at the compressor stations, Guardian would also construct new 30-inch and 20-inch-diameter launcher/receiver facilities at three of the proposed meter station sites. The 30-inch-diameter launcher would be constructed within Guardian's existing Ixonia Meter Station in Jefferson County, Wisconsin. The new 30-inch-diameter receiver would be constructed within the proposed Fox Valley Meter Station in Calumet County, Wisconsin. The Fox Valley Meter Station would also house the new 20-inch launcher facility. The new 20-inch receiver facility would be constructed within the proposed West Green Bay Meter Station in Outagamie County, Wisconsin at the northern terminus of the new pipeline.

### **2.1.2.4 Mainline Valves**

Guardian would install six new MLVs. Four of these MLVs would be installed along the 30-inch-diameter pipeline at mileposts (MPs) 19.0, 38.8, 45.8, and 64.6 in Dodge, Fond du Lac, and Calumet Counties, Wisconsin, respectively. The two remaining MLVs would be installed along the 20-inch-diameter pipeline at MPs 92.7 and 105.6 in Brown and Outagamie Counties, Wisconsin.

## **2.2 LAND REQUIREMENTS**

Construction of Guardian's proposed pipeline and related facilities would disturb about 1,766.9 acres of land. Of this total, about 1,482.0 acres would be disturbed by the pipeline construction rights-of-way, 191.7 acres would be disturbed by additional temporary workspace, 14.5 acres would be disturbed by access roads, and 27.6 acres would be disturbed by contractor and pipe yards. Construction of the aboveground facilities would affect about 51.1 acres.

Operation of the new facilities would require about 768.6 acres of the 1,766.9 acres used for construction. Of this total, 722.6 acres would be for the permanent pipeline right-of-way and 46.0 acres would be for the operation of aboveground facilities and permanent access roads. The remaining 998.3 acres would be restored to its preconstruction condition or allowed to revert to its former use.

Table 2.2-1 summarizes the land requirements for the proposed facilities. Additional information regarding land requirements of the proposed Project facilities is included below and in section 4.7.1.

TABLE 2.2-1

## Summary of Land Requirements for Proposed Facilities

Facility	Land Affected During Construction (acres)	Land Affected During Operation (acres)
Pipeline Facilities		
Right-of-Way		
30-inch-diameter Pipeline	1,079.5 <u>a/</u>	508.3
20-inch-diameter Pipeline	356.3	190.1
16-inch-Denmark Branch Line	16.1	8.5
20-inch-diameter Southwest Green Bay Branch Line	20.8	10.9
20-inch-diameter West Green Bay Branch Line	9.3	4.8
Additional Temporary Workspace	191.7	0.0
Access Roads	14.5	0.0 <u>b/</u>
Contractor Yards	27.6	0.0
Pipeline Facilities Subtotal	1,715.8	722.6
Aboveground Facilities		
Sycamore Compressor Station	22.3	16.4 <u>b/</u>
Bluff Creek Compressor Station	20.0	20.0
Rubicon Meter Station	1.2	1.2 <u>c/</u>
Sheboygan Meter Station	1.3	1.7 <u>c/</u>
Chilton Meter Station	1.4	0.9
Fox Valley Meter Station	1.2	2.7 <u>c/</u>
Denmark Meter Station	1.3	1.3 <u>c/</u>
Southwest Green Bay Meter Station	1.2	0.9
West Green Bay Meter Station	1.2	0.9
Aboveground Facilities Subtotal	51.1	46.0
<b>Project Total</b>	<b>1,766.9</b>	<b>768.6</b>
<u>a/</u> Includes nominal 110- and 95-foot-wide construction right-of-way for the main pipeline and laterals and a 75-foot-wide construction right-of-way in wetlands and forested lands, respectively.		
<u>b/</u> Guardian will permanently retain five of the access roads that are used for construction to operate the Rubicon, Sheboygan, Fox Valley, and Denmark Meter Stations, and the Sycamore Compressor Station. The acreage permanently impacted by these roads is included as part of the land affected by the operation of these meter stations.		
<u>c/</u> Acreage affected by operation includes a permanent access road outside the fence line of these meter stations.		

### 2.2.1 Pipeline and Branch Lines

Construction of the proposed pipeline and branch lines would require acquisition of both temporary and permanent right-of-way easements. Guardian proposes to install the 30-inch-diameter pipeline using a 110-foot-wide construction right-of-way (consisting of 50 feet of permanent easement and 60 feet of temporary workspace). It proposes to install the proposed 20-inch-diameter pipeline, 16-inch-diameter branch line, and two 20-inch-diameter pipelines using a 95-foot-wide construction right-of-way (consisting of 50 feet of permanent easement and 45 feet of temporary workspace). In wetlands and forested uplands, Guardian would reduce the width of the construction right-of-way for the 30-inch- and 20-inch-diameter pipelines to 75 feet (consisting of 50 feet of permanent easement and 25 feet of temporary workspace). Figures 2.2-1, 2.2-2, and 2.2-3 show typical right-of-way cross-sections for the proposed pipeline.

The FERC regulations (18 CFR, Section 380.15[d][1]) encourage the use, enlargement, or extension of existing rights-of-way over developing a new right-of-way in order to reduce

potential impacts on potentially sensitive resources. In general, installation of new pipeline along existing, cleared rights-of-way (e.g., pipeline, powerline, road, or railroad) may be environmentally preferable to construction along new rights-of-way to reduce forest fragmentation and to at least partially overlap previously disturbed and currently maintained rights-of-way. Approximately 25.7 miles (21.6 percent) of Guardian’s proposed construction right-of-way would be located adjacent to or within existing rights-of-way. A summary of the location of adjacent existing rights-of-way in relation to the proposed pipeline facilities is presented in table 2.2.1-1. Where the pipeline would be directly adjacent to an existing utility, the new pipeline would be offset about 35 to 50 feet from the existing utility. Figures 2.2-4, 2.2-5, 2.2-6, and 2.2-7 show typical right-of-way cross-sections for the proposed pipeline when located adjacent to an existing utility.

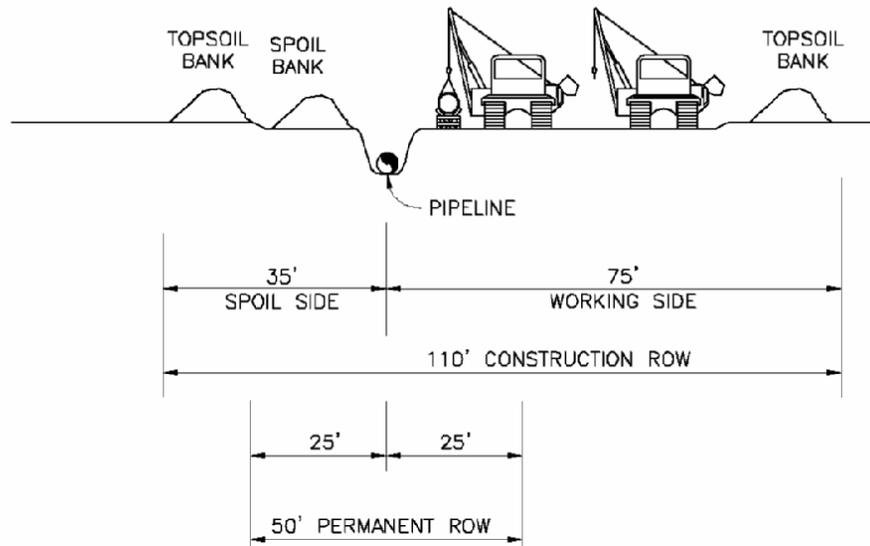
TABLE 2.2.1-1

**Locations Where the Proposed G-II Pipeline Would be Adjacent to Existing Rights-of-Way <sup>a/</sup>**

Facility/County	Mileposts	Length (mi.)	Existing Right-of-Way	Relationship of Proposed Pipeline to Existing Rights-of-Way
<b>30-inch-diameter Pipeline</b>				
Dodge County	0.4 – 0.9	0.5	Fox Road	East
	5.1 – 5.5	0.4	Bluebird Road	East
Fond du Lac County	56.3 – 59.5	3.2	ATC	West
Calumet County	59.5 – 60.5	1.0	ATC	West
	61.6 – 62.9	1.3	ATC	North
	65.0 – 66.3	1.4	ATC	West
	66.5 – 67.4	0.9	ATC	East
	67.6 – 77.3	9.7	ATC	East
	78.9 – 79.1	0.3	ATC	North
	79.1 – 80.0	0.9	ANR Pipeline	West
	80.0 – 82.4	2.4	ANR Pipeline	East
<b>20-inch-diameter Pipeline</b>				
Brown County	92.9 – 93.7	0.8	Overhead Powerline	South
Brown County	93.8 – 94.1	0.3	Overhead Powerline	South
Outagamie County	116.3 – 116.4	0.1	County Highway Y	East
<b>16-inch-diameter Denmark Branch Line</b>				
Brown County	1.2 – 1.4	0.2	Overhead Powerline / Wrightstown Road	West
<b>20-inch-diameter Southwest Green Bay Branch Line</b>				
Brown County	0.2 – 1.8	1.6	Overhead Powerline / FRVR Railroad	West
<b>20-inch West Green Bay Branch Line</b>				
Outagamie County	0.1 – 0.8	0.7	County Highway VV	South
<b>Project Total</b>		<b>25.7</b>	<b>21.6%</b>	

<sup>a/</sup> At this time, Guardian still does not know the width of all parallel rights-of-way or the amount of overlap that may be available. Guardian does not expect this information will be available until after discussions with the owners of adjacent rights-of-way have taken place.

Note: The length and total length may differ slightly from the measured distance between mileposts due to rounding.

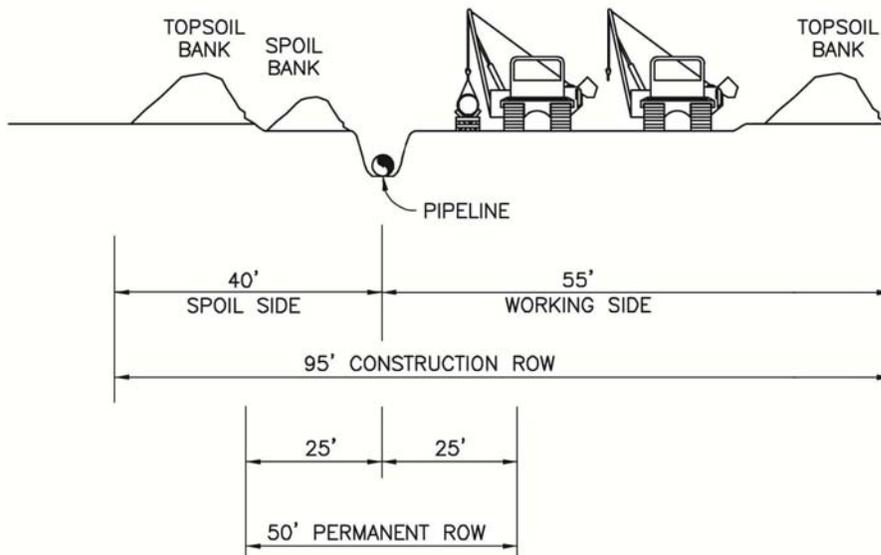


NOTES

1. CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.
2. 4 FEET COVER OVER TOP OF PIPE.
3. UP TO 12" TOPSOIL REMOVAL FROM WORKING SIDE AND SUBSOIL STORAGE AREAS.
4. TOPSOIL STORED ON SPOIL SIDE AND WORKING SIDE.

**PUBLIC**

**Figure 2.2-1  
Guardian Expansion and Extension Project  
Typical 110-foot Right-of-Way Cross Section (30-inch-diameter Pipeline)**

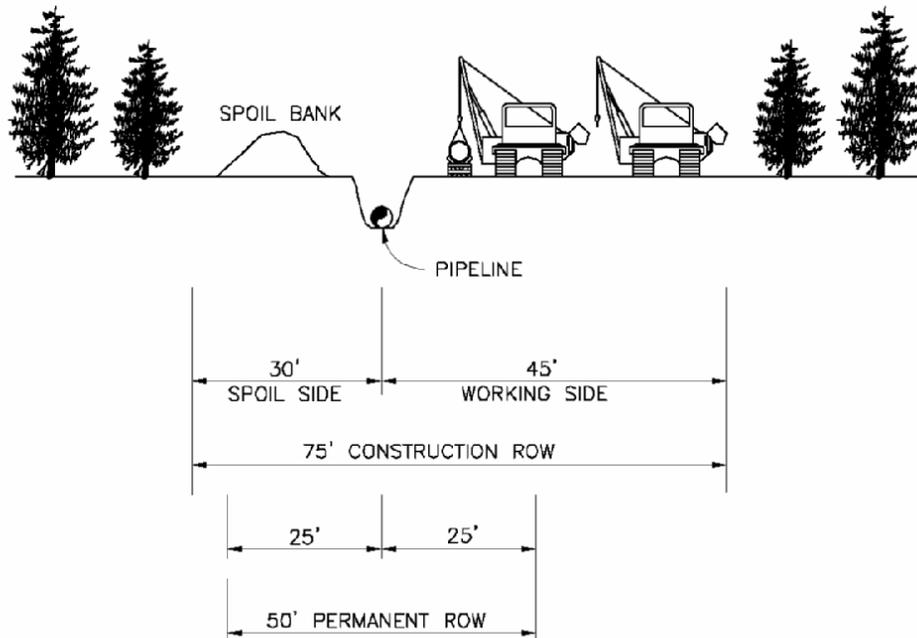


NOTES

1. CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.
2. 4 FEET COVER OVER TOP OF PIPE.
3. UP TO 12" TOPSOIL REMOVAL FROM WORKING SIDE AND SUBSOIL STORAGE AREAS.
4. TOPSOIL STORED ON SPOIL SIDE.

**PUBLIC**

**Figure 2.2-2  
Guardian Expansion and Extension Project  
Typical 95-foot Right-of-Way Cross Section (20-inch-diameter Pipeline)**

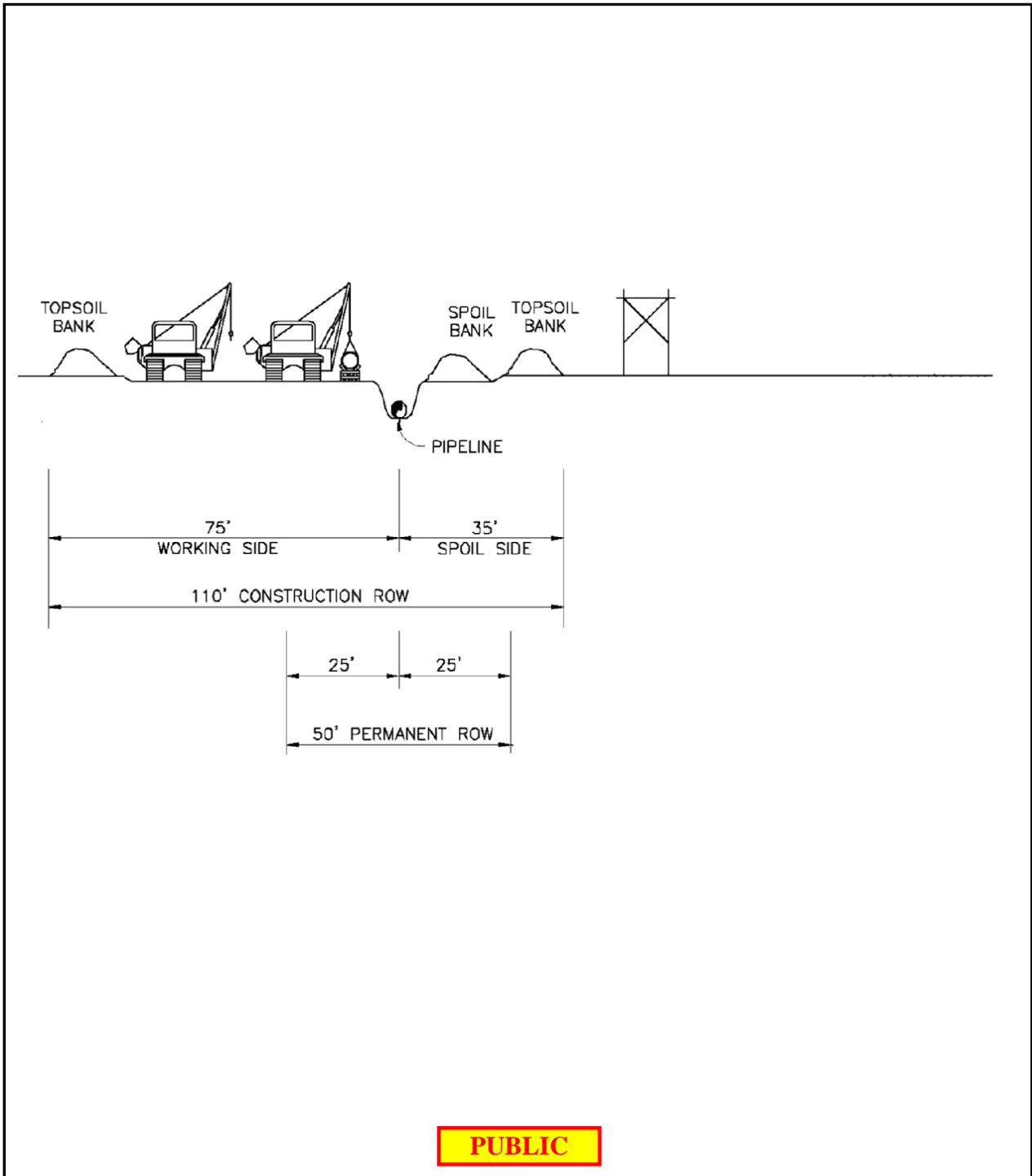


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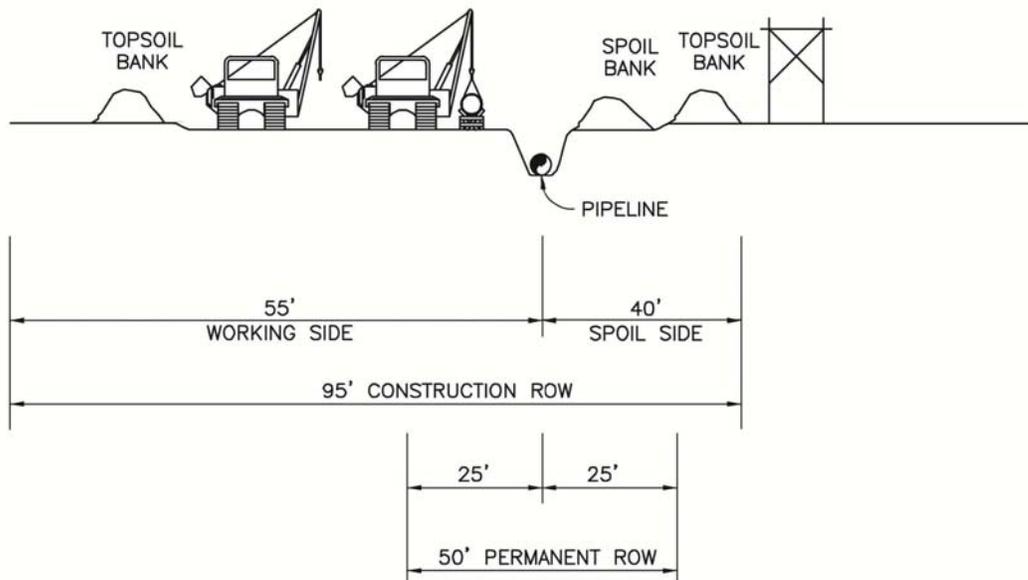
1. CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

**PUBLIC**

**Figure 2.2-3  
Guardian Expansion and Extension Project  
Typical Right-of-Way Cross Section in Forested Uplands and Wetland Areas**

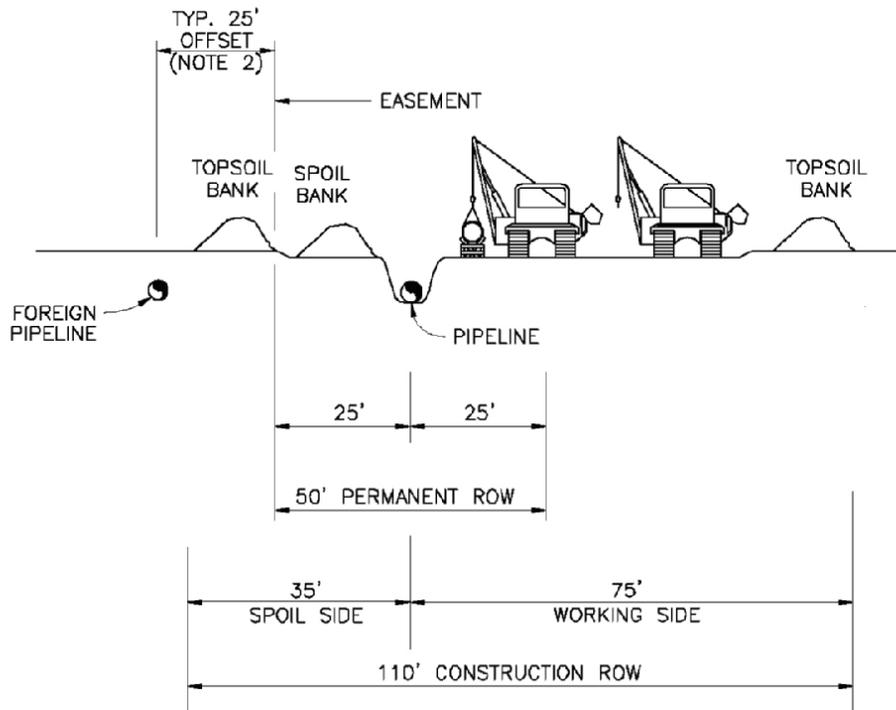


**Figure 2.2-4**  
**Guardian Expansion and Extension Project**  
**Typical 110-foot Right-of-Way Cross Section Adjacent to an Existing Power Line**  
**(30-inch-diameter Pipeline)**



**PUBLIC**

**Figure 2.2-5  
Guardian Expansion and Extension Project  
Typical 95-foot Right-of-Way Cross Section  
Adjacent to an Existing Powerline (20-inch-diameter Pipeline)**

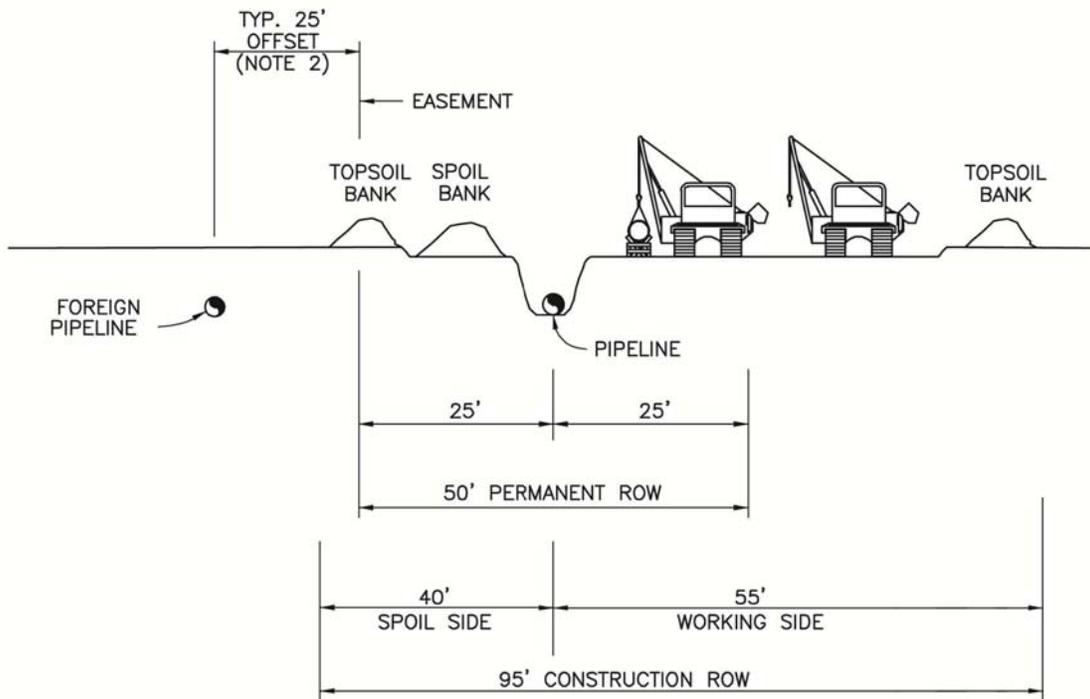


**NOTES**

1. WHERE PERMISSION TO STOCKPILE SPOIL ON EXISTING EASEMENT IS DENIED.
2. TYPICAL SEPARATION BETWEEN PROPOSED AND FOREIGN PIPELINE EASEMENTS WHEN THE SPOIL SIDE OF THE PROPOSED PIPELINE IS ADJACENT TO THE EXISTING CORRIDOR. THIS MAY NEED TO BE DECREASED OR INCREASED TO ALLOW FOR OBSTACLES OR TERRAIN AND FOREIGN PIPELINE ROW RESTRICTIONS.
3. ASSUMES FOREIGN PIPELINE EASEMENT LIMIT IS 25' FROM FOREIGN PIPELINE.
4. CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

**PUBLIC**

**Figure 2.2-6  
Guardian Expansion and Extension Project  
Typical 110-foot Right-of-Way Cross Section Adjacent to an Existing Pipeline  
(30-inch-diameter Pipeline)**



**NOTES**

1. TYPICAL SEPARATION BETWEEN PROPOSED AND FOREIGN PIPELINE EASEMENTS WHEN THE SPOIL SIDE OF THE PROPOSED PIPELINE IS ADJACENT TO THE EXISTING CORRIDOR. THIS MAY NEED TO BE DECREASED OR INCREASED TO ALLOW FOR OBSTACLES OR TERRAIN AND FOREIGN PIPELINE ROW RESTRICTIONS.
2. ASSUMES FOREIGN PIPELINE EASEMENT LIMIT IS 25' FROM FOREIGN PIPELINE.
3. CONFIGURATION DOES NOT INCLUDE ADDITIONAL TEMPORARY WORKSPACE AT CROSSINGS.

**PUBLIC**

**Figure 2.2-7  
Guardian Expansion and Extension Project  
Typical 95-foot Right-of-Way Foreign Pipeline Spoil Side (20-inch-diameter Pipeline)**

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## **2.2.2 Aboveground Facilities**

The land requirements for each of the proposed aboveground facilities are listed in table 2.2-1 and discussed in further detail below.

### **2.2.2.1 Compressor Stations**

Construction of the Sycamore Compressor Station and associated permanent access road would disturb approximately 22.3 acres. Approximately 16.4 acres would be fenced, covered with gravel, and permanently retained to operate the facility.

Construction of the Bluff Creek Compressor Station and associated access road would disturb approximately 20 acres. All 20 acres of land would be fenced, covered with gravel, and permanently retained to operate the facility.

### **2.2.2.2 Meter Stations**

The proposed modifications to the existing Ixonia Meter Station would be confined to the existing 3.0-acre meter station property. Construction of each of the new meter stations would disturb between 1.2 and 1.4 acres of land (see table 2.2-1). About 0.9 acre of land would be permanently retained to operate three of the seven new meter stations including the Chilton, Southwest Green Bay, and West Green Bay Meter Stations. The Rubicon Meter Station would permanently occupy 1.2 acres of land; the Fox Valley Meter Station would permanently occupy about 2.7 acres of land; the Sheboygan Meter Station would permanently occupy 1.7 acres of land; and the Denmark Meter Station would permanently occupy 1.3 acres of land. Guardian would permanently retain the access roads used during construction at the Rubicon, Sheboygan, Fox Valley, and Denmark Meter Stations. The total permanent acreage given for each of these meter stations includes the acreage of their associated access roads.

### **2.2.2.3 Launcher/Receiver Facilities**

No additional land would be disturbed or permanently retained for the construction and operation of the new launchers or receiver facilities. Each launcher and/or receiver would be located within the existing meter station in Ixonia, Wisconsin and the proposed meter stations of Fox Valley and West Green Bay.

### **2.2.2.4 Mainline Valves**

Construction of each MLV would disturb approximately 0.1 acre of extra temporary workspace outside of the proposed pipeline construction right-of-way.

No new permanent right-of-way outside of the permanent pipeline right-of-way would be required for the valves; however, an area of about 0.03 acre (50 feet by 30 feet) would be fenced and covered with gravel at each valve site within Guardian's new permanent easement at each of the six MLV locations.

## **2.2.3 Extra Work Areas**

### **2.2.3.1 Additional Temporary Work Areas**

Additional temporary workspaces would be required to facilitate construction at road, railroad, wetland, and waterbody crossings; in areas with steep side slopes; in agricultural areas for three-

lift soil handling; topsoil segregation; for installation of cathodic protection; for truck turnarounds; at valve sites; at hydrostatic test water withdrawal pump locations; at tie-ins; at points of intersection, and at foreign pipeline crossings. Additional temporary workspace would also be required whenever special construction techniques, such as horizontal borings, would be utilized. Except as otherwise requested, or where topographic or other factors impose setback constraints, temporary extra workspaces would be set back 50 feet from the edges of waterbodies and wetlands (see sections 4.3.2.2 and 4.4.1.3 for a list of requested deviations from the 50-foot setback requirement).

Additional temporary workspace of varying dimensions would be required at about 535 locations throughout the proposed pipeline route, primarily at crossings of existing utilities, roads, waterbodies, and wetlands (see appendix C).

### 2.2.3.2 Access Roads and Contractor Yard

Guardian has identified 26 access roads that it would use for construction and operation of its proposed pipeline and aboveground facilities. Of this amount, 15 are existing roads and 11 roads would be newly constructed and/or extensions of existing roads. Of the 11 newly constructed roads, only 5 would be retained for permanent access (see table 2.2.3.2-1).

Milepost	Road Name/Destination	New/Existing	Permanent/ Temporary	Acres Affected
0.7	Private Drive	Existing	Temporary	0
9.7	G-II Access Road	New	Temporary	0.1
13.8	G-II Access Road	New	Permanent	0.3
16.6	Private Drive	Existing	Temporary	0.1
16.6	G-II Access Road (Extension to Private Drive)	New (Extend Private Drive)	Temporary	0.2
21	Field Road	Existing	Temporary	0.2
21.1	Private Drive	Existing	Temporary	0.2
21.1	G-II Access Road (Extension to Private Drive)	New (Extend Private Drive)	Temporary	0.1
22.7	Private Drive	Existing	Temporary	0.6
25.5	G-II Access Road	New	Temporary	0.1
27.1	Private Drive	Existing	Temporary	0.3
30.5	Field Road	Existing	Temporary	0.8
36.3	Private Drive	Existing	Temporary	0.6
38.5	Private Drive	Existing	Temporary	0.4
40	Field Road	Existing	Temporary	1.7
43.8	G-II Access Road	New	Permanent	0.8
45.1	Field Road	Field Road	Temporary	0.3
50.2	Field Road	Field Road	Temporary	1.3
57.5 <sup>a/</sup>	G-II Access Road	New	Permanent	2.0
72.9	Private Drive	Existing	Temporary	0.7
77.7	Private Drive	Existing	Temporary	1.1
77.7	G-II Access Road (Extension to Private Drive)	New (Extend Private Drive)	Temporary	0.2
81.4	G-II Access Road	New	Permanent	1.1
87.7	Private Drive	Existing	Temporary	0.8
90.7	G-II Access Road	New	Permanent	0.4
91.2	G-II Access Road	New	Temporary	0.1
<b>Project Total</b>				<b>14.5</b>

<sup>a/</sup> Milepost is located along Guardian's existing pipeline facilities in DeKalb County, Illinois

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Road improvements would take place within the existing road footprints and no wetland or waterbodies would be affected due to road improvements. A total of about 14.5 acres would be required for the access roads used during construction. Of this amount, 4.6 acres would be retained for permanent access; however, as described in table 2.2-1, the permanent acreage of the five access roads that would be retained for Project operations is accounted for in the permanent meter station impact values. Therefore, no additional permanent impacts values are associated with the proposed access roads.

Guardian has identified one potential contractor and pipe yard location for use during the Project. This yard will be located in Fond du Lac County, Wisconsin on land zoned for industrial use, but currently in use for agriculture (see figure 2.2-8). This yard is about 27.6 acres and would only be used temporarily during construction of the Project.

### **2.3 CONSTRUCTION PROCEDURES**

This section describes the general construction procedures proposed by Guardian for construction of the pipeline and aboveground facilities. Section 4.0 of this EIS contains more detailed discussions of proposed construction and restoration procedures, as well as additional measures that we are recommending to mitigate environmental impacts.

The proposed pipeline facilities would be designed, constructed, operated, and maintained in accordance with the U.S. Department of Transportation (DOT) regulations at 49 CFR 192, *Transportation of Natural or Other Gas by Pipeline: Minimum Federal Safety Standards*. Among other items, these regulations specify material selection, design criteria, corrosion protection, and qualification for welders and operation personnel. In addition, Guardian would comply with the Commission's regulations at 18 CFR 380.15, regarding the siting and maintenance of pipeline rights-of-way. The Project would also adhere to the federal standards that are intended to adequately protect the public by preventing or mitigating natural gas pipeline failures or accidents, and ensure safe operation of the facilities.

Guardian would construct the Project facilities in accordance with our *Upland, Erosion Control, Revegetation and Maintenance Plan* (Plan) and *Wetland and Waterbody Construction and Mitigation Procedures* (Procedures). The Plan and Procedures are a set of construction and mitigation measures that were developed in collaboration with other federal and state agencies and the natural gas pipeline industry to minimize the potential environmental impact of the construction of pipeline projects in general. It is our position that the proper implementation of our Plan and Procedures would adequately minimize construction-related impacts on soil, waterbodies, and wetlands in general. Our Plan and Procedures have been included as appendices G and H.

Guardian has requested to use a 95 to a 110-foot-wide nominal construction right-of-way. The construction rights-of-way that have been proposed are the result of both consultations between Guardian and the DATCP and construction equipment support needs. The DATCP has specifically requested that Guardian achieve a minimum of 4 feet of cover over the pipeline in agricultural areas. This depth of burial is deeper than that required by the DOT; however, the DATCP believes, and we agree, that the additional cover would minimize interference to agricultural drainage tiles, and other agricultural operations. As a result of the greater depth of burial, pipeline trenching would result in additional spoil and would therefore require additional

# Non-Internet Public

DRAFT ENVIRONMENTAL IMPACT STATEMENT  
FOR THE GUARDIAN EXPANSION  
AND EXTENSION PROJECT  
Docket Nos. CP07-8-000, CP07-8-001, and CP07-8-002

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Figure 2.2-8 Guardian Expansion and Extension Project  
Fond du Lac Pipe/Contractors Yard

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construction right-of-way space to facilitate spoil storage and minimize mixing of topsoil with subsoil during construction. In addition, Guardian is proposing to install a range of pipeline widths (including 16-inch, 20-inch, and 30-inch-diameter pipe). The equipment used to install the larger 30-inch-diameter pipe is generally larger than what is typically used to install smaller diameter pipelines and thus would occupy more space on the right-of-way. Therefore, Guardian has requested, and we agree, that utilizing a 95-foot right-of-way for the installation of the smaller-diameter pipeline would adequately enable the safe operation of the larger construction equipment.

Guardian has agreed to use a 75-foot-wide construction right-of-way in the majority of wetlands crossed by the G-II Pipeline; however, in farmed wetlands Guardian proposes to use a 95- to a 110-foot-wide construction right-of-way.

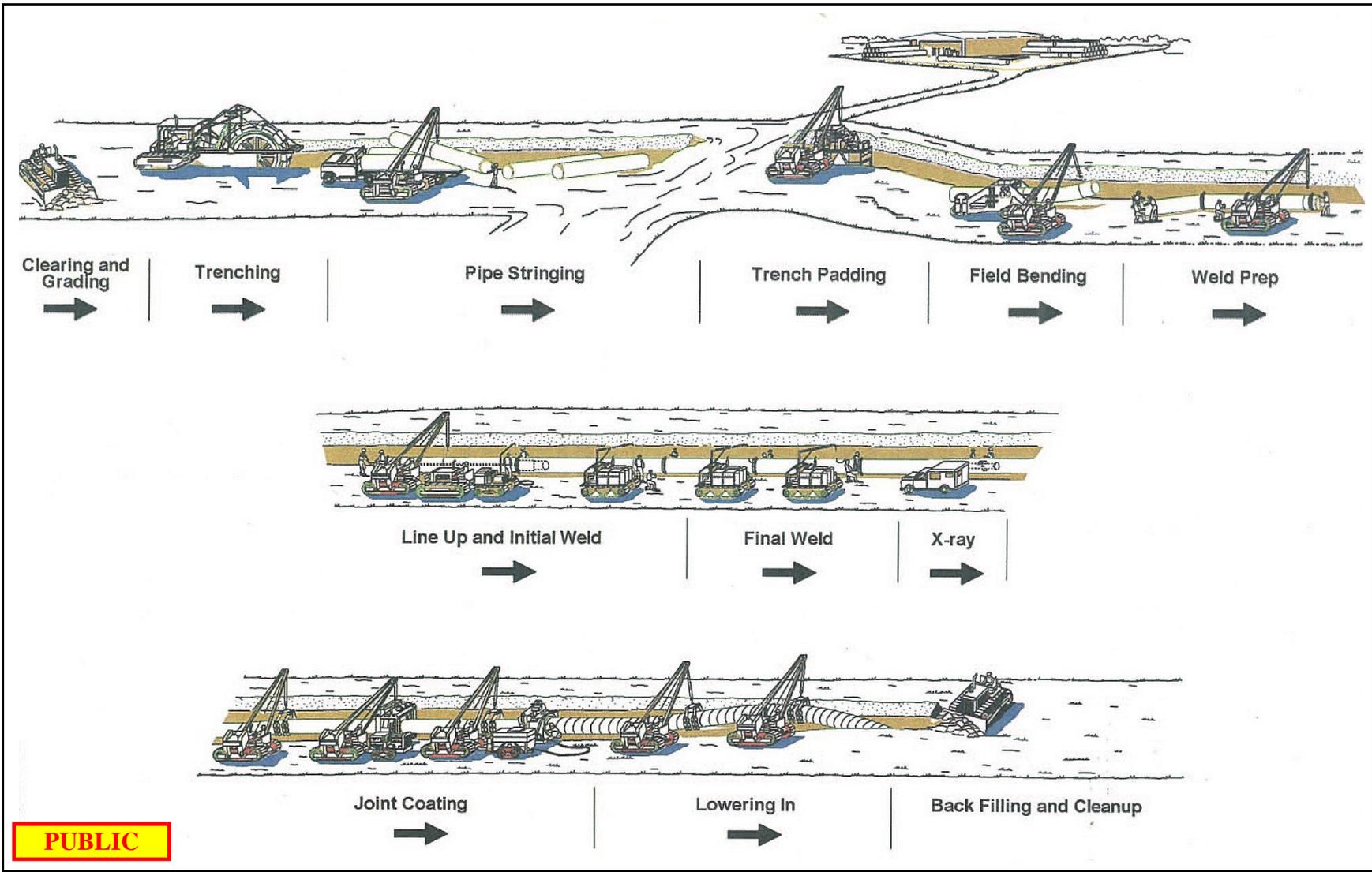
Guardian would also be required to develop a *Spill Prevention, Control and Countermeasures Plan* (SPCC Plan) to be implemented during construction of the facilities. The SPCC Plan must address potential spills of fuel, lubricants, and other hazardous materials and describe spill prevention practices, spill handling and emergency notification procedures, and training requirements. A general SPCC Plan has been provided as appendix D. This SPCC Plan will be updated with site-specific information and filed with the Secretary prior to construction.

### **2.3.1 Pipeline and Associated Aboveground Facilities**

#### **2.3.1.1 General Pipeline Construction Procedures**

Prior to initiating construction-related activities, Guardian would secure right-of-way easements from private landowners and managers of public lands whose properties would be crossed by the pipeline route. These negotiations of financial agreements between Guardian and the landowners are a private business concern that is not regulated or tracked by the FERC. All owners, tenants, and lessees of private land, and lessees and managers of public lands along the right-of-way would be notified in advance of construction activities that could affect their property, business, or operations. If the necessary land rights or easements could not be obtained through good faith negotiations with landowners, and the proposed Project has been certificated by the FERC, Guardian may use the right of eminent domain granted to it under Section 7(h) of the NGA to obtain a right-of-way. Guardian would still be required to compensate the landowners for the rights-of-way, as well as for any damages incurred during construction. However, the level of compensation would be determined by the court according to state laws that set forth the procedures for the use of eminent domain once the FERC issues a Certificate. Guardian must proceed through the appropriate state or federal court to condemn land for which it has received a Certificate from the FERC. The FERC does not take part in such proceedings.

Construction of the proposed pipeline facilities would incorporate conventional overland construction techniques for large diameter pipelines. The construction of the proposed pipeline would follow a set of sequential operations, unique to the pipeline industry, as shown on figure 2.3-1 and as further described in the following sections. In the typical pipeline construction scenario, the construction spread (crew) proceeds along the pipeline right-of-way in one continuous operation. As the spread moves along, construction at any single point along the pipeline, from initial surveying and clearing to backfilling and finish grading, is expected to last approximately 6 to 10 weeks. The entire process would be coordinated in such a manner as to minimize the total time a tract of land is disturbed and therefore exposed to erosion, and temporarily precluded from normal use.



**PUBLIC**

**Figure 2.3-1  
Guardian Expansion and Extension Project  
Typical Pipeline Construction Sequence**

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## **Survey and Staking**

Affected landowners would be notified prior to the commencement of preconstruction survey and staking activities. After these notifications, a crew would survey and stake the outside limits of the right-of-way and additional temporary workspaces, as well as the centerline of the pipeline, drainages, highway and railroad crossings, and access roads. The exterior boundary of these areas would be maintained throughout the construction period. Existing utility lines (e.g., cables, conduits, and pipelines) would be located and marked with flags, stakes, or other devices to prevent accidental damage during pipeline construction.

## **Erosion and Sediment Control**

Temporary soil erosion and sedimentation control measures would be installed along the right-of-way, access roads, and additional temporary extra workspace in accordance with the standard requirements for pipeline construction and operation in our Plan.

## **Clearing and Grading**

Following the installation of the erosion and sedimentation control measures, the construction right-of-way and additional temporary work spaces would be cleared and graded as necessary. Large obstacles, such as trees, rocks, brush, and logs, would be removed. Timber would be removed only when necessary for construction purposes. Timber and other vegetative debris may be chipped for use as erosion-control mulch or otherwise disposed of in accordance with applicable local regulations and landowner requirements. If permitted, burning would be conducted in such a manner as to minimize fire hazard and prevent heat damage to surrounding vegetation. Fences would be cut and braced along the right-of-way and temporary gates would be installed as necessary to control livestock and limit public access. The right-of-way would then be graded where necessary to create a reasonably level working surface to allow safe passage of equipment. Temporary bridges and culverts would be established for creek and drainage ditch crossings. In agricultural and residential areas, conserved topsoil would be stockpiled, usually along one side of the right-of-way, allowing the other side to be used for access, material transport, and pipe assembly.

## **Trenching**

Trench excavation is necessary to bury the pipeline underground. The trench would be excavated with a rotary trenching machine, a track-mounted backhoe, or similar equipment. Blasting may be required to excavate the trench in some locations where rock substrates are encountered at depths that interfere with conventional excavation or rock-trenching methods (see section 4.1.1). In agricultural and residential areas, subsoil would be stockpiled separately from topsoil. Typically, the bottom of the trench would be excavated at least 12 inches wider than the diameter of the pipe (i.e., 42 inches for a 30-inch-diameter pipe). The sides of the trench may be sloped for safety. The width of the top of the trench would vary depending on the soils being crossed. At tie-in locations, the top of the trench is expected to be between about 12 to 15 feet across. The width of the trench in unstable soils could be even wider. The trench would be excavated to a sufficient depth to generally allow a minimum of 4 feet of soil cover between the top of the pipe and the final land surface after backfilling. Areas containing shallow bedrock may have less than 4 feet of cover. At least 4 feet of cover would typically be used at waterbody crossings and a minimum of 4 feet of cover would be required in agricultural lands. Excavated soils would be stockpiled along the right-of-way, typically on the side of the trench away from the construction traffic (the “spoil side”) and pipe assembly area.

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## **Pipe Stringing**

Steel pipe for the pipeline would be procured in nominal 40-foot, 60-foot, and 80-foot lengths or joints, protected with an epoxy coating applied at the factory (the beveled ends would be left uncoated for welding), and shipped to the contractor/pipe storage yards. The individual joints would be transported to the right-of-way by truck and placed along the excavated trench in a single, continuous line, easily accessible to the construction personnel on the working side of the trench, opposite the spoil side. This would allow the subsequent lineup and welding operations to proceed efficiently. At waterbody crossings, the amount of pipe that would be required to span the waterbody typically would be stockpiled in temporary work areas on one or both banks of the waterbody.

## **Pipe Bending**

The pipe would be delivered to the Project site in straight sections. Generally, some bending of the pipe would be required to allow the pipeline to follow natural grade changes and direction changes of the right-of-way. Selected joints would be field bent by track-mounted hydraulic bending machines as necessary prior to line-up and welding. For larger horizontal changes of direction, manufactured induction bends may be used.

## **Pipe Assembly and Welding**

Following stringing and bending, the joints of pipe would be placed on temporary supports adjacent to the trench. The ends would be carefully aligned and welded together using multiple passes for a full penetration weld. Only qualified welders according to applicable American National Standards Institute, American Society of Mechanical Engineers, and American Petroleum Institute (API) Standards would be permitted to perform the welding.

## **X-Ray and Weld Repair**

To ensure that the assembled pipe would meet the design strength requirements, the welds would be visually inspected and non-destructively tested using radiographic (x-ray) or another approved test method, in accordance with API Standards. Welds displaying inclusions (void spaces) or other defects would be repaired or cut out (removed) and a new weld would be installed and retested.

## **Coating Field Welds, Inspection, and Repair**

Following welding, the previously uncoated ends of the pipe at the joints would be epoxy coated. Prior to lowering the pipe into the trench, the coating on the pipe section would be inspected. Any damaged areas that are identified would be repaired.

## **Pipe Lowering**

The completed section of pipe would be lifted off the temporary supports and lowered into the trench by side-boom tractors or in some cases other equipment. Before lowering the pipe, the trench would be inspected to ensure that it is free of debris that could damage the pipe or the coating. In addition, the pipe and trench would be inspected to ensure that the pipe and trench configurations are compatible.

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### **Padding and Backfilling**

After the pipe is lowered into the trench, the trench would be backfilled. Previously excavated spoil would be pushed back into the trench using bladed equipment or backhoes. Where the trench spoil contains materials that could damage the pipe or coating, clean fill or protective materials would be placed around the pipe prior to backfilling. Following backfilling, a small crown of soil may be left to account for any future settling that might occur.

### **Hydrostatic Test and Final Tie-In**

Following backfilling of the trench, the pipeline would be hydrostatically tested to ensure it is capable of operating at the design pressure. The new pipeline would be hydrostatically tested prior to being placed into service. The hydrostatic test water for the pipeline facilities would be pumped through screened intakes from waterbodies located along or near the pipeline route. Hydrostatic test water for the compressor stations would be obtained from municipal sources. As a contingency plan, Guardian has proposed to use water from wells it proposes to install at each compressor station location to support routine operations (e.g., potable water and toilet facilities to hydrostatically test the compressor station pipeline only). The water in the pipe would be pressurized and held for a minimum of 8 hours. Any loss of pressure that cannot be attributed to other factors, such as temperature changes, would be investigated. Leaks that are detected would be repaired. Upon completion of the testing, the water would generally be discharged back to the source through an energy-dissipating device, or where that is not practical, water would be discharged to an upland area that is well vegetated, or other location using a filter bag or other energy dissipating device. If necessary, hydrostatic test water would be discharged through a filtration system to remove any sediment or other pollutants pursuant to applicable permit requirements. Hydrostatic test water obtained from municipal sources or from Guardian's own wells would be discharged to an upland area that is well vegetated, or other location using a filter bag or other energy dissipating device.

Hydrostatic test water would generally be in contact with new pipe. No chemicals would be added to the testing water. Once a segment of pipe has been successfully tested and dried, the test cap and manifold would be removed, and the pipe would be connected to the remainder of the pipeline. Hydrostatic testing is further addressed in section 4.3.2.4.

### **Cleanup and Restoration**

After the pipeline has been installed and the trench has been backfilled, the areas disturbed by construction would be graded as necessary. Construction debris would be disposed of properly and land contours would be restored to conform to adjacent areas. In agricultural and residential areas, compacted subsoil would be decompact, and the segregated topsoil would be returned as nearly as possible to its original horizon. Permanent erosion and sediment control measures would be installed at this time. Private and public property, such as fences, gates, driveways, and roads, disturbed by pipeline construction would be restored in accordance with the standard requirements in our Plan and Guardian's Project-specific Agricultural Impact Mitigation Plan (AMP). The AMP was developed in consultation with the DATCP and has been included as appendix E to this EIS.

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### **2.3.1.2 Special Pipeline Construction Techniques**

#### **Road and Railroad Crossings**

Construction of the pipeline across major paved roadways and railways where traffic cannot be interrupted would be accomplished by conventional boring techniques. Roads and railroads that would be crossed using this methodology are listed in appendix F. Smaller, unpaved roads and drives would be crossed by open trenching. If an open-cut road requires extensive construction time, provisions would be made for detours, or other measures would be implemented to permit traffic flow during construction. The top of the pipeline would be installed to a depth of at least 4 feet below the bottom of the road ditches (see figure 2.3-2) and would be designed to withstand anticipated external loading. Casings would be installed where required by permitting authorities. Following installation of the pipeline, the trench would be backfilled and the road surface would be restored.

Guardian would acquire any necessary permits for all road and railroad crossings prior to construction.

#### **Wetland Crossings**

Crossings of jurisdictional wetlands would be conducted in accordance with our Procedures. Our Procedures regarding the crossing of wetlands have been included as appendix H.

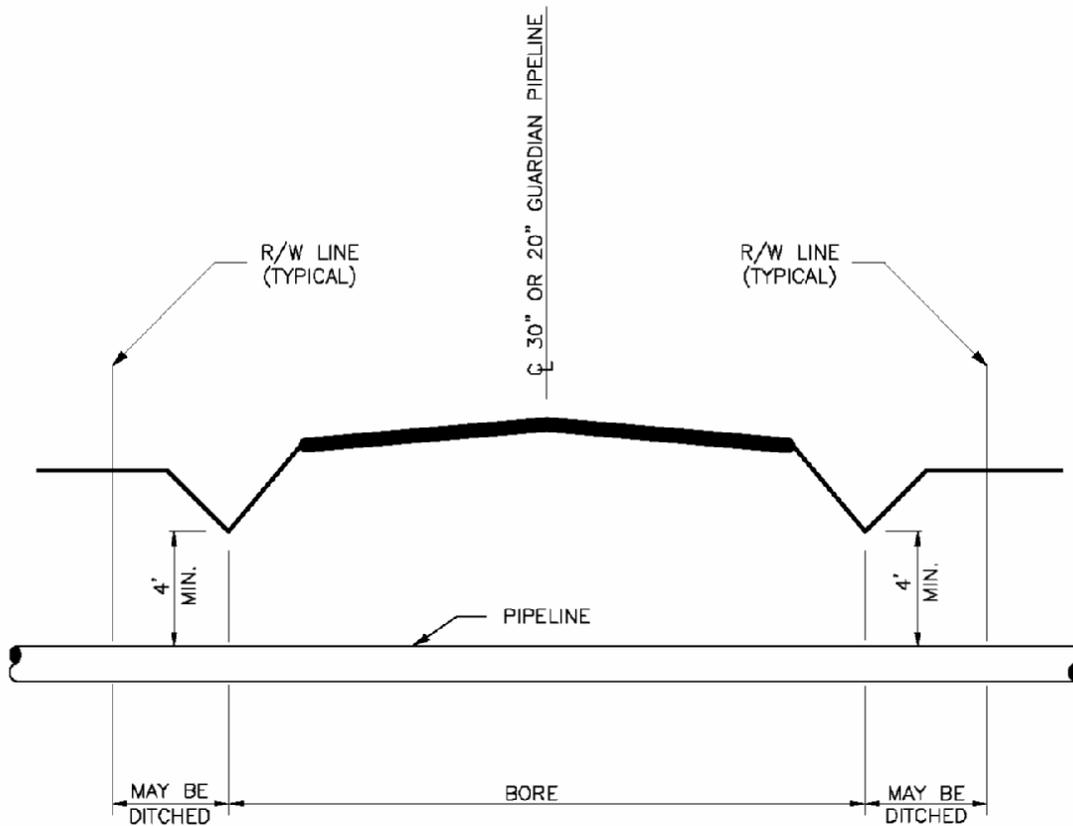
#### **Waterbody Crossings**

Crossings of waterbodies would be conducted in accordance with our Procedures.

Installation of the pipeline across waterbodies would be accomplished using either a “wet” or “dry” construction technique. A “wet” or open-cut crossing involves trenching and installing the pipeline without isolating the construction work area from stream flow. The objective of this method is to complete the crossing as quickly as practicable to minimize the duration of impacts on aquatic resources. A “dry” crossing involves isolating the construction zone from the stream flow by directing water flow through a flume pipe (flume crossing), by damming the flow and pumping the water around the construction area (dam and pump crossing), or by directionally drilling and installing the pipeline beneath the waterbody (horizontal directional drilling [HDD]). The primary objectives of these methods are to minimize siltation of the waterbody and allow for a more extended construction period.

#### **Residential Areas**

Where residences are located in proximity to the construction right-of-way, Guardian would reduce construction workspace, if necessary, to minimize inconvenience to property owners. If construction requires the removal of private property features, such as gates or fences, the landowner or tenant would be notified prior to the action. Following completion of major construction, the property would be restored as requested by the landowner in accordance with Guardian’s easement agreements, insofar as the landowner’s requirements are compatible with existing regulations and with Guardian’s standards regarding right-of-way restoration and maintenance.



**NOTE:**

1. PIPE TO BE INSTALLED UNDER ROAD BY BORING.
2. ALL DIMENSIONS ARE SUBJECT TO INDIVIDUAL ROAD SPECIFICATIONS.

**PUBLIC**

**Figure 2.3-2  
Guardian Expansion and Extension Project  
Typical 20-inch and 30-inch Pipeline Road Bored Crossing**

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## **Agricultural Areas**

Guardian estimates that 90 percent of the pipeline construction route is agricultural land. Guardian would cross these agricultural lands in accordance with the standard requirements for pipeline construction in our Plan and Guardian's Project-specific AMP currently included as appendix E. Guardian would conserve topsoil in all actively cultivated and rotated cropland, improved pasture, non-saturated wetlands, and residential areas. A maximum of 12 inches of topsoil would be segregated in these areas; in other areas topsoil would be segregated at the specific request of the landowner or land management agency. The topsoil and subsoil would be stored in separate windrows on the construction right-of-way and would not be allowed to mix. Where topsoil is less than 12 inches deep, the actual depth of the topsoil would be removed and segregated. The depth of the trench would be sufficiently deep to allow for at least 4 feet of cover on top of the pipe. Soil fertility and other characteristics are further discussed in section 4.2. Agricultural areas crossed by the Project are identified in section 4.7 along with proposed mitigation measures.

## **Certified Organic Farms**

The proposed pipeline would cross one certified organic farm and the pipeline centerline could come within 50 feet of a second certified organic farm. To minimize impacts on certified organic farms, Guardian would implement site-specific construction techniques based on a best management practice (BMP) for organic agricultural land which have been incorporated in Guardian's AMP.

Guardian's BMP for organic agricultural land would identify mitigation measures that apply specifically to farms that are Certified Organic or farms that are in active transition to become Certified Organic, and will address the unique management and certification requirements of these operations. Guardian recognizes that organic agricultural land is a unique feature of the landscape and will treat this land with the same level of care as other sensitive environmental features.

As part of their BMP, Guardian would request a copy of the Organic System Plan for the farm and will work with each producer (landowner or tenant) to develop a site-specific plan to cross the farm in a manner that would minimize the risk of losing certification. Standard protocols Guardian could implement in these areas include:

- segregating topsoil and subsoil;
- avoiding the application of any prohibited substances;
- restricting equipment refueling and maintenance activities;
- inspecting equipment for leaks before entering the property;
- restricting parking of equipment on the property;
- implementing other practices as indicated by the individual producer's Organic System Plan; and
- monitoring of construction and restoration procedures using appropriately trained monitors or inspectors.

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## **Commercial and Industrial Areas**

Impacts on commercial and industrial areas generally would be limited to the construction period. Guardian would maintain close coordination with business owners to maintain access, decrease construction duration, and generally attempt to minimize impacts. Commercial and industrial areas crossed by the pipeline, as well as proposed measures to mitigate impacts on those areas, are identified in section 4.7.

## **Blasting**

Soil survey information indicates that shallow bedrock would be crossed by portions of the pipeline route (see section 4.1.1 for further details on blasting). Some of this shallow bedrock is hard and may require blasting. In these areas, care would be taken to prevent damage to above and underground structures (e.g., buildings, cables, conduits, and pipelines) or to springs, water wells, or other water sources. Blasting mats or soil cover would be used as necessary to prevent the scattering of loose rock. Blasting would be conducted during daylight hours and would not begin until occupants of nearby buildings, stores, residences, places of business, and farms have been notified. These measures are further discussed in geology or soils in sections 4.1 and 4.2.

### **2.3.1.3 Aboveground Facility Construction Procedures**

Aboveground facilities that would be constructed as part of the Project include compressor stations, meter stations, MLVs, and launcher and receiver facilities. Construction activities and storage of construction materials and equipment would be confined to the approved construction area at the compressor station site or other approved work areas (e.g., contractor/pipe yards). Debris and wastes generated from construction would be disposed of appropriately. Disturbed surface areas would be restored in a timely manner.

Construction of the compressor and meter stations would involve clearing and grading, where necessary. Foundations would be poured; piping, valves, fittings, and flanges assembled on-site; equipment mounted on the foundations; and auxiliary buildings erected. Lastly, access roads and parking lots would be paved, a permanent perimeter fence would be installed surrounding the facilities, and landscaping would be completed.

Components in high-pressure natural gas service would be hydrostatically tested before being placed in service in accordance with all applicable federal, state, and local requirements. All controls and safety equipment and systems would also be checked and tested prior to being placed into service.

## **2.4 CONSTRUCTION SCHEDULE**

Guardian is under contract for a Project in-service date of November 1, 2008. It should take a total of about 7 months to construct the entire Project. The first part of this process would be the construction of the compressor stations, which would begin in late March of 2008. Construction of the pipeline and other associated facilities would be scheduled to begin in May of 2008. Construction of the pipeline and compressor station facilities is expected to be completed in September of 2008. Construction of the meter stations is expected to be completed in October of 2008. Some preparatory construction and mitigation work may occur prior to and after these dates.

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## 2.5 ENVIRONMENTAL COMPLIANCE AND MONITORING

Prior to construction, Guardian would develop and implement a Project-specific environmental compliance program. This program would define the roles and responsibilities of various construction and inspection personnel and would identify the organization, reporting structure, and lines of communication related to environmental compliance. The environmental compliance and monitoring requirements would include the standard requirements for pipeline construction and operation in our Plan and Procedures, and would also incorporate compliance and monitoring requirements from the federal, state, and local permits obtained for the Project.

Guardian would also develop various Project-specific environmental training modules. The most intensive training would be provided to Guardian's environmental inspectors before they begin their inspection duties. Appropriately tailored environmental training would also be provided to other onsite contractor and construction management personnel. Guardian would maintain training records to verify that each individual has received the required training before he or she engages in construction activities. It is anticipated that the focus of the environmental training would be on erosion and spill control, wetland and waterbody mitigation and restoration procedures, agricultural mitigation and restoration procedures, and our site-specific requirements for other sensitive areas, our Plan and Procedures, Guardian's AMP, Certificate, or permit conditions.

Guardian would prepare environmental compliance handbooks and other documents, such as construction alignment sheets prior to construction, which will be provided to its environmental inspectors and other key individuals. The environmental compliance handbooks would include copies of permits and other relevant mitigation plans and measures committed to by Guardian or required by Guardian's permits. Anticipated mitigation documents in the handbook would include Guardian's AMP and BMPs, Unanticipated Finds Plans, Guardian's Horizontal Directional Drill Contingency Plan for the Inadvertent Release of Drilling Fluid, a Project-specific SPCC Plan, and our Plan and Procedures.

During construction, Guardian would employ full-time environmental inspectors, including an agricultural inspector, to monitor construction activities and document environmental compliance. The environmental inspectors would interact directly with the construction contractor's environmental staff and would prepare daily inspection reports that would be distributed to the contractor personnel and Guardian's construction management team at the end of each day. Guardian would also fund a third-party Agricultural Monitor (AM) for the Project. The activities of the AM will be directed by the DATCP. The AM will serve in an auditing role, working closely with Guardian's agricultural inspectors to verify that construction activities on agricultural land are in compliance with Guardian's AMP. The AM would prepare regular compliance reports and submit the reports to the DATCP (typically on a weekly basis). The DATCP would then provide these reports to Guardian.

To ensure that restoration in agricultural lands is satisfactorily completed, **we recommend that:**

- **Guardian should file copies of the third-party agricultural monitoring reports with the Secretary when Guardian receives these reports from the DATCP.**

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The environmental and agricultural inspection effort would be supported by a compliance management team led by an Environmental Compliance Manager (ECM). The ECM will be responsible for managing and coordinating the overall environmental and agricultural inspection efforts and would visit the construction site on a regular basis to maintain quality control and independently assess the level of compliance that is being achieved.

## **2.6 OPERATION AND MAINTENANCE**

Guardian would operate and maintain the proposed pipeline and aboveground facilities in compliance with DOT regulations provided in 49 CFR 192, the Commission's guidance in 18 CFR 380.15, and maintenance provisions required by the FERC and identified in our Plan and Procedures. Operation and maintenance considerations for pipeline facilities are further described in the following section.

### **2.6.1 Pipeline**

During operations, Guardian would conduct regular patrols of the pipeline and branch line rights-of-way in accordance with the requirements of 49 CFR Part 192. The patrol program would include periodic aerial, vehicle, and/or foot patrols of the pipeline facilities. These patrols would be conducted to survey surface conditions on and adjacent to the pipeline right-of-way for evidence of leaks, unauthorized excavation activities, erosion and wash-out areas, areas of sparse vegetation, damage to permanent erosion control devices, exposed pipeline, and other conditions that might affect the safety or operation of the pipeline. Additional gas leak detection surveys would be performed using leak detection instruments in more densely populated areas and at public road crossings. Routing inspection of the cathodic protection system would also be conducted along the pipeline to ensure that it is functioning properly and to identify and correct potential problems with the system.

In-line inspection of the pipeline would be performed periodically using "smart pigs," which are computerized electro-mechanical devices that travel inside the pipe checking for deformities, pipe-wall metal loss caused by corrosion, or other factors that could impact the integrity of the pipeline. If potential problems are identified, repairs would be made to the affected pipe.

Guardian would keep detailed records of all inspections and supplement the corrosion protection system, as necessary, to meet the requirements of 49 CFR Part 192. Pipeline markers would be placed and maintained along the right-of-way at roadway crossings, railroad crossings, and other highly visible places to alert those contemplating working in the vicinity of the location of the buried pipeline. The markers would identify Guardian as the operator, include safety warnings, and display telephone numbers to call if any abnormal conditions are detected.

Guardian would also participate in the Diggers Hotline one-call system in Wisconsin and the Joint Utility Locating Information for Excavators (JULIE) one-call system in Illinois. These systems provide contractors, highway workers, farmers, and anyone digging along a pipeline right-of-way with the ability to call a telephone number to have underground facilities located prior to excavation activities. Guardian would review and respond appropriately to any requests to locate its pipeline that are issued from a one-call center. In the normal course of operations, Guardian would also devote time to educate the public that they must first notify the pipeline company before digging or operating heavy equipment along the pipeline route. Guardian would also send "call-before-you-dig" notices to property owners along the right-of-way.

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Vegetation management procedures during operation would also be performed in accordance with our Plan and Procedures and would include regular mowing, cutting, and trimming along most of the 50-foot-wide permanent pipeline right-of-way outside of agricultural and residential areas. Routine vegetative maintenance clearing would not be performed more frequently than every 3 years, unless requested and/or approved by appropriate state and local agencies. However, a corridor not exceeding 10 feet in width centered on the pipeline could be maintained annually in an herbaceous state, as required to facilitate periodic corrosion and leak detection surveys. Guardian would not use herbicides or pesticides within 100 feet of a wetland or waterbody unless approved in appropriate permits. Vegetation management and wetland maintenance is discussed further in section 4.4.

## **2.6.2 Aboveground Facilities**

Routine operation and maintenance would also be performed at all aboveground facilities by qualified Guardian personnel. Personnel would perform routine checks of the compressor station facilities, including calibration of equipment and instrumentation, inspection of critical components, and scheduled and routine maintenance of equipment and grounds. Corrective actions would be taken as necessary if problems are identified.

## **2.7 SAFETY CONTROLS**

### **2.7.1 Corrosion Protection and Detection Systems**

During construction of the proposed facilities, Guardian would install a cathodic protection system to prevent or minimize corrosion of the buried pipeline and aboveground facilities. The cathodic protection system impresses a low-voltage current on the pipeline to offset natural soil and groundwater corrosion potential. The condition of the pipe coating and the effectiveness of the cathodic protection system would be monitored during regularly scheduled cathodic protection surveys in accordance with federal standards and regulations. Cathodic protection surveys usually require walking the pipeline right-of-way with monitoring instruments. Repairs to the pipe, the pipe coating, or the cathodic protection system would be made as appropriate.

### **2.7.2 Emergency Response Procedures**

The proposed pipeline and aboveground facilities must be designed, constructed, operated, and maintained in accordance with the DOT Minimum Federal Safety Standards in 49 CFR 192. The regulations are intended to ensure adequate protection for the public and to prevent natural gas facility accidents and failures. Part 192 specifies material selection and qualification, minimum design requirements, and protection from internal, external, and atmospheric corrosion. Part 192 also prescribes the minimum standards for operating and maintaining pipeline facilities, including the requirement to establish a written plan governing these activities. Under Section 192.615, each pipeline operator must also establish an emergency plan that includes procedures to minimize the hazards in a natural gas pipeline emergency. Key elements of the plan include procedures for:

- receiving, identifying, and classifying emergency events, gas leakage, fires, explosions, and natural disasters;
- establishing and maintaining communications with local fire, police, and public officials, and coordinating emergency response;

- 
- making personnel, equipment, tools, and materials available at the scene of an emergency;
  - protecting people first and then property, and making them safe from actual or potential hazards; and
  - conducting emergency shutdown of system and safe restoration of service.

Part 192 also requires that each operator must establish and maintain a liaison with appropriate fire, police, and public officials to learn the resources and responsibilities of each organization that may respond to a natural gas pipeline emergency, and to coordinate mutual assistance. The operator must also establish a continuing education program to enable customers, the public, government officials, and those engaged in excavation activities to recognize a gas pipeline emergency and report it to appropriate public officials.

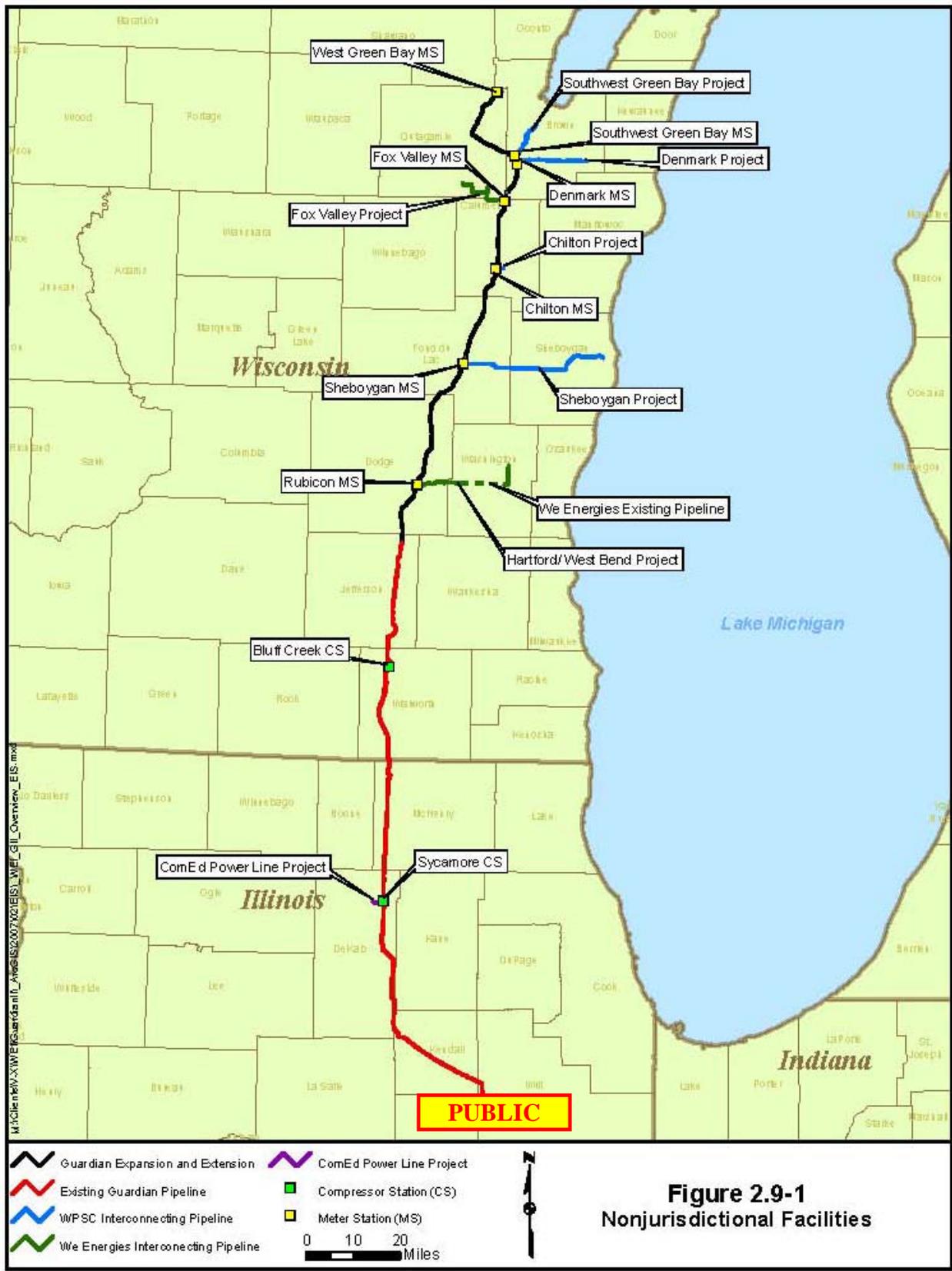
## **2.8 FUTURE PLANS AND ABANDONMENT**

The G-II Project involves new construction and upgrades to existing facilities; as such, the Project would not require the abandonment of pipeline or aboveground facilities. Guardian has no foreseeable plans for future expansion or abandonment of the Project facilities described in this EIS, but if market conditions change such that an expansion or abandonment is justified, Guardian would seek the appropriate authorizations from the FERC and comply with all applicable requirements. At the end of the useful life of the pipeline and aboveground appurtenances, Guardian would obtain the necessary permission to abandon its facilities.

## **2.9 NONJURISDICTIONAL FACILITIES**

There are nine nonjurisdictional facility projects related to this Project: (1) We Energies Hartford/West Bend Project; (2) We Energies Fox Valley Project; (3) WPS Sheboygan Project; (4) WPS Chilton Project; (5) WPS Denmark Project; (6) WPS Southwest Green Bay Project; (7) WPS Green Bay Project; (8) ComEd Sycamore Powerline, Transformer/Substation Project; and (9) ATC Bluff Creek Transformer/Substation Project. Figure 2.9-1 depicts the location of the nonjurisdictional facilities in relation to the proposed G-II mainline pipeline.

Permits and approvals for each of the projects would be obtained by We Energies, WPS, ComEd, and ATC as necessary. On March 30, 2007, the Public Service Commission (PSC) of Wisconsin issued an Environmental Assessment (EA) for the We Energies and WPS nonjurisdictional facilities. The Wisconsin Department of Natural Resources (WDNR) also issued an EA for these facilities on June 19, 2007. Both agencies conducted public hearings in March 2007 and July 2006, respectively. Information from the PSC and WDNR EAs, including information filed by Guardian for the nonjurisdictional facilities, are summarized in the following subsections. The complete PSC EA and public hearing transcripts are available on the PSC Web site at <http://psc.wi.gov> under the following three docket numbers: 5-CG-103, 6650-CG-220, or 6690-CG-160. The COE will also be reviewing permit applications for certain nonjurisdictional facilities under the CWA.



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## **2.9.1 Description of the Proposed Nonjurisdictional Facilities**

### **2.9.1.1 We Energies Hartford/West Bend Project**

We Energies would construct and operate a 14-mile two-segment (Hartford and West Bend Segments) 12-inch-diameter pipeline lateral to interconnect with the G-II Pipeline at the proposed Rubicon Meter Station in Dodge County, Wisconsin. Segment 1, the Hartford Segment of the proposed pipeline lateral, would be located within the Counties of Dodge and Washington, Wisconsin and consist of about 10.2 miles of pipe. Segment 2, the West Bend Segment of the proposed pipeline lateral would be located within Washington County, Wisconsin and consist of about 4.1 miles of pipe. One hundred percent of Segment 2 would be collocated within or adjacent to existing rights-of-way.

Within the footprint of the proposed Rubicon Meter Station, We Energies would also construct and operate a new gate station, the Hartford/West Bend Gate Station. Additional facilities would include two 12-inch-diameter valves in both Dodge and Washington County and a new regulator station in Washington County, Wisconsin.

### **2.9.1.2 We Energies Fox Valley Project**

We Energies would construct and operate a 14-mile pipeline lateral within the Counties of Calumet and Outagamie, Wisconsin to interconnect with the G-II Pipeline at the proposed Fox Valley Meter Station in Calumet County, Wisconsin. The pipeline lateral would comprise the following four segments:

- 5.5 miles of 20-inch-diameter pipe within Brown and Outagamie County, Wisconsin of which 73 percent would be collocated within or adjacent to existing rights-of-way;
- 1.3 miles of 8-inch-diameter pipe within Outagamie County, Wisconsin of which 95 percent would be collocated within or adjacent to existing rights-of-way;
- 4.7 miles of 16-inch-diameter pipe within Outagamie County, Wisconsin of which 85 percent would be collocated within or adjacent to existing rights-of-way; and
- 2.6 miles of 12-inch-diameter pipe within Outagamie County, Wisconsin of which 53 percent would be collocated within or adjacent to existing rights-of-way.

Within the footprint of the proposed Fox Valley Meter Station, We Energies would also construct and operate a new gate station, the Fox Valley Gate Station. Additional facilities would include the construction and operation of two regulator stations (the Kaukauna and Kimberly Regulator Stations), the WPPI Delivery Point Customer Metering Facility, the Appleton Regulator Metering Station, and two valve assemblies (the Kaukauna and Little Chute Valve Assemblies) in Outagamie County, Wisconsin.

### **2.9.1.3 WPS Sheboygan Project**

WPS would construct and operate a 31.0-mile 14-inch- and 12-inch-diameter pipeline lateral within the Counties of Fond du Lac and Sheboygan, Wisconsin to interconnect with the G-II Pipeline at the proposed Sheboygan Meter Station in Fond du Lac County. Approximately 99 percent of the pipeline lateral would be collocated within or adjacent to existing rights-of-way.

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WPS would also construct a 2.07-mile 16-inch-diameter distribution pipeline in Sheboygan County, of which 100 percent would be collocated within or adjacent to existing rights-of-way.

The Sheboygan Project would also include the construction and operation of odorization and pigging facilities within the footprint of the proposed Sheboygan Meter Station. Additional facilities would include the construction and operation of the New West Sheboygan and New Plymouth Regulator Stations in Sheboygan County, Wisconsin. WPS would also make modifications to the existing Sheboygan ANR Meter/WPS Regulator Station and the Plymouth ANR Meter/WPS Regulator Station located in Sheboygan County.

#### **2.9.1.4 WPS Chilton Project**

WPS would construct and operate a 1.7-mile, 4-inch-diameter pipeline lateral within Calumet County, Wisconsin to interconnect with the G-II Pipeline at the proposed Chilton Meter Station. One hundred percent of the pipeline lateral would be collocated within or adjacent to existing rights-of-way. Additional facilities would include the construction and operation of odorization, pigging, and valve facilities within the footprint of the proposed Chilton Meter Station, as well as a new regulator station in Calumet County, Wisconsin. WPS would also make modifications to the existing Chilton ANR Meter/WPS Regulator Station, and distribution system connection facilities located in Calumet County.

#### **2.9.1.5 WPS Denmark Project**

WPS would construct and operate a 14.25-mile, 12-inch-diameter pipeline lateral within Brown County, Wisconsin to interconnect with the G-II Pipeline at the proposed Denmark Meter Station via the proposed G-II Denmark Branch Line in Brown County, Wisconsin. One hundred percent of the pipeline lateral would be collocated within or adjacent to existing rights-of-way.

Within the footprint of the proposed Denmark Meter Station, WPS would construct and operate new odorization and pigging facilities. WPS would also make modifications to the existing Denmark ANR Meter/WPS Regulator Station located in Brown County.

#### **2.9.1.6 WPS Southwest Green Bay Project**

WPS would construct and operate a 8.25-mile 12-inch- and 20-inch-diameter pipeline lateral within Brown County, Wisconsin to interconnect with the G-II Pipeline at the proposed Southwest Green Bay Meter Station via the proposed G-II Southwest Green Bay Branch Line. Approximately 83.4 percent of the pipeline lateral would be collocated within or adjacent to existing rights-of-way. WPS would also construct a 6.57-mile 20-inch-diameter distribution pipeline in Brown County, of which 88.5 percent would be collocated within or adjacent to existing rights-of-way.

The Southwest Green Bay Project would also include the construction and operation of odorization, pigging, and valve facilities within the footprint of the proposed Southwest Green Bay Meter Station, as well as one new regulator station (the Southwest Green Bay Regulator Station) in Brown County. WPS would also make modifications to the existing ANR Green Bay Meter/WPS Broadway Regulator Station located in Brown County.

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### **2.9.1.7 WPS West Green Bay Project**

In Outagamie County, Wisconsin, WPS would construct and operate a new a flow control facility and odorization facility that would interconnect with the G-II Pipeline at the proposed West Green Bay Meter Station via the proposed G-II West Green Bay Branch Line in Outagamie County, Wisconsin. WPS would also make modifications to the existing West Green Bay Meter Station also located in Outagamie County, Wisconsin.

### **2.9.1.8 ATC Bluff Creek Transformer/Substation Project**

Construction and operation of the Bluff Creek Compressor Station in Walworth County, Wisconsin would require electrical service to the site. Electrical service would be provided by an existing 138-kilovolt (kV) ATC overhead electrical transmission line that crosses the northeast corner of the proposed Bluff Creek Compressor Station site. No new transmission line structures would be required to interconnect with the ATC electrical line at this location. However, a new transformer/substation would be required to reduce the electrical voltage from 138 kV to a voltage suitable for the loads at the compressor station. The transformer/substation would be divided into two sections. One section would be owned and operated by ATC. This section will provide ATC the ability to isolate the transmission line upstream of the compressor station. The other section of the substation would be owned and operated by Guardian and would contain the equipment necessary for reducing the voltage for distribution to the compressor station. The transformer/substation would be constructed and operated wholly within the boundaries of the proposed Bluff Creek Compressor Station.

### **2.9.1.9 ComEd Sycamore Powerline, Transformer/Substation**

Construction and operation of the Sycamore Compressor Station in DeKalb County, Illinois would require electrical service to the site. Electrical service would be provided by a new 2.7-mile-long, overhead electrical transmission line that would interconnect with an existing 138-kV transmission system located about 1,300 feet east of the proposed compressor station property near Sycamore, Illinois. Construction of the new overhead electrical transmission system would occur entirely within an existing ComEd easement and would not require acquisition of additional right-of-way.

A new transformer/substation would also be required to reduce the electrical voltage from 138 kV to a voltage suitable for the loads at the compressor station. The transformer/substation would be divided into two sections. One section would be owned and operated by ComEd. This section would provide ComEd the ability to isolate the transmission line upstream of the compressor station. The other section of the substation would be owned and operated by Guardian and would contain the equipment necessary for reducing the voltage for distribution to the compressor station. The transformer/substation would be constructed and operated wholly within the boundaries of the proposed Sycamore Compressor Station.

## **2.9.2 Summary of Environmental Impacts**

In accordance with the Wisconsin Environmental Policy Act (WEPA), S.1.11, Wis. Stats, both the PSC and WDNR prepared EAs analyzing the environmental effects of the six nonjurisdictional pipelines laterals and associated facilities including the We Energies Hartford/West Bend Project; We Energies Fox Valley Project; WPS Sheboygan Project; WPS Chilton Project; WPS Denmark Project; WPS Southwest Green Bay Project; and WPS Green

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Bay Project. Both the PSC and WDNR conducted public hearings regarding the proposed nonjurisdictional facilities in March 2007 and July 2007, respectively. The WDNR also conducted public hearings associated with the facilities' proposed Wisconsin State Chapter 30 permit for the associated stream and wetland crossings. A summary of the environmental impacts and mitigation measures, as presented in the PSC and WDNR, EAs are included in the following sections. The complete PSC EA and public hearing transcripts are available on the PSC Web site at <http://psc.wi.gov> under the following three docket numbers: 5-CG-103, 6650-CG-220, or 6690-CG-160. The complete WDNR EA and public hearing transcript are also available online at <http://dnr.wi.gov/org/es/science/eis/Guardian2andLateralsCertifiedEA.pdf>. Environmental effects of the nonjurisdictional facilities are also discussed in section 4.13.2.

### **2.9.2.1 Water and Water Resources**

A total of 63 waterbodies would be crossed by the proposed pipeline lateral projects. The majority of these waterbodies are intermittent streams, with no flowing water during portions of the year. Sixteen of these waterbodies are named rivers including the East River, Mullet River, Sheboygan River, and the Fox River.

In the course of reviewing permit applications, the WDNR has indicated to the applicant that crossings of intermittent waterways would only be permitted at times of no flow. For streams where flowing water is present, impacts would be limited to the period of construction and would be dependent on the time, duration, and method of pipeline installation. Construction methods such as boring, dam and pump or flume would likely result in only temporary and minor impacts on the waterbodies crossed.

Some in-stream and shoreline cover that provides cover for fish may be altered or removed at the proposed stream crossings. Some fish, including trout, have spawning runs in the spring, summer, or fall that could be interrupted due to construction activities that could block or discourage fish from passing through the construction area. Increased sedimentation and turbidity could reduce survival of eggs and emerging fry and degrade spawning habitats.

After the pipeline laterals are installed, stream beds and banks would be restored, as near as practicable, to preconstruction conditions. Disturbed soils adjacent to the waterways would be stabilized and reseeded with approved seed mixes.

### **2.9.2.2 Vegetation**

#### **Wetlands**

The extent of impact to wetlands crossed by the proposed pipeline lateral projects would be dependent on the type of wetland affected, the existing quality of the wetland, the time of year, and the construction methods. Four general wetland types are found within the project areas associated with the pipeline laterals including wet meadows, shrub/scrub wetlands, forested wetlands, and emergent wetlands (shallow and deep marsh). While open-cut trenching is proposed to be used in many of the wetlands, boring methods may be used to install the pipelines beneath some emergent and wet meadow wetlands.

Pipeline construction and right-of-way maintenance activities would result in the temporary removal of wetland vegetation. In wet meadow/emergent wetlands, the impact of construction would be temporary, because herbaceous vegetation regenerates within one or two seasons. In

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forested and shrub-dominated wetlands, the impact would be longer due to the longer recovery period for these vegetation types. Ongoing vegetation management on the portion of the operational rights-of-way would permanently restrict regeneration of tree and shrub cover. Clearing of wetland vegetation would temporarily, or in some cases, permanently, remove or alter wetland habitat.

Pipeline trench excavation would be a major disturbance to wetland habitat; however, construction activities could also impact wetlands adjacent to the construction right-of-way. Impacts on wetlands would include compaction, and rutting of wetland soils could result from the temporary stockpiling of soil and the movement of heavy machinery; the temporary alteration of surface drainage patterns and hydrology; and the potential for the trench to act as a drainage channel. Increased siltation in adjacent wetland areas could also result from trenching activities. In addition, disturbances to the wetland could temporarily affect its capacity to control erosion and flooding. Reed canary grass, an aggressive invasive plant species, currently dominates some of the wetlands along the proposed rights-of-way; it is likely this plant species would retain its dominance when revegetation occurs after construction is complete. However, introducing aggressive invasive plant species could adversely affect the reproductive success of indigenous species.

To minimize both the temporary and permanent adverse effects of construction on the wetland habitats to be crossed by the proposed pipeline laterals WPS and We Energies would employ best management practices, schedule construction during the period when soils are frozen and vegetation is dormant, utilize ice roads or timber matting, and install appropriate erosion control measures such as trench breakers.

Several wetlands in the proposed project areas qualify as Areas of Special Natural Resource Interest, as defined by Wisconsin Administrative Code § NR 103.04, because of unique features they possess or their location in relation to a state or federal resource area. Most, if not all, of these wetland communities would be protected by boring the pipelines beneath them or constructing under stable soil conditions.

### **Forests**

About 20 acres of forest would be affected by construction of the proposed pipeline lateral projects. Construction in these areas would result in the clearing of trees in the construction rights-of-way. The removal of the tree cover would substantially change the plant and animal communities in the areas cleared. The impacts associated with the clearing of forested land may include temporary increases in soil erosion and runoff, increased soil temperatures, soil mixing and soil compaction, and possible root damage and increased wind throw of trees adjacent to newly cleared areas. Clearing may allow early successional species to become established along the edge of the newly cleared construction and operational rights-of-way and the overall disturbance could enhance the spread of aggressive non-native species. Such effects, however, would vary in their severity, depending on the ecological conditions at the site.

A portion of the Sheboygan lateral would pass through the Kettle Moraine State Forest–Northern Unit; however, the proposed pipeline route through the State Forest would lie within an already cleared right-of-way of an existing 345-kV electric transmission line. As a result, additional tree clearing would not be necessary in this area. In addition, discussions with the staff of the Kettle Moraine State Forest indicated that the construction of the proposed Sheboygan pipeline lateral

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project would not result in any significant impacts on the use or management of the Forest. Construction activities would, however, cross the Ice Age Trail, as well as other recreational trails within the State forest and would likely result in the temporary closure of these trails during the construction period.

As proposed, the construction and operation of the pipeline laterals would not result in the clearing of extensive individual wooded areas. The amount of tree clearing needed in any specific wooded area is consistent with the highly fragmented and developed nature of the landscape in the pipeline lateral project areas.

### **2.9.2.3 Threatened and Endangered Species**

The region of Wisconsin in which the proposed pipeline lateral projects would be constructed is dominated by agriculture and, therefore, does not support many threatened, endangered or rare species or communities. Many occurrences of these types of species or communities are associated with waterbodies or consist of species that do not have large area habitat requirements (e.g., insects and snails). Although unlikely, construction of the proposed pipeline lateral projects could affect rare fish, mussels, birds, turtles, and reptiles.

Rare fish and mussel species occurring in waterways crossed by the proposed pipelines would be protected by using boring methods to install the pipelines. Blanding's turtle and the wood turtle, which may be present at several locations, would be protected by performing construction outside of the turtles' active season or the use of exclusion fencing to keep turtles out of construction zones.

With respect to rare birds, such as the bald eagle, northern harrier, and dickcissel, additional surveys would be conducted to ensure that these birds are not nesting within the construction rights-of-way or within a critical distance of construction activities. If active nests are located in these areas, the timing of construction would be adjusted to avoid disturbance to nesting activities.

The Butler's garter snake may also be present at two locations along the proposed pipeline lateral rights-of-way. Because of the size and quality of the suitable habitat for the snake, no special conservation measures would be required and the sites would be covered under a broad Incidental Take Authorization.

### **2.9.2.4 Land Use**

The Hartford/West Bend, Sheboygan, Chilton, and Denmark laterals are located in areas where the major land use is agriculture, with scattered low-density residential areas. A portion of the Sheboygan lateral would cross through lands of the Kettle Moraine State Forest. Otherwise, forested lands along these four pipeline laterals are few and scattered.

The Fox Valley and Southwest Green Bay laterals both extend from agricultural lands into actively expanding urban areas. Residential and commercial development are the dominant land uses as these routes enter urban areas. Only small, forest resources are present along these two Project routes.

Construction of large pipelines in agricultural lands can damage or reduce the suitability of lands for agricultural uses. Substantial concerns included soil compaction, mixing of soil layers,

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disrupting drainage patterns, and increasing the density of rocks near the surface of the soil. These actions could result in reduced crop productivity or damage to farm equipment.

Improper construction activities could disrupt natural drainage or damage existing surface and subsurface drainage systems. Underground drainage tiles could be cut during trenching and shallow tiles outside of the trench area could be damaged or displaced by heavy equipment, particularly where soil grading or topsoil stripping has reduced the depth of soil between the drainage tiles and construction equipment. Inadequate compaction of trench backfill could cause subsidence of soil over the pipeline, altering field drainage, and causing water to pond, thereby delaying planting or killing crops. Disruption of surface and subsurface drainage systems could also cause temporary crop losses adjacent to the right-of-way.

Both We Energies and WPS have proposed practices to be used when constructing the proposed pipeline laterals through agricultural lands. These construction practices are based on experience with past pipeline projects and include practices to address all of the major concerns noted above. Implementing the proposed agricultural construction practices should greatly reduce or eliminate the major concerns associated with construction through farmlands.

In areas dominated by residential and/or commercial land uses, construction activities associated with the proposed pipelines lateral projects could result in locally increased dust and particulate emissions, noise and vibrations, and minor traffic disruptions. These adverse effects, however, would be temporary and relatively minor.

#### **2.9.2.5 Cultural Resources**

Site file searches of the Chilton, Denmark, and Southwest Green Bay pipeline lateral projects did not identify any cultural resources in the proposed project areas. However, literature reviews and site file searches resulted in the identification of several possible sites of cultural significance in the vicinity of the Hartford/West Bend, Fox Valley, and Sheboygan project sites including the following:

- two previously recorded archaeological sites and a Euro-American era historic cemetery in the vicinity of the proposed Hartford/West Bend facilities;
- two Native American village sites in the general vicinity of Segment 4 of the proposed Fox Valley Project, north of the Fox River; and
- a historic Euro-American era cemetery, the Empire Cemetery, adjacent to the proposed Sheboygan Lateral and a potential non-recorded archaeological site located in the vicinity of Mullet Lake.

We Energies has committed to having a professional cultural resource consultant conduct a Phase I survey of the Hartford/West Bend and Fox River Valley project areas to determine if these cultural resources would be affected by the proposed projects.

In the area of Mullet Lake, WPS has already conducted a Phase I archaeological survey, which has confirmed the potential for archaeological resources in this area. WPS has committed to conduct Phase II investigations in this area, and either avoid any significant archaeological sites, or develop a treatment plan for those sites that would be adversely affected by their project.

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In regard to cultural resources, the COE would be responsible for ensuring compliance with section 106 of the NHPA, as part of its permitting process under section 404 of the CWA for these proposed pipeline laterals and Project facilities.

### **2.9.3 Summary of Nonjurisdictional Facilities**

Under the NEPA, the Commission has the responsibility to attempt to review infrastructure facilities that are associated with, and a necessary part of, a jurisdictional project. Our review of the nonjurisdictional facilities and PSC and WDNR EAs, as described above, indicates that construction would not have an adverse impact on the environment. As previously stated, the applicable federal and state permits would be obtained by We Energies, WPS, ComEd, Guardian, and ATC as necessary.