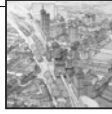




# How to Plan & Design a High-Performance TOD

## GB Arrington



PlaceMaking

Arrington@pbworld.com

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## TOD or TAD?

### *Transit-Oriented Development or Transit Adjacent Development?*

- Majority of development at US transit stations not TODs
- TOD is still illegal in most of US
- Not enough to be next to transit, must be shaped by transit



Cisco Systems TAD, San Jose, CA



Street Car TOD, Portland, OR

PlaceMaking

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## Keys To TOD Success

- Get the planning right
- Apply the power of partnerships
- Market driven, not transit driven TOD
- Design for the pedestrian



State Center TOD Redevelopment Strategy, Baltimore Maryland

PlaceMaking

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# Planning for TOD Matters

"Build it and they will come" has not happened

## Planning building blocks:

- Regional Vision
- Local Leadership
- Help w/ Funding
- Station Area Plans
- Streamlining TOD




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# Build a Place, not a Project

The Round at Beaverton Central. Plaza surrounds station

- ▶ 240 units
  - ▶ 125k retail
  - ▶ 375k office
- Beaverton, OR




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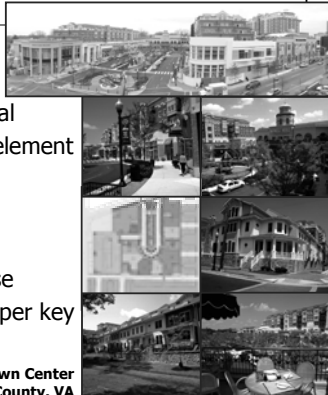
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# Mixed Use

- Vertical or Horizontal
- Most difficult TOD element
- Great TOD benefits
  - ▶ More walking
  - ▶ More ridership
  - ▶ Reduced auto-use
- Experienced developer key



Clarendon Town Center  
Arlington County, VA

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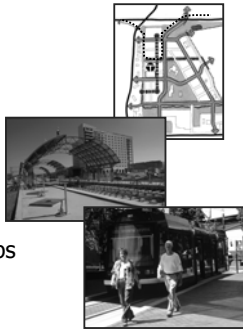
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## Development-Oriented Transit

- Transit designed with development in mind
  - ▶ Corridor selection
  - ▶ Station function
  - ▶ Pedestrian access
  - ▶ Parking location
  - ▶ Community partnerships
  - ▶ Incorporate TOD




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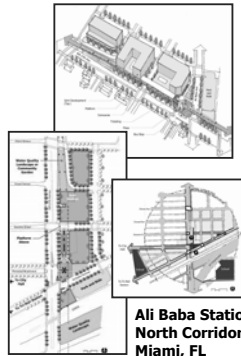
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## Applying DOT Principles

- DOT Charrette –
  - ▶ Early in design
  - ▶ How do you design transit to maximize operations and TOD?
  - ▶ Get all the stakeholders at the table
- Create a tool that can be applied to each phase of project design



Ali Baba Station  
North Corridor  
Miami, FL

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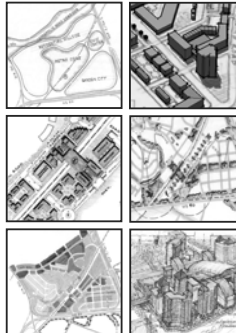
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## Link to a Broader Strategy

- Part of community's vision for growth
- More than transit
- Basis to gain greater broader support & success
- Building partnerships essential



*TOD as "means to an end" of community objectives*

New Carrollton TOD Strategy

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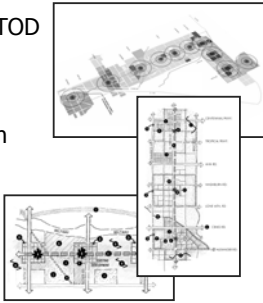
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## Plan TOD to Right Scale

- More than one kind of TOD no "one size fits all"
- TOD Corridor Vision
  - ▶ Relationship between stations
  - ▶ TOD Typology to fit the place
  - ▶ Types of stations
  - ▶ Areas for growth, preservation




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## TOD Typology: TOD to fit each Community




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## Applying TOD Theory

TOD Principles	TOD Design	TOD Code
Greater Density than Community Average		Allows Greater Density
A Mix of Uses	Building & Mix of Uses	Height, Bulk, Allowed Uses
Quality Pedestrian Environment	Pedestrian Environment	Public Realm Stds / Connections
A Defined Center	Building Placement	Site Location & Setbacks
	Building Orientation & Frontage	Street Presence & Design
	Parking	Location & Quantity

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## TOD Planning Principles

- Greater Density than Community Average
- Quality Pedestrian Environment
- A Mix of Uses
- A Defined Center



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## TOD Design

- Pedestrian Environment
- Building & Mix of Uses
- Building Placement
- Building Orientation & Frontage
- Parking



Orencia Station, Hillsboro, OR

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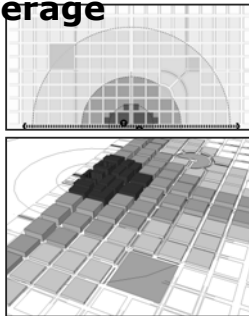
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## Greater Density than Community Average

- Up to 600 ft: greatest intensity
- 600 to 1,500 ft: intermediate intensity
- 1,500 to 3,000 ft: greater than community average for intensity



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## State Center TOD

An Urban Redevelopment Strategy




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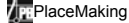
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PLANNING & DESIGNING A HIGH PERFORMANCE TOD

### Challenge

- What to do with two parking lots?
- Aging state-owned employment center and city-owned public housing complex
- Multiple citizen, institutional and stakeholder interests





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PLANNING & DESIGNING A HIGH PERFORMANCE TOD

### Process

- Initiated by visionary State DOT
  - ▶ Recognized TOD potential
  - ▶ Link to State Asset Management Study
- Fast-track, comprehensive approach
- Charrette-based





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PLANNING & DESIGNING A HIGH PERFORMANCE TOD

## Development Program

- 3,200 housing units
- 1.3M s.f. office (redeveloped)
- 600,000 s.f. retail, including:
  - ▶ Grocery store
  - ▶ 200 room boutique hotel
  - ▶ Cinema, Restaurants
- 60,000 s.f. additional institutional
- +3 acres parks/open space
- 3,000 additional parking (5,800 spaces total)

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PLANNING & DESIGNING A HIGH PERFORMANCE TOD

## Eutaw District

PlaceMaking

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## Mixed-Use Core



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## Housing

- Diversity of types
  - ▶ Townhouses (standard, stacked, live/work)
  - ▶ Flats and Lofts
- Primarily market rate
  - ▶ 10% below
  - ▶ Excludes public housing needs
- For-sale and rental



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## Implementation

- Eutaw District Development Corporation
  - ▶ Facilitate policy goals
  - ▶ Provide expertise and leadership
  - ▶ Coordinate public investments, secure financing
  - ▶ Attract private investment

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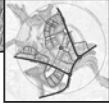
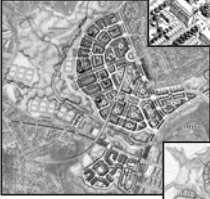
# West Hyattsville TOD



From a parking lot to a park community:



- WMATA station
- Development Program
  - ▶ 3,100 housing units
  - ▶ Main street retail
  - ▶ 1m SF commercial
  - ▶ 127 acres open space
- Form based code
- Revitalized community



Best Project 2004  
Smart Growth Competition AASHTO



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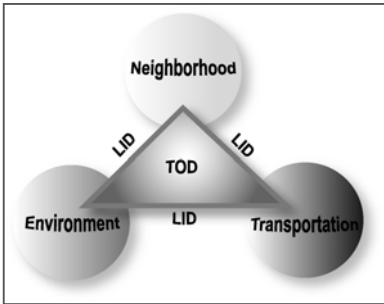
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# Overall Strategic Framework



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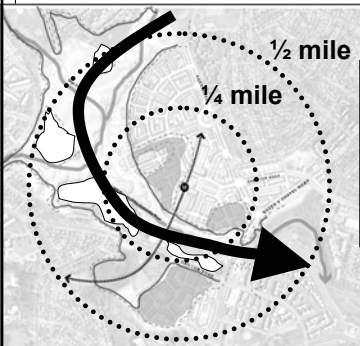
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# Solving Site Constraints



**Floodplain**

- Existing Floodplain
- New Floodplain
- ➔ Address Flow

Balance The

- Cut
- Fill

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# Greening Technologies



## Open Spaces

- Town Square
- Stream Valley
- Neigh'd Parks
- Pocket Plazas
- Play Spaces

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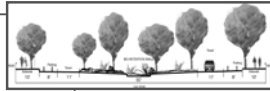
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# Changing the Rules – Access



## Streets

- Boulevard
- Mainstreet
- Avenue
- Lane

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# Changing the Rules – Land Use



- Mixed use:
  - Office / retail
  - Residential / retail
  - Office / residential
- Residential:
  - Tower: 10-12 stories
  - Condo: 4-6 stories
  - Live / work: 4-6 stories
  - Town: 2-4 stories
- Retail
- Parks & open space
- Community center
- Structured parking

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# Changing the Rules - Orientation



## Setbacks

- █ 0 feet
- █ 0-8 feet
- █ 0-10 feet
- █ 10-25 feet

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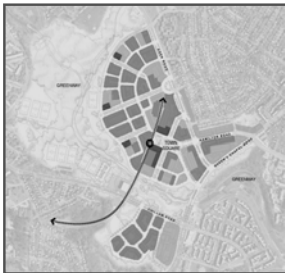
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# Changing the Rules - Scale



## Heights

- █ 7-12 Stories
- █ 4-6 Stories
- █ 1-3 Stories

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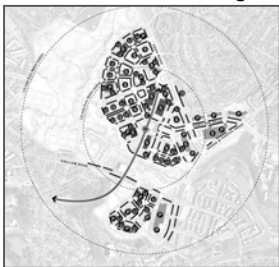
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# Changing the Rules - Parking

Conventional Standards: 8,000-10,000  
 Savings of 1,600 spaces: \$35,000,000



- █ Private off-street commercial parking
- █ Shared parking opportunity
- P Surface parking
- S Structured parking
- U Tuck under garage
- G Private garages
- C Car sharing
- Public on-street parking
- Alley parking
- Bus staging
- Taxi
- Kiss & ride

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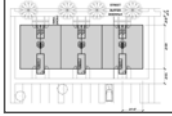
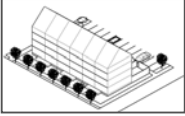
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## Changing the Rules - Form-Based Code

- Most concerned with 'how' rather than 'what'.
- Graphic oriented zoning code.
- Building design compatibility critical.



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## Some Conclusions

- Market for TOD is real & growing
- Make it easy to do TOD
- Prohibit what you don't want
- Create places to come back to
- Build communities, not projects
- Start with demonstration projects
- Partnerships essential for success
- Link to communities vision
- Design for the Pedestrian



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# Taking Advantage of the Opportunity: Tools for TOD



Shelley Poticha  
Center for Transit Oriented Development  
January 2006

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# Reconnecting America's Center for Transit-Oriented Development



- Create a national marketplace for TOD, working with cities, transit agencies, developers, investors and communities.
- A collaboration with The Center for Neighborhood Technology, Strategic Economics, and real estate and transit experts
- [www.reconnectingamerica.org](http://www.reconnectingamerica.org)

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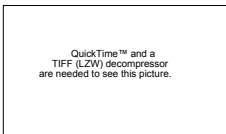
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# CTOD: Unlocking the Power of Transit-Oriented Development

- Pinpointing the Demand for TOD in Regions and Corridors
- Making TOD Easier by Removing Barriers
- Devising Innovative Implementation & Financing Strategies
- Educating Leaders, Developers and Practitioners
- Acting as a Clearinghouse for Best Practices



[www.reconnectingamerica.org](http://www.reconnectingamerica.org)

CTOD

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## A Once-in-a-Generation Opportunity

- When transit systems were built in San Francisco, Atlanta, Dallas, and DC they didn't consider TOD.
- You have the chance to do more than move people.
- You can shape the livability and economic health of the region



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## TOD: What is it?

TOD is development within a half mile of transit that delivers:

- Walkability and Vibrancy
- Expanded Mobility, Shopping and Housing Choices.
- Financial Return and Value Recapture.
- Balance Between Place and Node
- Function, Not Formula

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## Development At Transit

Two types of projects:

- Transit-Oriented Development
  - Area w/in a 5 minute walk
  - Transit Villages / Town Centers/ urban infill / greenfield
- Joint Development
  - On publicly owned land
  - Primarily with rail systems



Santa Ana TOD



Santa Ana Joint Development

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# TOD or TAD?

*Transit-Oriented Development or  
Transit Adjacent Development?*

- Majority of development at US transit stations not TODs
- TOD is still not allowed by zoning in most of US
- Not enough to be next to transit, must be shaped by transit



Cisco Systems TAD, San Jose, CA



Street Car TOD, Portland, OR

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# Converging Trends Drive Demand for TOD



- Transit is in a building boom
- Urban and suburban reinvestment are on the rise
- Demographic changes mean that "who we are" is much more diverse than before
- Developers, investors and cities are recognizing that "place-making" creates value

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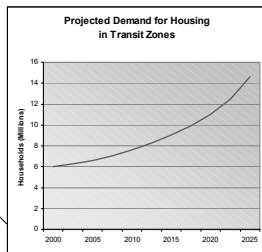
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# Demand for TOD by 2025 will more than double

- By 2025 demand TOD residential could grow from 6 million to 14.6 million households nationally.
- Regions with extensive and growing transit systems offer the greatest potential for TOD.
- Growth is likely to be modest through 2010 and accelerate in later years as more transit systems come on line.



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# Significant Demand for TOD in Denver by 2025

	Number of Transit Stations	Class of Transit System	TOD Demand Capture Rate	Potential Demand for TOD Housing Units in 2025
Denver Today	27	Small Expanding	5%	45,000 in 2000
Denver with T-Rex & Fast Tracks	98	Medium-Large	12%-24%	144,200 to 288,400
Portland	17	Large Medium-Large	28%	200,000
San Diego	12	Large	12%	174,000
Seattle	61	Small Expanding	7%	174,000

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# National TOD Database

- 3,341 existing fixed transit stations in 27 regions
- 630 additional stations in 15 regions with new systems
- 1/2 mile radii - metropolitan comparison
- Fixed Transit includes:
  - Subway and Heavy Rail
  - Light Rail Transit
  - Commuter Rail
  - Trolley and Streetcars
  - Bus Rapid Transit



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# Metro Regions Including New Starts




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## How Does Denver Stack Up?

Compared with the region, TOD households:



- Are similar in size (2.5pp/hh)
- Have lower incomes (62% of regional average)
- Are mostly renters (64% vs. 33%)
- Own fewer cars (1.4 vs. 1.8)
- Walk, Bike or Take Transit to Work (31% vs. 12%)

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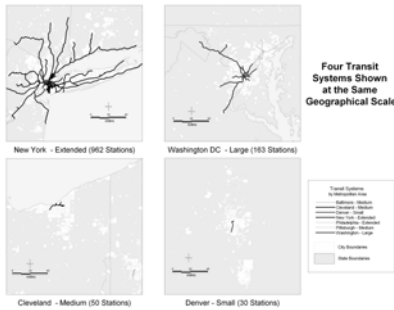
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## Network Coverage Drives Performance of TOD



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## What Does it Take to Do Good TOD?

- Define Goals Upfront
- Partnerships!
- Let the Market Lead
- Design for Pedestrians and Users
- Get the Planning Right at the Region, Corridor and Place and Project Scales



Fruitvale Transit Village, Oakland

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## At the Regional Scale

- Recognize the Value of TOD
- Address Affordability
- Support a Variety of Place Types



International Blvd, Oakland, CA

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## The Value of TOD Leverages the Public's Investment



- Creates inexpensive ridership for transit
- Creates value for transit agencies, cities, citizens
- Shapes developer interest
- Can help finance the features that make TOD work

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## Transit Attracts Private Investment

- **Dallas:** LRT \$800M in development, \$3.7B in economic activity, 32,000 jobs. (Source: University of North Texas)
- **Portland:** MAX \$2.4B in new development value. Downtown Streetcar: \$1.6B (Source: Tri-Met, Portland, OR)
- **Santa Clara, CA:** 45% premiums for TOD residential, 23% premiums for TOD commercial. (Source: Cervero, 2002)
- **Pittsburgh Busway:** 54 development projects valued at \$302 million. (Source: Port Authority of Allegheny County)



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# Value Capture: Techniques and Uses

## Techniques

- Tax revenue growth -- sales, property
- Joint development of transit properties
- Tax increment financing/Special assessment districts
- Bulk Transit Pass Purchases
- Parking fee revenues
- Program Related Investments

## Uses

- Transit Facilities and Operations
- "Placemaking" Features
- Affordable Housing
- Local Services and Destinations

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# TOD Helps Create Affordable Neighborhoods

- Reduces transportation costs
- Helps build wealth
- Provides affordable access to jobs
- Can provide convenience if services are clustered.



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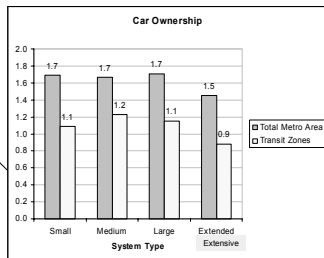
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# Car Ownership Rates are Lower in Transit Zones

- Transit Zones HHs own an average of 0.9 cars.
- Metro-regions HHs own an average of 1.6 cars.



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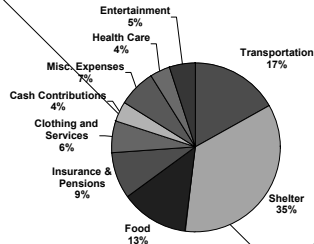
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# Transportation is the Highest Household Cost After Housing

Typical American Household Budget



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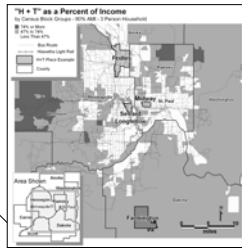
# Comparing Affordability Indices

- Where can a 3-person household earning 80% of the Twin Cities AMI afford to live?

Considering only housing prices



Considering Housing prices and Transportation Costs



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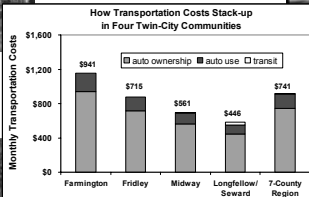
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# Monthly Transportation Costs throughout the Region

**Farmington**  
 \$941/month  
 \$11,292/year

**Midway, St. Paul:**  
 \$561/month  
 \$6732/year



**Fridley:**  
 \$715/month  
 \$8580/year

**7-County Region:**  
 \$741/month  
 \$8892/year

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## Tools for Affordable TOD

- Count Housing + Transportation Costs
- Help Renters become Owners
- Direct LIHTC to TOD
- Land Banking + Community Land Trust
- Reduce Parking Requirements



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## One Size Does Not Fit All: A Typology of Places



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## A Typology for TOD: Density and Service Levels



TOD Type	Land Use Mix	Minimum Housing Density	Regional Connectivity	Frequencies
Urban Downtown	Office Center	>60 units/acre	High	<10 minutes
Urban Neighborhood	Urban Entertainment Multifamily Housing Retail	>20 units per acre	Hub of Radial System	10 minutes peak 20 minutes offpeak
Suburban Center	Class B Commercial	>50 units/acre	Access to Downtown Subregional Circulation	10 minutes peak 15-18 offpeak
Suburban Neighborhood	Primary Office Center Urban Entertainment Multifamily Housing Retail	>12 units/acre	High Access to Downtown Subregional Hub	20 minutes peak 30 minutes offpeak
Neighborhood Transit Zone	Residential Neighborhood Retail	>7 units/acre	Medium Access to Suburban Centers and Access to Downtown	25-30 minutes Demand Responsive

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## TOD is a District, Not a Site



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## Why A District Approach

- Creates Greater Critical Mass
- Allows Different Sites to Provide Different Functions
- Responds More Effectively to the Market
- District Connectivity Can Reduce Auto Dependency and Expands Transit Ridership

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## Techniques and Incentives for Implementing TOD Districts

### Regulatory

#### Techniques:

- Station Area Plans
- Framework Plans
- Relaxed parking stnds.
- Parking Management Tools
- Form-based zoning codes

### Incentives:

- Relaxed on-site parking standards
- Park Once Programs
- Density bonuses (for affordable housing)
- Public funding for place-making amenities
- Land Assembly (public + private)
- Creative Placement of Computer Parking

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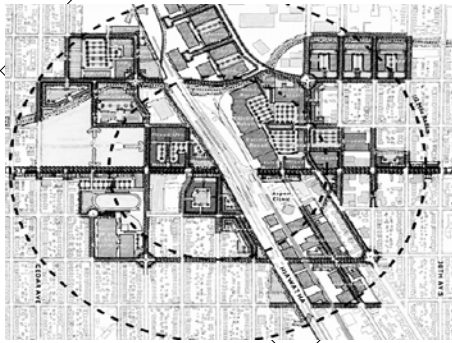
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### Typical TOD Plan



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### How Do You Get From A to Z?

A

Z



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### Start with Opportunities and Work Toward Implementation



HI.L.39a  
Opportunities & Issues

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# Critical Factors in Assessing Opportunity in a Transit District

- Market activity/demand
- Large pieces of land
- Property owner interest
- Critical mass/anchors
- Use mix
- Transit/ Road Network/ Bike-Ped connections
- Political Will
- Capital
- Leadership (public and private)

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# District-Wide Actions

District Action 1: Create District Connectivity/Infrastructure Open Space/ Public Realm Strategy.

District Action 2: Work with Hennepin County to expand streetscape improvements in station area.

District Action 3: Refine Current Zoning to Reflect TOD Overlay.



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# District-Wide Actions

District Action 4: Create More Comprehensive Project Tracking Mechanism.

District Action 5: Formulate District-Wide Financing Strategy.

District Action 6: Investigate Coordinating and Targeting Programs for Small Businesses.



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## Northeast Quadrant

NE Action 1: Develop Minnehaha Mall Area Special District Strategy.

NE Action 2: Address Environmental Concerns.



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## Partnerships are Key to Success

- **Transit Agencies:** TOD-supportive alignments & station sites, strategic parking locations, linkages to surrounding neighborhoods, context-sensitive infrastructure investments.
- **Cities:** comp plans, zoning, design goals, community support, public investment, land assembly tools
- **Developers:** ready to accept the market and its changing dynamics, able to provide housing and retail options
- **Communities:** have a clear vision of what they want.
- **Lenders:** Will they step up to the plate and support the TOD product?
- **Regional Agencies:** Regional vision, implementation strategies that cut across jurisdictional lines, data

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## From Vision to Reality TOD in Arlington Co. Virginia (some final inspiration)

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## Rosslyn-Ballston Transit Corridor, Arlington, VA

- Used Metrorail as catalyst for redevelopment of commercial spine
- Concentrated density and promoted mixed-use at five stations
- Preserved and reinvested in adjacent residential neighborhoods



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## Rosslyn-Ballston: Results

- 73.3% of patrons walk to transit; over 58,000 trips daily; 38% of residents near stations take transit to work. Average County NH income is \$63,000
- 12% of Arlington County households don't own cars; regional average is 4% carless
- The R-B Corridor produces 32.8% of the County's real estate tax revenue from 7.6% of it's land area, allowing Arlington to have the lowest property tax of any major jurisdiction in Northern Virginia



[www.reconnectingamerica.org](http://www.reconnectingamerica.org)

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