

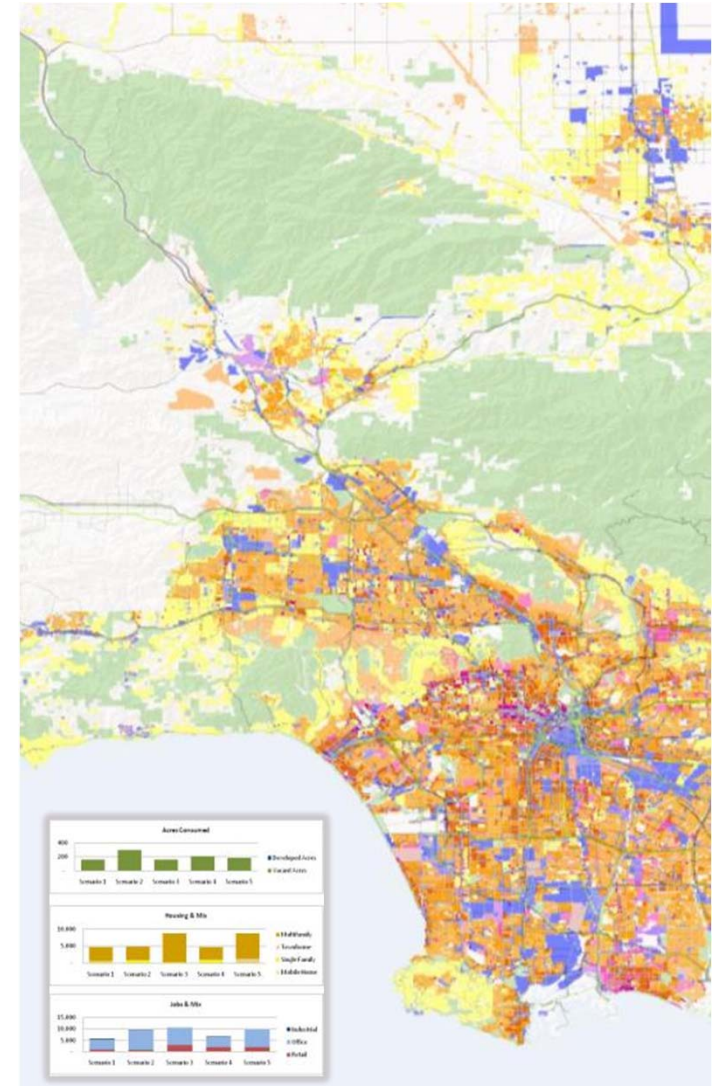
Scenario Planning with Envision Tomorrow

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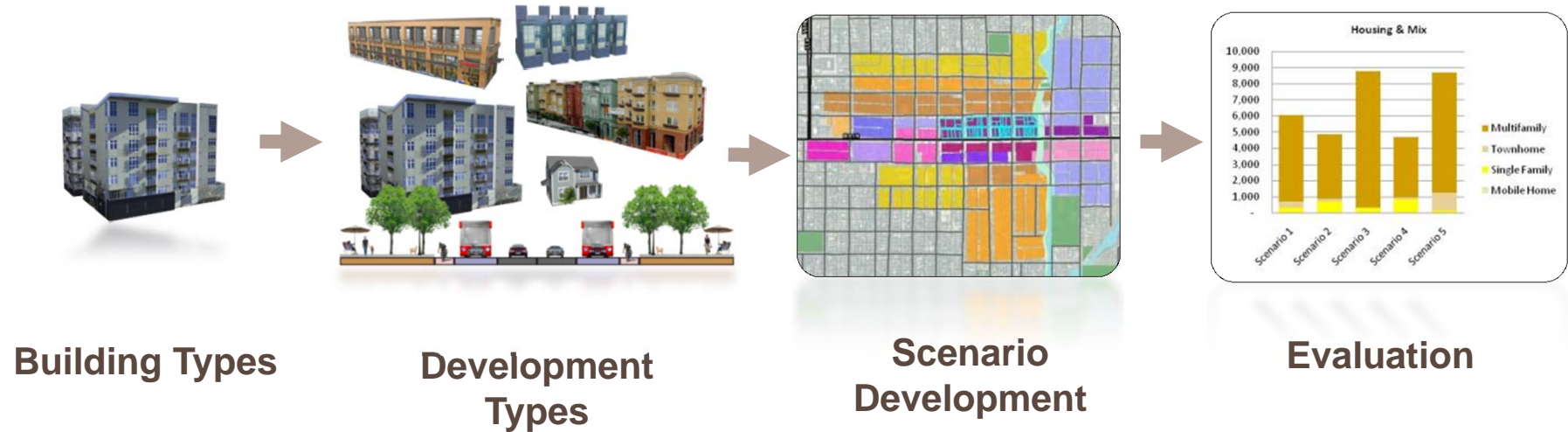
December 21, 2011

What is Envision Tomorrow?

- Suite of planning tools:
 - Prototype Builder
 - Return on Investment (ROI) model
 - Scenario Builder
 - Extension for ArcGIS



Fresno COG Scenario Building Process



1

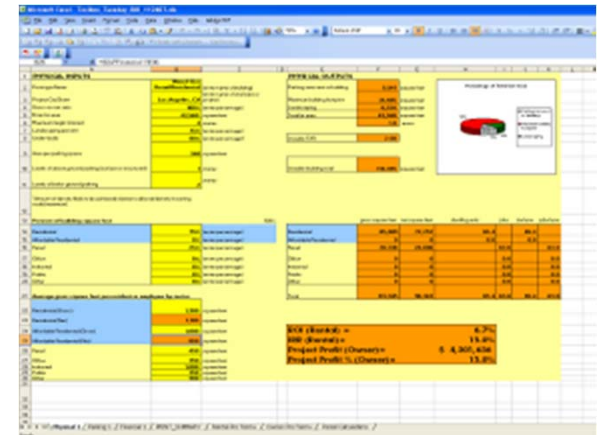
Step 1: Model a library of building types that are financially feasible at the local level.

Create Prototype Buildings

Why start with buildings?

- *Easily modeled & lots of existing data*
 - ▣ Density and Design
 - ▣ Rents and Sales Prices
 - ▣ Costs and Affordability
 - ▣ Energy and Water Use
 - ▣ Fiscal Impacts

Use ROI Model...



...to Create a Range of Buildings

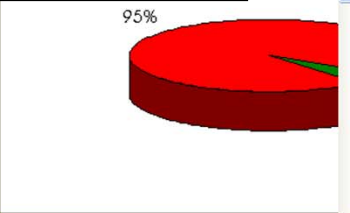


PHYSICAL INPUTS		
1	PHYSICAL INPUTS	
2		
3	Prototype Name	Mixed-Use Residential (enter name of building)
4	Project City/State	Long Beach, CA (enter name of city/state or project)
5	Site area	34,848 square feet
6		0.80 acres
7	Site gross-to-net ratio	100% (enter percentage)
8	Landscaping or open space	5% (enter percentage)
9	Building height (stories)	13 stories
10	Under-build	100% (enter percentage)
11		
12	Parking Configuration	
13	Surface or Structured Parking	0.00 (number of levels)
14	Internal Parking (Tuck Under or Sandwich)	0.00 (number of levels)
15	Underground Parking	3.00 (maximum number of levels to test)
16		2.62 actual underground levels after factoring underbuild
17		
18	Building Uses	
19	Residential	Owner (choose 'RENTER', 'OWNER' or 'NONE')
20	Market-Rate	85% (enter percentage)
21	Affordable	(enter percentage)
22	Retail	15% (enter percentage)
23	Office	(enter percentage)
24	Industrial	(enter percentage)
25	Public	(enter percentage)
26		100%
27	Average residential unit size or gross square footage per employee by sector	

Checks
2.62 levels will maximize site without surface or structured parking

Physical

Building footprint	35,100	square feet
Landscaping or open space	1,742	square feet
Parking area next to building	-	square feet
Unused or flexible space	-	square feet
FAR	12.35	
Useable building total	430,373	square feet



Square Footage by Use	Gross Square Feet	Net Square Feet	Total Dwelling Units	Total
Market-Rate	365,817	292,654	243.9	
Affordable Residential	0	0	0	
Retail	64,556	51,645		
Office	0	0		
Industrial	0	0		
Public	0	0		
Internal Parking	0	0		
Total	430,373	344,298	243.9	

Developer Impact	Project Profit % (Owner)	
	Project Profit \$ (Owner)	\$ 17

Municipal Impact	Estimated Annual Revenues from Prototype	\$
	Estimated Annual Expenditures from Prototype	\$
	Annual Impact of Prototype	\$

Parking Parameters

Microsoft Excel - ROI_Model_FregoEnvisionTomorrow_V2.11.XLT

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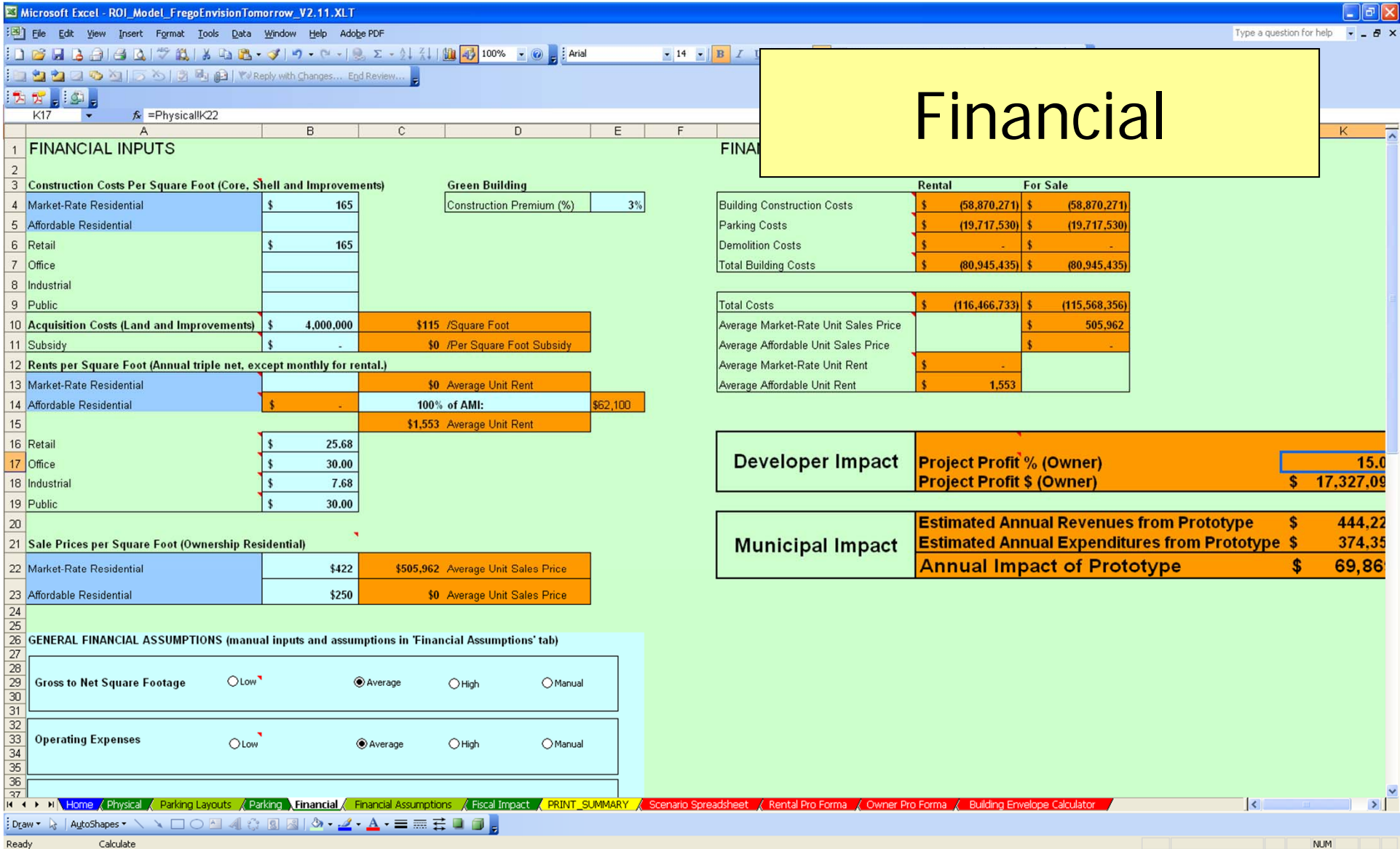
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PARKING INPUTS		PARKING OUTPUTS	
Parking Characteristics <i>Urban Perpendicular configuration</i>			
Area per parking space (select on 'Parking Layouts' tab)	255 sf	Market-Rate Residential	
Mechanical parking?	no	Affordable Residential	0
Parking Costs Per Space		Retail	0
Surface	\$ 3,000	Office	0
Structured (above ground)	\$ 20,000	Industrial	0
Underground	\$ 55,000	Public	0
Internal (Tuck Under or Sandwich)	\$ 20,000	Total	359 91,418
Mechanical	\$ 45,000	Required spaces per 1,000 sf of development	0.83
Parking Spaces Per Dwelling Unit or 1,000 sf of Commercial		Allocation of Spaces by Type	
Market-Rate Residential	1.47 space(s)/dwelling unit	Surface	0
Affordable Residential	0.00 space(s)/dwelling unit	Structured (above ground)	0
Retail	0.00 space(s)/1000 sf	Underground	359
Office	0.00 space(s)/1000 sf	Internal (Tuck Under or Sandwich)	0
Industrial	0.00 space(s)/1000 sf	Total	359
Public	0.00 space(s)/1000 sf		
Developer Impact		Project Profit % (Owner) 15.0%	
		Project Profit \$ (Owner) \$ 17,327,098	
Municipal Impact		Estimated Annual Revenues from Prototype \$ 444,220	
		Estimated Annual Expenditures from Prototype \$ 374,351	
		Annual Impact of Prototype \$ 69,869	

Home Physical Parking Layouts Parking Financial Financial Assumptions Fiscal Impact PRINT_SUMMARY Scenario Spreadsheet Rental Pro Forma Owner Pro Forma Building Envelope Calculator

Draw AutoShapes

Ready Calculate NUM



Financial

FINANCIAL INPUTS			
Construction Costs Per Square Foot (Core, Shell and Improvements)			
Market-Rate Residential	\$ 165	Green Building	
Affordable Residential		Construction Premium (%)	3%
Retail	\$ 165		
Office			
Industrial			
Public			
Acquisition Costs (Land and Improvements)			
Market-Rate Residential	\$ 4,000,000	\$115 /Square Foot	
Affordable Residential	\$ -	\$0 /Per Square Foot Subsidy	
Rents per Square Foot (Annual triple net, except monthly for rental.)			
Market-Rate Residential		\$0 Average Unit Rent	
Affordable Residential	\$ -	100% of AMI:	\$62,100
		\$1,553 Average Unit Rent	
Retail	\$ 25.68		
Office	\$ 30.00		
Industrial	\$ 7.68		
Public	\$ 30.00		
Sale Prices per Square Foot (Ownership Residential)			
Market-Rate Residential	\$422	\$505,962 Average Unit Sales Price	
Affordable Residential	\$250	\$0 Average Unit Sales Price	

	Rental	For Sale
Building Construction Costs	\$ (58,870,271)	\$ (58,870,271)
Parking Costs	\$ (19,717,530)	\$ (19,717,530)
Demolition Costs	\$ -	\$ -
Total Building Costs	\$ (80,945,435)	\$ (80,945,435)
Total Costs	\$ (116,466,733)	\$ (115,568,356)
Average Market-Rate Unit Sales Price		\$ 505,962
Average Affordable Unit Sales Price		\$ -
Average Market-Rate Unit Rent	\$ -	
Average Affordable Unit Rent	\$ 1,553	

Developer Impact	Project Profit % (Owner)	15.0
	Project Profit \$ (Owner)	\$ 17,327,09

Municipal Impact	Estimated Annual Revenues from Prototype	\$ 444.22
	Estimated Annual Expenditures from Prototype	\$ 374.35
	Annual Impact of Prototype	\$ 69,86

GENERAL FINANCIAL ASSUMPTIONS (manual inputs and assumptions in 'Financial Assumptions' tab)

Gross to Net Square Footage: Low Average High Manual

Operating Expenses: Low Average High Manual

Market Research: Residential

Fair Market Rents (2012)

Studio	\$638
1 BR	\$702
2 BR	\$829
3 BR	\$1,209

Source: HUD Fair Market Rent, FY 2012

Sample New Construction Rents (2012)

1 BR	\$750
2 BR	\$950
2 BR (townhome)	\$1,350

Source: Listings for H Street and Iron Bird Lofts

New Home Construction

Median Sale Price, Homes	Median Sale Price, Condos
\$118 – 140 / sq ft	\$113 / sq ft

Median Home Sales Price (2011): *\$146,400*

Source: Zillow

Note: Includes both new and existing rents

Market Research: Commercial

Average Lease Rates

Retail	\$15 / sq ft
Office	\$16 / sq ft
Industrial	\$6 / sq ft

Source: Loopnet

Market Research: Construction Costs

Building Type	Fresno, CA
Apartment, 1-3 story	\$107
Apartment, 4-7 story	\$166
Apartment, 20 story	\$152
Office, 1 story	\$120
Medical Office	\$142
Office, 5-10 story	\$120
Restaurant (not fast food)	\$150
Retail store, 1 story	\$85
Senior Housing	\$110
Large Retail	\$85
Small warehouse	\$90
Warehouse	\$58

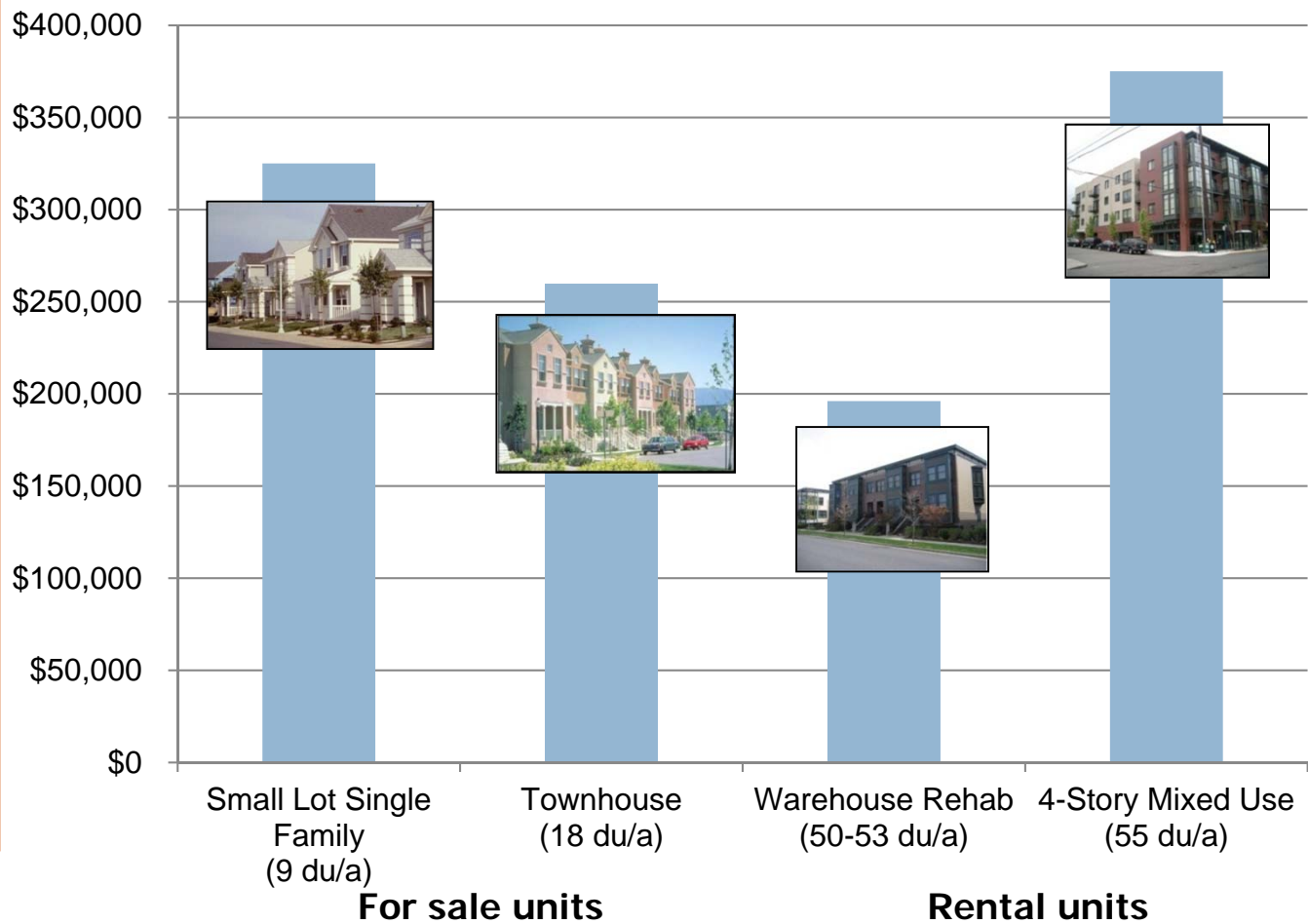
Source: RSMeans CostWorks Square Foot Estimator; 2011

Total Unit Cost of Building Higher Density Housing

Higher density buildings are costly.

Lower parking ratios improve feasibility.

Rehab can be less costly than new construction.



Mixed-Use

- Neighborhood Mixed-Use
- Mixed-Use Residential (3-Story)
- Mixed-Use Residential (5-Story)
- Mixed-Use Residential, Mid-Rise (10-Story)
- Mixed-Use Residential, High-Rise (20-Story)

- Mixed-Use Office, Small Downtown
- Mixed-Use Office (5-Story)
- Mixed-Use Office, Mid-Rise (10-Story)



Residential

- Student Housing
- Senior Housing
- Apartment (5-Story)
- Apartment (3-Story)
- Duplex
- Townhomes
- Small Lot Single Family (4,500 sf lots)
- Traditional Single Family (6,000 sf lots)
- Large Lot Single Family (7,500 sf lots)
- Estate Single Family (1 acre lots)
- Rural Residential (2 acre lots)



Commercial

- Low Rise Office
- Medical Office
- Educational/School
- Large Format Retail
- Low Density Commercial
- Main Street Commercial
- Business Park/Flex Space
- Light Industrial
- Heavy Industrial



1. Load your Prototype buildings	Site and Building Characteristics				Residential	Employment
	Building Name	Lot Size	Height (Stories)	Floor Area Ratio (FAR)	Dwelling Units / Acre	Total Jobs / Acre
Mixed-Use Residential, Mid-Rise	40,000	10	6.39	163.8	43	
Mixed-Use Residential, 5 Story	43,560	5	3.40	106.0	46	
Mixed Use Residential, 3 Story	30,000	3	1.91	36.7	20	
Neighborhood Mixed-Use	10,000	2	0.91	29.5	18	
Mixed-Use Residential High Rise	40,000	20	10.23	256.6	49	
Mixed-Use Office Mid Rise	43,560	10	7.83	0.0	751	
Mixed-Use Office 5 Story	43,560	5	2.78	0.0	242	
Mixed -Use Office Small Downtown	10,000	2	1.00	0.0	78	
Multifamily - Student Housing	15,000	3	1.74	100.9	0	
Multifamily - Senior Housing	15,000	3	1.85	91.8	0	
Multifamily - Medium Density	43,560	5	1.63	70.9	0	
Multifamily- Moderate Density	20,000	3	1.08	40.1	0	
Duplexes	10,000	2	0.62	15.0	0	
Townhomes	10,000	3	0.83	20.2	0	
Single Family Residential Urban	4,500	2	0.52	10.0	0	
Single Family Residential Standard	6,000	2	0.42	7.3	0	
Single Family Residential Large Lot	7,500	2	0.23	3.3	0	
Single Family Estate	43,560	2	0.08	1.1	0	
Rural Residential	87,120	2	0.03	0.5	0	
Low Rise Office	40,000	1	0.39	0.0	45	
Medical Office	40,000	6	1.36	0.0	195	
Educational	40,000	2	1.02	0.0	105	
Low Density Commercial	20,000	1	0.35	0.0	19	
Main Street Commercial	5,000	1	0.95	0.0	52	
Large Format Retail	100,000	1	0.37	0.0	14	
Business Park /Flex	150,000	1	0.32	0.0	15	
Light Industrial	100,000	1	0.32	0.0	15	
Heavy Industrial	250,000	1	0.48	0.0	10	

Preliminary Analysis: Prototypes Vary in Feasibility



Main Street Retail



Townhomes



2- 5-story
mixed-use



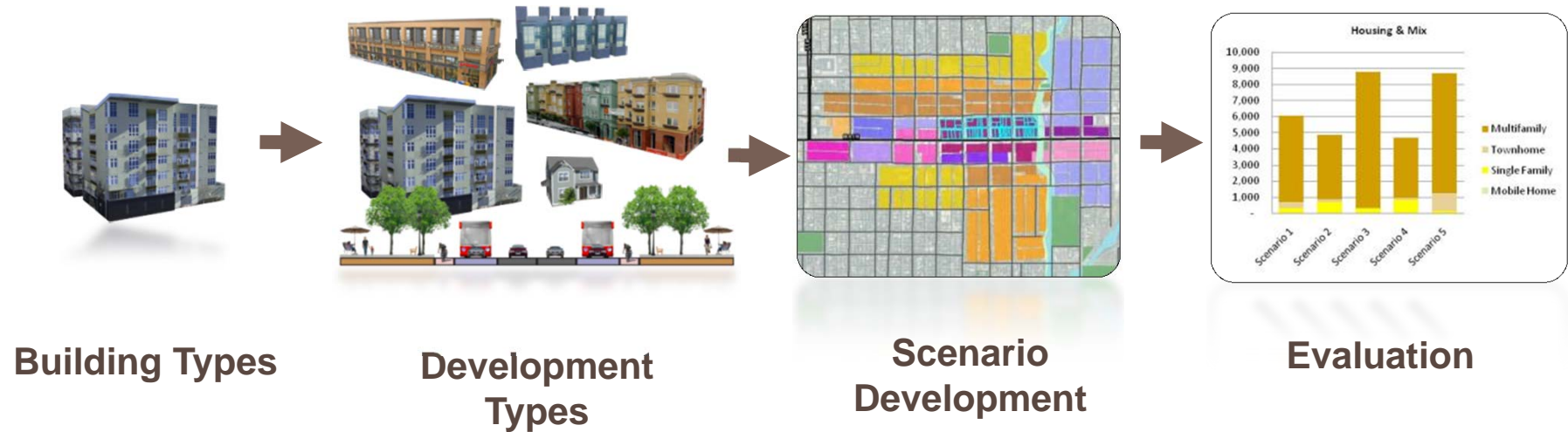
Midrise
mixed-use



Most Feasible

Most Challenging

Fresno COG Scenario Building Process



2

Step 2: Define the buildings, streets and amenities that make up all the “places” in which we live, work and play.

Development Type Mix

A Variety of Buildings, Streets and Amenities Create a “Place”



**Town
Center**



**Medium-Density
Residential**



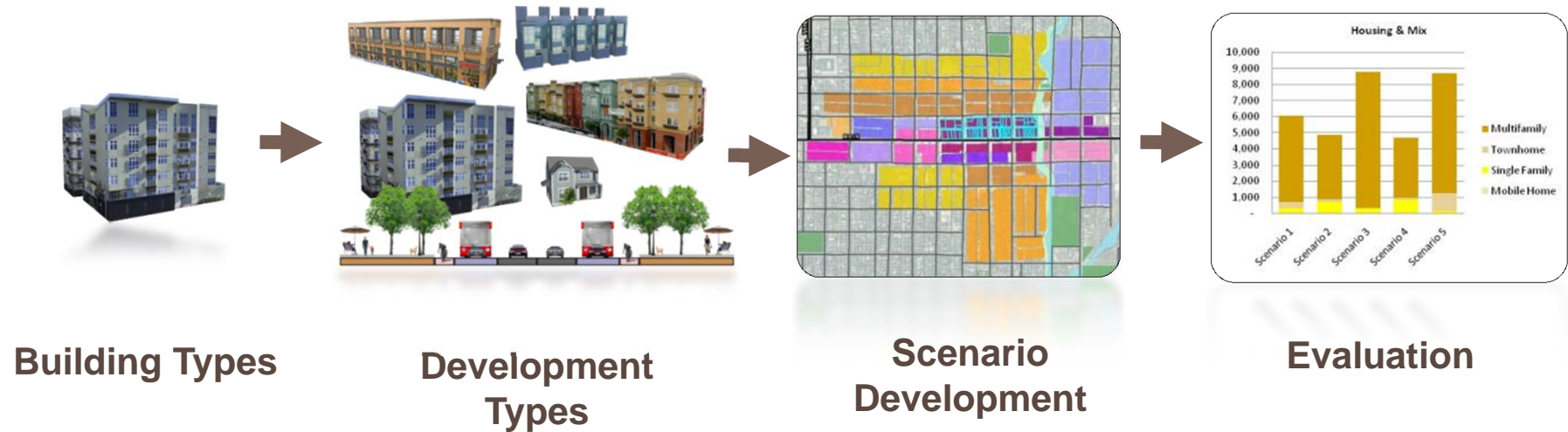
**Single-Family
Residential**

Potential Development Types - *Brainstorm*

- Downtown
- Downtown Residential
- City Center
- Urban Neighborhood
- Town Center
- Town Neighborhood
- Neighborhood Center
- Compact Neighborhood
- Main Street
- Mixed-Use Corridor
- Suburban Residential
- Large Lot Residential
- Rural Residential
- Employment Center
- Activity Center
- Arterial Commercial
- Industrial

Others?

Fresno COG Scenario Building Process



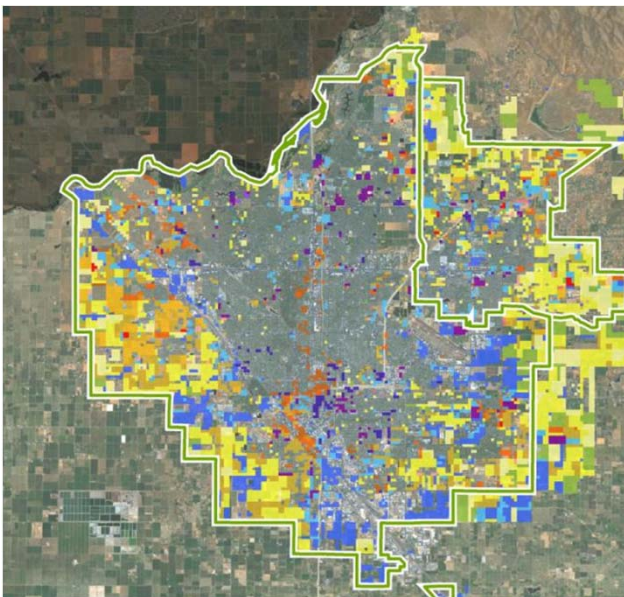
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Step 3: Painter future land use scenarios to test the implications of different decisions or policies.

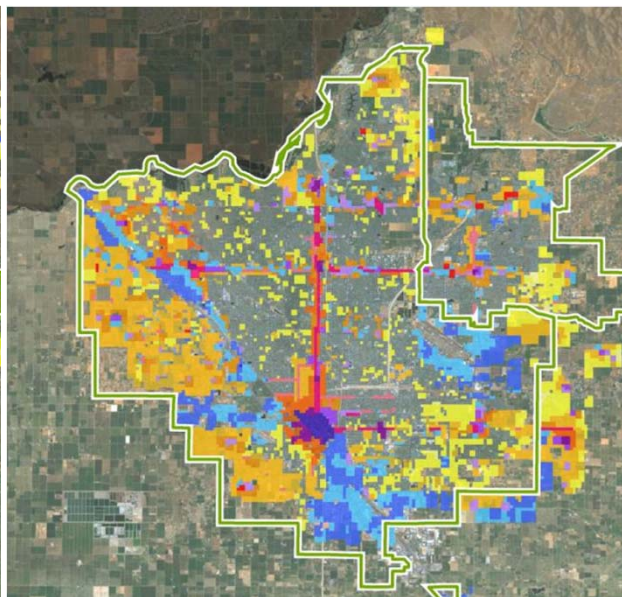
Compare Multiple Scenarios

- Test land use policies
- Experiment with new development patterns

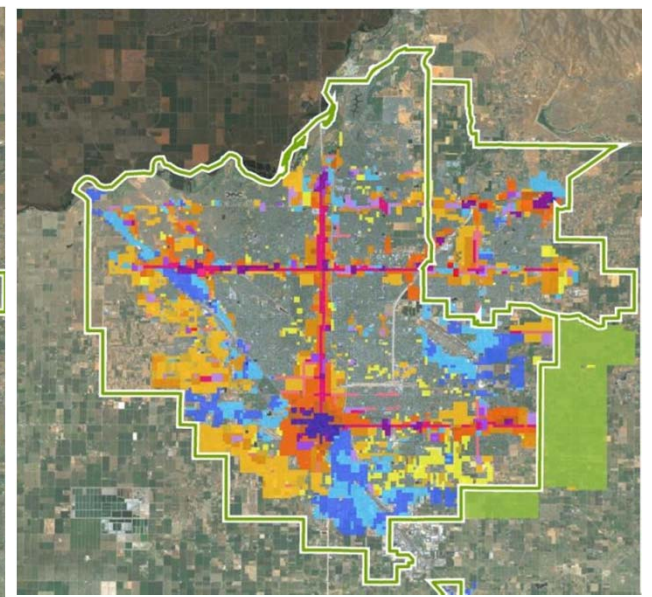
COG Trend/ Forecast



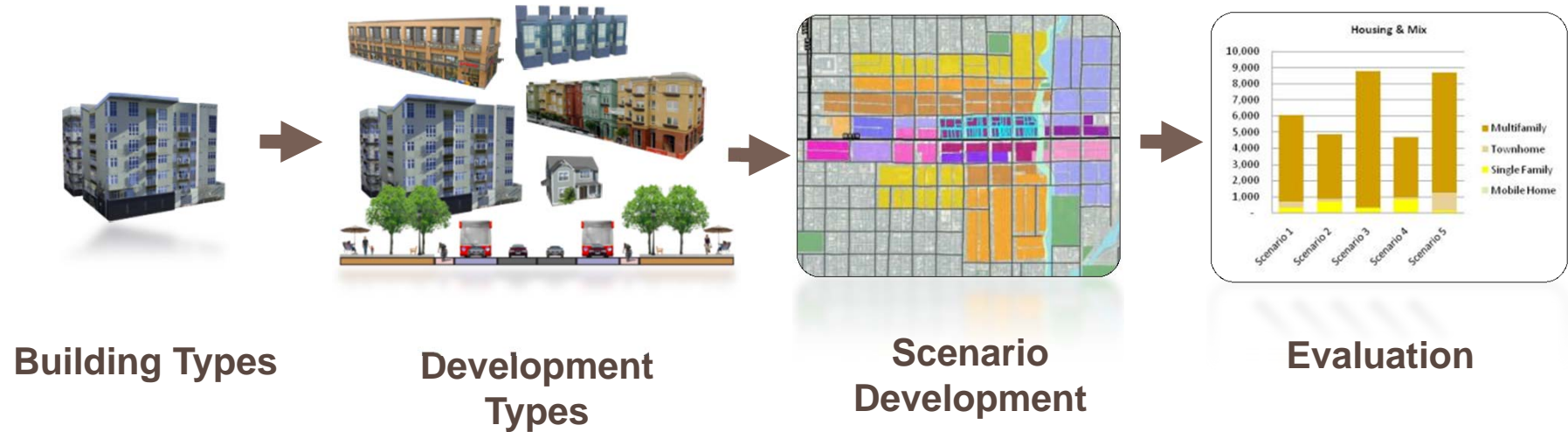
Constrained TOD



**Full Build-Out
(Aggressive Transit)**



Fresno COG Scenario Building Process



4

Step 4: Compare the scenarios and monitor the impact of land use decisions in real-time.

Scenario Indicators:

- ***Anything we can know about a building,
we can know about a scenario...***
 - Housing and Jobs: mix and density
 - Land Consumption: vacant, agricultural, infill
 - Housing Affordability
 - Employment Profile: sq ft, jobs, income
 - Resource Usage: energy and water
 - Waste Production: water, solid, carbon emissions
 - Fiscal Impact: local revenue and infrastructure costs



Next Steps



- Finalize market research (Dec.)
- Finalize building prototype library (Dec.)
- Create development types (Jan.)
- Choose scenario themes (Jan.)
- Begin scenario development (Feb.)