

Coordinating Land Use and Transportation

Transportation Planning Workshop North Dakota January 28, 2015

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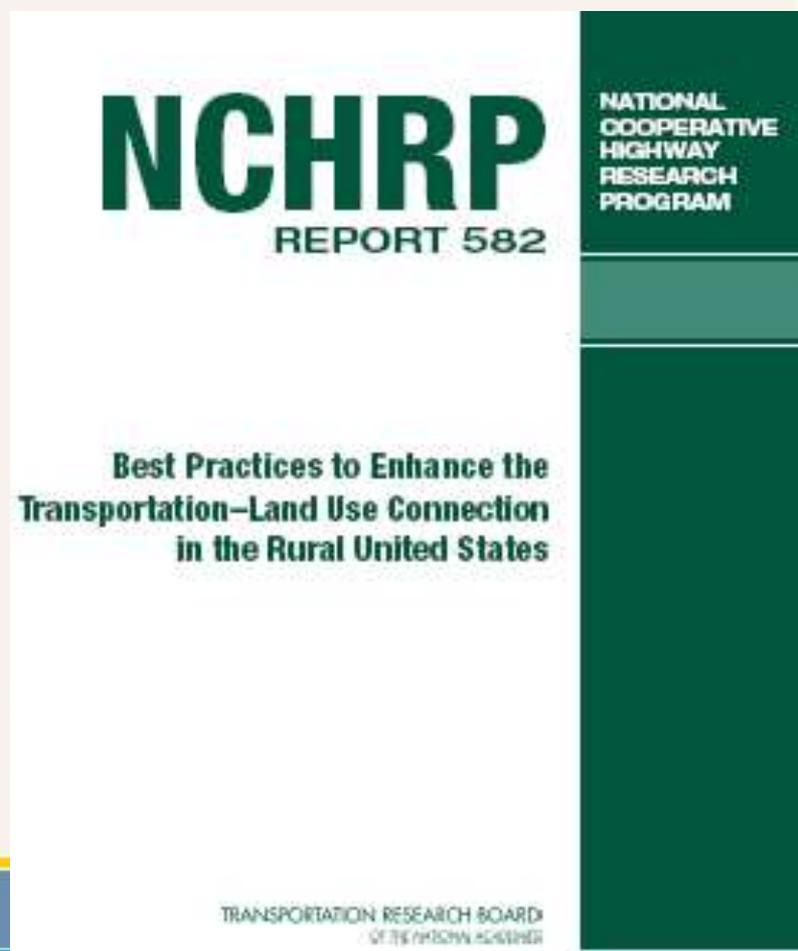
Approach to link land use and transportation

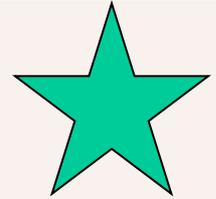
Identify strategies to improve transportation
communities

NCHRP 582

Best Practices to Enhance the Transportation - Land Use Connection in the Rural United States

www.trb.org





- Set Regional Framework
- Improve Local Accessibility
- Enhance Community Design

Regional Framework



Scale: Regional, Corridor, Local

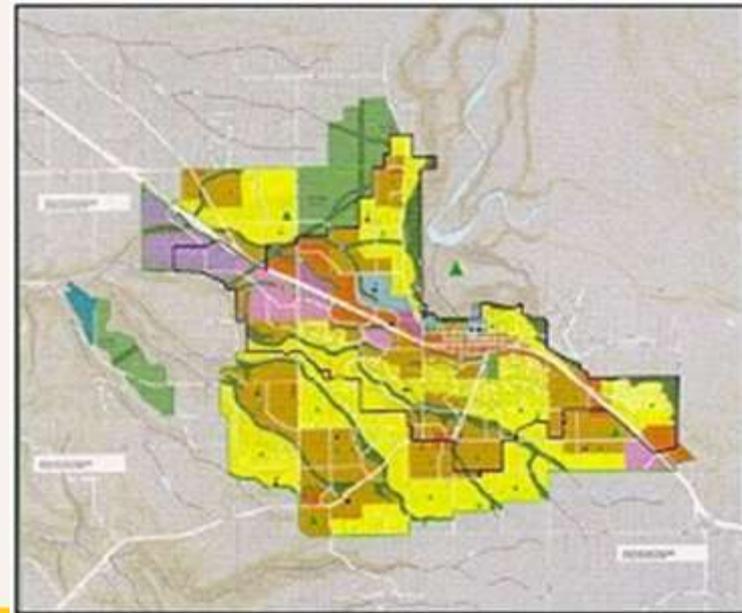
- Comprehensive Plan
- Land Use Tools
- Scenario Planning
- Corridor/Small Area Planning
- Access Management



Elements of Land Use Planning

- Comprehensive/Master/General plan
- Subarea/neighborhood/specific issues
- Zoning ordinance and map
- Subdivision regulations

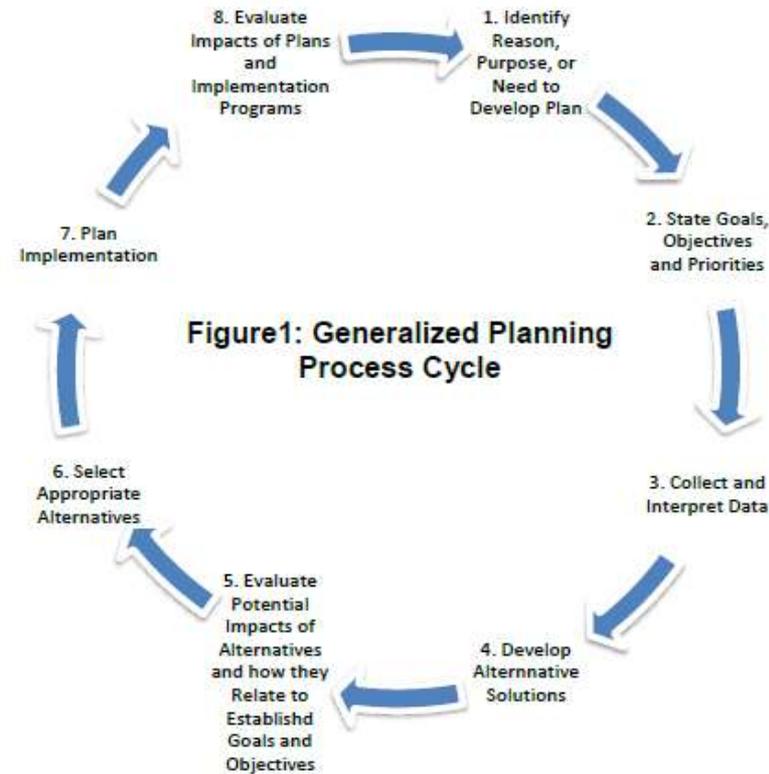
ND Planning Resource Guide



- Other land use ordinances
 - Adequate public facilities ordinances
 - Transfer of development rights
- Major thoroughfare plan/official map
- Sewer and water master plans
- Capital Improvement Program

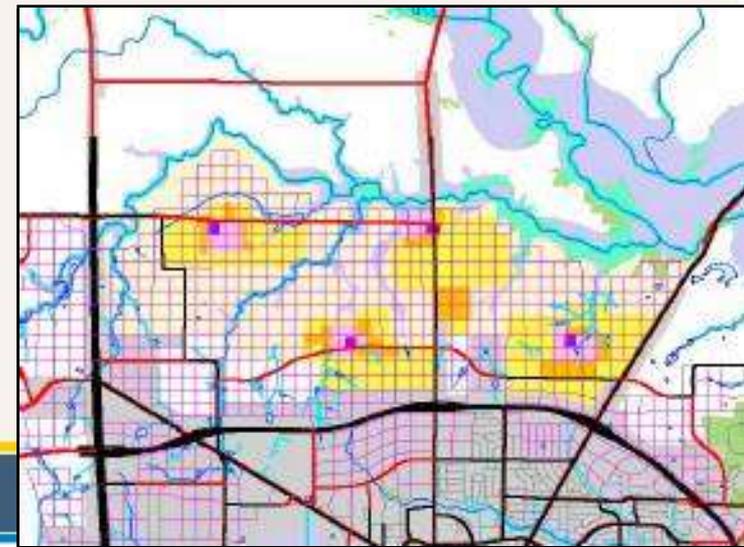
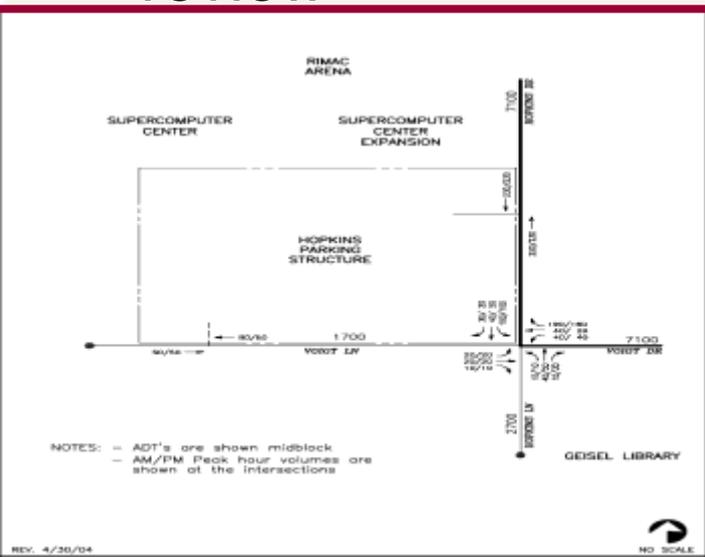
Planning Process

- Public involvement process
- Visioning, goals, objectives, policies
- Data collection
- Existing and future conditions analysis
- Identification of challenges and opportunities
- Develop plan to address goals
- Approval by elected body

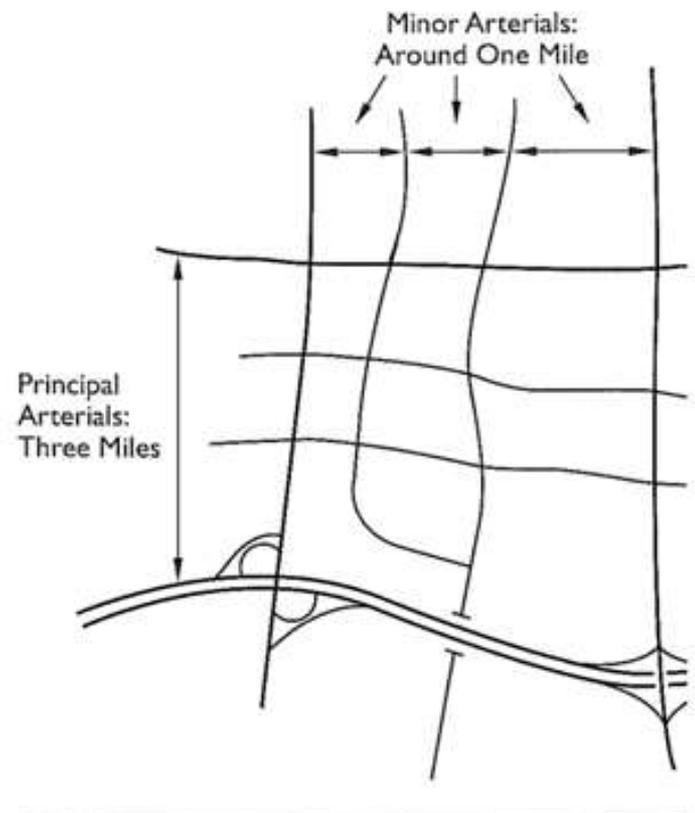


Land Use and Transportation Connections

- Street design and classification
- Street network connectivity
- Master street planning
- Concurrency/adequate public facilities requirements
- Traffic impact analysis
- Design standards, guidelines & development review

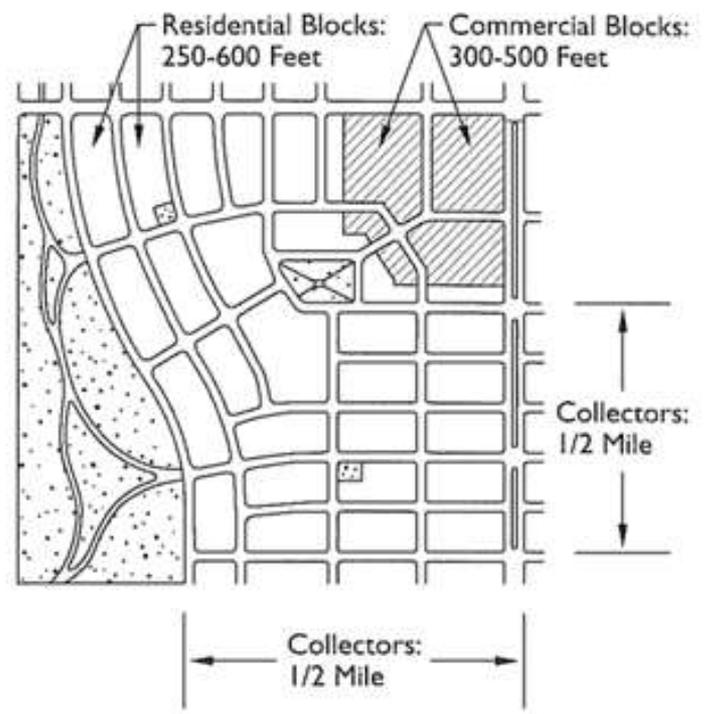


Transportation Network Planning



SPACING CRITERIA, PRINCIPAL ARTERIAL STREETS

Source: Walter Kulash.



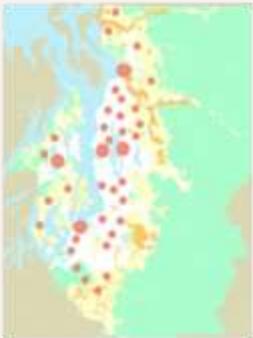
SPACING CRITERIA, COLLECTOR AND LOCAL STREETS

Source: Walter Kulash.

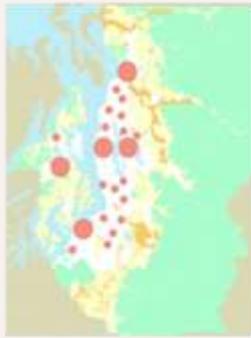
Scenario Planning

Scenario planning is a process that **identifies, explores,** and **assesses future alternatives** for transportation, growth, land use, economic development, and other issues.

Scenario planning **proactively engages stakeholders and the public.**



Continue as planned



Focus growth in bigger cities



Focus growth in smaller cities and towns

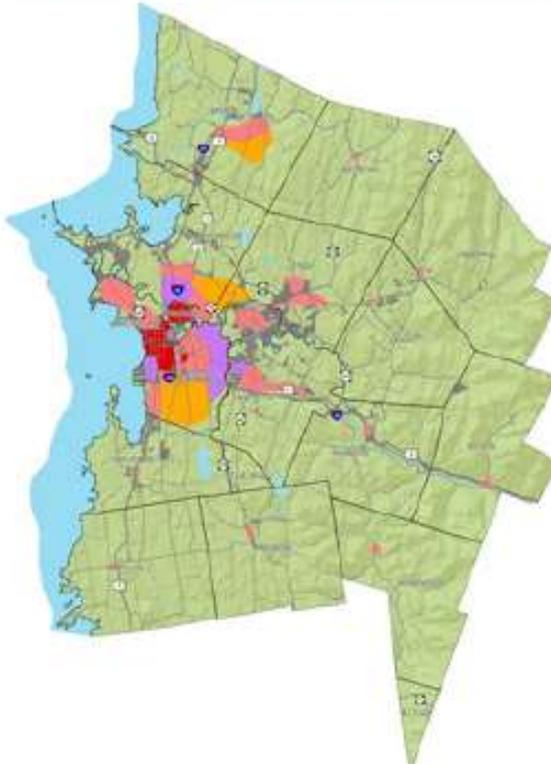
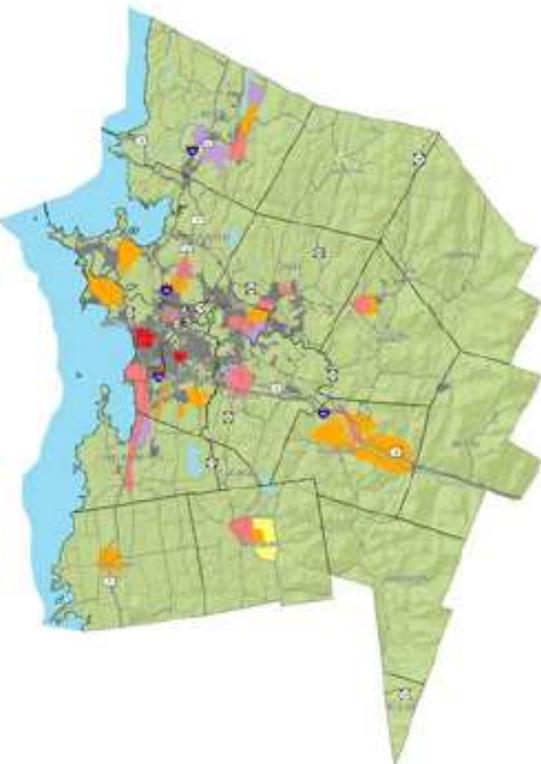
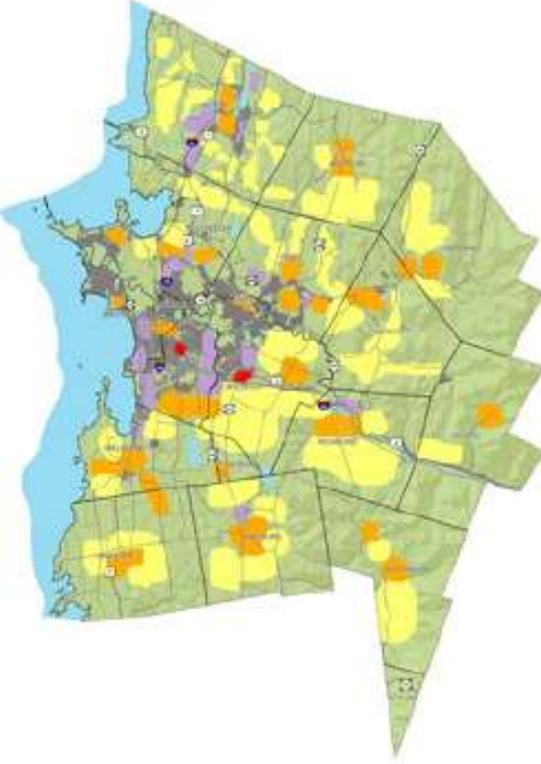


Burlington, VT Scenarios

TREND SCENARIO

WORKSHOP SCENARIO

CORE SCENARIO



Legend

-  CITY CENTER
-  EMPLOYMENT CENTER
-  MIXED USE CENTER
-  NEIGHBORHOOD
-  LOW DENSITY HOUSING
-  EXISTING DEVELOPED AREA
-  OPEN SPACE/ LITTLE OR NO NEW DEVELOPMENT

Scenario Planning

- Process to define alternative futures and strategically consider critical decisions and their implications
- Links transportation and land use planning
- Facilitates stakeholder involvement
- Improves decision making through visualization
- Learning process/robust choices

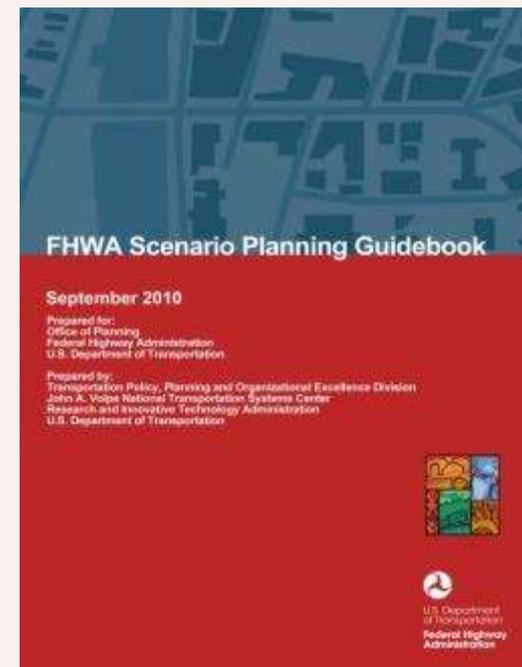


FHWA Scenario Planning Guidebook

Provides a suggested six-phase framework for conducting scenario planning.

Presents key steps, considerations, and examples to help lead agencies through a complete process.

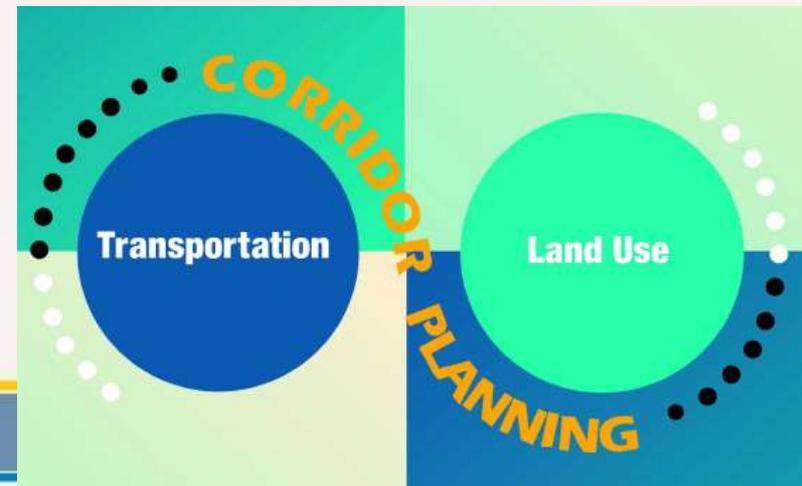
Available on the FHWA scenario planning website:



www.fhwa.dot.gov/Planning/scenplan/index.htm

Corridor Planning

- Establish a vision for transportation and land use
 - Long-term: Anticipate and address problems *before* they occur
 - Short-term: React to and manage problems
- Evaluate full range of strategies
- Identify specific projects, strategies, etc. for more detailed analysis and implementation



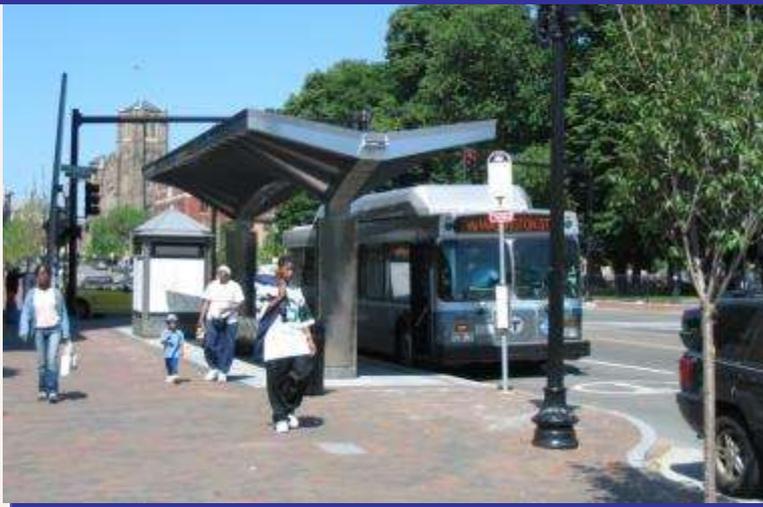
Range of Purposes

New Corridor



Expansion

Kentucky
Transportation Cabinet

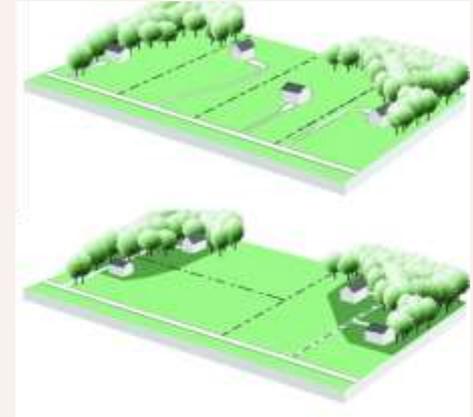


Redevelopment

Preservation

Omro, WI

- Clustering of development – location, density, diversity, design
- Building and site design
- Access management
- Parking management
- Land preservation/development rights
- Corridor preservation/right-of-way acquisition

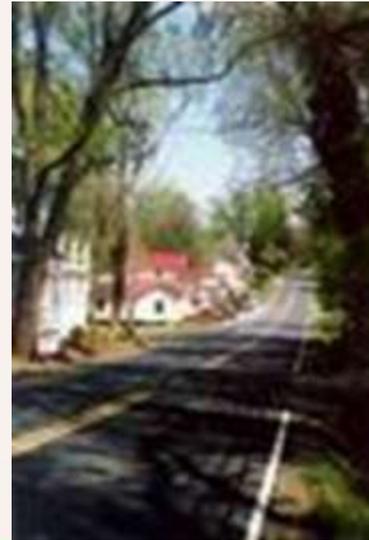


- Roadway, intersection/roundabout design
- Traffic operations
- Transit, pedestrian, and bicycle treatments
- Parallel/alternative facilities, routes
- Local street networks
- Transit services and transportation demand management
- Freight operations and intermodal

Scale: Regional, Local, Corridor

Land use and Transportation Actions

- Access management
- Street connectivity
- Complete Streets
- Safety
- Freight



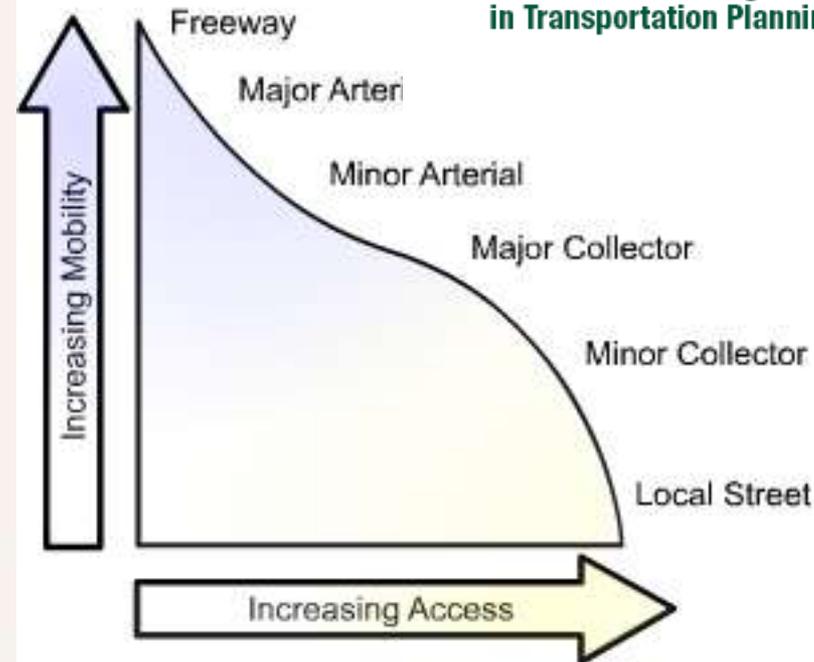
Access Management

“the systematic control of the location, spacing, design and operation of driveways, median openings, interchanges, and street connections”

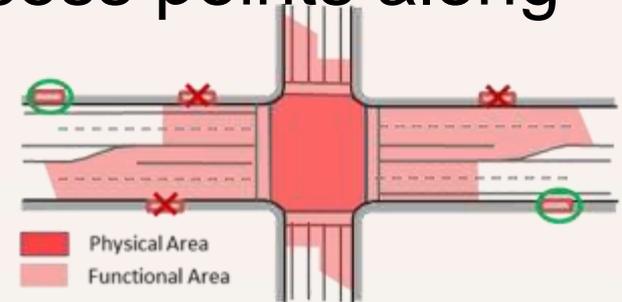
NCHRP REPORT 548

NATIONAL
COOPERATIVE
HIGHWAY
RESEARCH
PROGRAM

**A Guidebook for Including
Access Management
in Transportation Planning**

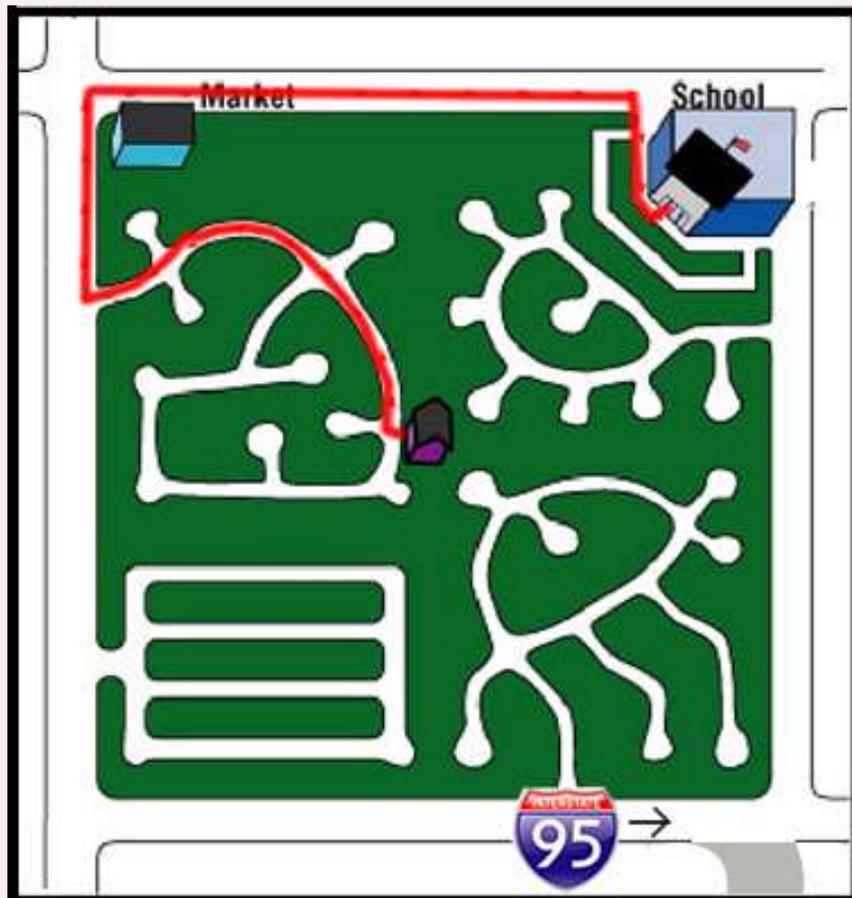


- Locate driveways on appropriate roadway type
- Avoid Driveways within the functional area of an intersection
- Reducing crashes by limiting the number and type of access
- Minimize left-turn movements at driveways
- Use medians to improve safety
- Plan intersections and safe access points along a corridor

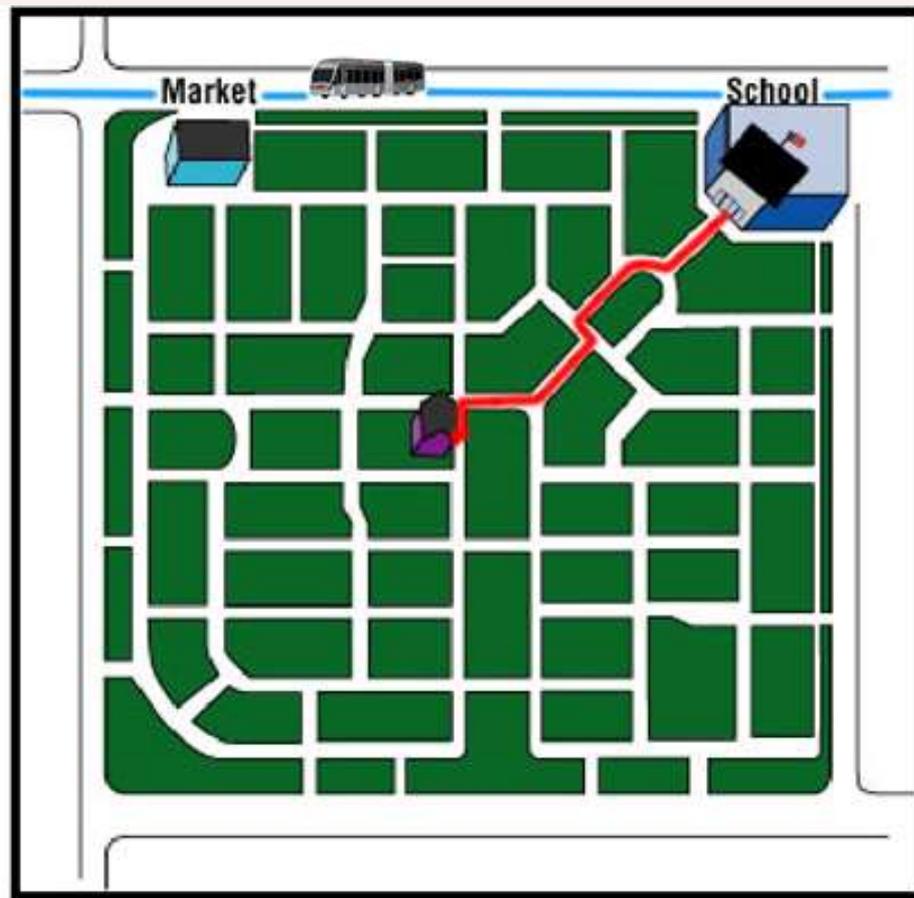


Functional and Physical Areas of an Intersection.

Connected Streets: Getting from A to B

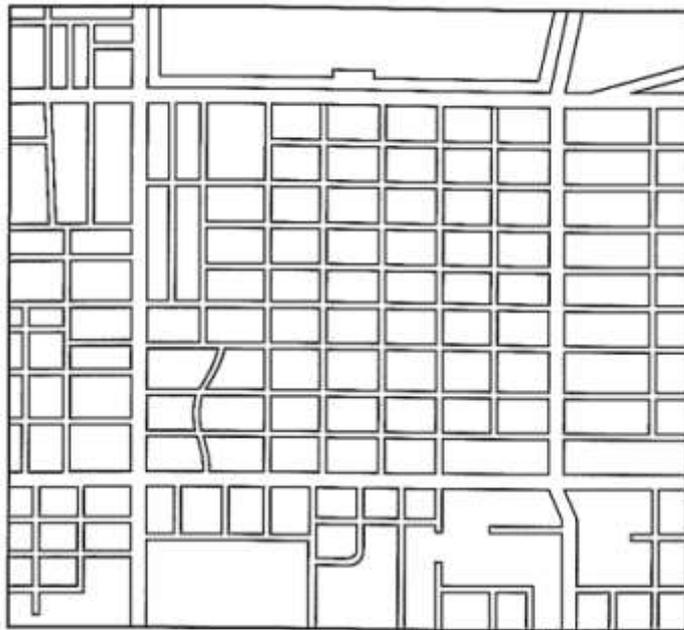


Driving-only transportation pattern



Walkable connected transportation network

Source: www.cnu.org



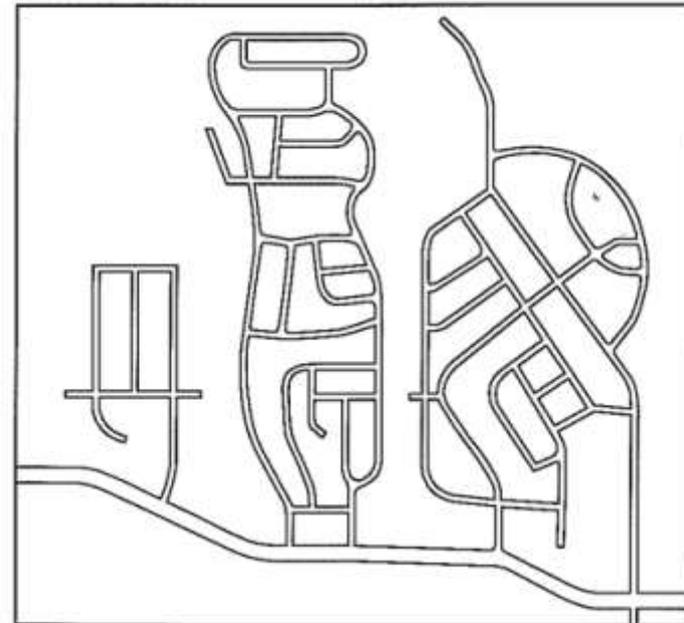
0.25 0.125 0

1 Inch = 0.2 Miles

A traditional rectilinear street grid provides relatively direct connections and multiple routes, thus has high connectivity.

HIGH-CONNECTIVITY NETWORK

Source: Handy, Paterson, and Butler 2003.



0.25 0.125 0

1 Inch = 0.2 Miles

Curvilinear networks dominated by cul-de-sacs often provide relatively indirect connections and few routes, thus have low connectivity.

LOW-CONNECTIVITY NETWORK

Source: Handy, Paterson, and Butler 2003.

Walter Kulash, P.E., Glotting Jackson Kercher Anglin Lopez Rinehart, Inc., Orlando, Florida; Susan Handy, Ph.D., University of California at Davis, Davis, California

Complete Streets

- Roadways that serve all users—vehicle drivers, pedestrians, bicyclists, transit riders
- Interconnected, Multimodal networks
- Safe for all ages and abilities
- Vary by context (e.g., urban/rural)
- Based on community desires
- Outcome of good planning and design



1. Safety Edge
2. Roundabouts
3. Corridor Access Management
4. Backplates with Retroreflective Borders
5. Longitudinal Rumble Strips and Stripes on 2-Lane Roads
6. Enhanced Delineation & Friction for Horizontal Curves
7. Medians and Pedestrian Crossing Islands in Urban and Suburban Areas
8. Pedestrian Hybrid Beacon
9. "Road Diets" (Roadway Reconfiguration)

Freight and Land Use

Positive Impacts

- Economic development
- Wide range of available goods



Negative Impacts

- Noise, air quality, vibration
- Traffic safety / pedestrian and bike conditions
- Land may have a higher economic use



Land Use

- Parking and loading requirements
- Street standards
- Location of industrial zoning



Transportation

- Designated truck routes
- Intermodal planning



FIGURE 1 Large trucks backing into or parked at the loading docks of retail and commercial establishments can block roads and contribute to congestion.

- Identify the freight related needs, concerns, and trends
- Define significant freight generators
- Identify locations which generate or attract freight
- Create an inventory of the existing transportation infrastructure
- Establish a recommended freight network
- Identify “bottlenecks” or impediments to freight movement

Enhance Community Design



Scale: Regional, Local, Corridor

Context Sensitive Solutions

Access Management

Context Sensitive Solutions (CSS)

- Collaborative
- Interdisciplinary
- Involves all stakeholders



- Results in facility that complements;
- Physical setting, and
- Preserves scenic, aesthetic, and historic and environmental resources, while
- Maintaining safety and mobility

Context Sensitive Solutions



- Rural Livability
- Building Partnerships
- Enhancing Access To Natural Assets
- Expanding Transportation Options
- Fostering Downtown Revitalization
- Improving Goods Movement
- Improving Roadway Safety
- Leveraging Resources
- Managing High-Speed Regional Traffic
- Transforming Strip Development Corridors

Hayden, CO

- Rural town of 1,700.
- Agriculture and mining
- Steamboat Springs development pressure
- 2000 unit subdivision proposal
- Boom and bust real estate cycle impact on other communities
- Lacked current tools (subdivision ordinances, codes, plan).



- Postpone subdivision decision to create new comprehensive plan.
- Financial support from Foundations
- Community Visioning
- Interactive technology – visualization
- Unified mindset of the community - Less on pro-growth versus no growth to more about how to grow (development form, connectivity, getting positive impacts)

- One well planned, well run public meeting lead to “Eureka” moment
- Public input informed Town Council decisions.
- Expedited Comp Plan update (April 2005)
- Updated land use codes and ordinances (November 2005).
- Required well connected development, cover their share of new road costs.
- Not entirely prescriptive, recognized value of negotiations in development decisions.

Strategies Used by Hayden

- Scenario planning
- Regional planning
- Access management
- Rural land conservation
- Compact growth
- Street connectivity
- Context Sensitive Solutions

- Value of using professional planning resources to help community determine how want to grow.
- Entrepreneurial approach to secure private grants to fund effort.
- Scenario planning facilitated community agreement on growth management approach.

The Transportation Planning Capacity Building Program - Windows Internet Explorer

http://planning.dot.gov/default.asp#3

U.S. Department of Transportation
Federal Highway Administration/Federal Transit Administration

THWA Home | FTA Home | Feedback

Transportation Planning Capacity Building

Planning for a Better Tomorrow

Search for Resources

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TPCB Special Features

New Resource Available for Transportation Planning Agencies:

Role of Regional Planning Organizations in Transportation Planning Across Boundaries

Role of Regional Planning Organizations in Transportation Planning Across Boundaries

Training and Events Calendar

Event	Date
National Rural Transportation Conference	12/02/14
Facility Planning Tools to Create Alternative Growth and Development Scenarios	12/02/14
Let's Talk Performance: Theory vs. Practice - Linking Performance Measures to Outcomes	12/02/14
Data Business Planning - Applying AASHTO's Data Principles	12/15/2014

Check the Calendar

New Publications

Publications:

- Regional Models of Cooperation
- Statewide Pedestrian and Bicycle Planning Handbook
- Model Long-Range Transportation Plans: A Guide for Incorporating Performance-Based Planning

Peer Reports:

- Performance Outcomes Beyond the Mainstream Peer Exchange Summary Report
- Target Setting Peer Exchange Summary Report
- North Carolina DOT Peer Exchange on Performance Management (November 2013)

TPCB Key Resources

Key Issues

The Transportation Planning Process: Key Issues

A Briefing Book for Transportation Decisionmakers, Officials, and Staff

Data

Search the MPO Database

Find the name and contact information of the designated MPO for any metropolitan area over 50,000 in the nation.

Focus Areas

- Bicycle and Pedestrian
- Congestion and Transportation Demand Management
- Fiscal Constraint
- Metropolitan
- Performance-Based
- Public Engagement
- Public Lands
- Rural and Small Community
- Statewide
- Transit at the Table
- Tribal

U.S. Department of Transportation

The Transportation Planning Process Key Issues

A Briefing Book for Transportation Decisionmakers, Officials, and Staff

A Publication of the Transportation Planning Capacity Building Program
Federal Highway Administration
Federal Transit Administration

The screenshot shows a web browser window displaying the FHWA website. The browser's address bar shows the URL https://www.fhwa.dot.gov/planning/processes/land_use/. The page header includes the U.S. Department of Transportation logo and the text "Federal Highway Administration". Below this, there are navigation links for "About", "Programs", "Resources", "Briefing Room", and "Contact", along with a "Search FHWA" field and social media icons for Facebook, Twitter, YouTube, and LinkedIn. The main navigation bar includes "Office of Planning, Environment, & Realty (HEP)" and "Planning · Environment · Real Estate", with sub-links for "HEP", "Events", "Guidance", "Publications", "Glossary", "Awards", and "Contacts".

Planning Processes

Land Use and Transportation

Statewide | **Land Use** | Rural | Tribal | Metropolitan | Tools

Case Studies | Land Use Tools | Legislation & Regulation | Programs/Tools/Approaches | References | Related Links | Related Programs/Activities | Statewide & Metropolitan Land Use

Contacts
For more information, please contact **Jody McCullough**.

FHWA → Planning → Processes

Coordinating Land Use and Transportation: What is the Role of Transportation?

What does coordinating land use and transportation mean?

The role of transportation professionals is evolving and more frequently requires them to understand how transportation investments can be consistent with the principles and practices of land use planning and development. At a minimum, the coordination of land use and transportation requires that those concerned with the well-being of a community (or region, state or nation) assess and evaluate how land use decisions effect the transportation system and can increase viable options for people to access opportunities, goods, services, and other resources to improve the quality of their lives. In turn, the transportation sector should be aware of the effects the existing and future transportation systems may have on land use development demand, choices, and patterns.



Coordinating (or integrating) land use and transportation planning and development is commonly considered today as one facet of "smart growth", sustainable development, new urbanism, or other similar concept. These share policies, principles, and strategies intended to preserve and even enhance valued natural and cultural resources and facilitate "healthy", sustainable communities and

Featured Content

- [Tool Kit for Integrating Land Use and Transportation Decision-Making](#)
 - [The Tools](#)
 - [Case Studies](#)
 - [References and Related Links](#)

Featured Link

- [Transportation Planning Capacity Building](#)

https://www.fhwa.dot.gov/ Trusted sites | Protected Mode: Off 100%

A Few Key Points

- Public and decision maker understanding that land use and transportation are intertwined.
- Align regional goals, policies and programs
 - Recognize transportation connection to broader community goals.
- Planning driven by Goals, Objectives, Performance Measures.
- Safe, connected, multimodal roadway networks.
- Range of strategies: planning, access management, connected streets, way finding, roundabouts, road diets, green infrastructure, ?
- Interdisciplinary collaborative approach (CSS).
- Develop partnerships.