

Introduction

Between 1940 and 1970, towns and cities across the nation grew and expanded rapidly. Often these communities were nestled alongside a stream or river. As the towns grew, so did a number of problems associated with the nearby rivers. For instance, if a town's industrial and human wastes were dumped into a river, public health risks grew along with the town. If a nearby stream flooded its banks easily, construction near the stream was difficult.

Many communities dug trenches to contain these streams during flooding, or buried the streams in pipes underground to avoid associated health risks. Once the streams were buried underground, the towns also found it easier to grow. They built streets, housing, and industrial plants over the buried streams. And the public health problems also disappeared--at least for awhile.

Today many towns and cities are beginning to think differently about the streams buried under their streets. Several reasons account for this. For some towns, the pipes that encase the streams have rusted and must be replaced. For other towns, the volume of water flowing into the underground pipes has increased, and now, during winter storms, the pipes back up and water overflows onto streets and other places. And in some cities, people are asking whether the stream buried underground could be excavated and turned into a park setting that may attract new business and activities to declining and poorly used downtown areas. Often communities are struggling with a combination of these factors.

Many communities are finding that the costs associated with "daylighting" a stream (see sidebar) can be less than designing new pipes and re-burying the stream. They are also discovering that their communities can gain other benefits from a daylighted stream.

Here is the story of two communities that chose to daylight their streams. You'll learn why they excavated streams that were buried underground for decades. You'll also learn where you can get more information about daylighting streams and whether it's a good choice for your community.

What is "daylighting"? Many communities are confronting the problems associated with the streams buried under their downtowns. One option they have is to return these streams to a more natural, open state. This is often referred to as "daylighting" a stream.

The communities profiled here have experienced a revival of their downtown and business districts as a result of daylighting streams that were formerly underground. They are excited by the new look of their downtown areas and the renewed interest of local citizens, tourists and businesses since they daylighted these streams.



Until 1997, Cow Creek was buried under the streets of Hutchinson, Kansas. Now it provides a park setting enjoyed by tourists and residents alike.

Cow Creek cont'd
the problems publicly. The engineers presented different approaches to the problems at the meetings, and listened to the community's suggestions. The folks of Hutchinson liked the daylighting idea. When they heard that the costs for daylighting the stream and creating a new park in the downtown area were less than the costs of unearthing and replacing the underground pipes and bridge, they supported the daylighting project. The Cow Creek design eventually included a water play area, a merry-go-round and a festival site.

Three city blocks of Avenue "A" were excavated for the project. Four commercial buildings were also moved, and Cow Creek now flows through 800 feet of frontage in a park-like setting. Today, instead of declining property values and diminishing business activity in Hutchinson's downtown, property values have increased by 10% in the area. Concerts and music festivals are held regularly, and public use and business activity has increased.

Is the City of Hutchinson glad it daylighted Cow Creek? A local bank has been so pleased with the change in the area, and the increased business and civic use, that it now sponsors a "brown bag in the park" concert series in the summer with musical groups performing during the lunch hour.

FOR MORE INFORMATION, CONTACT THE RIVERS & TRAILS PROGRAM

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is to advocate and assist community based conservation action. We build and support partnerships that conserve natural and cultural resources, provide recreational opportunities, and contribute to economic and social well-being.

GIVING NEW LIFE TO STREAMS IN RURAL CITY CENTERS



A former parking lot is now a Festival Site at the end of the recently daylighted Arcadia Creek in Kalamazoo, Michigan



The National Park Service cares for the special places saved by the American people so that all may experience our heritage.



Arcadia Creek as it flows into the stormwater pond/festival site in Kalamazoo

Why do Buried Streams Cause Flooding? *Think of a city's streets and rooftops as a big wash tub that catches all of the rainwater falling on the city. The hard surfaces prevent the water from soaking into the ground. Instead, the rainwater runs down the city's streets and rain gutters and eventually flows into the pipes buried under the streets. As a city grows, the "wash tub" also grows, catching more rain and channeling it into the underground pipes. Eventually, more water is directed into the pipes than they can carry, and the excess water spills out in unexpected places—such as backed up storm drains and flooded city streets.*

Arcadia Creek

Over a century ago, Kalamazoo, Michigan buried Arcadia Creek underground. By the 1980s, downtown Kalamazoo had become a depressed area with boarded up, vacant buildings, high crime and declining public use. The streets also flooded often, because the underground pipes backed up as a result of the city's growth (see sidebar). In 1986, Kalamazoo began a major renovation of the downtown area. "Daylighting" Arcadia Creek (see introduction) gained support as a way to restore the declining downtown area, as well as address the flooding problems.

Kalamazoo daylighted five blocks of Arcadia Creek. To address the flooding problems the city created a large retention pond that holds the high winter flows and releases the water gradually into the stormwater system. In the summer, the city uses the pond area as an amphitheater for outdoor concerts. The amphitheater is popular with local residents and out-of-town tourists. The summer festivals generate about \$12 million annually.

To ensure a strong economic base for the project, the city encouraged local businesses to invest in the area before daylighting and renovation began. The city offered 30-year leases at low interest rates to businesses that developed new



Arcadia Creek after daylighting as it runs through Kalamazoo's business district.

Avenue A in Hutchinson, Kansas before daylighting Cow Creek. This area frequently flooded during winter storms.



construction along Arcadia Creek. The city also offered to renew the leases at \$1.00/ year after the initial leases expired.

To gain public support, the city passed out booklets in local schools explaining the Arcadia Creek project, as well as the reasons why the business district needed renovating. City staff discussed the problems at public meetings and workshops as well as the proposal for how to address them. The community learned how daylighting Arcadia Creek could revive the downtown area and address the increasing flooding problems. They also learned about the costs of the project, as well as the expected benefits. The citizens of Kalamazoo soon rallied behind the idea.

Today, Arcadia Creek drives an economic revival in the business district. Five festivals are scheduled at the amphitheater site each year, and new businesses continue to locate in the Arcadia Creek district.

For Kalamazoo, gaining firm commitments from local businesses and public institutions before starting to daylight Arcadia Creek was key to the project's success. As Ken Nacci, director of the downtown development agency said, don't proceed on a "build it and they will come basis." He advised that, "Getting commitments from local businesses and institutions early is critical."

Cow Creek



Avenue A in Hutchinson, Kansas with Cow Creek's streambed outlined

Downtown Hutchinson, Kansas experienced a host of problems in the 1980s and early 1990s. The underground pipes that encased Cow Creek below the city's streets were deteriorating. The downtown streets flooded during heavy winter storms, and a major bridge into downtown needed replacing. The general public avoided downtown's vacant, abandoned buildings and run-down environment, allowing crime and other problems to develop.

The city's engineers worried about the rusting underground pipes and decaying bridge. They looked at two different approaches to the problems: excavate the old pipes, encase Cow Creek in



Daylighting Cow Creek created an attractive place for residents and tourists to enjoy.

new underground pipes, and then seek state and federal grants to replace the bridge. The other option was to dig up the pipes and create a park with the re-

stored creek running through it. The city could then re-route traffic and eliminate the need for the bridge. The city found the costs of excavating, replacing and re-burying the pipes, plus replacing the bridge were higher than daylighting the stream and creating a park along its banks. The city's engineers also designed a stormwater pond to absorb the high winter storm flows and stop the flooding.

Hutchinson prides itself on having a high level of public involvement in its community affairs. City staff held a number of town meetings to share

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