



Undergrounding Utility Wires

More than three million miles of electrical cables are strung across the country and at least 180 million telephone and cable television lines coexist with above ground power lines. As a result, the aesthetics of our communities and landscapes are often overwhelmed by unsightly utility wires and accessories.

Because of the benefits of undergrounding utilities, 9 out of 10 new subdivisions bury utility lines. In addition, dozens of cities have adopted comprehensive plans to bury or otherwise relocate utility lines, including San Antonio, TX; Colorado Springs, CO; New Castle, DE; Saratoga Springs, NY; Williamsburg, VA; Tacoma, WA; and Frederick, MD.

Together, communities and utility companies can reduce the visual impact of utility lines and poles; saving scenic beauty, improving safety, reducing utility disruptions, and increasing property values.

Benefits of Relocating Utilities

Utility wire undergrounding and relocation projects are expensive. Communities need to convince their local officials and utility companies of the benefits of wire relocation or burial.

Aesthetics

The appearance of an area can be greatly improved by reducing the visual clutter of utility wires. Undergrounding utility wires allows communities to highlight their unique beauty without a maze of poles and wires in the way. Without overhead utilities, communities can more readily undertake improvement projects such as sidewalk widening and tree planting without having to snake around poles or trim vegetation to make way for power lines.

Reduced Maintenance

Falling tree limbs, high winds, and heavy snows are just a few of the things that frequently cause utility disruptions by destroying overhead lines. Burying lines eliminates weather-related power outages and provides more reliable service to subscribers.

Safety and Community Health

Burying lines eliminates fire hazards, accidents, and safety risks from power outages due to downed lines. Relocation also reduces possible health risks from electromagnetic radiation and improves road safety by removing or reducing the chance of motorists striking poles.

Economic Development

Many revitalization experts agree that investing in improving the appearance of traditional commercial areas is one of the best ways to attract new business and stimulate economic development. Beauty benefits business, and minimizing the visual impact of utilities can be a major strategy to beautify and revitalize an area.



**FEATURED
PUBLICATION**
*Power to the
People*

For more
information and to purchase
this publication [click here](#)



Case Studies

Many communities have successfully reduced the visual impact of utilities in many innovative ways. The case studies below illustrate a few examples of different approaches that can be taken to reclaiming a community.

Balancing Aesthetics & Affordability: Palo Alto, California

In 1966, Palo Alto became one of the first cities in California to begin undergrounding utility wires. Palo Alto's city-owned electric company works with other utility providers and city planners to identify priority areas for undergrounding and to implement projects in multiple phases. Palo Alto is also one of the only cities to make low-interest loans available to property owners to offset the cost of hookup from the underground service to their property. In order to prioritize areas for undergrounding, Palo Alto applies the following criteria:

Aesthetics -- *The visual quality of an area is weighed against the intrusiveness of utilities in the area. Commercial and residential areas are given priority over more open areas.*

Reliability -- *Areas subject to frequent utility disruption are given high priority.*

Affordability -- *The overall cost of the project is weighed against the benefits of conversion.*

Creative Approaches to Relocation: Laurel, Maryland

Laurel, MD began an extensive Main Street revitalization program in 1978. Initially Laurel wanted to place its utilities underground, but could not find a way to pay for the conversion. Baltimore Gas and Electric (BG&E) worked with the city to identify alternative utility relocation options. Since Laurel has an extensive alley system, BG&E worked with city planners to design a network that hid all of the utilities in the downtown area in the alleys. On streets approaching the downtown area, utility wires were consolidated on one side of the street and poles moved back an average of eight feet to make them less visible. This creative thinking reduced the total cost of the project to less than \$1.3 million.

Selective Screening: Breckenridge, Colorado

Unlike most undergrounding requirements for new development, Breckenridge, CO regulates the placement and appearance of all utility elements, including transformers, meters, and substations. Screening these often overlooked elements can have a tremendous impact on the aesthetic appearance of communities. Breckenridge requires all utility elements to be buried, enclosed or screened in "a style and detail that is compatible with the architecture of the development."

Innovative Undergrounding: San Antonio, Texas

In 1993, the municipally-owned City Public Services in San Antonio, TX launched one of the most innovative undergrounding schemes in the country. Unlike some other programs, San Antonio's initiative costs consumers nothing, and gives the city complete political control over undergrounding. The city receives one percent of City Public Services's retail electric sales revenue to pay for utility burial and relocation. It is up to the city to determine how and where to spend the conversion fund. Because the fund is limited and does not pay for the relocation of other wire-based utilities, the city uses a nine-step process to select and implement projects, with priority on undergrounding in historic districts, public spaces, and scenic areas.



Hilton Head Island Project Puts Power Lines Underground

One of the most inspiring and forward-looking municipal improvement projects in the country is currently underway in the Town of **Hilton Head Island**, South Carolina, where crews are more than halfway through a 15-year project to put overhead power lines underground.

The effort is the result of a 2004 Town ordinance requiring the conversion of all overhead power lines to underground.

The purpose of the project is to protect the health, safety and welfare of residents and visitors, increase the reliability of electric service, and boost the local economy by improving the aesthetics of an island that receives more than 2.3 million visitors annually.

The conversion process relies on a partnership between the Town and the utility company Palmetto Electric. The project is being paid for with a 3% monthly fee assessed to the utility bills of the roughly 1800 commercial and 35,000 residential customers on the Island.

The project will put nearly **76 miles** of overhead power lines underground at a total estimated cost of \$34,777,000, and will be completed in 2019.

Special thanks to Marc L. Torin of the Community Development Department of Hilton Head Island for providing photos and background information for this report.

Click on any image below to see a before/after comparison:





Funding Utility Relocation

How can communities find funds to reduce the visual impact of utility wires? The cost of a burial or relocation project can be staggering and communities often forego utility relocation projects to save money. However, several sources of funding from federal, state, and local agencies, in addition to special assessments, can help pay for utility relocation.

Federal Sources

One way for communities to pay for utility relocation is through the federal Transportation Enhancements Program, under the Transportation Equity Act for the 21st Century (TEA-21). Through their state department of transportation, communities can apply for Transportation Enhancements (TE) funds for utility burial or relocation under the categories of landscaping, scenic beautification, or scenic/historic highway programs and welcome centers. Utility relocations are often incorporated as part of a larger project to improve local appearance. For example, Vidalia, GA and Augusta, ME used TE funds to bury utility wires as part of their downtown improvement projects. Maryland has also used federal Community Development Block Grants (CDBG) to fund utility relocation projects.

State and Local Sources

Local and state community improvement grants are another method of funding smaller scale undergrounding projects. Some states, like Pennsylvania and Maryland, consider utility burial an aesthetic improvement akin to landscaping and allow communities to apply for funding to bury utilities as part of downtown and Main Street improvement grants. For example, the Pennsylvania Department of Community and Economic Development's "Downtown and Communities of Opportunity" grant program awards funding for communities seeking to enhance their quality of life and aesthetics.

In some states, like Washington, the state department of transportation (DOT) has the authority to pay for utility relocation costs necessitated by highway construction. In these states, the DOT can use federal highway funds for utility relocation under one or more of the following conditions:

- the relocation is in the public interest from a safety, aesthetic, economic, or legal standpoint;
- the utility has a property interest in its present location;
- the relocation involves implementing safety measures to reduce the roadside hazards of utility facilities to highway users;
- the utility is municipally owned and occupies the public right-of-way; and
- the state has a utility reimbursement law which gives it the authority to pay for utility relocation.

Special Assessment Districts

Some communities establish "special assessment areas" in regions that are scheduled for undergrounding in which utility subscribers pay an extra fee, generally two percent, on their monthly bill to fund the project. Special assessment areas are usually created through a petition by the majority of property owners in an area. Since the early 1970s, Commonwealth Electric in Massachusetts has successfully used special assessments to fund utility burial efforts in historic Cape Cod communities, such as Nantucket. However, one drawback to special assessments is that the total revenue collected is often minimal in comparison to the cost of utility relocation, forcing communities to extend the schedule for undergrounding utilities over a long period of time.

Several states, including California and Oregon, have established special "undergrounding districts" to help communities pay for burying utility wires. For example, in California the public utilities commission collects a percentage of revenue from all wire-based utilities to pay for undergrounding. In order to receive a share of this funding to bury wires, a community must form an undergrounding district by either collecting signatures from at least

70 percent of the property owners within the proposed district or through a special resolution passed by the local government. In addition, property owners in the undergrounding district must agree to pay for the cost of hookup from the new underground conduit to their property (typically \$500-\$2000). Once community meets these requirements, the local government can apply to the public utilities commission for undergrounding funds and coordinate an undergrounding schedule with planners and utility providers.