

Cities and Streets

Linking Street Design and Community Form

Ben Ehreth

NDDOT

Project Development Conference

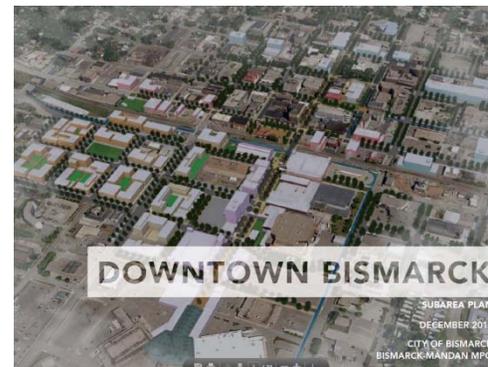
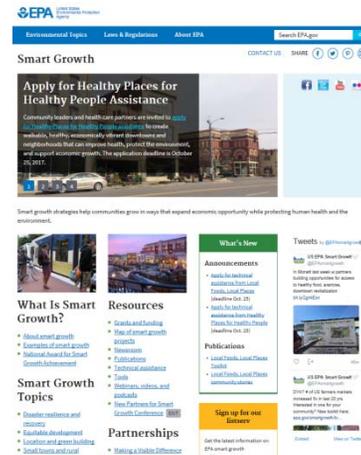
November 2, 2017

“The design of cities begins with the design of streets. To make a good city, you need good streets, and that means streets where people want to be”

source: Dover and Massengale, *Street Design*, 2014

Convergence of Interest in Concept

- Federal
 - FHWA
 - Livability Initiative
 - Linking Planning and NEPA
 - Context Sensitive Solutions
 - EPA
 - Smart Growth Initiative
- State
 - Main Street Initiative
- Local
 - Downtown Master Plans, Comprehensive Plans, Corridor Studies, Bicycle and Pedestrian Master Plans



Role of Streets in a Community



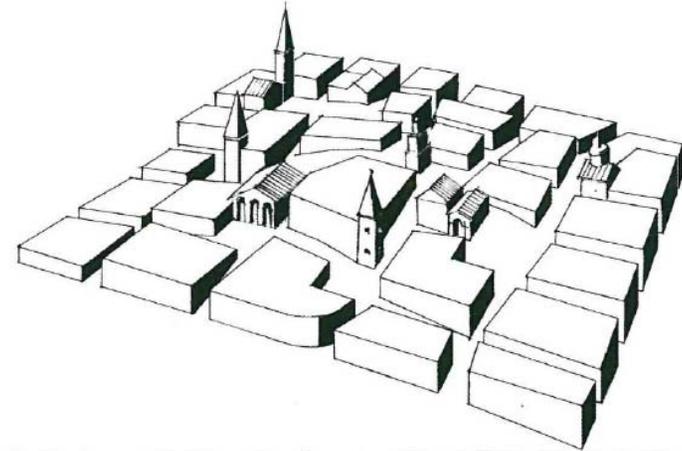
Mobility



Commerce

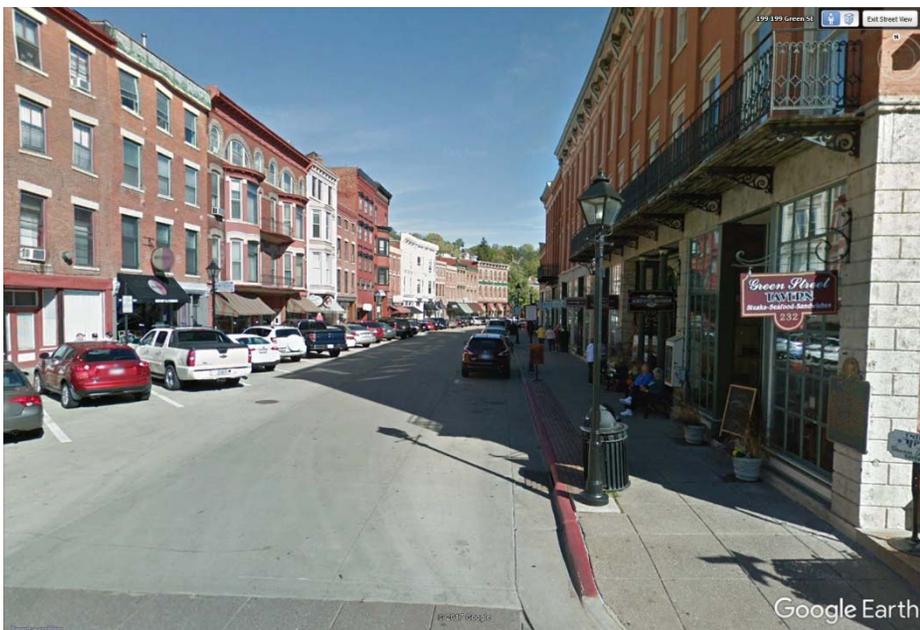


Social Interaction



Which is More Walkable and Why?

A



B



Role of Streets in a Community

- What is walkability?
 - How accommodating and appealing a space is to pedestrians
- Its about choice

Destination



Pass Through



Walkability

- Principles of Walkable Spaces
 - Shape
 - Comfort
 - Safety
 - Connected
 - Interesting/Memorable

“...we’ve come to understand that what makes a good [walkable] street is not as subjective or as complex as some might think. In fact, making good [walkable] streets comes naturally to people, and has for thousands of years.”

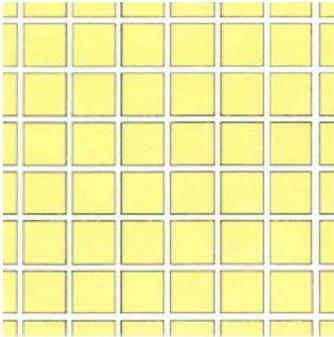
source: Dover and Massengale, *Street Design*, 2014



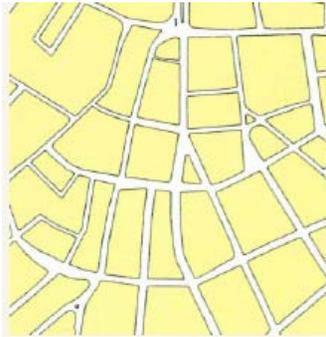
source: www.travelandleisure.com

Connectivity

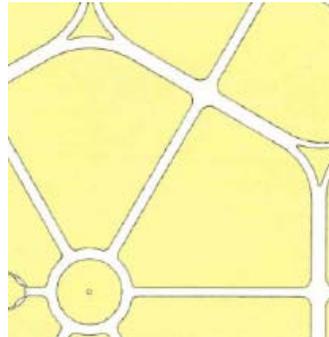
Grid



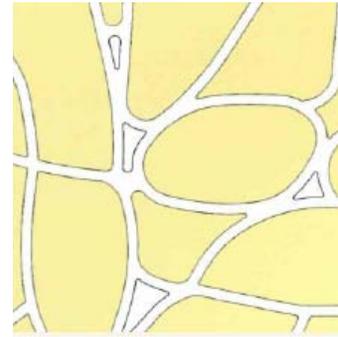
Organic



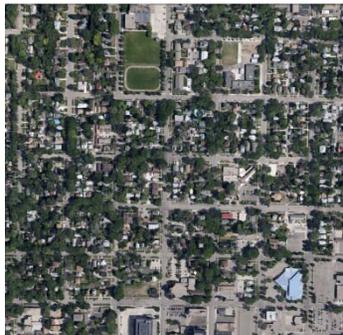
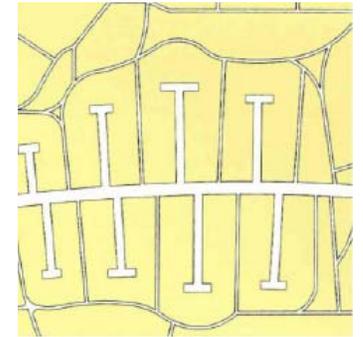
Radial Geometric



Curvilinear Organic



Cul-de-sac



Streets shape the community form and structure by separating blocks and linking different places of interest within the city

Mixed Use

BATH, ME



- One of the fundamental principles of a walkable environment
- Concentration of different uses in close proximity
- Could be vertical or horizontal
- Encourages pedestrian activity
 - Convenient access to daily destinations
 - Park-once concept where multiple-daily tasks can be accomplished within a neighborhood using just one parking space

MANHATTAN, KS



Building Entrances Fronting Street

SALUDA, NC



- Primary entrance directly adjoining the public space
- Generates pedestrian activity each time a building is entered or exited
- Windows facing the public space puts “eyes on the street” creating a safer environment for pedestrians

Human Scale

ALEXANDRIA, VA



- The size, texture, and arrangement of physical elements:
 - Match the size of humans
 - Correspond to the speed at which humans walk
 - Building details, pavement texture, lighting, and street furniture contribute to this element

“...road building affects future land-use patterns and the all important character of the surrounding community”

source: Dover and Massengale, *Street Design*, 2014

Parking

RED LODGE, MT



source: www.comdev.mt.gov

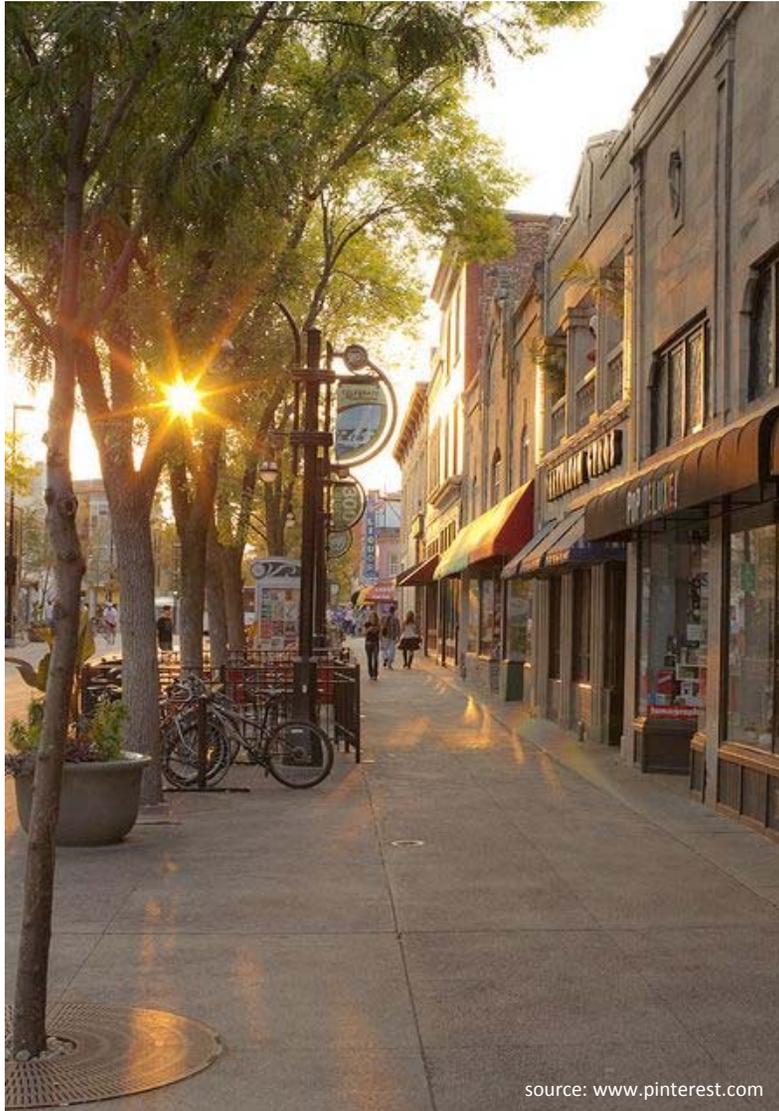
“Parking is one of the most critical issues facing any retailer or shopping district today”

Source: Principles of Urban Retail, Gibbs, 2012

- On-street parked cars buffer pedestrian from moving traffic
- On-street parking is preferred for most shoppers
- Most shopping trips are elective activities, if parking is not convenient perspective customers avoid the area
- Shoppers using convenient on-street parking tend to generate the bulk of retail sales in a downtown area
- One on-street stall can turnover as much as 10-12 times per day = \$150,000 to \$250,000 in retail sales annually

Street Trees

MADISON, WI



source: www.pinterest.com

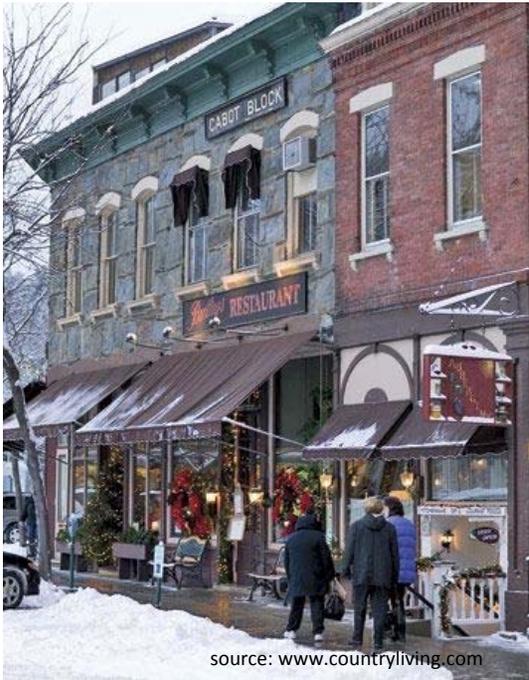
- Define the space of the street
- Calm traffic and buffer pedestrians from vehicles
- Provide shade
- Soften the visual impact of hard construction materials
- Reduce the scale of the street and height of tall buildings
- Trees activate multiple senses, making a space more memorable

“Retail settings containing trees elicited more positive behavioral expectations on the part of respondents: they were willing to travel greater distances to those districts, willing to spend more time there, and willing to visit them more frequently”

Source: Principles of Urban Retail, Gibbs, 2012

Sidewalks

WOODSTOCK, VT



SARATOGA SPRINGS, NY



“Sidewalks provide the first and last impression a shopper receives when visiting a downtown or commercial center”

Source: Principles of Urban Retail, Gibbs, 2012

- Materials should be hard surfaced and high quality
 - In most commercial areas well designed and detailed concrete may be sufficient
- Should be sized appropriately to accommodate existing and anticipated pedestrian activity
 - Wide enough to allow pedestrians to pass one another comfortably and allow for limited outdoor displays and dining
- In commercial setting should not distract shoppers from storefront window viewing

Lighting

PORTLAND, ME



- In commercial areas, high-quality lighting such as, combinations of halogen and LED light sources, can generate higher sales
- Good lighting can contribute to stores and associated merchandise looking cleaner, fresher, and higher quality

BETHLEHEM, PA



“...most retailers and restaurants realize that lighting can generate significantly higher sales, yielding a considerable return on the initial investment”

Source: Principles of Urban Retail, Gibbs, 2012

Complexity

DEADWOOD, SD



source: www.pinterest.com

STAUNTON, VA



source: www.onlyinyourstate.com

- Visual Richness of a Place
 - Diversity of architectural character
 - Building ornamentation
 - Landscape elements
 - Human activity

“Pedestrians are easily bored. We are attracted to places that are beautiful and distinctive”

source: Dover and Massengale, *Street Design*, 2014

Transparency

NEW ORLEANS, LA



- The ability for pedestrians to see or perceive what lies beyond the edge of the street
- Elements that influence transparency:
 - Walls, windows, doors, fences, landscaping, and building arrangement

Street Width

STAUNTON, VA



- Streets are typically designed as narrow as possible in walkable areas as they:
 - Calm traffic
 - Influence drivers to operate less aggressively
 - Allow pedestrians to navigate more comfortably along and across the street

PARK CITY, UT



“As pedestrians, we choose to return to places where we feel reasonably free from danger...Any excessive width in the area devoted to motoring--whether in the number of lanes or their dimension—pushes speeds higher and discourages walking”

source: Dover and Massengale, *Street Design*, 2014

Traffic Speed



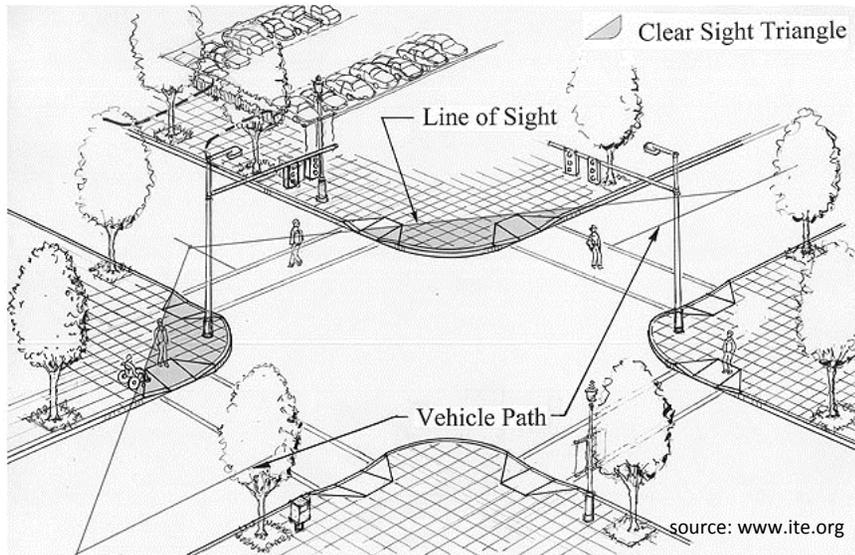
source: Small Town and Rural Multimodal Networks, FHWA 2016

- Pedestrians feel safer and more comfortable in lower speed environments
 - 15 to 18 mph ideal speed for pedestrian friendly streets
- For adjacent development deep setbacks are not necessary when traffic is moving slower allowing buildings to be located closer to the street

“The best defense against the mayhem in pedestrian-auto collisions is to keep motoring speeds low, by design”

source: Dover and Massengale, *Street Design*, 2014

Intersections



- Should be designed as compact as possible
 - Large curb radii result in higher speed turns and longer crossing distance for pedestrians
- Use design speed appropriate for context
 - Motorists traveling at slower speeds have more time to react
- Intersection approaches should permit time for pedestrians, motorists, and bicyclists to observe and react to each other



“In urban areas expectations based on rural and suburban experiences are unreasonable... Driver expectations need to shift toward taking turns with other modes and a sense of uncertainty, which creates a slower, vigilant and safer environment.”

source: www.ite.org

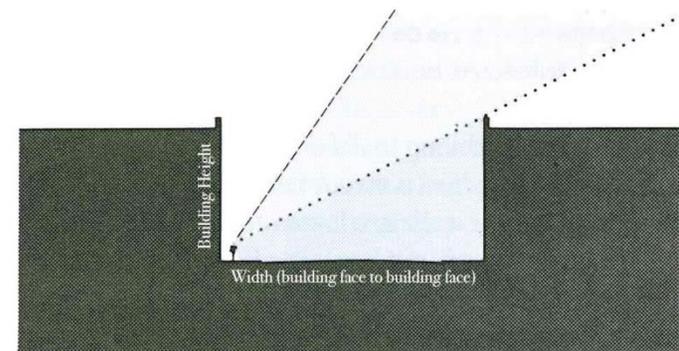
Enclosure

GALENA, IL



- The degree to which streets are visually defined by vertical elements
 - Considers width (façade to façade) in comparison to height
 - A 1:3 ratio or less (1:2 or 1:1) of height to width is preferred for a walkable environment

1:2 Ratio



source: Fundamentals of Urban Design

Money Walks

Economic Value of Walkable Places



Graphic provided by State of Place based on work developed by Leinberger and Alfonzo, 2012, Brookings

“When traffic concerns are leavened with placemaking, infrastructure improvements can improve property values considerably”

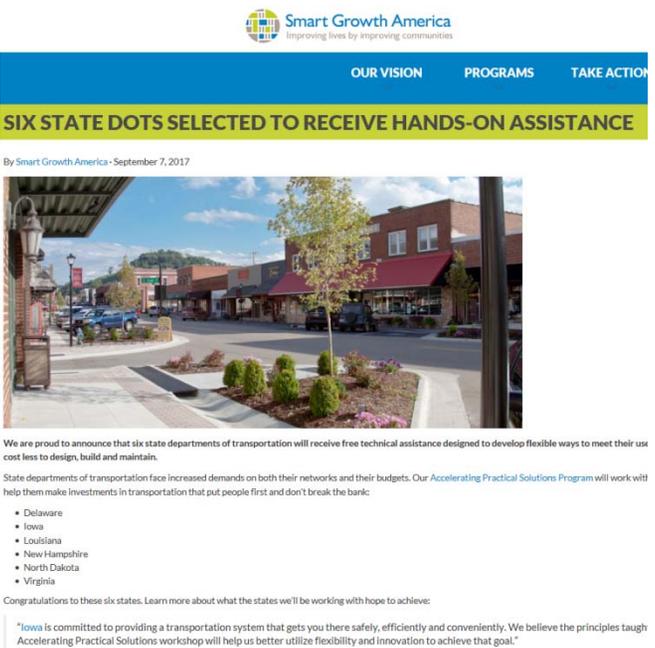
source: Dover and Massengale, *Street Design*, 2014

Challenges

- Multiple governmental entities with differing roles and responsibilities
 - Land Use vs. Transportation
- Public and Private sector
- Competing desires for how to use the space
 - Localized priorities vs. regional or statewide priorities
 - Who decides what the space is or should become and how does that occur

Technical Assistance

- Governors Institute on Community Design/Smart Growth America Workshop
 - Enhance integrated decisions about transportation and land use
 - Balance the needs of all roadway users in a variety of contexts



The image is a screenshot of a news article from Smart Growth America. The header includes the Smart Growth America logo and the tagline 'Improving lives by improving communities'. Below the logo is a navigation bar with 'OUR VISION', 'PROGRAMS', and 'TAKE ACTION'. The main headline is 'SIX STATE DOTs SELECTED TO RECEIVE HANDS-ON ASSISTANCE'. The article is dated 'September 7, 2017'. The main image shows a street scene with a building and a tree. The text of the article states: 'We are proud to announce that six state departments of transportation will receive free technical assistance designed to develop flexible ways to meet their use cost less to design, build and maintain. State departments of transportation face increased demands on both their networks and their budgets. Our Accelerating Practical Solutions Program will work with help them make investments in transportation that put people first and don't break the bank.' A list of states is provided: Delaware, Iowa, Louisiana, New Hampshire, North Dakota, and Virginia. The article concludes with 'Congratulations to these six states. Learn more about what the states we'll be working with hope to achieve:' and a quote from Iowa: '*Iowa is committed to providing a transportation system that gets you there safely, efficiently and conveniently. We believe the principles taught Accelerating Practical Solutions workshop will help us better utilize flexibility and innovation to achieve that goal.*'

ND Moves

- State Active and Public Transportation Plan
 - State highways as Main Streets
 - Design guidelines
 - Data collection
 - Laws, policies, and programs
 - Funding and priorities
 - Safety messaging and education

www.ndmoves.com

North Dakota
NDDOT
North Dakota
Department of Transportation

nd.gov Official Portal for North Dakota State Government

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   **ND moves**
NDDOT active transportation & transit plan

➔ About This Project

NDDOT is in the early stages of developing a statewide active and public transportation plan.

The Statewide Active and Public Transportation Plan, or ND Moves, will review and identify existing and emerging needs and recommend strategies for the future of biking, walking, rolling, and transit across the state. State, regional, and local stakeholders will be engaged in this process to help identify needs and opportunities and provide direction on the overall vision for the North Dakota transportation system. Ultimately, the plan will help to update or establish guidance on statewide programming and policies for NDDOT, and can also provide support and guidance to local communities.



➔ Learn More

A fact sheet with information about goals, timeline, and study areas will be posted here soon.

➔ Get Involved!

Survey
An online interactive survey will be available in November. Check back soon for updates!

Upcoming meetings
Please join us for one of five open houses across the state where you will be able to learn more about this plan, interact with project staff, and share your thoughts.

- Fargo
Wednesday, November 8, 2017
4:00 p.m. to 7:00 p.m.
Fargo City Hall
City Commission Chamber (2nd Floor)
200 3rd Street N

ND Moves

– Pop-up Projects

- What is it?
 - Small scale, short-term intervention meant to inspire long-term change
- Why pursue?
 - Short lead time to develop
 - Easy for public to be involved and understand
 - Ensure it's the right fit for the community
 - Test drive the project
- What is NDDOT proposing?
 - Work with a handful or several communities depending on cost to establish a pop-up demonstration project as part of ND Moves



PROGRAMS

- Urban Grant Program
- ND STREETS



“The City is an assembly of public works of art
that are never finished, produced by many hands
collaborating over time”

source: Dover and Massengale, *Street Design*, 2014