

Complete Streets are **Green Streets**

2015 Municipal Day – September 9, 2015



Danielle Fitzko

Agency of Natural Resources

Jane Brown

Agency of Transportation

Richard Amore

Agency of Commerce and Community Development

Complete Streets are Green Streets

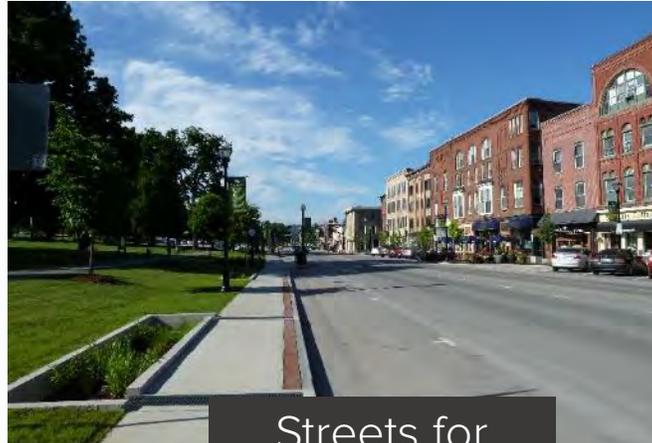
Streets as Places – Supporting Mobility, the Environment and Community



Streets for
Mobility

**“Encouraging Mobility and
Multi-modal Travel”**

Complete Streets provide mobility for all users including pedestrians, cyclists, transit and vehicles.



Streets for
Environment

**“Improving the Environment and
Water Quality”**

Complete Streets can provide a myriad of ecological services to preserve, protect and enhance our environment.

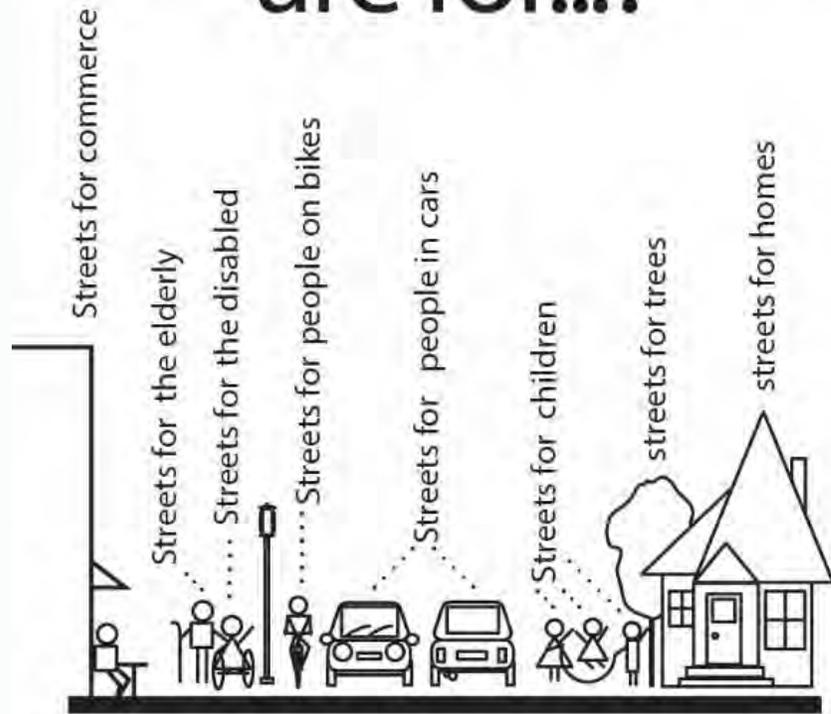


Streets for
Community

**“Building Community and
Economic Vitality”**

Complete Streets can boost retail and dining sales, spark private investment, raise property values, attract new businesses and add jobs.

Complete Streets are for...?



Streets for
Mobility

Streets for the
Environment

Streets for
Community

Complete Streets are a natural complement to sustainability efforts, ensuring benefits for mobility, community, and the environment

1 Why it matters

2 What can you do

3 In action



Photos © Watershed Associates. Simulated example of bioretention planters on Bank Street

Complete Streets are Green Streets

Streets as Places – Supporting Mobility, the Environment and the Community



Streets for
Mobility

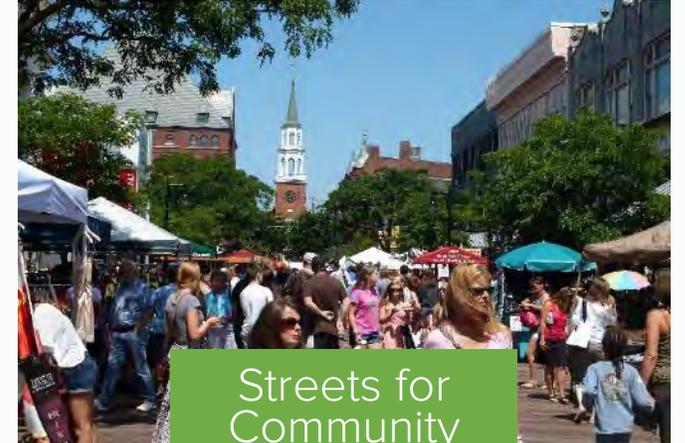
“Encouraging Mobility and
Multi-modal Travel”

Jane Brown
Agency of Transportation



Streets for
Environment

“Improving the Environment
and Water Quality”



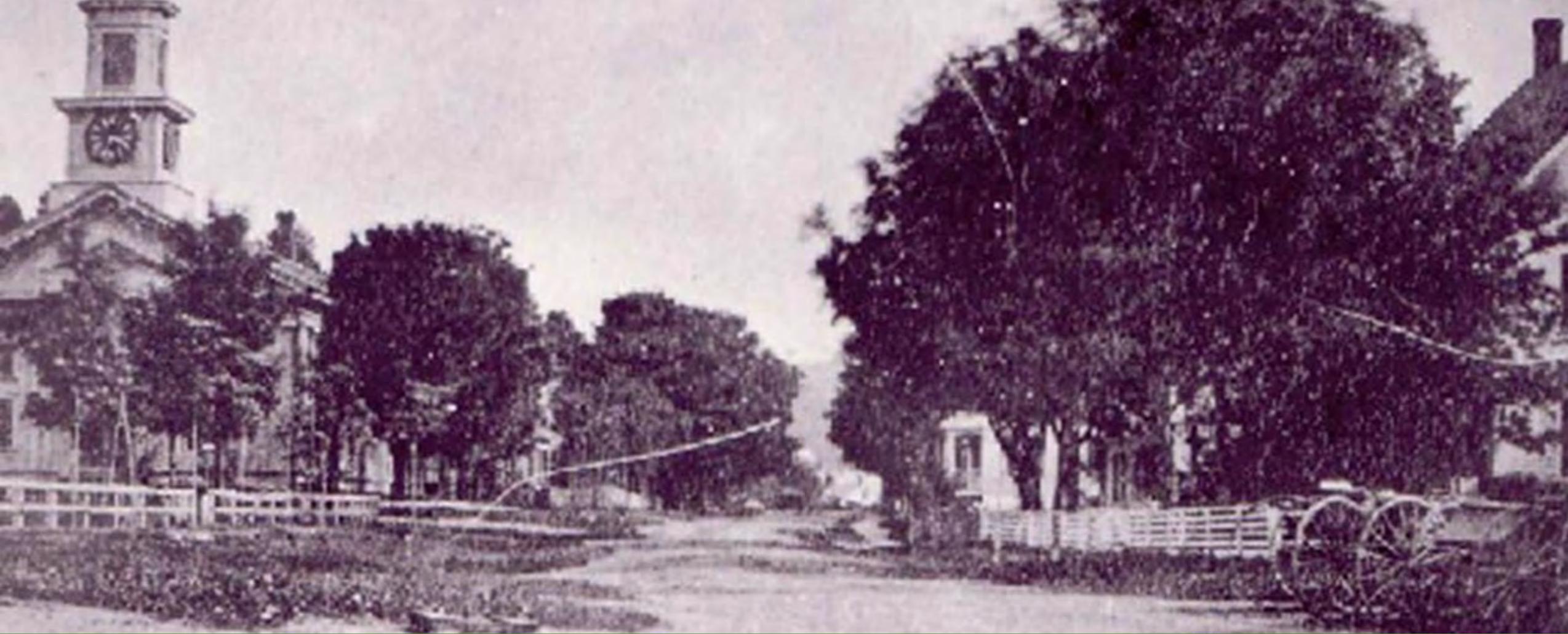
Streets for
Community

“Building Community and
Economic Vitality”



Streets provide mobility. Streets support community.

Brandon VT.



Streets provide mobility and support community – just as in the past

City Park, Barre VT.



Streets provide mobility and support communities - Celebrating the season

Rutland County, VT

Multi-modal transportation



Streets provide mobility - Primary focus and infrastructure was previously for vehicles.



Streets are for Mobility **Act 34: Section 1 – Complete Streets Legislation, 2011**

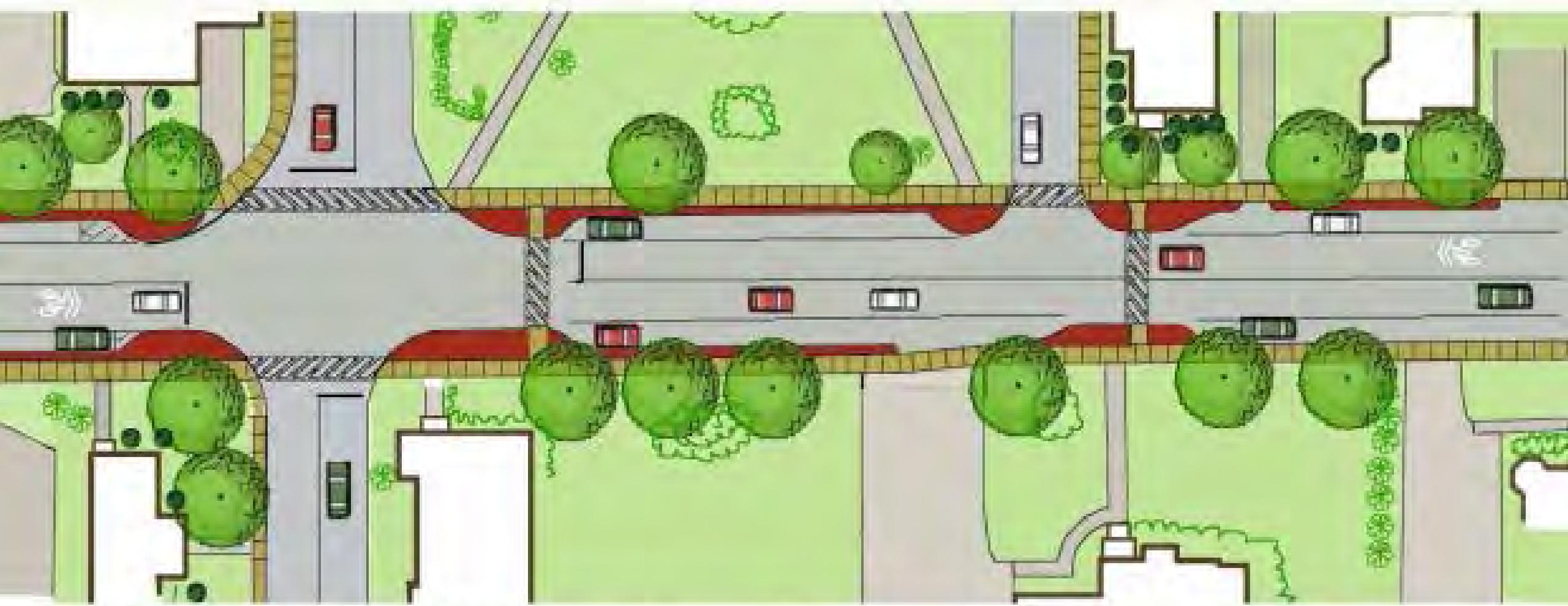
“To ensure the needs of all users of Vermont’s transportation system; motorists, bicyclists, public transportation users, and pedestrians of all ages and abilities.”

Complete Streets

a guide for Vermont communities



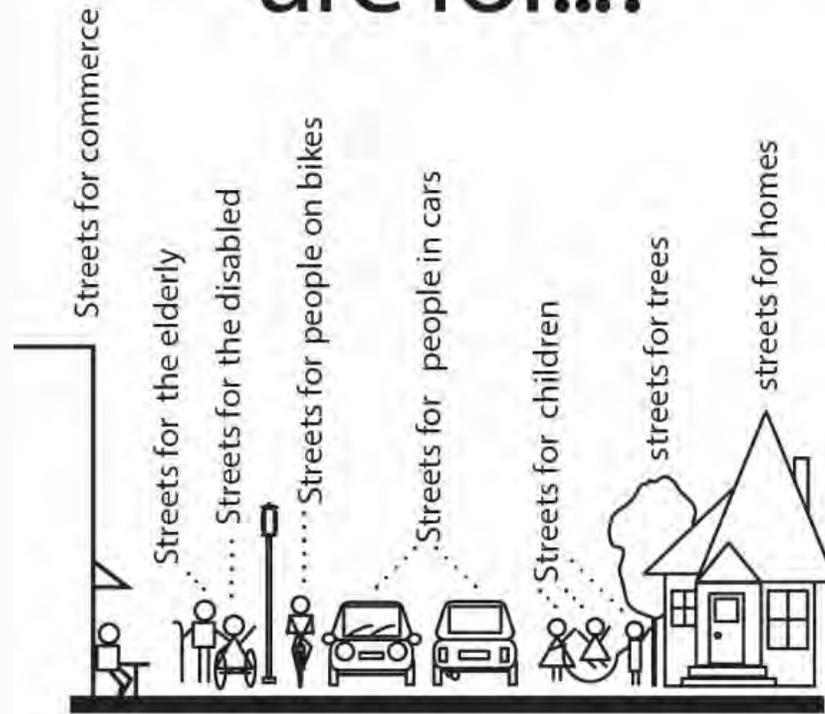
Plan, Develop, Construct and Maintain



Streets are for Mobility

Complete Streets Elements - Typical Vermont Village or Urban Setting

Complete Streets are for...?



Streets are for Mobility -- Complete Streets Elements - Typical Vermont Village or Urban Setting

Complete Streets: A Guide for Vermont Communities
VT Bike and Pedestrian Design Manual



Streets are for Mobility - What Are Complete Streets? Context and travel patterns These determine how to meet the needs of all modes of transportation.

Complete Streets: A Guide for Vermont Communities



Streets are for Mobility - What Are Complete Streets? including pedestrians, bicyclists and transit riders.

Considers all users;

Complete Streets: A Guide for Vermont Communities



Streets are for Mobility - What Are Complete Streets? including pedestrians, bicyclists and transit riders.

Considers all users;

Complete Streets: A Guide for Vermont Communities



Streets are for Mobility - What Are Complete Streets? Considers all users; including pedestrians, bicyclists and transit riders.

Complete Streets: A Guide for Vermont Communities



**Streets are for Mobility - What Are Complete Streets? For all streets?
Not every street or road will be used by a wide variety of modes.**

Complete Streets: A Guide for Vermont Communities



Streets are for Mobility - What Are Complete Streets Seek desirable, practical & affordable improvements to be accepted by the community.

Complete Streets: A Guide for Vermont Communities

Impact speeds, pedestrian fatality and injury



Streets are for Mobility and Safety - Lower Travel Speeds reduce injuries dramatically

The slower the vehicle speed ,the lower the risk of serious injury or fatality.

Benefits of Providing Walkable Streets



**Equality
accessibility for all**

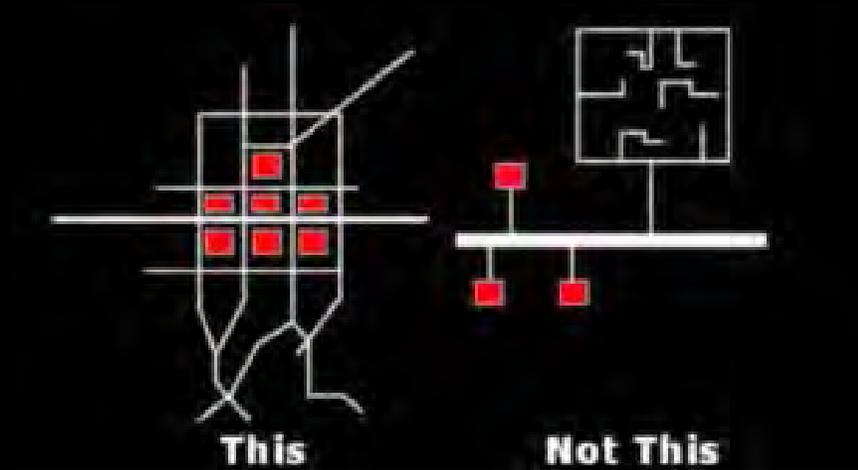
**Cost savings to
individuals**

Efficient land use

**Livability / fitness
and health**

**Reduce public
costs**

**Economic
development**



General Planning and Design Principles:
Consider safe and comfortable movement for all users.

Plan the network, not just the road.

HAVE A PLAN! Engage active community members

Plan, Develop, Construct and Maintain



Plan and Develop -- Identify the following:

Purpose - For example - Safety for all users including bike and pedestrians

Need: - Disconnected sidewalks No room for bicycles. No transit stops.

Goals - Add shared bike lanes. Connect sidewalks . Add transit shelters and signage

Resources – Start with Regional Planning , look at proposed projects , grants etc.

Scoping / Analysis/ Review options w/ Public process / Selected option / Final Design

Streets for Transportation

Streets move people....

Burlington VT



Burlington Transportation Plan and Street Design Guidelines

A planned network of complete streets with design criteria.

Option to convert Colchester Avenue from a four lane auto-oriented street to a three lane Complete Street.

Bike Lanes

W. Brattleboro VT.

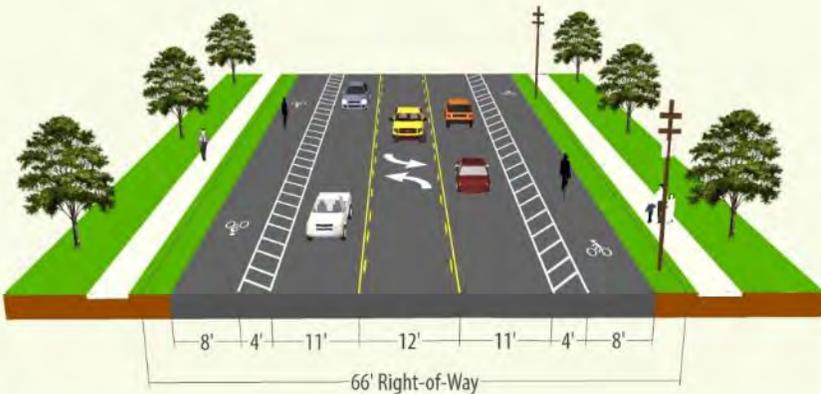
- **Separate lane for cyclists.**
- **Easily added to a paving project.**



Buffered Bike Lanes

Lyndon VT.

- Provide greater separation between cars and bikes.
- Easily added to a paving project.
- Bike symbols will be added.



Burlington - Shared Lane Markings

- **Bike symbols calls attention to the shared space for cyclists.**
- **Requires low speed roads – under 25 mph**



Montpelier - Bulbouts / Curb Extensions

- Bulbouts shorten the distance for pedestrian crossing
- Make pedestrian more visible





Streets are for mobility - Dorset Street in South Burlington

Parkway with median islands, sidewalks , bike path and street trees.



**Shelburne Road VT 7 Corridor:
New Sidewalks, bus shelters and bus pull-offs, new bike lanes and trees**



Burlington Riverside Avenue : Transformation to a Complete Street Changed the look and feel of this street.

Access management reduced curb cuts. Bollards were added. New sidewalk, bicycle lanes, multiuse path, new lighting, street trees, structural soil under sidewalks and crosswalks.

Before



Waterbury- Gateway /Rte. 100 and Rte. 2 Roundabout: Streetscape improvements

This intersection had back-up of 20-30 vehicles weekday mornings. Pedestrian and bicycle crossings were difficult.

Waterbury VT.

Before



Waterbury- Gateway /Rte. 100 and Rte. 2 Roundabout: Complete Street Improvements

Old intersection had back-up of 20-30 vehicles weekdays. Pedestrian and bicycle crossings were dangerous.

After



Waterbury Gateway - Rte. 100 and Route 2 Roundabout: Streetscape improvements

New Design included new sidewalk and bike lane system, new access to Post Office and a local restaurant, on-street parking, tree plantings, pedestrian-scaled lighting, and bulb-outs at pedestrian crossings.

After

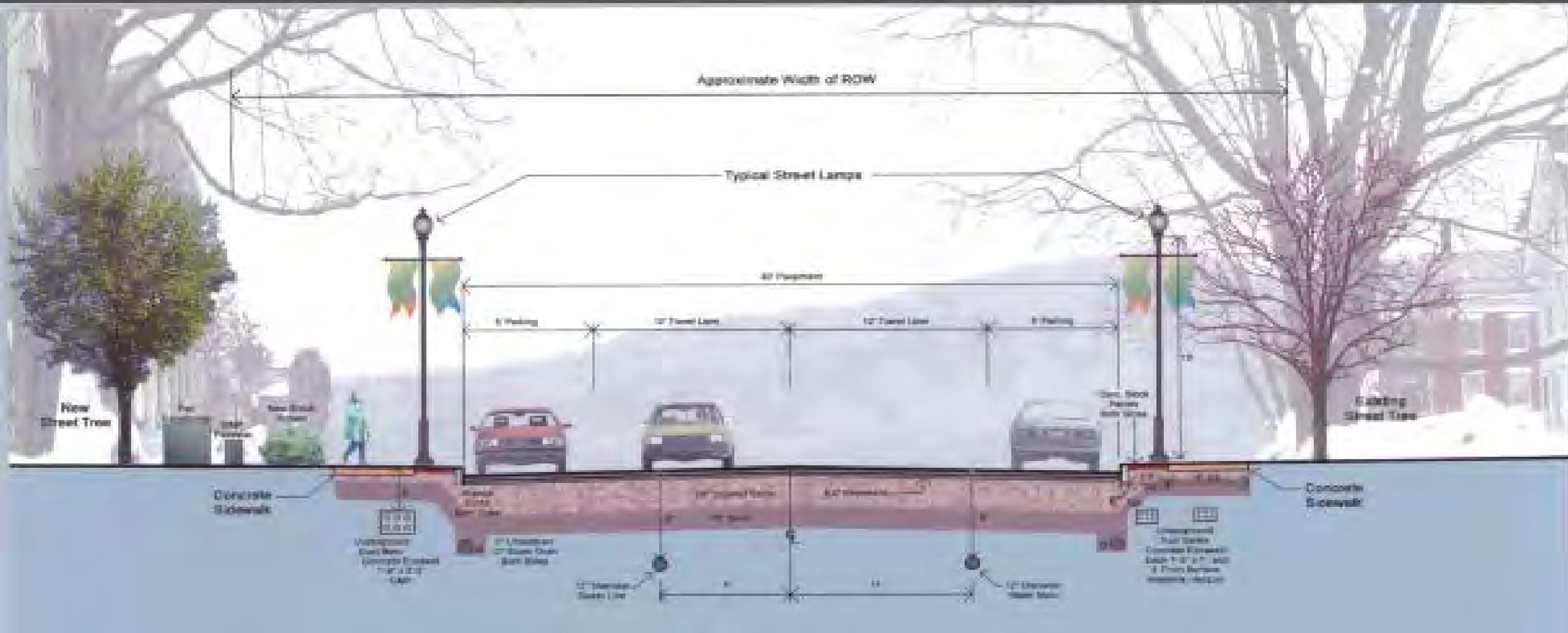


Waterbury Gateway - Rte. 100 & Route 2 Roundabout: Complete street improvements

Sidewalk crossing before roundabout. Note the detectable warnings and the pedestrian / bike refuge in center of roadway



Waterbury-Main Street : Proposed -- Major Reconstruction & Streetscape improvements



Waterbury-Main Street : Major Reconstruction & Streetscape improvements

Stantech Engineers

Norwich-Route 10A
Corridor:
Reallocation of Right of
Way for a multi modal
corridor

Bicycles and pedestrians commuter route between Norwich and Hanover NH.

Note: - This is the Appalachian Trail too!



Norwich-Route VT Rte.
10A Corridor:
**Ledyard Bridge
reconstruction**

Pedestrian walkway passes under the
bridge along the Connecticut River. Local
committee provided design input.





Danville VT 2 Corridor: Completed - Road reconstruction, Traffic calming, Streetscape and sidewalk project:

- Large volume of traffic passing through the village. New traffic circulation for the Danville Green.
- Legacy trees preserved on the Danville Green. Added new shade trees to enhance Main Street character.



Danville VT 2 Corridor: Completed Road reconstruction, Traffic calming, sidewalk project:

- New crosswalks and traffic circulation for the Danville Green.
- Legacy trees preserved on the Danville Green and new ones added.

Scoping Study – Establish Purpose and Need



■ **Purpose:** provide for safe bicycle and pedestrian travel along the US 302 corridor.

■ **Need:** currently there is no bicycle or pedestrian infrastructure on a corridor with numerous businesses and services.

US 302 Barre- Montpelier Road - Bike Pedestrian -- Scoping Study Selected option – Road diet

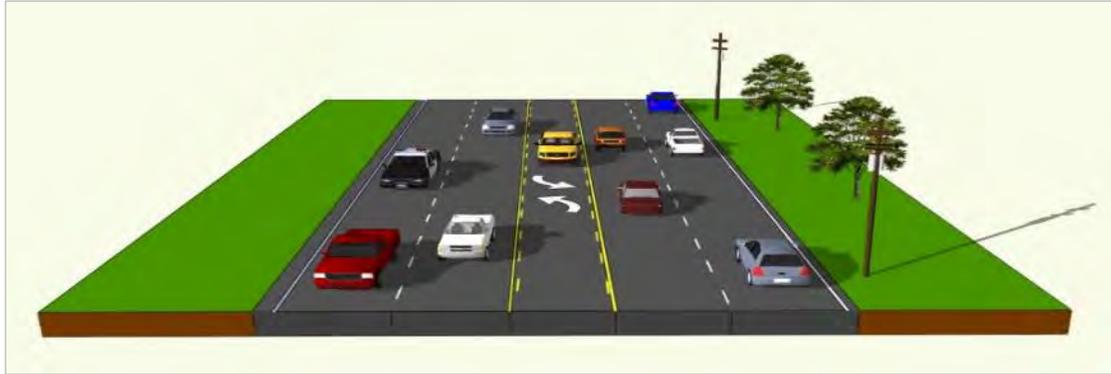
This shows option to convert Rte. 302 to a three lane Complete Street.

Dubois and King Engineering

Existing Cross Sections



3 lanes



5 lanes



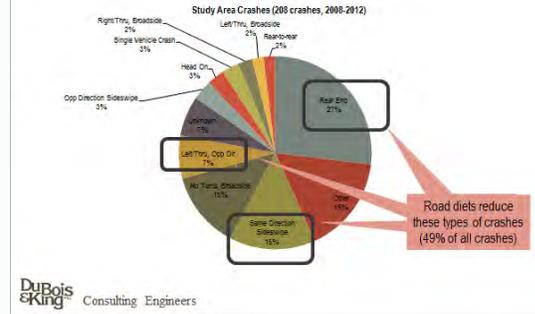
2 lanes



Where do road diets work best? FHWA Says:

- Moderate volumes (8,000-16,000 ADT)
 - US 302 AADT: 11,000 to 13,900
- Roads with safety issues
 - 208 crashes in study area in past 5 years
- Transit corridors
 - GMTA Routes serve corridor; generate pedestrians
- Essential bicycle routes and links
 - Missing link in Central Vermont Regional Bike Path network
- Commercial reinvestment areas
 - Numerous commercial redevelopment projects underway

US 302 Road Diet: Safety Benefits



DuBois & King Consulting Engineers

Buffered Bike Lanes



- Separation from vehicle traffic
- Buffer for pedestrians

DuBois & King Consulting Engineers

- Reduced Crash rate
- Reduced injury Rate
- Mobility for all
- Slight increase in traffic volume

US 302 Bike Pedestrian Scoping Study Selected option – Road diet

The conversion of Rte. 302 to a three lane Complete Street.

Barre Main Street

Before



Barre Main Street

After



Barre Main Street

After



Barre Main Street

After



Barre Main Street

After



Complete Streets are Green Streets

Streets as Places – Supporting Mobility, the Environment and the Community



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Danielle Fitzko
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St. Albans, VT

Streets for the Environment

Complete Streets can provide a myriad of ecological services to preserve, protect and enhance our environment.

What is making headlines?

Of particular concern is are **stormwater runoff and drainage** issues too common in traditional streets.



Impacts of Development on Hydrology

PRE-
Development



POST-
Development



Evapotranspiration **40%**

Runoff **10%**

Shallow Infiltration **25%**

Deep Infiltration **25%**

Evapotranspiration **30%**

Runoff **55%**

Shallow Infiltration **10%**

Deep Infiltration **5%**

Traditional Stormwater Management

Treats stormwater as a waste....

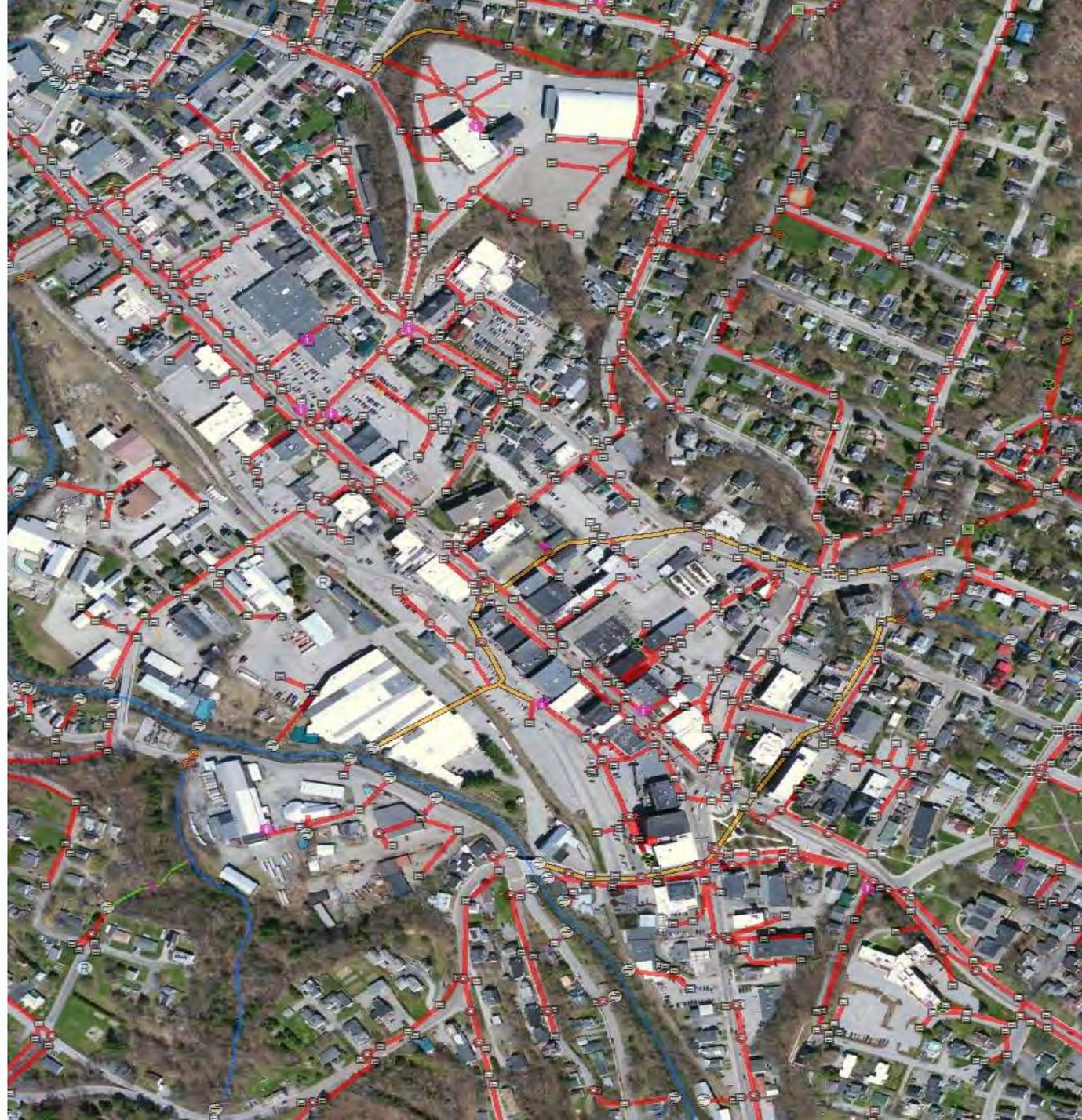


Traditional Stormwater Management

Uses pipe and convey strategies....

Looks at mostly surface runoff....

Barre, VT



Traditional Stormwater Management

Centralized....

Manages for peak flows....

Relies on LARGE infrastructure....



Traditional Stormwater Management

Nutrient
Loading



Sedimentation
and Erosion



Bacteria

Trash and
Debris

Reductions in
Base Flow



Trace
Metals

Increased runoff
volume and
duration



Green Infrastructure.....

Infrastructure that works for all

St. Albans, VT

Low Impact Development

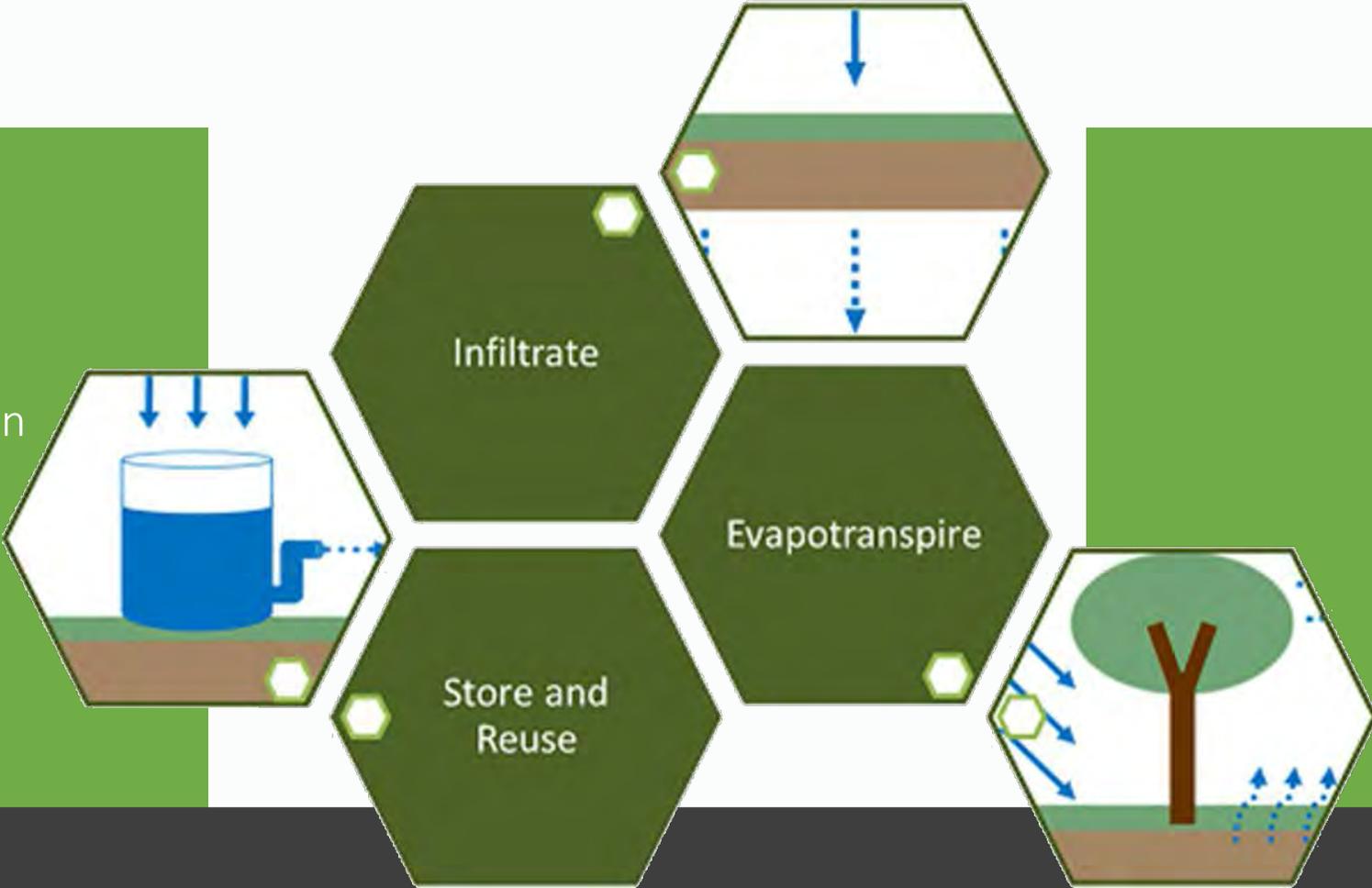
A land use planning and design approach which seeks to maintain a site's pre-development ecological and hydrological function through the protection, enhancement, or mimicry of natural processes.



PROTECT

Green Stormwater Infrastructure

Systems and practices that restore and maintain natural hydrologic processes.



MANAGE



Opportunities in the Right of Way.....

Bring the green in as a public infrastructure to provide valuable services for all.

Photo: ASLA. Suburban Street Stormwater Retrofitting.

Green Practices

Infiltrate...infiltration trenches

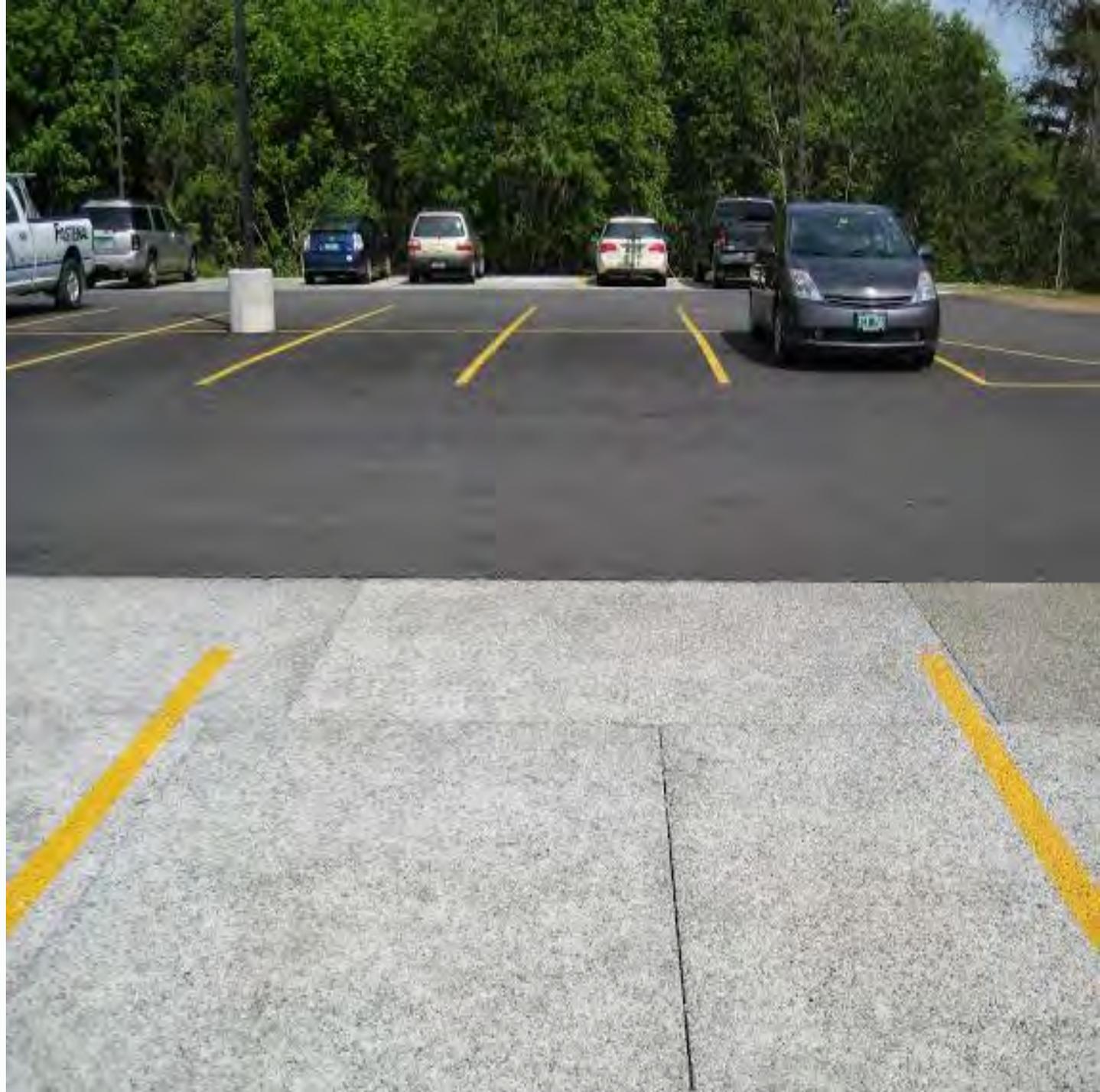
Rutland, VT



Green Practices

Infiltrate....permeable pavement

Burlington, VT



Green Practices

Infiltrate....permeable pavement

St. Albans, VT



Green Practices

Infiltrate & Evapotranspiration....turf pavers

Burlington, VT



Green Practices

Infiltrate & Evapotranspiration....rain garden

Montpelier, VT



Green Practices

Infiltrate & Evapotranspiration....bioretention

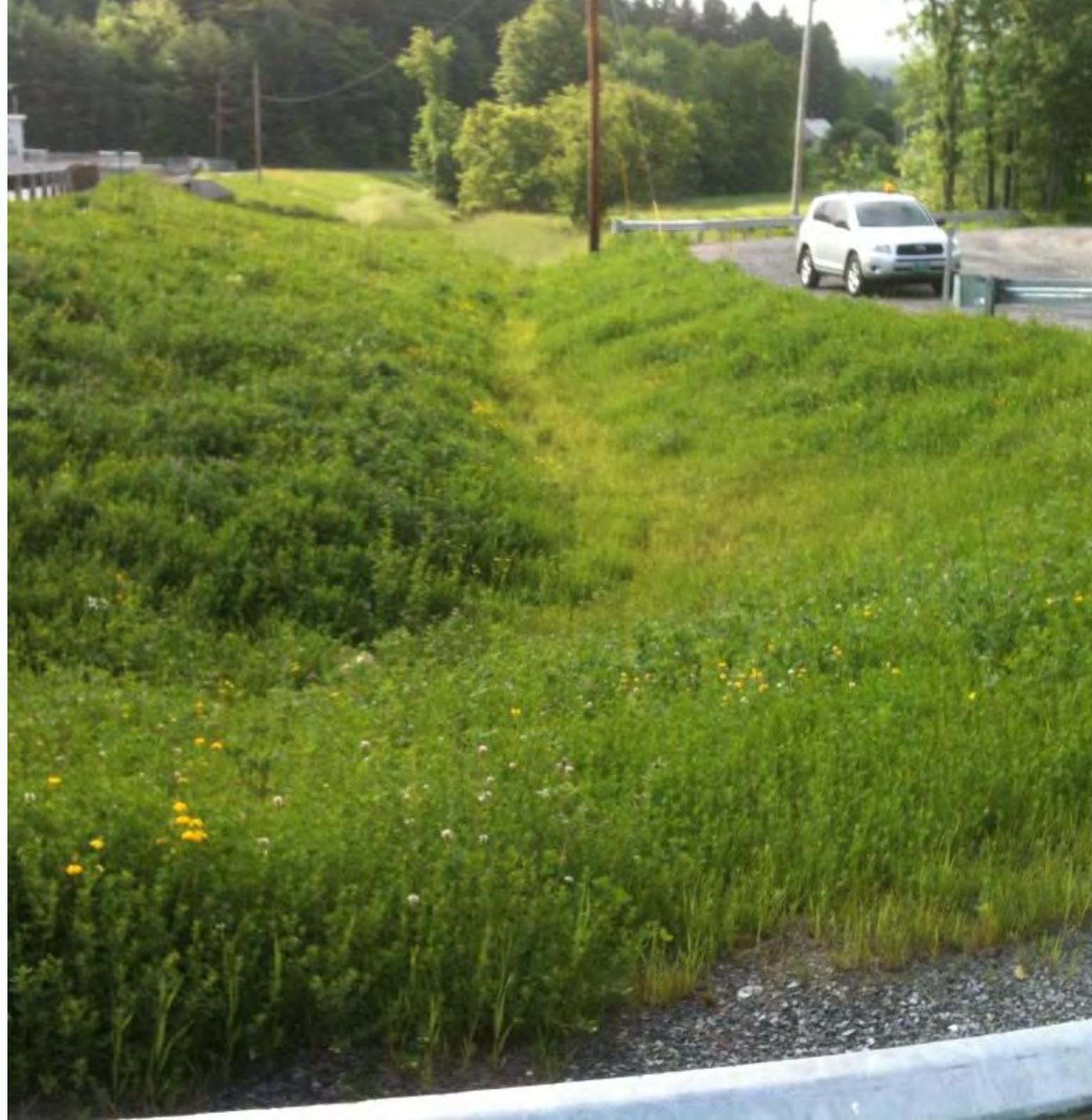
Richmond, VT



Green

Infiltrate & Evapotranspiration...bioswale
Practices

Middlesex, VT



Green Practices

Infiltrate & Evapotranspiration.....gravel wetland

St. Albans, VT



Green Practices

Infiltrate & Evapotranspiration....tree preservation

Jamaica, VT



Green Practices

Infiltrate & Evapotranspiration....canopy cover

Burlington, VT



When it comes to trees: BIGGER is better





Trees need soil.....

Large volumes of uncompacted soil with adequate drainage, water holding capacity, aeration and fertility.

Photo source: wikipedia

Engineered Soils

Winooski, VT



Green Practices

Infiltrate & Evapotranspiration....engineered soil

Winooski, VT



Structural Cells / Suspended Pavement

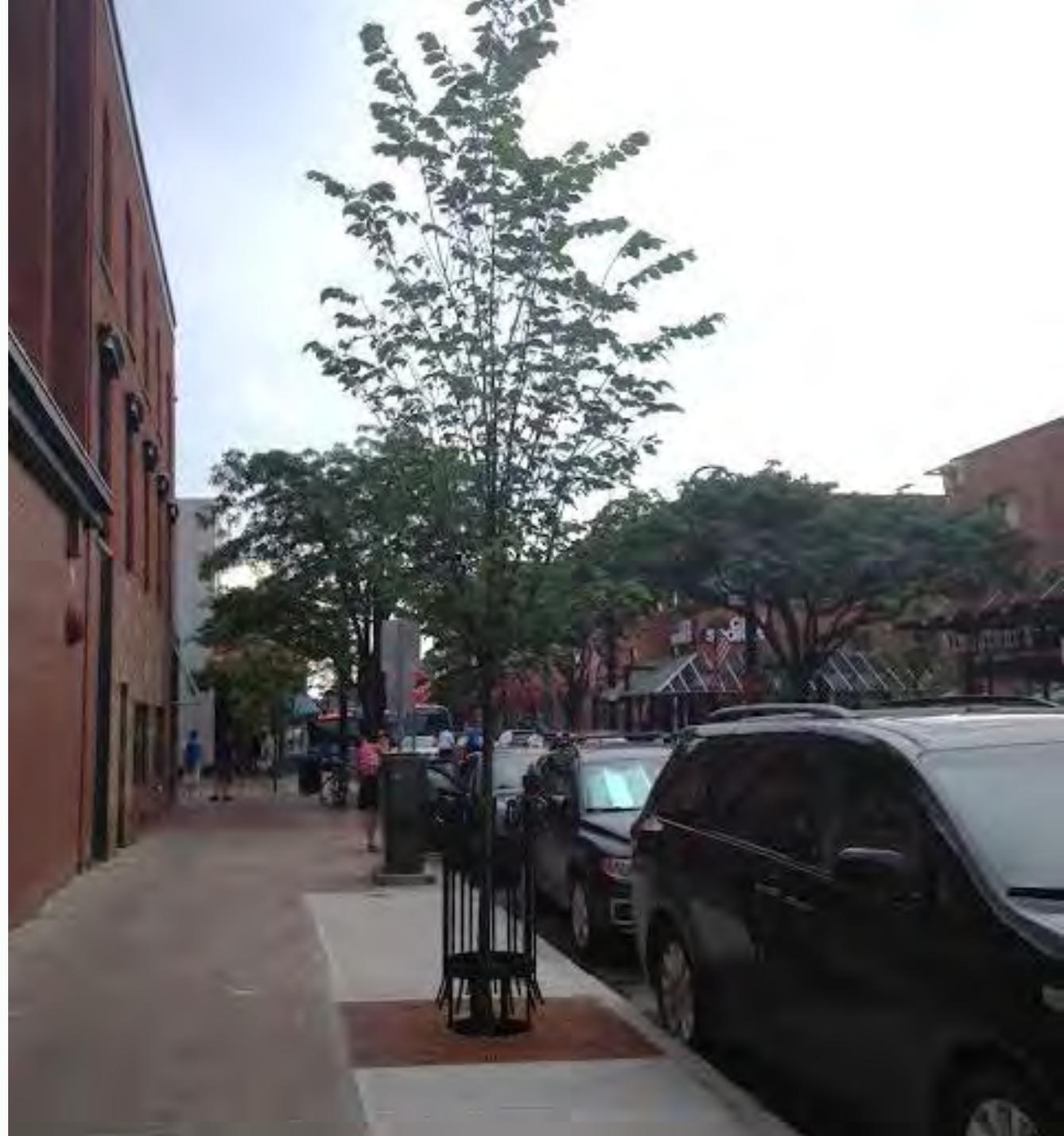
Burlington, VT



Green Practices

Infiltrate & Evapotranspiration.... structural cells

Burlington, VT





When it comes to cost and maintenance..... Think Infrastructure

Photo: ASLA. Suburban Street Stormwater Retrofitting.



St. Albans, Vermont

Turning Main Street into a Green Street

St. Alban's Vision



01 Treatment of stormwater runoff from roads

02 Reduce the amount of stormwater entering municipal system

Their Strategy



19

Treatment Bays

16

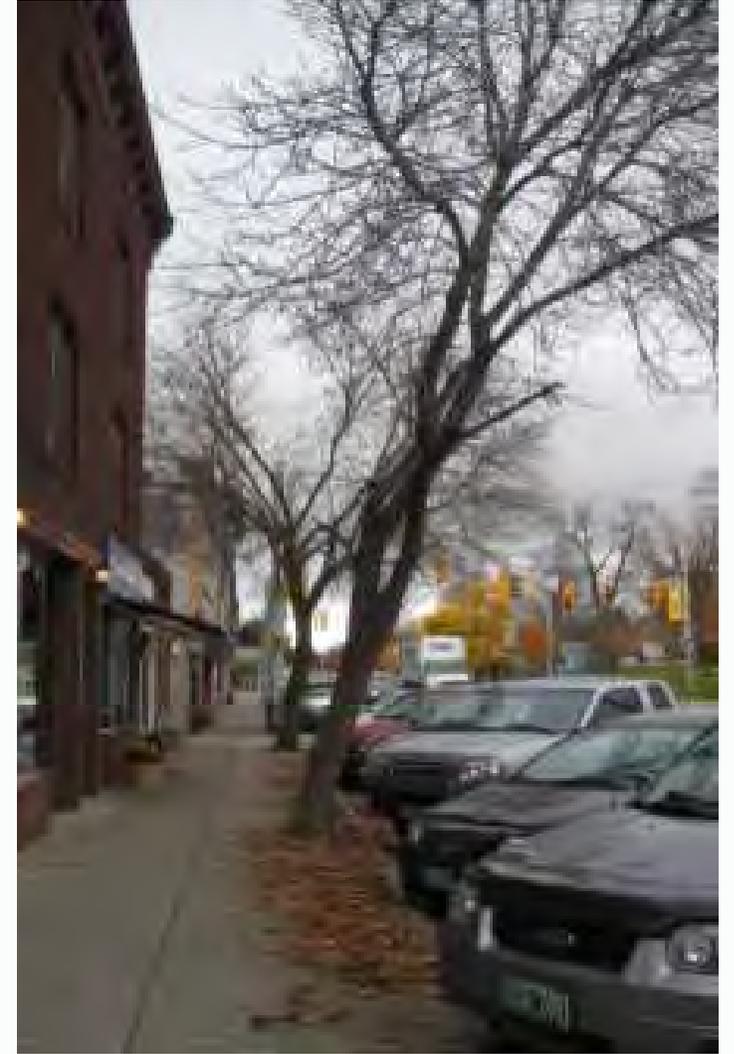
Trees in engineered soils

17

Trees in structural cells

ST. ALBANS

Before



ST. ALBANS

Before



ST. ALBANS

After

Treatment
Bays



ST. ALBANS

After

Treatment
Bays



ST. ALBANS

After

Street Trees





The many benefits of green infrastructure

Complete Streets are Green Streets

Streets as Places – Supporting Mobility, the Environment and the Community



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“Encouraging Mobility and
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Streets for
Environment

“Improving the Environment
and Water Quality”



Streets for
Community

“Building Community and
Economic Vitality”

Richard Amore

Agency of Commerce and Community Development



This marks the
junction of
two old post and
stage roads ~
one from Boston
to Montreal
and the other
from Haverhill,
N. H.

Erected by
Rebeckah Hastings Chapter
D. A. R.
1957

Barre, VT

Streets for communities. Streets form our communities and shape our lives....

Complete Streets can boost retail and dining sales, spark private investment, raise property values, attract new businesses and add jobs.



Montpelier, VT

Streets are the stage for community, commerce and celebration.....yesterday



Barre, VT

Streets are the stage for community, commerce and celebration....and today.

Streets for Commerce

Streets bring people together.

St. Albans, VT



Streets for Commerce

Streets bring people together.

Burlington, VT



Streets for Commerce

Streets bring people together.

Manchester, VT



Streets for Commerce

Streets bring people together.

Brandon, VT



Streets for Commerce

Streets bring people together.

Morrisville, VT



Streets for Commerce

Streets bring people together.

Weston, VT



Streets for Commerce

Streets bring people together.

Vergennes, VT



Streets for Community

Streets bring people together.

Brattleboro, VT



Streets for Community

Streets bring people together.

Barre, VT



Streets for Community

Streets bring people together.

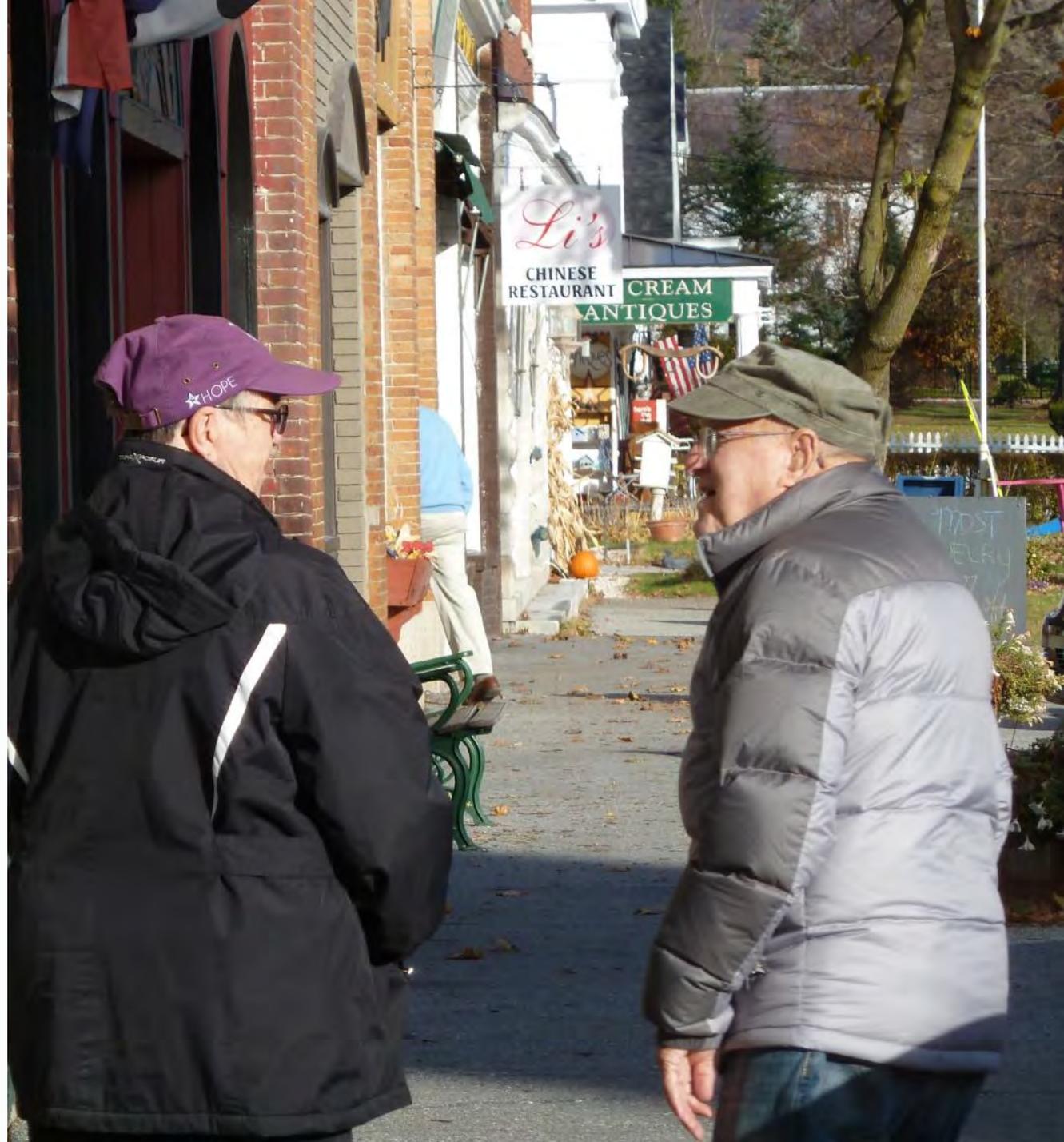
Montpelier, VT



Streets for Community

Streets bring people together.

Brandon, VT



Streets for Celebration

Streets bring people together.

Waterbury, VT



Streets for Celebration

Streets bring people together.

Montpelier, VT



Streets for Celebration

Streets bring people together.

Poultney, VT



Streets for Celebration

Streets bring people together.

Waterbury, VT





Complete Streets are Green Streets



From Williamstown, Waitsfield, Randolph, Jamaica, Northfield, Arlington and Bristol, Complete Streets are popping up across the state.





Transformation in St. Albans

The City of St. Albans is flourishing, welcoming nearly 40 new businesses and 300 workers – including 140 state employees – to its historic downtown and commercial center over the past five years. This robust revitalization is no accident: businesses, property owners and municipal officials have worked together with the state to take advantage of tax incentives, grants and planning assistance through the State Designation Programs, administered by the Department of Housing and Community Development, and support for transportation planning and implementation with grants administered through the Vermont Agency of Transportation and the Agency of Natural Resources.

Vision

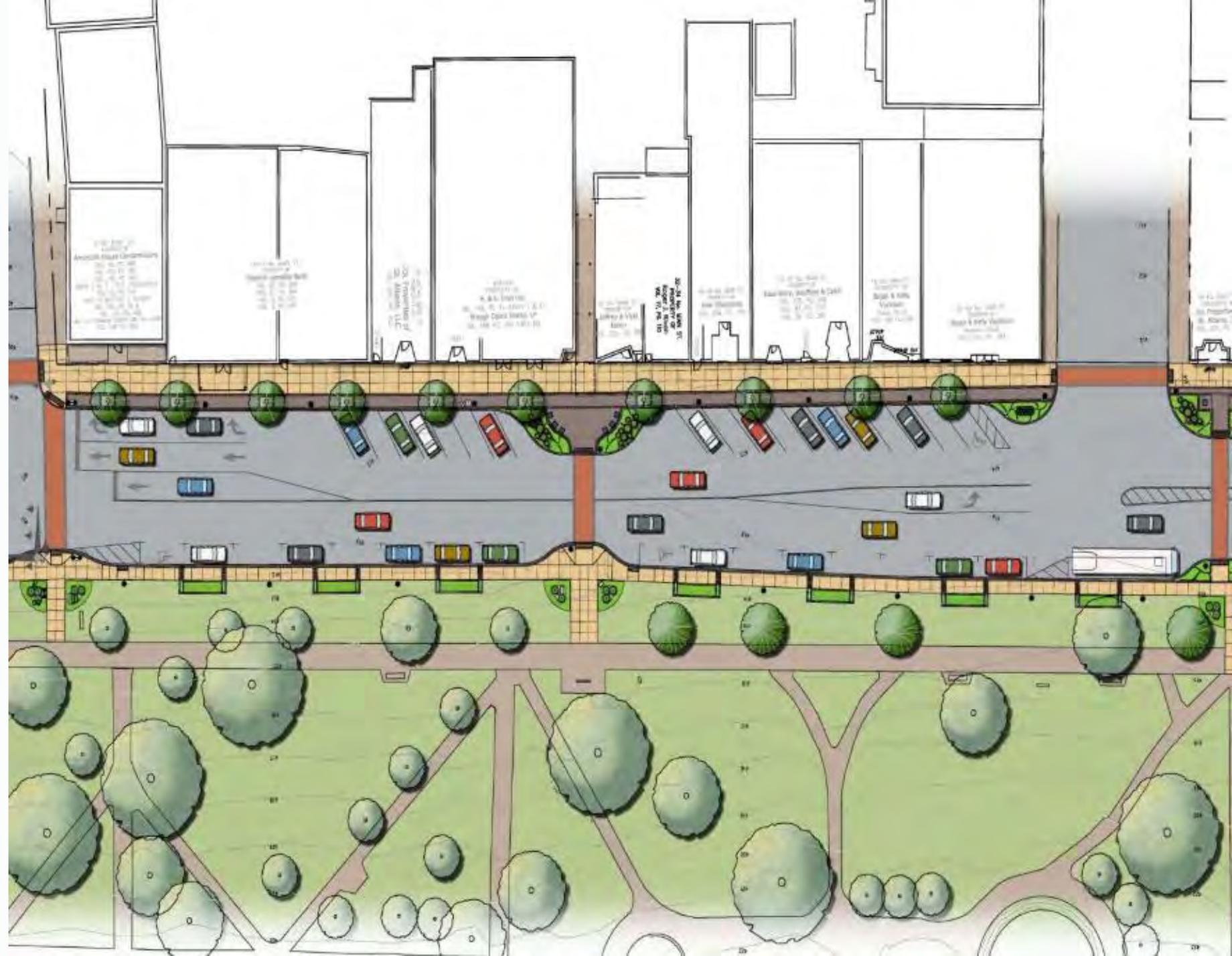
Downtown Master Plan

A critical first step was a community visioning process to support their downtown which received State Designation in 2004. This step was funded in part by two State Municipal Planning Grants (MPGs) - the initial \$10,500 grant was followed by a second of \$15,000 to create a Downtown Master Plan in 2009.

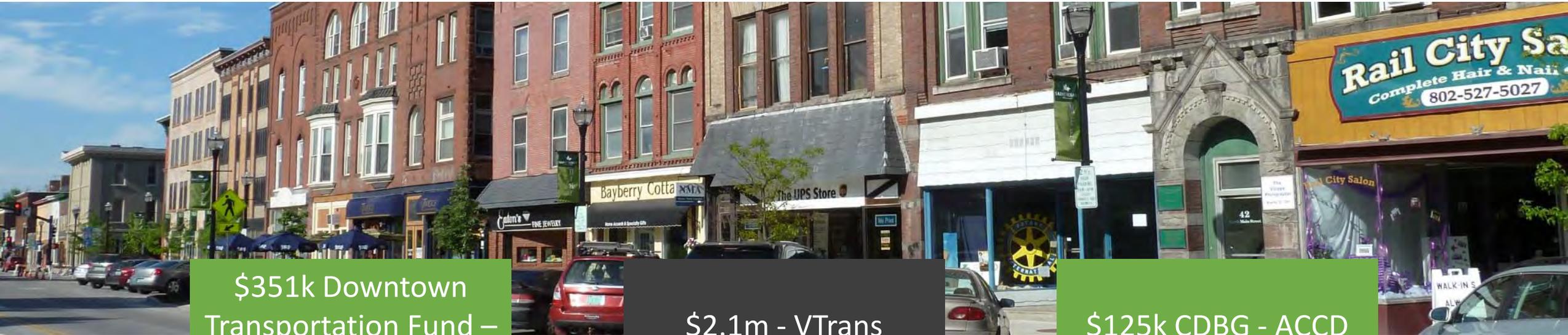


Plan

An ambitious three-year streetscape improvement project that included new traffic signals, sidewalks, lighting, landscaping, street trees, storm water treatment, paving, and signage.



Implement



\$351k Downtown
Transportation Fund –
ACCD/VTrans

\$2.1m - VTrans

\$125k CDBG - ACCD

\$125k – ANR

\$600k - TIF and other
local bonds

\$6k - Electric Vehicle
Charging Station
(ACCD)

St. Albans

BEFORE



St. Albans

AFTER



St. Albans

BEFORE

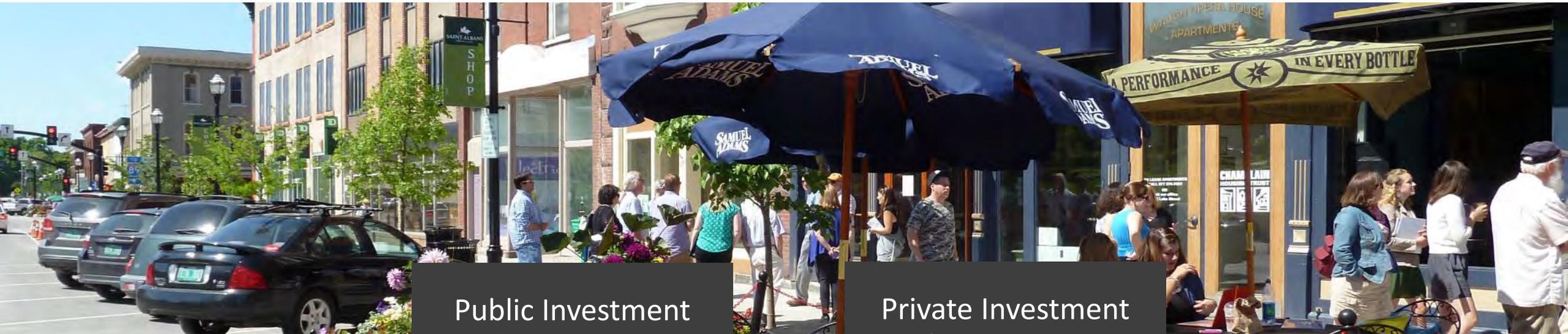


St. Albans

AFTER



Results



Public Investment
\$12,848,171

Private Investment
\$33,783,030

37 New Businesses
Added

288 Jobs Added

70% Decrease in
Storefront Vacancy
Rate

St. Albans

Ripple Effects



St. Albans

Ripple Effects



St. Albans

Ripple Effects



St. Albans

Ripple Effects



St. Albans

**What's Next –
Federal Street**



St. Albans

What's Next – Lake Street Hotel





Renaissance in Barre

Since 2011, almost \$20M in public investment in the downtown spurred \$45M in private investment that has brought 24 new businesses, reduced vacancy rates by 8%, increased commercial rental rates by \$6-10 dollars a square foot and attracted over 350 jobs. This investment also includes major streetscape and public infrastructure improvements, construction of City Place, a new State office building with commercial/retail spaces on the ground floor, and rehabilitation of several prominent downtown blocks with the help of federal and state tax credits.

Vision

Barre City has gone through a similar revitalization thanks to local visionaries, strategic partnerships, and investment in key infrastructure upgrades.

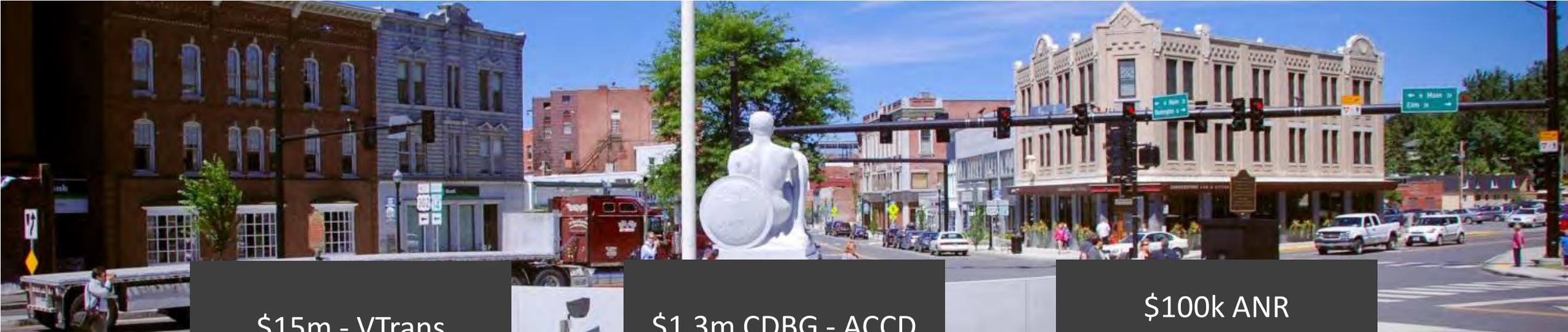


Plan

A group of municipal officials and stakeholders identified three major goals to help jump-start revitalization in Barre: bring 500 new workers to Barre over five years by improving the city's image with investments in public infrastructure and marketing; recruit businesses and services to meet the needs of local residents; and modernize Barre's existing industrial assets to attract entrepreneurs and new start-up businesses.



Implement



\$15m - VTrans

\$55k Municipal Planning Grants – ACCD

\$1.3m CDBG - ACCD

\$790k Downtown Tax Credits - ACCD

\$100k ANR Brownfields

\$270k Downtown Transportation Fund – ACCD/VTrans

The "Big Dig"



Barre

BEFORE



Barre

AFTER



Barre

BEFORE



Barre

AFTER



Results



24 New Businesses
Added

Private Investment
\$45,122,000

263 New Jobs

8% Decrease in
Storefront Vacancy
Rate

Public Investment
19,936,230

Commercial Square
Foot Rates Increased
to \$12-\$17

Barre

BEFORE



Barre

AFTER



Barre

BEFORE



Barre

AFTER

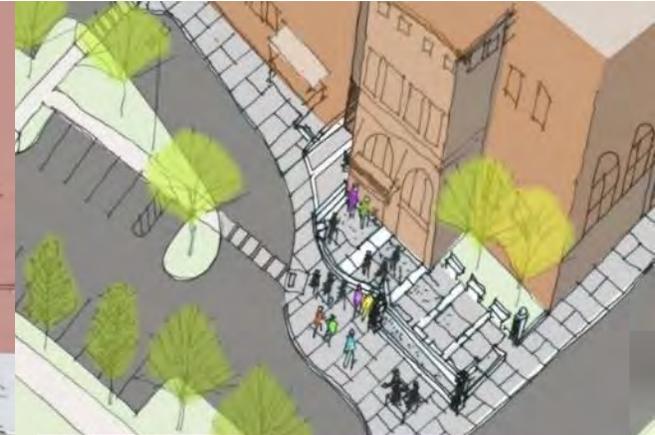


Barre

What's Next



What's Next – Enterprise Alley



\$100k Downtown
Transportation Fund –
ACCD/VTrans

\$1.3m CDBG - ACCD

\$600k – EPA – ANR
Brownfields

\$30k – EV Charging
Station Grant - ACCD

\$225k – TIF Bonds -
City

\$628k – Insurance
Proceeds ANR

\$30k Planning Grant -
ACCD

\$246k – Semperbon
Annuity - City



If You Build It, They Will Come.



Streets as Places – Making it Happen

Vision → Plan → Implement

Have A Vision

The Vision must be from the community and be community-driven. It should explore how streets can improve the mobility, environment and community.

“A Vision without a Plan is Hallucination”
– Thomas Edison



Develop A Plan

Develop a plan and identify strategies to improve your streets. Strategies could include physical improvements, from sidewalks, to street trees, landscaping, to better signage and wayfinding, revitalized buildings, and programmed events and celebrations.



Find Some Money to Implement

Identify and secure funding to implement your vision and develop your plan. Funding strategies could include local fundraising/crowdsourcing, local town funds, state grants, federal grants, nonprofit and foundation grants, etc.



Join us for dinner Nov. 20 at the Bobcat Cafe in Bristol!

The folks at the Bobcat Cafe will be generously donating 20% of the dinner proceeds to help fund the:

**Bristol Green
Playground!**

*Come see a
preview of the
playground
design*

Take out orders help too!

Reservations are required. Call 802-453-3311.

5 Main Street, Bristol, VT - www.bobcatcafe.com



Brought to you by:

The Bristol Downtown Community Partnership and Bristol Recreation Department

Bristol, VT

Implementation – Show Me The Money



VTrans Bike/Ped
Grants

VTrans Transportation
Alternative Grants

Downtown
Transportation Fund –
ACCD/VTrans

Strong Communities,
Better Connections
VTrans/ACCD

Vermont Community
Development
Program (CDBG)

Caring for
Canopy Grants
ANR – FP&R

Ecosystem
Restoration Program
Grants – ANR - DEC

Municipal Planning
Grants - ACCD

Funding Opportunities

Downtowns and Village Centers

FUNDING DIRECTORY

Downtown and Village Center Tax Credit*
 State investment tax credit for qualified historic rehabilitation, façade, code and technology upgrades for properties constructed before 1983 located within a Designated Downtown or Village Center.
Range: 10 - 50% of eligible expenditures
Eligibility: Properties within Designated Downtown or Village Center
Deadline: Annually in July
Contact: Caitlin Corliss, (802) 828-3047 caitlin.corliss@state.vt.us
Website: http://accd.vermont.gov/strong_communities/opportunities/funding/downtown_village_tax_credit

Federal Rehabilitation Investment Tax Credit*
 Federal investment tax credit for 20% of the rehabilitation costs (including labor, materials and architects or other consultant fees) for income-producing buildings listed in the National Register of Historic Places.
Range: 20% of eligible expenditures
Eligibility: Owners of income-producing historic buildings. File application before construction
Deadline: Rolling application deadline. File application before construction
Contact: Caitlin Corliss, (802) 828-3047 caitlin.corliss@state.vt.us
Website: http://www.nps.gov/tax/tax_incentives.htm

Sales Tax Reallocation Program*
 Municipalities and the developer of the qualified project may jointly apply for a reallocation of sales taxes on construction materials. Qualified projects must be located within a Designated Downtown and reallocated taxes must be used by the municipality to support the qualified project. Projects are awarded on a competitive basis.
Range: Based on sales tax generated in excess of \$100,000 to \$1M depending on the size of municipality
Eligibility: Joint application between municipality and developer located within Designated Downtown
Deadline: Annually in July
Contact: Caitlin Corliss, (802) 828-3047 caitlin.corliss@state.vt.us
Website: http://accd.vermont.gov/strong_communities/opportunities/funding/salestaxreallocation

Vermont Community Development Program (CDBG)*
 Federal grants to bring existing municipal buildings and non-school libraries into compliance with the Americans with Disabilities Act (ADA).
Implementation Grants - Federal grants for economic development, housing, public facilities, and public services that will benefit low/moderate income individuals, eliminate slums or blight, or address an urgent need
Planning Grants - Federal grants for community development planning, downtown planning studies, and project development to benefit people with low to moderate incomes and/or eliminate slums and blight.
Range: \$30,000 - \$1,000,000
Eligibility: Municipalities and/or municipalities on behalf of organizations and private owners
Deadline: Open application with funding decisions made throughout the year
Contact: Josh Hamford, (802) 595-1385 josh.hamford@state.vt.us
Website: http://accd.vermont.gov/strong_communities/opportunities/funding/vcdp

Downtown Transportation Fund*
 State grants for municipalities to finance transportation-related capital improvements in support of economic development within or serving a Designated Downtown, including construction or alteration of roads and highways, parking facilities, pedestrian and streetscape improvement, rail or bus facilities or equipment, and underground relocation of electric utility cable and telecommunications lines.
Range: 50% of overall project costs up to maximum of \$100,000
Eligibility: Municipalities with a Designated Downtown
Deadline: Annually in March
Contact: Gary Holloway, (802) 828-3220 gary.holloway@state.vt.us
Website: http://accd.vermont.gov/strong_communities/opportunities/funding/downtown_transportation_fund

* Grant program receives priority consideration due to designation



VERMONT
 AGENCY OF COMMERCE & COMMUNITY DEVELOPMENT
 DEPARTMENT OF STATE, ECONOMIC DEVELOPMENT

Downtowns	Village Centers
Richard Arnes (802) 828-1229 richard.arnes@vermont.gov	Gary Holloway (802) 828-3220 gary.holloway@vermont.gov

Downtowns and Village Centers

FUNDING DIRECTORY

Municipal Planning Grant Program*
 State grants for a wide range of municipal planning projects including municipal land use plans, zoning and subdivision bylaws, designated downtown, village and neighborhood planning.
Range: \$2,500 - \$20,000
Eligibility: Municipalities with adopted plans confirmed by their regional planning commission.
Deadline: Annually in September
Contact: Annina Seiler, (802) 828-1948 annina.seiler@state.vt.us
Website: http://accd.vermont.gov/strong_communities/opportunities/funding/overview/municipal_planning_grants

Hazard Mitigation Grant Program
 Provides grants to implement long-term hazard mitigation actions that reduce structure damage or loss of life due to natural disasters. Examples include updating culverts, elevating or floodproofing buildings, property acquisitions/demolitions, and mitigation planning. Details on website.
Range: No minimum or maximum. Local match of 25%.
Eligibility: Municipalities, state agencies, regional planning agencies, non-profits in select circumstances. Eligible entities on behalf of private owners.
Deadline: Funding available after a major disaster declaration. Rolling application deadlines vary depending on funding.
Contact: Ray Doherty, (802) 241-5258 ray.doherty@state.vt.us
Website: <http://vem.vermont.gov/mitigation/applications/>

State Historic Preservation Grants*
 State 50/50 matching grants for the repair and restoration of historic buildings listed or eligible for listing in the National Register of Historic Places in Vermont.
Range: \$1,000 - \$20,000
Eligibility: Municipalities and non-profit organizations
Deadline: Annually in October
Contact: Caitlin Corliss, (802) 828-3047 caitlin.corliss@state.vt.us
Website: http://accd.vermont.gov/strong_communities/preservation/grants/historic_preservation

Certified Local Government Program
 Federal grants available for resource identification and planning, National Register nominations, downtown planning, public education, archeological studies, and building feasibility studies.
Range: \$500 - \$25,000
Eligibility: Municipalities that are enrolled as Certified Local Governments
Deadline: Annually in January
Contact: Devin Colman, (802) 828-3043 devin.colman@state.vt.us
Website: http://accd.vermont.gov/strong_communities/preservation/planning/clg

Brownfield Revitalization Fund*
 Grants and loans for remediation of brownfield sites. The funds are made available to Vermont by the EPA and eligible applicants can be private developers, non-profits and municipalities.
Range: Grants are capped at \$200,000
Eligibility: Municipalities, non-profit organizations and private developers
Deadline: Rolling
Contact: Kersten Bourgeois, (802) 793-4899 kersten.bourgeois@state.vt.us
Website: http://accd.vermont.gov/business/relocate_expand/capital/brownfields

Cultural Facilities Grant Program
 Matching state grants to improve community facilities used to provide cultural activities to the public to enhance or expand the capacity of an existing building to provide cultural programming.
Range: \$1,000 - \$30,000
Eligibility: Municipalities and non-profit organizations
Deadline: Annually in the spring
Contact: Michelle Bailey, (802) 828-3294 mbailey@vermontartsCouncil.org
Website: <http://www.vermontartsCouncil.org/grants-and-services/organizations/cultural-facilities>

* Grant program receives priority consideration due to designation



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 DEPARTMENT OF STATE, ECONOMIC DEVELOPMENT

Downtowns	Village Centers
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Barre + St. Albans Case Studies

Transforming St. Albans

Public Improvements Leverage Private Investment

Overview
The City of St. Albans is flourishing, welcoming nearly 50 new businesses and 300 workers – including 140 state employees – to its historic downtown and commercial center over the past five years. This robust revitalization is no accident: businesses, property owners and municipal officials have worked together with the state to take advantage of tax incentives, grants and planning assistance through the State Designation Programs, administered by the Department of Housing and Community Development, and support for transportation planning and implementation with grants administered through the Vermont Agency of Transportation. As the City continues to move forward, the example of its recent accomplishments offers a roadmap that communities statewide can follow.

The Challenge
The success in St. Albans took time and didn't come without challenges. As with revitalization in any community, finding money to support infrastructure improvements and economic development was, for many years, an obstacle. Another challenge was determining what projects to tackle, where to invest and how best to leverage limited financial resources. "Without a plan that focused on goals supported by the community we could never have gotten the support to tackle the big projects," says Chip Sawyer, St. Albans Director of Planning and Development.

The Solution
A critical first step was a community visioning process to support their downtown which received State Designation in 2004. This step was funded in part by two State Municipal Planning Grants (MPCs) – the initial \$10,500 grant was followed by a second of \$15,000 to create a Downtown Master Plan in 2009. With State Designation and a blueprint forward, the door opened to a number of funding sources that helped leverage taxpayer dollars and spurred private investment. Approval for a state tax increment financing (TIF) District in 2012 provided yet another source of funds. "Downtown Designation and support from the State, both technical and financial, were key to getting several of these projects out of the planning pages and into reality," says Sawyer.

The Result
With a vision that city residents and city leadership could get behind, successful private/public partnerships and strategic use of public funds and taxpayer dollars, the list of recent public infrastructure and community development projects in St. Albans is impressive. These include:

- An ambitious three-year streetscape improvement project funded with the help of more than \$250,000 in state Downtown Transportation Funds and a number of grants funded through and administered by the Vermont Agency of Transportation. These included two federal TIGER grants – one for design and one for construction, Transportation Enhancement Program funds totaling about \$2.5 million. The streetscape project included new traffic signals, sidewalks, lighting, landscaping, drainage, storm water treatment, paving, and signage.
- State tax credit projects, totaling \$619,955 which sparked over \$4.2 million in private investment, including the former Fishman's Department Store, the former Napoli Variety Building, and the historic St. Albans House a former hotel that had been empty for over 15 years before its recent rehabilitation.
- \$14 Million in TIF bonds to finance construction of a new parking garage, redevelopment of a brownfield site for a new downtown hardware store and construction of a new State Office Building.

The decade long effort to revitalize St. Albans was recently capped by the announcement of a new 88-room downtown hotel to be completed in 2016. Also currently under construction and planned for the near future are additional streetscape enhancements along Main and Lake Streets to be funded with \$300,000 of Transportation Alternative Program funds and \$300,000 of Transportation Community and System Preservation Program funds. All this proves St. Albans is not resting on their past success, but continuing to create a vibrant community with a diverse economic base.




 VERMONT
 AGENCY OF COMMERCE & COMMUNITY DEVELOPMENT
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

Renaissance in Barre

Public Improvements Leverage Private Investment

Overview
Things are looking up in the Granite City. Since 2011, almost \$20M in public investment in the downtown spurred \$45M in private investment that has brought 24 new businesses, reduced vacancy rates by 8%, increased commercial rental rates by \$6-10 dollars a square foot and attracted over 350 jobs. This new State office building with commercial/retail and public infrastructure improvements, construction of City Place, a new State office building with commercial/retail spaces on the ground floor, and rehabilitation of several prominent downtown blocks with the help of federal and state tax credits. Support from multiple state agencies including the State Designation Programs administered by the Department of Housing and Community Development, and the Agency of Transportation have been an important source of funding, helping to leverage other public and private money to make this renaissance possible.

The Challenge
After multiple years of economic decline in downtown Barre, the City was struggling with empty store fronts, low commercial rents and declining property values. Turning things around took time and didn't come without challenges. The City had spent a decade investing heavily in the creative/tourist economy without results. According to Mike Miller, the City's former Director of Planning, "We needed to better understand our strengths and weaknesses. Barre is never going to be Stowe, but what Barre has is plenty of water and sewer capacity, industrial activity, highway access, and a great stock of historic buildings with affordable rental office space." With those things in mind, a group of municipal officials and stakeholders identified three major goals to help jump-start revitalization: bring 500 new workers to Barre over five years by improving the city's image with investments in public infrastructure and marketing; recruit businesses and services to meet the needs of local residents; and modernize Barre's existing industrial assets to attract entrepreneurs and new start-up businesses.

The Solution
A Designated Downtown since 2000, Barre took advantage of a number of grant and tax incentive programs that give priority to projects in communities within the State Designation Program. Work began with updates to the City's municipal plan and zoning bylaws and the creation of Downtown Conceptual Plan – all supported by the State's Municipal Planning Grants. The next step was finding funding to implement the plan and make the infrastructure improvements that support economic development. A combination of \$140,000 in Downtown Transportation Funds – a multi-year effort to revitalize the heart of downtown – and over \$15M in federal funding administered through the Agency of Transportation supported Barre's "Big Dig" – a new office building in the heart of downtown. Technical support through the State's Designation Program helped us plan projects, identify funding sources and leverage public investment. "said Steve McKenzie, Barre's City Manager. "We continue get great support from the Agency of Commerce including initiatives like the Vermont Downtown Action Team that helped us develop a downtown master plan and re-brand and market the community in the wake of the 2011 floods. This year, the City is working to make a number of changes to protect our infrastructure investments, economy and business from future floods with the help of the Vermont Economic Resiliency Initiative."

The Result
In just the past five years, the resume of accomplishments in Barre is impressive, including:

- Completion of the "Big Dig" which included the replacement of 100-year old water and sewer lines, plus sidewalk and lighting improvements and new paving, parking and signage. This effort was supported by a combination of federal, state and local funds.
- Construction of "City Place" a new 80,000 square foot building in the heart of downtown with state office space as well as ground floor commercial space for a new restaurant and commercial tenants.
- Secure state and federal tax credits to rehabilitate a dozen historic buildings on Barre's Main Street, including the 1904 Blanchard Block, which now houses 49,000 of mixed retail and office space, and the Aldrich Block, in danger of demolition following a fire in 2010, now home of the celebrated Cornerstone Restaurant.

Barre isn't content to rest after these successes and has set its sights on the 2015 makeover of "Enterprise Alley." The project will use a variety of public and private funding sources to remediate a brownfield site and transform a poorly configured parking with inadequate drainage into a pedestrian-friendly public space with new parking, storm water controls, sidewalks and landscaping; ADA accessible entrances to Merchants Row shops; a public plaza at the city's historic train depot and a long-planned bike path along the Stephens Branch of the Winooski River.




 VERMONT
 AGENCY OF COMMERCE & COMMUNITY DEVELOPMENT
 DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT

Resources

VERMONT URBAN & COMMUNITY FORESTRY PROGRAM

MAIN STREETS TO GREEN STREETS

Harnessing the Power of Trees Downtown

Urban areas are challenged by extensive impervious surfaces, damaged soils and little area to build traditional engineered stormwater facilities. Creative Best Management Practices (BMPs) that harness the ability of vegetation and soils to mitigate urban runoff are needed. Traditional methods of stormwater in urban areas include collecting runoff at a centralized facility, such as a detention pond, or relying on a storm sewer system. Newer goals are aimed at distributing the treatment across the landscape at many sites or at the point of contact. But some sites do not have sufficient conditions to handle water collected from surrounding areas, and thus unable to benefit from tree canopy interception and the influence of roots on soil hydrology. With new technologies and strategies - trees can play an important role in managing stormwater in our downtowns.

Montpelier, VT



New Take on Tree Pits

Tree wells or tree box filters use bioretention to filter sediment and pollutants out of stormwater runoff. Bioretention systems collect and filter runoff through layers of mulch, soil and plant root systems. The treated stormwater is then infiltrated into the ground or discharged into a traditional stormwater drainage system. Numerous prefabricated tree pit structures are commercially available. They typically include a ready-made concrete box containing an appropriate soil mixture and often trees and the trees are essentially used as a replaceable filter every 7 - 10 years. Newer designs are emerging that offer open sides suitable for tree roots to move beyond the tree box.

For More: www.lid-stormwater.net/treeboxfilter_home.htm

Trees Need Room

Tree roots need adequate amounts of uncompacted soil volume to thrive in urban environments. The key to designing sites that support large trees and harness a tree's power is to have essentially unlimited rooting space. Tree pits (a.k.a. cutouts, planters) should be as large as possible. A typical 4 x 4 ft. cutout with no access to surrounding soil limits tree growth almost immediately. The usable rooting space provided by any cutout can be expanded by a continuous soil bed under pavement.

GREATER SOIL VOLUME = INCREASED TREE CANOPY = OPTIMAL WATER INTERCEPTION = REDUCED RUNOFF

GREEN STORMWATER INFRASTRUCTURE (GSI) FACT SHEET

Green Stormwater Infrastructure

WHAT IS IT?

Green Stormwater Infrastructure (GSI) is a suite of "systems and practices that restore and maintain natural hydrologic processes in order to reduce the volume and water quality impacts of stormwater runoff." Riparian buffers, green roofs, bioswales, permeable pavements and constructed wetlands are all examples of GSI.

HOW DOES GSI RELATE TO LOW IMPACT DEVELOPMENT?

For many years, the terms green stormwater infrastructure (GSI) and low impact development (LID) were used interchangeably. (LID) were first introduced, the field of practice was fairly narrow and this worked well. However, as the field broadened and developed, the interchangeable nature of the terms became confusing. In Vermont, we make a clear distinction between the two terms. LID refers to an approach to land planning and site design that tries to prevent and minimize environmental degradation. GSI, on the other hand, refers to and relies on the physical elements (natural or man-made) of the landscape when addressing or minimizing impacts from stormwater runoff. In other words, LID is a series of planning principles and GSI is a set of physical best management practices.

MOVING FROM GRAY TO GREEN

GRAY

Traditionally, stormwater runoff has been collected and conveyed in closed systems to off-site locations where it is then discharged, without treatment on surface waters. The series of pipes, catch basins, and storm drains that result is known as "gray infrastructure." Because "gray infrastructure" does little to improve water quality and reduce water quantity, stormwater discharges from these systems often contribute to unhealthy stream flow regimes marked by chronic flash flooding, altered stream morphologies, elevated nutrient and contaminant levels, excessive sedimentation, loss of species diversity, and higher water temperatures.

GREEN

Green stormwater infrastructure is a complimentary and sometimes alternative system to "gray infrastructure" that utilizes infiltration, evapotranspiration, storage and reuse. GSI is decentralized by design and either prevents runoff from occurring or treats it as close to the source as possible. GSI provides multiple benefits and functions such as reduced and delayed stormwater flows, enhanced groundwater recharge, stormwater pollutant reductions, reduced sewer overflows, urban heat island mitigation, improved air quality, additional wildlife habitat and recreational space, improved human health, and increased land values. GSI can be used at many spatial scales, from an individual site to an entire watershed.

Facilitated provided by the Vermont Green Infrastructure Initiative, a program of the Watershed Management Division at the Vermont Department of Environmental Conservation (<http://www.vermont.gov/environment/dec/>)

VERMONT DEPARTMENT OF ENVIRONMENTAL CONSERVATION
WATERSHED MANAGEMENT DIVISION
100 WATER STREET, SUITE 100
MONTPELIER, VT 05602

Resources

Complete Streets are Green Streets

Resource Guide

Overview
Complete Streets are designed and operated to enable safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. The Complete Streets approach to planning and engineering has arisen after many decades where automobiles were the primary, and sometimes the only mode of transportation considered in the design process. As we broaden our approach to transportation systems more sustainable to ensure benefits for our community and the environment. These resources will help Vermont communities realize the potential for 'complete and green' streets that improve water quality, expand transportation options and add vibrancy to the streetscape.

Vermont DEC Green Infrastructure
www.watervt.com/infrastructure/
Resources on Low Impact Development (LID) and green stormwater infrastructure.
Join the conversation: <https://groups.google.com/forum/#!forum/vt-nst-infrastructure>

Vermont Urban and Community Forestry Program
www.vtcommunityforestry.org/
Resources on tree planning, design, and management.
Join the conversation: <https://groups.google.com/forum/#!forum/vt-nst-infrastructure>

Let It Rain by University of Vermont Sea Grant
Resources on green stormwater infrastructure.
<http://www.uvm.edu/sea/grant/water-quality/>

Vermont Association of Planning and Development Agencies
Developing an online green infrastructure toolkit.
<http://www.vaplan.org/>

Vermont League of Cities and Towns
Resources on modal green infrastructure regulations.
<http://www.vlct.org/municipalassistance-center/water-resources-as-a-star/csr/>

Environmental Protection Agency
Resources on green stormwater infrastructure.
<http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>

State Designation Programs - Agency of Commerce and Community Development
Resources on community revitalization and planning.
http://www.vermont.gov/about_us/newsletters
Join the conversation: <https://groups.google.com/forum/#!forum/vt-nst-infrastructure>

Complete Streets are Green Streets

Resource Guide

Vermont Downtown Action Team - Design Tool Kit
Resource highlighting best practices in community design and planning.
<http://www.vermont.gov/files/roads/files/Document%20Downloads/Design%20Tool%20Kit%20Vermont%20Downtown%20Action%20Team%20Design%20Kit%20Web.pdf>

Complete Streets Guide for Vermont Communities
Guide to understanding and developing Complete Streets in Vermont.
http://roads.vermont.gov/roads/files/documents/complete_streets_guide_for_VT_communities.pdf

Landscape Guide for Vermont Roadways and Transportation Facilities
Guide for integrating landscaping into Vermont transportation projects.
http://vtceengineering.vermont.gov/files/ent_program_development/files/documents/environmental/VTrans%20Landscape%20Guide.pdf

Vermont Pedestrian and Bicycle Facility Planning and Design Manual
Guide for the planning, design and maintenance of bicycle and pedestrian facilities.
http://vtceengineering.vermont.gov/files/ent_program_development/files/documents/publications/PedestrianandBicycleFacilityDesignManual.pdf

Vermont State Design Standards (VTrans)
Provides technical direction to designers of transportation projects in Vermont.
http://VTransengineering.vermont.gov/files/ent_program_development/files/documents/publications/VermontStateDesignStandards.pdf

Vermont Guardrail Study
A report that studied alternative guardrail types for performance, maintenance and life cycle information that included compatibility with aesthetics and non-motorized users.
http://VTransengineering.vermont.gov/files/ent_program_development/files/documents/publications/VermontStateDesignStandards.pdf

VERMONT
AGENCY OF COMMERCE & COMMUNITY DEVELOPMENT
RESEARCH IN BUSINESS & ECONOMIC DEVELOPMENT

VERMONT
AGENCY OF NATURAL RESOURCES

VTrans



Complete Streets are Green Streets

A community vision, a shared plan and teamwork is a common element in these projects – the ACCD, Vtrans and ANR are committed to work with each other and local communities to continue targeting incentives, grants, and programs to revitalize downtowns and villages to build strong communities.



Contact Us

ANR

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VTrans

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ACCD

Richard Amore, (802) 828-5229
richard.amore@vermont.gov

Thank You

