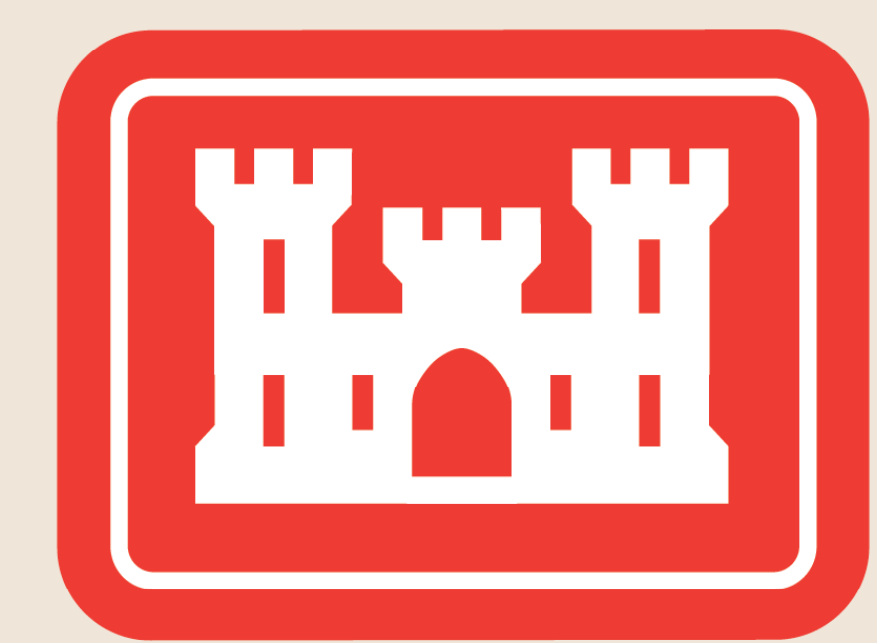


CHALLENGES IN PLANNING URBAN STREAM RESTORATION PROJECTS



HEATHER N. JENSEN
PLANNING DIVISION
U.S. ARMY CORPS OF ENGINEERS
PHILADELPHIA DISTRICT
PHILADELPHIA, PA



US Army Corps
of Engineers
Philadelphia District

INTRODUCTION

Restoration of urban streams presents well-documented technical challenges including: complex hydrology as a result of stormwater runoff from a high percentage of impervious surfaces, space constraints due to infrastructure and utilities, complicated property boundaries, human debris littering project sites, abundant invasive species, and limited funding. Project managers face additional challenges associated with the human dimensions of urban stream restoration. Sharing these challenges will facilitate a greater understanding of constraints, allowing them to be addressed early in the planning process and increasing the likelihood of successful project implementation.

PLANNING CHALLENGES

1. Public Participation and Perception

- The success or failure of urban stream restoration projects is often dependant on public support.

➔ Early public outreach is essential for many reasons, particularly because these projects are frequently on private land. In addition, the principal benefits from urban river or stream restoration projects are often social, such as building a sense of community by involving neighborhood residents or increasing pride of place (1).

2. Design

- Project design in urban settings should be guided by a fundamental understanding of the operating constraints that may preclude success (2).

➔ It is important to understand the current use of the stream on private property and, when possible, design with this use in mind to ensure project success.

3. Real Estate

- Conservation easements should be used to ensure long-term project success. Discussion with property owners is time well spent, as one person can often stop a project from being built.

➔ Understanding the property owner's expectations on their property can be important in establishing and maintaining a quality riparian buffer, which is an essential step towards restoration.

4. Collaboration

- Close coordination with municipal, county, state, and Federal agencies and sewer and utility companies, is imperative.

➔ Utility lines often run along or across streams and it is often difficult to obtain a good record of crossing locations. Although the primary focus of coordination is to avoid impacts to utilities, there may be an opportunity to relocate or replace utilities during construction.

LESSONS LEARNED

1. Public Participation and Perception

- Engage early; manage expectations for restoration and flood control; emphasize community benefits and community support; educate the public about riparian buffers and native plantings, floodplain function, and stream function.

2. Design

➔ Encourage community ownership and participation; incorporate features such as stream crossings and paths through riparian vegetation for fishing or swimming access; add a deep fishing pool next to a fishing access; add large "no mow" stones along the new riparian buffer.

3. Real Estate

- Choose low-growing flowering native riparian vegetation for an attractive riparian buffer adjacent to residential areas; clearly mark proposed conservation easements to facilitate negotiation; address misconceptions about taking private land and allowing public access.

4. Collaboration

- Coordinate early to allow planning and budgeting for property relocation or utility replacement; educate agencies and utility companies about the project and steps that are being taken to reduce impacts.



Using an urban stream as a classroom

CONCLUSIONS

There are many challenges in urban stream restoration and an open discussion including practical solutions will lead to more successful projects. Lessons learned from these challenges are applicable to other types of restoration as well as local, state, and federal restoration practitioners.

REFERENCES

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2. Bernhardt, E., Palmer, M., Restoring Streams in an Urbanizing World, Freshwater Biology, 52, 738-751 (2007).