

Moving Tough Sites in Tough Markets Using Sustainable Design



14th Annual Business of Brownfields Conference

Pittsburgh, PA

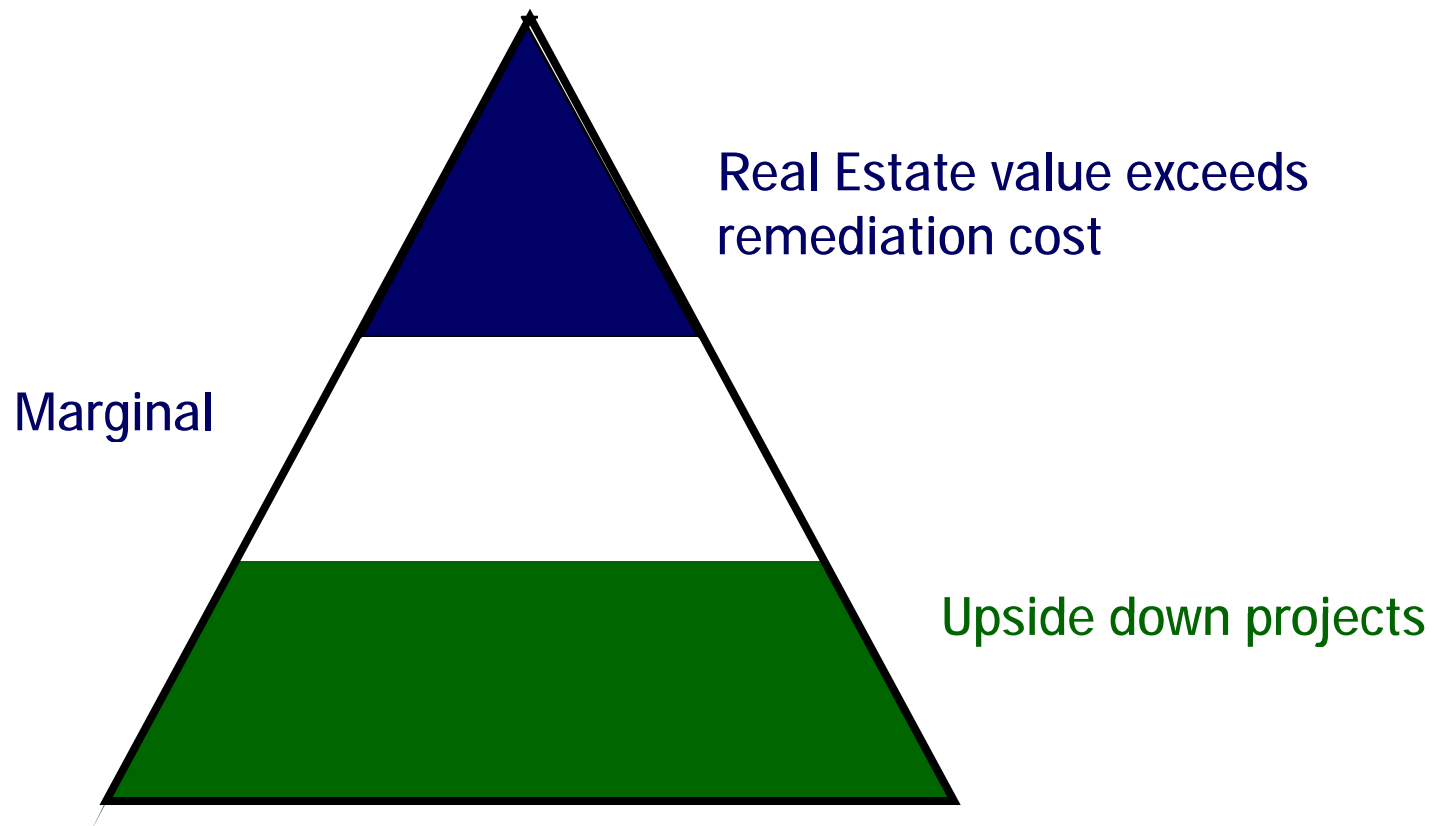
April 16, 2009

Kate Marshall, Nicole Henderson, SRA International, Inc.



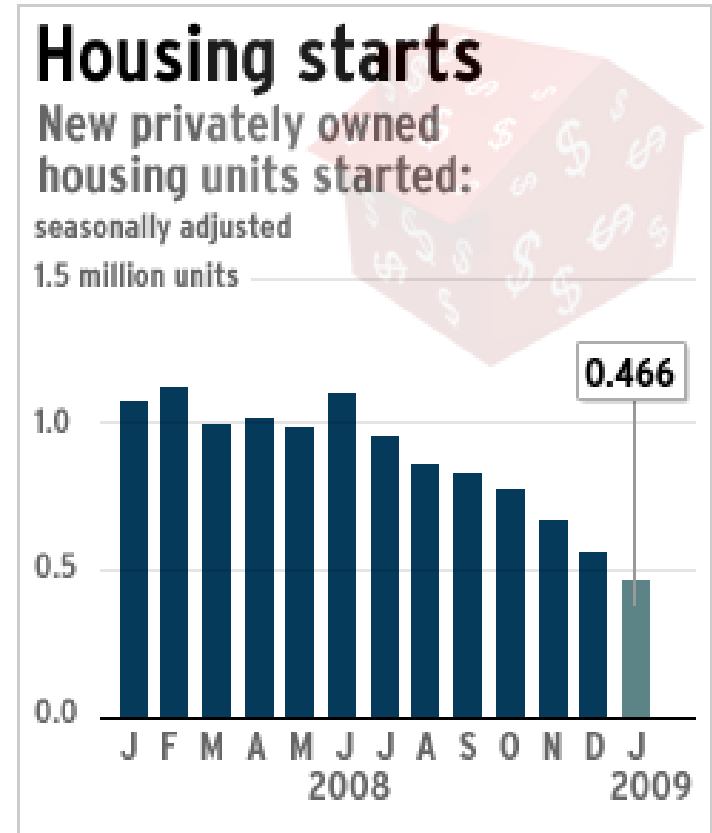
Even the Best Brownfields Sites Can Be Tough

- Real Estate/Environmental Value Pyramid



Market Slowdown Has Had Wide-Reaching Effects

- New building construction has slowed to record lows in the U.S.
 - Dropped 16.8 percent in January to a seasonally adjusted annual rate of 466,000 units
- Building permit applications – a barometer for future construction – has also hit record lows
 - Dropped 4.8 percent in January to a rate of 521,000 units
- Home prices are dropping



Department of Commerce



...But It's Not All Bad News

- A market slowdown provides an opportunity to reevaluate business practices
 - Time to research new innovations
 - Financial incentive to seek new revenue streams
 - Green building market, had been slowly increasing its share of the overall construction market prior to the market slowdown

OPPORTUNITY FOR CHANGE



Private Sector is Preparing for Sustainability

- Green building had been growing as a share of total construction
- Is now poised to provide a much needed spark in the construction market
- Less than half of architects were using sustainable design practices in their projects five years ago; by 2012, 90% of surveyed architects are expected to add some sustainable elements
- Nearly 90% of AIA survey respondents said they have received training or continuing education focused on green building
- Last year, an estimated 2% — or \$7.4 billion — of the residential construction market was green (McGraw-Hill estimates)
- Based on a survey of NAHB home builders conducted in 2006, between 40% and 50% of the homes built in 2010 are expected to be green, containing at least three of five green building elements



Consumer Demand (and Behavior) is Trending Toward Sustainability

- 73% would pay more for products that are better for the environment
- 89% would pay more for products that will reduce heating and cooling costs
- 9 out of 10 would buy quality products that last longer - rather than less expensive materials that save upfront costs but have a shorter life span - when considering replacement items like windows or doors

2008 poll by Opinion Research Corporation

"Builders, remodelers and contractors who are trying to cut costs by offering products that are only average in quality are choosing the wrong path...Quality is still the defining characteristic for home improvement products despite a decrease in real estate values and a softening economy. Homeowners realize that long-term savings far outweigh upfront costs." - Franco An, President of Plastpro, Inc.



Customer Satisfaction is High

- 63% of green home buyers said that their green home purchases were motivated by the lower operating and maintenance costs
- 85% of green home buyers said they were more satisfied with their new green homes than with their previous, more traditionally built homes

2007 home buyer survey by McGraw-Hill



Beyond Green Buildings, Demand is Growing for Sustainable Communities

- Nearly 90% of people believe new communities should be designed so we can walk more and drive less, and that public transportation should be improved

www.smartgrowthamerica.org/narsgareport2007.html

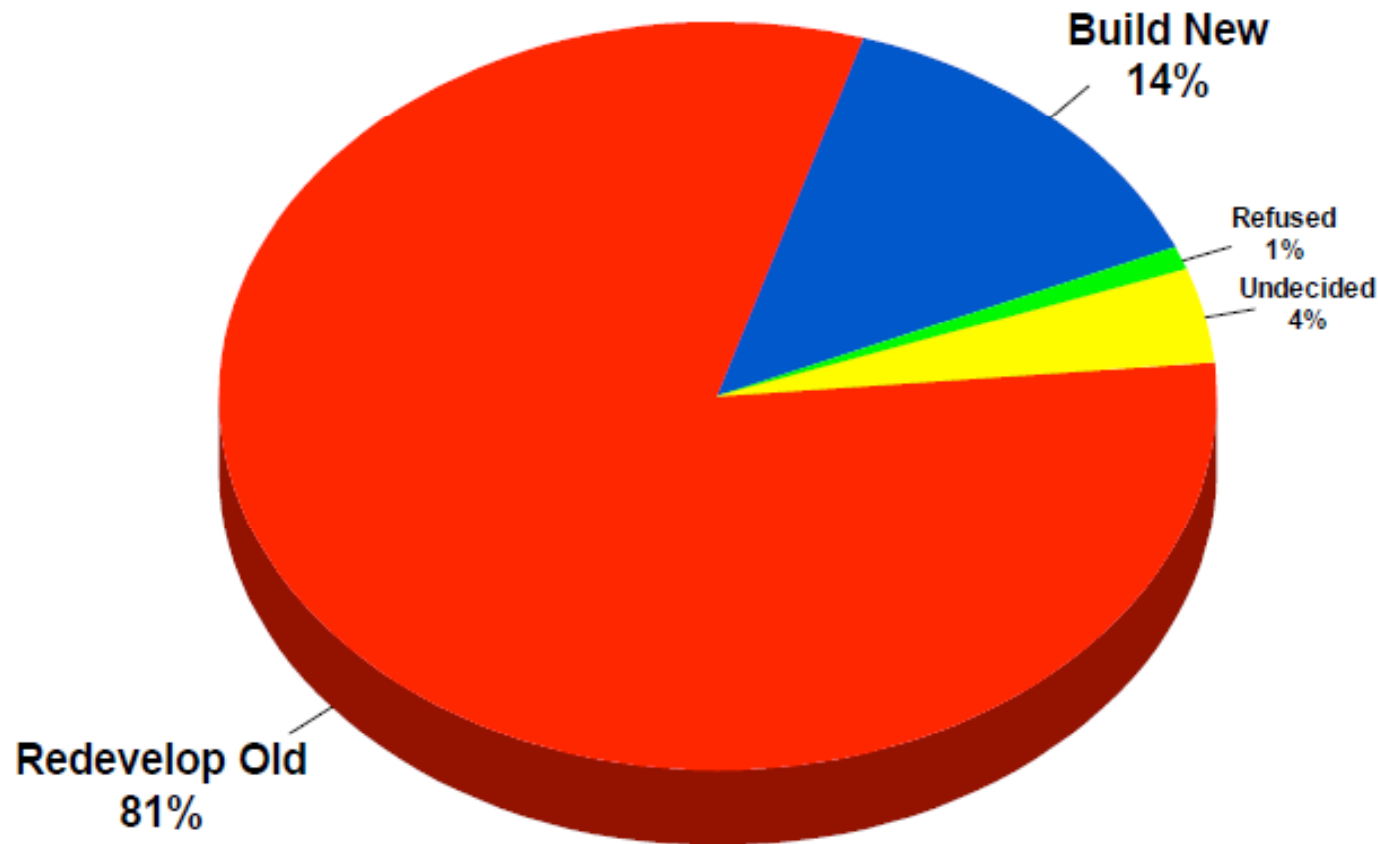
- 70% of surveyed architects say client demand is the leading driver of green building and that the primary reason these owners and developers are demanding greener buildings is for reduced operating costs

Autodesk/AIA "Green Index"



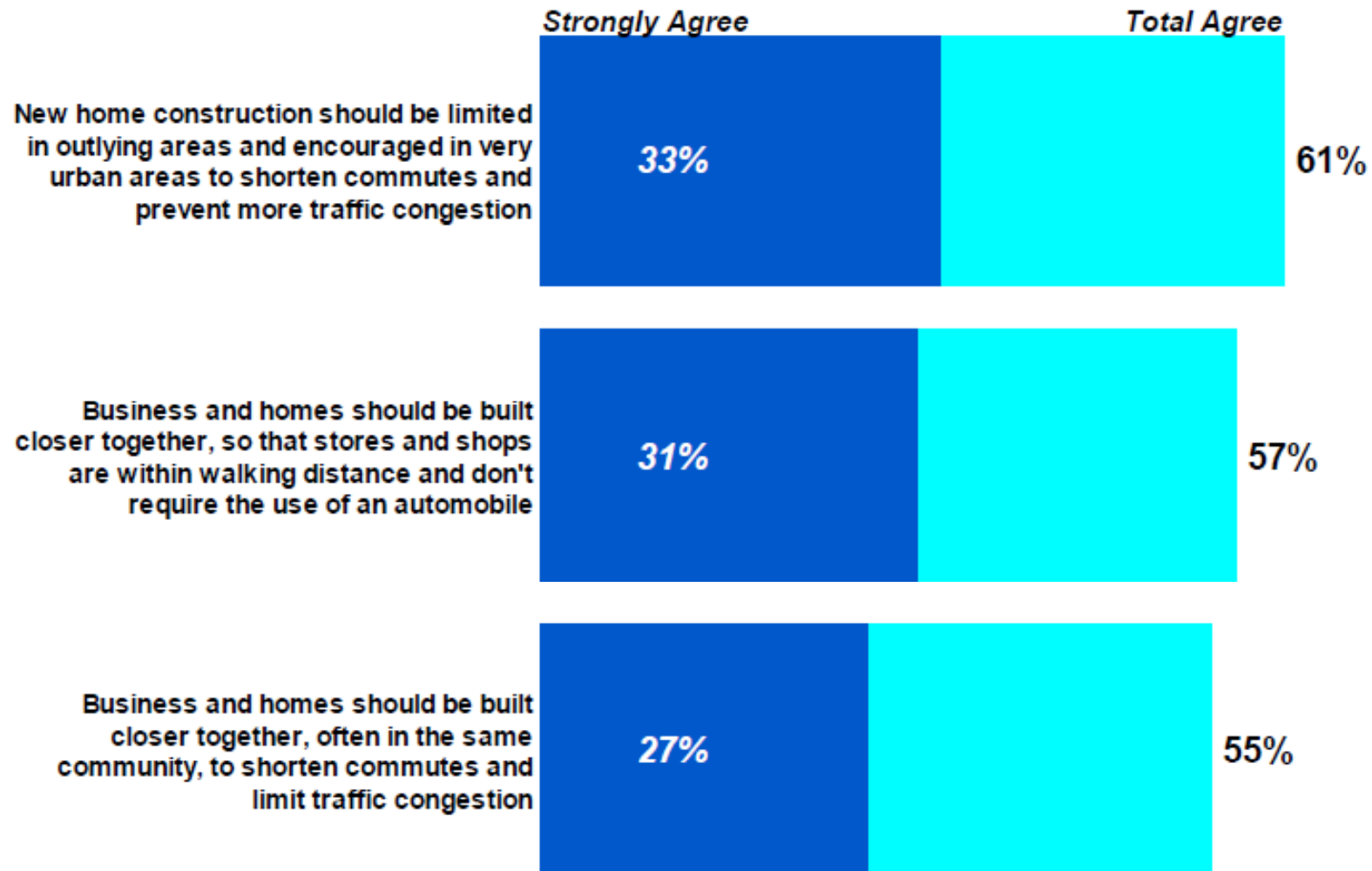
Eighty-one percent of voters want to redevelop older areas rather than building new

“The population of the United States is expected to increase from 300 million to 400 million by 2050. I am going to read you two statements, please tell me which approach do you prefer to accommodate this growth... Continue to build new suburbs on the edge of the existing suburbs ...or... Redevelop older urban and suburban areas with additional development, that is, build new housing and commercial development in already developed areas. Which approach do you prefer?”



Americans see smarter development patterns as a viable way to reduce traffic and shorten commutes

"I am now going to read you several about growth, and after I read each one, please tell me whether you agree or disagree with that statement."



Federal Government is Investing in Sustainability

- Stimulus package from federal government includes \$50,825 million in funding for energy and environment projects
- Expected to develop policy addressing climate change: residential and commercial sectors account for 39% of U.S. greenhouse gas emissions (primarily related to lighting, heating, cooling, and operating appliances).
- Secretary of Housing and Urban Development proposed last week that consumers be provided with more information on the energy efficiency of homes and that mortgages should come with lower rates or better terms to encourage purchases and retrofits that save energy

We're in the midst of a national movement toward more sustainable practices



Sustainability in Practice

- Smart Growth, location efficiency
- Energy efficiency
 - Appropriately sized HVAC systems, tight construction and ducts, effective insulation, energy efficient windows, very efficient appliances
- Green buildings
 - US Green Building Council LEED standards; NAHB National Green Building Program; Energy Star
- Stormwater management
 - Water-friendly landscaping, and rainwater collection systems
- Building water management
 - Low-flow fixtures, tankless water heaters, greywater systems
- Sustainable materials
 - Reduce toxicity, emission of VOCs, other indoor air pollutants
- Sustainable design: passive solar, daylighting
- Waste reduction: material selection, reuse, recycling
- Greenspace and other amenities
- Renewable energy

Example: LEED Rating Systems



Cost (?) of Sustainability

- *Perception* that sustainable elements cost more
- Stems from the *disconnect* between capital and operating costs
 - “A building owner knows there is a return on investment of 40% going into a green building. Investments come out of capital; but, year-to-year, the operating budget isn’t linked. That’s a big obstacle.”
Greg Kats, principal of Capital E
- **A building can be built green within the same budget as a non-green building**
 - “With proper planning and a little experience, building green, even certified green, can be done for **about the same cost**. We are building certified green homes at the highest levels of certification for less than 1% cost increase.”
Rick Hunter, Sage Homebuilders, St. Louis
 - “The **costs are relatively insignificant** compared to the benefits that will be accrued by the occupants of the building.”
2004: *Costing Green: A Comprehensive Cost Database and Budgeting Methodology*



Other Studies

2003: *The Costs and Financial Benefits of Green Buildings*

- Examines data on the costs and financial benefits of LEED-certified projects in California as *compared to conventional designs* for those buildings
 - 25 office buildings and 8 school buildings with actual or projected dates of completion between 1995 and 2004
- 8 LEED Bronze - average cost premium <1%
- 18 LEED Silver - average cost premium 2.1%
- 6 LEED Gold - average cost premium 1.8%
- 1 LEED Platinum - cost premium 6.5%
- Average premium for all 33 studied green buildings is <2% (\$3 to \$5 per square foot)
- **The majority of cost premiums resulted from the increased architectural and engineering design time needed to integrate sustainable building practices into projects**

“The thing about green buildings is that they are much more cost effective if you do them as a whole rather than piecemeal,” he says. “The key is to start very early, include everyone, and have senior management take the lead responsibility on greening.”



Benefits of Sustainable Design

- Faster leasing times and higher occupancy rates
- Direct health benefits to occupants
 - Reduced water use, sewer charges
 - Reduced material use
 - Reduced toxicity
 - Increased availability of greenspace, transportation options
- Direct financial benefits to occupants
 - Green buildings can yield savings more than 10 times the average initial investment; energy savings alone exceed the average increased cost associated with building green
 - The 2,500 buildings that earned the ENERGY STAR label for energy efficiency through 2005 saved a combined \$350 million on their energy bills compared with similar buildings
- Communities with interconnected and non-vehicle transportation options have their held value better than other communities in the last year
- Availability of financial incentives to offset costs



Expanding Reach of Sustainable Design

- Certified green buildings were originally trophy and high-end properties attracting a limited customer base
- Today, sustainable design features are in demand across the real estate spectrum
- Traditionally built homes and facilities are beginning to face an obsolescence risk
- Example: introduction of air conditioning to commercial buildings



Incentives for Sustainable Design

- Funding available at the federal, state and local levels for:
 - Brownfields and contaminated land assessment, cleanup, and revitalization
 - Energy efficiency
 - Green buildings
 - Smart Growth
 - Infrastructure development
 - Stormwater management
 - Greenspace development
 - Economic development
 - Workforce development
 - Renewable energy development
- Incentives include:
 - Tax Incentives
 - Grants
 - Loans
 - Technical Assistance



Federal Incentives

2009 American Recovery and Reinvestment Act

- http://recovery.pa.gov/portal/server.pt/community/recovery_pa_gov/5994
- The 2009 American Recovery and Reinvestment Act is expected to give considerable incentives for developing renewable energy in the United States.
- Department of Energy received over \$6 billion in recovery funds for energy efficiency and renewable energy projects.
- EPA received \$100 million for competitive grants to evaluate and clean up former industrial and commercial sites,
- \$600 million for Superfund cleanup
- \$200 million for underground storage tank cleanup.

Pennsylvania Specific (www.recovery.pa.gov)

- \$1.41 billion for transportation (PennDOT)
- \$220 million for drinking water and wastewater projects (PENNVEST)
- \$119 million State Energy Plan and \$13 million Energy Efficiency Block Grant (PADEP)
- Approximately 6.3 million dollars for LUST (PADEP)
- Energy Efficiency and Renewable Energy Research Development Demonstration and Deployment - \$2 billion for energy efficiency and renewable energy research including \$800 million for biomass projects and \$400 million for geothermal projects
- \$60 million in CDBG to Pennsylvania; \$12.7 million of which goes through DCED
- Neighborhood Stabilization Program - could receive \$45 million; of which \$30.4 million would go through DCED



Federal Incentives

Economic Development Administration (EDA) (www.eda.gov/AboutEDA/Programs.xml)

- Public Works and Economic Facilities Program
- Economic Adjustment Assistance Program

Department of Housing and Urban Development (HUD)

- Section 108 Loan Guarantee (www.hud.gov/offices/cpd/communitydevelopment/programs/108/)
- Brownfields Economic Development Initiative (BEDI) Grant (www.hud.gov/offices/cpd/economicdevelopment/programs/bedi/index.cfm)
- USDA Renewable Energy Systems and Energy Efficiency Improvements Program (www.rurdev.usda.gov/rbs/farmbill)

Appalachian Regional Commission (ARC) (www.arc.gov)

- General Funding
- Access Road Funding

U.S. Department of Agriculture (USDA) –

- Business & Industry Guaranteed Loan Program (www.rurdev.usda.gov/rbs/busp/b&I_gar.htm)
- Rural Business Opportunity Grant Program (www.rurdev.usa.gov/rbs/busp/rbog.htm)
- Rural Business Enterprise Grant Program (www.rurdev.usd.gov/rbs/busp/rbeg.htm)
- Intermediary Relending Program (IRP) (www.rurdev.usda.gov/rbs/busp/irp.htm)

U.S. Department of Treasury: New Markets Tax Credits (NMTC) Program (www.cdfifund.gov/what_we_do/programs_id.asp?programID=5)



Federal Incentives

Department of Interior (DOI)

- National Park Service: Rivers, Trails, and Conservation Assistance (RTCA) Program (www.nps.gov/ncrc/programs/rtca/whoweare/wwwa_partners.htm)
- Office of Surface Mining: Clean Streams Initiative (www.osmre.gov/)
- Office of Surface Mining: OSM/VISTA Watershed Development Team (www.osmre.gov/)

U.S. Environmental Protection Agency (EPA), Office of Brownfields and Land Revitalization

- Brownfields Assessment and Cleanup Grants www.epa.gov/swerosps/bf/index.html)

U.S. Internal Revenue Service, U.S. EPA

- Brownfields Tax Incentive (www.epa.gov/brownfields/bftaxinc.htm)

U.S. Internal Revenue Service, U.S. Department of Energy (DOE)

- Commercial Building Tax Deduction (CBTD) (<http://www.energy.gov/additionaltaxbreaks.htm>)
- Renewable Electricity Production Tax Credit (www.irs.gov/irb/2004-17_IRB/ar09.html)
- Federal Business Investment Tax Credit (www.dsireusa.org/library/includes/incentive2.cfm?Incentive_Code=US02F&State=Federal¤tpageid=1)
- Clean Renewable Energy Bonds (CREBs) (www.irs.gov/irb/2007-14_IRB/ar17.html)

U.S. DOE, Office of Energy Efficiency and Renewable Energy (EERE) (http://www1.eere.energy.gov/financing/types_assistance.html)

U.S. Department of Labor

- Work Opportunity Tax Credit (www.doleta.gov/business/Incentives/opptax)



Other Federal Resources

EPA RE-Powering America's Land

- http://www.epa.gov/renewableenergyland/maps_incentives.htm
- Incentive sheets developed by EPA in partnership with the National Renewable Energy Laboratory (NREL), and provide information about opportunities for renewable energy generation and cleanup on contaminated lands and minings sites in all 50 states.

Database of State Incentives for Renewable Energy & Energy Efficiency

- www.dsireusa.org/



State Incentives – PA Example

PA Business Assistance Programs

- Industrial Sites Reuse Program (www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=25)
- Infrastructure Development Program (IDP) (www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=26)
- PA Economic Development Financing Authority (PEDFA) Taxable and Exempt Bond Program (www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=30)
- Business In Our Sites (www.newpa.com/find-and-apply-for-funding/funding-and-program-finder/funding-detail/index.aspx?progId=39)

PA Bureau of Abandoned Mines Reclamation (BAMR)

(www.depweb.state.pa.us/abandonedminerec/cwp/view.asp?a=1474&q=520866)

Land Recycling Program – Voluntary Cleanup Program (DEP)

(www.depweb.state.pa.us/ocrlgs/cwp/view.asp?a=1459&q=517149)

Brownfields Action Team (www.depweb.state.pa.us/ocrlgs/cwp/view.asp?A=1459&Q=517198)

PECO Energy Sustainable Energy Fund (www.trfund.com/sdf/)

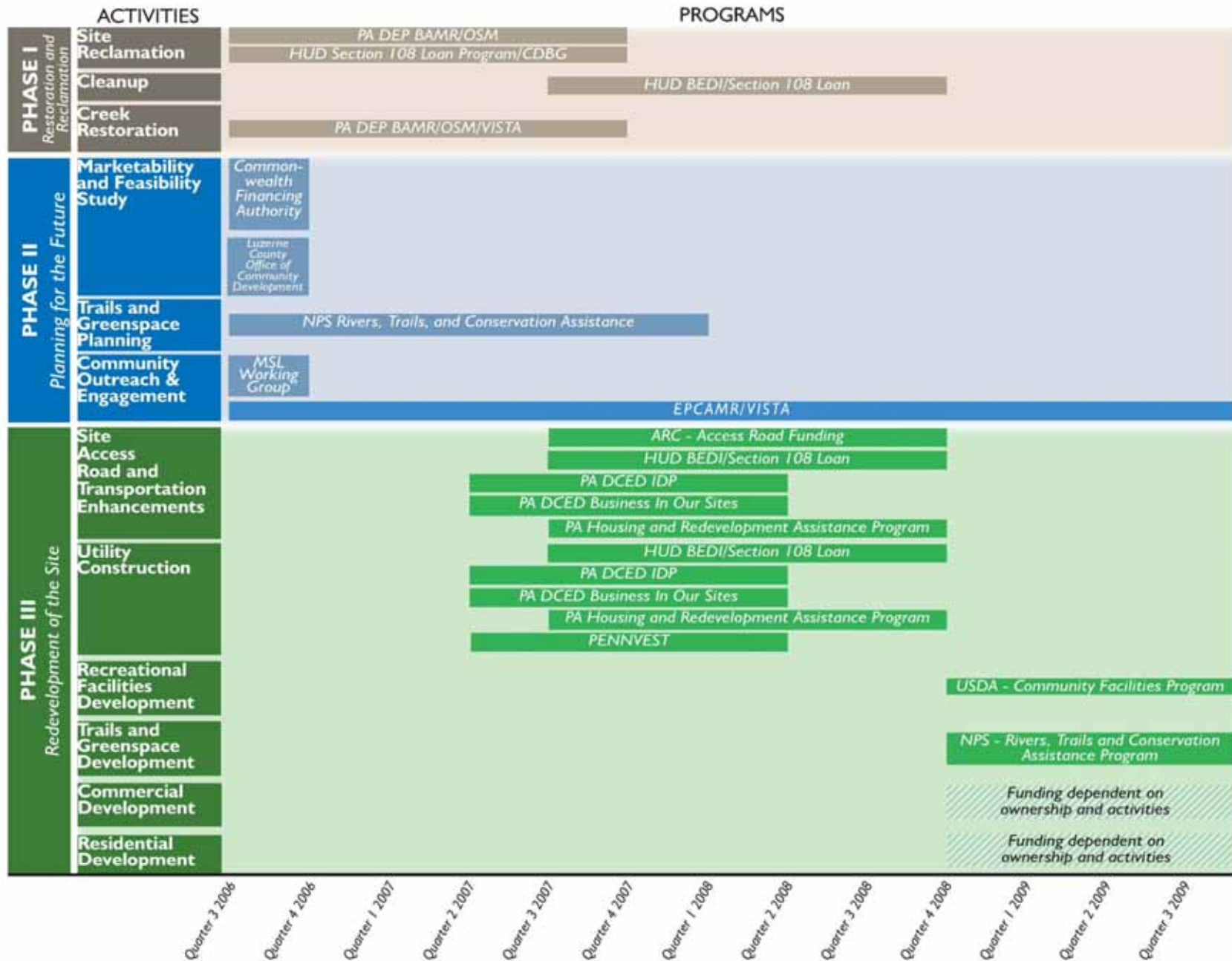
Metropolitan Edison Sustainable Energy Fund (www.bccf.org/pages/gr.energy2.html)

Sustainable Energy Fund of Central Eastern Pennsylvania (www.theseef.org/)

West Penn Power Sustainable Energy Fund (www.wppsef.org/)



Cranberry Creek Financial and Technical Assistance Timetable



Group Discussion

- What are the barriers/challenges to implementing sustainable design elements to brownfields projects?
- What are the tools people are using to incorporate sustainable, renewable energy, or energy efficiency elements into projects?
- How have you integrated sustainable elements into your specific projects?





Earth Conservancy Property



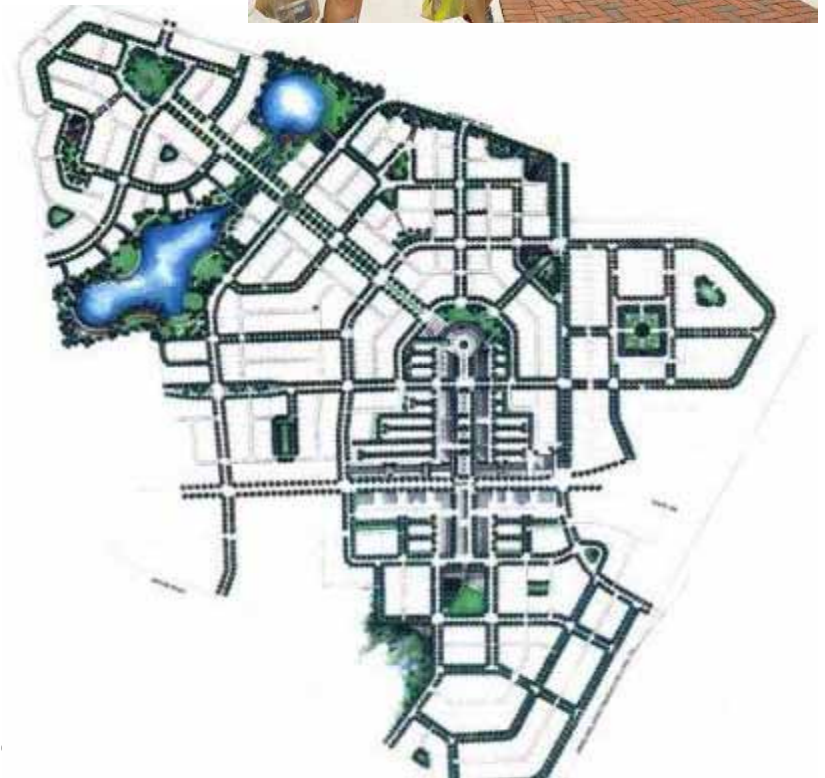
Major Market Drive: Mixed Use

- Mixed Use and Transit Oriented Development
 - Growing trend over past decade
 - Increasing demand nationally for walkable lifestyle
 - Increasing diversity in household size drives demand for housing alternatives
 - Existing communities faring better in housing slump
 - Benefits developers by dispersing risk
 - Benefits municipalities by diversifying tax base

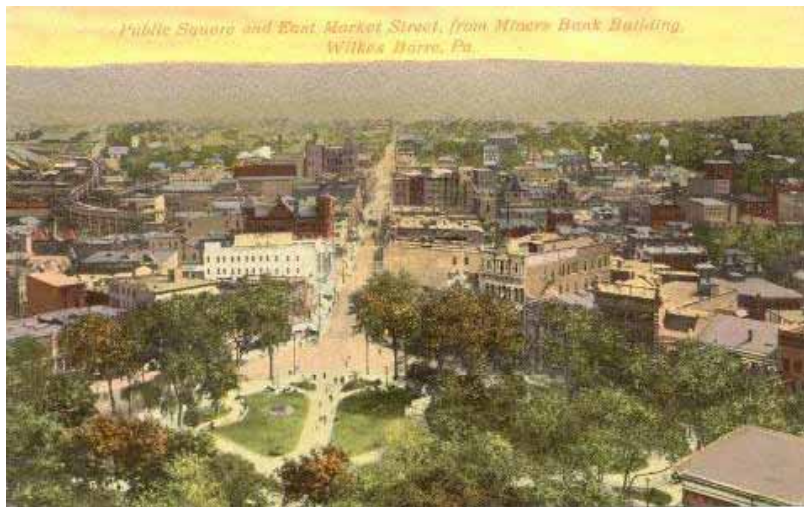


Mixed Use in Nearby Communities

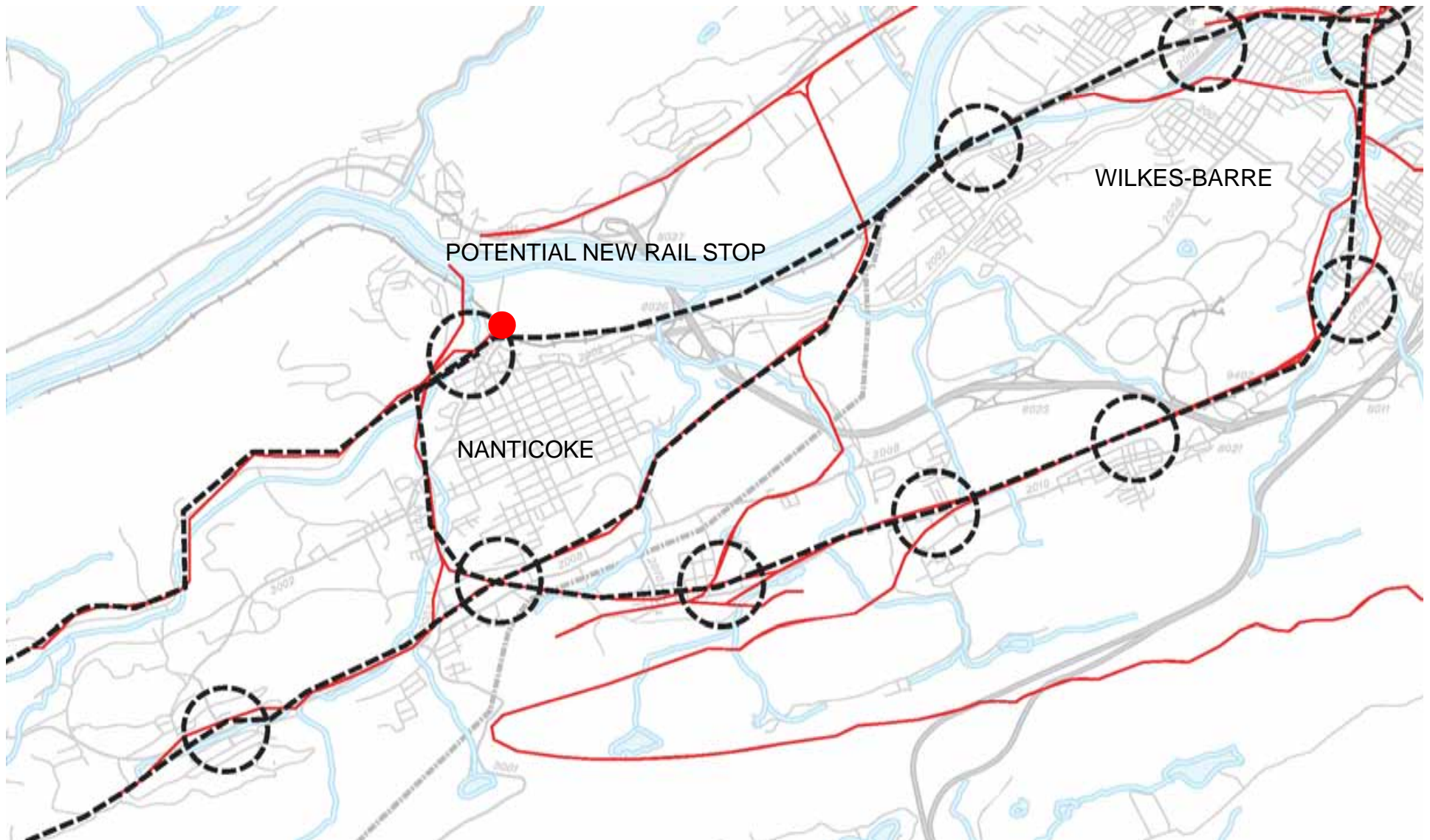
- Mixed Use and Transit Oriented Developments occurring nearby in PA, NY, NJ
 - Washington Township, NJ
 - Wesmont Station, Woodbridge, NJ
 - Commons at Holmdel, Holmdel, NJ
 - Highlands at Morristown Station, NJ
 - Harrison MetroCenter, NJ
 - Rego Park, Queens, NY
 - Hudson Point, Esopus, NY
 - Riverview at Valley Forge, PA
 - Uptown Worthington, Malvern, PA



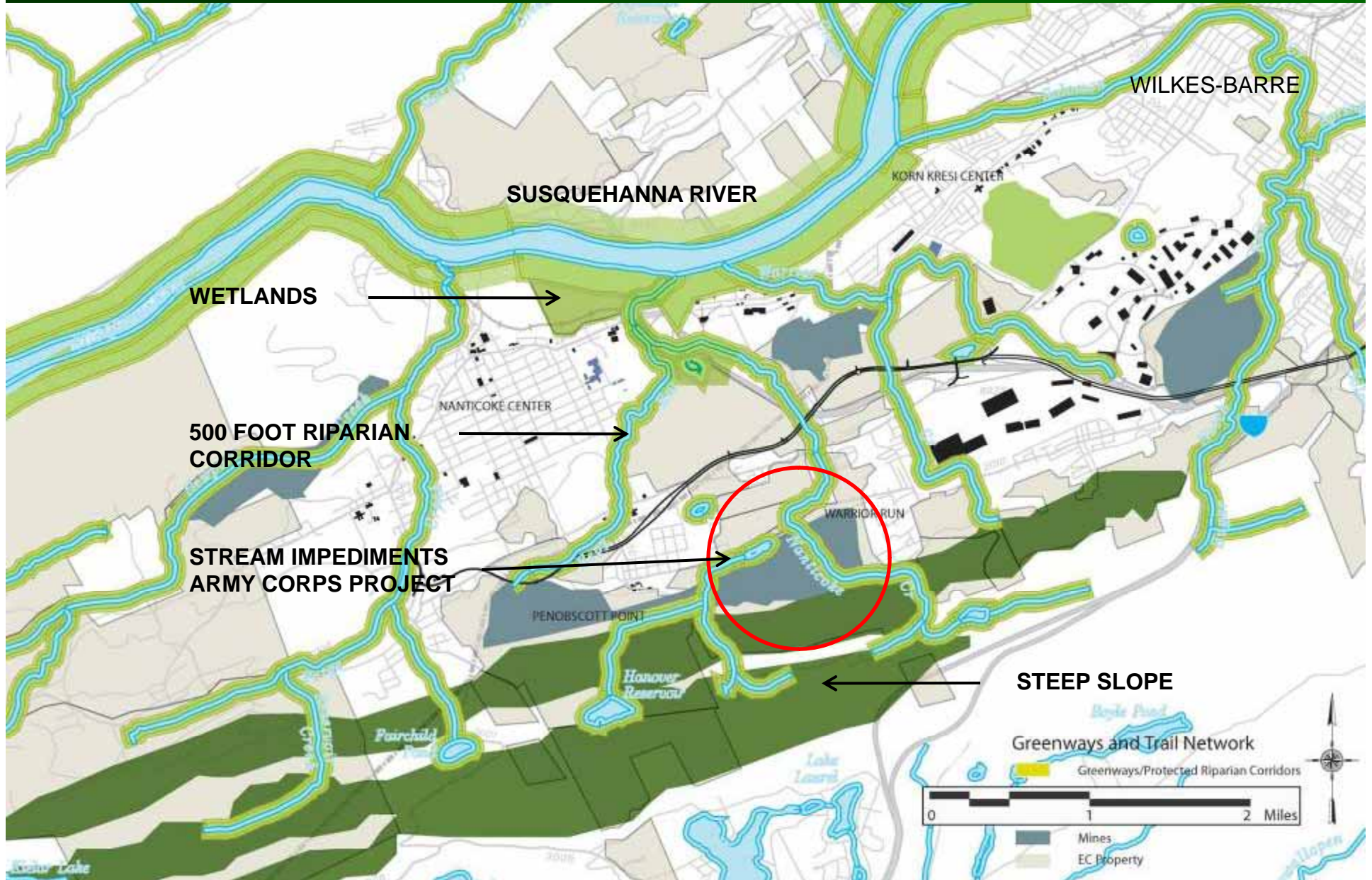
The Plan: Build on Historic Urban Structure



The Plan: Build on Existing Infrastructure



The Plan: Build on Valley Ecology Blue and Green Networks



Core Proposed Development Components

VILLAGE CENTER



- Small Scale
- Neighborhood based
- Regionally connected

+

THINKBELT



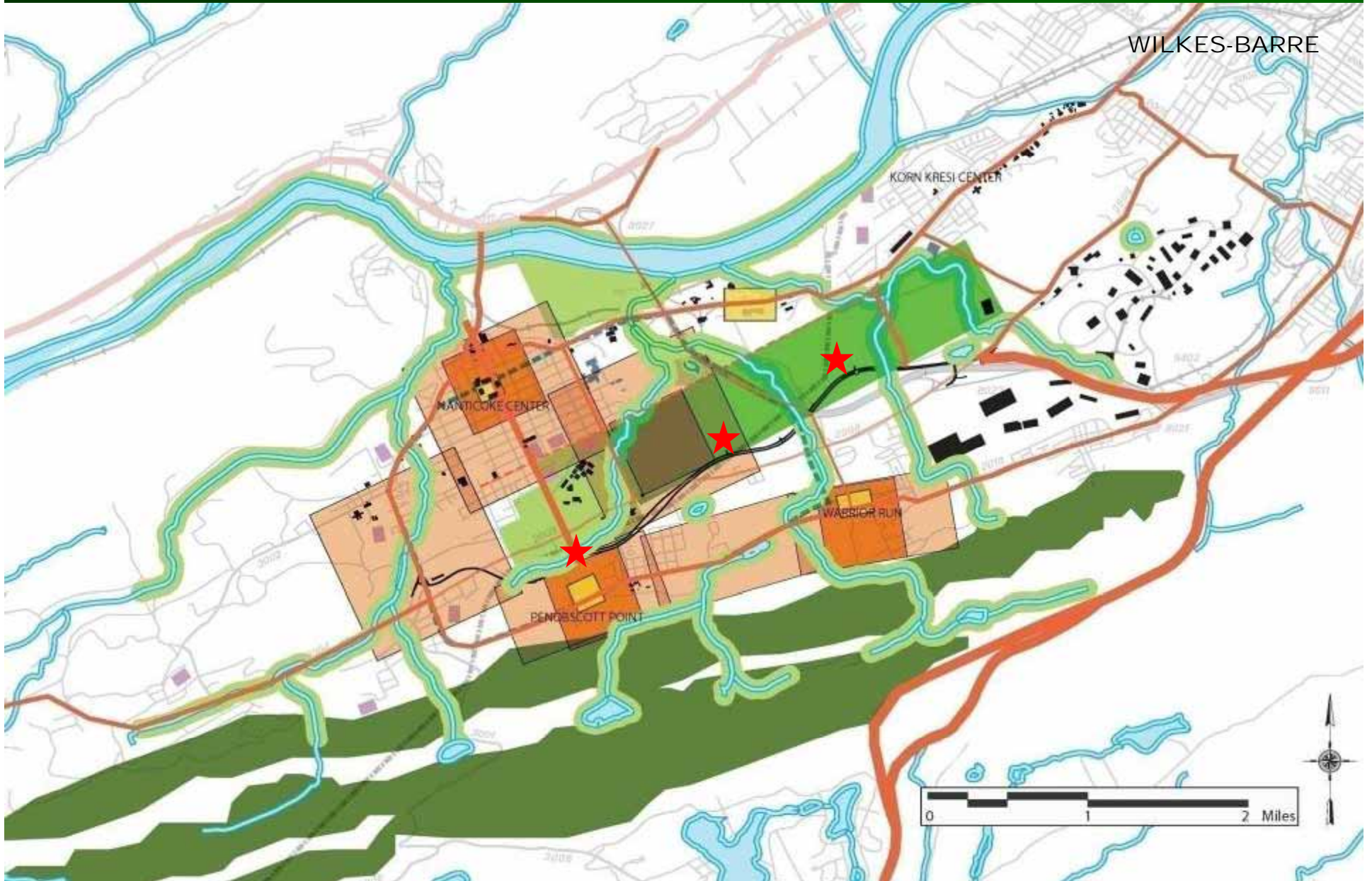
- Larger Scale
- Regional based
- Regionally connected



Village Center Examples



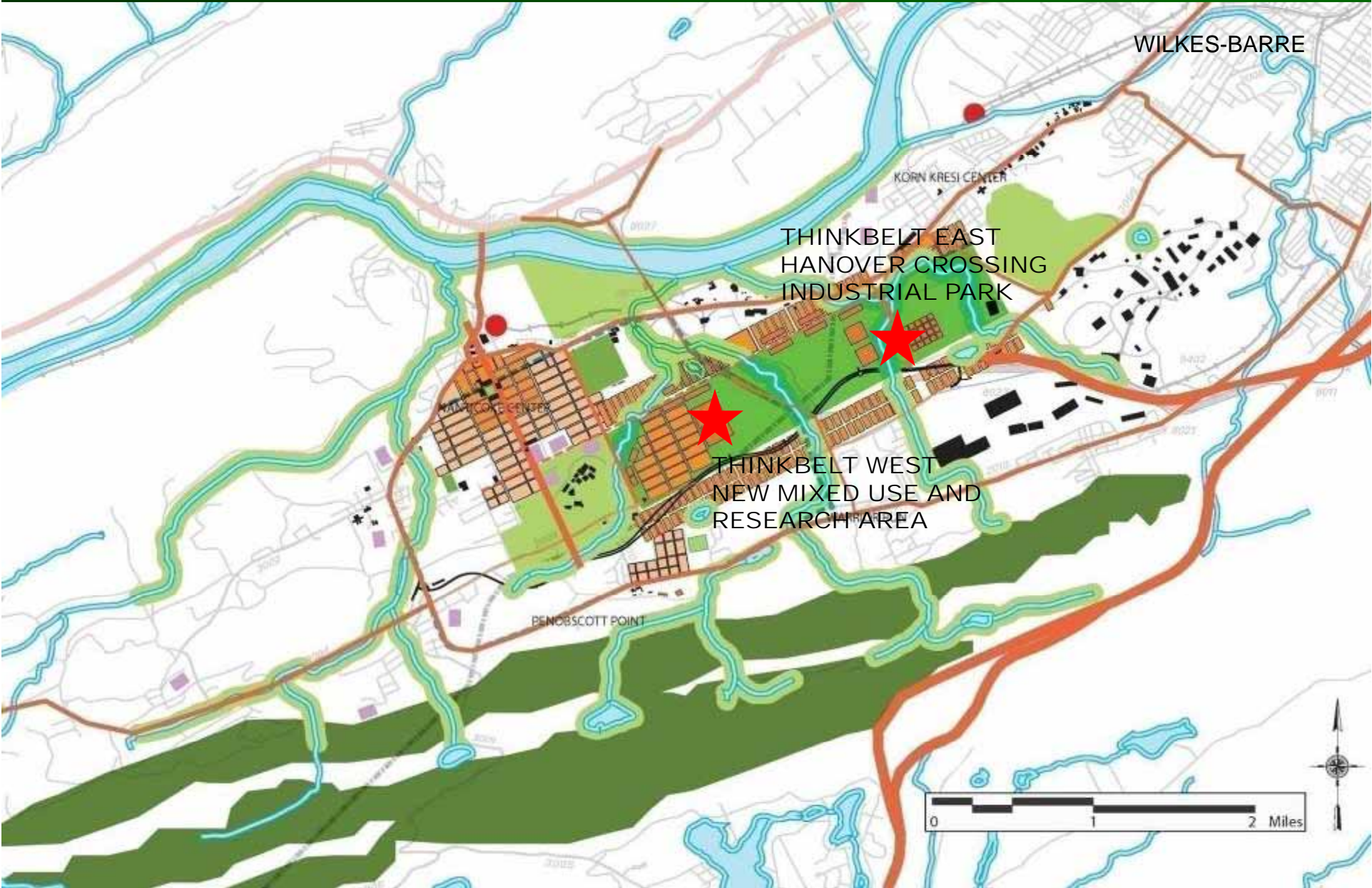
Village Centers



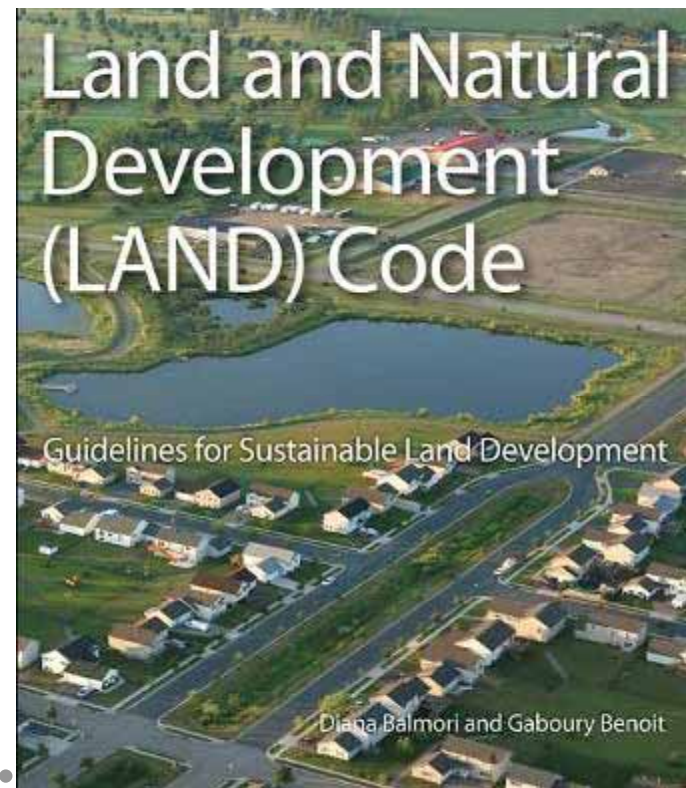
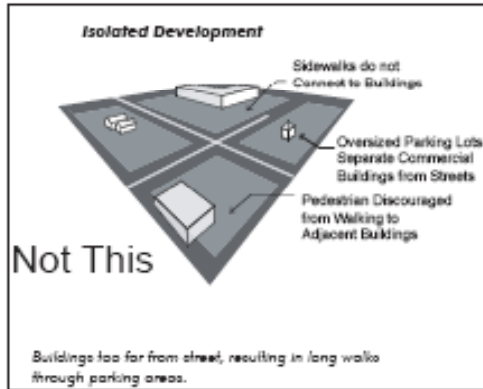
Town Center – Penobscot Point



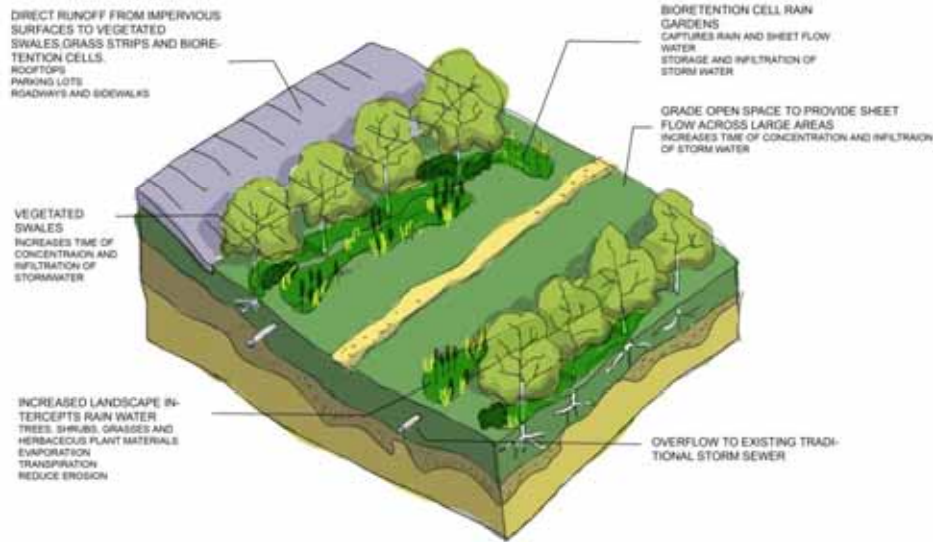
Thinkbelt



Office Park Design Covenants and Land Use



Office Park Design Covenants and Land Use



Examples of New Uses and Innovation



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Discussion Questions

- How can the plan elements be deployed in the lower Wyoming Valley?
- How might the development process begin?
- What development structure would be needed to construct these alternatives? Public/Private, Private/Public, Private?
- How do we attract 'green' development to the valley?

