Coordinating Land Use and Transportation

Transportation Planning Workshop
North Dakota
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Session Outline

Approach to link land use and transportation

Identify strategies to improve transportation communities
Improving Access and Quality of Life

- 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
Related Local Government Tools

- 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 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.
Burlington, VT Scenarios

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
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
Corridor Strategies – Land Use

- 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
Corridor Strategies - Transportation

- 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
Improve Local Accessibility

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”
ND Planning Resource Guide – Access

- 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.](image-url)
Connected Streets: Getting from A to B

Driving-only transportation pattern

Walkable connected transportation network

Source: www.cnu.org
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.

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., Glatting 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
Freight and Land Use

Land Use

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

Transportation

• Designated truck routes
• Intermodal planning

NCHRP Synthesis 320: Integrating Freight Facilities and Operations with Community Goals
ND Planning Resource Guide - Freight

- 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

http://contextsensitivesolutions.org/
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).
Approach

- 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)
Results

- 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
Transferability

- 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.
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 affect 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 regional systems.

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.