

X. PUBLIC UTILITIES

A. Public Sewer Service

Public sewer service is provided within the Eastern Berks County Region by Tipton Borough. The Borough has been working towards compliance with a Consent Order and Agreement with the PA Department of Environmental Protection to resolve wet weather flow problems and hydraulic overloads. As part of this effort an update to the Borough's Official Sewage Plan was prepared and adopted in March 2000. The location of public sewage facilities is plotted on the Public Utilities Map.

System History

The system originated in 1961 when the Commonwealth issued a permit for the former Tipton Municipal Authority to construct the Borough's treatment plant, pump station and interceptor. The Authority operated the system for over 20 years until in 1987 it was taken over by the Borough as part of a refinancing of the original bond issue. Then in 2002 the Authority was reinstated so that the Borough could properly manage the delivery of public sewer outside of its municipal boundaries into Longswamp Township. The treatment plant was upgraded in 1976, 1990 and 2000.

Existing Service Areas

Today the system serves all "developed" areas of Tipton Borough with "undeveloped" areas expected to be served as needed. In addition the following lists areas served outside of the Borough:

- Two sewer lines extend south into Longswamp Township to serve the Lutheran Home which is the system's largest customer;
- Service is extended along Old Tipton Road to the new High School located in Longswamp Township;
- Another sewer collection line extends south into Longswamp Township along Woodside Avenue where it serves several dwellings along this road;
- A fourth sewer line extends along Freehall Street to the southwest of the Borough in Longswamp Township to serve several dwelling units; and,
- Service is provided to Deka & East Penn Manufacturing sites located to the northeast of the Borough.

Treatment Processes and Capacity

The Borough of Tipton Wastewater Treatment Facility is located adjoining the north side of Toad Creek just east of the Borough in Longswamp Township. The Plant outfalls into the Toad Creek under National Pollutant Discharge Elimination System (NPDES) Permit No. 0020711. The original plant utilized a contact stabilization process and was constructed in 1962. It was

updated in 1976 with the addition of an aeration tank and again in 1990 with the addition of reed beds for sludge management.¹ During the 2000 expansion/upgrade of the plant, the design was changed from a grinder type system to a screen type system for filtering out foreign materials. The plant also uses an extended aeration variation of activated sludge process that provides for primary and secondary treatment of sanitary sewage and acceptable pretreated industrial wastes.² Specifically the plant incorporates the following:

- Comminution;
- Duplicate aeration tanks with approximately 9 hours detention;
- Variable speed and fixed speed pumps;
- Duplicate secondary aeration tanks;
- Duplicate settling tanks;
- Dechlorination;
- Aerobic digestion of sludge;
- Liquid sludge loading; and,
- Dewatered sludge reed bed sludge management.³

The 2000 upgrade to the treatment plant achieved compliance with a Consent Order and Agreement between the Borough and the PA Department of Environmental Protection. In so doing the treatment capacity of the plant has been expanded to 250,000 gallons per day or 0.25MGD. The average 2010 sewage flow to the treatment plant is depicted below:

<u>Land Use</u>	<u>No. of Connections</u>	<u>Average Effluent Generated (Gallons Per Day)</u>
Residential	792	130,000 gpd
Commercial/Industrial	67	17,000 gpd
Public/Institutional	5	53,000 gpd
Total	864	200,000 gpd, or (0.20 MGD)

¹ Borough of Topton Berks County, PA Act 537 Sewage Facilities Plan Update, March, 2000, Great Valley Consultants, pg.8

² Borough of Topton Berks County, PA Act 537 Sewage Facilities Plan Update, March, 2000, Great Valley Consultants, pg. 1.

³ Borough of Topton Berks County, PA Act 537 Sewage Facilities Plan Update, March, 2000, Great Valley Consultants, pg. 8.

Conveyance Facilities

The sewer collection system was largely constructed in 1962. Most of the local collection lines are 8-inch diameter vitrified clay pipe that flow by gravity and follow street and alley rights-of-way. Some limited 10-inch diameter trunk lines also run along East & West Franklin, North Haas, North Heffner and East High Streets. A 15-inch diameter interceptor links the entire collection system with the treatment plant; it runs between North Haas Street along the north side of Toad Creek and the plant. The system has two pump stations. The first is located on the north side of Washington Street on the Brandywine Youth Baseball Association ball field. This pumphouse generally collects sewage flows from the uses north of High Street and conveys it via force main to the 10-inch trunk line located in East High Street. This facility has 2 ejector-type pumps with a combined design capacity of 86,400 gpd with an average daily flow of about 15,031 gpd in 2013. The second pump station is a submersible pump installed during the

development of Brandywine Meadows in the late 1980s. This facility is located at the northern terminus of Hoch Avenue near the western edge of the Borough. It collects sewage from this development and pumps via force main in a southeasterly direction to the 10-inch trunk line located along West Franklin Street. This pump has a design capacity of 115,000 gpd. The average daily sewage flow from Brandywine Meadows is 15,000 gpd in 2013.

There has been a chronic problem with infiltration and inflow at the Topton collection, conveyance and treatment facilities. An annual sewer rehabilitation and repair project program has been implemented to internally televise the lines, repair manholes and line pipes. In 2013 the Borough began an inspection program for each sewer customer. Approximately 180 homes were inspected for illegal connections. Any improper connections were identified and the homeowners were instructed to correct these connections. The Borough plans to continue this program in the future.

Future Public Sewer Needs

During the last process of update to the Topton Borough Official Sewage Plan conducted in the late 1990s and early 2000s, Topton Borough specifically invited Longswamp Township's participation in the design and financing of a treatment plant with sufficient capacity to meet the future sewer needs of both municipalities. At that time two separate design alternatives were presented that involved a joint effort between the Borough and Township. After consideration, Longswamp Township opted out of the process and the Borough proceeded to implement the option that best fit its individual needs.

However, another impediment looms prominent. The Toad Creek is a tributary of the Little Lehigh Creek and is part of the High-Quality Watershed as described in Chapter 3 of this Plan. As such special protection regulations are applied by the State in permitting sewage outfall to protect this important resource. However, the goals of this plan are quite clear that additional public utilities will be provided to serve compact future growth areas just outside of Topton Borough. In addition, some residents of Longswamp Township are currently on the Topton waste water system, and residents have expressed a desire to add capacity. Absent such efforts, increased and undue development pressure will be exerted upon the agricultural and conservation landscapes for rural housing. In turn, the Plan's deliberate and proactive strategy to concentrate residential growth in planned utility service areas will be invalidated by its lack of infrastructure to support this strategy. The Townships of the Region are much more likely to have their effective agricultural/conservation zoning regulations upheld if a judicial body can determine that the Region has adequately projected growth and advanced a deliberate strategy for its accommodation. The obligation of communities to plan extends beyond the mere placement of zones on a map; legal precedents have established that the provision of necessary public services and infrastructure are equally binding.

B. Public Water

History and Service Area

Public water within the Region is furnished by the Topton Borough Municipal Authority. This Authority also oversees the public sewer system. The Authority consists of 5 members who are appointed by the Borough Council to serve 4-year terms. They meet on an as-needed basis. The original system was dug and installed as part of the Work Projects Administration (WPA)

during the 1940s. Service was later extended into Longswamp Township to serve a few properties on Woodside and Freehall Streets in the early 1980s. The water treatment plant was renovated in 1997.

Water Sources

For many years the system has relied upon 34 protected springs located at the Borough's watershed property along Woodside Avenue in Longswamp Township south of the Borough. Currently, 33 springs are active and one is inactive. These springs are encased under steel doors to protect their integrity and situated amid a wooded setting that is maintained to ensure good water quality. The springs generate between 60,000 gpd during dry seasons to 100,000 gpd during wetter periods.

In addition, two wells supplement the Borough's source water. Well No. 1 is located at the northern edge of the watershed property in close proximity to the Borough's treatment plant and storage reservoirs. A second well, known as Well No 2 is located on the east side of Henningsville Road (which becomes Woodside Avenue in Longswamp Township) just south of West Keller Street. Water from this well is pumped up Henningsville Road over ½ mile to the treatment plant and reservoirs located on the watershed property. Combined these wells have a rated capacity of 360,000 gpd. The Borough has adopted wellhead protection measures in place to protect these sources. Currently, Well No. 2 is the only one being used.

Treatment, Storage & Conveyance Facilities

The Borough's Water Treatment Plant is located along the northern edge of the watershed property located on the east side of Woodside Avenue about 3100 feet south of the Borough boundary. This site is located at an elevation above all areas served by the system and enables gravity flow throughout the Borough. A major treatment plant upgrade was completed in 1997. This upgrade was precipitated by a discovery of giardia cyst bacteria in one of the system's supply springs. Specifications of this treatment plant list it as a 2-stage filter system capable of filtering 237,600 gpd. It is designed to adequately filter raw water and maintain proper Federally-regulated drinking water levels according to the following criteria:

- Turbidity;
- Particles in 4 size ranges;
- MS-2;
- Coillpahge virus;
- Giardia lamblia cysts;
- Cryptosporidium Parvum Oocysts;
- Algae; and,
- Sediment.

The plant also incorporates many monitoring and system control devices to ensure optimal plant operation and performance with automated safety systems that activate when adequate performance is compromised. Sodium hypochlorite is used to chlorinate the finished water and soda ash is used to maintain proper pH balance. Raw water storage occurs in two 330,000 gallon covered reservoirs located on the same site and a separate covered 1,000,000 gallon reservoir is used to store finished water that has already been treated. With an average daily consumption of about 184,000 gpd, these reservoirs furnish ample water supply for about 5.5 days of reserve capacity. A general rule-of-thumb suggests that reserve water capacity of 2.5

days is desirable; therefore the Borough has an abundance of reserve water storage capacity. Main water lines are constructed of cast iron and are generally 12 inches in diameter. Residential tap lines are constructed of various materials depending upon their time of installation and are 2-6 inches in diameter. Most of the water lines were installed in the 1940s and are susceptible to failure due to age. The Borough does not have a program for replacement of these lines at this time.

Future Public Water Needs

As discussed earlier for future public sewer needs, the goals of this plan advocate that additional public utilities will be provided to serve compact future growth areas in this plan. These compact growth areas are to accommodate the bulk of the Region's residential development over the next 20 years.

C. Solid Waste Disposal

All of the Region's municipalities rely upon private haulers for garbage collection and disposal. Curbside recycling is described as prevalent within Topton Borough, limited in Rockland Township and infrequent in District Township. Topton Borough is in the process of developing a mandatory curbside recycling program that is anticipated to start in 2015.

D. Other Utilities

Aside from the public sewer and water utilities described earlier in this section, several other utility lines pass through the Eastern Berks County Region. Many of the rights-of-way (ROW) associated with these utilities have distinct implications for future land use and proposed activities. This analysis inventories and maps major utility lines. ***Potential land developers and residents living near ROW should use the PA One Call System at 811 to contact representatives of the various utility companies with regard to any proposed projects.*** The locations of the ROWs are plotted on the *Public Utilities Map*. The following describes these major rights-of-way:

Pipelines

The municipalities recognize the existence of pipelines that currently exist running through portions of the municipality and acknowledges the potential for additional pipelines running concurrently with existing pipelines or in other areas. Such transmission pipelines provide opportunities to meet the energy demands of the Atlantic seaboard but also pose tremendous risk for those communities potentially affected should a pipeline failure occur. Under normal circumstances, underground pipelines are relatively benign; however, where emergencies such as failures do occur, varied threats to public health, safety and welfare can be significant, from direct impacts such as resident injury or death, severe property damage, debris management, contaminated soils and groundwater pollution to indirect impacts associated with cleanup (expanded access points, groundwater recovery and remediation facilities, expanded soil disturbance, etc.). As such, the municipality should monitor existing and future pipeline activity and enact, where feasible, regulations complimentary to the Pennsylvania Oil and Gas Act and the Federal Energy Regulatory Commission designed to protect the public health, safety and

welfare and regulate land uses in conformance with the Pennsylvania Municipalities Planning Code, Act 247, as amended.

Among the needs to address are those surface land uses affiliated with transmission pipelines, appropriate access provisions for pipeline rights-of-way, and buffering and setback standards appropriate to reduce adverse impacts to residents of new development should a pipeline failure occur. In addition to buffers and setbacks, the municipality should examine the feasibility of increased communication with pipeline operators, particularly as related to new development proposals within proximity of transmission pipelines, and investigate measures to protect new land uses with high on-site populations. The municipality should also continue to coordinate its activities with those of the County and State when and if new pipelines are proposed and application proceed through the permit review and construction phases.

Sun Pipe Line Company

Sun Pipe Line Company owns a 3” underground petroleum pipeline through Rockland and Longswamp Townships as depicted on the Public Utilities Map. The pipeline was constructed of welded steel in the early 1930’s to transport petroleum products from Reading to Allentown. Fifty-foot-wide private right of way and easement agreements were purchased from the landowners whose property was crossed by the pipeline. The pipeline has been out of service for many years and has been cut out and removed in various locations. However, Sun still maintains the right of way and has no future plans to give this right of way up. The following lists the general restrictions enforced by the company around active lines. Since the subject line is not active, the company selectively enforces the restrictions that enable preservation of the right-of-way.

1. Detailed plans for proposed construction must be submitted to Sunoco Pipeline L.P.’s Engineering Department for review to determine to what extent, if any, the pipeline or right-of-way will be affected by the proposed construction and/or development.
2. A driveway or roadway may cross the right-of-way and pipeline perpendicularly but at no time will it be parallel to, over and within the right-of-way.
3. Buildings, trees, shrubs or any obstruction of a permanent nature shall not be constructed, planted or placed closer than (25’) feet to any existing pipeline (50’ easement).
4. Wells, leach beds, cesspools or sewer systems of any type shall not be placed within the right-of-way.
5. All underground facilities crossing the right-of-way shall cross under the existing pipeline with a minimum of one-foot clearance. This includes sewer drain lines.
6. The earth cover over the pipelines shall be maintained and never changed in any manner without the express permission of Sunoco Pipeline L.P.
7. Any parking area placed over the pipeline with permission of Sunoco Pipeline L.P. shall be subject to an amendment to agreement entered into by subject parties prior to construction of same.
8. If heavy equipment is to cross the existing pipeline for any reason, it will be necessary for the owner to provide a ramp of sufficient material to protect said pipeline. Sunoco Pipeline L.P. will make the decision as to how much fill will be required for the ramp. Upon completion of construction and discontinuation of heavy equipment passage over the pipeline, the ramp may be removed.

9. A Sunoco Pipeline L.P. inspector must be present at the time that any work is done within Sunoco Pipeline L.P.'s right-of-way.
10. No blasting is permitted within 300 feet of the pipeline. Anything less than 300 feet must have the approval of and instruction from Sunoco Pipeline L.P.'s Engineering Department.
11. Should you have any questions or need additional information on the aforementioned Paragraphs 1 through 10, please call Sunoco Pipeline L.P.'s Right-of-Way Department at 610-670-3309.

Spectra Energy Gas Transmission (Texas Eastern Transmission, LP)

Texas Eastern Transmission, LP has an approximately 150-foot-wide right-of-way in extreme southern Rockland Township. This ROW was obtained through the acquisition of private easements and contains 4 underground parallel natural gas lines with a maximum allowable operating pressure of 1050 psi. The following describes those design and construction guidelines associated with this ROW:

1.0 PURPOSE

- 1.1 This guideline presents the requirements for construction in the vicinity of a Duke Energy Gas Transmission (herein referred to as Company) pipeline(s) or pipeline right-of-way. These requirements are general in nature whereby specific circumstances may necessitate special considerations. The following areas are addressed:
 - 1.0 Purpose
 - 2.0 Company Notifications
 - 3.0 General Requirements
 - 4.0 Excavation and Blasting
 - 5.0 Utility and Foreign Line Crossings
- 1.2 If any of the conditions stated in this document cannot be satisfied, the Company representative shall be advised immediately.

2.0 COMPANY NOTIFICATIONS

- 2.1 The Company considers it essential that developers and contractors know the exact location and depth of the Company's pipeline(s) and requires that the pipeline(s) be shown on the contractor's plans.
- 2.2 The Company will field locate and stake its pipeline(s) at selected points in accordance with state and local requirements at no cost to the developer or contractor. However, the cost to excavate the pipeline and restore surface improvements (e.g., pavement, landscaping, and sidewalks) shall be the responsibility of the developer or contractor. Note: A Company representative must be present during the excavation to expose the pipeline.
- 2.3 Copies of any proposed plans or drawings for road crossings within the pipeline right-of-way shall be submitted to the Company for review at least 30 days prior to the commencement of work.
- 2.4 The Company shall be given at least three (3) working days advance notice prior to the actual commencement of any work or excavation over or near its pipeline right-of-way so that the Company may locate its pipeline(s) and have a field representative present during excavation or construction activities.
- 2.5 In addition to complying with the above Company requirements, developers, contractors, utility companies, and landowners shall comply with the provisions of all

state and/or local one-call regulations relating to excavation and demolition work in the vicinity of underground facilities.

3.0 GENERAL REQUIREMENTS

- 3.1 No buildings, structures or other obstruction may be erected within, above or below the pipeline right-of-way. If requested, the Company will furnish pipeline easement information which describes the pipeline right-of-way width.
- 3.2 Wire fencing and decorative fencing that can be easily removed and replaced may cross the pipeline right-of-way at or near right angles.
- 3.3 Planting of trees is not permitted on the pipeline right-of-way.
- 3.4 Planting of shrubs, bushes or other plants associated with landscaping on the pipeline right-of-way is subject to Company approval and shall not exceed 4 feet in height.
- 3.5 No drainage swells and no reductions in grade are permitted on the pipeline right-of-way. Limited additional fill may be deposited with prior written approval from the Company.
- 3.6 A Company representative must give prior approval for heavy equipment to cross the Company pipeline(s) at any location. Minimum cover and other requirements will be determined by the Company on an individual basis.
- 3.7 Parking areas should be planned so as to avoid covering the pipeline right-of-way if possible.
- 3.8 No roads, foreign lines, or utilities may be installed parallel to the pipeline within the pipeline right-of-way.
- 3.9 All foreign lines, roads, electrical cables and other utilities must cross the pipeline right-of-way at an angle as near to 90-degrees as practical.
- 3.9 If, in the sole judgment of the Company, the utility's, owner's and/or developer's proposed plans necessitate the installation of casing pipe and/or other alterations to protect the Company's pipeline(s), the utility, owner and/or developer shall pay the Company the estimated cost prior to the Company beginning the alterations. Once the actual costs have been incurred and tabulated by the Company, the Company and the utility, owner and/or developer shall settle any cost variances.

4.0 EXCAVATION AND BLASTING

- 4.1 Excavation operations shall be performed in accordance with the guidelines set forth below.
 - 4.1.1 When a contractor excavates near Company pipelines, the Company representative must be on site at all times to locate the pipeline(s), to determine the depth of cover before and during the excavation (see Section 2.4) and to witness the excavation and backfilling operations. The contractor shall not perform any excavation, crossing, backfilling or construction operations unless the Company representative is on site. **The Company representative shall have full authority to stop the work if it is determined that the work is being performed in an unsafe manner.**
 - 4.1.2 Excavation by a third party backhoe or other mechanical equipment shall not be permitted within the Company pipeline right-of-way until an excavation plan has been reviewed and approved by the Company representative. The excavation plan may be a written document produced by the contractor or a verbal discussion between the contractor and the Company representative. As a minimum, the excavation plan shall include but not be limited to the following:
 - *Backhoe set-up position in relationship to the pipeline*

- *Need for benching to level backhoe*
 - *Required excavation depth and length*
 - *Sloping and shoring requirements*
 - *Ingress/egress ramp locations*
 - *Minimum clearance requirements for mechanical equipment*
 - *Verify bar has been welded onto backhoe bucket teeth and side cutters have been removed*
 - *Pipeline location and depth*
 - *Spoil pile location*
 - *Compliance with OSHA regulations*
- 4.1.3. No mechanical excavation equipment shall be used within 6" of the pipeline(s). Hand shovels shall be used to push the dirt directly above the pipeline(s) into the ditch.
- 4.1.4 Federal regulations require that the Company's pipe be inspected whenever it is exposed. OSHA regulations pertaining to excavations must therefore be met to ensure the safety of the Company representative who must enter the excavation.
- 4.2 Blasting operations shall be performed in accordance with the guidelines set forth below.
- 4.2.1 The Company shall be advised of any blasting proposed within 200 feet (500 feet for large scale quarry-type blasting) of its facilities. No blasting is permitted within the pipeline right-of-way, and no blasting shall occur outside the pipeline right-of-way if the Company determines that such blasting may be detrimental to its facilities.
- 4.2.2 The Company reserves the right to require that the party responsible for blasting furnish a detailed blasting plan at least three (3) working days prior to blasting to allow for evaluation and to make arrangements for witnessing the blasting operation. Blasting codes shall be followed in all cases.

5.0 UTILITY & FOREIGN LINE CROSSINGS

- 5.1 All buried foreign lines must be installed as noted below and as stated in Section 3.9, as appropriate.
- 5.1.1 Foreign lines must be installed below the Company's pipeline(s) with a minimum of 12" of clearance except as noted in Section 5.1.2. Additional separation may be required in marshy areas or other areas where the 12" of clearance would have a potential to cause future problems.
- 5.1.2 Foreign lines may be installed above the Company's pipeline(s) with prior approval from the Company representative. All such lines shall be installed with a minimum of 12" of clearance. The Company will not be responsible for any damage or required repairs which are caused by the Company's operating and maintenance activities when foreign lines are installed above the pipeline(s). Protective measures such as a concrete encasement, ditch marking tape, and/or above ground markers may be required as deemed necessary by the Company representative.
- 5.1.3 Suitable backfill shall be placed between the foreign line and the Company's pipeline(s).
- 5.1.4 All metallic foreign lines must have test leads (two No. 12 THW black insulated solid copper wires) attached at the point of crossing for corrosion control monitoring. Test wires shall be routed underground and terminated at a point specified by the Company.

- 5.2 The following requirements shall be met for fiber optic cables which encroach upon the pipeline right-of-way.
- 5.2.1 The fiber optic cable shall be installed in a rigid non-metallic conduit or covered in 6-8" of concrete which has been colored with an orange dye extending across the entire pipeline right-of-way.
- 5.2.2 The fiber optic cable must be installed a minimum of 12" below the Company's pipeline(s) across the entire width of the pipeline right-of-way, unless approved by the Company representative.
- 5.2.3 Orange warning tape must be buried a minimum of 18" directly above the fiber optic cable across the entire width of the pipeline right-of-way, where practical.
- 5.2.4 The fiber optic cable crossing must be clearly and permanently marked with identification signs on both sides of the pipeline right-of-way.
- 5.3 The information listed below shall be furnished to the Company for all proposed electrical cables which will encroach upon the pipeline right-of-way. Specific installation requirements for cables carrying less than 600 volts shall be determined by the Company on a case by case basis. Cables which carry 600 volts or greater shall adhere to the installation requirements described in Section 4.4.
- Number, spacing and voltage of cables
 - Line loading and phase relationship of cables
 - Grounding system
 - Position of cables and load facilities relative to pipeline(s)
- 5.4 The following installation requirements shall be met for electrical cables carrying over 600 volts but less than 7,600 volts. The Company will determine the installation procedures for electrical lines carrying voltages over 7,600 volts on a case by case basis.
- 5.4.1 The electrical cable shall be installed in a rigid non-metallic conduit covered in a minimum thickness of 2" of concrete which has been colored with a red dye extending across the entire pipeline right-of-way.
- 5.4.2 The electrical cable must be installed a minimum of 12" below the Company's pipeline(s) across the entire width of the pipeline right-of-way, unless approved by the Company representative.
- 5.4.3 The neutral wires shall be externally spirally wound and grounded on each side of the pipeline right-of-way.
- 5.4.4 Red warning tape must be buried a minimum of 18" directly above the electric cable across the entire width of the pipeline right-of-way, where practical.
- 5.4.5 The electric cable crossing must be clearly and permanently marked with identification signs on both sides of the pipeline right-of-way.
- 5.5 Overhead power line and telephone line installations shall be reviewed by the Company on an individual basis. As a minimum requirement, overhead lines shall be installed with a minimum clearance of 25 feet above the grade of the pipeline right-of-way. The installation of poles will not be permitted on the pipeline right-of-way

First Energy Corporation

First Energy Corporation has seven overhead electrical transmission lines that pass through the Region. In addition they operate their Eastern Topton Electrical Substation on the north side of Furnace Street within the Borough. These transmission lines have the following characteristics:

Line No. See Map	Voltage	Right-of-Way Width
75	69KV	60 ft.
872	69KV	60 ft.
873	69KV	60 ft.
877	69KV	60 ft.
1001	230KV	180 ft.
1003	230KV	180 ft.
5009	500KV	200 ft.

The following present the General Restriction and Requirements for uses along these transmission lines, although potential users must obtain permission from First Energy and the private landowner before new uses are established:

Basic Restrictions for Requested Uses

1. No buildings, fences, swimming pools, or other structures may be erected.
2. No excavation, trenching, or changes to existing grades (cuts or fills) are allowed without Licensor prior approval based on review of detailed drawings. Contours along access routes and near structures may not be steeper than 5:1. Raising grade reduces conductor clearance and could create a safety hazard. Grade changes can also affect access or lead to drainage problems.
3. Earth must be left undisturbed and open space maintained for a minimum distance of 50 feet (100 preferred) from the edge of towers and 25 feet (50 preferred) radius around poles, guy wires, and anchors. At no time shall fill be placed around structures or over guy wire anchors. Licensee to install construction barriers around Licensor facilities at these distances during grading and construction operations to protect Licensor facilities and maintain existing grade. Notes and details to be shown on all grading drawings.
4. No rights will be assigned within 150 feet longitudinally on either side of a line angle or dead end structure for the full width of the right-of-way (depending on the height and type of structure, terrain, proposed encroachment, etc distance may be reduced to 50 feet). This area must be reserved for structures and guys of potential adjacent lines and wire set-ups at dead ends.
5. Longitudinal occupations are generally restricted to the outer ten feet of the easement area, subject to review. Crossings perpendicular to the right-of-way are strongly preferred provided required clearances can be met. Longitudinal and paved occupations are limited since they disrupt future structure placement.
6. Storage of flammable, explosive, or hazardous material is prohibited. No fueling operations are permitted.
7. Any blasting must be performed by a fully licensed and insured firm and must be reviewed with Licensor in advance. Blasting is not permitted within 100 feet of Licensor structures. Blasting mats or equivalent protection must be used to protect the conductors and insulators. Licensee is responsible for any damage caused to any Licensor facility.
8. Licensor reserves the unrestricted rights of ingress and egress for line maintenance or other work. Access to Licensor facilities shall at no time be impeded.
9. If buried ground wires (which generally run parallel to the transmission line and 12 to 18 inches below grade) are severed or any other Licensor facility is damaged, the damage shall be reported immediately to Licensor and will be corrected by Licensor at the responsible party's expense.
10. Licensor reserves the right to monitor construction and correct deficiencies at Licensee expense if these requirements are not met. Billing may be at full overtime rates including travel time plus overheads.

11. Licensor reserves the rights to reconstruct the line(s), add facilities, and construct additional lines.
12. Licensor shall be relieved of all responsibility for damage or injury resulting from construction on or use of Licensor property or right-of-way. Any such situation shall be resolved without expense to Licensor and with the approval of and to the satisfaction of property owner(s) and all-appropriate local, state and federal agencies.
13. Erosion and sedimentation control must be installed and maintained by Licensee. All disturbed areas must be seeded and maintained by Licensee until sufficient growth exists to prevent erosion. Visible ground settlement must be restored by Licensee.
14. Extreme caution must be used when working in the vicinity of Licensor facilities. Any contact or damage shall be reported immediately to Licensor. Posting and maintaining signs warning of overhead high voltage lines are recommended.
15. Twenty feet minimum clearance (based on current OSHA regulations) must be maintained between the conductors and any equipment.

Line Operating Voltage	Minimum Clearance
69kV & below	15 feet
115kV	15 feet
230kV	20 feet
345kV	25 feet
500kV	30 feet

345KV & 500KV LINES

16. Licensee (is/has been) advised of the potential for exposure to electric discharge from metal objects located under or along 345/500 kV lines. Licensee (is/was) advised to consult with technical experts to determine if this condition could affect any activities or operations planned. Electrical charges are the result of electrostatic induction from the line(s) and reduce rapidly with distance from the line. High resistance grounding of metal objects has been effective.

BASIC RESTRICTIONS FOR INSTALLATION OF PARKING AREAS OR STREETS:

17. Parking lots for short-term parking are generally permitted provided that clearance is sufficient and provision is made for future line additions and rebuilds. Licensor facilities located within or near the parking area must be suitably protected from vehicular damage with removable barriers approved by Licensor and installed by Licensee at least 5 feet from the facility.
18. Area lighting structures over 10 feet high located on the right-of-way must be evaluated individually for safe clearance so that workers installing or maintaining the lighting facilities are not placed within dangerous proximity to present or proposed Licensor transmission facilities. If distribution facilities are attached to the transmission structures, additional restrictions may be imposed.
19. Licensor reserves the right to restrict parking or use of roadways during performance of maintenance or other work.
20. New roads and high traffic volume drives may not be constructed within 25 feet of a pole, guy, or the face of a tower. May allow low volume drives as close as 10 feet with removable barriers approved by Licensor and installed by Licensee at least 5 feet from the structure. Minimum only applies if final grade is the same as existing grade so adverse slope does not affect structure access or drainage. All grade changes must be

evaluated. Anchors are generally installed at a 45-degree angle and extend 10 feet into the ground.

21. Concrete or bituminous paved roads, drives, sidewalks, and parking areas are required to meet the H20-44 (32,000 lb axle load) highway specification for heavy equipment travel and must not create an obstacle for equipment access along the right-of-way. Gravel surfacing is strongly preferred.
22. When roads, drives, sidewalks, or parking lots are built at an elevation different from the existing elevation of the right-of-way, access ramps to the right-of-way must be provided.
23. Licensor reserves the rights to add, replace, or relocate facilities without any obligation to restore surfacing or relocate barriers.
24. Sloped curbing or curb cuts 16 feet wide must be provided for Licensor vehicle access to the right-of-way.

BASIC RESTRICTIONS FOR INSTALLATION OF BURIED PIPELINES (Sewer, Water, Gas, etc.) AND UNDERGROUND TELEPHONE AND ELECTRIC CABLES:

25. All underground facilities shall be installed to a depth or have sufficient strength to withstand an axle load of 30 tons without damage when traversed by heavy equipment.
26. All underground facilities shall be visibly marked in the field where they enter and leave the right-of-way and at any angle points. Markers to identify the facilities shall also be placed on the right-of-way at line of sight intervals not to exceed 200 feet.
27. Manholes may not be more than 6 inches above grade.
28. Horizontal separation shall be maintained from the centerline of the underground facility to the nearest parallel overhead line conductor to provide a safe working space during construction and maintenance of underground facility.
29. Licensee shall install and maintain any cathodic protection that may be required at no expense to Licensor. Proper grounding procedures must be followed during installation, operation, and maintenance of the pipeline to assure no one is affected by induced currents.
30. Pipelines generally shall not encroach more than 5 feet from the edge of the right-of-way (10 feet depending on the right-of-way width). No valves are allowed on the right-of-way. Use is specifically restricted to a centerline easement for a single or specified number and specified diameter pipeline(s) with a 10 or 20 feet surface right-of-way for construction and maintenance.
31. As-built plans signed and sealed by a PLS or PE locating the pipeline within Licensor right-of-way and referencing existing Licensor structures must be submitted to Licensor upon completion of the project. Deviation from approved plans may require relocation of Licensee pipeline. Failure to provide as-built drawings will result in forfeiture of License and removal of Licensee facilities at Licensee expense.
32. Licensee must comply with all provisions of the State one-call system.
33. Underground sewage disposal beds shall not be located on the right of way. Hardship exception: If owner provides a letter signed and sealed by a licensed Professional Engineer or sewage enforcement officer confirming that testing has been performed and the property will not perc anywhere except in the easement area. Conductor clearance and access to the line and structures must be maintained. The proposed underground sewage bed shall be identified and protected with vertical bollards (4 inch by 8 foot concrete filled steel pipes embedded 3.5 feet) at corners and at intervals between corners not exceeding 8 feet.

BASIC RESTRICTIONS FOR PLANTING TREES AND SHRUBBERY:

34. Licensor reserves the right to trim or remove any tree or shrub that interferes with maintenance or operation of Licensor's facilities without any further obligation. Plantings shall not block or limit access to or along the right-of-way or to facilities.
35. No planting or growth shall be allowed to exceed a maximum mature height of 10 feet and no trees shall be planted under wires.

BASIC RESTRICTIONS FOR INSTALLATION OF FENCES AND GATES:

36. Fences are not permitted on the right-of-way unless approved by Licensor. Where fencing is installed, Licensor right-of-way access must be maintained.
37. Metal fences on the right-of-way must be grounded by Licensee to driven 8 feet long 5/8 inch copper-clad rods at the following locations as a minimum: gate posts, corner posts, and 40 foot maximum intervals overall.
38. Gates that limit access to the right-of-way shall have a double lock arrangement so Licensor is able to unlock and gain access to the right-of-way. 16 feet wide gates are required.

ADDITIONAL RESTRICTIONS FOR SURFACE MINING:

39. Earth should be left undisturbed and open space maintained for a minimum distance of 100 feet from the edge of towers and 50 feet radius around poles, guy wires, and anchors. Licensee to install construction barriers around Licensor facilities at these distances during grading and mining operations to protect Licensor facilities and maintain existing grade. Notes and details to be shown on project drawings.
40. One to one (45-degree) slopes, or equivalent benching, must be left in place around structure support mounds. Licensor will consider alternative support provisions based upon review of an independent registered Engineer's or Geologist's report of stability of underlying strata paid for by Licensee.
41. A 20 feet wide access ramp suitable for vehicular access with slope no steeper than 5:1 must be left in place to each structure.
42. A copy of the DEP final permit must be provided to Licensor.
43. At no time shall fill or other materials be placed around structures and guy wire anchors or under wires.
44. Notify Licensor in writing at least 30 days prior to start of back-filling operations. Licensor reserves the right to have a representative on site.
45. Care must be exercised when back-filling and establishing final grades to insure safe ground clearance is maintained to wires. No fill is permitted on the right-of-way which would decrease original conductor to ground clearance without Licensor prior approval based on review of detailed drawings. Back-filling must be completed in compacted layers. Finish grade must match grade preserved around facilities, provide for facility access, and prevent run-off from affecting Licensor facilities.
46. Licensee shall provide a topographical survey for the area of mining disturbance on the right-of-way as soon as practical after any phase of final back-filling is completed. Survey must include ground elevations under all conductors and reference ground line elevations at each structure. Survey to be performed by a Professional Land Surveyor. Licensor can provide this service at Licensee expense if requested.