Transmission lines and substations are often considered a nuisance — necessary but preferably “not in my backyard.” What if utility companies could flip the script on what power lines represent, inextricably linking transmission lines with community assets, namely community trails and gardens? As utilities strive to serve as a trusted energy provider and partner in the community, integrating these attributes with vital infrastructure could be a universal win.
Imagine a public meeting centered on power lines, filled with engaged residents and stakeholders. But instead of a crowd united in opposition, this group is curious and hopeful. They’re here to learn more about the local utility’s plan to transform transmission line rights-of-way (ROW) into a series of master-planned trails and develop community gardens around substations.

Creating neighborly transmission lines with trails and gardens benefits both sides of the utility-community partnership. Green space is at a premium in cities, especially as the percentage of people who live in urban areas continues to rise. If land isn’t already claimed for public recreational use, it’s unlikely it ever will be.

Power line ROW is ideally suited for trail development, offering many miles of contiguous segments requiring minimal development and connecting vital areas of the community.

Even though ROW and linear recreational uses can have benefits for both the utility and the community, utilities need to consider ROWs on a case-by-case basis, says Mark Van Dyne, a Burns & McDonnell vice president. “Utilities need to consider their ability and future rights to upgrade facilities, and to protect those rights, before allowing public parks and facilities in their right-of-way.” Utilities’ properties are a tremendous asset. By proactively developing those green spaces, trails and gardens, utilities can deliver more value from those assets and demonstrate good stewardship for the community.

**LINES ABOVE, OPPORTUNITY BELOW**

The need for safe, reliable electric capacity is constant. But new long-line transmission lines and incremental improvement projects can face resistance, and a small percentage of people can sometimes impact the greater good of the community.

A simple solution might be introducing trails and parks — civic assets that encourage a healthier, happier lifestyle — to reframe the conversation about what power lines mean to a community.

“A next generation trail system gives our clients an opportunity to present transmission line corridors as a community asset,” Van Dyne says.

Engaging residents and other stakeholders in the process is essential to success. Utilities already share a connection with residents as their electricity provider. Jointly planning and pursuing this initiative can enhance that relationship.

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**THE HIGHWAY PUBLIC ART MODEL**

Redefining the brand of our nation’s infrastructure has precedent. Highways are often a point of contention in communities. But the durable trend of including public art elements near surface transportation has transformed many of these roadways from irritant to tourist attraction.

Funded in part by “percent for art” legislation, public art has become a treasured addition to Arizona’s natural landscape — especially along its highways. Ranging from traditional to whimsical, these art pieces have helped turn the driving experience from dull to delightful for residents and visitors.

The bland expanse of Interstate 70 into Indianapolis became an attractive welcome with native landscaping and public art installations at five highway interchanges. In Sandpoint, Idaho, a controversial highway bypass became a community asset with the addition of green walls — vertical structures with plants growing from them.

Several cities are also working to transform the area underneath elevated highways. The Under Gardiner project in Toronto includes plans for a series of “living room” public spaces underneath a new expressway. The Wabash Lights public art project in Chicago imagines using 5,000 LED light tubes to create an interactive light sculpture beneath two blocks of the Loop.
While this opportunity is appropriate for new transmission projects, it might be a good idea to implement beneath existing lines. Residents will see well-defined civic beautification and personal health benefits.

- **Trails**: More than simply bare dirt, these are greenbelts with paved trails, appropriate for walking, running and biking. Ideally the trails connect existing infrastructure and amenities, including parks, neighborhoods and businesses. The details rely on the community’s input — every decision from fruit trees to fences is informed by their perspectives.

- **Community Gardens**: Green space around transmission line ROW and substations is cultivated as a community garden, capitalizing on the site’s existing parking and lighting. Members must adhere to rules established in similar gardens across the country, but they have the opportunity to grow their own organic fruits and vegetables. Utility representatives help support a bountiful harvest by dropping off compost and mulching seasonally.

There’s no question — this initiative requires a serious commitment in both initial costs and maintenance. But the benefits for utilities and the community are tangible.
Contributing to the community is a big part of the answer. Placing a trail under a line or a garden near a substation offers a visible, long-term example of civic investment. Pursuing this idea requires a genuine, altruistic instinct from utility leaders.

- **Trust and Goodwill**: These benefits are intangible, but they’re also important. Deployed strategically and with a constant focus on community engagement, the public relations value of a trail and garden project is considerable. When a utility comes to customers with a new product, they might just remember where they took their morning jog.

- **A New Perception of Power Lines**: When transmission lines are paired with community assets, they shed some of their negative perceptions. Developing a functional, attractive space could translate into less opposition on future utility plans.

- **Access**: A city- or county-maintained trail provides utility workers with easier access to lines and fixtures and may reduce raw maintenance cost.

Developing a trail or garden project comes with challenges. Public safety is a possible issue, requiring fencing, signage and potentially a designated buffer space between the trail and transmission towers.

Liability can also be a concern, though all 50 states have passed recreational use statutes that address the issue.

Utilities can also look to state legislatures to address specific liability concerns. In 2013, the Texas legislature adopted a bill reducing liability for the local power company in Houston when allowing bike paths below transmission lines. The bill has paved the way for the integration of power lane trails into the larger Bayou Greenway Initiative, which aims to make most of the city walkable and bikeable for the first time.

### FIRST STEPS TOWARD MORE NEIGHBORLY POWER LINES

For utilities, the first steps toward developing a Next Generation Trail and Community Garden Program are relatively straightforward.

- **Step One — Map the Transmission System**: Examine the transmission map to identify likely sites for the development of trails and gardens. Ideal locations allow for maximum safety, with minimal natural obstructions such as drainage areas and ridges. Consider easy access from roads, existing connections to parks and trails, and aesthetic potential.

- **Step Two — Develop a Budget**: Identify a solid source of funding and a budget. Once the project is announced, there’s no going back. This investment may be partially balanced by the maintenance cost savings realized from less mowing and weed control — not to mention the benefits of community goodwill.

- **Step Three — Build Consensus with Politicians and Community Leaders**: Buy-in from local politicians and community leaders can smooth the upcoming planning and permitting process.

- **Step Four — Engage the Community**: Develop a community relations plan — including interviews, surveys, advertising and public relations — that culminates in a series of public meetings.

- **Step Five — Pilot the System**: Select one section of trail and one site for a community garden and pilot the plans, testing out operational plans and budget estimates.
• **Step Six — Analyze Results and Plan for the Future:**
Share the results of the pilot program with the community and develop a plan for moving forward together. Alternatively, identify the challenges that must be overcome before the project progresses.

• **Step Seven — Form Partnership with Parks and Recreation Department:** Forming a partnership with a parks and recreation department (or similar) is a vital early step in order to work together in line with that organization vision and trail master planning. Additionally they may participate in maintenance, signage, etc. so it is important to form this partnership early to come to agreement on roles and responsibilities before getting too far into project design and development.

Resist the temptation to have all of the answers before engaging the public. “When the community’s ability to shape the scope is more than just window dressing, you give them a real stake in the project’s success,” Van Dyne says.

What does a transmission line signify to the average resident today? What could it signify if it came bundled with a much-desired community asset? A Next Generation Trail and Community Garden Program has the potential to quietly transform the public perception of power lines. Today, dozens of walking and biking trails follow transmission ROW. With proper guidance, awareness and demonstrated success, hundreds more could follow.

**BIOGRAPHIES**

**MIKE BEEHLER, PE,** is a vice president at Burns & McDonnell. After working as a transmission engineer and project manager, Mike led the company’s initial development of critical infrastructure protection after 9/11. He initiated application of sustainable principles into substation design, preceding their development by ASCE and ACEC in the Envision program. Mike has written and presented extensively on the subjects of reliability-centered maintenance, program management and the smart grid. Subsequently, Burns & McDonnell has become an industry leader in major program management and developed a series of world-class grid automation labs. More recently, Mike has written, presented and consulted on electric and gas industry megatrends and grid modernization. Mike has a Bachelor of Science in civil engineering from the University of Arizona and a Master of Business Administration from the University of Phoenix. He is a registered professional engineer in eight states, a member of IEEE and a fellow in the American Society of Civil Engineers.

**WILL KIRBY, PE, ENV SP,** is a senior transmission engineer and project manager on a variety of overhead transmission projects around the country. He also helped found and lead the firm’s Sustainable Energy Solutions team, a cross-division group focused on bringing the company and its clients to the next generation of clean and responsible energy use. Will graduated from Missouri University of Science & Technology with Bachelors of Science in civil and architectural engineering. He is currently pursuing a Master of Engineering in Sustainable Systems Engineering from the University of Wisconsin-Madison.

**IMPORTANT QUESTIONS**

Gather community feedback on a wide range of issues and let the answers inform the master plan. Sample questions might include:

- What are the best locations for trails and gardens?
- What trail surface is best for walkers, runners and bikers that is also easy to maintain?
- Is the reintroduction of native species in the landscaping a priority? How about habitat development? Or bees?
- Should the trail system also include public art?
- What are safety concerns about the trail and community gardens?
- Should fences be built in backyards along the trail?
- How can the trail connect the community and improve mobility?