

## APPENDIX 6: FINANCING CASE STUDIES

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The selected case studies included here illustrate the most applicable mechanisms to be leveraged in Detroit. Many of them can be used in combination with each other as indicated in the full report on page 57. Case studies for DWSD's Capital Partnership Program and Targeted Redevelopment Area have not been included but they are closely related to other mechanisms, such as grants and Tax Increment Financing, respectively. Foundation specifics have not been documented here as each foundation has its own nuances and specific interests. Likewise, governmental support has not been documented given the specificity of bonding capacity and allocation of funds to support GSI. Some of the mechanisms illustrated have traditionally been used for other energy related financing but are relevant to GSI and could be extended to encompass whole building and site strategies. The selected case studies provide a high level introduction to their use and serve as resources for greater investigation. The case studies features here include:

**Development Incentives: Portland Ecoroofs**

**On-Bill Financing: Windsor (CA) Efficiency Pays ®**

**On-Bill Repayment: Clean Energy Works Portland**

**PACE | Property Assessed Clean Energy: D.C. United Audi Field**

**Revolving Loan Fund: Spokane Urban Runoff Greenways Ecosystem  
Innovative Stormwater Management**

**BID | Business Improvement District: Green Benefits in Victoria Business  
Improvement District**

**CIA | Corridor Improvement Authority: City of Oak Park, Michigan  
Corridor Improvement Authority**

**TIF | Tax Increment Financing: West Peterborough TIF District  
Improvements**

**Land Acquisition Tax/Millage: Alachua County Forever**

**Foundation PRI | Program Related Investment: Colorado River Delta**

**Government Bonds: Green Bond Program for New York City**

**STBG | Surface Transportation Block Grant: Inner Circle Greenway**

# DEVELOPMENT INCENTIVES

## PORTLAND ECOROOF

Portland, Oregon

With the goal of keeping stormwater out of the sewer system, reducing flooding and erosion, filtering pollutants, providing habitat, and increasing neighborhood green space, the city of Portland initiated a Grey to Green campaign. The success of the program is attributed to political support from the Mayor and incentives to promote the application of ecoroofs. Incentives include: expedited permitting, decreased fees, zoning upgrades such as increased Floor Area Ratio (FAR), reduced stormwater requirements, and monetary incentives for construction.<sup>1</sup>

According to Portland's Bureau of Environmental Services report in 2010, 172 ecoroofs had been installed totaling nearly 10 acres.<sup>2</sup> Between 2009 and 2014 a monetary incentive program offered property owners \$5 for construction per SF of new ecoroof. The \$5 per SF decreased the cost for residential projects to as low as \$1 per SF and \$10.55 per SF for institutional projects. The program was so successful that according to the International Federation of Landscape Architects report in 2015, Portland had 434 ecoroofs installed, totaling nearly 1,000,000 SF.<sup>3</sup>

### ADVANTAGES:

- Political support and promotion
- Reduces capital costs
- Incentives are quantifiable
- The incentive encourages an increased familiarity for permitting and installation

### LIMITATIONS:

- The absence of the incentive may deter property owners from pursuing GSI

### ADMINISTRATIVE REQUIREMENTS:

- Application process

### SOURCES:

<sup>1</sup> Five Types of Green Infrastructure Incentives Program, Water Environment Federation Water Report, 2013

<sup>2</sup> Portland's Green Infrastructure: Quantifying the Health, Energy, and Community Livability Benefits, City of Portland Bureau of Environmental Services, 2010

<sup>3</sup> International Green Roof City Network Case Study Portland, Oregon USA, International Federation of Landscape Architects, 2015

# ON-BILL FINANCING

## WINDSOR (CA) EFFICIENCY PAYS®

Windsor, California

Windsor, California piloted a project which allowed homeowners and commercial building owners to install water-saving and related energy-saving equipment (new water/energy saving appliances and drought-resistant landscaping) and pay for the improvements on their monthly water bill without any upfront cost or debt.<sup>1</sup> The slogan “pay as you save,” meaning that the costs of the improvements do not exceed the current utility costs, helped promote the program. This program has assisted approximately 5% of all residential units with water savings between 19% for single family and as much as 33% for multifamily.<sup>2</sup>

### ADVANTAGES:

- Immediate utility bill savings<sup>3</sup>
- New water saving fixtures and landscape improvements<sup>3</sup>
- No upfront costs of debt<sup>3</sup>
- The costs of the improvements remain with the property<sup>3</sup>

### LIMITATIONS:

- Funding is available for fairly low-cost systems, not major capital investment

### ADMINISTRATIVE REQUIREMENTS:

- Inclusion on utility bill
- Qualifying criteria, i.e. demonstrated energy performance

### SOURCES:

<sup>1</sup> International Green Roof City Network Case Study Portland, Oregon USA, International Federation of Landscape Architects, 2015

<sup>2</sup> Efficiency PAYS®: Lessons Learned from On-bill Programs that Work, BKI Efficiency First, 2015

<sup>3</sup> Windsor Efficiency PAYS®, Town of Windsor, California

# ON-BILL REPAYMENT

## CLEAN ENERGY WORKS PORTLAND

Portland, Oregon

On-bill repayment plans allow for property owners to utilize third party capital for property improvements with little or no up front costs and at marginally lower interest rates. The third party may be private capital or provided through programs such as the American Recovery and Reinvestment Act (ARRA). Portland, Oregon established a fund, administered by a community development financing institution (CDFI), for projects between \$10,000 and \$15,000.<sup>1</sup> The advantage of the loan pool encourages competitive rates for property owners and ensures a backing for lenders through the aggregation of sources.

### ADVANTAGES:

- Easy access to long-term financing to cover the upfront costs (20-year loans at 5.99 percent)
- The convenience of paying the monthly loan obligation on the existing utility bill
- “Bill neutrality” ensuring the loan does not exceed existing utility bill<sup>1</sup>

### LIMITATIONS:

- Is a loan with interest

### ADMINISTRATIVE REQUIREMENTS:

- The utility company needs to make adjustments to the billing structure to include the repayment of the loan for energy efficiencies

### LEGAL REQUIREMENTS:

- Standard underwriting requirements
- Would want to ensure that the loan is tied to the property for ease of sale or transfer for ownership

### SOURCES:

<sup>1</sup> Innovative Financing for Voluntary Green Stormwater Infrastructure: Lessons Learned From Energy Efficiency, Kendall Starkman, Dr. Megan Mullin, Pam Emerson, 2016

# PACE | PROPERTY ASSESSED CLEAN ENERGY

## D.C. UNITED AUDI FIELD

Washington D.C.

In municipalities with supporting legislation, PACE enables a special tax assessment on a property for energy efficiencies, including stormwater management, providing long-term financing for building systems that save money on utility bills and operating expenses with no money down.<sup>1</sup> DCPACE supported D.C. United stadium construction in 2017 to achieve overall economic savings with water, stormwater, energy efficiency, and solar energy systems.<sup>2</sup> The project includes 884 kW solar, high efficiency HVAC, LED field lighting, insulation, site stormwater conservation, green roof, and low flow fixtures. The stormwater measures yield 55,000 cubic feet of stormwater diverted from the sewer system.<sup>2</sup> The stadium project eligible costs total \$25,000,000 and are financed over 20 years backed by EagleBank.<sup>2</sup>

### ADVANTAGES:

- Reduces utility bills<sup>1</sup>
- Improves cash flow<sup>1</sup>
- Lowers capital costs<sup>1</sup>
- Extends capital budgets<sup>1</sup>
- Increases property values<sup>1</sup>

### LIMITATIONS:

- May restrict the sale of a property as the assessment stays with the property

### ADMINISTRATIVE REQUIREMENTS:

- Must have supportive state legislation

### SOURCES:

<sup>1</sup> DCPACE website

<sup>2</sup> D.C. United Audi Field, DCPACE, 2017

# REVOLVING LOAN FUND

## SPOKANE URBAN RUNOFF GREENWAYS ECOSYSTEM INNOVATIVE STORMWATER MANAGEMENT

Spokane, Washington

The city of Spokane leveraged the Clean Water State Revolving Fund (CWSRF) administered by the State of Washington Department of Ecology in combination with funds from the American Reinvestment and Recovery Act (ARRA) to support the Spokane Urban Runoff Greenways Ecosystem (SURGE) project.<sup>1</sup> CWSRF is intended to be used for projects that have the greatest environmental impact in terms of improving public health and water quality. These funds are maintained in perpetuity through reallocations upon repayment.<sup>2</sup> The SURGE project consists of street-side rain gardens, curb cuts, and landscaping to manage urban stormwater through natural hydrological systems of infiltration.<sup>3</sup> Key successes of the project include the partnerships between city agencies, local businesses and residents, leading to more effective and less expensive results.<sup>4</sup>

### ADVANTAGES:

- Blending of funding sources
- Public private partnerships
- Repayment supports additional projects

### LIMITATIONS:

- Intended for large scale projects

### ADMINISTRATIVE REQUIREMENTS:

- State agency support

### SOURCES:

<sup>1</sup> Spokane wins EPA PISCES award for innovative stormwater project, EPA, 2011

<sup>2</sup> SRF Fund Management Handbook, EPA, 2018

<sup>3</sup> Clean Water State Revolving Fund Green Project Reserve, EPA, 2011

<sup>4</sup> Spokane wins EPA PISCES award for innovative stormwater project, EPA, 2011

# BID | BUSINESS IMPROVEMENT DISTRICT

## GREEN BENEFITS IN VICTORIA BUSINESS IMPROVEMENT DISTRICT

Victoria, United Kingdom

A BID district enables the collection of revenue and bonding capacity of certain local governmental units through the creation of a board that governs the development, redevelopment, and public improvements within the defined business improvement zone.<sup>1</sup> By focusing on planting trees, the Victoria BID has addressed many sustainability goals related to air pollution removal, carbon storage and sequestration, stormwater management, surface temperature moderation, energy savings and reduced CO<sup>2</sup> emissions.<sup>2</sup> The interception of water by trees via the surface of leaves, branches, and trunk contributes to evaporation of rainfall along with the ability of the roots to absorb run-off. The management of stormwater diverted from the combined sewer additionally saves on energy use of pumping and treating stormwater thus improving air quality through a reduction of renewable energy sources. The orchestration of public and private tree planting through the Victoria BID has provided many benefits across the city and to the individual property owners both as long and short term returns on investment.<sup>2</sup>

### ADVANTAGES:

- Provided direct benefits to the property owners in cost savings and beautification
- Financing included on existing property tax bill
- The assessment supports installations within the area it is collected

### LIMITATIONS:

- Requires neighboring property owners to agree to the assessment
- A board must be formed
- Annual reporting of how assessment is utilized
- Agreement between property owners to comply with BID requirements of self taxation

### ADMINISTRATIVE REQUIREMENTS:

- Formation of a BID according to Act 120

### SOURCES:

<sup>1</sup> Act 120 of 1961 Principal Shipping Districts and Business Improvement Districts, Michigan Legislature

<sup>2</sup> Green Benefits in Victoria Business Improvement District, An I-Tree Eco, Cavant and G.I. Valuation Study, 2011

# CIA | CORRIDOR IMPROVEMENT AUTHORITY

## CITY OF OAK PARK, MICHIGAN CORRIDOR IMPROVEMENT AUTHORITY

Oak Park, Michigan

The purpose of establishing a CIA with tax increment financing is to maintain and upgrade the economic viability of a commercial corridor over a twenty year time period.<sup>1,2</sup> The CIA in Oak Park supports extensive streetscape projects consisting of a road diet, pocket parks, bike lanes along the Nine Mile, facade grant funding, parking lot creation/improvements, marketing, events, landscaping, and more.<sup>2</sup> While the listed activities do not explicitly state green stormwater infrastructure, best practices do encompass stormwater management techniques, especially in relation to roadways, parking lots, and streetscapes.

### ADVANTAGES:

- Provides additional benefits to the district including pedestrian prioritization and beautification
- Will increase property values and tax base

### LIMITATIONS:

- One time establishment of 20 years that is not able to be extended or renewed
- Coordination among corridor business owners is required
- Established plan would require amendments if plan changed with new or existing property ownership

### ADMINISTRATIVE REQUIREMENTS:

- Formation of a BID according to Act 280

### SOURCES:

<sup>1</sup> Act 280 of 2005 Corridor Improvement Authority Act, Michigan Legislature

<sup>2</sup> Corridor Improvement Authority, City of Oak Park, Michigan

# TIF | TAX INCREMENT FINANCING

## WEST PETERBOROUGH TIF DISTRICT IMPROVEMENTS

Peterborough, New Hampshire

Tax increment financing refers to the increase in property tax rise above the base taxable value after redevelopment of a property.<sup>1</sup> The difference between the base value and the increase can be reallocated to property owners for improvements made to the public right-of-way and for the transformation of blighted and obsolete properties. An array of eligible activities qualify for reimbursement including GSI.

In West Peterborough the primary goal of the project was to support the communities desire to restore the historic village character. Project components included traffic calming measures, sidewalks, roadway rehabilitation, utility improvements, LED lighting, bioretention stormwater treatment, and recycled materials. Stormwater management design features include rain gardens, bioswales, porous pavers, and curb cuts managing 5,000 SF to 1 acre.<sup>2</sup>

### ADVANTAGES:

- Green stormwater infrastructure expenses are 100% eligible expenses for reimbursement
- Included beautification to the district and roadway improvements

### LIMITATIONS:

- Additional eligible expenses compete for reimbursement of GSI

### ADMINISTRATIVE REQUIREMENTS:

- Formation of a BID according to Act 120

### SOURCES:

<sup>1</sup> Act 381 of 1996 Brownfield Redevelopment Financing Act, Michigan Legislature, 2017

<sup>2</sup> Green Infrastructure & Stormwater Management Case Study: West Peterborough TIF District Improvements, American Society of Landscape Architects

# LAND ACQUISITION TAX/MILLAGE

## ALACHUA COUNTY FOREVER

Alachua County, Florida

As the rural county experienced growth, protection of the local waterways and aquifer was prioritized through regulation, land acquisition, and information strategies promoting green infrastructure.<sup>1</sup>Regulatory guidelines provided requirements for percentages of land to remain undeveloped, setbacks maintained along streams, and the protection of existing tree canopies. Furthermore, the county approved the allocation of tax collection to support a dedicated fund for land acquisition. The fund is a combination of land acquired through sales, donation, and dedications. The program was expanded by an additional elective sales tax for two years to include conservation and recreational improvements. Through promotion and outreach, Alachua County has experienced continued support and benefits of green infrastructure including the protection of an open space network for nature preservation valued at \$81 million.

### ADVANTAGES:

- Generates public support, outreach, and education
- Yields economic benefits back to the community as an amenity and tourism
- Combines tax dollars with charitable giving or dedications

### LIMITATIONS:

- Could be considered limiting to development

### ADMINISTRATIVE REQUIREMENTS:

- Leveraging a millage

### SOURCES:

<sup>1</sup> Green Infrastructure Case Studies: Municipal Policies for Managing Stormwater with Green Infrastructure, EPA, Aug. 2010

## FOUNDATION PRI | PROGRAM RELATED INVESTMENT

### COLORADO RIVER DELTA

Colorado

The David and Lucile Packard Foundation made a \$1.3 million loan to enable The Nature Conservancy and a coalition of conservation organizations to capture water rights from the Colorado River as part of an innovative binational U.S.-Mexican government agreement that was signed on November 20, 2012. The water rights were to be used to restore depleted delta watersheds on a large scale and to ultimately restore the Colorado River's flow to the Gulf of California. In addition to the direct benefits of watershed restoration across the Colorado River Delta, the Packard Foundation's investment supports this promising new mechanism for funding future watershed restorations in the West.<sup>1</sup>

#### ADVANTAGES:

- Provides capital quickly
- Can be issued to both for-profit and non-profit organizations
- Aggregates well with other funding mechanisms
- Could be forgivable and not require repayment

#### LIMITATIONS:

- Generally a short loan term

#### ADMINISTRATIVE REQUIREMENTS:

- Specific to the foundation

#### SOURCES:

<sup>1</sup> Packard Foundation Program-Related Investments

# GOVERNMENT BONDS

## GREEN BOND PROGRAM FOR NEW YORK CITY

New York, New York

Bonds enable money to be borrowed by an approved entity such as a city or authority. The borrowed money does need to be repaid and repayment can be accomplished through revenue generated from taxes or other means. Government bonds are typically used for large scale civic infrastructure projects or utilities. New York City's comptroller established a Green Bonds program for water efficiency projects to protect Manhattan from being vulnerable in the face of sea-level rise. Projects included wastewater treatment facilities and seawalls. The program was expanded in 2014 with the aid for Clean Water State Revolving Fund which supported drinking water and wastewater projects with Green Bonds.<sup>1</sup>

### ADVANTAGES:

- Expands the investor base
- Is similar to a loan or mortgage in payment structure
- Generally a low cost loan
- Green Bonds specifically allow investors to contribute environmentally

### LIMITATIONS:

- Is borrowed money
- 'Green' encompasses a wide array of project types

### ADMINISTRATIVE REQUIREMENTS:

- Community vote may be required for open space and watershed protection projects

### SOURCES:

<sup>1</sup> Getting to Green: Paying for Green Infrastructure Financing Options and Resources for Local Decision-Makers Dec, 2014

# STBG | SURFACE TRANSPORTATION BLOCK GRANT

## INNER CIRCLE GREENWAY

Detroit, Michigan

The Joe Louis Greenway (formerly Inner Circle Greenway) leveraged the Transportation Alternatives Program (TAP) under the Surface Transportation Block Grant (STBG) to install GSI features along the trail. Features include green streets and bioretention, repurposing 8.3 miles of abandoned railway near Detroit. TAP funding supports transportation alternatives including on-road and off-road pedestrian and bicycle facilities, infrastructure projects for improving non-driver access to public transportation, enhanced mobility, community improvement activities such as historic preservation and vegetation management, environmental mitigation related to stormwater and habitat connectivity recreational trail projects, safe routes to school projects, and projects for planning, designing, or construction boulevards and other roadways largely in the right-of-way of former divided highways.<sup>1</sup>

### ADVANTAGES:

- Includes GSI in capital improvement projects
- Easily aggregates with other funding sources
- Is highly visible for public awareness

### LIMITATIONS:

- Competitive funding source
- The funding does not require GSI to be included

### ADMINISTRATIVE REQUIREMENTS:

- Funds must be spent in 3 years.
- Must comply with ADA and Safe Routes to School requirements

### SOURCES:

<sup>1</sup> U.S. Department of Transportation Federal Highway Administration Transportation Alternatives