MID-OHIO REGIONAL MORPC PLANNING COMMISSION

FUNDING & FINANCING

INTRODUCTION

Paying for the capital investments to enable a Smart Region is challenging. Besides the high initial cost common to all capital projects, smart infrastructure faces additional challenges:

- Uncertain risks of new technologies
- Difficulty in estimating or monetizing the benefits
- Shorter lifespans than traditional infrastructure

However, these challenges can be overcome with a strategic plan based on thorough understanding of the project, its associated costs and revenues, the available funding and financing options, and potential delivery methods.

DEFINITIONS

Funding: Government provides a specific amount of money for a specific purpose (e.g., to a project), usually free of charge (interest free), with no expectation of repayment.

Financing: Someone (usually financial institutions) provides an amount of capital (debt or equity) to a project. This is expected to be repaid with interest.

Free Cash Flow: Revenue left over after all costs have been paid.

CONSIDERATIONS FOR LOCAL GOVERNMENTS

Understand the project and its value

An effective smart community project starts with several key steps. The first is to define the objectives and the desired outcomes, so participants can tailor their efforts toward those goals. Next, develop an inventory of existing assets that may be available for use by the project.

With those preliminaries complete, it's time to define the business model. It involves considering all the elements related to the project, from revenues and costs to project risks, plus the potential for sharing risks with, or transferring them to, any private sector partner.

At the end of this process, the project sponsor should know how much free cash flow (revenues less all costs) to expect. A relevant risk review of the project, to determine the sensitivity of the level of free cash flow, can determine how much reliance to place on this value. The sponsor will use this free cash flow to satisfy future finance repayments.

- How will the project generate economic value?

- What new value chains will arise from advanced technologies and related services?

Next, determine if, and how, the project will generate revenue and free cash flow.

- Will the project require more funding than it can recover from its project revenue?
- What sort of value will the project create (directly or indirectly)?
- How might you capture (monetize) that value?

When a project involves any level of private sector participation, the sponsor should consider the issue of revenue streams to determine how costs can be repaid over time.

Consider funding & finance options

To determine the most effective way to finance a smart city project, it must be decided who will pay for the service and assume the associated risks. Historically, the public sector has been the first choice. In an alternative scenario, revenues to support a smart community project could come from selling value generated to other third parties. The project sponsor might, for example, sell advertising space on an asset, monetize data that the service collects or form affiliate or strategic partnerships, and use these revenues to pay for the asset or the service.

As the project sponsor evaluates potential revenue models for a smart community project, here are some questions to consider:

- Does the project capture economic benefit through direct revenue streams? Will it generate any free cash flow that can be used to cover various expenses, such as up-front capital and finance costs and ongoing operation and maintenance?
- What kinds of risk connected with free cash flow, quantum, certainty, and source does the project face, and how do those risks affect the kind of finance the sponsor may source?
- Can public and private sources of finance be combined? This is sometimes done if the cash flows are insufficient to repay finance from the private sector, which will include a premium for the level of risk transferred.
- Is the present value of the total investment costs greater than the present value of net revenues? If such a funding gap exists, the sponsor will need to identify alternative funding mechanisms.

Determine relevant procurement & delivery method

Just as different funding and financing strategies work best for different smart cities projects, so do different procurement structures, and specific procurement mechanisms are required in order to accommodate different funding/financing strategies. The options cover a spectrum from public to private, with risk transfer and innovation increasing with the degree of private involvement.

FURTHER READING

Smart Cities Financing Guide, developed for the Smart Cities Council by the Center for Urban Innovation at Arizona State University, reviews 28 municipal finance tools for city leaders

investing in the future. Many of the tools represent alternatives to the traditional funding mechanisms municipalities have used for decades. (PDF, 116 pages, 8/24/2015)

The Deloitte Global series on funding and financing smart cities offers research-based guidance on funding and procurement options with valuable insights from smart cities projects. (5 PDFs, varying length, c.2018)

CASE STUDIES

Kansas City, Missouri

Emerging Technology Initiative

Kansas City has entered into a public-private partnership to build out the most comprehensive smart city network in North America, creating not only the most technologically sophisticated streetcar experience but also providing new tools to manage public infrastructure with greater efficiency. The investment of $3.8 million by Kansas City over the next 10 years is being matched and exceeded by nearly $12 million in private investment by Cisco, Think Big Partners and other private companies. From better public health to safer streets to energy-saving streetlights, the applications and benefits are limited only by our imagination.

US 33 Corridor

NW 33 Innovation Corridor Council of Governments

The NW 33 Innovation Corridor Council of Governments was established in November 2016 pursuant to Chapter 167 of the Ohio Revised Code to oversee and manage the development along the US-33 corridor (33 Smart Corridor). Its overall purpose is to review, evaluate, and make recommendations relative to the planning and programming, and the location, financing, and scheduling of public facility projects within the region that affects the development of the US-33 corridor area.

Franklin County, Ohio

InfrastructureWorks

The InfrastructureWorks program is designed to encourage and accelerate public sector investment in infrastructure projects that result in economic growth and job creation. The program functions as a revolving loan fund known as the Franklin County Infrastructure Bank (FCIB). Three municipalities have utilized the FCIB to establish their own fiber networks:

- Upper Arlington (2015) – $1,000,000 borrowed; 30 miles; 300 Jobs
- Grove City (2017) – $2,000,000 borrowed; 84 miles; 100 Jobs
- Hilliard (2019) - $1,250,000 borrowed; 25 miles; 90 Jobs

Initially pursued to facilitate specific economic development projects, each municipality took advantage of those opportunities to invest in their community.

- Internet cost savings to Cities and Schools help pay the debt service
- Preparing for Smart Cities Technology
- Additional Economic Development Incentive
- Carrier neutrality increases competition among Internet Service providers

Chattanooga, Tennessee

EPB Fiber

In 2010, EPB Fiber, a division of Chattanooga's city-owned electric and telecommunications utility formerly known as the Electric Power Board of Chattanooga, became the first city in the United States to build a Fiber-To-The-Home (FTTH) network offering up to 1 Gig upload and download speeds. In 2015, EPB began offering up to 10 Gig speeds.[1]

EPB secured a [$220 million] bond [in 2008] to begin construction of Chattanooga's Smart Grid….EPB was awarded a federal stimulus grant [in 2009] in the amount of $111 million from the Department of Energy for expediting the build and implementation of the Smart Grid.[2]

RESOURCES

US Ignite Federal Funding Opportunities. *This database contains a curated summary of existing federal programs that offer funding that may be applied to a variety of smart city projects. The database provides links to the relevant agency site for further detail. Sectors covered in the database include: Transportation, Big Data, Infrastructure, Energy, Healthcare, Broadband, Economic Development, Education, Public Safety and Information Technologies.*

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[1] Study Finds Chattanooga Fiber Network 10-Year ROI: $2.69 Billion. https://muninetworks.org/content/study-finds-chattanooga-fiber-network-10-year-roi-269-billion

[2] A long-standing history of serving Chattanooga. https://epb.com/about/history/