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Opportunistic Urban Greenways: typologies, precedents and challenges

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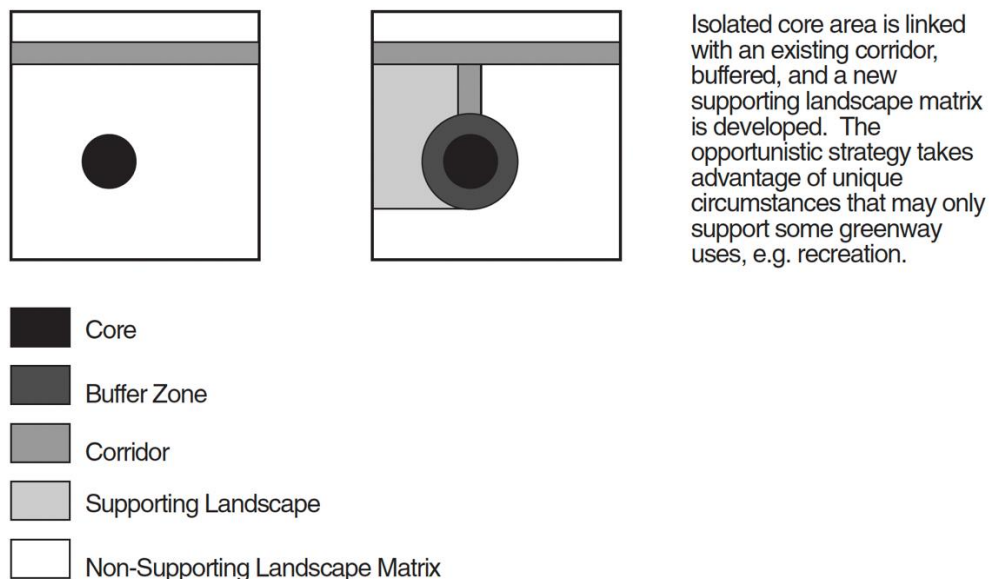
Introduction

As the greenway concept gains recognition internationally, its initial tendencies to “protect” fragile and sensitive resources has become limiting for application in dense urban environments. This challenge is increasingly addressed via an “opportunistic” approach. A recent addition to the literature of urban ecology recognizes novel urban ecosystems as distinct ecological entities (Teixeira and Fernandes, 2019). Often the landscape contains unique elements or configurations that represent special opportunities for greenway planning. These unique elements may or may not be optimally located in cities, but in some respects they are useful for greenway development. In the USA, the rails-to-trails movement is a good example of such opportunistic greenway planning. The opportunistic strategy is, by definition, dependent on the presence of certain unique landscape elements, which are often in the configuration of a corridor— and therefore are useful for greenways. As illustrated in Figure 1, the opportunistic strategy involves recognition of such special opportunities and integrating them with other planning strategies (Ahern, 1995).

The opportunistic strategy fits conceptually with Berger’s concept of “drosscapes” (2007) which are left-over, interstitial landscapes that are paradoxically signs of both abandonment and progress – areas that are by-passed by technological change and left fallow, awaiting a change in development pressure driven by economic or political pressure. Disimini (2019) describes this phenomenon, and its inherent options and opportunities in a 2019 book “from Fallow”. She provides an extensive collection of variations for the re-design of abandoned lands with the goal of understanding the many possibilities that are inherent in any particular locale. Urban ecologists and planners have also recognized the unique and distinct opportunities represented by vacant and underused urban lands (McPherson 2012, Pagano 2000, and Pearsall and Lucas 2014).

To understand and speculate on what these increasingly-recognized opportunities represent for urban greenway planning and design, this paper proposes a typology to better understand these resources and discusses challenges to their implementation in urban greenways.

D. Opportunistic



Key questions: what's been done/learned about working with abandoned/derelict/vacant urban lands.

Typology of Opportunistic Urban Landscapes for Urban Greenways

As greenways have gained in global popularity, planners and city officials have adopted opportunistic strategies to adopt and implement ambitious visions for greenways in space-limited contexts (Kim et al, 2018). These opportunistic strategies can be organized into a typology with four principal types defined by their urban context, goals, scale and functions supported.

Unused Infrastructure: Available derelict transportation corridors can provide continuity and form linkages in dense urban environments. The iconic example is the High Line in New York City that has been extremely popular and often repeated worldwide. Other examples in this category include the Petit Ceinture in Paris; Rail Park in Philadelphia and the “606” Bloomingdale Park in Chicago.

Vacant Lot Patchwork: Many cities have extensive numbers of vacant lots due to economic changes, and population loss. The spatial distribution of these abandoned lots is often somewhat random, causing challenges for systematic reuse. Cities are increasingly recognizing the potential for reuse and redevelopment of vacant lots. Precedents are often post-industrial cities like Detroit and Philadelphia.

Found Space: As the urban greenway movement matures, cities are “finding” space using existing road rights-of-way, wide sidewalks, street intersections and under-used existing public land. Common functions for these urban greenways include bicycle transportation and habitat corridors. Precedents include San Francisco’s “green connections” network and the Spring Garden Greenway in Philadelphia

Urban Redevelopment: In cities with active redevelopment programs, planners have recognized opportunities to build greenway networks to address social and environmental justice, economic development and alternative transportation. The Atlanta Beltline is a prime example.

These typologies are often used in combination and many are already commonly integrated into urban planning and urban open space planning.

Precedents

The following precedents from Europe and the U.S. have been selected to provide examples of the typologies above and offer diverse approaches to opportunistic urban planning and design. Some of these projects explicitly aim to create greenways that are intentionally linked and integrated to form networks for various uses/goals including: walking routes, urban wildlife habitat, urban agriculture, stormwater management and green corridors that mitigate climatic extremes. Other precedents function as “nodes” in existing or potential urban greenway networks. Individually and collectively these precedents provide “proof-of-concept” and a “toolbox” for adaptation of opportunistic urban greenways in other cities.

San Francisco: Green Connections

San Francisco has built a 115-mile network including 24 routes that seek to connect people with nature, called the Green Connections Program. This initiative encourages street (re)designs that enhance urban ecology with native plantings, stormwater plantings and street trees in the context of typical neighborhoods and street configurations. . In addition to providing direct ecological benefits, these designs support ecoliteracy and encourage residents to understand and interact with local opportunistic habitats. The Green Connections program includes 24 Ecology Routes/Guides, with maps and information on particular species of local plants and animals. Each of the 24 guides is named for a key species or habitat that serves an important ecological function and is suited to that particularly area. Routes can create a wildlife corridor, and in some cases correspond with flight, mobility, and nesting patterns of species found in the city. The Ecology Guides also provide a tool for visitors who want to learn about nature along the routes and surrounding neighborhoods, as well as for neighbors, designers and gardeners who want to help support a vibrant urban ecosystem (<https://sfplanning.org/project/green-connections>). The San Francisco Green Connections fits the vacant lot patchwork and found space typologies.



Figure 2. City map of Green Connections Network. (<https://sfplanning.org/project/green-connections>).

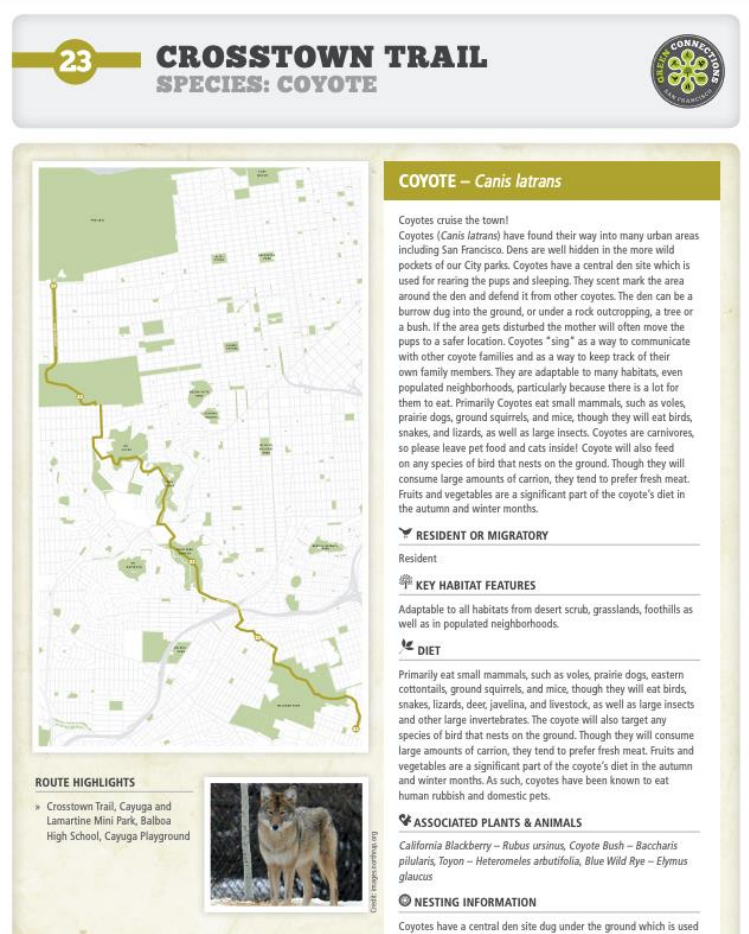


Figure 3. Map of Crosstown Trail for Coyotes in San Francisco. (<https://sfplanning.org/project/green-connections>).

Spring Garden Street Greenway, Philadelphia

This proposed greenway is designed primarily to improve bicycle accessibility and safety as a “high quality bicycle network”. As such this proposed greenway project is an example of an opportunistic greenway linkage – in this case linking the city’s major urban space, Fairmont Park, with the Delaware River corridor. And this linkage is to be achieved with no additional land acquisition. With a focus on bicycle safety and linkages, the project has complementary goals: to provide recreation and improve neighborhood quality, to promote economic investment and community development, and to improve aesthetics. The main proposed design intervention is a raised, off-street bicycle lane that addresses serious safety concerns with the existing bicycle lane on Spring Garden Street. Notably, the proposed project is integrated with the City of Philadelphia’s Trail Plan (<https://pecpa.org/wp-content/uploads/Reimagined-Spring-Garden-Street-Greenway-1.pdf>). The Spring Garden Street Greenway fits the found space and urban re-development typologies.

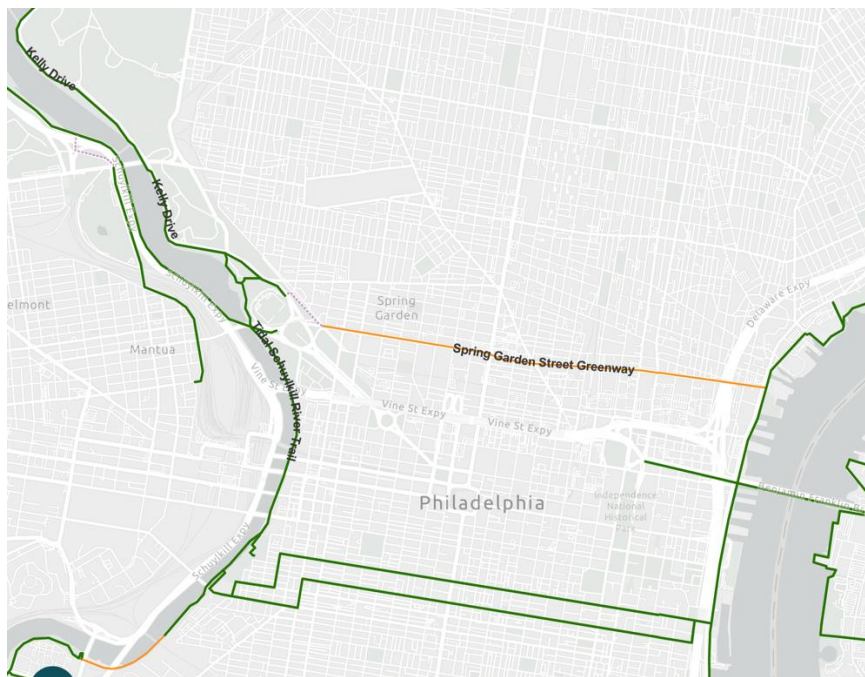


Figure 4. Proposed network connections of the Planned Spring Garden Street Greenway (<https://storymaps.arcgis.com/stories/a315cc6f10d2447aa54fb221aae81ae6>)

WHAT COULD SPRING GARDEN STREET LOOK LIKE?



Figure 5. Vision of proposed greenway with raised bicycle lanes. (<https://storymaps.arcgis.com/stories/a315cc6f10d2447aa54fb221aae81ae6>)

Schöneberger Südgelaende Nature Park, Berlin

Schöneberger Südgelände is an internationally-known example of opportunistic urban open space design with a unique history. The former Templehof railroad switching yard became inactive after World War II. Ownership belonged to East Berlin, yet the site was located in former West Berlin. As a consequence of this disjointed ownership, the site laid vacant for nearly 50 years. During this half-century, forest succession occurred on parts of the site, supporting a diverse matrix of canopy and understory trees and providing important bird habitat. The site's meadows spontaneously developed as xeric acidic heathlands supporting numerous rare and endangered/endemic species of grasses, forbs and associated butterflies. A development proposal for the Schöneberger Südgelände site in the 1990's was defeated and in 2000 the 18 ha site became a unique public nature park, a modern day "noah's ark" ironically now managed to maintain the diverse habitats that developed spontaneously in a highly disturbed and contaminated urban landscape (information: www.bi-suedgelaende.de/index.html). The Schöneberger Südgelände nature park possesses a striking contrast and metaphor for abandonment and recovery of nature with an unusual and memorable juxtaposition of railroad/industrial relics and spontaneous vegetation. The project includes bespoke park infrastructure with a contemporary industrial aesthetic that both protects and calls attention to the unique-but-fragile vegetation. Schöneberger Südgelände Nature Park fits the unused infrastructure and vacant lot patchwork typologies.



Figure 6. Spontaneous birches growing among railroad tracks, Südgelände Nature Park.



Figure 7. Raised steel walkway provides elegant passage across fragile and rare spontaneous grassland habitat.

Petite Ceinture, Paris

The Petite Ceinture (little belt) is a 35-kilometer long remnant of a major 19th Century infrastructure project to create a defensive perimeter for the City of Paris and to link the city's rail stations that were located at the city's perimeter where rail lines radiated from the city to all regions of France. The original plan was developed by Baron Haussman under the leadership of Napoleon III as part of their unprecedented redesign of Paris. The project was completed in 1867 but was soon rendered obsolete after the Paris Metro was built and urban development extended beyond the Petite Ceinture's perimeter. The rail system was partially closed in 1934 and fully closed in 1993. Post closure the Petite Ceinture was colonized by a diversity of spontaneous vegetation and associated fauna (Foster 2014).

Today the Petite Ceinture is considered as Paris's last great open space. In recent years, sections of the Ceinture have been incrementally opened as neighborhood parks and walkways – with a unique character including street art and graffiti as well as its rich vegetation. During the development of these initial public sections, careful attention has been paid to protect the Ceinture's ecological diversity. Sections have been adopted by grassroots neighborhood groups that have cleaned debris and established entrances and pathways. Currently, the Petite Ceinture is a contested resource, with advocates for protection of its unique character and ecology challenged by political figures pressing for urban development (Guardian 2014). The Petite Ceinture fits the unused infrastructure and (potential) urban re-development typologies.

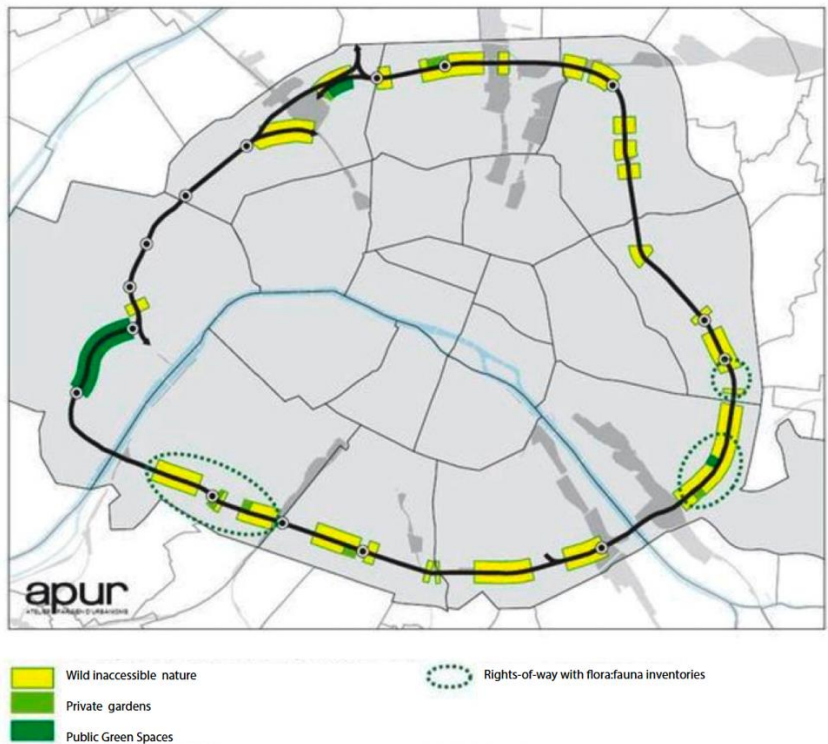


Figure 8. Map of Petite Ceinture nature types and issues



Figure 9. Petite Ceinture: accessible section in Parisian Neighborhood.

The four precedents discussed briefly above illustrate various combinations of the proposed typology of opportunistic urban greenways. They have been selected to illustrate the potential for the opportunistic approach to “find” space and “invent” new uses for underused infrastructure in urban contexts.

Challenges

As the preceding precedents have illustrated, opportunistic urban greenways develop in response to their particular contexts where existing conditions, are engaged to realize goals through particular actions. Opportunistic urban greenways offer an effective strategic approach to planning and designing open space networks in cities because they capture the advantages intrinsic to connectivity, and offer flexibility and choice in terms of greenway uses/goals. Planning for urban greenways is always challenged by the availability and competition for available space(s) that are required for linkages and nodes. Competition for space among many uses is a near-universal characteristic of urban environments. These opportunistic greenways hold the potential to support public health, recreation, climate adaptation and resilience goals. Applying an opportunistic approach can be an effective strategy because it relies chiefly on vacant and under-used lands where pressure from competing land uses is absent. The opportunistic strategy has great appeal in this respect, yet challenges remain to realize urban greenways.

Perhaps the greatest challenge to the opportunistic re-use of vacant and derelict urban lands is overcoming negative public preconceptions. Ironically, society has come to understand plants and environments that require little or no effort to grow as having less value (Gandy 2022). Innovative responses to this challenge include the spontaneous urban vegetation project by Future Green Studio in Brooklyn, NY where the public was engaged in an Instagram site where photos of spontaneous urban vegetation were made public. The project was also published as the book ““Spontaneous Urban Vegetation” and includes the many ways that these plants can be understood as beneficial, useful, or even edible. David Seiter refers to this as “designing with weeds” (2016).

Articulating and measuring the specific ecosystem services provided is a key challenge to build public support and to obtain the resources necessary for implementation of opportunistic urban greenways. An inventory of potential ecosystem services includes: supporting biodiversity and habitat, locales for recreation and public interaction, stormwater management, phytoremediation of toxic materials in soil and water, carbon sequestration, reducing soil erosion, providing medicinal and edible plants, and climate mitigation – among others. Landscape architects are increasingly leading efforts to measure and document these ecosystem services by monitoring landscape performance. The Landscape Architecture Foundation has an extensive online library of case study briefs where landscape performance is considered and rigorously monitored (LAF).

To be objective, ecosystem disservices associated with the use of vacant urban vegetation should also be acknowledged and enumerated. Paradoxically, the negative attributes of spontaneous urban vegetation can be addressed through a novel approach to their management. Teixeira et al. 2022 propose a framework for managing novel urban ecosystems to address climate change adaptation and mitigation. Del Tredici (2010) provides specific recommendations for the types of plants that should be “edited” from vacant lands to render them more acceptable: high-climbing vines that can compete with desirable trees, diseased/hazard trees, unhealthy/allergenic plants, and plants commonly associated with dereliction or abandonment. He describes the challenge as how to manage to enhance the aesthetic and ecological functionality provided by these plants.

Building local support for a spontaneous urban greenway is often the key challenge – in large part for the reasons described above. While opportunistic lands are, by-definition, inexpensive, their development and design to fashion a greenway requires financial resources and political Competition for these resources is a universal challenge. It requires effective public engagement throughout the planning and design

process. It often depends on communicating a convincing vision for the greenway, supported with objective, scientific research on costs and ecosystem services benefits and maps, videos, narratives that effectively communicate the goals and vision. Demonstrating flexibility in the public participation phase shows that the planners are listening to public input and provides opportunities to secure financial and political support.

Conclusion

Opportunistic urban greenways are emerging as a promising approach to implement innovative solutions – especially in resource-limited contexts. The very nature of the opportunistic approach is based on “seeing” opportunity in unexpected places, and developing convincing plans and designs that address public needs, environmental improvement and provide human enjoyment. As the greenway movement matures over future decades, an opportunistic approach holds the promise to develop the next generation of urban greenways supporting shared goals for climate adaptation, sustainability, and resilience.

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<https://interactive.wttw.com/urbannature/intricate-ecology-vacant-lots#!/eiskin>