

ONCOR HIKE AND BIKE TRAIL GUIDELINES

A SUSTAINABLE COMMUNITY PARTNERSHIP MODEL

June 1, 2014



Table of Contents

Introduction 3
Guiding Principles..... 3
Background..... 4
Application/ Process..... 4
Hike and Bike Trail Features..... 5
Landscaping Requirements 7
Landscape Template..... 9

Introduction

In 2011, Oncor announced it will begin to transform pathways under parts of the company's transmission rights-of-way into hike and bike trails as part of the new Oncor Texas Trails program. These trails will help create pathways that will be integral parts of the communities Oncor serves. The Oncor Texas Trails program is also a key part of Oncor's commitment to supporting health and fitness initiatives, as well as a key part of a broader Oncor initiative to align Oncor's assets with community needs.

The Oncor Texas Trails program will allow Oncor to work proactively with the communities we serve to design a template for recreational use of transmission rights-of-way, including native and low maintenance landscape designs.

Oncor hopes that the hike and bike trails will lend themselves to health and fitness oriented events such as community walks, runs, rides and other fitness activities along the trails. These types of events illustrate the importance of living a healthy lifestyle and provide an outlet to community members to practice a healthy lifestyle.

Guiding Principles

The following guiding principles are primary factors when evaluating proposed Hike and Bike Trail plans:

- Maintaining the safety of the public and Oncor's employees and contractors;
- Promoting a sustainable community partnership model that aligns well with Oncor's philanthropic and community involvement focus on health and wellness;
- Ensuring public awareness and support for hike and bike trail projects including the adjacent landowners;
- Maintaining the reliability, security and electrical clearance requirements of Oncor's transmission and distribution lines;
- Preserving Oncor's ability to access facilities for on-going and future inspection, operations and maintenance needs;
- Ensuring the corridor is not constrained in a way to prevent meeting future grid electrical needs, system upgrades, etc.;
- Avoiding increased maintenance expense or liability for Oncor.
- Sustaining and protecting the Licensee's investment in a hike and bike trail.

Background

Oncor's transmission line rights-of-way (ROW) primary purpose is to provide safe and reliable electric service to the public. The ROW is used by Oncor to construct, operate, and maintain transmission and in some cases distribution facilities. When possible, the use of the ROW for hike and bike trails is a great way for Oncor to partner with cities in our service area. The width of a transmission line ROW depends on the voltage of the line and the height of the structures, but can be 70 to 160 feet wide or more depending on the type of facilities and their location on the ROW.

Transmission lines transfer electricity from generating stations to substations. From these substations, the electricity is distributed to individual homes and communities through distribution lines typically supported by wood poles called distribution poles. These distribution lines and poles are smaller in size, carry a smaller amount of electricity, and are spaced closer together as compared to transmission lines and structures.

Since overhead electric lines are un-insulated, the design of these lines requires that minimum clearances be maintained for safety and reliability. Trees and other plant materials can cause interruptions to electric service if they grow into or fall upon the overhead electric lines. Since 1996, tree and power line conflicts have been implicated as the cause of three large-scale electric grid failures in the US and Canada, including the massive August 14, 2003 blackout that affected 50 million people. As a result, the industry practice of tree clearing both within and along the edge of ROW has become more stringent.

The development of Hike and Bike Trails and Landscaping Enhancements must be carefully planned and these guidelines have been developed to ensure a sustainable community partnership where transmission line ROW remains in compliance with all clearances, safety regulations, and good engineering practices that pertain to existing and future electric transmission and distribution facilities.

Application/ Process

Each transmission right of way is unique and as such, Oncor reviews each project for approval. These Guidelines and Landscaping Templates are provided as information to minimize misunderstanding and ensure that improvements that are proposed by a community will be possible.

Before developing details plans for a Hike and Bike Trail on Oncor property, the entire proposed scope of the Hike and Bike Trail (including those portions of the proposed trail not impacting Oncor's property) should be submitted to Oncor for review. This preliminary review process is intended to provide project feasibility feedback to the potential Licensee regarding the use of Oncor's property for Hike and Bike Trail purposes before the Licensee makes significant financial investments and plans.

The Hike and Bike Trail project plan documentation requirements are as follows:

- Submit a set of preliminary, scalable plans showing the property lines, transmission and distribution structures, existing facilities (roads, telecom, etc.) and proposed trail location.
- Indicate all proposed grading / elevation modifications.
- Utility access route to be shown on plans.
- If possible, discuss future desired trail improvements if not part of the original plans.

Hike and Bike Trails License Agreements are for use with city or county governments. Oncor will not license a hike and bike trail to other entities such as homeowner's associations.

Hike and Bike Trails are intended for application on typical 138,000 volt or 69,000 volt ROW owned by Oncor. Oncor will review proposed trail locations for appropriate application in the event the property configuration or facility limitations cannot accommodate a Hike and Bike Trail.

The Licensee must conduct an open meeting for all adjacent property owners and the public before the start of a hike and bike trail project to ensure public awareness and support.

Oncor reserves the right to approve or deny Hike and Bike Trails and the trail design or landscaping in certain areas and situations consistent with the Guiding Principles.

Hike and Bike Trail Features

It is important for Oncor to be provided the full scope of a community's proposal for the success of the project and to protect the city's investment in the trail. Following are specific requirements:

Trail Design Requirements

- One side of the transmission line ROW must remain open throughout the trail to allow Oncor access for maintenance and operations. Typically a minimum of 15 feet is required for vehicular access.
- The maximum concrete trail width is 12 FT.
- Divided concrete trails are not allowed.
- Bollards will typically be required at road crossings.
- Trail construction will minimize changes to the existing grade, elevation, and contours within the ROW.
- Written consent is required from Oncor, prior to any excavation or trenching within the ROW.
- Minor changes will be permitted to comply with American with Disabilities Act.

Amenities

The following commonly requested hike and bike trail amenities are generally acceptable with some restrictions:

- Crossing Metal Fences - maximum height 8 feet, crossing angle at 45 to 90 degrees to the centerline of the ROW.
- Trash Receptacles - at road/street crossings.
- Trail Identification Signage - non-conductive materials only, trail name identification at the road/street crossing, maximum height 6 feet.
- Mile Marker Signage - non-conductive materials only, recommended one per mile, edge of ROW, maximum height 6 feet.
- Rest Areas - located adjacent to publically available road/street access.
- Pedestrian Benches - maximum length 6 feet, located adjacent to publically available road/street access.
- Shade Features – typically located within rest areas, non-conductive, non-climbable, work closely with Oncor on height and ROW location to ensure electrical clearances are met.
- Low Water Crossings - permitted with minimum grade/elevation change.
- Decorative Walls – incorporated within landscaping features, maximum height 5 feet.
- Sprinklers – low pressure drip irrigation only and in areas of approved landscaping vegetation only.
- Portable Restrooms – temporary ONLY for events and construction.

Restrictions

Consistent with the Guiding Principles, the following improvements are typically not compatible with transmission ROW, but can be incorporated into the overall hike and bike trail design outside the transmission ROW and not on Oncor property:

- Structures (e.g. pavilions, cabanas, playground equipment, storage buildings, etc.)
- Longitudinal Fences (conductive or non-conductive)
- Electrical lighting or wiring
- Dumpsters
- Parking Lots
- Ponds
- Bridges

Landscaping Requirements

Vegetation density and height are critical issues affecting the safe and reliable operation of Oncor transmission lines. Landscaping requirements attempt to provide basic guidelines for a space that allows compatible use of vegetation and visually attractive landscaping features with the use of Oncor's electric facilities in accordance with the Guiding Principles.

Before any new transmission line ROW landscaping plan for a Hike and Bike Trail or Landscaping Enhancement is approved, Oncor will work with the licensee to identify all existing vegetation incompatible with these Landscape Requirements and determine the plan for removal. Once a new landscaping design is approved by Oncor, the improvements may be installed and are maintained by the Licensee.

The license agreement for the hike and bike trail requires the Licensee maintain the entire length and width of the transmission line ROW covered under the license agreement - not just the areas within and immediately adjacent to the trail.

Visual Interest Features

Features that promote visual interest such as vegetation, rocks, planting beds, berms, etc. are often desirable features in a landscape plan. Oncor will review and if appropriate approve these features for potential clearance and access issues, consistent with the Guiding Principles.

For the purposes of landscape design requirements, a Landscape Template is provided to communicate where visual interest features are generally acceptable and offer the least interference with ROW access and clearance with electric facilities. The template describes three general zones:

- Structure Zone – includes a 25 foot space surrounding a transmission structure. Typically turf only.
- Sag Zone – includes the middle 40% of the ROW between transmission structures and 10 feet outside the outermost overhead transmission conductor. Grass type plantings only. Visual interest features and other amenities are typically incompatible.
- Visual Interest Zone – features might include approved vegetation, rocks, planting beds, berms and amenities. Typically limited to 5 foot in height.

Other utility facilities within the transmission ROW such distribution lines / poles, substations, utility boxes may exist. Areas within 25' of these facilities should be turf only.

The density of vegetation (all types) for all zones should not exceed 25% of the total space available by landscape area per span. There should be no plantings, stands, or beds that cover the entire length or width of any zone so as to form a barrier to visibility or travel by foot or by vehicle from one Zone to the next or one span to the next.

Adequate breaks or spacing between beds or stands should exist to provide for foot and vehicle travel through these Zones.

Following are the minimum spacing requirements for certain types of plant material:

Shrubs-Minimum 15 ft spacing outside of planting beds

Ground cover/Flowers/Bunch Grass – typically limited to planting beds

Grade

The existing ROW should be sufficiently graded to provide good drainage and avoid standing water. Care should be taken during trail construction to avoid any changes in the grade within the transmission line ROW, thus preventing any drainage issues or concerns from adjacent landowners.

Plant Materials and Landscape Layout

All plant material that will be installed will be noted on the trail landscaping plans at the exact location where it will be planted. The specific species and variety of all plant material must be listed on the plans.

The following Recommended Plant Material List is intended as a guide and does not guarantee that the plants listed will not exceed the maximum height under certain conditions. Licensee will be responsible ensuring that the maximum allowable height of plant material is not exceeded at any time. If, upon inspection by an Oncor representative, plant material is found that exceeds the maximum height allowed for the Zone where it is planted, Oncor representatives will mark (Tag) the plant material for removal by Licensee. Replacement of the plant material will be at the sole cost of the Licensee. If Licensee fails to remove the plant material that has been tagged by Oncor as non-compliant, Oncor reserves the right to remove the plant material and Oncor's discretion after 30 days written notice to Licensee.

Vegetation height at maturity must not exceed 5 feet. The following list of ornamental plants generally meets these requirements. No trees will be approved as part of a landscape design on transmission ROW. Other plants may be submitted for review on a case-by-case basis.

Recommended Plant Material List

Common Name	Plant Species	Common Name	Plant Species
American Beautyberry-	<i>Callicarpa americana</i>	Apache Plume	<i>Fallugia pardoza</i>
Bat Face Cuphea	<i>Cuphea llavea</i>	Bridal Wreath Spirea	<i>Spiraea cantoniensis</i>
Bridal Wreath Pirea	<i>Pirea patens</i>	Butterflybush (blackbush)	<i>Buddleia cacidii var black Knight/Bonnie</i>
Coralberry	<i>Symphoricarpos orbiculatus</i>	Cliff Spirea	<i>Holodiscus dumosus</i>
Creosotebush	<i>Larrea tridentate</i>	Fern Acacia	<i>Acacua angustissima</i>
Firebush	<i>Hamelia patens</i>	Flame of the Woods	<i>Ixora coccinea</i>
Golden Currant	<i>Ribes aureum</i>	Oak leaf Hydrangea	<i>Hydrangea quercifolia</i>
Primrose Jasmine	<i>Jasminum mesnyi</i>	Rabbitbrush	<i>Chysothamnus nauseosus</i>
Rockspray Cotoneaster	<i>Cotoneaster horizontalis</i>	Shrubby Cinquefoil	<i>Potentilla jruiticos</i>
Texas Sage	<i>Leucophyllum virginicus</i>	Three Leaf Sumac	<i>Rhus trilonata</i>
Winter Honeysuckle Bush	<i>Lonicera jragrantissima</i>	Yellow Bird of Paradise	<i>Caesalpinia gilliesii</i>

Landscape Layout Template

