



**ROVER PIPELINE**

An ENERGY TRANSFER Company

***ROVER PIPELINE LLC***

***Rover Pipeline Project***

***Response to FERC  
Environmental Information Request  
Dated June 16, 2015***

***FERC Docket No. CP15-93-000***

***July 2015***



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**Resource Report 1 – General Project Description**

1. *Clarify whether the area of impact required for installation and operation of the cathodic protection system(s) would require additional work space and acquisition of permanent easements beyond those presented in the application and subsequent filings. If these additional areas would be required, provide estimated acres of impact (construction and operation) by land use type and location (i.e., Project milepost). If this information is not currently available, provide an estimated date of submission.*

**Response:**

No additional workspace or permanent easement will be required for installation and operation of the cathodic protection system.

Rover will use a mix of cased deep well and conventional ground beds to provide cathodic protection for the pipeline. Deep wells are the preferred method because they require the least amount of space and can be installed within the existing pipeline easement or within the fenceline of the aboveground facilities. Deep well anodes will be used in all areas except those where rock may make the use of deep well anode beds infeasible.

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2. *Provide an estimate of the expected timeframe (i.e., in days or weeks) to complete each of the construction activities in the bullet list that Rover submitted in its response filed on April 22, 2015 (Resource Report [RR] 1, comment #6).*

**Response:**

Rover cannot definitively answer this question. The list of sequential activities that Rover provided on April 22, 2015 illustrates the assembly-line nature of the activities. However, the dual pipeline segment of the project (Supply Connector and Mainlines A and B) will involve six separate spreads, with separate contractors. Rover estimates that each spread will take between 12 and 20 weeks to complete, which would require that each activity should be completed between 12 and 20 weeks across each spread. Construction is a dynamic process. Weather delays, landowner requests, special circumstances with waterbody, wetland, road, and foreign pipeline crossings, etc. will affect the duration of each activity and the progression of the assembly line.

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3. *While Rover's April 22, 2015, response (RR 1, comment #17) was informative, it does not provide the site-specific justification that is essential for our evaluation of each proposed modification to the Federal Energy Regulatory Commission's (FERC) Wetland and Waterbody Construction and Mitigation Procedures (Procedures). Provide site-specific justifications for the use of a construction right-of-way greater than 75 feet wide in wetlands.*

**Response:**

Table 2 (dated July 2015) provides site-specific justification for use of a wider than 75-foot construction right-of-way in wetlands and is included in Volume IIA, Appendix 1A.

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**Alignment Sheets**

1. *Rover's April 22, 2015, response (Alignment Sheet, comments #2 and #3) did not identify a construction need for additional temporary workspace at road crossings within the roadway itself. Therefore, provide revised alignment sheets that accurately depict all proposed construction work areas, that clearly illustrate areas of disturbance associated with construction and those that would be maintained for operation of the Project. Guidance on development of the alignment sheets can be found in 18 CFR Part 380, the FERC Upland Erosion Control, Revegetation, and Maintenance Plan at sections III.A.1 and IV.A.1, and FERC's Guidance Manual section 1.1.3.*

**Response:**

Rover has reduced the construction work area across public roadways to the permanent easement and an additional 20 feet adjacent to the permanent easement. The revised construction work areas are shown in the revised alignment sheets provided in Volume IIB, Attachment 1Aa. The revised Table 1A-3 is provided in Volume IIA, Appendix 1A.

The impact of this workspace reduction is negligible on Project-wide basis. However, when acreage impacts were recalculated, a transcription error was discovered in the acreage numbers for forest in Livingston County, Michigan on the Market Segment that added 17.94 acres for construction and 8.7 acres for operation. The net change in Project acreage impacts increased by 7.74 acres for construction and 8.7 acres for operation as listed in revised Table 8A-2 in Volume IIA, Appendix 8A.

As a point of clarification, public and private roads are maintained open to traffic at all times except when traffic is stopped for a short period to allow construction equipment to cross the road or to move construction materials onto the construction right-of-way. Actual work space that is used within a roadway at any one time is therefore limited to that needed to move the equipment across the road or materials onto the right-of-way. As originally depicted, the construction work area (construction right-of-way and additional temporary work space) across a public road is a typical, industry-wide configuration that identifies the length of the road that may be affected during construction for permitting and approval purposes. It also provides flexibility for the equipment crossing locations so that equipment can be moved around construction activities that may be occurring along the construction right-of-way and avoids multiple equipment crossings in one specific area of the road that could lead to damage of the road in that one area over time. This is consistent with the FERC Plan at Section III.A.1 ("identify all construction work areas ... that would be needed for safe construction") and FERC's Guidance Manual section 1.1.3 ("... all pipeline segments ... extra work/staging areas ... need to be clearly and accurately shown on ... photo-based alignment sheets"). This revision addresses all roadways noted in FERC's Environmental Information Request dated April 2, 2015, except for private roads on the CGT

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Lateral (MP 3.33), Clarington Lateral (MP 30.24), Burgettstown Lateral (MP 2.7), and Mainlines A and B (MP 86.43), plus additional roadways as identified by Rover.

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2. *Rover's April 22, 2015, response (Alignment Sheet comment #5, part g) stated that the false right-of-way for the additional temporary workspace at milepost (MP) 97.73 was depicted in Horizontal Directional Drilling Drawing MK-P4-28. However, the drawing does not fully depict the false right-of-way. Provide an updated drawing that accurately depicts the entire false right-of-way.*

**Response:**

Drawing MK-P4-28 (update 6/3/15) submitted on June 10, 2015 addresses this comment.

See: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5327](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5327).

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3. *Rover's April 22, 2015, response (Alignment Sheet comment #8) states table 1A-7 was updated to resolve the discrepancies; however, it appears that an updated table was not included in the filing. Provide the updated table or identify its location in the April filing.*

**Response:**

Revised Table 1A-7 was submitted on June 10, 2015.

See: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150611-5023](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150611-5023).

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**Resource Report 2 – Water Use and Quality**

1. *Provide an update on the addendum report for wetland and waterbody field surveys for the remaining portion of the pipeline routes, including an estimated date of submission. When submitting the report, be sure to include all associated updated tables including but not limited to tables 2.3-1, 2A-5, 2A-5a, 2A-6, 2A-6a, and 2A-11. Also, include updated alignment sheets that depict all waterbody and wetlands crossings, regardless of survey status.*

**Response:**

The wetland addendum reports, revised alignment sheets and Tables 2.3-1, 2A-5, 2A-5a, 2A-6, 2A-6a, and 2A-11, reflecting the new information, were submitted on June 10, 2015.

See: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5273](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5273) and  
[http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5327](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5327).

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2. *Provide an update on correspondence with federal agencies regarding the proposed mitigation for wetland impacts and all the federal authorizations that would be related to these activities. If no mitigation measures have been identified to date, provide an estimated timeframe for when mitigation measures would be identified.*

**Response:**

Supplements to applications submitted in February 2015, to the U.S. Army Corps of Engineers (USACE), Huntington, Pittsburgh and Buffalo Districts, were submitted on June 9, 2015. The supplement to the application submitted in February 2015 to the Michigan Department of Environmental Quality (MDEQ), Jackson and Lansing Districts, was submitted on June 25, 2015. These supplements provided the same Project updates as provided to FERC on June 10, 2015, for those areas under each agency's review. Copies of these supplements to the applications are included in Volume IIB, Attachment 2B.

Resource Report 2, Sections 2.3.4 and 2.3.5 provides a description of mitigation measures and options for compensatory mitigation for wetland impacts. Rover anticipates finalizing the compensatory mitigation plan for the Project with the USACE and MDEQ by the fourth quarter 2015.

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3. *Provide a site-specific crossing plan for the proposed open-cut crossing of the unnamed tributary to Brushy Fork (Cadiz Tie-in) that includes specific mitigation measures to avoid or minimize in-stream turbidity.*

**Response:**

Rover relocated the Cadiz Tie-in as described in its Supplement submitted on June 10, 2015. See [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5273](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5273) and Table 10D in Appendix 10D, and Figure 10H-3 in Appendix 10H.

With the relocation of the Cadiz Tie-In to a new site approximately 0.5 mile to the west, the tributary to Brushy Fork Creek is no longer within the Cadiz Tie-In site or in the area affected by the Tie-in of the Clarrington and Cadiz Laterals and Supply Connector Lines A and B. The 2.5-foot-wide, perennial tributary will be crossed by the Cadiz Lateral using standard waterbody crossing procedures described in Resource Report 1, Section 1.6.1.3 and in accordance with Rover's Wetland and Waterbody Crossing Procedures. Therefore, no site-specific open-cut crossing plan has been developed.

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4. *Rover's April 22, 2015, response (RR 2, comment #20, part b [5]) implies that waterbody/drainage feature identification #S4H-CR-158 should be included in table 2A-5a; however, no feature with this identification is reported in the table. Verify whether this feature would be crossed by the Project and provide updated tables, as appropriate.*

**Response:**

Waterbody S4H-CR-15 (Marsh Run) is listed in Table 2A-5 submitted on June 10, 2015.

See [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5273](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5273).

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5. *Based on review of the alignment sheets, we identified several waterbodies that appear to be crossed by the Project but were not listed in RR 2 tables and were neither depicted nor labeled on the alignment sheets. Provide updated tables and alignment sheets clearing indicating if the following waterbodies are crossed by the Project:*
- a. *drainage ditch (depicted by an orange line) near MP 25.7 on the Burgettstown Lateral;*
  - b. *stream near MP 1.7 on the Cadiz Lateral;*
  - c. *natural drainage features near MP 5.9 and MP 24.0 on the Clarington Lateral;*
  - d. *drainage near MP 5.6 on Supply Connector Laterals A and B;*
  - e. *drainage features near MP 6.0 and MP 6.2, and an aquatic feature near MP 25.0 on the Seneca Lateral;*
  - f. *drainage features near MP 47.0, MP 71.6, and MP 85.87 on Mainlines A and B; and*
  - g. *drainages D7H-MO-415, D7H-MO-414, and D7H-MO-410 at the Clarington Compressor Station.*

**Response:**

The following responses are based on the alignment sheets and updated tables provided on June 10, 2015.

See: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5327](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5327) and [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5273](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5273).

<p>a. <i>drainage ditch (depicted by an orange line) near MP 25.7 on the Burgettstown Lateral;</i></p>	<p>As stated in Rover’s response to the Environmental Information Request dated April 2, 2015, there is no drainage at this location. The “natural drainage” listed in the profile band on the alignment sheet near MP 25.7 on the Burgettstown Lateral has no defined bed or bank, and was not delineated as a waterbody or drainage ditch. As a” natural drainage,” it is a swale that conveys sheet flow during rain events.</p>
<p>b. <i>stream near MP 1.7 on the Cadiz Lateral;</i></p>	<p>The pipeline was re-routed in this area (see Variation CA1 on Table 10D in Appendix 10D) and the perceived stream near MP 1.7 on the Cadiz Lateral is no longer crossed.</p>
<p>c. <i>natural drainage features near MP 5.9 and MP 24.0 on the Clarington Lateral;</i></p>	<p>There is a stream (S4H-BE-506) at MP 5.92 and a stream at MP 24.03 (W2ES-BE-341) on the Clarington Lateral. Both are depicted and labeled on the alignment sheets, and listed on Table 2A-5</p>

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<p>d. <i>drainage near MP 5.6 on Supply Connector Laterals A and B;</i></p>	<p>There is a stream (S4H-HR-491) at MP 5.62 on Supply Connector Laterals A and B. This stream is depicted and labeled on the alignment sheet, and listed on Table 2A-5.</p>
<p>e. <i>drainage features near MP 6.0 and MP 6.2, and an aquatic feature near MP 25.0 on the Seneca Lateral;</i></p>	<p>As stated in Rover’s response to the Environmental Information Request dated April 2, 2015, there are no drainages near MPs 6.0 and 6.2 on the Seneca Lateral. The “natural drainages” listed in the profile band on the alignment sheets have no defined bed or bank, and were not delineated as waterbodies or drainage ditches. As a natural drainage, these are swales that convey sheet flow during rain events.  There is a stream (S2TB-MO-160) at MP 24.98 on the Seneca Lateral. This stream is depicted and labeled on the alignment sheet, and listed on Table 2A-5.</p>
<p>f. <i>drainage features near MP 47.0, MP 71.6, and MP 85.87 on Mainlines A and B; and</i></p>	<p>As stated in Rover’s response to the Environmental Information Request dated April 2, 2015, there are no drainages near MP 47.0 on Mainlines A and B. The “upland drainage” listed in the profile band on the alignment sheet has no defined bed or bank, and was not delineated as a waterbody or drainage ditch. As an “upland drainage,” this is a swale that conveys sheet flow during rain events.  There are streams at MP 71.67 and MP 71.73 (S3H-WA-149 and S3H-WA-150, respectively), and a roadside drainage ditch (D4H-AS-472) at MP 85.88 on Mainlines A and B. These are depicted and labeled on the alignment sheets, and listed on Table 2A-5 and Table 2A-6, respectively.</p>
<p>g. <i>drainages D7H-MO-415, D7H-MO-414, and D7H-MO-410 at the Clarington Compressor Station.</i></p>	<p>As stated in Rover’s response to the Environmental Information Request dated April 2, 2015, these drainages are not affected by construction or operation of the Clarington Compressor Station and are not included on any tables.</p>

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**Resource Report 3 – Fisheries, Vegetation and Wildlife**

1. *Provide updated correspondence with state agencies including the Pennsylvania Department of Conservation and Natural Resources, Ohio Environmental Protection Agency, Michigan Department of Environmental Quality, and West Virginia Department of Environmental Protection regarding the identification of vegetative communities of special concern in the Project area.*

**Response:**

The Ohio Environmental Protection Agency (OEPA), Michigan Department of Environmental Quality (MDEQ), and West Virginia Department of Natural Resources (WVDNR) did not identify any vegetative communities of special concern within the Project area during their review of the Project area within their jurisdiction and as documented in previous correspondence submitted as part of Rover's application. Therefore, no additional correspondence with these agencies pertaining to vegetative plant communities of special concern is necessary.

The Pennsylvania Department of Conservation and Natural Resources (PDCNR) did identify three plant species that could potentially occur within the Project area. Rover has coordinated with the PDCNR to identify areas within the Project area requiring presence/absence surveys. Each species has its own unique survey timeframe based on its flowering. To date, the snow trillium (*Trillium nivale*) is the only one of the three identified plants where surveys have been completed. No snow trillium were found in the areas surveyed in April 2015. Surveys for the other two plants, heartleaf meehania (*Meehania cordata*) and stalked bulrush (*Scripus pedicellatus*), will be conducted July 2015. A report of the survey findings for the three plant species will be provided to the PDCNR and FERC in the third quarter of 2015.

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2. *Provide a summary of interior forest areas potentially impacted by the Project per the U.S. Environmental Protection Agency letter dated December 18, 2014. Provide details on proposed avoidance, minimization, and mitigation measures of potential impacts on this habitat due to construction and operation (in acres).*

**Response:**

**Summary of Potential Impacts**

*A Guide to the Conservation of Forest Interior Dwelling Bird in the Chesapeake Bay Critical Area*, identifies forest interior dwelling bird habitat as forest tracts 100 acres or larger (Jones 2001). It has also been suggested that canopy gap width may affect territorial behavior, and that when gaps reach 25 to 40 meters wide (82 to 131 feet), territorial behavior of forest interior species (in this case, crossing gaps to maintain territory) can be significantly affected (Rail et al. 1997). However, crossing has been observed to be significantly more common with gaps less than 25 meters wide (82 feet) (Rail et al. 1997). For the Project, the widest construction right-of-way would be 125 feet in upland forested areas and 75 feet in wetland forested areas, where one pipeline will be installed, as in the Supply Laterals where the most forested area is encountered. While this would temporarily affect territorial behavior based on the references cited above, only a 50-foot-wide corridor would be maintained in upland areas following construction, which would greatly increase the potential crossings for forest interior dwelling birds given the 1997 study. Along the dual pipeline sections of the project, where the forested habitat significantly decreases as it continues west, the construction right-of-way would be a maximum of 135 feet in upland forested areas, and 95 feet in wetland forested areas, and would be maintained as a 60-foot-wide permanent easement in upland areas, which is also less than the 25-meter corridor referenced in the 1997 study.

Other indirect impacts to forest interior species have been shown to result from forest fragmentation. Gibbs and Faaborg (1990) have shown that an increase in forest fragmentation can reduce pairing success in certain species. Nest predation and brown-headed cowbird (*Molothrus ater*) brood parasitism have also been shown to increase after conversion of intact forest to early successional stages and an increase in forest edge (Batory and Baldi 2004; Brittingham and Temple, 1983).

In the last two cited studies, adverse effects to interior nesting species in forests declined as distance to open habitat increased. Batory and Baldi (2004) suggest that nests in forested areas experience the highest predation rate when situated 0 to 24 meters (0 to 78 feet) from openings, and that the effect was insignificant at distances greater than 50 meters from openings (164 feet). In Brittingham and Temple (1983), cowbird parasitism significantly declined in study regions 100 to 199 meters (328 to 653 feet) from openings versus regions 0 to 99 meters (0 to 324 feet) from openings. These studies suggest, as have other similar studies, that “edge effects” caused by the boundary of unforested areas with forested areas occur within a width of forest, and that generally,

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these effects decline with increasing distance from openings. In these cases, nest predation and brown-headed cowbird parasitism were observed to be “edge effects.” The width of forest where edge effects occur can vary greatly depending on what effect is being observed, but typically edge (habitat) is defined as a 100-meter-wide (~300-foot-wide) section of forest along the bordering open land (i.e., edge effects generally diminish to insignificant levels at distances greater than 100 meters from openings) (Temple, 1986).

Using this framework for an analysis, as the pipeline right-of-way transects a tract of unfragmented forest land, it will impact not only the forest interior area situated directly within the right-of-way, but it will create edge habitat along the right-of-way, extending approximately 300 feet into the forest on either side. Indirect impact to forest interior nesting species will likely occur as a gradient of effects that diminish further from the right-of-way, as is suggested in literature on edge effects.

The Rover pipelines cross forested tracts in West Virginia, Pennsylvania, and southeastern Ohio where large expanses of forested areas in the Project area are prevalent. However, while the region is generally forested, there are few 100-acre tracts of forest that are not bisected by the network of utility rights-of-way and roadways, or broken up by patches of cleared areas for agricultural fields, pastures, and lawn areas around residences, commercial and industrial development, schools, churches, etc.. Only the Sherwood and Burgettstown Laterals cross any 100-acre entirely forested areas, and those areas are limited in number. Forested areas along the other pipeline segments are significantly smaller. As listed in Table 8A-2, the Project will require approximately 3,031.79 acres of forest clearing, accounting for approximately 31.5 percent of total land affected during construction. Impacts to forest resources will be minimized or mitigated for as described below.

### **Avoidance and Minimization**

The Supply Laterals area is predominantly forested, and there are no alternatives to the proposed pipeline routes that would significantly decrease forested impacts. Along the Mainline and Market Segment areas, Rover has already avoided and minimized impacts to forested areas to preserve isolated tree stands where possible. The new pipelines will be installed adjacent to existing rights-of-way for 24 percent of their total length. Approximately 68 percent of the new pipeline system will be installed in non-forested areas (i.e., agricultural, open land, residential, industrial/commercial, and open water habitats), thereby minimizing impacts on forested habitat. Contractor yards will be located in open and industrial/commercial land.

Since the Project’s inception, Rover has worked diligently to reduce impacts to environmental resources, including upland and wetland forested areas. Many of these changes have been documented in filings provided over the past year, and innumerable adjustments have been made during the original planning phase of the Project. As previously stated, Rover began by identifying the locations of the required supply and delivery connections, and began to route the pipeline segments between them, always keeping in mind the minimization of impacts to environmental resources. Likewise, Rover has devised multiple construction right-of-way configurations to reduce impacts to sensitive environmental resources. The Project currently includes 31 horizontal

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directional drills and has removed travel lanes between the drill boxes wherever possible, which will further avoid impacts to forested areas.

**Mitigation**

Compensatory mitigation for unavoidable impacts to forest resources will be addressed for wetland and upland forested areas.

In compliance with federal and state regulatory requirements relative to wetland protection, Rover is developing a compensatory mitigation plan for wetlands through approved programs in place for each of the three U.S. Army Corps of Engineers (USACE) Districts and the Michigan Department of Environmental Quality (MDEQ). These programs include in-lieu fee programs or the purchase of mitigation credits from established wetland banks, prior to construction. Mitigation measures to avoid and minimize wetland impacts (including forested wetland impacts) are included in Rover's construction plans previously filed with the FERC. Rover is consulting with the USACE and MDEQ for guidance on the development of the mitigation plan to compensate for temporary and permanent wetland impacts. Supplements documenting wetland and waterbody survey data from surveys completed through mid-May 2015, along with revised tables of potential impacts on these wetland and waterbody resources, have been provided to the USACE and MDEQ in supplemental filings of addendum wetland delineation reports and permit applications in June 2015. Copies of the addendum wetland delineation reports were included in the June 10, 2015 filing as Volume IIB, ATT2A. The supplemental application information is enclosed in Volume IIB, Attachment 2B.

For upland forested areas, Rover is coordinating with the U.S. Fish and Wildlife Service (USFWS) for unavoidable impacts on forest resources that are used by migratory birds or the federally listed Indiana and northern long-eared bats. The USFWS will conduct an analysis of the Project using the Habitat Evaluation Assessment (HEA) Tool that will assess forest resources affected by the Project based on the relative value of the ecological services that habitat provides. Rover has conducted baseline habitat surveys of forested areas with a focus on bat habitat to document tree species composition along the Project route. The HEA Tool will be used by USFWS to evaluate the data provided and assess the relative importance of the habitat that will be affected. Compensatory mitigation would be assessed based on the highest ratio for any given area for either federally listed bats or migratory birds. For example, habitat for a federally-listed bat species usually includes older forests, meaning that those habitats typically will have an equal or higher ratio (or importance) for federally-listed bats than as habitat for migratory birds.

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3. *Provide documentation of Rover's coordination with the U.S. Fish and Wildlife Service in the development of the Migratory Bird Mitigation Plan and specific locations and Project-specific conservation measures for migratory birds, as well as proposed mitigation for two bald eagle nests in the vicinity of the Project.*

**Response:**

*Migratory Bird Conservation Plan*

Meeting notes from teleconferences on May 13, 2015 and June 3, 2015 discussing migratory birds are enclosed in Volume IIA, Appendix 3D. In addition, Rover previously filed notes from a meeting on April 15, 2015 with USFWS wherein migratory birds were discussed in detail. Discussions with USFWS will continue and the results of the discussions will be incorporated into subsequent versions of the Migratory Bird Conservation Plan. An updated version of the Migratory Bird Conservation Plan reflecting the Project scope changes since the previous version, is included in Volume IIA, Appendix 3C.

*Bald Eagles*

The USFWS recommends no tree clearing occur within 660 feet of a bald eagle nest or within any woodlot supporting a nest tree. Further, the USFWS recommends that construction activities within 660 feet of a nest or within the direct line of site of a nest be restricted from January 15 through July 31 to prevent disturbance of the eagles from the egg-laying period until the young fledge, which is their most vulnerable time.

The bald eagle nest identified by USFWS near milepost (MP) 48 on the Mainline in Stark County is approximately 770 feet from the workspace. No mitigation will therefore be required.

Rover has not obtained landowner permission to survey the tract near the bald eagle nest reported by USFWS near MP 95.5 on the Mainline at the Ashland/Richland county line. Mitigation will be recommended if appropriate once the location of the nest is determined.

A third bald eagle nest was identified by Rover biologists near MP 155.2 on the Mainline. It is approximately 200 feet northeast of the proposed workspace, on the opposite side of a cleared electrical right-of-way. To mitigate potential impacts to the nest, Rover is proposing to not clear or construct between MPs 155.0 (County Route 23) and approximate MP 155.25 between January 15th and July 31st.

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4. *The U.S. Fish and Wildlife Service recommended that all clearing be avoided from May 15-August 15 to avoid impacts on the majority of the Birds of Conservation Concern for the Project area. Verify that Rover commits to avoiding all clearing during this recommended timeframe.*

**Response:**

The USFWS and Rover are currently discussing the potential clearing schedule for portions of the Project where Birds of Conservation Concern are anticipated. Meeting notes from teleconferences on May 13, 2015 and June 3, 2015 discussing migratory birds are enclosed in Volume IIA, Appendix 3D. Rover will submit updates with the FERC as discussions continue.

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5. *Provide an estimated timeframe for an updated Biological Evaluation that takes into account the April 2015 habitat surveys and the May/June 2015 mist netting surveys. Indicate if a draft version would be provided following completion of the habitat surveys but prior to the mist netting surveys.*

**Response:**

The habitat surveys for the Indiana and northern long-eared bat have been completed and the mist net surveys for these species are in progress. Rover will submit an excel spread sheet with the results of the bat habitat surveys to the USFWS upon completion, and will submit the updated Biological Evaluation in August 2015.

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6. *Provide documentation of Rover's coordination with federal and state resource agencies to identify locations within the Project area that would require species-specific surveys for protected species as stated in Rover's April 22, 2015, response (see RR 3, comment #9). In addition, provide the estimated timing of the completion of surveys for federal and state listed mussels, reptile, and plant species.*

**Response:**

Rover has coordinated with the applicable federal and state resource agencies to identify locations along the Project routes that require species-specific surveys. These species-specific surveys, in most cases, require that an approved biologist perform a desktop review of the Project area to identify the areas that would require presence-absence surveys. Once the desktop review has been completed and areas requiring surveys have been identified, survey plans are provided to the appropriate federal and state resource agencies.

Streams requiring mussel surveys have been identified in West Virginia, Ohio, and Michigan, and survey plans and applications are being submitted to the appropriate agencies in those states. The Pennsylvania Fish and Boat Commission has determined that the Project in Pennsylvania does not cross any streams known to contain protected mussel populations and therefore, no surveys are required (see Volume IIA, Appendix 3F). Mussel surveys are expected to be completed in July 2015, and reports will be provided to the FERC and appropriate federal and state resource agencies in August 2015.

Rover is coordinating with approved herpetologists to perform desktop review of the portions of the Project area identified by the state and federal resource agencies as potentially containing protected reptile species or their critical habitat. The desktop review is expected to be completed by August 2015. Once the areas that could potentially contain protected reptile species are identified, Rover plans to coordinate with appropriate federal and state agencies to identify the most appropriate measures to minimize and avoid impacts on these species.

The areas requiring federal and state protected plant surveys have been identified and surveys have begun (see response above to Resource Report 3, Number 1).

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7. *Provide a discussion of how Rover proposes to address impacts related to invasive species that includes: how they would be identified during construction; measures to control the spread of invasive species from the Project area to other areas or regions; decontamination methods for vehicles, equipment, and materials (including equipment mats); and proper disposal of any materials resulting from these measures. Either provide documentation of coordination with the state agencies to develop invasive species management plans or documentation that those agencies do not require such plans.*

**Response:**

The region encompassing the Project area is not prone to aggressive invasive species that would require extensive preconstruction measures, as in other regions of the United States. Rover has been in contact with agencies across West Virginia, Pennsylvania, Ohio, and Michigan and none of the states require an invasive species management plan or has requirements for specific activities regarding invasive species. However, each state has a noxious plant list, which Rover has previously submitted and will utilize in the restoration phase of the Project to monitor for any areas where the species may become established and control them, all per the Rover Plan and Procedures, as well as the Agricultural Impact Mitigation Plans for Ohio and Michigan. In addition, it was noted in the consultations that certain agencies, such as the Michigan Department of Environmental Quality, may add conditions to permits regarding invasive species. Rover will also work with any agency or landowner who identifies a concern with a specific invasive species and will coordinate with them to control that specific species. Documentation of agency contacts regarding this specific issue are included in Volume IIA, Appendix 3E.

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8. *Based on the description provided in section 3.2.3 of RR 3 and Rover’s Upland Erosion Control, Revegetation, and Maintenance Plan and Agricultural Impact Mitigation Plan – Ohio, verify that during revegetation and restoration, the seed mix used by Rover would include native plant species which include species of nectar-producing plants and milkweed endemic to the area where this mix would be applied, as recommended in the U.S. Department of Interior’s letter dated December 18, 2014.*

**Response:**

Rover has researched native nectar-producing and milkweed plant species and has made several selections of species that:

- provide forage and or habitat for butterflies, bees, and other pollinators;
- are endemic to the project area;
- are not listed as noxious or invasive by the USDA-NRCS;
- are not listed as aggressive by the states crossed by the Project and the USDA-NRCS;
- are commercially available as seed;
- are accepted/recommended for use as forage for butterflies, bees and other pollinators; and
- occupy appropriate layers of vegetative community strata, including herbaceous, shrubs, and up to small trees.

These species are listed in the table below. Rover intends to incorporate endemic species of nectar-producing plants and milkweed into its upland and wetland seed mixes. Rover has verified that these species are commercially available in the Project area; however, use of these species will depend on availability at the time of restoration, and will be subject to approval of landowners.

State/Habitat	Scientific Name	Common Name
<b>Michigan</b>		
Wetlands	<i>Asclepias Incarnata</i>	Swamp Milkweed
	<i>Aster laevis</i>	Smooth Aster
	<i>Aster puniceus</i>	Swamp Blue Aster
	<i>Cornus amomum</i>	Silky Dogwood
	<i>Cornus stolonifera</i>	Red-Osier Dogwood
	<i>Eupatorium maculatum</i>	Joe Pye-Weed
	<i>Eupatorium perfoliatum</i>	Boneset
	<i>Lobelia cardinalis</i>	Cardinal Flower
	<i>Lobelia siphilitica</i>	Blue Lobelia
	<i>Silphium perfoliatum</i>	Cup Plant
	<i>Viburnum lentago</i>	Nannyberry
Uplands	<i>Asclepias tuberosa</i>	Butterfly Weed
	<i>Aster laevis</i>	Smooth Blue Aster
	<i>Aster macrophyllus</i>	Big-leaved Aster
	<i>Eupatorium perfoliatum</i>	Boneset
	<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis

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State/Habitat	Scientific Name	Common Name
Upland	<i>Monarda fistulosa</i>	Wild Bergamot
	<i>Prunus virginica</i>	Chokeberry
	<i>Rudbeckia hirta</i>	Black-eyed Susan
	<i>Solidago caesia</i>	Blue-stemmed Goldenrod
	<i>Tradescantia ohiensis</i>	Ohio Spiderwort
	<i>Viburnum lentago</i>	Nannyberry
<b>Ohio, West Virginia, Pennsylvania</b>		
Wetlands	<i>Asclepias Incarnata</i>	Swamp Milkweed
	<i>Eupatorium maculatum</i>	Joe Pye-Weed
	<i>Eupatorium perfoliatum</i>	Boneset
	<i>Eupatorium perpureum</i>	Purple-Node Joe Pye-Weed
	<i>Cornus stolonifera</i>	Red-Osier Dogwood
	<i>Iris shrevei</i>	Southern Blue Flag
	<i>Lobelia cardinalis</i>	Cardinal Flower
	<i>Lobelia siphilitica</i>	Blue Lobelia
	<i>Lindera benzoin</i>	Spicebush
	<i>Sambucus canadensis</i>	Elderberry
	<i>Silphium perfoliatum</i>	Cup Plant
Uplands	<i>Asclepias tuberosa</i>	Butterfly Weed
	<i>Aster divaricatus</i>	White-wood Aster
	<i>Coreopsis lanceolata</i>	Lanceleaf Coreopsis
	<i>Cornus alterniflora</i>	Pagoda Dogwood
	<i>Echinacea purpurea</i>	Purple Coneflower
	<i>Monarda fistulosa</i>	Wild Bergamot
	<i>Pycnanthemum tenuifolium</i>	Sender Mountainmint
	<i>Rudbeckia hirta</i>	Black-eyed Susan
	<i>Rudbeckia triloba</i>	Three-lobed Coneflower
	<i>Solidago ptarmicoides</i>	Upland White Aster
	<i>Tradescantia ohiensis</i>	Ohio Spiderwort
Sources: National Wildlife Federation, Plants for Pollinators: A Collection of Favorites accessed at <a href="https://www.nwf.org/News-and-Magazines/National-Wildlife/Gardening/Archives/2010/Native-Plants-for-Pollinators.aspx">https://www.nwf.org/News-and-Magazines/National-Wildlife/Gardening/Archives/2010/Native-Plants-for-Pollinators.aspx</a> . Ohio State University Extension Fact Sheet: Native Landscaping for Birds, Bees, Butterflies and Other Wildlife accessed at <a href="http://ohioline.osu.edu/w-fact/0013.html">http://ohioline.osu.edu/w-fact/0013.html</a> . Ohio State University Extension; The Native Plants of Ohio, accessed at <a href="http://estore.osu-extension.org/">http://estore.osu-extension.org/</a> . Little Traverse Conservancy; Attracting Butterflies with Native Michigan Plants accessed at <a href="http://landtrust.org/Newsletters/Spring2001Newsletter/NativePlants.htm">http://landtrust.org/Newsletters/Spring2001Newsletter/NativePlants.htm</a> U.S. Department of Agriculture, Natural Resources Conservation Service Plants Database accessed at <a href="http://plants.usda.gov/java/">http://plants.usda.gov/java/</a> .		

Three species of milkweed (*Asclepia*) are endemic to the region: *Asclepis incarnata* (swamp milkweed), *Asclepias tuberosa* (butterfly milkweed) and *Asclepias syriaca* (common milkweed).

Swamp milkweed is a wetland species of milkweed. It prefers full sun, and is therefore well adapted for rights-of-way. It is not listed as an aggressive species in the Ohio State University's

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(OSU) list of native plants (OSU, 1998). Butterfly milkweed is an upland species of milkweed that is relatively slow-growing and not considered aggressive (OSU, 1998). The third endemic species of milkweed, common milkweed, is found in upland areas and is considered aggressive (OSU, 1998).

All three species are provide forage and habitat for the Monarch butterfly and other pollinators. However, the NRCS notes in the Plant Guide for swamp milkweed that “milkweed species, as a group, are known to contain cardiac glycosides that are poisonous both to humans and to livestock.” In addition, the NRCS Fact Sheet for butterfly milkweed cautions that, “At one time, milkweed was classified as a noxious weed due to reported toxic effects on livestock, and efforts were made to eradicate it. Milkweeds are thought to be poisonous to cows and sheep. Milkweed also can have invasive characteristics in disturbed areas.”

Rover is proposing to include the swamp milkweed in the wetland seed mix for the Project, and not include the upland species of milkweed in the upland seed mix for the Project. Rover is concerned that the upland milkweed species may be problematic for landowners with livestock across the Project area. The other species proposed for the project identified in the table above will provide habitat and forage for many species of pollinators. And the swamp milkweed, which will be contained in wetland areas where livestock will be less likely to encounter it, will increase available forage and habitat for the Monarch butterfly. Rover believes that the addition of an assortment of these species will enhance the quality of the habitat within the right-of-way once established.

References

OSU, 1998. OSU Extension; The Native Plants of Ohio

USDA, 2015. NRCS. Federal and State Composite list of Introduced, Invasive and Noxious Plants, accessed at <http://plants.usda.gov/java/noxComposite>

USDA, 2015. NRCS Plants Database accessed at <http://plants.usda.gov/java/>.

USDA, undated. NRCS. Plant Guide. Butterfly Milkweed. *Asclepias tuberosa*.

USDA, undated. NRCS. Plant Guide. Common Milkweed. *Asclepias syriaca*.

USDA, undated. NRCS. Plant Fact Sheet. Swamp Milkweed. *Asclepias incarnata*.

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9. Clarify the following issues for table 3A-3:
- a. *the subtotals and totals do not sum per the individual components for the following:*
    - i. *the Market Segment subtotals for palustrine emergent (PEM) wetlands, palustrine forested (PFO) wetlands, and total construction and operation acreages;*
    - ii. *the Clarington Lateral subtotals for open upland, contractor yard, and total construction acreages (47.99 acres for the contractor yard are not carried through); and*
    - iii. *the Burgettstown Lateral subtotal for open upland, access roads, and total construction and operation acreages (0.47 acre for access roads is not carried through).*
  - b. *there are several instances where the wetland operational impact acreages are greater than the wetland construction acreages. For example:*
    - i. *PFO and PEM for the Seneca Lateral;*
    - ii. *PEM for the Berne Lateral;*
    - iii. *PFO and PEM for the Clarington Lateral;*
    - iv. *PEM for the Burgettstown Receiver;*
    - v. *PEM for the Majorsville Lateral;*
    - vi. *palustrine scrub-shrub (PSS) and PFO for Supply Connector Laterals A and B;*
    - vii. *PEM and PFO for Mainlines A and B;*
    - viii. *PEM for Compressor Station 1; and*
    - ix. *PSS and PFO for the Market Segment.*

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*Reconcile these discrepancies and provide an updated table, as appropriate. Additionally, please ensure the updated table provides data that is consistent with that presented in tables 2A-11, 8A-2, and table 2 in the Migratory Bird Plan.*

**Response:**

- a. Errors in the spreadsheets used to calculate Table 3A-3 have been fixed and the revised table was submitted on June 10, 2015. However, with the changes in the workspace across public roads being submitted with this filing, Table 3A-3 has been revised again and is included in Volume IIA, Appendix 3A. Table 3A-3 has been cross-referenced with Table 8A-2 provided with this submittal. Volume IIA, Appendix 3C includes an updated Table 2 within the Migratory Bird Plan that corresponds to the updated Tables 3A-3 and 8A-2.
- b. Table 3A-3, as revised, also addresses these comments. Construction acreage for wetlands now reflect both temporary and permanent wetland impacts, not just those associated with temporary workspace.

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**Resource Report 4 – Cultural Resources**

**NOTE REGARDING CULTURAL RESOURCES:**

**All material filed with the Commission containing location, character, and ownership information about cultural resources must have the cover and any relevant pages therein clearly labeled in bold lettering: “CONTAINS PRIVILEGED INFORMATION – DO NOT RELEASE.”**

1. *In Rover’s April 22, 2015, response (see RR 4, comment #6) it provided copies of the requested reports, however a copy of the submittal letter to the Lac Vieux Desert Band of Lake Superior Chippewa Indians was not included. Provide the transmittal letter and any resulting comments from this tribe. Also, provide any resulting comments from the tribes that have been received since the April 22, 2015, filing.*

**Response:**

The submittal letter to the Lac Vieux Desert Band of Lake Superior Chippewa Indians was included in Volume IV, Attachment 4A (*Privileged and Confidential*) submitted by Rover on June 10, 2015. Attachment 4A also included copies of all correspondence from the tribes received since the April 22, 2015 filing.

See: [http://elibrary.FERC.gov/idmws/file\\_list.asp?accession\\_num=20150610-5275](http://elibrary.FERC.gov/idmws/file_list.asp?accession_num=20150610-5275).

No response from the Lac Vieux Desert Band of Lake Superior Chippewa Indians regarding the report has been received to date. No other tribal correspondence has been received since the submittal on June 10, 2015.

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2. *As previously requested, add a milepost column to table 15.1-1 of the Michigan Phase I Cultural Resources Survey report. Provide the revised table.*

**Response:**

A copy of Table 15.1-1, with mileposts in the third column, for those sites that are located along the Market Segment route as filed in April 22, 2015, for the Michigan Phase I Cultural Resources Survey report is included in Volume IV-PRIV, Attachment 4G, submitted as *Privileged and Confidential*.

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**Resource Report 6 – Geological Resources**

1. *Provide an update on the expected submission date for the following:*
  - a. *the desktop analysis for steep slopes, landslides, karst features, and historic underground mines; and*
  - b. *results of the geotechnical investigations.*

**Response:**

- a. The geotechnical data report including desktop analysis for steep slopes, landslides, and underground mines was submitted as Attachment 6B in Volume IIB on June 22, 2015. A desktop study of karst prone areas was submitted in Volume IIB as Attachment 6A on June 22, 2015.
- b. Results of geotechnical investigations completed to date, and an overview table are included in Volume IIB, Attachment 6C on an enclosed DVD.

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**Resource Report 7 – Soils**

1. *Table 7A-5 presents soil data for 406.48 miles of access roads; however, table 1A-4 reports a total of 84.92 miles would be required for the Project. Please clarify the apparent discrepancy and provide updated tables, as appropriate.*

**Response:**

The transcription errors have been corrected and the updated Table 7A-5, which corresponds to the Supplement submitted on June 10, 2015, is provided in Volume IIA, Appendix 7A.

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**Resource Report 8 – Land Use, Recreation, and Aesthetics**

1. *Rover’s April 22, 2015, response (RR 8, comment #1, part c) states that mainline valves are classified as aboveground facilities and are identified separate from the pipeline right-of-way in table 8A-2. However, a note within table 8A-2 states “The Burgettstown, Clarrington, Majorsville, and Sherwood Laterals, and the Mainlines pipeline right-of-way construction and operation acreages include permanent easements associated with MLVs totaling 7.13 acres.” Clarify how the acreages for mainline valves are accounted for in the table and provide an updated table, as appropriate.*

**Response:**

The acreages listed in Table 8A-2 include all acres affected by construction and operation of the pipeline and aboveground facilities. Because the MLVs will be installed within the permanent pipeline easement, land used for construction and operation of the MLVs is included with the pipeline as stated in the note at the end of Table 8A-2. The note only quantifies that a total of 7.13 acres of the permanent easement will be occupied by the MLVs.

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2. *As previously requested on February 2, 2015 (RR 8, comment #4), and April 2, 2015 (RR 8, comment #2), provide a detailed description for each aboveground facility site describing the modifications to the existing land use types, and characterize the resulting operational footprint with emphasis on areas outside of the physical structures depicted in the Plot Plans. For example, identify whether agricultural lands would be allowed to revert to preconstruction use. Include acreages where possible.*

**Response:**

Resource Report 8, Section 8.1.2.2 provided a description for each aboveground facility. Table 8A-2 identifies land uses that will be affected by construction and operation of the aboveground facility. Provided below are the descriptions from Section 8.1.2.2, as well as a description of the specific land uses affected during and after construction as listed on Table 8A-2.

The Sherwood Compressor Station will be located at milepost (MP) 0.0 on the Sherwood Lateral in Doddridge County, West Virginia. The 136.09-acre site consists of forest (108.90 acres), agriculture (18.64 acres), and open land (8.56 acres). Access to the site will be via a new permanent access road off of County Route 18/6. Construction will affect a total of 29.97 acres of land consisting of forest (19.83 acres), agricultural land (4.34 acres), and open land (5.8 acres). Operation will affect a total of 11.75 acres of land, and will convert forest (6.55 acres) and open land (5.2 acres) to industrial use. The remaining 18.22 acres used for construction will be allowed to revert to previous uses although no agricultural activities will continue with the station property.

The Seneca Compressor Station will be located at MP 0.0 on the Seneca Lateral in Noble County, Ohio. The 44.08-acre site consists of forested areas (37.31 acres), agricultural (3.65 acres), and open land (3.12 acres). Access to the site will be via a new permanent access road off of Ohio Route 146. Construction will affect a total of 24.79 acres of land, consisting of forest (22.75 acres), agricultural land (0.03 acre), and open land (2.01 acres). Operation will affect a total of 8.2 acres of land, and will convert forest (7.42 acres) and open land (0.78 acre) to industrial use. The remaining 16.59 acres used for construction will be allowed to revert to previous uses although no agricultural activities will continue within the station property.

The Clarington Compressor Station will be located at MP 0.4 on the Clarington Lateral in Monroe County, Ohio. The 114.99-acre site consists mostly of forest (81.75 acres), along with agricultural (25.23 acres), and open land (8.01 acres). Access to the site will be via a new permanent access road off of German Ridge Road. Construction will affect a total of 40.08 acres of land, consisting of forest (21.71 acres), agricultural land (13.25 acre), and open land (5.12 acres). Operation will affect a total of 15.83 acres of land, and will convert forest (10.67 acres), agricultural land (3.8 acres), and open land (1.36 acre) to industrial use. The remaining 24.25 acres used for construction will be allowed to revert to previous uses although no agricultural activities will continue within the station property.

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The Majorsville Compressor Station will be located at MP 1.1 on the Majorsville Lateral in Marshall County, West Virginia. The 37.35-acre site consists mostly of forest (33.63 acres) and open land (3.72 acres). Access to the site will be via a new permanent access road off of County Route 32. Construction will affect a total of 18.69 acres of land, consisting of forest (14.8 acres) and open land (3.89 acres). Operation will affect a total of 13.16 acres of land, and will convert forest (10.49 acres) and open land (2.67 acres) to industrial use. The remaining 5.53 acres used for construction will be allowed to revert to previous uses.

The Cadiz Compressor Station will be located at MP 0.0 on the Cadiz Lateral in Harrison County, Ohio. The 28.16-acre site consists entirely of agricultural land. Access to the site will be via a new permanent access road off of Industrial Park Drive. Construction will affect a total of 20.65 acres of agricultural land. Operation will convert a total of 12.21 acres of agricultural land to industrial use. The remaining 8.44 acres used for construction will be converted to open land as no agricultural activities will continue within the station property.

The Burgettstown Compressor Station will be located at MP 0.0 on the Burgettstown Lateral in Washington County, Pennsylvania. The 27.09-acre site consists mostly of forest (21.62 acres) and open land (5.47 acres). Access to the site will be via a new permanent access road off of Point Pleasant Road. Construction will affect a total of 19.11 acres of land, consisting of forest (15.28 acres) and open land (3.83 acres). Operation will affect a total of 5.14 acres of land, and will convert forest (4.24 acres) and open land (0.9 acre) to industrial use. The remaining 13.97 acres used for construction will be allowed to revert to previous uses.

Mainline Compressor Station 1 will be located at MP 18.8 on the Mainlines A and B in Carroll County, Ohio. The 54.89-acre site consists mostly of agriculture (38.09 acres), as well as forest (14.49 acres) located in the northeast portion of the site, and open land (2.31 acres). Access to the site will be via a new permanent access road off of Azalea Road. Construction will affect a total of 32.49 acres of land, consisting of forest (3.65 acres), agricultural land (27.96 acre), and open land (0.88 acre). Operation will affect a total of 14.12 acres of land, and will convert forest (1.6 acres) and agricultural land (12.52 acres) to industrial use. The remaining 18.37 acres used for construction will be allowed to revert to previous uses although no agricultural activities will continue within the station property.

Mainline Compressor Station 2 will be located at MP 77.3 on the Mainlines A and B in Wayne County, Ohio. The 34.09-acre site consists of agriculture (32.11 acres), forest (1.38 acre), and open land (0.6 acre). Access to the site will be via a new permanent access road off of South Elyria Road. Construction will affect a total of 21.6 acres of land, consisting entirely of agricultural land. Operation will affect a total of 17.55 acres of agricultural land and will that agricultural land to industrial use. The remaining 4.05 acres used for construction will be allowed to revert to open land as no agricultural activities will continue within the station property.

Mainline Compressor Station 3 will be located at MP 127.9 on the Mainline in Crawford County, Ohio. The 38.23-acre site consists of agricultural (38.20 acres) and open land (0.03 acre). Access

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to the site will be via a new permanent access road off of Albaugh Road. Construction will affect a total of 29.02 acres of agricultural land. Operation will affect a total of 13.03 acres of agricultural land and will convert that agricultural land to industrial use. The remaining 15.99 acres used for construction will revert to open land as no agricultural activities will continue within the station property.

The Defiance Compressor Station will be located at MP 0.0 on the Market Segment in Defiance County, Ohio. The 28.40-acre site consists of agriculture (23.60 acres) and open land (4.80 acres). Access to the site will be via a new permanent access road off of Ohio Route 66. Construction will affect a total of 22.38 acres of land, consisting of agricultural land (20.94 acres) and open land (1.44 acres). Operation will affect a total of 15.55 acres of land, and will convert agricultural land (14.6 acres) and open land (0.95 acres) to industrial use. The remaining 6.83 acres used for construction will revert to open land as no agricultural activities will continue within the station property.

The Columbia Gas Transmission (CGT) Meter Station will be located at MP 5.7 on the CGT Lateral in Doddridge County, West Virginia. The 1.86-acre site consists of agriculture (1.78 acres) and open land (0.08 acres). Access to the site will be via County Route 3/7. Construction will affect a total of 1.7 acres of land, consisting of agricultural land (1.65 acres) and open land (0.05 acre). Operation will affect a total of 1.41 acres of agricultural land that will be converted to industrial use. The remaining 0.29 acre used for construction will revert to open land as no agricultural activities will continue within the station property.

The Berne Meter Station will be located at MP 0.0 on the Berne Lateral in Monroe County, Ohio. The 6.3-acre site consists of agriculture land. Access to the site will be via County Route 44. Construction will affect a total of 6.3 acres of agricultural land. Operation will affect a total of 1.03 acres of agricultural land and will convert that land to industrial use. The remaining 5.27 acres used for construction will revert to open land as no agricultural activities will continue within the station property

The Hall Meter Station will be located at MP 3.7 on the Seneca Lateral in Monroe County, Ohio. The 1.75-acre site consists of open land (1.53 acres) and forest (0.22 acre). Access to the site will be via Ohio Route 78. Construction will affect a total of 1.75 acres of land, consisting of forest (0.22 acre) and open land (1.53 acres). Operation will affect a total of 1.75 acres of land, and will convert forest (0.22 acre) and open land (1.53 acres) to industrial use.

The Gulfport Meter Station will be located at MP 21.9 on the Seneca Lateral in Monroe County, Ohio. The 1.21-acre site consists of agriculture (0.94 acre), forest (0.20 acre), and open land (0.07 acre). Access to the site will be via Township Highway 2192. Construction will affect a total of 1.11 acres of land, consisting of forest (0.19 acres), agricultural land (0.89 acre), and open land (0.03 acre). Operation will affect a total of 1.11 acres of land, and will convert forest (0.19 acres), agricultural land (0.89 acre), and open land (0.03 acre) to industrial use.

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The Majorsville Meter Station will be located at MP 0.0 on the Majorsville Lateral in Marshall County, West Virginia. The 4.00-acre site consists of forest (3.02 acres) and open land (0.98 acres). Access to the site will be via Township Highway 2192. Construction will affect a total of 3.9 acres of land, consisting of forest (2.96 acres) and open land (0.94 acre). Operation will affect a total of 0.92 acre of land, and will convert forest (0.84 acre) and open land (0.08 acre) to industrial use. The remaining 2.98 acres used for construction will be allowed to revert to previous uses

The ANR Meter Station will be located at MP 208.9 on Mainline A in Defiance County, Ohio. The 12.79-acre site consists of agricultural land (11.96 acres) and open land (0.83 acres). Access to the site will be from State Route 66. Construction will affect a total of 8.7 acres of land, consisting of agricultural land (8.63 acres) and open land (0.07 acre). Operation will affect a total of 4.59 acres of land, and will convert that agricultural land (4.59 acres) to industrial use. The remaining 4.11 acres used for construction will revert to open land as no agricultural activities will continue within the station property.

The Consumers Energy Meter Station will be located at MP 75.0 on the Market Segment in Washtenaw County, Michigan. The 4.6-acre site consists of forest (0.02 acre) and fallow agriculture land (4.58 acres). Access to the site will be via an existing gravel road off of Trinkle Road. Construction will affect a total of 4.6 acres of land consisting of forest (0.02 acre) and agricultural land (4.58 acres). Operation will affect a total of 4.6 acres of land, and will convert forest (0.02 acre) and agricultural land (4.58 acres) to industrial use.

The Vector Meter Station will be located at MP 100.0 on the Market Segment in Livingston County, Michigan. The 9.62-acre site consists of agricultural land (8.73 acres) and open land (0.89 acres). Access to the site will be from West Mason Road. Construction will affect a total of 8.4 acres of land, consisting of agricultural land (7.38 acres) and open land (1.02 acres). Operation will affect a total of 8.4 acres of land, and will convert agricultural land (7.38 acres) and open land (1.02 acres) to industrial use.

The CGT Tie-In Site will be located at MP 0.0 of the CGT Lateral in Doddridge County, West Virginia. The 0.40-acre site consists entirely of forest. Access to the site will be via County Route 20. Construction will affect a total of 0.37 acre of forest. Operation will affect a total of 0.37 acre of forest and will convert that forest land to industrial use.

The Sherwood Tie-In Site will be located at MP 54.1 of the Sherwood Lateral (MP 16.7 of the Seneca Lateral) in Monroe County, Ohio. The 1.91-acre site consists of agriculture (1.35 acres) and open land (0.56 acres). Access to the site will be via Trembly Ridge Road. . Construction will affect a total of 1.8 acres of land, consisting of agricultural land (1.32 acres) and open land (0.48 acre). Operation will affect a total of 1.8 acres of land, and will convert agricultural land (1.32 acres) and open land (0.48 acre) to industrial use.

The Majorsville Tie-In Site will be located at MP 23.9 of the Majorsville Lateral (MP 11.7 of the Clarrington Lateral) in Belmont County, Ohio. The 4.13-acre site consists of forest (3.14 acres),

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open land (0.67 acres), and agriculture (0.32 acres). Access to the site will be via Ok Road. Construction will affect a total of 4.05 acres of land consisting of forest (3.1 acres), agricultural land (0.3 acre), and open land (0.65 acre). Operation will affect a total of 4.05 acres of land, and will convert forest (3.1 acres), agricultural land (0.3 acre), and open land (0.65 acre) to industrial use.

The Cadiz Tie-In Site will be located at MP 32.6 of the Clarington Lateral (MP 2.9 of the Cadiz Lateral and MP 0.0 of the Supply Connector) in Harrison County, Ohio. The 4.01-acre site consists of forest (3.1 acres) and open land (0.91 acre). Access to the site will be via a new access road off of Kanoski Road. Construction will affect a total of 4.01 acres of land consisting of forest (3.1 acres) and open land (0.91 acres). Operation will affect a total of 4.01 acres of land, and will convert forest (3.1 acre) and agricultural land (0.91 acre) to industrial use.

The Mainline B Receiver Site will be located at MP 202.1 of Mainlines A and B, and is located at the end of Mainline B in Defiance County, Ohio. The 1.16-acre site consists of agriculture (0.98 acres) and open land (0.18 acres). Access to the site will be via Egler Road. Construction will affect a total of 1.04 acres of land, consisting of agricultural land (0.95 acre) and open land (0.09 acre). Operation will affect a total of 1.04 acres of land, and will convert agricultural land (0.95 acres) and open land (0.09 acre) to industrial use.

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3. *In table 8A-2, the “open land” category is defined as open uplands, PSS, and PEM and reports open land pipeline right-of-way operation impacts for the Market Segment in Michigan as 17.11 acres. However, table 2A-11 reports pipeline right-of-way operation impacts for PEM and PSS for the Market Segment in Michigan as 18.25 acres. Clarify the apparent discrepancy and provide updated tables, as appropriate.*

**Response:**

The footnote in Table 8A-2 as provided in Volume IIA, Appendix 8A has been amended. PEM wetlands are included in the “open land” category and the “agricultural” land category. PSS wetlands are included in both “open land” and “forest” land categories depending on the size and density of the shrubs.

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**Resource Report 9 – Air and Noise Quality**

1. *Provide a copy of the Midwest Research Institute (1996) report that was used to support Rover's emissions estimates.*

**Response:**

A copy of the Midwest Research Institute's "Improvements of Specific Emission Factors (BACM Project No. 1) Final Report, March 29, 1996" is provided in Volume IIA, Appendix 9E.

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2. *Similar to fugitive pipeline greenhouse gas emissions provided in table 9A-20, provide fugitive emissions from sources at meter and compressor stations (e.g., valves and fittings). In addition, provide greenhouse gas estimates from blowdown activities from the pipelines and at meter and compressor stations.*

**Response:**

Table 9A-20 has been revised to include greenhouse gas (GHG) emissions from pipeline blowdowns, and has been renumbered 9A-20A. Table 9A-20B has been added and includes fugitive GHG emissions from meter and compressor stations. Please note that the GHG emissions from compressor stations were previously provided in the Emission Inventory (Tables 9A-9A - 9A-18A). In addition, the construction emissions for Michigan in Table 9A-21 were amended to reflect the correct pipeline length. The previously submitted Table 9A-21 did not take into account the Market Segment pipeline ending at the existing Vector pipeline. Tables 9A-20A, 9A-20B, and 9A-21 are included in Volume IIA, Appendix 9A.

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3. *Rover's April 22, 2015, response (RR 9, comment #12) states that table 9A-22 presents emissions data that take into account all delivery, receipt, and bi-directional meter stations (seven receipt, three delivery, and two bi-directional meter stations). However, the Clarrington, Hall, Gulfport, REX, and Sherwood meter stations are not listed in the table. Additionally, the Seneca Receipt Station is listed twice (once under Monroe County and again under Noble County) and the CGT meter station is listed as a receipt station, while table 1.3-4 identifies it as a delivery station. Provide an updated table that addresses these inconsistencies. Please be sure to compare the updated table to table 9A-21 to verify internal consistency.*

**Response:**

Table 9A-22 has been revised to correct the list of Rover meter stations, and correct the Seneca receipt station listing. The revised table is included in Volume IIA, Appendix 9A.

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4. *Provide an acoustical analysis (including equipment list, noise evaluation methodology, identification of Noise Sensitive Areas (NSA), baseline noise levels, and impact evaluations) for the following Project components where an NSA would be within 0.5 mile:*
- a. *mainline valves; and*
  - b. *delivery, receipt, and bi-directional meter stations.*

**Response:**

Acoustical analyses of mainline valves and meter stations were performed and delivered to the FERC in document Acoustical Evaluations at Mainline Valves, Meter Stations, and Pipeline Construction Locations, submitted on May 1, 2015.

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5. *Provide documentation, including estimates of existing vibration levels and potential vibration from construction and operation activities, to support Rover's statement that no "perceptible increase in ground-borne vibration" would be expected.*

**Response:**

The Federal Transit Authority (FTA) has a comprehensive framework for addressing ground-borne vibration. Their handbook "Transit Noise and Vibration Impact Assessment" (Handbook) issued May of 2006, includes guidelines, prediction methodologies, and recommendations for evaluating ground-borne vibration.

*Existing Levels of Ground Vibration*

In Figure 7-3 of the Handbook, included below, the FTA gives some typical ground vibration velocity levels for various vibration sources and locations, along with the human/structural response to those vibrations. As discussed in the Handbook, most residential areas will have minimal background vibration unless they are adjacent to railroads or traffic on rough roads. Based on our review of the aerial photography for the Project work areas, we would expect that existing ground vibration velocity levels would be in the 40 to 55 VdB range, with VdB denoting decibels referenced to  $10^{-6}$  inches per second.

*Ground-Vibration due to Operations*

Operational equipment will not be a significant ground-borne vibration source. The equipment at compressor stations, as well as at meter stations and mainline valves, is fundamentally well-balanced, as any out of balance conditions would cause excessive wear and premature failure of the equipment. There are no ground impact or other activities associated with compressor station operation or other aboveground facilities that would be expected to cause significant ground-borne vibration.

SLR has performed ground vibration measurements at 150 feet from an existing compressor building (not affiliated with the Rover Pipeline Project) containing three Caterpillar 3606 engines and Ariel reciprocating compressors, with a total of 5,325 hp in operation. The ground vibration levels at this location were between 46.5 and 48.5 VdB. This level of ground borne vibration was not perceptible.

The largest Project compressor station proposed is Mainline CS 1, with approximately 42,190 hp of compression. Using a  $10 \cdot \log(\text{horsepower ratio})$  adjustment for the measured ground vibration levels, a horsepower adjustment factor of  $10 \cdot \log(42,190 / 5,325)$ , or +9.0 dB, is calculated. With this adjustment, the anticipated ground vibration levels at 150 feet from the Mainline CS 1 compressor building would be at most  $48.5 + 9 = 57.5$  VdB. As shown in Figure 7-3 of the Handbook, 57.5 VdB is lower than the approximate threshold of human perception of vibration. This calculation is for 150 feet from the compressor building. The closest Project NSAs are more

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than 700 feet away from the Project compressor buildings and should not experience perceptible ground-borne vibration during facility operation.

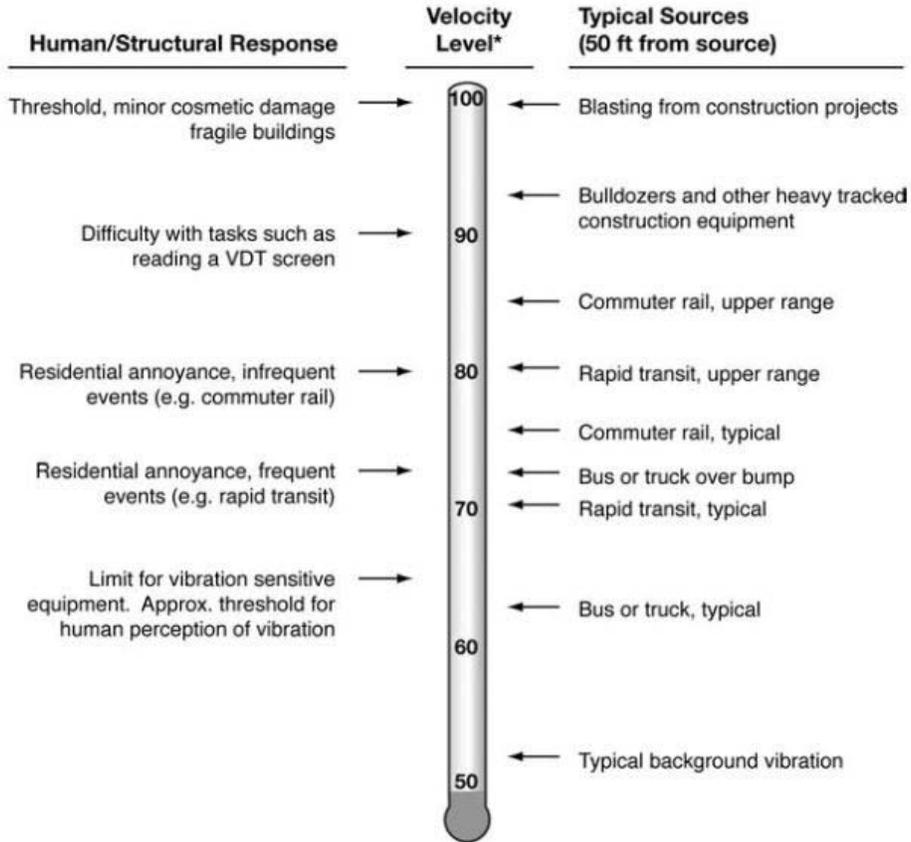
*Ground-Vibration due to Construction*

Heavy construction equipment can potentially be a source of ground-borne vibration for receivers that are located very close to construction areas. Since the original filing, additional construction design has determined that there may be the need to use vibratory or hammer pile-driving for sheet piling along the pipeline where there are saturated soils, road crossings, or foreign line crossings. In addition, “dynamic compaction” may be required at the Cadiz and Burgettstown Compressor Stations. Dynamic compaction is a process in which a heavy flat plate is dropped repeatedly onto the ground from a set height until the desired level of ground compaction is achieved.

Based on the Handbook, Table 12-2, attached below, typical ground-vibration levels from pile driving are about 104 VdB at 25 feet. Using the methods outlined in the Handbook, these construction vibration levels can be propagated to greater distances from the construction site. Table A, below, shows the predicted ground-borne vibration levels at different distances from the construction area for pile driving. Ground-borne vibration from construction pile driving is not expected to be perceptible at distances of greater than 500 feet from construction areas. For areas closer than 500 feet, ground-borne vibration may be perceptible during the temporary construction activities.

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\* RMS Vibration Velocity Level in VdB relative to 10<sup>-6</sup> inches/second

**Figure 7-3. Typical Levels of Ground-Borne Vibration**

Source: "Transit Noise and Vibration Impact Assessment", FTA document FTA-VA-90-1003-06, May 2006

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<b>Table 12-2. Vibration Source Levels for Construction Equipment (From measured data.<sup>(7,8,9,10)</sup>)</b>			
<b>Equipment</b>		<b>PPV at 25 ft (in/sec)</b>	<b>Approximate L<sub>v</sub><sup>†</sup> at 25 ft</b>
Pile Driver (impact)	upper range	1.518	112
	typical	0.644	104
Pile Driver (sonic)	upper range	0.734	105
	typical	0.170	93
Clam shovel drop (slurry wall)		0.202	94
Hydromill (slurry wall)	in soil	0.008	66
	in rock	0.017	75
Vibratory Roller		0.210	94
Hoe Ram		0.089	87
Large bulldozer		0.089	87
Caisson drilling		0.089	87
Loaded trucks		0.076	86
Jackhammer		0.035	79
Small bulldozer		0.003	58

† RMS velocity in decibels (VdB) re 1 micro-inch/second

Source: "Transit Noise and Vibration Impact Assessment", FTA document FTA-VA-90-1003-06, May 2006

**Table A: Ground-Borne Vibration Levels for an Impact Pile Driver**

<b>Distance, feet</b>	<b>Ground Borne Vibration Velocity Levels, VdB</b>	<b>Notes / Human Response</b>
25	104.0	Pile driver, impact-type, typical levels
35	99.6	
50	95.0	
100	85.9	
150	80.7	Residential annoyance for infrequent events
200	76.9	
300	71.6	Residential annoyance for frequent events
400	67.9	
500	65.0	Approx. threshold for human perception of vibration

VdB are decibels referenced to 10<sup>-6</sup> inches per second

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6. *Provide the calculations used to populate table 9.2.12, appendix 9A, for compressor station construction noise impacts (the noise contribution and potential noise increase).*

**Response:**

The calculations used to populate Table 9.2.12, Appendix 9A for compressor station construction noise impacts, were performed in CadnaA as part of the overall compressor station noise models. The calculations were included in the overall calculation tables presented in response to the April 2, 2015 data request for the Project and were included as Volume IIA, Appendix 9F – Compressor Station Raw Output Data in the submittal on April 22, 2015.

See [http://elibrary.ferc.gov/idmws/file\\_list.asp?accession\\_num=20150501-5128](http://elibrary.ferc.gov/idmws/file_list.asp?accession_num=20150501-5128).

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7. *Provide clarification on the Washington County, Pennsylvania noise ordinance that is discussed in RR 9; specifically, it states that the ordinance prohibits “creation of any unreasonably loud, disturbing and unnecessary noise...”. Verify whether Rover has met with representatives from Washington County, and any specific actions that Rover would employ at its Burgettstown Compressor Station to comply with the county noise ordinance.*

**Response:**

Rover has met with township supervisors, county commissioners, and held a public meeting in Washington County, in addition to the FERC Prefiling activities in the area. No requirements more specific than those required by FERC have been requested. The Washington County ordinance relies only on descriptive terms, and does not state specific numeric (decibel) goals. The FERC decibel limits are among the most stringent environmental sound goals in common use. It is unlikely that a compressor station that meets the FERC noise limits would be characterized as unreasonably loud or disturbing, and thus there has been no need to meet with county representatives in this regard.

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8. *The existing day-night sound level ( $L_{dn}$ ) for the Sherwood Compressor Station for NSA 1 is identified as 22.1 dBA in table 9.2.1-4 and 41.5 dBA in table 9.2.1-1. There are similar discrepancies in existing  $L_{dn}$  for NSAs 2 through 5. In addition, the “Combined Predicted Station plus Existing  $L_{dn}$ ” values are unrealistically low, while the “Potential Increase Above Existing  $L_{dn}$ ” values seem unrealistically high. Clarify the apparent discrepancies and provide updated tables, as appropriate.*

**Response:**

There was a column shift error while pasting data into Table 9.2.1-4. The corrected table is shown below.

<b>Table 9.2.1-4 Sherwood Station Compressor Station Sound Level Predictions All levels are A-weighted decibels, dBA</b>						
NSA	Distance from Compressor Building to NSA (feet)	Direction	Existing $L_{dn}$	Predicted $L_{dn}$ Contribution of Station	Combined Predicted Station plus Existing $L_{dn}$	Potential Increase Above Existing $L_{dn}$
1	3,100	Southeast	41.5	<b>22.1</b>	41.5	0.0
2	1,430	South	41.5	<b>32.2</b>	42.0	0.5
3	1,410	Southwest	41.5	<b>34.5</b>	42.3	0.8
4	1,230	West	41.5	<b>35.4</b>	42.5	1.0
5	4,900	Northwest	53.2	<b>16.5</b>	53.2	0.0