Planning and Implementing a TOD that does not Increase Traffic
Presentation Outline

• Planning Background

• Transit Village Area Plan
  • Land Use, Transportation and TDM Planning

• Current and Planned Development

• Access Management

• TDM District
BVCP- Centers and Connections

Three transit anchors envisioned since 2000 Update
FasTracks Plan (2004)
For the US 36 corridor:
• $791 million in investment
• Double track Passenger rail
• Bus Rapid Transit (BRT)
• HOV lanes
• Bikeway
Boulder Transit Village History

• 1996- Commitment to transit anchor in the BVRC

• 2001- Site Selection Study and Council direction to negotiate for Pollard site

• 2004- City and RTD purchased Pollard site
  • RTD received $7.8 M federal grant
Boulder Transit Village History (cont.)

- 2007- Council approves TVAP
- 2010- RTD RFP for design/build project including Criteria for Success
- 2011- Depot Square Concept and Site Plan
  - Site Plan- unanimous approval at PB
- Depot Square Opens 2015
Transit Village Plan

- First plan based on integrated land use, transportation facility and transportation demand management (TDM)
- Fundamental objective - no additional vehicle trips beyond existing allowed development
- Comprehensive TDM program based on parking management and monitoring/reporting
The plan recommends: “to transform this mostly industrial, low density, automobile-oriented area into a more urban, higher density, pedestrian-oriented environment, with a mixture of uses, including new retail and office, and new residential neighborhoods for a diversity of incomes and lifestyles.”
Transit Village Plan

- Transportation Connections modeled on the downtown
  - Establish a fine-grained, multimodal network
  - Create safe and convenient access to transit
  - No more than 400’ grid
  - Mid block bike/pedestrian access every 200’
  - Provide flexibility within properties
Adopted TVAP Connections Plan

- Making it walkable by:
  - Establish a fine-grained network
  - Alleys and mid-block access
  - Central spine as a shared street
TVAP Options Assessment

Key Conclusions

Maximizing Transit & Achieving Alt. Mode Share Depends on:

• Making it Walkable
• Implementing comprehensive TDM & managed parking
• Land use Mix & sufficient density
• Need to phase in with development
Managed Parking

• Foundation for achieving high non-SOV mode shares

• Is an urban design issue and part of creating a pedestrian environment

• Parking provision is a large capital and operational cost, so parking savings can contribute to TDM funding
# Forecast TDM Results

<table>
<thead>
<tr>
<th></th>
<th>Existing Conditions</th>
<th>Buildout - Current Trends</th>
<th>Buildout - Option 1</th>
<th>Buildout - Option 2</th>
<th>Buildout - Option 3</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Person Trips</strong></td>
<td>10,530</td>
<td>22,590</td>
<td>29,460</td>
<td>41,110</td>
<td>46,920</td>
</tr>
<tr>
<td><strong>Percent Alt. mode share</strong></td>
<td>31%</td>
<td>40%</td>
<td>55%</td>
<td>70%</td>
<td>69%</td>
</tr>
<tr>
<td><strong>Net New Car Trips from Today</strong></td>
<td>0</td>
<td>6,300</td>
<td>5,900</td>
<td>4,900</td>
<td>7,100</td>
</tr>
<tr>
<td><strong>Commute VMT</strong></td>
<td>18,000</td>
<td>39,000</td>
<td>23,000</td>
<td>19,000</td>
<td>32,000</td>
</tr>
<tr>
<td><strong>Non-Work VMT</strong></td>
<td>30,000</td>
<td>50,000</td>
<td>61,000</td>
<td>57,000</td>
<td>61,000</td>
</tr>
<tr>
<td><strong>Total VMT</strong></td>
<td>48,000</td>
<td>89,000</td>
<td>84,000</td>
<td>76,000</td>
<td>93,000</td>
</tr>
</tbody>
</table>
Support for Modal Targets

• Strong transit availability and frequency
• Area should perform as good or better than downtown Boulder
• Performance-based measures protect long-term appeal of the area
• ~65% alternative modes for all trips (new transit + TOD + TDM)
• ~50% alternative modes for work trips
Support for Modal Targets

• Strong transit availability and frequency

• **Area should perform as good or better than downtown Boulder**

• Performance-based measures protect long-term appeal of the area

• ~65% alternative modes for all trips (new transit + TOD + TDM)

• ~50% alternative modes for work trips
## Mode Share in Boulder

### Primary Mode of Transportation on Survey Day (2005)

<table>
<thead>
<tr>
<th>How did you get to work today?</th>
<th>All Boulder Valley Employees</th>
<th>Downtown Boulder Employees</th>
<th>CU Faculty/Staff</th>
<th>CU Students</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drove alone</td>
<td>69%</td>
<td>36%</td>
<td>39%</td>
<td>10%</td>
</tr>
<tr>
<td>Drove with at least one other person</td>
<td>8%</td>
<td>9%</td>
<td>10%</td>
<td>2%</td>
</tr>
<tr>
<td>Walked</td>
<td>3%</td>
<td>8%</td>
<td>3%</td>
<td>24%</td>
</tr>
<tr>
<td>Biked</td>
<td>3%</td>
<td>6%</td>
<td>11%</td>
<td>18%</td>
</tr>
<tr>
<td>Rode a bus or buses</td>
<td>9%</td>
<td>34%</td>
<td>25%</td>
<td>26%</td>
</tr>
<tr>
<td>Multi-mode</td>
<td>2%</td>
<td>6%</td>
<td>9%</td>
<td>15%</td>
</tr>
<tr>
<td>Worked at home</td>
<td>4%</td>
<td>0%</td>
<td>1%</td>
<td>2%</td>
</tr>
</tbody>
</table>
TDM Implementation Approach

• Translate “ideal” program into a performance based approach reflecting development realities:
  • Establish core requirements
  • Set parcel level trip budgets
  • Provide framework for owners/developers to easily implement TDM strategies
  • Establish monitoring of program performance
TVAP Key Public Improvements

- Public infrastructure to support FasTracks
- Key Public Improvements for Phase 1:
  - Junction Place & bridge
  - Depot plaza
  - Pocket park
  - Area-wide storm water
  - Traffic signals
  - Multi-use paths
- $11M + investment

Phase 1 Key Public Improvements
Boulder Transit Village: Master and Site Planning 11.2 Acre Site

City Housing Division (7.97 acres)

RTD (3.23 acres)
2009 Plan ....

... 2011
Sustainable Development in Boulder Junction
Principles of Sustainable Development

• Boulder Valley Comprehensive Plan Goals & Policies

• Transit Village Area Plan Goals & Policies
  - Provision of Permanently Affordable Housing
  - Walkability

• Recent Building Code Updates
  - 2013 Commercial Energy Code Updates
    30% > 2012 IECC/ASHRAE 90.1-2010
  - 2017 Residential Energy Code Updates
  - Path to Net Zero
Environmental Sustainability / Public Realm
Environmental Sustainability

Pearl Parkway Woonerf Design—
Environmental Sustainability

Silva Cells –

- Modular system to support large tree growth
- Maximize Root Volume
- Provide on-site stormwater management through absorption, evapotranspiration, and interception
Environmental Sustainability

Silva Cells Installation – Along Multi-way Blvd.

Frame Unit

Geogrid and Geotextile
Environmental Sustainability

Silva Cells Installation – *Along Multi-way Blvd.*
Environmental Sustainability

Wireless Control System

- Luminaire – Segment Controller
- Traffic Signal Radio Integration
- Web-based Control- Dimming

SINGLE AND DOUBLE LUMINAIRE POLES
Environmental Sustainability

Recycling of Removed Materials

- 5,000 CY of Aggregate Base Coarse Created for Re-Use
- 4,000 CY of Structure Backfill Created for Re-use
- Eliminated Landfill Disposal, New Product, & Hauling
Pedestrian Emphasis in Boulder Junction
Pedestrian Emphasis in Boulder Junction
Recent Projects –
Recent Projects –
The Common I & II
Recent Projects – The Commons I
Recent Projects –
The Commons II
Recent Projects – S’PARK
Recent Projects – S’PARK
# Boulder Junction

## Projects Summary To Date

<table>
<thead>
<tr>
<th>Phase 1- Build Out</th>
<th>Units</th>
<th>Perm Aff.</th>
<th>Residents</th>
<th>Comm’l SF</th>
<th>Employees</th>
</tr>
</thead>
<tbody>
<tr>
<td>Projects to date</td>
<td>988</td>
<td>175</td>
<td>1,847</td>
<td>911,933</td>
<td>2,898</td>
</tr>
<tr>
<td>Anticipated in TVAP</td>
<td>1,400-2,400</td>
<td>300-475</td>
<td>2,800-5,000</td>
<td>---</td>
<td>2,900-4,300</td>
</tr>
<tr>
<td>Percentage of planned</td>
<td>52%</td>
<td>45%</td>
<td>47%</td>
<td>---</td>
<td>80%</td>
</tr>
</tbody>
</table>
Opportunity Site - 30th & Pearl
Lessons Learned from Downtown Boulder

- District Approach
- Parking Management
- Multimodal options
- TDM Programs
- Creating a Place/Destination
Application in Boulder Junction

- Parking Maximums for Commercial properties
- One Parking Space per Residential unit
- Guided by S.U.M.P. Principles
  - Shared
  - Unbundled
  - Managed
  - Paid
Access District

• On-Street Parking Management and Enforcement
• Financing for shared public parking structures
Innovative Technology

- Parkmobile
- Parking Management System at Depot Square
TDM Access District

• Reliable and Scalable Funding
  • PILOT Fees
  • Property Taxes
• Funds TDM Programs
• Administration of Programs
Trip Generation Allowance

• Boulder Junction’s TDM ordinance requires that only 45% of all trips by residents and employees can be completed in an SOV

• Equals no net new traffic despite changes in land use and density
TDM Program Benefits

- For residents and employees
  - RTD Eco Passes
  - Carshare Benefit
  - Bikeshare Benefit
Multimodal Access

• New transit service
• Access to Multimodal Paths
• Pool Bike Program
Communication and Marketing

- TDM Summit
- Welcome Kits
Evaluation of Effectiveness

• Spring 2017
  • Vehicle Trip Generation Analysis

• Fall 2017
  • Boulder Valley Employee Survey
Vehicle Trip Generation Study

- Estimated SOV mode share for all PM Peak Trips = 58%
  - Inbound PM Peak Trips = 53% SOV
  - Outbound PM Peak Trips = 68% SOV
- Will continue to monitor every two years to track progress
Depot Square Project

• Underground bus based transit facility
  • 7 bays, passenger amenities
• 390 space parking garage
  • 100 spaces for GID-Parking
• 71 units of affordable housing
• 140 room boutique hotel and meeting space
• Renovated Depot
• Plaza and public art
Depot Rehabilitation

- Including Depot in development was an option in the RFP
- Projected investment of $1 million
- Landmark Alteration Certificate:
  - Reconstruction of roof, original porte-cochere, and arched openings
Pearl Multiway Boulevard Pilot

Innovative Street Section – Multiway Boulevard

- Shared Street
- Mountable Shorelines
- On Street Parking to Support Commercial Use

West of Junction Place

East of Junction Place
Other Developments

Griffis 3100 Pearl

Boulder Commons
Conclusions: it is possible

- Need to be in it for the long haul
- Public Investment is essential
- Monitoring
- Land Use, Parking and TDM Integration
  - Dedicated funding source
- Strive to meet a variety of goals
Contacts

• Randall Rutsch
  Rutschr@bouldercolorado.gov

• Chris Hagelin
  Hagelinc@bouldercolorado.gov

• Karl Guiler
  Guilerk@bouldercolorado.gov
Influencing Demand

- Provide realistic options.
- Use incentives to allow for rational decision making.
- Educate users about the options.
- Monitor performance.
- Strive for the win-win-win solution!
What is Transportation Demand Management?

• Programs and services designed to reduce single occupant vehicle travel.

• Core elements:
  1. Parking Control
  2. Active Promotion of Transportation Options
  3. Sustainable Program Funding
  4. Performance Monitoring
Why TDM?

- Demonstrated success in reducing SOV travel (up to 30%)
- Complement to new transit services and Transit Oriented Development
- Enhanced options for travelers
- Can save money
  - Could reduce household budgets by over 25%
  - Reduce parking costs by nearly 40%
  - Supports more development options
Case Example #1

> Central Platte Valley

- Centralized parking
- TDM assessment
- Free transit passes
- Active promotion of transportation alternatives
- 52% single occupant vehicle
Case Example #2

> Clayton Lane

- Mixed used development
- Subsidized transit passes
- Active promotion through Transportation Solutions (local TMA)
- Bike station
- Strong pedestrian connections
Case Example #3

> Lloyd District (OR)
  - Mixed use district with light rail
  - Commuter store
  - Guaranteed ride home
  - Interactive map
  - Carshare program
  - Promotional events
  - 41% SOV
Case Example #4

> Roslyn-Ballstron Corridor, VA

- 12% don’t own cars
- Corridor produces 33% of real estate tax revenue from less than 8% of county land area – lowest taxes for any major jurisdiction in Northern Virginia.
- Award winning TDM program
- Performance monitoring
- 42% SOV
Case Example #5

Downtown Boulder, CO

- Nationally recognized Pedestrian Environment
- Mixed use employment and entertainment center with increasing residential
- Comprehensive TDM program including Eco Passes for all employees
- Managed parking and a parking district
- 36% SOV for employees
Benefits to Boulder

- Shift focus from just a park-n-Ride
- Facilitate transition to more urbanized development
- Improve air quality
- Reduce household expenses for residents
- Demonstrate innovation
Existing and Enhanced Strategies

> Eco Pass
> Promotional activities
> Telework
> Car/vanpool matching
> Carshare services
New Strategies

> Comprehensive parking management
> Fully unbundled parking for both residents and employers
> No monthly parking passes for employees – daily charge using debit card technology
> Phased parking caps
> Preferential parking for HOV
New Strategies

> Bike station with transportation concierge
> On-site requirements for bike amenities (if not conveniently located near bike station)
> Bike share
> On-street carshare
New Strategies

- Periodic individualized marketing
- Award point system for alt. mode users
- Location efficient mortgages
- Telework stations
- “Smart Community” network with interactive map/travel tool
Phasing of TDM Programs

- Recognize the transportation needs of early development.
- Create opportunities to adapt to increasing services.
- TDM programs phased-in over a 25 year period. Three thresholds/phases:
  I. Current new development
  II. Completion of commuter rail services
  III. 75% build-out
Parking Phasing

• City creates shared parking district for city and RTD-owned properties.
• All parking is “unbundled” excluding some types of residential units.
• Phase I – Current New Development
  • Parking capped at current code minimums
  • Can build 25% less
  • Can buy into shared parking district
Parking Phasing

• Phase II – Completion of New Rail Services
  • Parking capped at current code minimums
  • Can build 35% less
  • Can buy into shared parking district

• Phase III – 75% Build Out
  • Capped at 25% less than current code minimums
  • Can build 50% less
  • Can buy into shared parking district
  • Excess parking must be eliminated
### Phasing of TDM Programs

<table>
<thead>
<tr>
<th>TDM Program</th>
<th>Percent Trip Reduction due to TDM Programs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking Control</td>
<td>3%</td>
</tr>
<tr>
<td>Transit Pass Subsidy</td>
<td>4%</td>
</tr>
<tr>
<td>Carpool/Vanpool Programs</td>
<td>4%</td>
</tr>
<tr>
<td>Active Promotion</td>
<td>2%</td>
</tr>
<tr>
<td><strong>Total Reductions</strong></td>
<td><strong>13%</strong></td>
</tr>
</tbody>
</table>
TDM Funding

- **Phase I – Current New Development**
  - Public funding for extension of GO Boulder services.
  - Mandatory membership in the Boulder East TMO for employers.
  - Grant funding for development and implementation of bike station, “Smart Community” Network and marketing materials/branding.
TDM Funding

- **Phase II – Completion of Commuter Rail Services**
  - Partial program funding including Common Area Maintenance ($0.50/sf annually) and household ($87.50/HH annually) assessments

- **Phase III – 75% Build Out**
  - Full program funding including CAM ($1.00/sf annually) and HH ($175/HH annually) assessments and parking fees.
Parking Reduction Savings

• One possible scenario:
  • No TDM
    • 100,000 SF commercial development
    • 320 parking spaces (3.2/1,000 SF)
    • $6.4 million to construct ($20,000/space)
    • Monthly costs $42,000 (20 years at 5%)
  • With TDM
    • 150 parking spaces (1.5/1,000 SF)
    • $3 million to construct
    • Monthly cost $19,000
    • $8,350 monthly cost for TDM services and incentives
  • Net monthly savings ~ $14,650
TDM Monitoring

• Create trip generation allowance for each property.
• Allowance based on type and intensity of development.
• Measuring actual trips through:
  – Boulder Valley Employee Survey
  – Triennial peak hour driveway counts
  – Triennial visitor intercept survey
  – Triennial market research
Parking in TVAP

• Elements that go into Parking
  • Provision/Ownership of facilities
  • Management of Parking
  • Parking Regulation
• Other Services and Programs
  • Mobility management
  • Streetscape improvements
  • Safety
Parking in TVAP

- Three Broad Approaches:
  - Upfront Parking District
  - Incremental or “Opt-in” approach
  - Regulatory- by zonal districts
Parking in TVAP

- Parking for Transit Facilities
  - Majority of commuters are inbound
  - Commuters access the BRT along its route
  - Are other park and ride facilities
  - Downtown Station provides no parking
  - Area is envisioned as urban, pedestrian
  - Therefore, will not be a large park and ride, any parking provided needs to support the vision of the area
Transit Village Plan

Development Expectations:
• Housing Units: 1400-2400
• 300 to 475 permanently affordable units
• Population: 2800-5000
• Jobs: 2900-4300
Downtown Mode Shift Success

Drive Alone, 43%

Transit, 23%

Have an EcoPass, 84%
Transit Village Plan

• TDM program implementation
  • New zoning removes parking requirements and establishes parking maximums; requires monitoring and performance
  • Established two improvement districts with permanent funding:
    • Access Management District- all parking is “shared, unbundled, managed and paid” (SUMP principles)
    • TDM District- promotes and supports non auto modes; provides Eco Pass, Boulder B-Cycle
Depot Square

What’s currently getting built as a result of City intervention and RTD collaboration

Parking wrapped with 71 permanently affordable housing, below-grade bus facility, 150-room hotel, a public plaza, and adaptive reuse of a historic depot
Parking instead lined with 71 permanently affordable housing
Placemaking

East of Junction
Place
Innovative Features

1. Innovative Street Section – Multiway Boulevard/Shared Street
2. Permeable Brick Paver System for parking and other areas
3. “Silva Cells” for tree strip by Multi-use Path
4. City-owned, Wireless Controlled, LED Street Lighting System
5. Recycling of Removed Materials
Pearl Multiway Boulevard Pilot

Innovative Street Section – Multiway Boulevard

- Shared Street
- Mountable Shorelines
- On Street Parking to Support Commercial Use
Shared Street
Shared Space philosophy:
Motor vehicles, cyclists, and pedestrians share the same space. Traditional road markings, signs and signals are absent.
Environmental Sustainability

Permeable Brick Paver System
- Water Quality Benefits
- Parking Areas (full depth aggregate base)
Silva Cells –

- Modular system to support large tree growth
- Maximize Root Volume
- Provide on-site stormwater management through absorption, evapotranspiration, and interception

Environmental Sustainability
Environmental Sustainability

Silva Cells Installation – Along Multyway Blvd.
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Wireless Control System

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- Web-based Control-Dimming, etc
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- 5,000 CY of Aggregate Base Coarse Created for Re-Use
- 4,000 CY of Structure Backfill Created for Re-use
- Eliminated Landfill Disposal, New Product, & Hauling!

Concrete Removed from Job Site
Crusher Producing Aggregate Base Coarse
Depot Lease Principles

• Two agreements: rehabilitation and lease
• Lease for 20 years at nominal amount to recover investment
• Sublease at market rates
• PDC will be responsible for all utilities and maintenance
• City is not trying to recover capital costs
Depot Rehabilitation-Development Agreement

- Complete work per approved plans
- Work will follow acceptable standards
- Extend utilities to the depot
- Provide insurance, timelines and response to contingencies
- Allows PDC to improve interior for commercial purposes
Depot Lease Provisions

• **Uses**- Active uses like restaurant
• **Premises**- Use of full depot, patio area, parking access
• **Parking**- Close-in allowed intermittently
• **Maintenance, condominium costs, utilities, taxes and insurance**- PDC covers
• **Sublease and assignability**- with city approval
• **Basement**- city use allowed if not used by tenant
Condominium Ownership

• Depot Square is an integrated, urban type project with shared amenities
• Allows the costs of construction, maintenance and management to be shared
• Retains recognized property ownership rights for each member-RTD and city need
• Lot 2, including the Depot, would become a condominium unit
Condominium Ownership Guiding Principles

- Control and use of Depot preserved
- Parking unbundled and shared
- All code provisions apply
- Maintenance and repair costs for common areas share equitably
- Defined and agreed to maintenance and repair costs, decision-making responsibilities
Plaza Public Use

Depot Square
General Public Plaza Area
Plaza Use Guiding Principles

• Open to public use with appropriate management
• Uses and programming considers needs and impacts on all members
• Activities are intended to enliven the plaza and be inviting to a broad range of users
• Should be a neighborhood-gathering spot
• Will be coordinated with adjacent park
Randall, the next slides are mine and Molly’s
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• Pool Bike Program
Communication and Marketing

• TDM Summit
• Welcome Kits
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  • Vehicle Trip Generation Analysis

• Fall 2017
  • Boulder Valley Employee Survey
Conclusions

• In it for the long haul
• Investment
• Monitoring
• Land Use, Parking and TDM
• Meeting City Transportation and Environmental goals