Scenario Planning

- Forecasting
- Land Use
- Economic
- Transportation

Strategies
• Building the Virtual Present
• Capacity Analysis
• Forecast
• Census Trends
• Housing Model
• Build geographic database for Dallas
• Create vacant and developed land inventory using 2002 Land Use
• Allocate current population and employment by TAZ to the developed land
2002 Land Use

Legend
- City Limits
- County Boundary
- Interstate

Road Network
CLASSIFICA
- Primary Highway
- Secondary Highway
- Open Water No Ponds

LandUse2002
LUBasic
- Retail
- Mixed Commercial
- Lodging
- Heavy Industry
- Light Industry
- Warehouse/Distribution
- Office
- Multifamily
- Duplex
- Mixed Residential
- Mobile Homes
- Single Family
- Institutional
- Public Service
- Parking
- Utility
- Transportation
- Vacant
- Parks
- Protected Open Space
- Recreation
Vacant & Developed Land
Current Distribution of Households
Households 2000
Current Distribution of Jobs
• “Build out” using zoning regulations applied to “buildable” land inventory
• Buildable land is
  – vacant
  – unconstrained
  – available
Constraints Analysis

• City of Dallas: Escarpment and Floodplain only
• Suggested additional constraints:
  – Riparian areas--50 ft buffer
  – Slopes above 25%
• Capacity analysis shows results of both approaches
• Parks were counted as constraints for both calculations
Riparian Zones
Open Space
Floodplains
Vacant Land without Planned Developments
Buildable Land: Vacant, Unconstrained, and Available
Vacant Land Inventory

• 20% of Dallas’ land is vacant in the 2002 Land Use
• Less than half of Dallas’ land is developed
• Housing covers less than a third of the landscape
• 16% of land is used for employment
• Planned Developments cover 38,797 acres or 16%
Vacant & Developed Land (Zoom)
## Capacity Analysis Worksheet

### MF with storied Parking

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<tr>
<th>Zone</th>
<th>District Type</th>
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<th>Land Use Floor Pk</th>
<th>Residential Parking avg (per avg DL)</th>
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**Notes:**
- For powerpoint: Zone Assumptions, Zone Assumptions, Max Assumptions
Capacity Inputs
Parking - Employment Zones

- Residential Parking (per DU)
- Retail Parking (1,000 s.f.)
- Office Parking (1,000 s.f.)
- Industrial Parking (1,000 s.f.)

Graph showing parking capacity inputs for different employment zones.
Capacity Inputs
Parking – Residential Zones

- Residential Parking (per DU)
- Retail Parking (1,000 s.f.)
- Office Parking (1,000 s.f.)
- Industrial Parking (1,000 s.f.)
### Capacity Input

**Square Feet per Dwelling Unit**

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Capacity Results

Employment Totals

- Total Employees (Constrains: Escarpment + Floodplain)
- Total Employees (Constrains: +Riparian+Slopes above 25%)
Capacity Results

Residential Totals

- Total Dwelling Units
  (Constrains: Escarpment + Floodplain)

- Total Dwelling Units
  (Constrains: +Riparian + Slopes above 25%)
Capacity Analysis Results

FAR - Employment Zones

Maximum FAR

Real FAR

- Employment Zones

- Capacity Analysis Results

- FAR
Capacity Analysis Results

• Real buildable FAR is much lower than maximum FAR allowed in zoning code
• High parking and open space requirements diminish real buildable FAR
Base Zoning Types

• **Mixed Use**: Central Area (CA), Mixed Use (MU)
• **Commercial**: Multiple Commercial (MC), Regional Retail (RR), Community Retail (CR), Commercial Service (CS), Neighborhood Service (NS)
• **Office**: General Office (GO), Mid-range Office (MO), Limited Office (LO), Neighborhood Office (NO)
• **Industrial**: Industrial Research (IR), Industrial Manufacturing (IM), Light Industrial (LI)
• **Residential**: Multifamily (MF), Clustered Housing (CH), Duplex(D), Mobile Home (MH), Townhouse (TH), Single Family (R), Agricultural (A)
• **Others**: Parking (P), Open Space (O), Planned Development(PD), Conservation Districts (CD)
Capacity Analysis

Acres (numbers given for FCA Constraints)

- Mixed Use: 424 Acres (FCA)
- Commercial: 2,736 Acres (FCA)
- Office: 321 Acres (FCA)
- Industrial: 6,235 Acres (FCA)
- Residential: 15,382 Acres (FCA)
- Total: 25,098 Acres (FCA)

Acres (City)
Capacity Analysis

Dwelling Units (numbers are FCA Constraints)

- Dwelling Units (FCA)
- Dwelling Units (City)

Dwelling Units (FCA):
- Mixed Use: 9,820
- Commercial: 84,615
- Office: 94,435
- Industrial: 20,000
- Residential: 40,000
- Total: 94,435

Dwelling Units (City):
- Mixed Use: 9,820
- Commercial: 84,615
- Office: 94,435
- Industrial: 20,000
- Residential: 40,000
- Total: 94,435
Capacity Analysis
Jobs (numbers given are FCA Constraints)

- Employment (FCA)
- Employment (City)

- Mixed Use: 22,417
- Commercial: 67,617
- Office: 13,788
- Industrial: 188,017
- Residential: 291,838
- Total: 291,838

Legend:
- Employment (FCA)
- Employment (City)
Capacity based on Zoning
Dwelling Units per Acre
Capacity based on Zoning
Employment per Acre
What is the Forecast?
TAZ Forecast
Households: City of Dallas

557,638


Population: 471,443, 486,743, 498,931, 511,194, 522,157, 545,251, 557,638
Forecast
City of Dallas vs. Dallas County

[Bar chart showing population growth from 2000 to 2030 for HH and Emp, comparing City of Dallas and Dallas County.]
Forecast
Households 2030
Capacity on Vacant Land
Households
Capacity on Vacant Land

Employment
• Redevelopment will be necessary downtown
• Capacity is high on the fringe
TAZ Forecast and Capacity
Households/Dwelling Units

(numbers given for Capacity are FCA Constraints)

2030 (TAZ) | FCA Capacity (no PUD)
---|---
557,638 | 565,878
TAZ Forecast and Capacity Employment

(numbers given for Capacity are FCA Constraints)

- 2030 (TAZ): 1,389,298
- FCA Capacity (no PUD): 1,329,765
City of Dallas Population

Growth Trends
City of Dallas Land Area

Growth Trends
City of Dallas Density

Growth Trends
City of Dallas
Population & Housing Units

Growth Trends
Texas Population & Housing Units

Growth Trends
**United States Population & Housing Units**

**Growth Trends**
Historical Growth Trends

- Use of land has slowed, despite continued increase in population
- Population growth in Dallas and in Texas is stronger than in rest of U.S.
Census Trends
1990 Ethnicity

- White: 48%
- African American: 30%
- Asian: 20%
- Hispanic: 2%

Source: Census Bureau
Census Trends
2000 Ethnicity

- White: 35%
- African American: 26%
- Asian: 26%
- Hispanic: 3%

Source: Census Bureau
Percent White only 1990

Source: Census Bureau
Percent White only 2000

Source: Census Bureau
Source: Census Bureau
% African American 2000

Source: Census Bureau
2000 Census Trends
Percent African American

Source: Census Bureau
% Hispanic 1990

Source: Census Bureau
% Hispanic 2000

Source: Census Bureau
2000 Census Trends
Percent Hispanic

- Dallas: 35.60%
- Texas: 32%
- USA: 12.50%

Source: Census Bureau
Census Trends

Percentage Foreign Born

Source: Census Bureau
% Foreign Born 2000

Source: Census Bureau
2000 Census Trends
Percent Foreign Born

Source: Census Bureau
Census Trends
1990 Age

- 27% age 65 and over
- 63% age 19 to 64
- 10% age 18 or less

Source: Census Bureau
Census Trends
2000 Age

- 63% age 19 to 64
- 28% age 65 and over
- 9% age 18 or less

Source: Census Bureau
2000 Census Trends
Age Under 5

Source: Census Bureau
2000 Census Trends
Age 65 +

Source: Census Bureau
Census Trends

Map showing the distribution of the percentage of the population aged 25 and over with a bachelor degree in different areas. The legend indicates:
- 0% - 10%
- 11% - 20%
- 21% - 25%
- 26% - 35%
- 36% - 55%

Census Trends
2000 Census Trends
% Bachelor Degree

- Dallas: 27.70%
- Texas: 23.20%
- USA: 24.40%

Source: Census Bureau
Median Household Income ($)

1990

Source: Census Bureau, 1999 $
Median Household Income ($)
2000

Source: Census Bureau, 1999 $
Income Distribution 2000

Source: Census Bureau
2000 Census Trends
Median Household Income ($)

Dallas: $37,628
Texas: $39,927
USA: $41,994

Source: Census Bureau, 1999 $
Census Trends

1990
Unemployed/Pop 16+
- 0% - 3%
- 4% - 5%
- 6% - 10%
- 11% - 20%
- 21% - 38%

Census Trends
Census Trends
Source: Census Bureau
Poverty Rate 2000

Source: Census Bureau
2000 Census Trends
Poverty Rate

Dallas: 17.80%
Texas: 15.40%
USA: 12.40%

Source: Census Bureau
Census Trends
Commute 1990

- 91% car
- 7% transit
- 2% bicycle
- 0% walk

Source: Census Bureau
Census Trends
Commute 2000

Source: Census Bureau
Percent Commute by Car 1990

Source: Census Bureau
Percent Commute by Car 2000

Source: Census Bureau
Source: Census Bureau
Percent Commute by Transit
2000

Source: Census Bureau
Source: Census Bureau
Percent Commute by Walking
2000

Source: Census Bureau
Average Time to Work (min.)
1990

Source: Census Bureau
Average Time to Work (min.)
2000

Source: Census Bureau
Median Home Value

Source: Census Bureau
Median Home Value
1999 $

Source: Census Bureau, 1999 $
Median Home Value 1990

Source: Census Bureau, 1999 $
Median Home Value 2000

Source: Census Bureau, 1999 $
2000 Census Trends
Median Home Value ($)

Dallas: $89,800
Texas: $82,500
USA: $119,600

Source: Census Bureau, 1999 $
Change in Total Rental Units in Selected Metropolitan areas 1970-2000

Source: Census Bureau
Change in Total Rental Units in Selected Metropolitan Areas, 1990 - 2000

Source: Census Bureau
2000 Census Trends
% Renter Households

Source: Census Bureau
2000 Census Trends
% Owner-occupied Households

Dallas: 43.20%
Texas: 63.80%
USA: 66.20%

Source: Census Bureau
Median Monthly Housing Payment

<table>
<thead>
<tr>
<th>Year</th>
<th>Median Monthly Rent</th>
<th>Median Monthly Mortgage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>541</td>
<td>980</td>
</tr>
<tr>
<td>2000</td>
<td>623</td>
<td>1,054</td>
</tr>
</tbody>
</table>

Source: Census Bureau, 1999 $
Census Trends

1990 Median Monthly Mortgage

- 0 - 300
- 301 - 500
- 501 - 1000
- 1001 - 1500
- 1501 - 4500
Households paying over 30% of Income on Housing

- **1990**
  - Renter-occupied: 33.7%
  - Owner-occupied: 13.6%

- **2000**
  - Renter-occupied: 34.7%
  - Owner-occupied: 22.4%

Source: Census Bureau
Renters Overpaying 1990

Source: Census Bureau
Renters Overpaying 2000

Source: Census Bureau
Owners Overpaying 1990

Source: Census Bureau
Owners Overpaying 2000

Source: Census Bureau
People per Household 1990

Source: Census Bureau
People per Household 2000

Source: Census Bureau
Rooms per Person 1990

Source: Census Bureau
Source: Census Bureau
The US Census defines overcrowding as more than one person per room per unit and severe overcrowding as more than 1.5 persons per room per unit.

Source: Census Bureau
Vacancy Rate 1990

Source: Census Bureau
Vacancy Rate 2000

Source: Census Bureau
2000 Census Trends
Vacancy Rate

Source: Census Bureau
Housing by Type 1990

- SFR: 46%
- Attached: 6%
- Small Apts 3-19: 21%
- Large Apts 20+: 27%

Source: Census Bureau
Housing by Type 2000

- **SFR**: 46%
- **Attached**: 24%
- **Small Apts 3-19**: 25%
- **Large Apts 20+**: 6%

*Source: Census Bureau*
Housing Tenure 1990

- Owner occupied: 44%
- Renter occupied: 56%

Source: Census Bureau
Housing Tenure 2000

Source: Census Bureau
Census Trends
Census Trends

- More ethnically diverse
- High percentage of foreign born
- Younger population
- High percentage of people with bachelor degrees
- Low average household size
- Low vacancy housing rates in 2000
- Geographic isolation among ethnic groups
Census Trends

- Higher poverty rates than state
- Lower incomes than state or country
- More dependency on car for commutes
- Longer commutes
- Lower homeownership rates than state
- Overcrowding in central city area
• Overcrowding increased in the 1990s
• A majority of households are renters
• Type of housing remained unchanged in 1990s
• 46 percent of households live in single detached family housing
• Homeownership rate increased somewhat in the 1990s, from 56 to 57 percent
• More rental units were built in the 1990s than owner-occupied units
Housing Model

• Distribute increment households proportionally to 2000 income distribution

• Estimate monthly rent based on income
  – Housing payments of no more than 30% of income (HUD threshold)

• Adjust for present overcrowding and to obtain “optimal” vacancy rates
  – 2 percent for owner-occupied units
  – 6 percent for renter-occupied units
Housing Cost Distribution 2000

Maximum housing cost amount for income range
Housing Cost Distribution 2030

Maximum housing cost amount for income range

- **2000**
- **2030 Increment**
Estimated Adjustments 2000: Extra needed units to fix overcrowding and ensure optimal vacancy rates

- Low estimate: 16,534
- High estimate: 21,182
Estimated Adjustments 2000:
Extra needed units to fix overcrowding and ensure optimal vacancy rates

- Low estimate: 3.7%
- High estimate: 4.7%

% of 2000 Units
Estimated Units 2030: 131,000 units

- 2030 Household Increment: 105,629
- 2000 Overcrowding & Vacancy: 21,182
- 2030 Vacancy: 4,594
Housing Model

- Demand: Estimate type of housing that can be afforded by income groups using a price range for each type
- Supply: Determine trend of housing and likely future development
- Compare affordability of future housing with incomes
- Determine gaps between housing costs and incomes
• Incorporate effect of more diverse population, aging population on housing patterns

• Estimate present and future housing demand and supply based on:
  – Housing cost levels
  – Housing types
  – Possibly tenure?
Housing Model

• Estimate future housing supply by
  – Studying building permit trends
  – Housing inventory
  – Land use trends

• Add to total supply the units needed to adjust for present overcrowding and vacancy

• Estimate the type of housing needed to close the gap and provide housing that matches people’s incomes

• Adjust land use scenarios to reflect balanced housing