Livable Neighborhood Design

CE 594
University of Wisconsin-Milwaukee

Approaches

• Traditional neighborhood design (TND), new urbanism, transit friendly design, transit oriented development and walkable design are similar
• They share common goals, to increase livability, reduce auto dependency and automobile dominance.
• Differences relate to basic vision, goals for each concept. Conflicting visionaries.
• Not anti-auto but pro-pedestrian, bicyclist, etc.

Traditional neighborhood development

• Origins in Planning Architecture community
• Node based design
• Goal is to create neighborhoods such as existed in central cities prior to the mid-1950’s
• Grid street pattern, alleys, no cul-de-sacs
• Multiple entry and exit points into neighborhoods
• Local commercial land use mixed with residential land uses
• Public amenities
• Often have a distinctive architectural style with specific required details
• May not have any transit, may not necessarily be “transit friendly”

Examples

• Middleton Hills, Madison
• Prairie Crossing, Lake County, Illinois
• Hartford, Wisconsin
• Oregon, California, Florida, etc
Fairview Village, Oregon

1. Fairview City Hall
2. Fairview U.S. Post Office
3. Fairview Columbia Library
4. Woodland Elementary
5. La Petite Academy Preschool
6. Sally Total Fitness
7. "Main Street" Mixed Use
8. Target (Anchor Retail)
9. South Market Square
10. Professional Office Buildings
11. Single Family Homes
12. Longley Park Rowhouses
13. Brickyard Rowhouses
14. Rosewalk Loft Rowhouses
15. Park Lane Rowhouses
16. Charles Court Townhouses
17. Chinook Way Apartments
18. Park Lane Apartments
Transit Friendly Design

- Origins in Transit Community
- Corridor based design
- Land use is arranged to facilitate success of transit services.
- Predesignate future transit routes
- Transit corridor zoning overlay district
- Separate transit and auto oriented land uses
- Use mixed land uses
- Control of through auto traffic
- Provide a quality access system to transit by walking or bicycles

Land Uses

- Transit Oriented
  - Commercial Airport
  - Park and Ride Station
  - General Heavy Industrial
  - Apartments
  - Residential Condominiums
  - High Density Residential
  - Retirement Community
  - Hotel - non-CBD
  - Stadium
  - Elementary School
  - High School
  - Junior/Community College
  - University
  - Hospital
  - General Office Building
  - Office Park
  - Shopping Center

- Highway Oriented
  - Water Port
  - General Aviation Airport
  - Truck Terminal
  - Mini-Warehousing
  - Utilities
  - Recreational Uses
  - Resort Hotel
  - Marina
  - Golf Course
  - Dry Cleaner
  - Nursing Home
  - State Motor Vehicle Department
  - Building Materials and Lumber
  - Edison Plant Site
  - Recreational Center
  - Quality Restaurant
  - New Car Sales
  - Service Station
  - Car Wash
  - Highway Oasis
  - Truck Stop
  - Furniture Store
  - Drive-in Bank
  - Drive-in Savings and Loan

Transit Corridor Districts

- Transit Corridor District
Connectivity

Walkable Design

- Origins in Planning Architecture community -- “Pedestrian Pods”
- Node oriented design
- Places where people can walk safely
- Places with amenities and activities to walk to
- Pathways along all roads and in other areas to provide short connections
- May not have any transit or be “transit friendly”
- A component of TND or transit friendly design
Cluster Development

• Require an average density on a parcel, but allow smaller lot sizes for individual lots
• Example in urban fringe area:
  • 4 acre average, 1 acre minimum, 40 acre parcel could be ten lots of 1 acre with remaining 30 acres as common open space.
  • Open space could be held in common, held privately, or dedicated to public use. Can be kept in a natural state or used as permanent agricultural areas.
• See SEWRPC Cluster Development Guide
“Conventional” Subdivision/Neighborhood

- Good Traffic Management
- Avoid driveways on main roads
- Proper sight distance
- Good connectivity
- Access management
- Use Appropriate Geometry
- Speed = f(width)
- Be willing to accept narrow streets

Cul de sacs?

- Market Popularity, but
- Extra public cost
- Extra travel
- Concentrates traffic on arterials
- Poor connectivity for pedestrians and bicycles
- Provide pedestrian and bicycle facilities
- Provide shortcut connections
- Provide paths parallel to main roads

Pathway to Adjacent Street
Building Orientation

Development Rights

- Transfer or sale of the right to develop
- Used in Maryland, Pennsylvania, Vermont; some areas in Wisconsin, being considered elsewhere
- Conservation Easements – permits use only for conservation
- Sell or exchange the right to develop property at the difference between its value for development versus its value for agriculture
- Once sold it cannot be developed
- Land owner can remain on the land
- Can have significant tax advantage to the land owner
- Community has lower infrastructure and service costs, even after purchase
- Preserves open space, prime agriculture land, have more efficient public system

Related Issues

- Traffic Calming
  - Many principles of traffic calming also apply to livable design
  - Similar goals: slow traffic, reduce dominance of the automobile
- Market, Market, Market
  - Changing population structure, smaller household size, aging of population, multiple worker households
- Affordable housing
  - Areas can be designed and laid out to minimize infrastructure costs, especially if clustering is used along with average density requirements.
  - Affordability is market dependent.
  - How is conventional development affordable?
  - Location Dependent Mortgages
ITE Traditional Neighborhood Design Guidelines

- Few hard and fast rules.
- Encourage interdisciplinary approach.
- Rethink of land use/travel patterns.

Design Principles

- Specificity: Design should be adapted to a specific situation
- Shared street space/"lanes": Should not think of lane width added to parking areas. Narrow streets may occasionally require drivers to slow down or pull over to let others pass
- Scale -- Human/Pedestrian dominance. Small details are important.
- Bicycles: travel should be encouraged.
- Street space: Closer building to building distances. Nature of streetscape should be defined in advance.
- Connectivity: Interconnect streets for internal circulation which can avoid use of arterials. Cul-de-sacs and dead-end streets are to be avoided except in extreme circumstances.

Principles - 2

- Alleys: encouraged to provide for closer building spacing, off-street automobile parking.
- Through traffic: discourage through “T” intersections, narrow street widths, or occasional one-way streets.
- Street capacity: Use multiple ways to connect locations, reduce loads on arterials. Hierarchy of streets is still important.
- Pedestrian Networks: Pathways along both sides of streets, short cut pathways across areas not directly connected by streets.
- Pedestrian crossings/curb radii: Consider specific situation. If few turns by large vehicles, it is usually acceptable to allow vehicles to swing across the centerline to turn.

Principles - 3

- Vista terminations: Important buildings, etc. can be used to “anchor” the end of the street.
- Emergency vehicles: Multiple routes of access help. There may be special provisions to provide access.
- Utilities: should be clustered, located toward rear of buildings. Convenience of a utility should not take precedence over other needs.
- Arterials/Large Vehicle Corridors: shouldn’t penetrate the neighborhood; rather they should be located on the edges of the neighborhood.
- Neighborhood Size: Five minute walking radius (1/4 mile) from the center, size range 40-120 acres.
Principles - 4

- Mixed Use, Commercial/Residential Areas. Include a gathering point, such as a post office, school, restaurant, or transit stop. (May have two-sided commercial areas on edges, with auto access from arterial, and pedestrian access from neighborhood.)
- Eye Contact/Street Safety: Create conditions so there is a high degree of eye contact between user types.
- Street Trees: Line streets, form spaces (diverse species).
- On-Street Parking: Allow parallel parking, diagonal in certain circumstances.

Principles - 5

- Resolution of Conflicts: Conflicts between competing needs of vehicles and non-vehicles should be resolved in favor of non-vehicular users.
- Prudent and Reasonable Determinations: Participants in the decision process should be well informed and understand general concepts. Avoid posturing and entrenched views. Document rationale for decisions. Good communications.
- (Attitude is critical: “How can we make this work?” versus “It can’t be done because. . .”)

Speeds and Geometric Design

- Upper limit of actual speeds in TNDs is approximately 20 mph.
- New legislation/rules may be required to allow for posting of lower speeds.
- Probability of injury increases rapidly with speed.
- Design should self-enforce lower speeds.
- Traffic calming concepts apply.
- Be sensitive to vehicle volumes and vehicle mix.
- No hard and fast guidelines

Street Width

- No specific chart of widths; street should not be viewed as “lanes” of moving and parked vehicles
- Consider snow storage in buffer strips, and snow management procedures
- Design for normal use, rather than for very infrequent use.
- Examples existing of older neighborhoods include:
  - 25 ft. wide with parking – Seattle
  - 28 ft. wide with parking – Washington
  - 21 ft. wide with parking -- San Francisco
  - 22 ft. wide with parking – Madison
Street Width Guidelines

References


Basic Street Patterns

- Grid: Provides north/south-east/west; ignores topography; no definite separation between arterial, collector and local streets.
- “Milwaukee Grid,” blocks are 660 by 330 feet (5 acres), 16 blocks per mile east-west; 8 blocks per mile north-south.
Curvilinear Streets

- Curvilinear: A series of blocks with curved streets. Fewer intersections with arterials, separate local from through traffic; can use topography to advantage.

Cluster

- Large blocks and many cul-de-sacs.
- Buildings are clustered with larger areas of open space - may lead to lower utility costs.

Radial-Circumferential

- Has a centered focal point and streets radiating from it and concentric circles. More common at the urban scale

Hierarchy of Streets

- Keep purposes distinct in design of street network.
- Arterial -- purpose is mobility, through movement
- Collector -- purpose is movement to and from local streets as well as land access
- Local -- purpose is land access only; should not be used for mobility.