Parking
Myths, Realities and Opportunities

Paris Rutherford
Catalyst Urban Development
DFW Growth

**3,434,661** people added through 2040
-- 1,296,098 households (2.65 people / hh)
-- 2,332,976 cars (1.8 cars / hh)

Top 9 Urbanized Cities in DFW:
- Dallas 1,241,162
- Fort Worth 792,727
- Arlington 375,600
- Plano 269,776
- Garland 233,564
- Irving 225,427
- Carrollton 125,409
- Richardson 103,297
- Lewisville 101,074

**10.6M people in 2040**
-- US Census, ACS, NCTCOG, Catalyst

If development patterns follow the densities of the past, the resulting horizontal footprint of urbanization will be massive.

If current car/household rates continue, the number of DFW cars will increase by 45%. At surface parking density, this would be equivalent to a parking lot the size of Plano.
General Topics:

1. Significance and Common Notions
2. Density, Format and Requirements
Common Notions

- “Municipalities can lower parking requirements to incentivize the market”
  
  But, the market will provide the amount of parking it feels is necessary to lease/sell the development.

- “Multimodal TOD provides the opportunity to reduce parking provisions”
  
  But, if the developer/lender believe the resulting amount is not enough to service demand, the development will not proceed.

- “Shared parking leads to lower costs and increased return on investment”
  
  But, if conflicts occur between uses this can effect market perception and lower the development’s value.
The Importance of Parking

- Parking is often one of the first underwriting decisions made for a development. This is because it lies at the nexus of multiple competing issues:
  - Site Location and Size
  - Density Thresholds
  - Market Rents
  - Tenant Requirements
  - Construction Costs

- Parking can drive site/building planning and directly affect the success of a development (+ or -)

- Poor parking concepts can impact the go-no-go decision on a development due to cost

- By contrast, creative parking concepts can solve problems and lead to new economic development
The Importance of Parking

- It is a major factor in a project’s density, cost and efficiency of land utilization
- It has critical impact on how mixed-use or urban place is perceived

**Office Development**
A. 240,000 sf
B. 240,000 sf 4 x’s Acreage

**Apartment Development**
C. 450 units
D. 450 units 2 x’s Acreage

Developments within/Adjacent to Legacy Town Center – Plano, TX
## Development and Parking Configuration Comparisons

<table>
<thead>
<tr>
<th>2017 Market Info</th>
<th>Base Program:</th>
<th>252 dwelling units</th>
<th>Parking Requirement:</th>
<th>290 sp</th>
<th>1 space / bedroom</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>850 sf average unit size</td>
<td>11 sp</td>
<td>2 spaces / 1000 sf assembly</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5,500 sf office/amenity</td>
<td>50 sp</td>
<td>5 spaces / 1000 sf retail</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10,000 sf retail</td>
<td>351 sp</td>
<td>total parking required</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>229,700 total net building area</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Project Description:

<table>
<thead>
<tr>
<th>3-4 Story Wood Frame Buildings</th>
<th>5-6 Story Wood Frame Building</th>
<th>8-10 Story Concrete Building</th>
<th>18+ Story Concrete Tower</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surface and In-Line Garage Parking</td>
<td>Concrete &quot;Wrap&quot; Parking Garage</td>
<td>Concrete &quot;Podium&quot; Garage</td>
<td>Concrete Underground Garage</td>
</tr>
<tr>
<td>(visitor parking on street)</td>
<td>(visitor parking on street)</td>
<td>(visitor parking on street)</td>
<td>(visitor parking on street)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Density:</th>
<th>30 du/ac</th>
<th>75 du/ac</th>
<th>112 du/ac</th>
<th>307 du/ac</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project FAR:</td>
<td>0.63</td>
<td>1.92</td>
<td>2.34</td>
<td>6.43</td>
</tr>
<tr>
<td>Project Acreage:</td>
<td>8.4 ac</td>
<td>2.8 ac</td>
<td>2.3 ac</td>
<td>0.82 ac</td>
</tr>
<tr>
<td>Development Cost:</td>
<td>$39,828,710</td>
<td>$44,201,200</td>
<td>$63,152,350</td>
<td>$75,531,230</td>
</tr>
<tr>
<td>(including land)</td>
<td>$158k / door</td>
<td>$175k / door</td>
<td>$250k / door</td>
<td>$299k / door</td>
</tr>
<tr>
<td>Parking Cost:</td>
<td>$1,948,125</td>
<td>$3,619,200</td>
<td>$5,151,500</td>
<td>$9,880,000</td>
</tr>
<tr>
<td>(and % of Total Cost)</td>
<td>$5.5k / space total</td>
<td>$10.3k / space total</td>
<td>$15.7k / space total</td>
<td>$28.1k / space total</td>
</tr>
<tr>
<td>Required Rents:</td>
<td>$1.45 / sf</td>
<td>$1.75 / sf</td>
<td>$2.75 / sf</td>
<td>$3.10 / sf</td>
</tr>
<tr>
<td>Qualifying Incomes:</td>
<td>$44,414</td>
<td>$53,604</td>
<td>$84,234</td>
<td>$94,955</td>
</tr>
</tbody>
</table>

### Density, Format and Market Requirements

- **Subsidized Housing**
- **Affordable Developers**
- **Regional Need**

- Village of Rowlett by Catalyst Urban Development
- 101 Center by Catalyst Urban Development
- Gables McKinney Ave by Gables Residential
- The Jordan by StreetLights Residential
## Density, Format and Market Requirements

### Development and Parking Configuration Comparisons

<table>
<thead>
<tr>
<th>2017 Market Info</th>
<th>Base Program: 252 dwelling units</th>
<th>Parking Requirement: 290 sp</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>850 sf average unit size</td>
<td>290 sp 1 space / bedroom</td>
</tr>
<tr>
<td></td>
<td>5,500 sf office/amenity</td>
<td>11 sp 2 spaces / 1000 sf assembly</td>
</tr>
<tr>
<td></td>
<td>10,000 sf retail</td>
<td>50 sp 5 spaces / 1000 sf retail</td>
</tr>
<tr>
<td></td>
<td></td>
<td>351 sp total parking required</td>
</tr>
<tr>
<td></td>
<td>229,700 total net building area</td>
<td></td>
</tr>
</tbody>
</table>

### Project Description:

- **3-4 Story Wood Frame Buildings**
  - Surface and In-Line Garage Parking (visitor parking on street)
  - **Project Density:** 30 du/ac
  - **Project FAR:** 0.63
  - **Project Acreage:** 8.4 ac
  - **Development Cost:** $39,828,710 (including land)
  - **Parking Cost:** $1,948,125 (visitor parking on street)
  - **Required Rents:** $1.45 / sf
  - **Qualifying Incomes:** $44,414

- **5-6 Story Wood Frame Building**
  - Concrete "Wrap" Parking Garage (visitor parking on street)
  - **Project Density:** 75 du/ac
  - **Project FAR:** 1.92
  - **Project Acreage:** 2.8 ac
  - **Development Cost:** $44,201,200
  - **Parking Cost:** $3,619,200 (visitor parking on street)
  - **Required Rents:** $1.75 / sf
  - **Qualifying Incomes:** $53,604

- **8-10 Story Concrete Building**
  - Concrete "Podium" Garage (visitor parking on street)
  - **Project Density:** 112 du/ac
  - **Project FAR:** 2.34
  - **Project Acreage:** 2.3 ac
  - **Development Cost:** $63,152,350
  - **Parking Cost:** $5,515,500 (visitor parking on street)
  - **Required Rents:** $2.75 / sf
  - **Qualifying Incomes:** $84,234

- **18+ Story Concrete Tower**
  - Concrete Underground Garage (visitor parking on street)
  - **Project Density:** 307 du/ac
  - **Project FAR:** 6.43
  - **Project Acreage:** 0.82 ac
  - **Development Cost:** $75,531,230
  - **Parking Cost:** $9,880,000 (visitor parking on street)
  - **Required Rents:** $3.10 / sf
  - **Qualifying Incomes:** $94,955

### Project Requirements

- **8-10 Story Concrete Building**
  - **Parking Requirement:** 5 spaces / 1000 sf retail

### Market Rate Zone

- **Median HH Income NCTCOG Region:** $68,000
- **36% of ($40k to $100k) incomes**
- **866,000 people through 2040 (35k to 40k units annually)**
- **Demand weighted towards lower 2/3 income groups**
Case Study Topics:

1. Efficiencies through Shared Parking
2. Parking and Economic Development
3. Mixed-Use Parking Management
1. Efficiencies through Shared Parking

1. Efficiencies through Shared Parking

ADDISON CIRCLE
Addison, TX
 +/- 3000 apartments
 250 townhomes
 650,000 sf office
 65,000 sf retail/restaurants
 Special events park

(phase two:)

- 300,000 sf Traditional Office
- 30,000 sf Loft Office
- 62,000 sf Retail, Restaurants, Storage
- 610 du Apartments and Live/Work units
- 110 du Condominium units
Efficiencies through Shared Parking

- **Shared Parking Analysis:**
  - ULI / Barton Aschman, Shared Parking (classic)
  - Institute of Transportation Engineers, Shared Parking Guidelines
  - Institute for Transportation and Development Policy, Shared Parking

<table>
<thead>
<tr>
<th>Category</th>
<th>GFA (sq. ft.)</th>
<th>Spaces per 1000 sq. ft. GFA</th>
<th>Spaces</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retail</td>
<td>10,000</td>
<td>5.00</td>
<td>50</td>
</tr>
<tr>
<td>Restaurant</td>
<td>10,000</td>
<td>10.00</td>
<td>100</td>
</tr>
<tr>
<td>Office</td>
<td>300,000</td>
<td>4.00</td>
<td>1200</td>
</tr>
<tr>
<td>Residential</td>
<td>150</td>
<td>1.00</td>
<td>150</td>
</tr>
</tbody>
</table>

**Results:**
- Total Spaces following Minimum Requirements: 1,500
- Total Spaces if Shared Parking is Permitted: 1,383
- Total Reduction in Spaces using Shared Parking: 117
- (Estimated Reduction in Impervious Cover: 37,333 Sq. Feet)
Project 1:

300,000 sf Office Building
20,000 sf Retail
150 Apartments
1540 parking spaces

Sharing Potential:
117 spaces
10% Sharing
$1.2M Savings

Actual:
(Lender Requirement)
Land & Foundations
+/-$650k + $7M (added bldg.)
Project 2:

30,000 sf Loft Office Building
42,000 sf Retail & Storage
225 Apartments
440 parking spaces

Sharing Potential:
129 spaces
28% Sharing
$1.4M Savings

Actual:
(Lender Requirement)
Land & Foundations
$+/−630k +$17M (added bldg.)
2. Parking as a Tool for Economic Development

101 CENTER / ARLINGTON CITY CENTER:
Downtown Arlington, TX

- 23,000 sf Restaurants and Retail
- 95,000 sf Library and Council Chamber
- 268 du Apartments and Live/Work Units
- 702 sp Shared Garage and Street Spaces
Shared Parking as Strategy Behind P/PP – Suburban Reinvention

Existing surface parking precluded new M/U urban infill

101 Center Comparative Parking Analysis

<table>
<thead>
<tr>
<th>Building Program</th>
<th>Pkg Ratio</th>
<th>Spaces Required</th>
<th>Net Code Required</th>
<th>Spaces Provided</th>
<th>Comparisons</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Non-Resid</td>
<td>Residential</td>
<td>On Street</td>
<td>Actual Parking Spaces Compared to Code</td>
</tr>
<tr>
<td></td>
<td># Units</td>
<td>3, 10, 2/1000</td>
<td>5:1, 1:1.5, 2:2</td>
<td>3:2.5, 4:3</td>
<td>Agreed Reduction</td>
</tr>
<tr>
<td>Retail</td>
<td>9,912</td>
<td>30</td>
<td>30</td>
<td>14</td>
<td>0</td>
</tr>
<tr>
<td>Restaur</td>
<td>8,500</td>
<td>85</td>
<td>85</td>
<td>73</td>
<td>0</td>
</tr>
<tr>
<td>Library</td>
<td>89,000</td>
<td>130</td>
<td>130</td>
<td>130</td>
<td>0</td>
</tr>
<tr>
<td>Chamber</td>
<td>6,000</td>
<td>26</td>
<td>26</td>
<td>26</td>
<td>0</td>
</tr>
<tr>
<td>Club</td>
<td>5,968</td>
<td>12</td>
<td>12</td>
<td>4</td>
<td>0</td>
</tr>
<tr>
<td>Studio</td>
<td>69</td>
<td>69</td>
<td>69</td>
<td>69</td>
<td>0</td>
</tr>
<tr>
<td>Live/Work</td>
<td>26</td>
<td>39</td>
<td>39</td>
<td>39</td>
<td>0</td>
</tr>
<tr>
<td>1 bed</td>
<td>65</td>
<td>98</td>
<td>98</td>
<td>65</td>
<td>-33 1/unit</td>
</tr>
<tr>
<td>2 bed</td>
<td>57</td>
<td>114</td>
<td>114</td>
<td>114</td>
<td>0</td>
</tr>
<tr>
<td>3 bed</td>
<td>41</td>
<td>103</td>
<td>103</td>
<td>103</td>
<td>0</td>
</tr>
<tr>
<td>4 bed</td>
<td>10</td>
<td>30</td>
<td>30</td>
<td>30</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>268</td>
<td>283</td>
<td>452</td>
<td>735</td>
<td>-33</td>
</tr>
</tbody>
</table>

Redevelopment strategy consolidated public parking; Shared garage, private parking and ground leases
Results of this Planning-Induced Partnership

- $100M under construction
- The sense of a “downtown” is now evident
- New retail and restaurant comps for downtown
- New residential comps for downtown
- New utilities and streets in downtown
- New central library and council chamber
- Additional projects have announced
LANCASTER URBAN VILLAGE
South Dallas, TX

- 50,000 sf Job Training
- 193 du Apartments
- 15,000 sf Retail/Office
- 355 sp Parking Garage

Unexpected Circumstance:
* 30+% residents take DART and leave cars in garage
3. Parking Management

VILLAGE OF ROWLETT:
Downtown Rowlett, TX
NCTCOG – CLIDE Award

- 60,000 sf Restaurants and Retail
- 40,000 sf City Hall, Library, Municipal Offices
- Special Events & Veterans Park
- 249 Apartments within Multiple Building Types
### Village of Rowlett Comparative Parking Analysis

<table>
<thead>
<tr>
<th>Building Program</th>
<th># Units</th>
<th>Code Req</th>
<th>Allowable TOD</th>
<th>Reduction (20%)</th>
<th>Net Code Required</th>
<th>Spaces Provided</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>1.5, 1.75, .333</td>
<td></td>
<td></td>
<td></td>
<td>On Street</td>
</tr>
<tr>
<td>Retail</td>
<td>16,752</td>
<td>56</td>
<td>-11</td>
<td>45</td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>Club</td>
<td>5,500</td>
<td>15</td>
<td>-3</td>
<td>12</td>
<td></td>
<td>38</td>
</tr>
<tr>
<td>1 bed</td>
<td>172</td>
<td>258</td>
<td>-52</td>
<td>206</td>
<td></td>
<td>82</td>
</tr>
<tr>
<td>2 beds</td>
<td>77</td>
<td>135</td>
<td>-27</td>
<td>108</td>
<td></td>
<td>208</td>
</tr>
<tr>
<td>Totals</td>
<td>249</td>
<td>464</td>
<td>-93</td>
<td>371</td>
<td></td>
<td>49%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Actual Parking Spaces Provided Compared to Code</th>
<th>Market Required</th>
<th>Delta Between Market and Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>32</td>
<td>87</td>
<td>-10</td>
</tr>
<tr>
<td>11</td>
<td>10</td>
<td>2</td>
</tr>
<tr>
<td>-28</td>
<td>172</td>
<td>6</td>
</tr>
<tr>
<td>48</td>
<td>154</td>
<td>2</td>
</tr>
<tr>
<td>52</td>
<td>423</td>
<td>0</td>
</tr>
</tbody>
</table>

**52 more spaces** than required by code; **0 extra spaces** when parked to market requirements

**Base Code:**
- 1.5 sp / 1 bedroom unit
- 1.75 sp / 2 bedroom unit
- 3 sp / 1000 sf non-residential

**TOD Code Reduction (20%):**
- 1.2 / 1 bedroom unit
- 1.4 sp / 2 bedroom unit
- 2.4 sp / 1000 sf non-res.

**Market:** (14% more than Code)
- 1 sp / bedroom
- 8 sp / 1000 sf restaurant
- 4 sp / 1000 sf retail (3/1000 sf office)
Parking Management: Providing for Retail Patrons

- **180** spaces required by code at full build out
- **235** street spaces provided presently
- **300** spaces required by market at full build out
- **900+** additional spaces nearby (DART, schools, churches, etc), but seen as inconvenient

**District valet system** utilized to:
- Access additional spaces required
- Enhance downtown experience
- Overcome inconveniences
- Allow downtown’s success
Parking Management: Providing for Downtown Residents

- To protect residents from retail patrons avoiding valet, a **resident-only permit** is required for spaces shown in yellow.
- Tenants have permit stickers on vehicles, guests given hanging tag for 24 hr period.
- Violators subject to towing.
- Extension of the City’s current parking enforcement program for downtown retail parking.
Suggestions

- Understand that parking is critically important to the real estate investment community

- Until parking demand is measurably diminished through location or technology, be careful not to under-park a development

- Focus on opportunities for shared parking rather than straight reductions through policy actions

- Look for ways to repair the urban fabric by creating more dense shared parking partnerships and parking management programs

- All the while, promote creativity and don’t rely on the traditional suburban solution to lower density single-use parking