



CHITTENDEN COUNTY RPC

Communities Planning Together

VAPDA Green Infrastructure Tool Kit & RPC Initiatives for Water Quality June 8, 2016

Dan Albrecht, MA, MS, Senior Planner
Chittenden County Regional Planning Commission
Winooski, Vermont



Vermont Association of Planning & Development Agencies Project

Green Infrastructure Municipal Outreach

- Review of existing bylaws in 22+ towns
 - Technical assistance to 11+ towns: plans, bylaws
 - 22+ seminars in 2015
 - Green Infrastructure toolkit at Vermont Planning Information Center website
-



The Municipal Role in Promoting Green Infrastructure: bylaws & standards

- **zoning bylaws**: lot coverage, building coverage, parking requirements, external review by engineers, etc.
- **zoning districts**: Storm Water Overlay, River Corridor Protection / Fluvial Erosion Hazards
- **subdivision regulations**: vegetation retention, lot coverage, stormwater management
- **public works standards**: roads, culverts, ditches, etc.
- **Permits**: MS-4, Municipal Roads Stormwater General Permit



Zoning and LID

- **Promote Conservation Development**
 - Maximums for cleared areas / yards
 - Minimums for open space / preserved vegetation
 - Incentives for clustered development
 - Lowering parking requirements
-



Zoning and LID

- **Minimize soil compaction & site disturbance**
 - In addition to erosion control plans, site plans must minimize and detail site disturbance.
 - As-built inspections and restoration of compacted areas
 - Encourage preservation of A & B soils in natural cover.
 - Constrain heavy vehicle traffic on site.
 - Minimize disturbance to existing vegetated areas and trees
 - Require restoration of or 1-for-1 replacement of removed trees in open space areas



Zoning and LID

- **Protect flow patterns**
 - Protect wetlands and wetland buffers
 - Restrict development in 100 year floodplain
 - Avoid River Corridors (aka Fluvial Erosion Hazard areas)
 - Protect drainage areas, slopes, etc.
-



Zoning and LID

- **Protect riparian buffers and other sensitive areas**
 - Stream buffer or setback
 - Minimize stormwater outfalls in buffers
 - restrict not only structures and parking lots but also lawns
 - Steep slopes, vernal pools
-



Zoning and LID

- **Reduce impervious [and gravel!] surfaces**
 - Lot coverage maximums
 - Incentivize low impervious
 - Reduce driveway widths, incentivize shared driveways
 - Minimize street widths; even narrower where no homes, intersections, etc. exist



Zoning and LID

- **Reduce PARKING surfaces**

- Link parking to use or performance rather than solely on Gross Floor Area or Square Footage
- Set maximum parking requirements rather than only minimums
- Allow waivers to parking requirements
- Allow shared parking
- Lower required width and length of parking spaces
- Incentivize compact car parking



Zoning and LID

- **Disconnect stormwater**

- Allow bioretention within setbacks and vegetated areas

- require landscaping and trees once more than X parking spaces constructed

- reduce curbing, slope pavement to bioretention

- discharge roof runoff to vegetation



Zoning and LID

- **VLCT Model LID Bylaw**
 - Authority
 - Purpose
 - Scope and Applicability
 - Definitions
 - Site Design (Pre-construction)
 - Erosion Prevention and Sediment Control
 - Stormwater Management Standards (Post-construction)
 - Supplemental Application Materials
 - Independent Technical Review
-



Green Infrastructure in Municipal Plans

- **Town Plan**
 - Introduce topic in chapters on Natural Resources, Transportation, Flood Resiliency, Future Development, etc.
- **Open Space Plan**
 - Where should conservation efforts focus
- **Stormwater Master Plan**
 - Detailed focus on town's individual watersheds
- **Capital Improvement Plan**
 - Ditches, culverts



Green Infrastructure on Municipal Lands

- **Town / School Offices as demonstration site**
 - Rain barrel, rain gardens, vegetated swales, pervious concrete/asphalt, pavers,
- **Town/school lands for stormwater treatment**
(town greens, town forests, conserved lands, cemeteries, etc.)
 - Constructed wetlands, large rain gardens
 - Be strategic in use of open space funds



Green Infrastructure: non-regulatory tools

- **School Programming**
- **Green Up Day**
- **Community Workshops: potential topics**
 - Re-engineering your driveway
 - Installing a rain barrel and/or rain garden
 - Creating a rain-friendly property



Green Infrastructure: getting your town started

- RPC technical assistance
- Work into town plan update
- Work into zoning bylaw update

New pages on Vermont Planning Information Center (VPIC) website

- <http://vpic.info/GreenInfrastructureToolkit.html>

State Green Infrastructure web page

- http://www.anr.state.vt.us/dec/waterq/stormwater/html/sw_green_infrastructure.htm
-

RPC initiatives for water quality

VAPDA's outreach partnership with Vermont DEC:
helping municipalities comply with Vermont Clean Water Act

- New annual contract between DEC and VAPDA
- Standardized deliverables for education on VCWA and technical assistance
- RPCs gearing up to help towns prepare for municipal roads general permit.

Five elements to partnership

- 1) Municipal Education and RPC staff training
- 2) Municipal Planning Assistance
- 3) Monitoring & Assessment
- 4) Tactical Basin Plan Development
- 5) Tactical Basin Plan Implementation

1) Municipal Education and RPC staff training

- Briefing to:
 - RPCs Boards
 - RPC subcommittees
 - Road Foremen's groups, etc
 - Promotion of DEC webinars & other opportunities
- Monthly RPC-DEC meetings
 - Capacity building
 - Training in coming online tools
 - Problem solving

2) Municipal Planning Assistance

Assistance to municipalities in exploring regulations and plans

- River Corridors
- Stormwater Master Plans
- Municipal Plans and Bylaws
- Flood Ready website
- Road Inventory
- Developed Lands

3) Monitoring & Assessment

Assistance to DEC

- Working with municipalities to identify desired water quality monitoring projects and potential partners (watershed associations) for project
- Update River Corridor maps as needed

4) Tactical Basin Plan: Plan Development

Assistance to DEC by strengthening municipal participation

- key water quality issues of municipality
- Catalog existing municipal zoning bylaws related to water quality
- Coordinate municipal comments on draft plan
- Prioritize projects and coordinate RPC Board recommendation
- Host formal public hearing at RPC Board meeting and promote public forum
- Map key “interventions” to address water quality stressors
- Develop “shovel-ready” project database

5) Tactical Basin Plan: Implementation

Assistance to DEC

- Developing management objectives: identification of candidate streams for Outstanding Resource Waters
- Track implementation of RPC-led and municipally-led projects in basin plans

Gearing up for the Municipal Roads General Permit

Assistance to municipalities

- Standardized inventory methodology
- Coarse screen to quantify issues per road segment
 - Crown/slope vs. grader berms
 - Sheet flow and adequate ditching
 - Culverts: cross-culverts, driveway, instream
 - Roadway drainage conveyance (where water leaves the road)
 - Mapping erosion locations: rill, gully, outfalls, poor headers, etc.
 - <http://ccrpc.maps.arcgis.com/apps/Viewer/index.html?appid=f63b91ee30fe4c16b116851687c96ec0>



CHITTENDEN COUNTY RPC
Communities Planning Together

Thank You!

Dan Albrecht, MA, MS, Senior Planner
Chittenden County Regional Planning Commission
Winooski, Vermont
dalbrecht@ccrpcvt.org
(802) 846-4490, *29