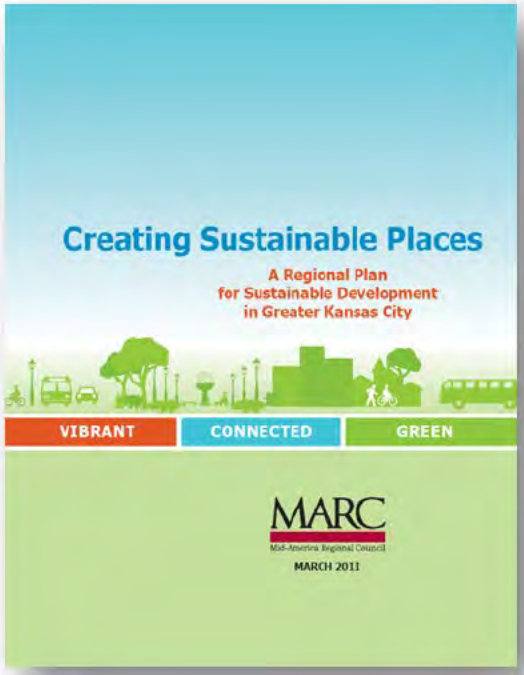
Creating Sustainable Places

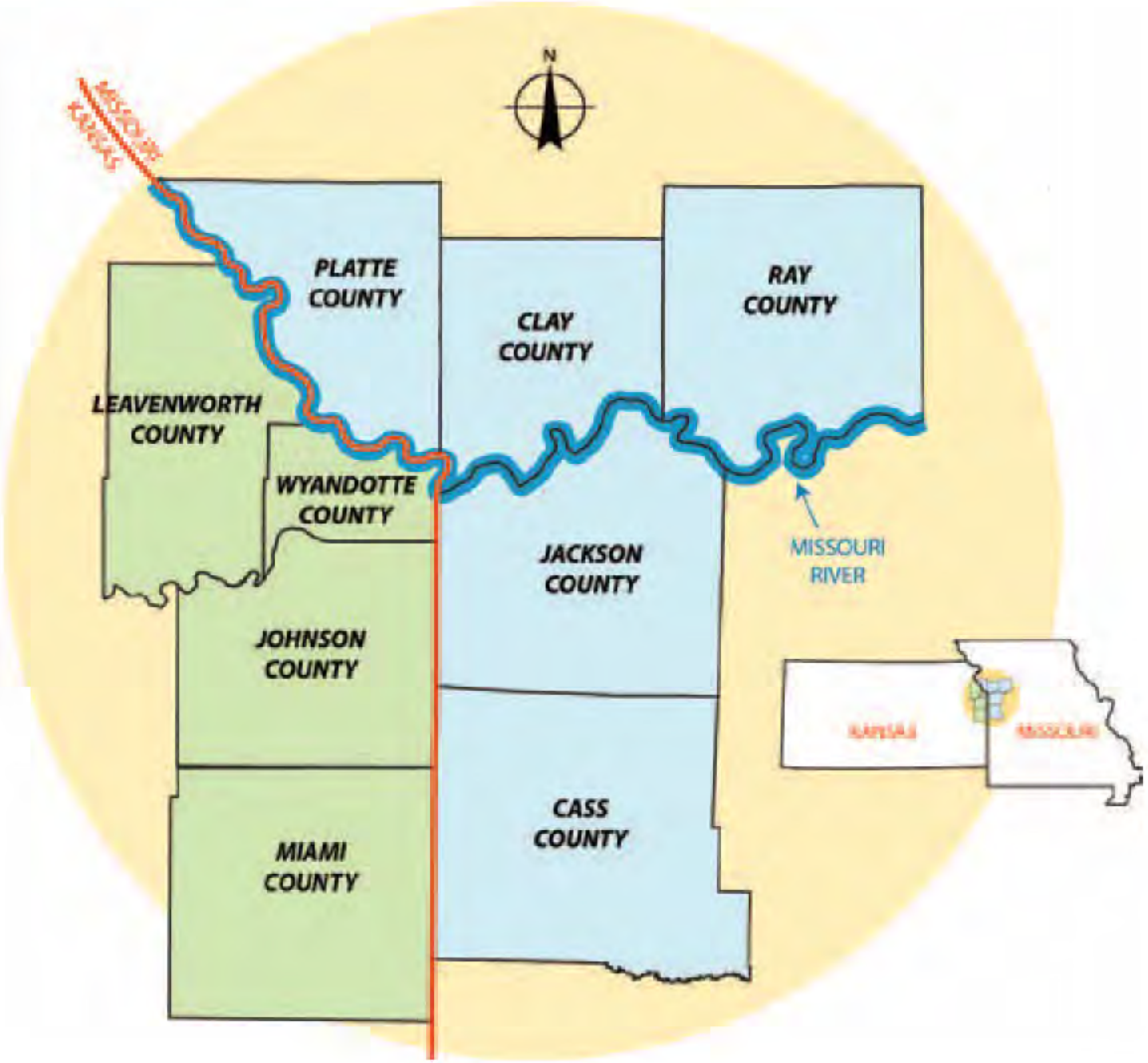
A Centers-and-Corridors Strategy for Regional Sustainability

Regional Opportunities for Sustainable Growth and Redevelopment

December 6, 2013

Regional Plan for Sustainable Development, 2011

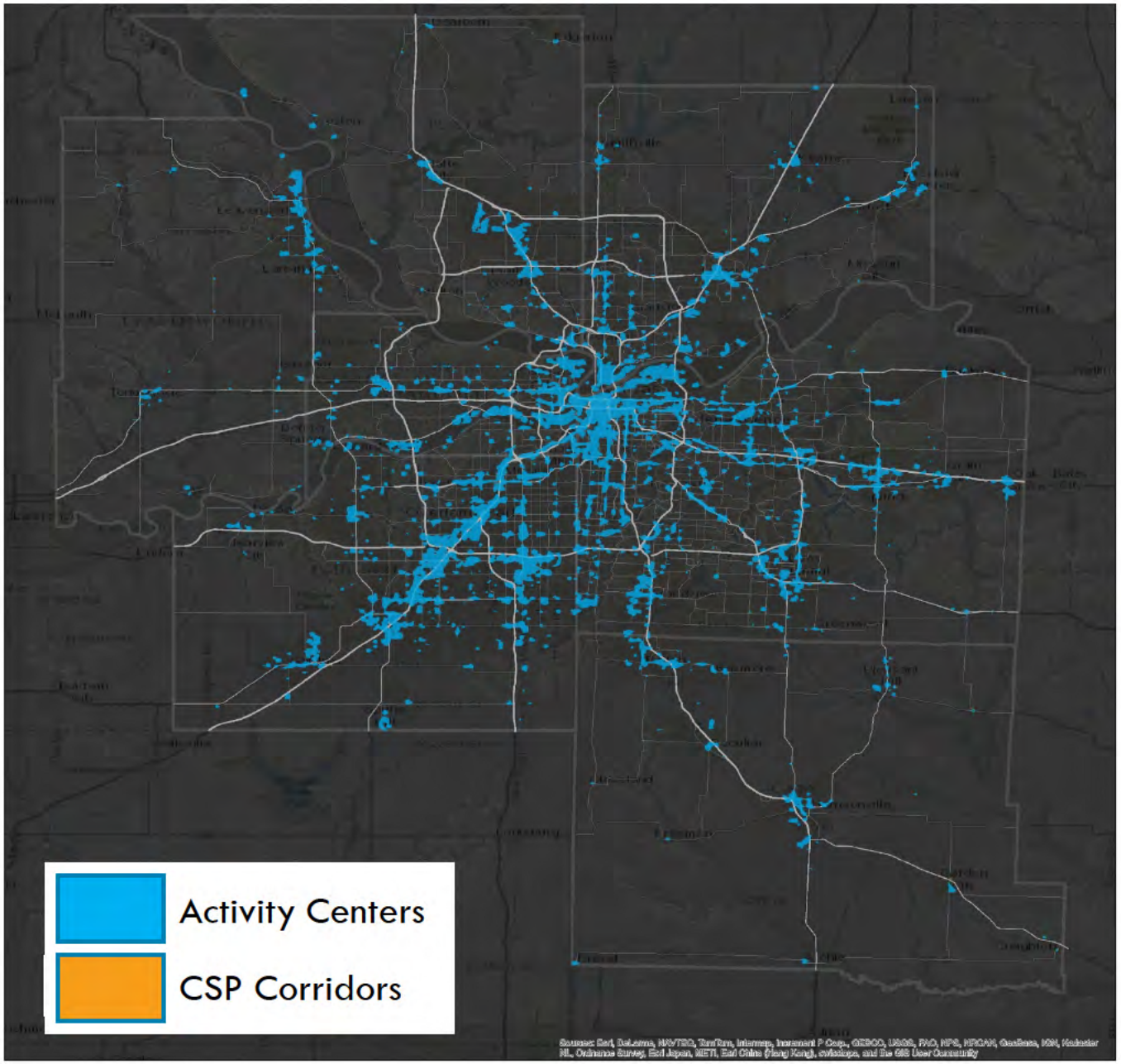




Goal: Focus Development into Activity Centers

- *"At the heart of the plan to achieve the regional vision is a development pattern that emphasizes a network of attractive, vibrant centers connected by transportation corridors that offer residents choices for getting from place to place, including public transit."*

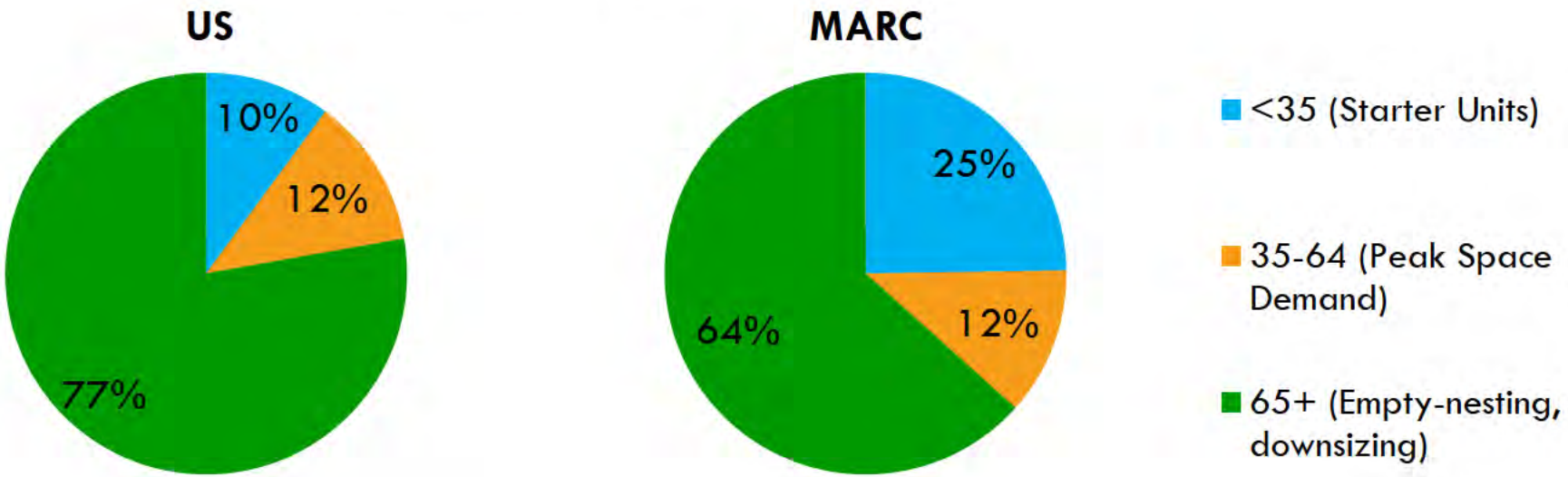
MARC has identified Activity Centers across the region



Future Housing Market Presents Opportunity

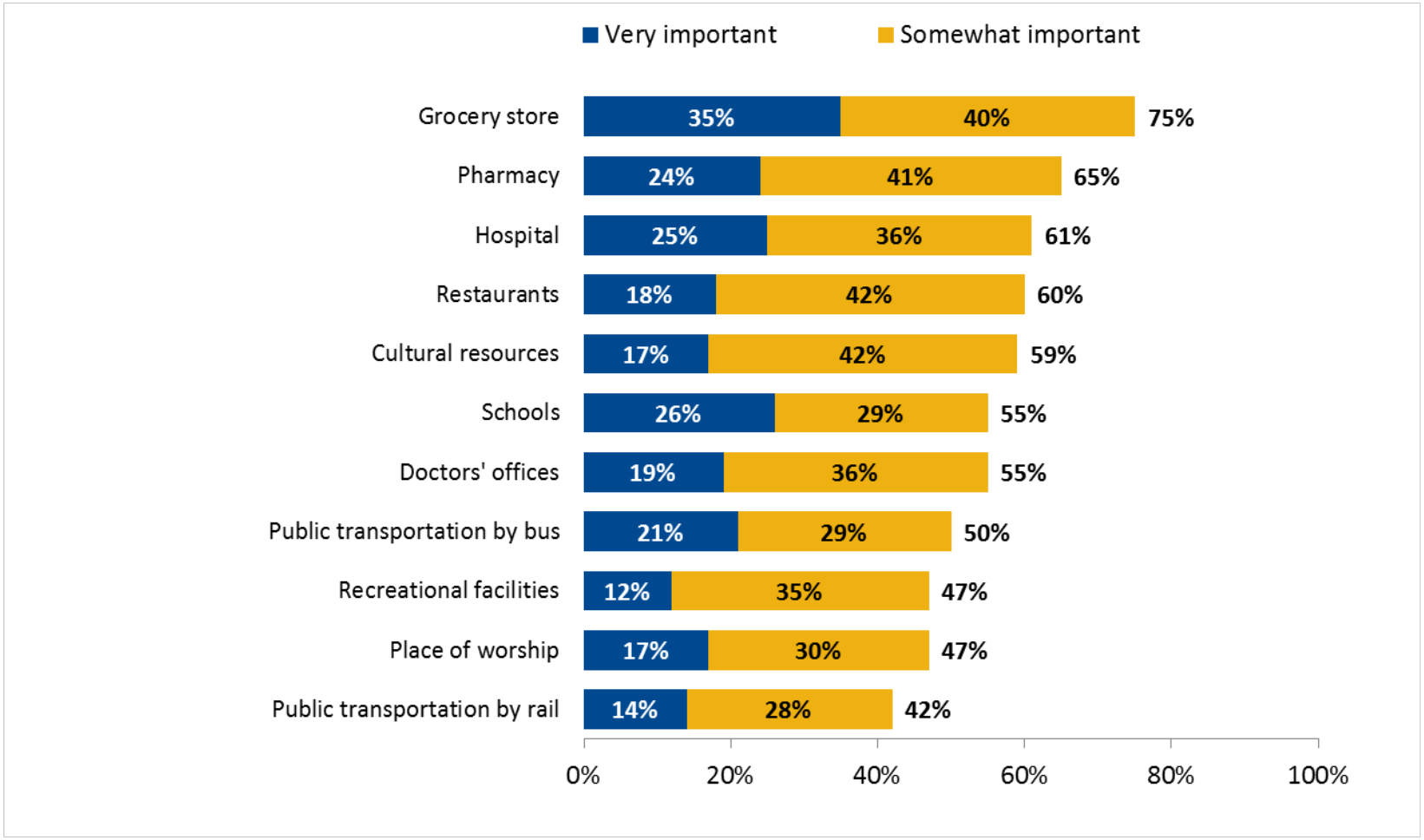
- Future housing demand requires broadening housing options
- Less expensive single family and townhome options
- AND higher income multifamily

Household Change (2010-2030)



NAR 2011: Walkable Destinations

In deciding where to live, indicate how important it would be to you to have each of the following within an easy walk: very important, somewhat important, not very important, or not at all important.



Source: **National Association of Realtors 2011.**

Walkability is in Increasing Demand

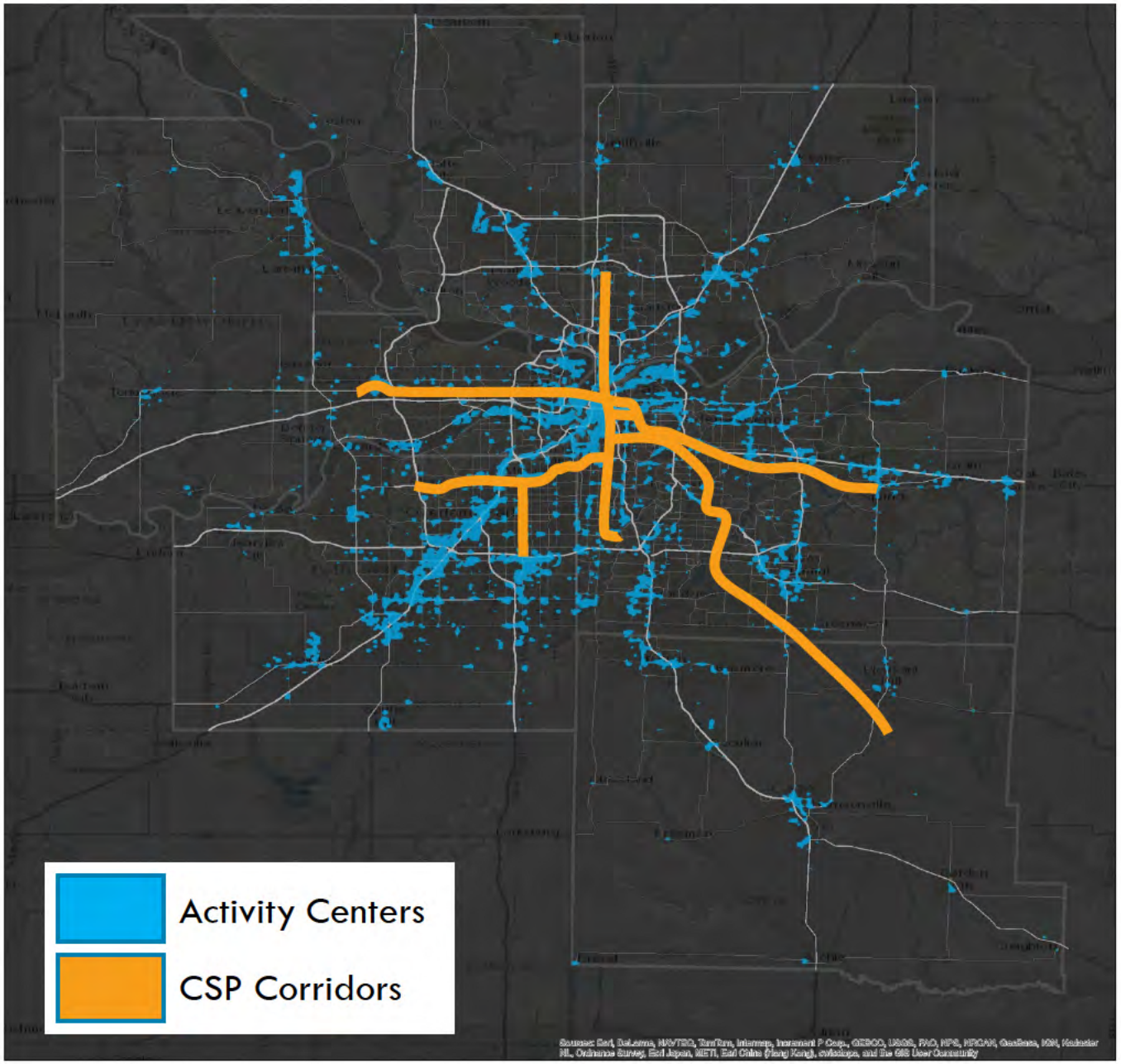
- **More than 50%** of local residents want to able to walk to places but **fewer than 10%** live in communities where they can.

- Even in areas without transit, walkability is important

People Pay More to Live Near Amenities

- High amenity areas have higher building value
- Up to 10-20% more for access to:
  - Parks
  - Schools
  - Shops
  - Transit
  - Quality streets

MARC has identified Activity Centers across the region

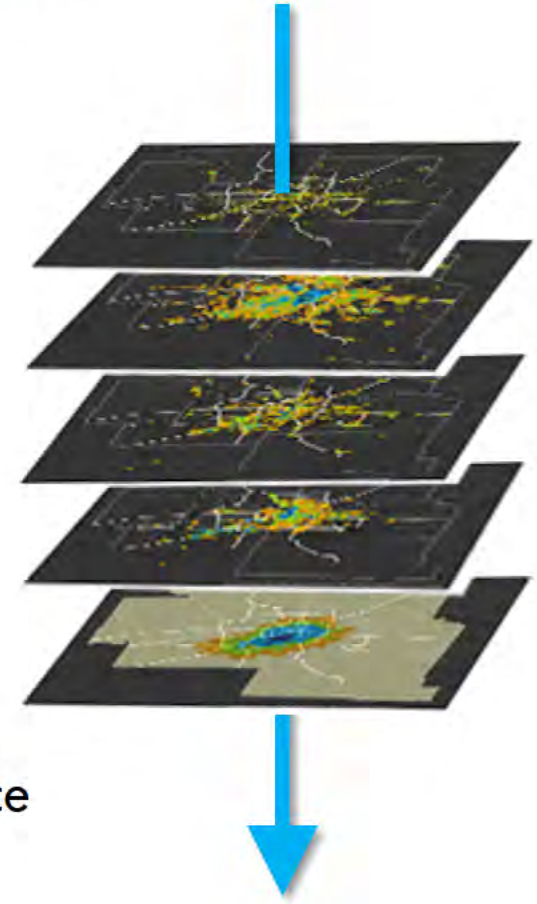


Vibrant, Green, Connected – *Demonstration Corridors*

- North Oak
- US 40
- Rock Island
- Troost
- Shawnee Mission / Metcalf
- State Avenue

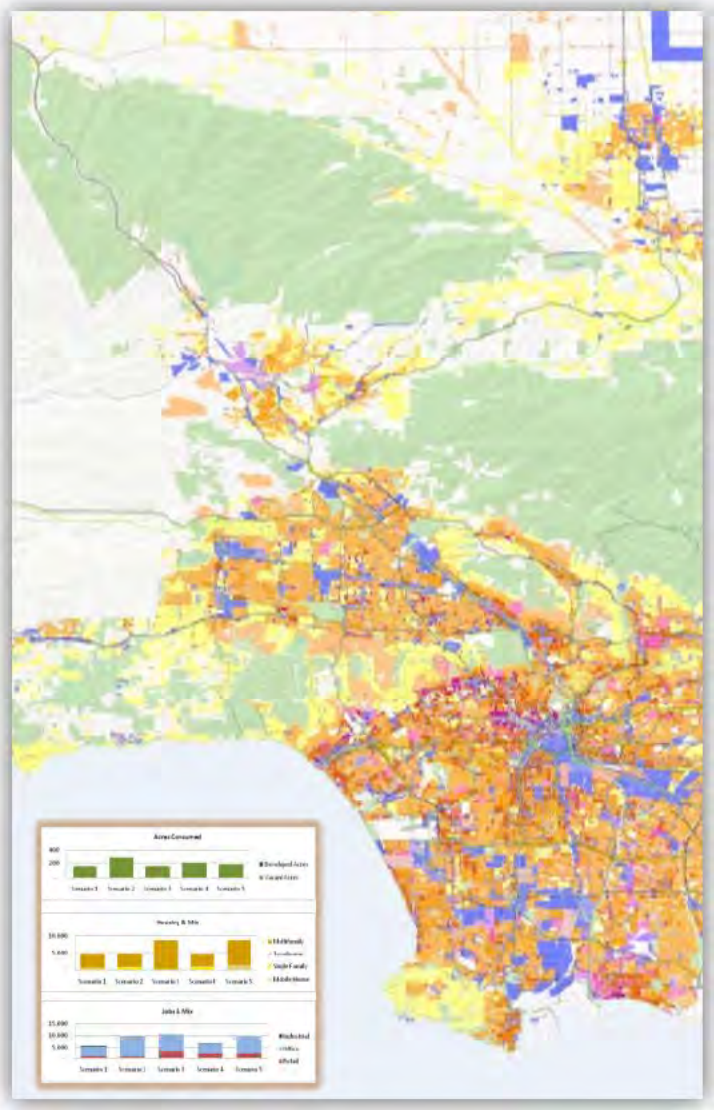
Tools to Identify Opportunities for Sustainable Development

- **Conducted a regional analysis based on:**
  - Physical
    - Street network connectivity
    - Transit access
    - Pedestrian amenities (Walk Score)
  - Financial
    - Household incomes
    - Job wages
    - Land costs
  - Location
    - Access to jobs/amenities regionally
    - Jobs-worker balance / Income-Wage Balance



What is Envision Tomorrow?

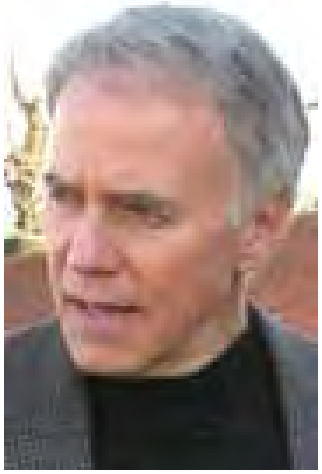
- Suite of open source planning tools:
  - Prototype Builder
    - Return on Investment (ROI) model
  - Scenario Builder
    - Extension for ArcGIS
  - 20+ modules or "apps" funded by HUD Sustainable Communities Grants



envision tomorrow™

a suite of urban and regional planning tools

Working with Universities to keep the tool State of the Art



Dr. Reid Ewing, University of Utah

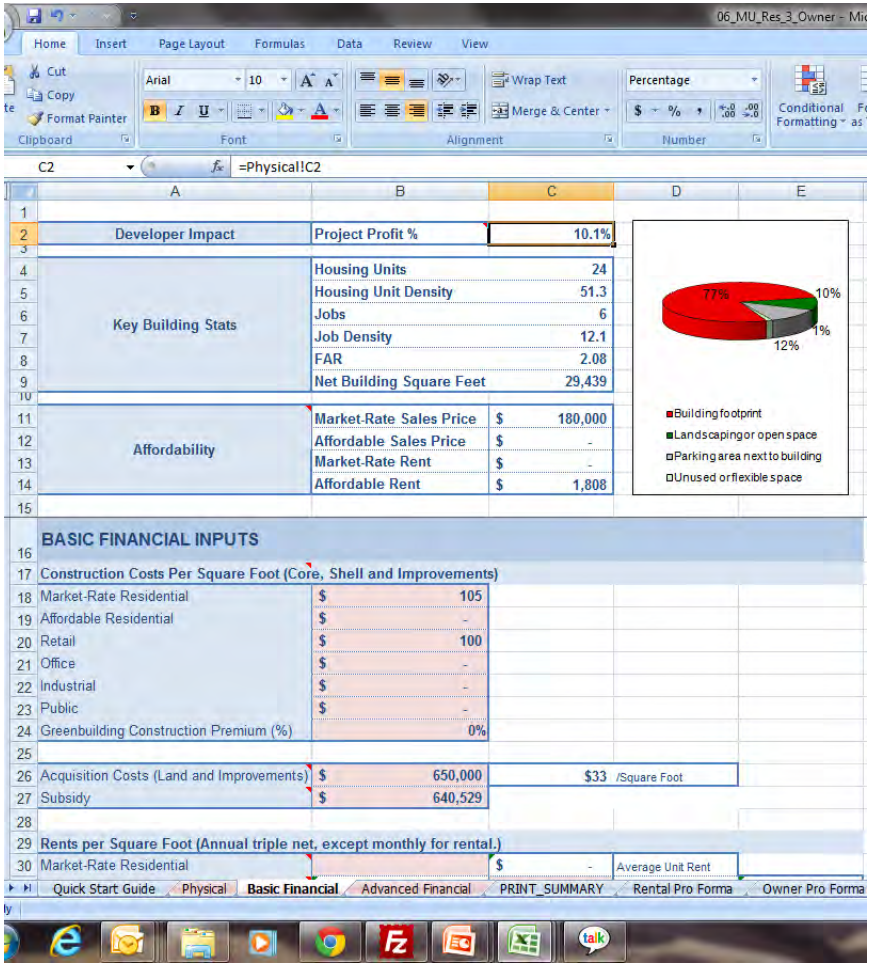
Dr. Arthur "Chris" Nelson, University of Utah

Dr. Rob Patterson, University of Texas, Austin

Public Domain and Open Source, it is a platform for putting latest expertise in the hands of planners across the United States

Building-Level Financial Analysis

- Envision Tomorrow Prototype Builder
- Estimate ROI (Return on Investment) based on local costs and rents/sales prices
- Gap Financing Tools



Test Financial Performance of Zoning Alternatives

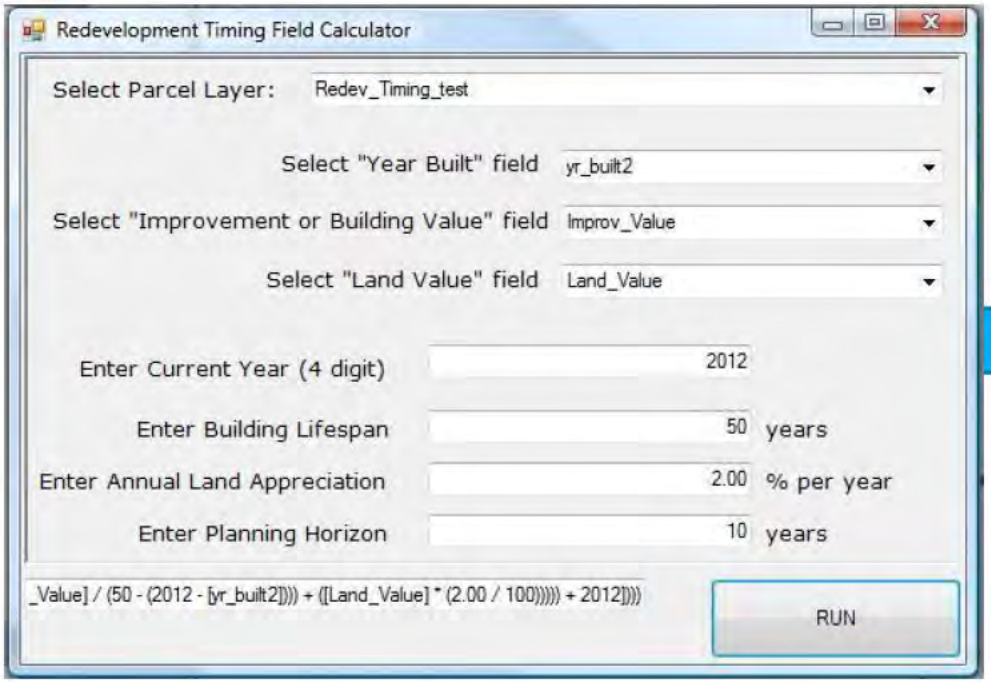
Baseline
4 story Mixed Use with existing parking

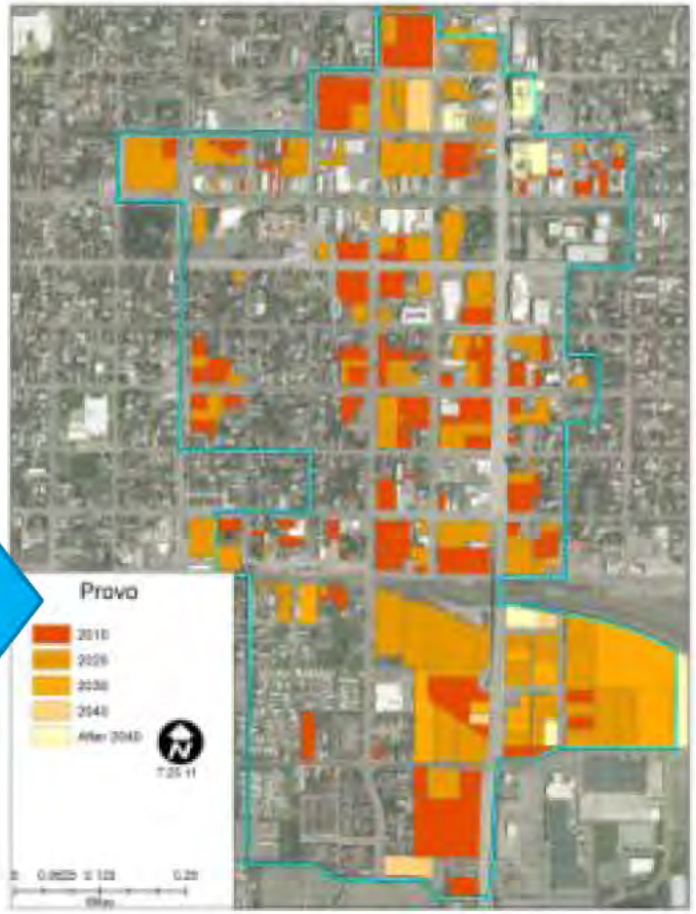
Optimal
6 story Mixed Use with lower parking requirements

Baseline			**Optimal**	**Change**
Height	4 Stories		6 Stories	+2
Parking Spaces	127		115	-10%
Land Used	43,000 Square Ft		43,000 Square Ft	0%
Density	31 DU / Acre		63 DU / Acre	+103%
Floor Area Ratio	1.1		2.0	+79%
Project Value	$17.3 Million		$23.5 Million	+35%
Unit Cost	$519,272		$369,590	-29%

Redevelopment Readiness Analysis

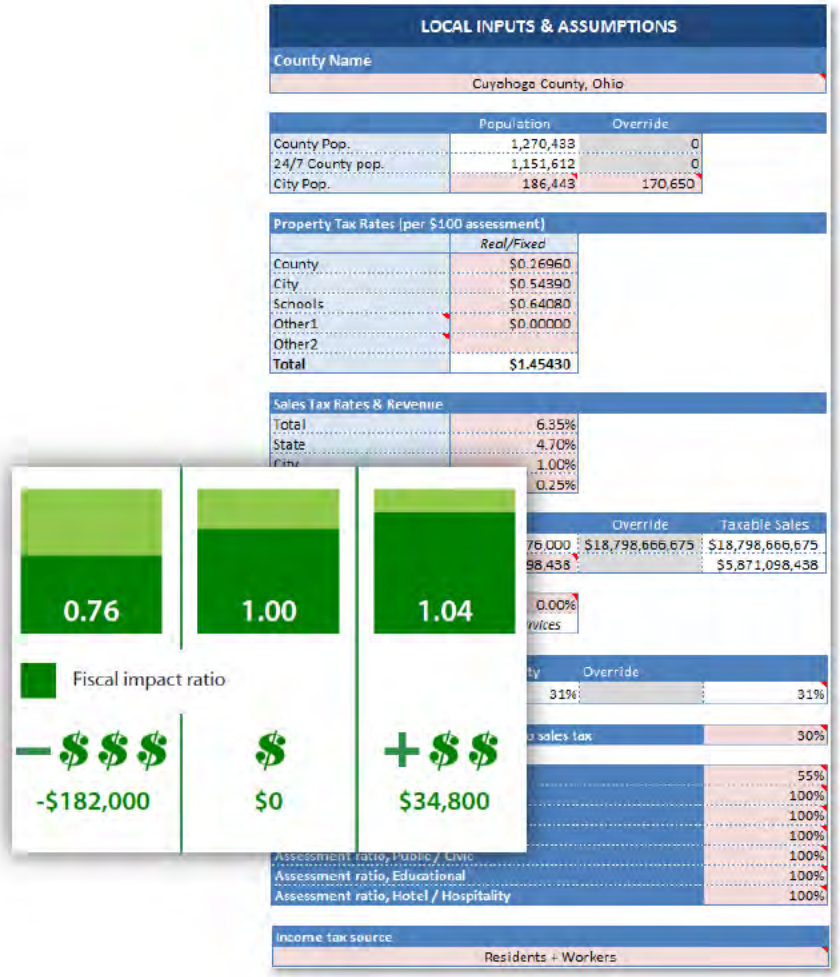
- A tool to assess which parcels within a study area may be candidates for redevelopment in the short term.
- Two methods:
  - Low Hanging Fruit: isolate the bottom quartile of total value per acre (land + improvement)
  - Timing: estimate the parcels that are ready today, or within 5-10 years based on the age of the structure and the value of the land and a depreciation schedule.





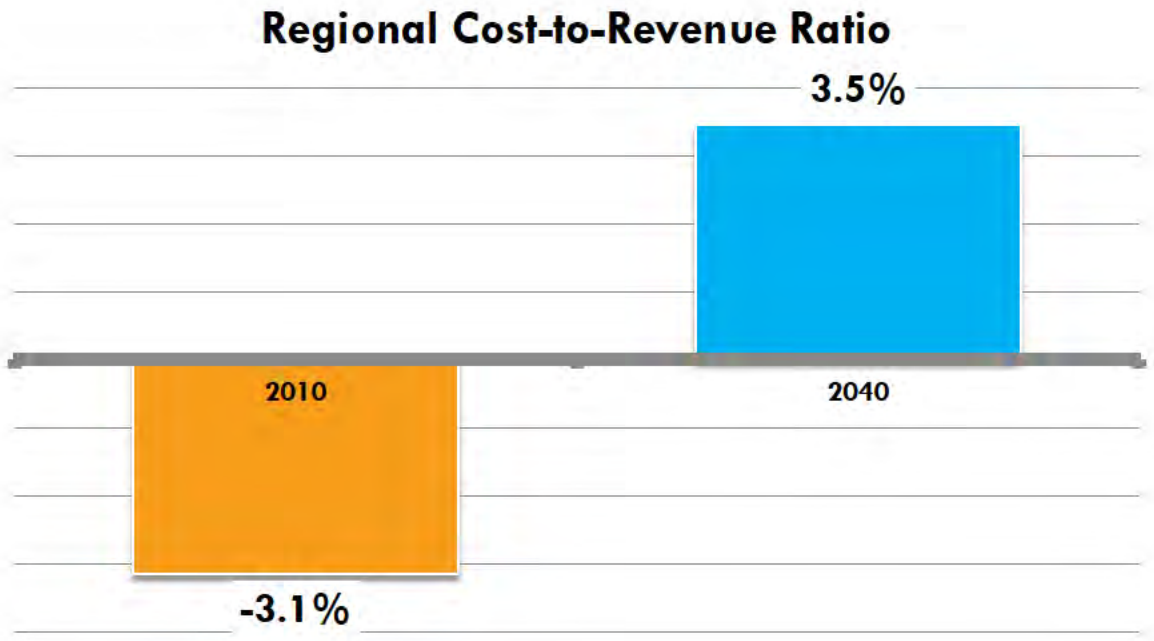
Fiscal Impact Modeling

- A Modified Version of the Federal "FIT" Fiscal Impact Model
- Estimate and compare county and municipal revenues and costs from scenarios
- Uses building values and infrastructure costs from Envision Tomorrow to capture explicit differences in revenues and costs from different land use types
- Indicators:
  - Revenue Cost Ratio
  - New Revenues (Property, Income and Sales Taxes)
  - New Costs (Infrastructure, O&M and Services)



Regional Fiscal Outlook

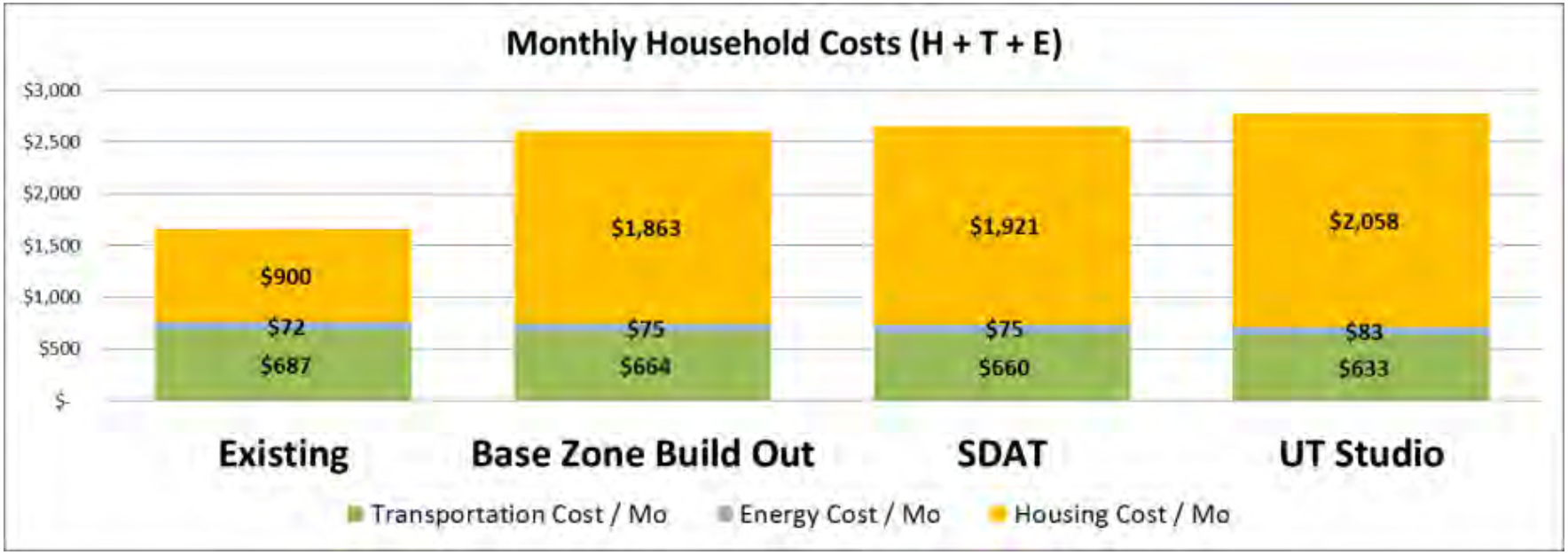
- 2010: Region-wide, expenditures exceed revenues by 3.1%
- 2040: If strategies are implemented, revenues could exceed expenditures by 3.5%



Affordability

Housing + Transportation + Energy Costs

- Assess trade-offs
- Trade higher housing costs for lower transportation costs?

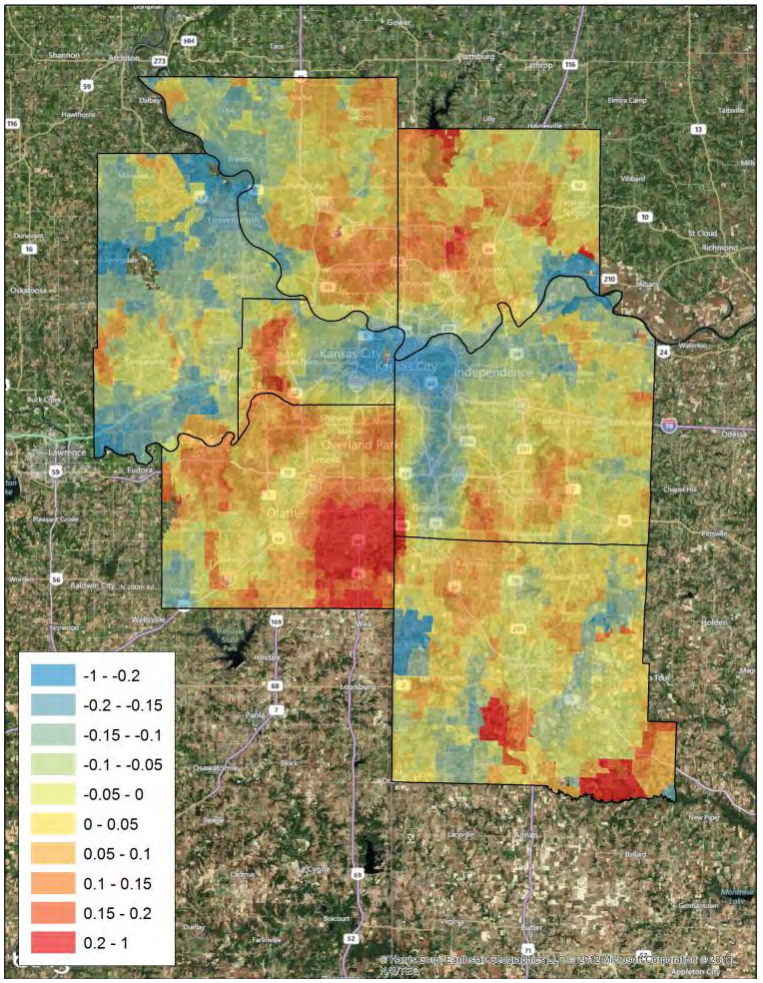


Regional "Balance" Analysis

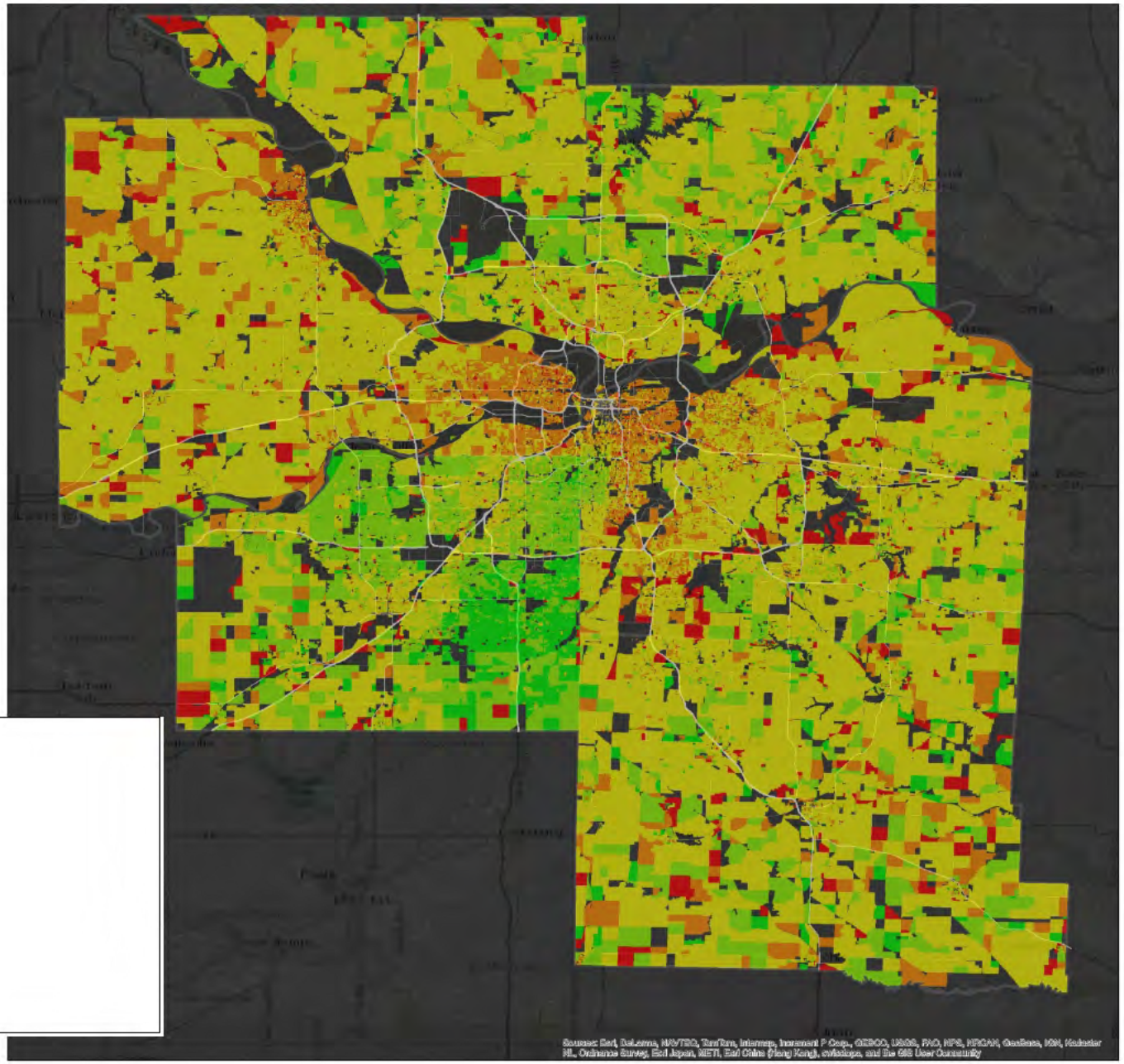
- Jobs-Housing balance impacts transportation
- GIS tool to identify imbalanced areas
- Envision Tomorrow Tools:

  Jobs-Worker Balance

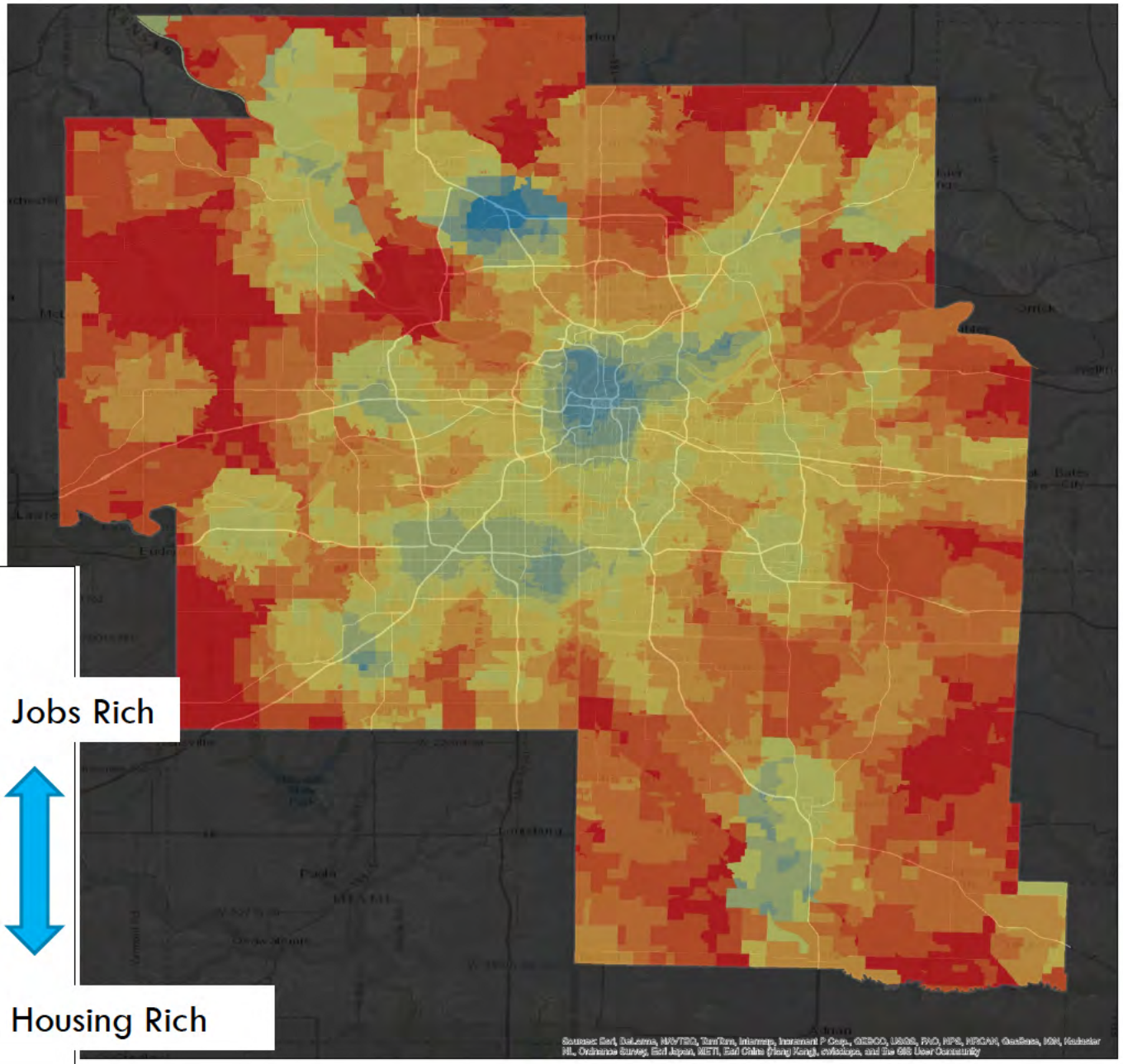
  Income-Wage Balance



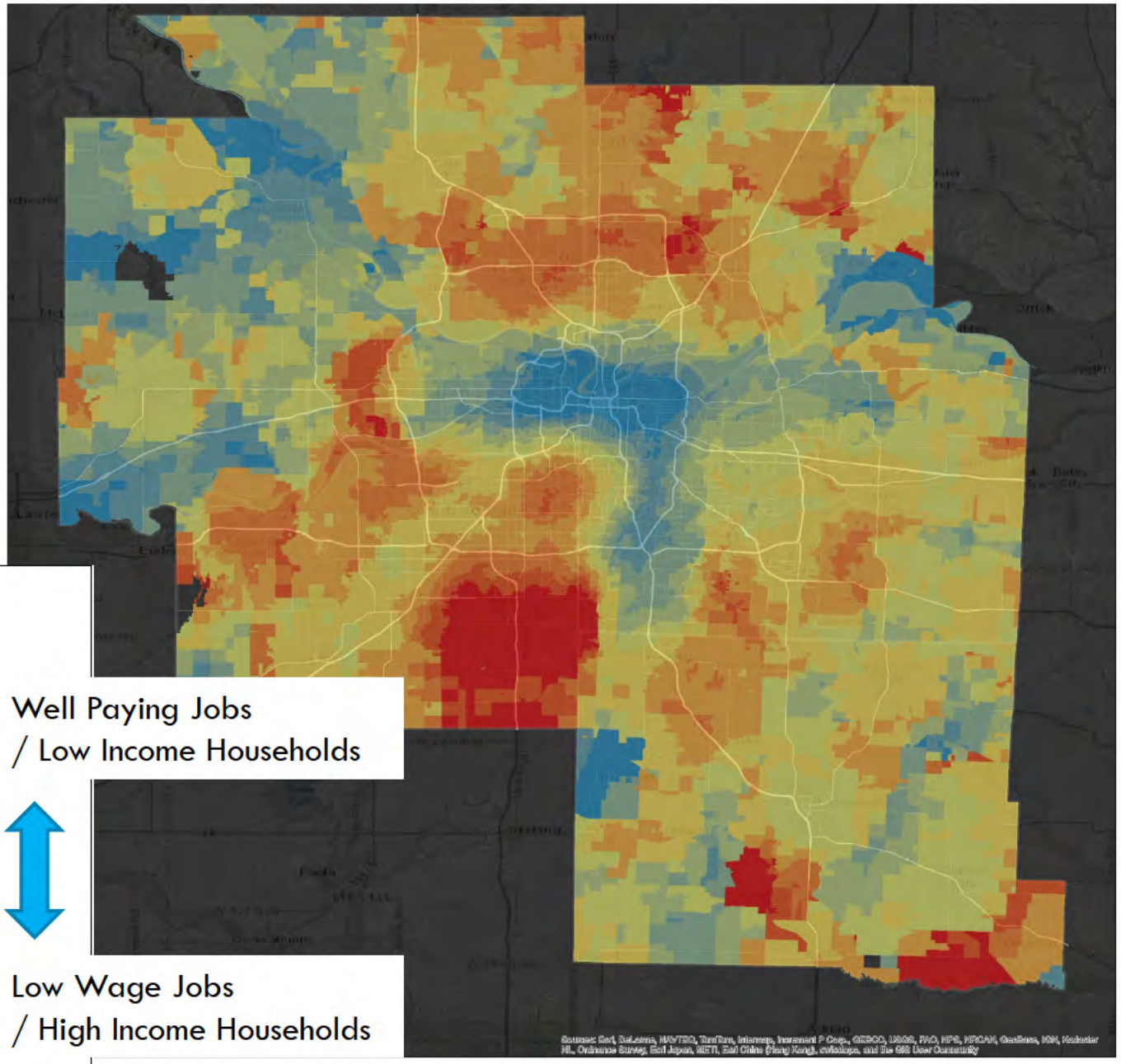
Average Resident Worker Income



Job-Worker Balance

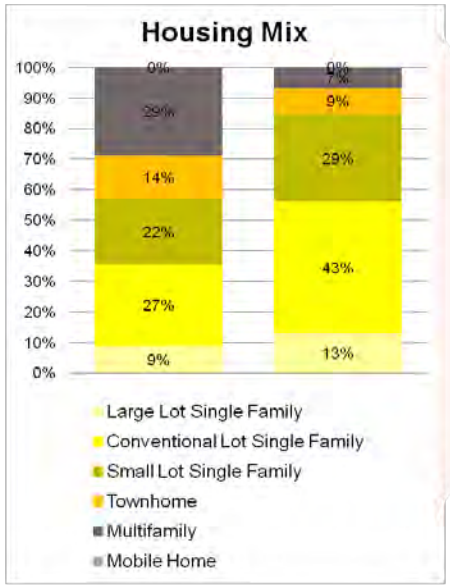


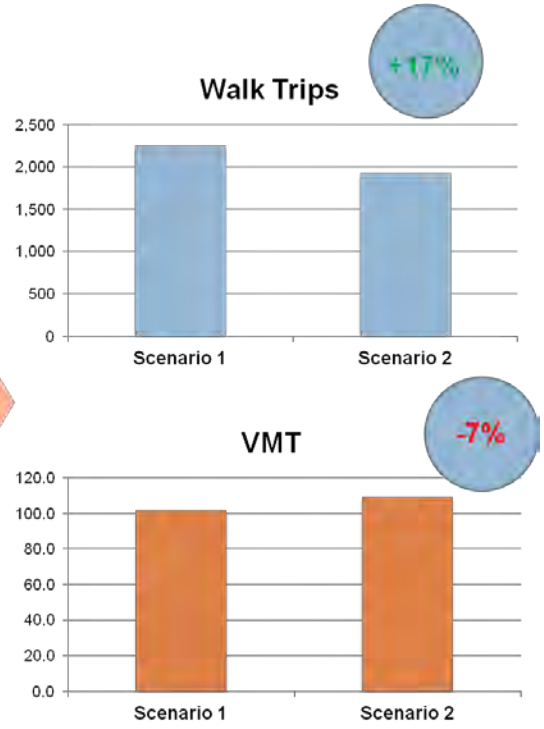
Wage-Income Balance



Transportation Indicators

- Household Vehicle Miles Traveled
- Trips by Mode
  - Auto
  - Transit
  - Walk
  - Bike
- Cost of Transportation (Auto and Transit)
- Health Benefits of Increased Walking
- Changes is Transportation Air Pollutants



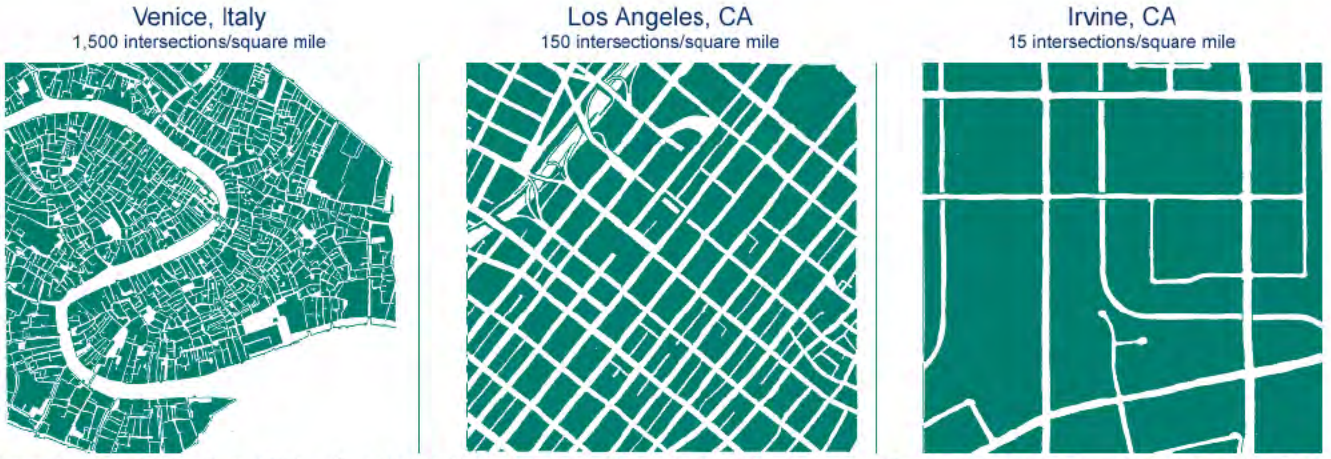


How Urban Form Affects Travel

- Academic research
- The "D" Variables
  - **D**ensity, **D**esign, **D**iversity (of uses), **D**estinations, **D**emographics

Dr. Reid Ewing

Street Maps at the Same Scale



Source: Allan B. Jacobs, *Great Streets*, MIT Press, Cambridge, MA, 1993, pp. 221, 225, 249. Reprinted in Reid Ewing, *Pedestrian and Transit-Friendly Design: A Primer for Smart Growth*, Smart Growth Network, August 1999, p. 4. <http://www.epa.gov/dced/pdf/ptfd_primer.pdf>

"D Variables" – Density

Housing Density

- Doubling housing density:
  - Reduces VMT 4%
  - Increases walking and transit usage 7%

"D Variables" – Density

Commercial Density

- Doubling of commercial density
  - +7% walking
- Same as housing density

"D Variables" – Diversity of Land Use

Land mix within 1 mile

- Diversity of land uses, aka "Entropy" score
  - 0-1 score
- Doubling mix
  - -9% VMT
  - +15% walking
  - +12% transit

- Elasticity is twice as influential as housing density

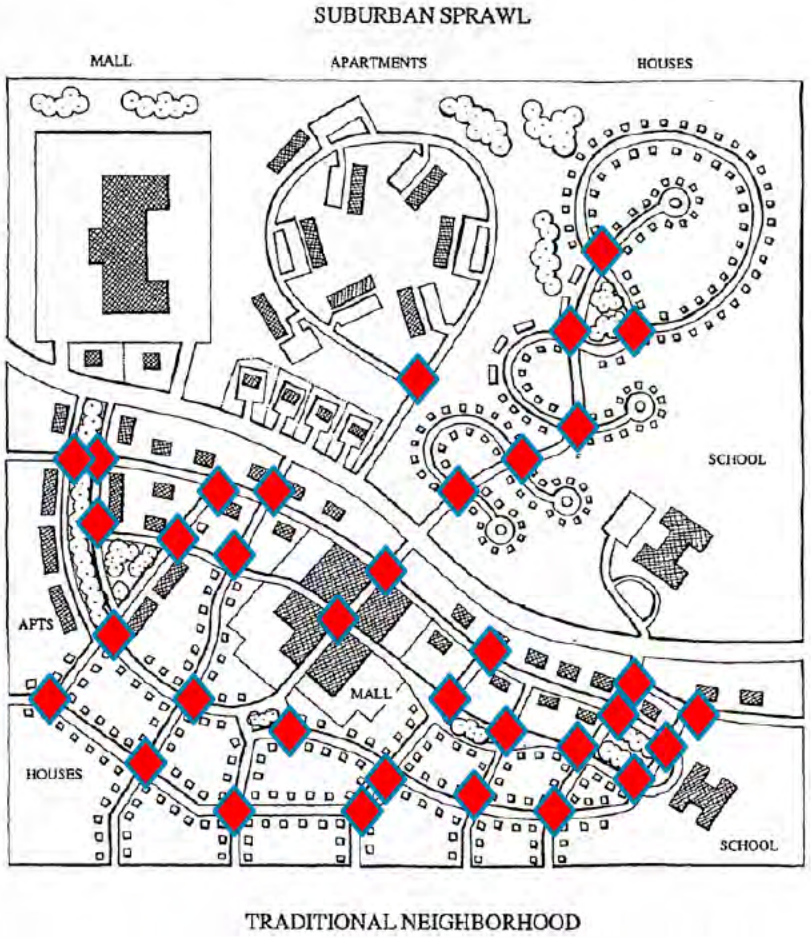
"D Variables" – Diversity of Land Use

Local Jobs Housing Balance

- Doubling ratio of jobs to housing (ie – 0.5 to 1)
  - -2% VMT
  - +19% walking
- Significant impact on walking, less so on VMT

"D Variables" – Design
Intersection Density per Sq Mi

- Intersection density important
- But also measures of connectivity
  - % 4-way intersections
- Compounding influence
- Double intersection density
  - -12% VMT
  - +30% increase in walking
- Most influential predictor of walking

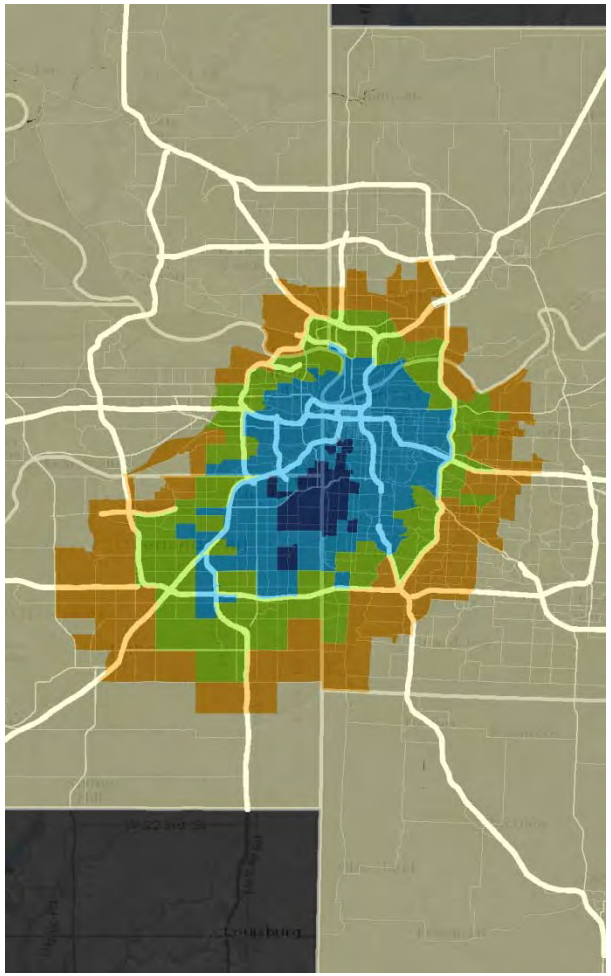


"D Variables" – Destinations

Employment Access

- Employment (destinations) within 1 mile
- Employment (destinations) within 20 and 30 minutes by auto
- Employment (destinations) within 30 minutes by transit

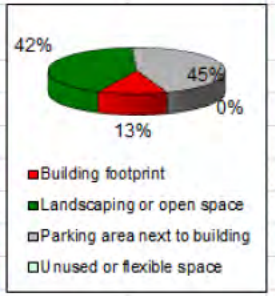
- Most influential variable on VMT
  - 4x as powerful as housing density



Kansas City Region Prototype Library

- Residential SF Medium
- Residential SF High
- Residential MF Low
- Residential MF Low-Med
- Residential MF Medium
- Residential MF High
- Residential MF Very High
- Residential 40
- Residential 60
- Residential 80
- Residential 120
- Mixed Use (Low)
- Mixed Use (High)
- Mixed Use (Very High)
- Mixed Use (Urban)
- Indust./Bus. Park (Low)
- Indust./Bus. Park (High)
- Indust./Bus. Park (Very High)
- Indust./Bus. Park (Urban)
- Office (Low)
- Office (Med)
- Office (High)
- Office (Very High)
- Office (Urban)
- Office (High Urban)
- Commercial (Low)
- Commercial (High)
- Commercial (Very High)
- Commercial (Urban)
- Parks, Open Space
- Public/Semipublic (Low)
- Public/Semipublic (High)
- Public/Semipublic (Very High)
- Public/Semipublic (Urban)
- Condo

Developer Impact	Internal Rate of Return	4.4%
Key Building Stats	Housing Units	1
	Housing Unit Density	-
	Jobs	41
	Job Density	27.6
	FAR	0.25
	Net Building Square Feet	14,082



Site Inputs

Building name	Office - Medium	
Project City/State	Regional	
Site area	65,340	square feet
	1.50	acres
Site gross-to-net ratio	100%	(enter percentage)
Landscaping or open space	42%	(enter percentage)
Building height (stories)	2	stories
Under-build	100%	(enter percentage)

FAR & Density Checks

Maximum FAR (if applicable)		FAR
Percent of Allowed FAR Used		
Maximum residential density (if applicable)		units/acre
Percent of Allowed Density Used		

Building Uses

Residential	None	select single family, townhome, multifamily or none
	None	select owner, renter or none

Kansas City Region Prototype Library

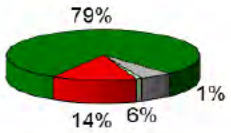
What is a Prototype?

Physical and financial assumptions that represent a type of building.

Single Family – Medium Density

10,000 sq ft lot
2,200 sq ft
5 DU/acre
.24 FAR
2 parking spaces / home
$75/sq ft construction costs
$145/sq ft sale price

Lot makeup:



Kansas City Region Prototype Library

Office – Medium Density

1.5 acres

14,082 square feet

27.6 jobs/acre

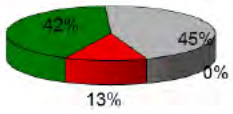
.25 FAR

5.5 parking spaces / 1,000 sq ft

$115/sq ft construction costs

$20/sq ft rent

Lot makeup:



Kansas City Region Prototype Library

Mixed Use – Low Density

30,000 sq ft lot

8,876 square feet

5.0 jobs/acre, 10.2 units/acre

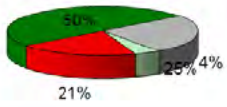
.35 FAR

$100/sq ft construction costs

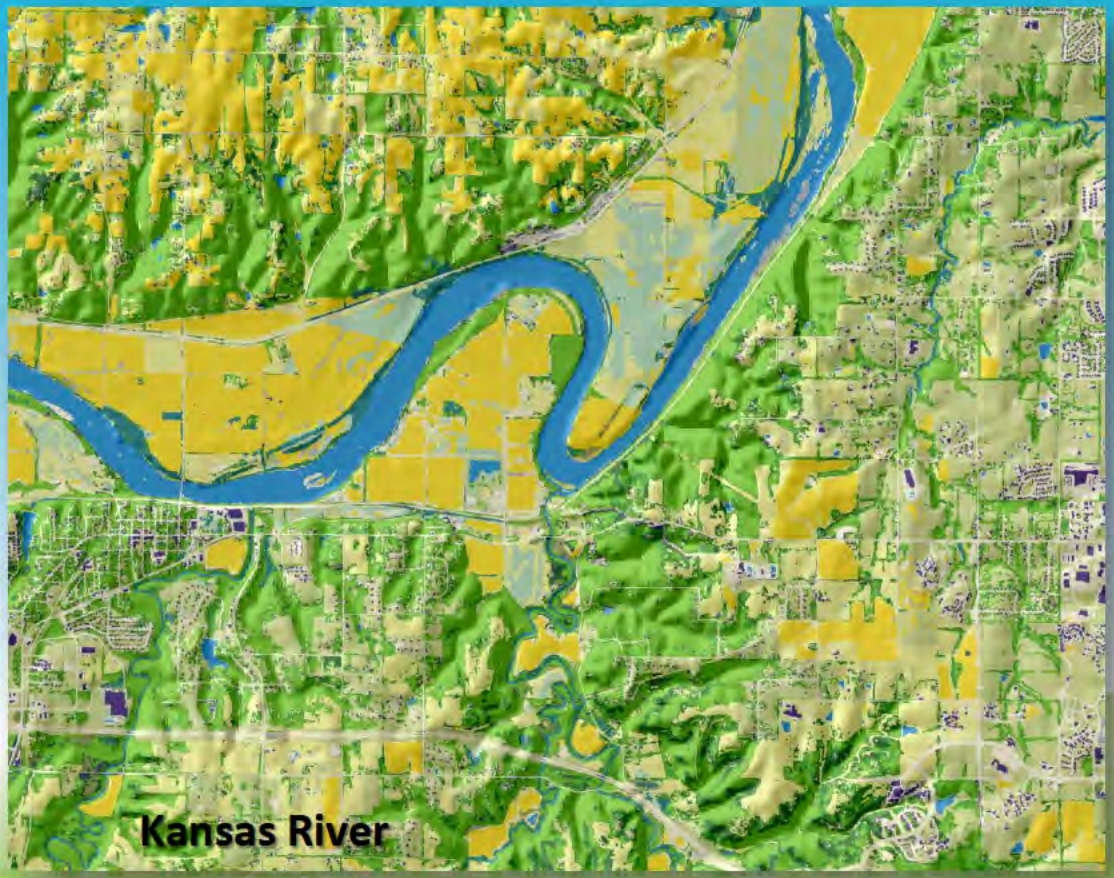
$18/sq ft rent for retail

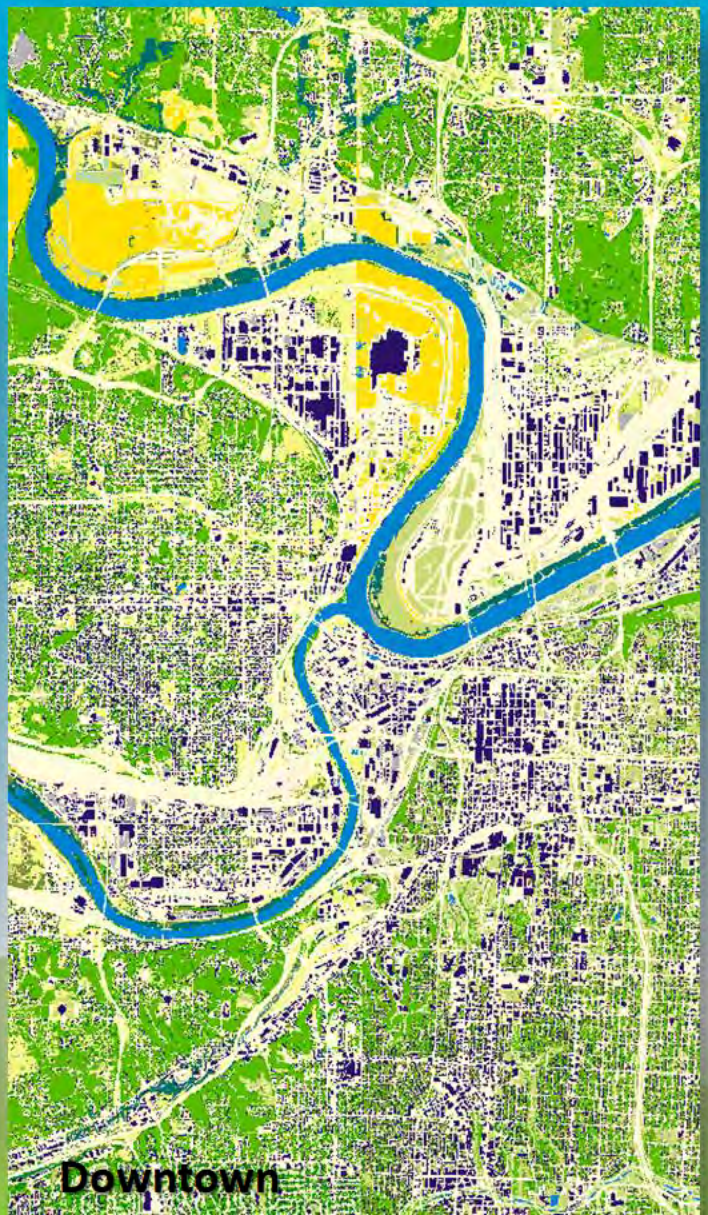
$1.25/ sq ft rent for residential

Lot makeup:



Natural Resource Inventory





Open Space Networks

Visualizations

Powerful tools to communicate neighborhood scale changes

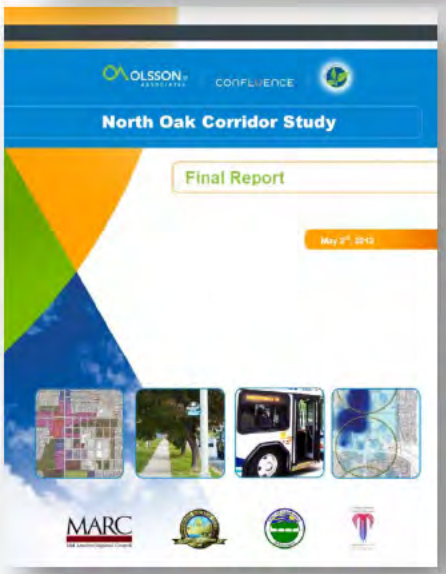
Troost & Armour
Kansas City, MO

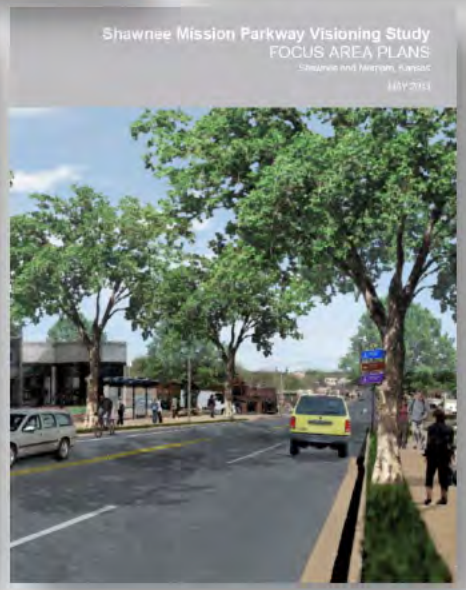
Visualizations

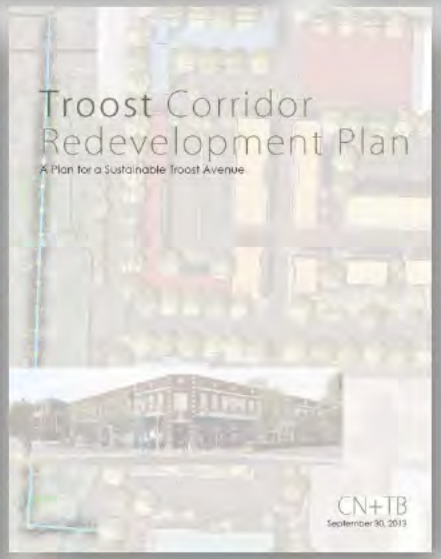
Scaling Up: A Regional View

- Lessons learned in the corridor projects applied to the region as a whole
- Use **Envision Tomorrow +** to measure regional and neighborhood impact

Corridor Studies

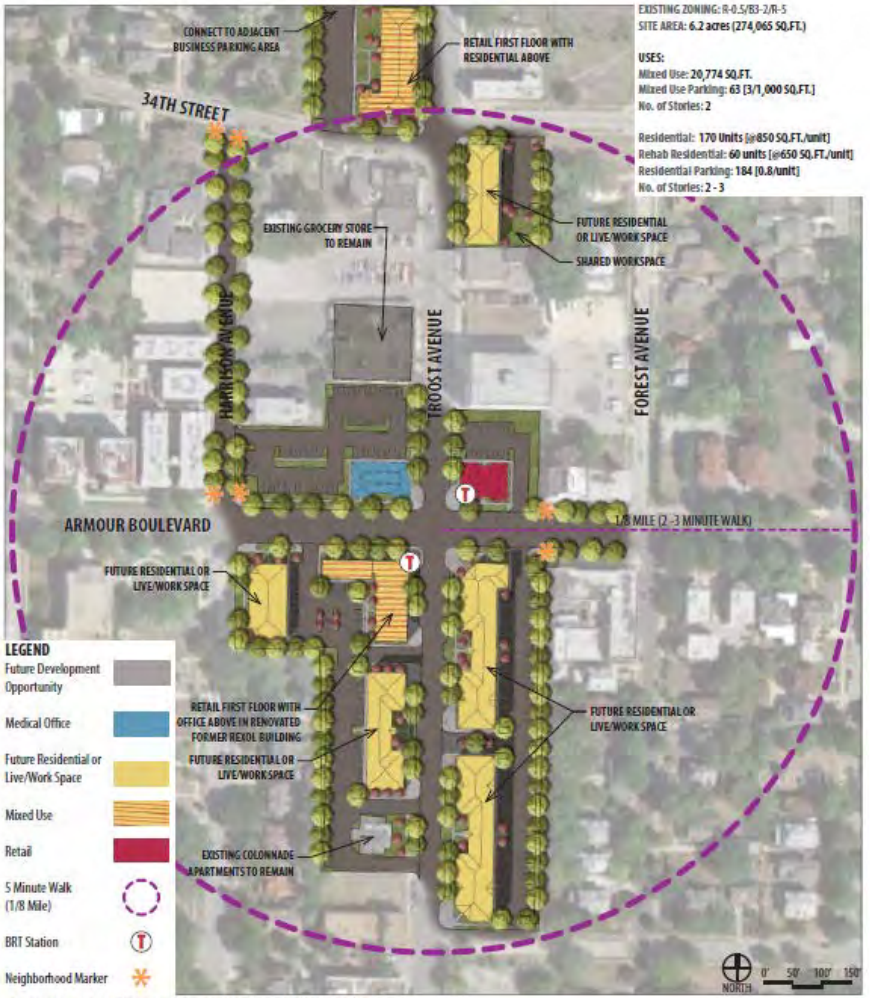






Detailed Development Programs

- Detail at nodes along the corridors
  - Market assessment
  - Financial modeling
  - Urban design
  - Public engagement



Armour Boulevard and Troost Final Plan

Applying Envision Tomorrow

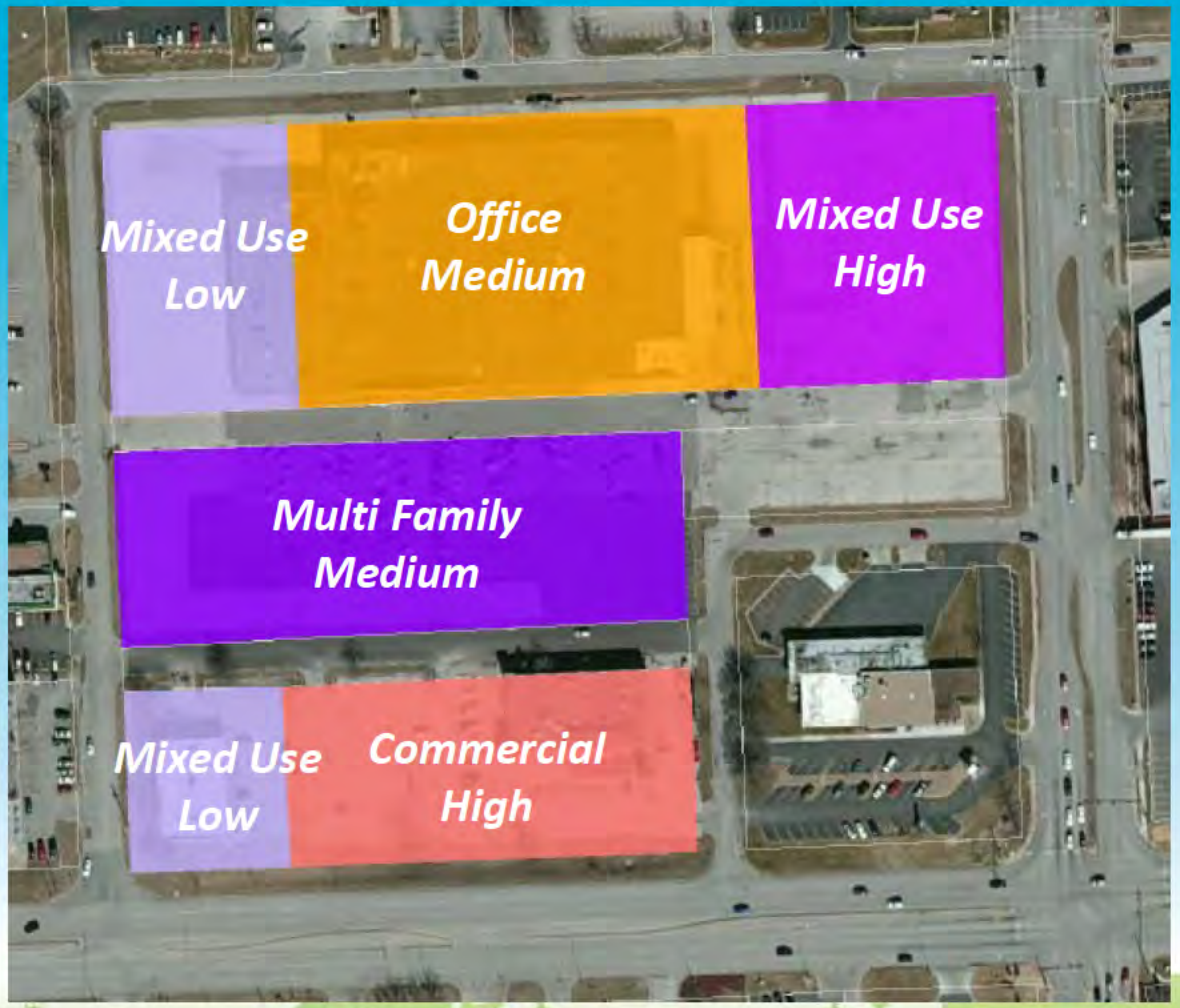
12.8 acre site at 78th and State Avenue

Scenario A – Existing Conditions

Development SF
100% Retail

-11.7% *Return on Investment*

Scenario B – Possible Redevelopment

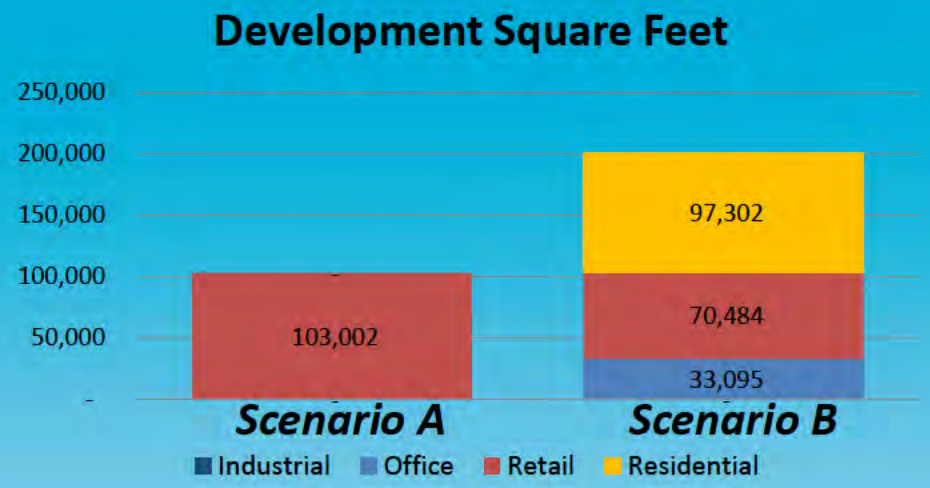


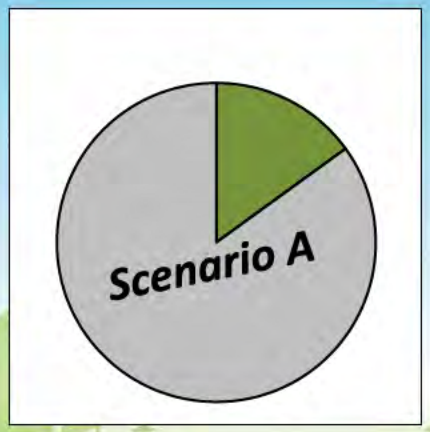
Development SF
56% Residential
26% Retail
18% Office

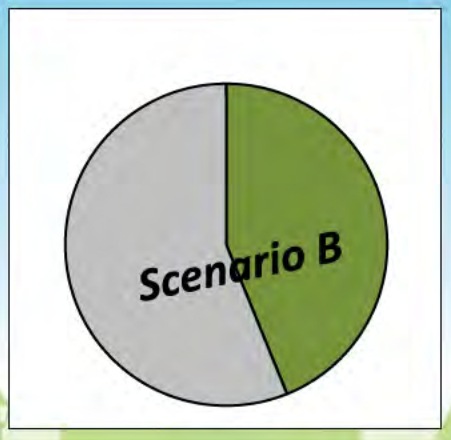
-2.6% Initial
Return on Investment

Further work made this market feasible

Site Breakdown

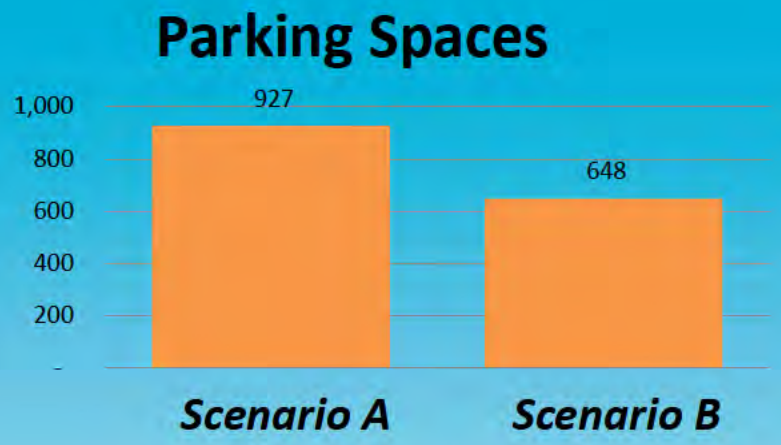


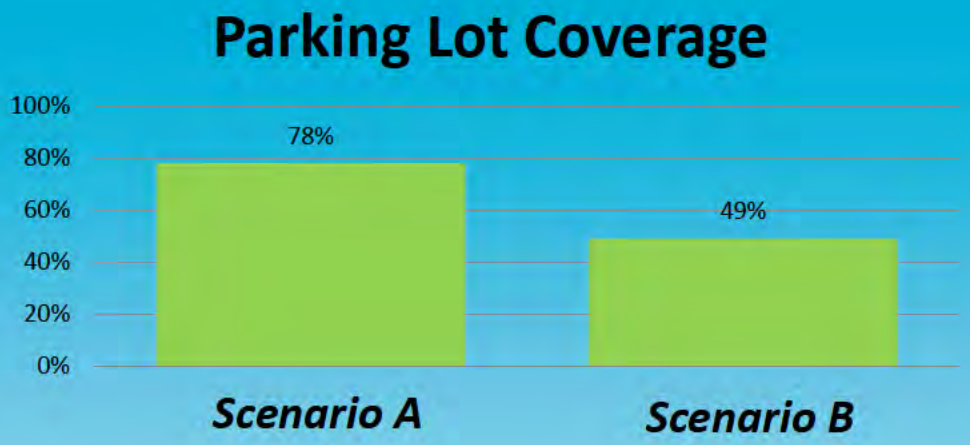


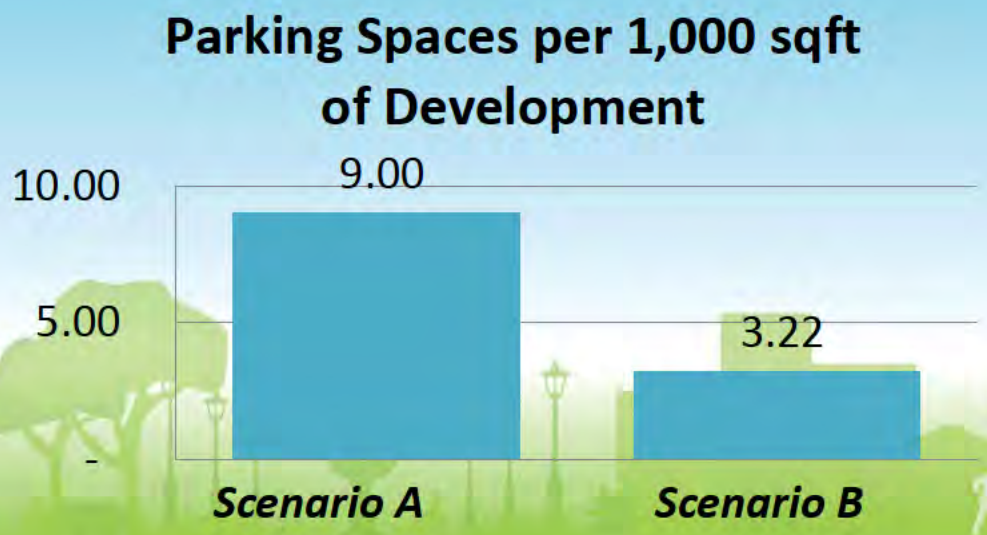


Impervious vs. Pervious Surfaces

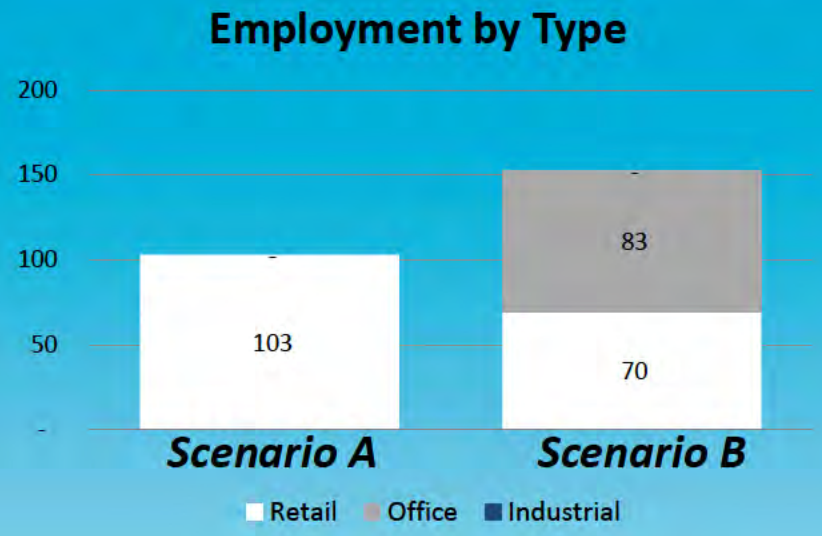
Parking Indicators

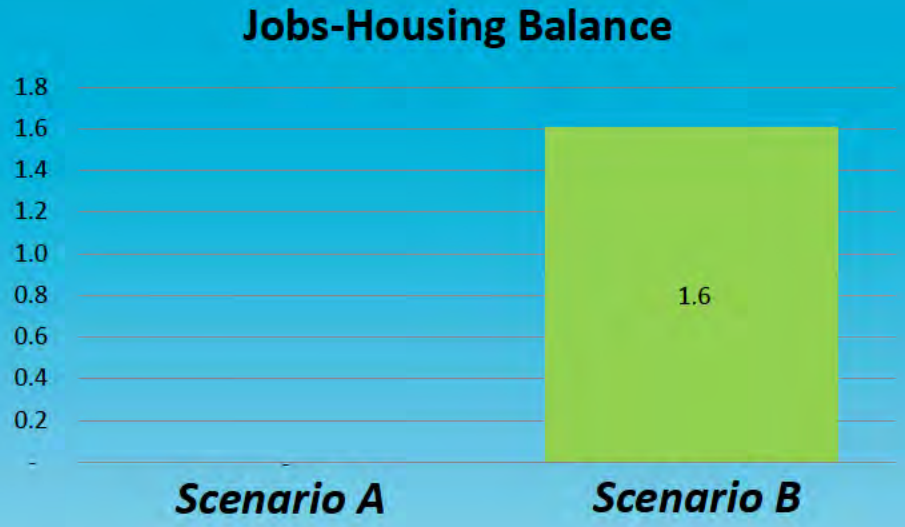


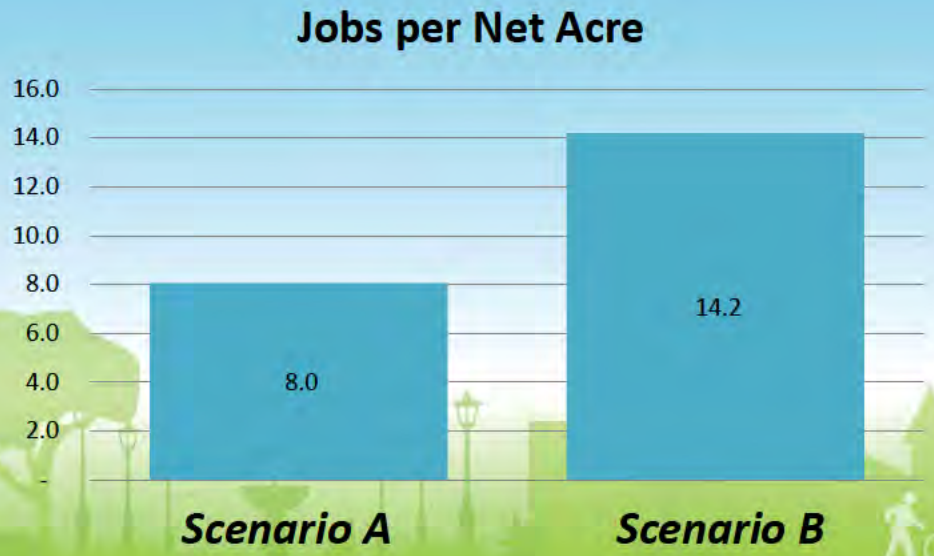




Employment Indicators







Environmental Indicators

	Scenario A		Scenario B	
	Per HH	Per Emp	Per HH	Per Emp
Energy Use (Million BTU/Yr)	-	136.6	96.1	107.0
Carbon Emissions (Tons/Yr)	-	12.7	8.9	9.9
Landscaping Water Use (G/Day)	-		659.7	
Internal Water Consumption (G/Day)	-	68.0	60.7	88.6
Waste Water (G/Day)	-	38.0	104.0	44.0
Solid Waste (lbs/Day)	-	5.0	2.6	4.2

6 Types of Regional Opportunities for Sustainable Growth

- Close in Markets:
  - Mixed-Use – Midrise
  - Mixed-Use – Low Rise
  - Commercial Adaptive Re-use
  - Residential Adaptive Re-use
- Farther Out Markets
  - New Centers
  - Commercial Adaptive Re-use

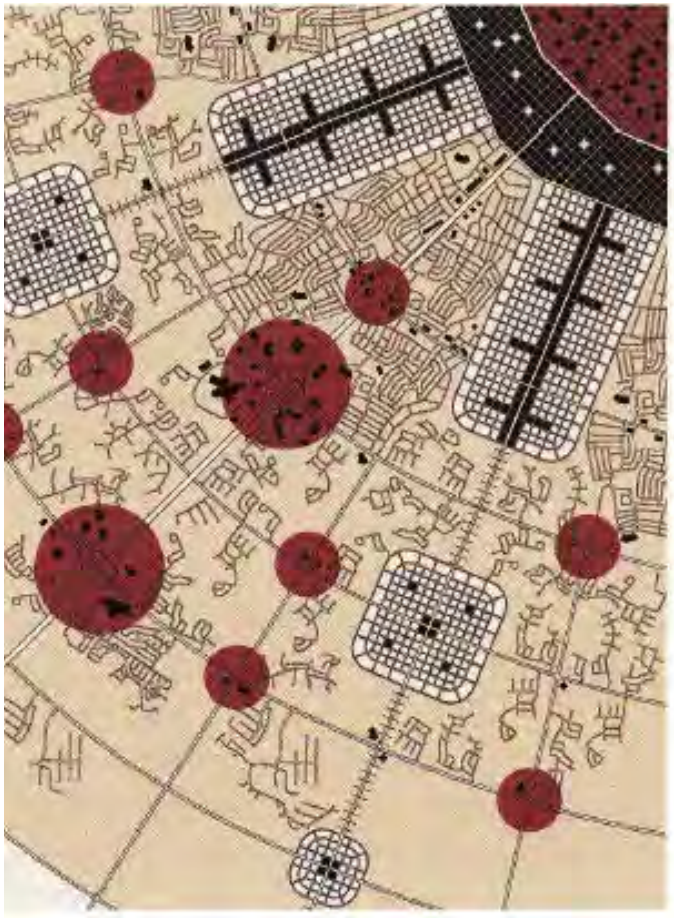
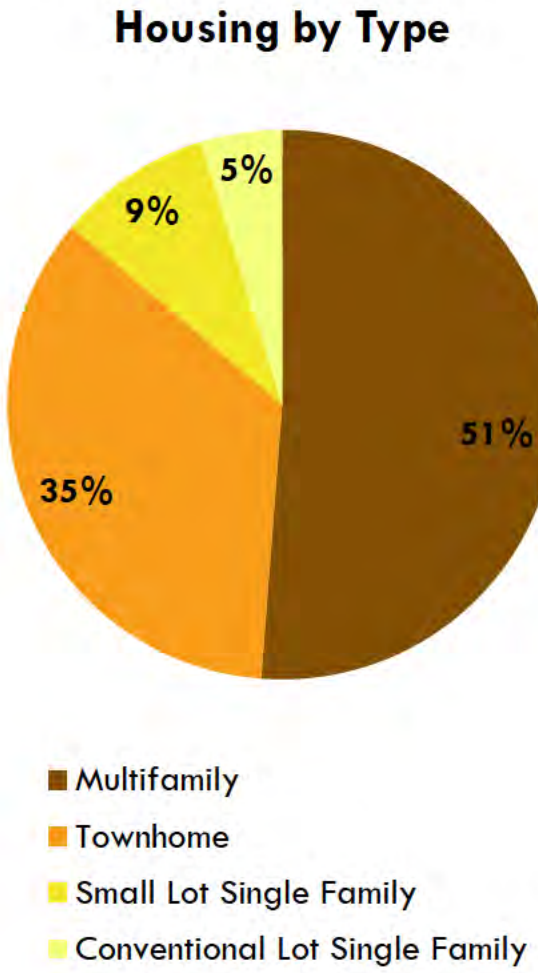


Image: Sprawl Repair Manual

Housing for the Future

- Corridors have opportunity to provide housing needs for the future
- Broaden housing choices

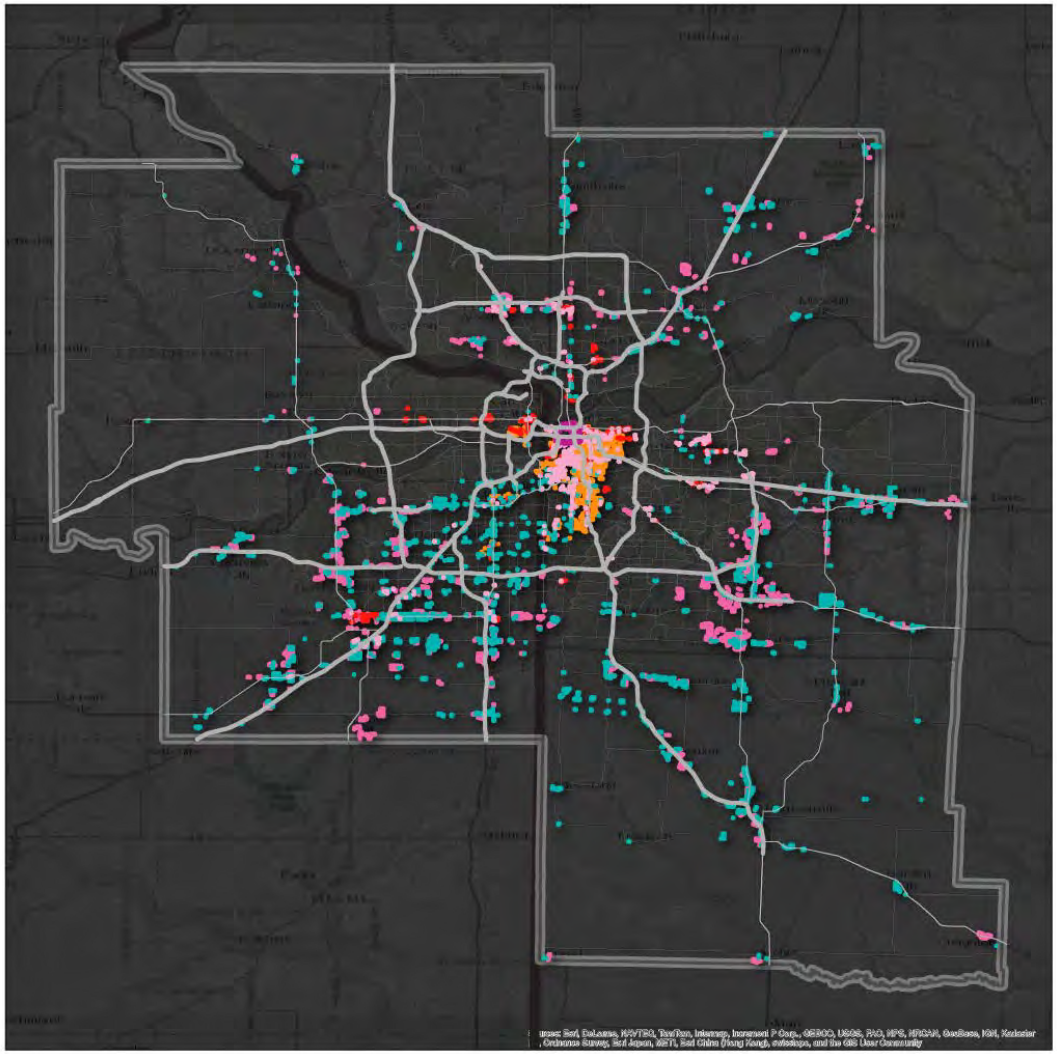


Close In Opportunity Areas

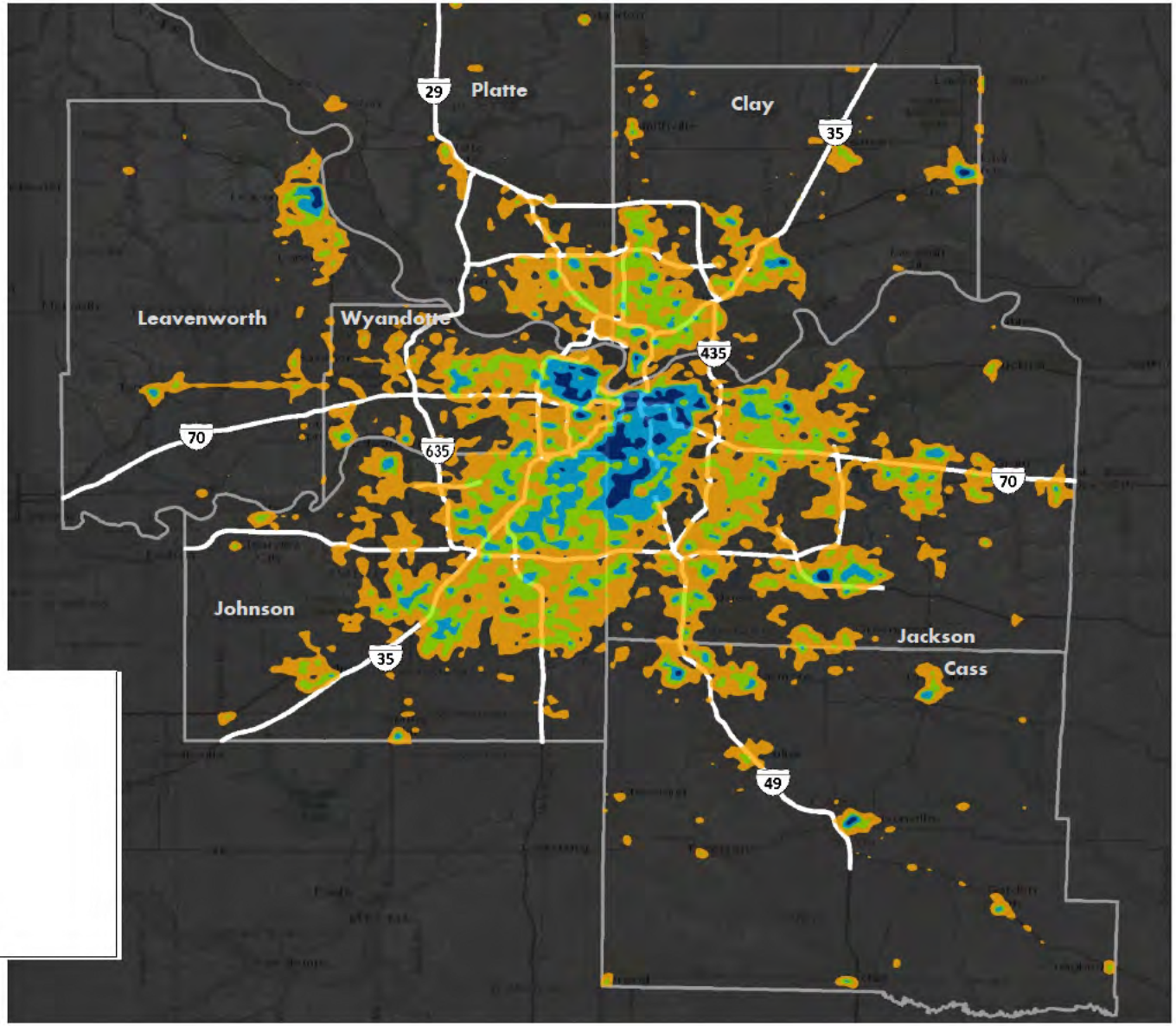
Existing areas with strong connectivity, mix of uses, and great regional access.

Significant Capacity at Opportunity Sites

- Hundreds of thousands people can be accommodated
- Leverage existing infrastructure
- Housing for the future population

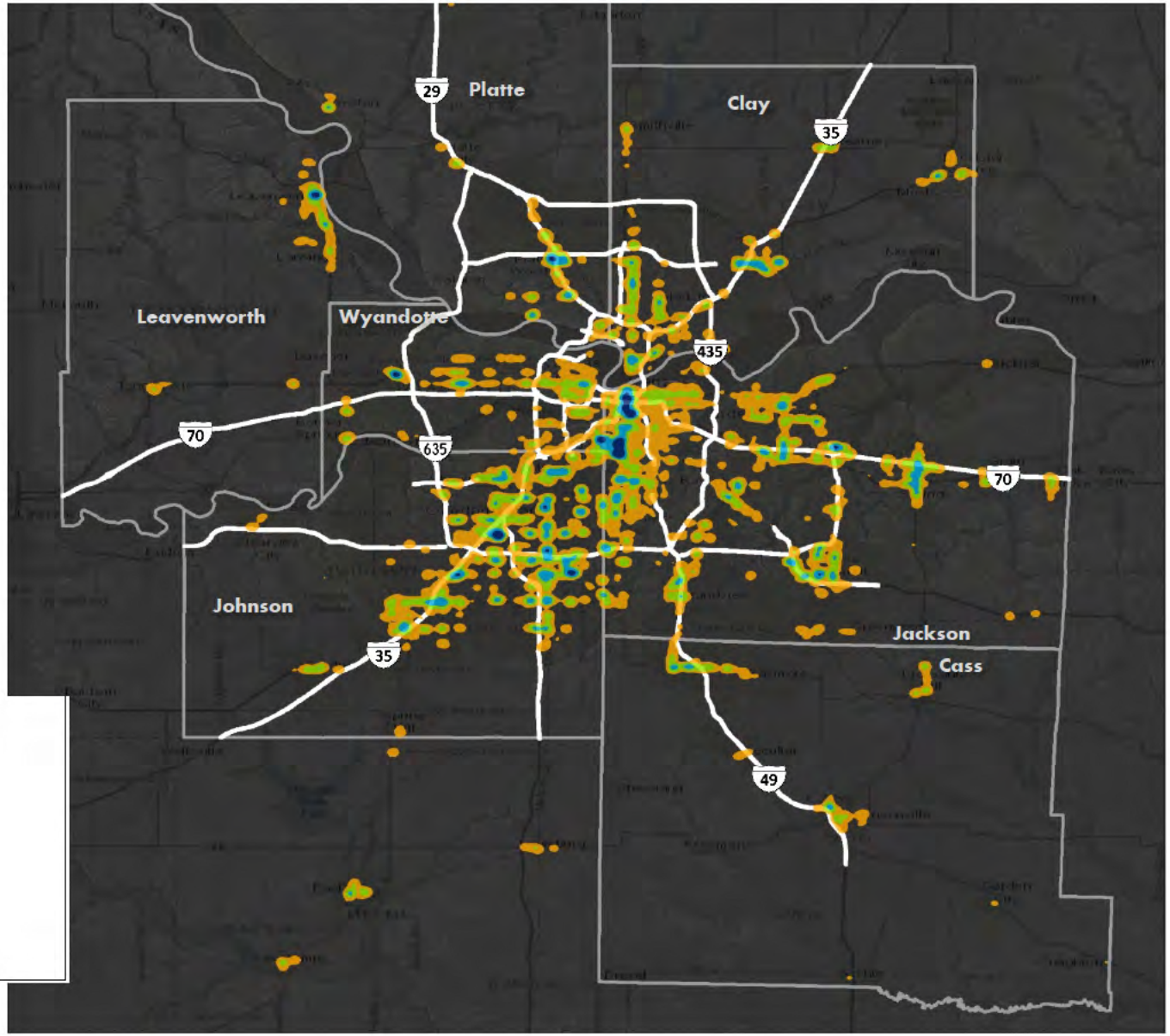


Well Connected Street Grid



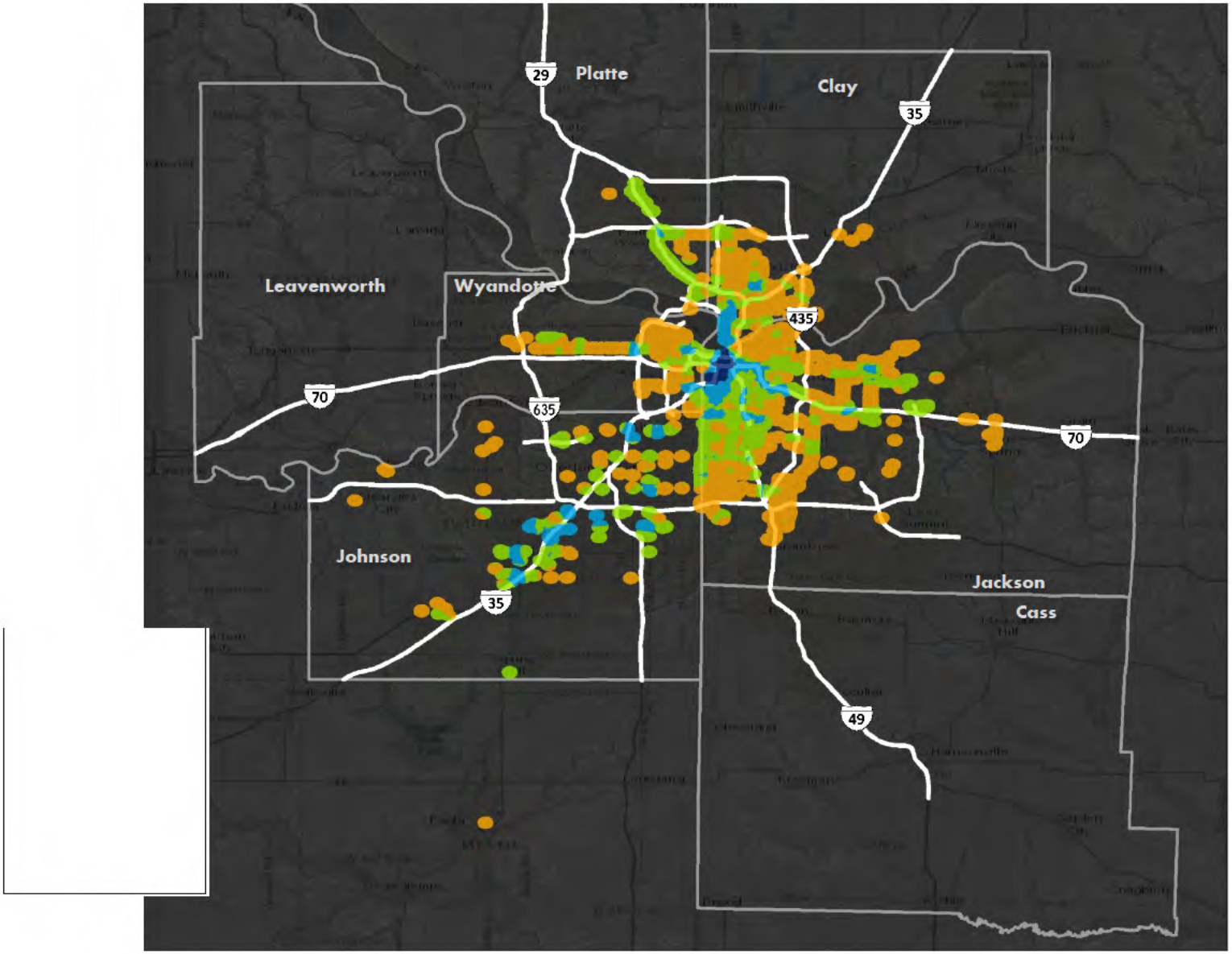
Road Network Density

Walkable Neighborhoods



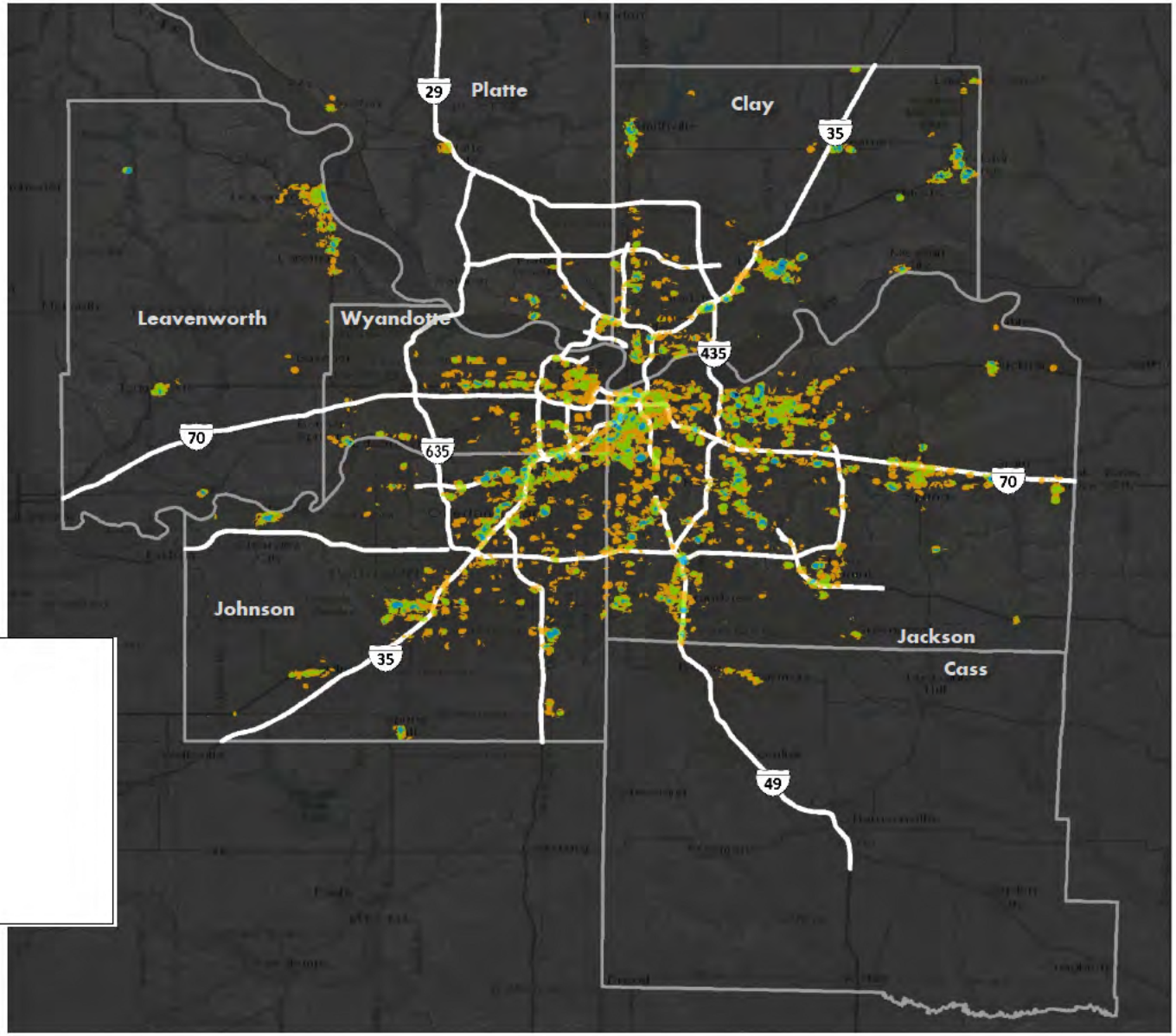
Walk Score

Good Transit Access



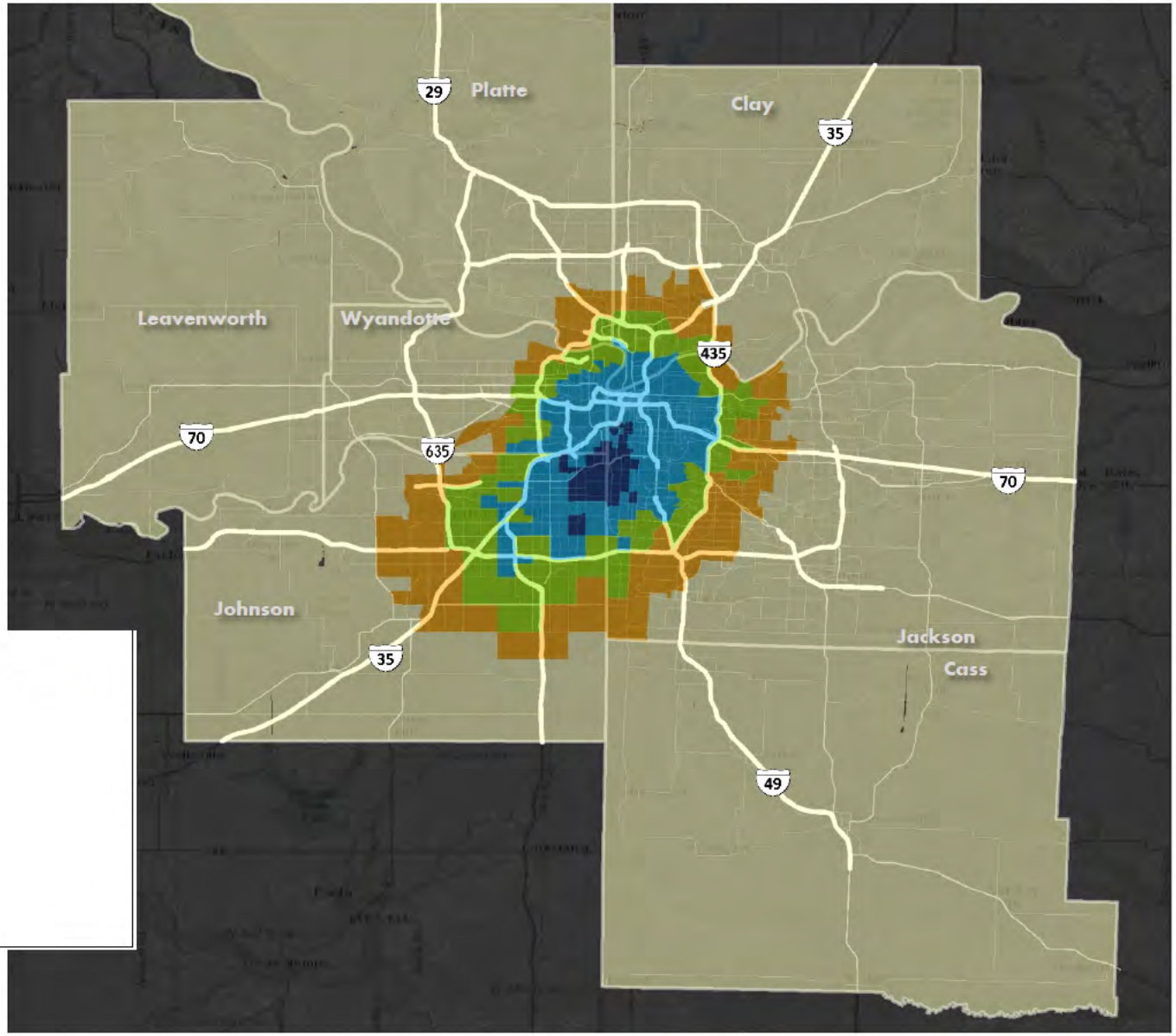
Transit Score

Diversity of Land Uses



Land Use Mix

Quick Access to Regional Jobs



Employment within 10 Minutes by Auto

Two Strategies for Close In Markets

Higher Rent Core

- Central Business District
- Near higher paying jobs
- Higher land costs require vertical construction

Lower Rent Neighborhoods

- Lower rents make new construction difficult
- Opportunities to reuse existing structures
- Subsidized demonstration projects

Close In Mixed Use

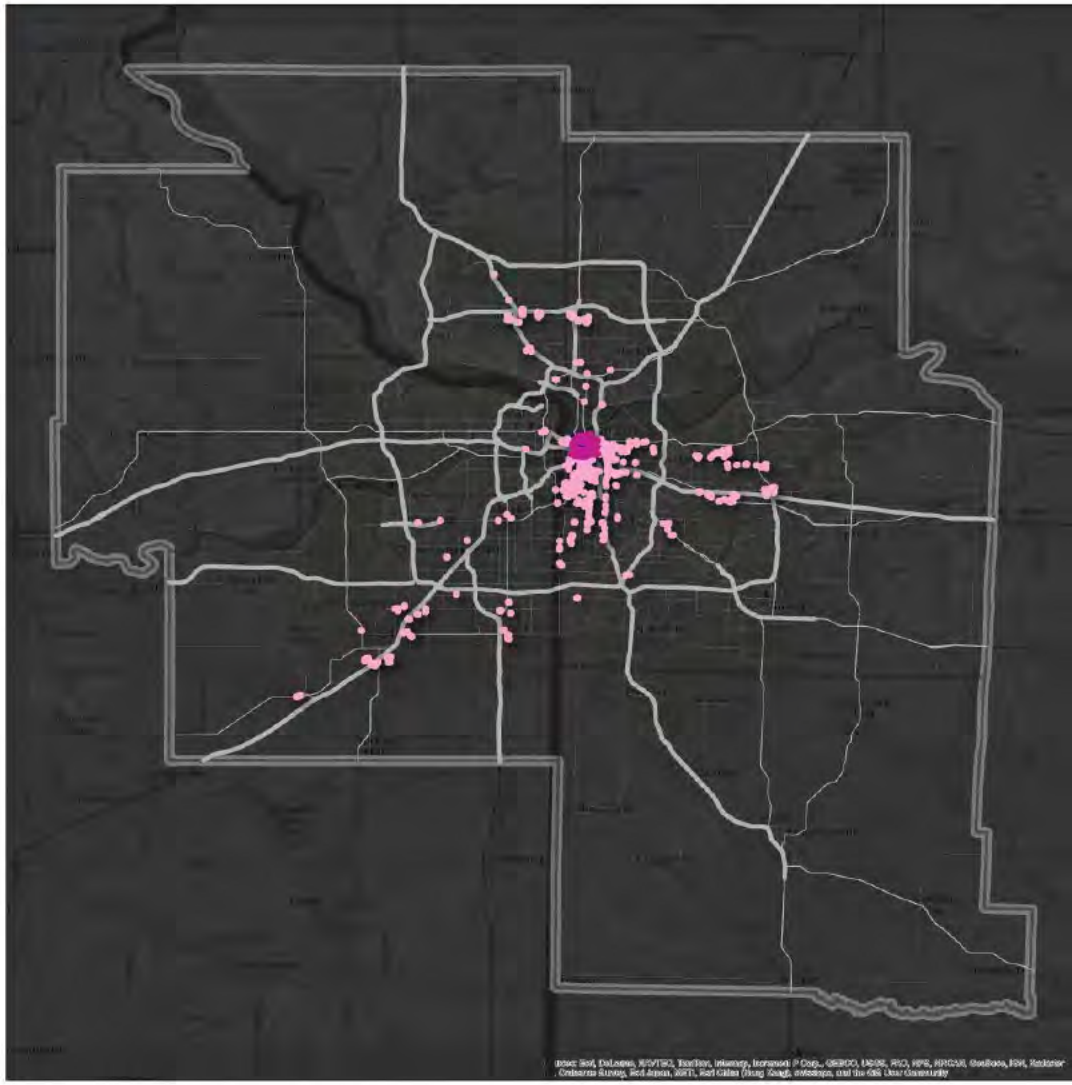
Rents are higher. Land costs are higher. Vertical mixed use is feasible in high amenity areas. 3-5 story mixed use buildings are possible. Efficient cost / rent ratio. Access to transit is fair, and much of the region's jobs are accessible within a 10 minute drive.

Housing

Close In Mixed Use

Criteria:

- Commercial, Employment, Mixed-Use FLU, or Surface Parking Lot EX LU
- Between $7 and $20 value per square foot
- Within activity center
- Transit score >=3
- At least ½ acre of vacant land (unless surface parking lot)
- Access to at least 300,000 jobs within a 10 minute auto trip



Solutions for Challenging Urban Markets

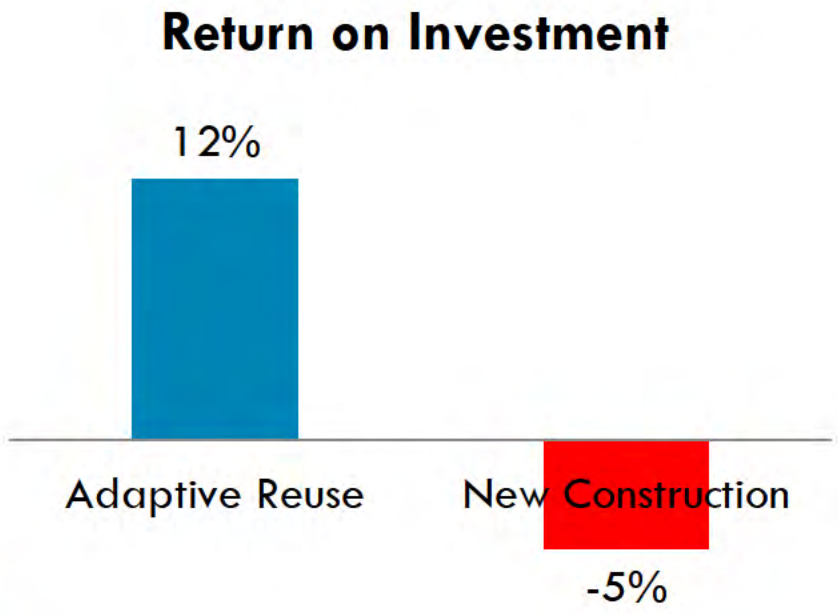
Lower rents make new construction difficult

Opportunities to reuse existing structures

Take advantage of existing urban form

Economics of Adaptive Reuse

- Less expensive, quick and sustainable
  - Half the cost of comparable new construction
  - Lower costs mean less rent is required to "pencil"
  - Less wasted materials



Dec 6, 2013, 5:00am CST | UPDATED: Dec 5, 2013, 1:25pm CST

COVER STORY

Retro activists: Friends join to restore Commerce Tower — and Downtown's glory

« Back to article

These "Mad Men"-esque renderings of Commerce Tower come from a 1985 leasing brochure.

« Back to article

Adaptive Reuse: a Viable Path Forward

- Retail repurposed
- Large homes re-imagined as flats

Repurposed Retail

1/3 cost of new construction

Single Family to Duplex

Half the cost of new construction

Demonstration Projects

- Public-private partnerships
- Power to change local markets
- May require subsidy
- Establish comparables; makes financing future projects easier

Short Term Market May Differ from Long Term Vision – Embrace Both.

- ***Allow inexpensive and/or interim building types that meet urban design standards***
- 1-story main street retail/office with no parking required
  - Increases street activity, generates downtown activity
  - Infill vacant parcels
  - Cheap to build, no subsidy required
  - Can be redeveloped when market heats up

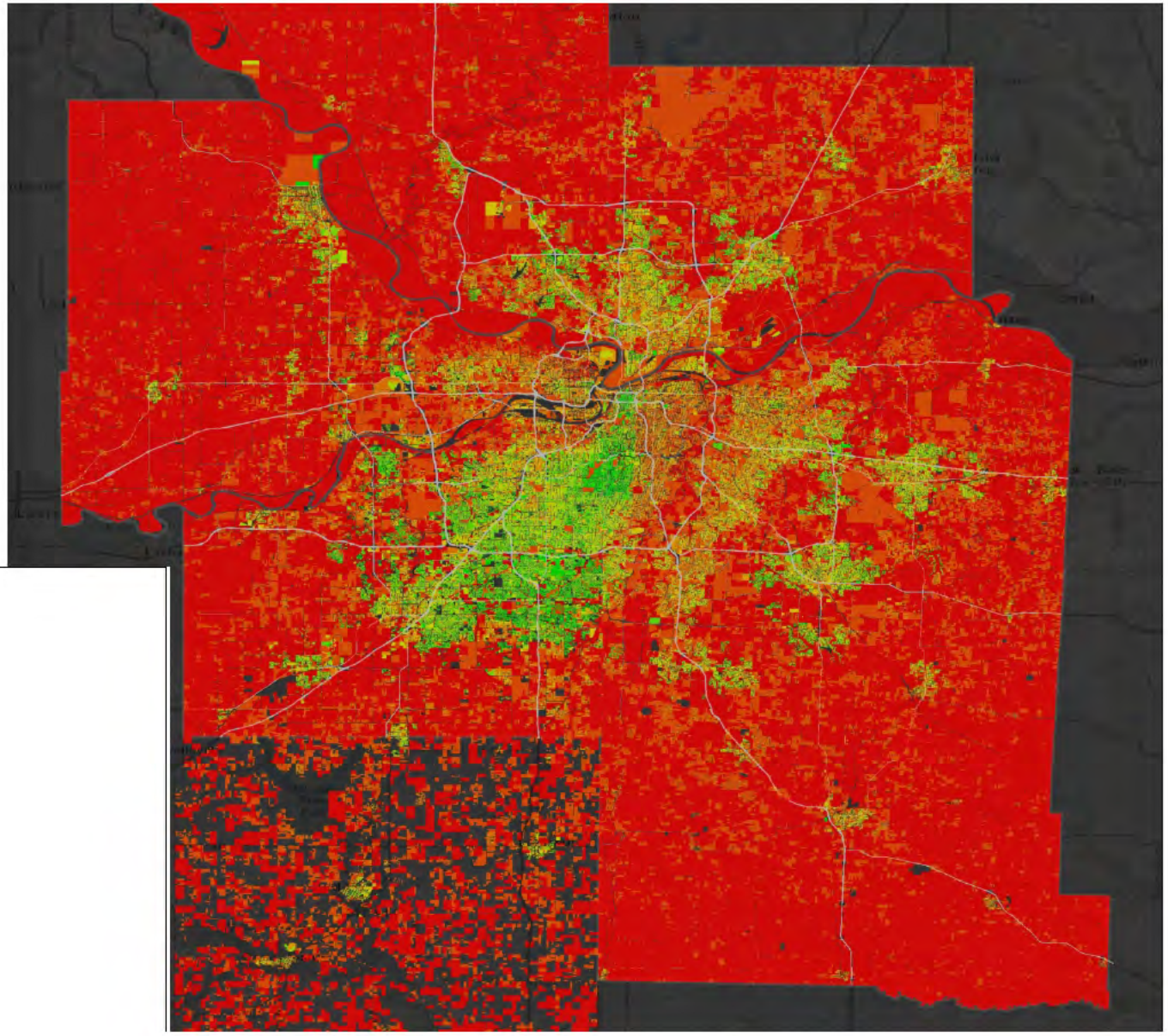
Embrace the Market: Food Carts and Trucks

- Food Carts
  - Instant street activity
  - Low overhead
  - Incubator model for future brick and mortar restaurants

What makes a good location?

- Underutilized/ Vacant land (sites that are already utilized are asset to community)
- Compatible land use nearby
- Good connectivity, roads, sidewalks – highways are barriers
- Lack of similar neighborhood services nearby

Finding the Bargains is Key



Total Land Value per Sq Ft

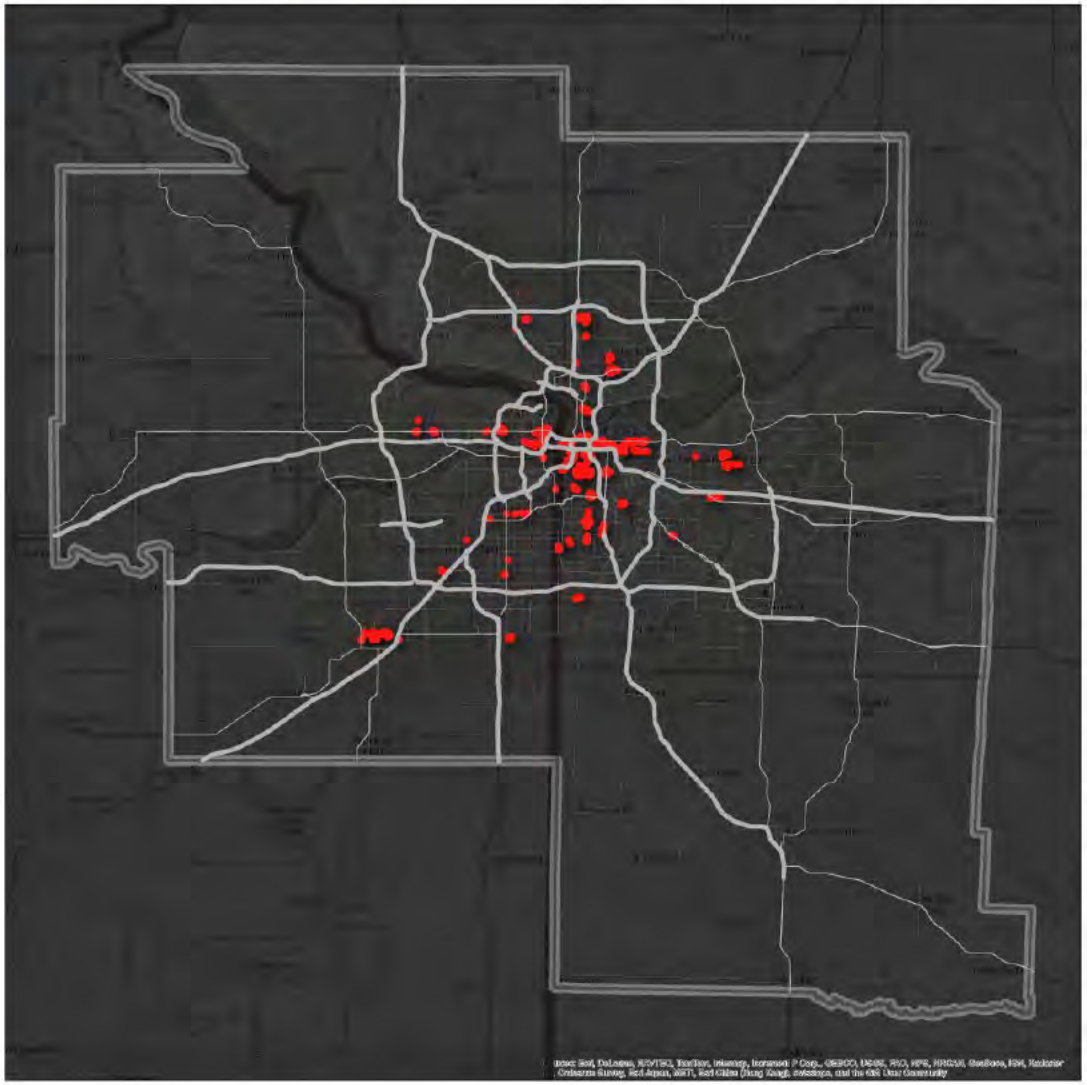
Commercial Infill / Adaptive Re-use

Aging commercial corridors where both rents and property values are low. Road density and transit access is still relatively good. There are unrealized assets in these areas that may need alternative strategies in order to be fully realized.

Commercial Infill / Adaptive Re-use

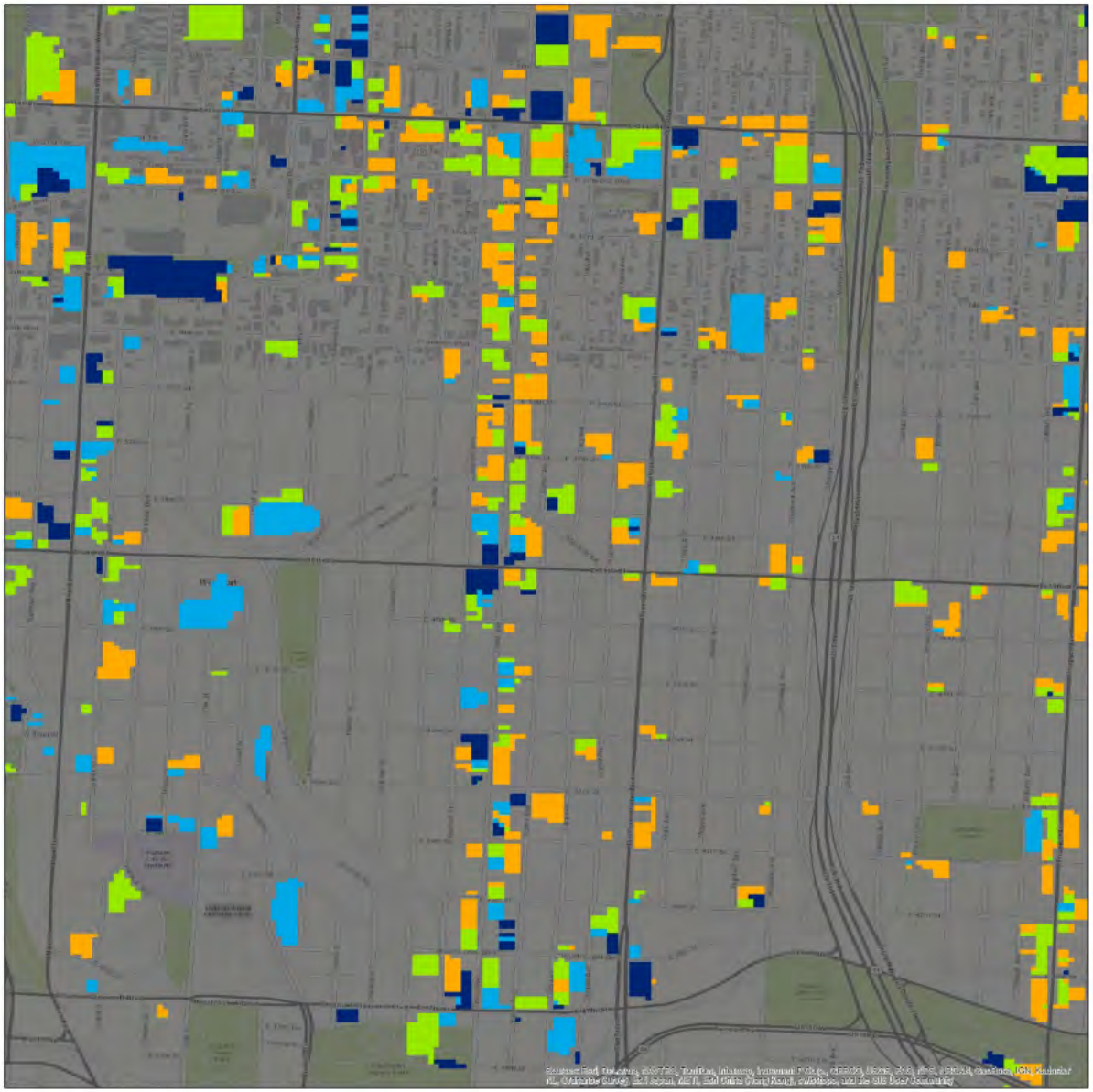
Criteria:

- Commercial or Mixed-Use FLU
- Less than $7 value per square foot
- Within an activity center
- Moderate road density
- Transit score >=3
- Walk score >2



Commercial Land – Low Value per Sq Ft

Commercial Land Costs

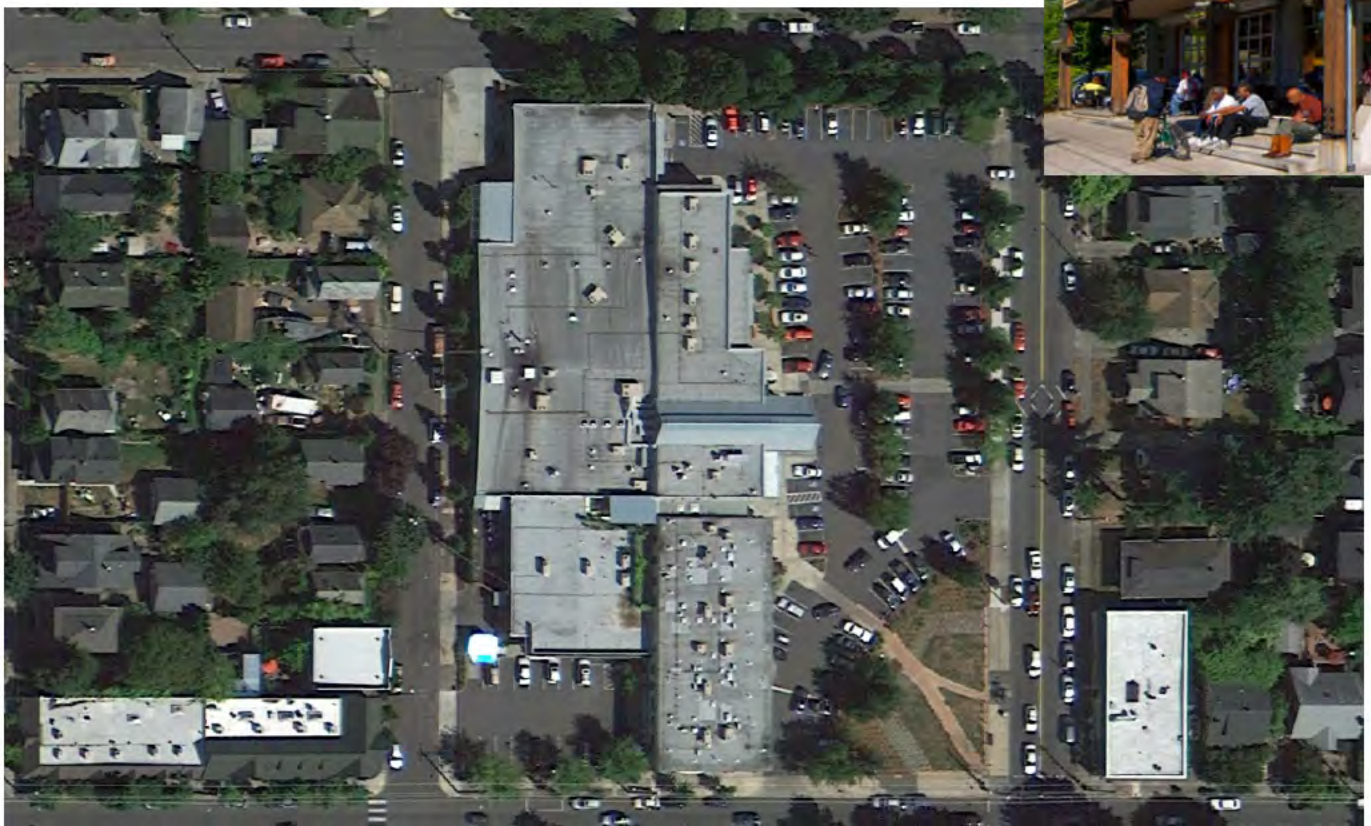


Inexpensive Construction with Good Urban Form and Local Character

Gas Station to Bar: Radio Room

Adaptive + New Construction

- Whole Foods Market
- NE Portland

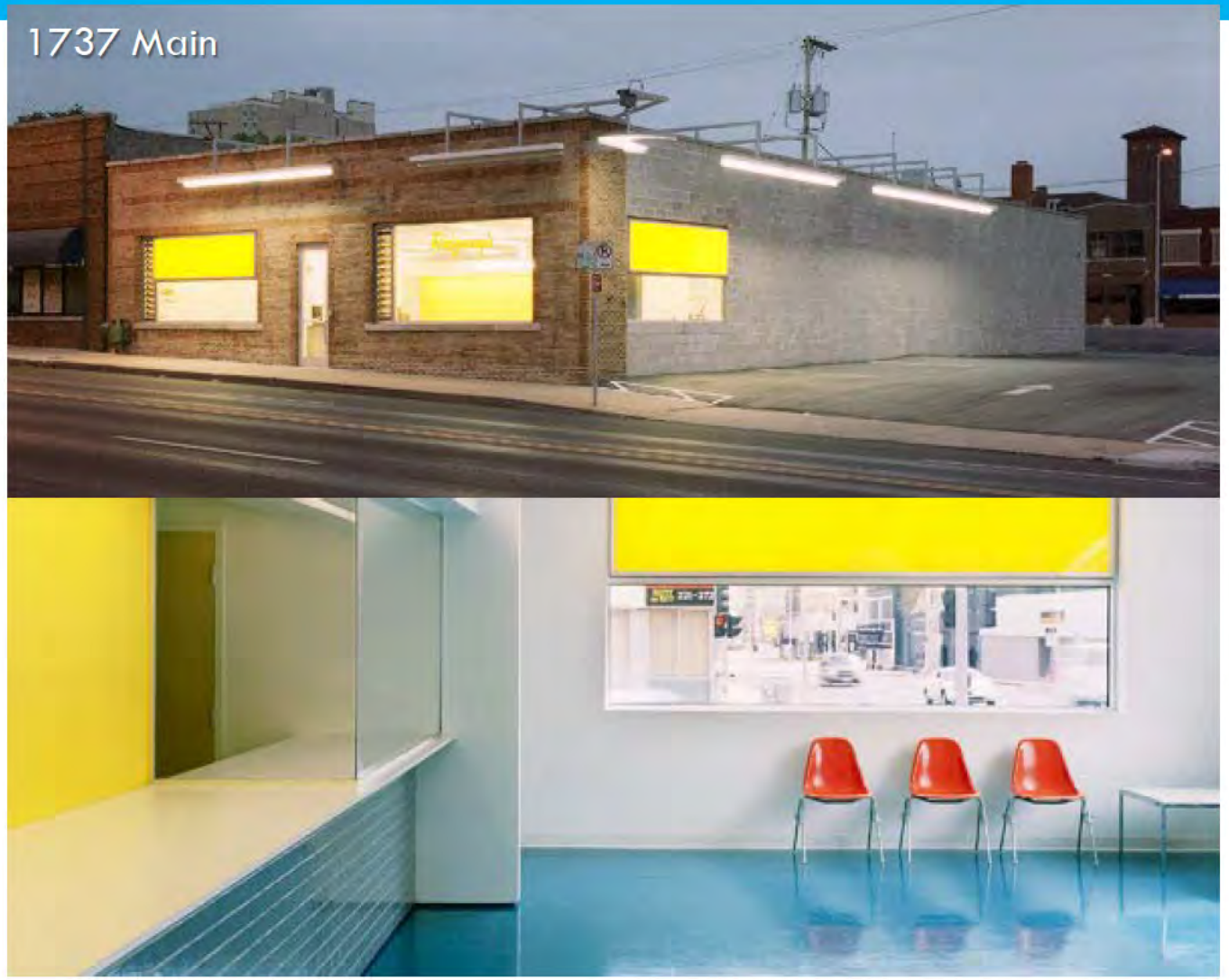


Incentivize Adaptive Re-Use: Storefront Improvement Programs

- Provide matching grants for:
  - Exterior façade improvements
  - Signage, lighting, and awnings
- Target businesses that:
  - Occupy older buildings
  - Are locally-owned
  - Occupy properties primarily in commercial use

Urban Reuse – Crossroads District

El Dorado Inc.



Urban Reuse – Crossroads District

Kem Studio

Today, Troost and Meyer

Troost & Meyer Visualization, Fregonese Associates

Potential future

Troost & Meyer Visualization, Fregonese Associates

Potential future

Troost & Meyer Visualization, Fregonese Associates

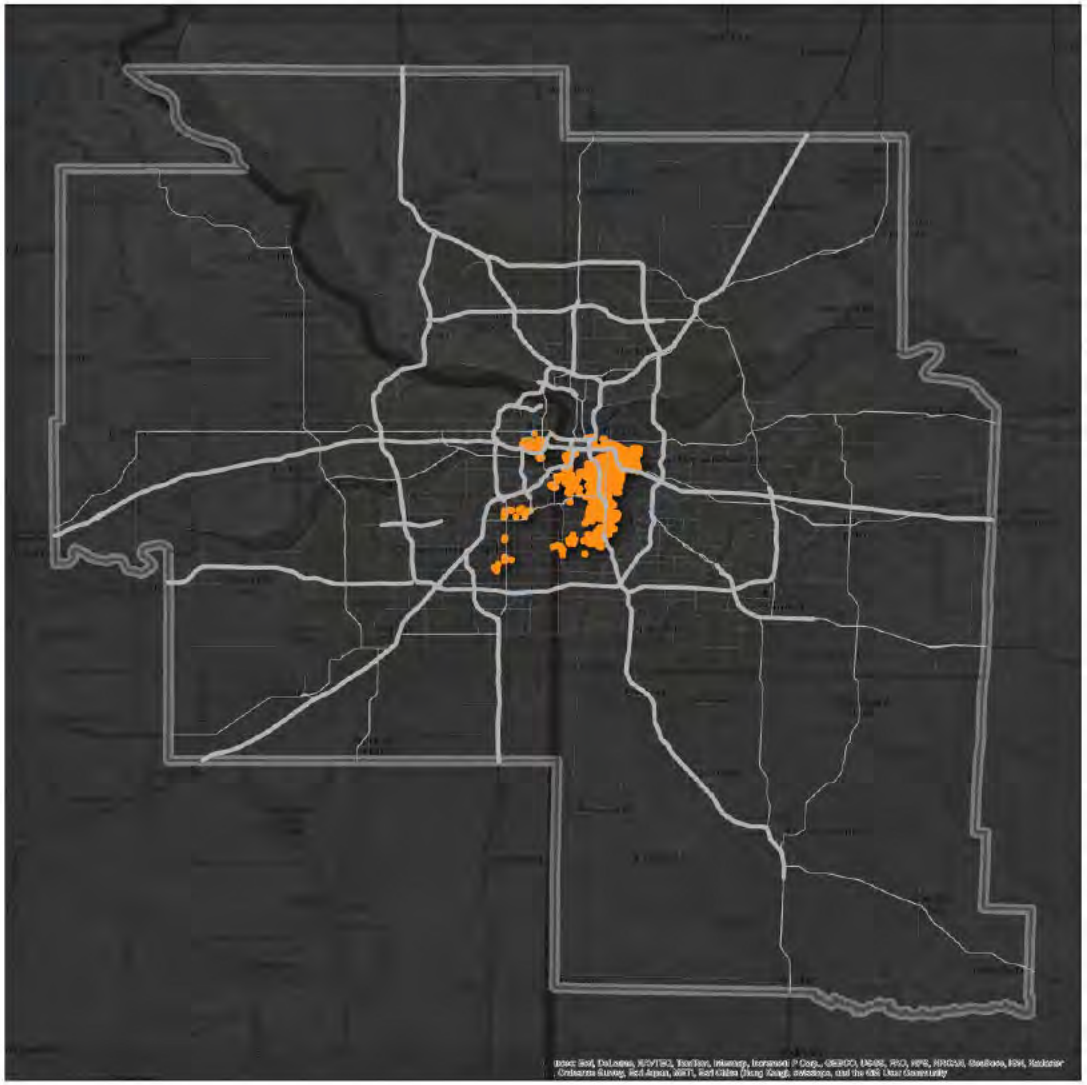
Residential Infill / Adaptive Re-use

Existing single-family neighborhoods where both rents and property values are low. Relatively close to regional job centers and commercial corridors. Adaptive reuse is the strategy – auxiliary dwelling units, plex conversions.

Residential Infill / Adaptive Re-use

Criteria:

- Existing single-family res land use
- Access to at least 300,000 jobs within a 10 minute auto trip
- Less than $7 value per square foot
- Within ¼ mile of an activity center
- Moderate road density
- Moderate wage-income balance
- Transit score >=3



Leverage What We Have

- Large stock of large old homes
- Difficult for single family to maintain alone
- Opportunity for owner-occupied rental conversion, ADUs – easily cover mortgage
- Housing solution for young urban pioneers and aging boomers alike.

Tweaks to Building Code

- Allow owner-occupied multi-unit dwellings
- Appropriate standards for adaptive reuse
- Exempt from additional parking

Opportunities in Farther Out Markets

Larger vacant parcels with transportation access.

Aging retail centers in higher rent areas.

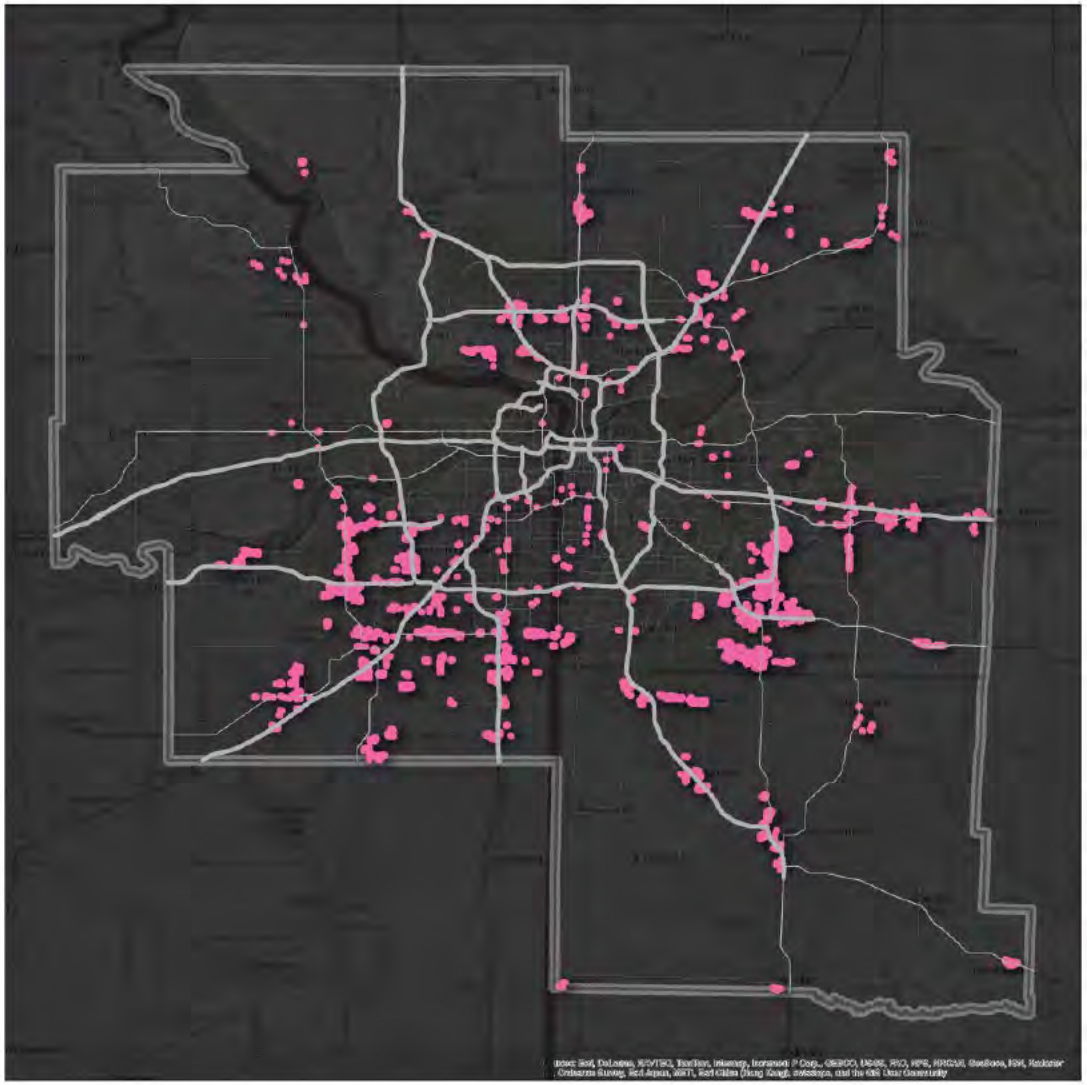
Place Types – Farther Out Centers

Rents are higher, but don't justify vertical mixed use construction. Land is relatively cheap and there is ample vacant land for the assembly of larger parcels. Horizontal mixed use with walkable design is the strategy. These centers are well-connected to regional job centers and grow over time to support the retail and employment needs of residential neighborhoods in the vicinity.

Selection Criteria – Farther out Centers

Criteria:

- Commercial, Employment, or Mixed-Use FLU
- Less than $10 value per square foot
- Within ¼ mile of an activity center
- Average wage of residents > $40,000
- Access to less than 300,000 jobs within a 10 minute auto trip
- Majority of parcel is vacant
- Moderate job-worker balance



Creating Neighborhood Centers

- Centers for retail, services and housing located within walking or biking distance of existing neighborhoods
- Storefronts open to sidewalk, typically 1-3 stories
- Shared parking in rear

Small commercial centers can fit within a residential context

Place Types – Farther Out Centers

Suburban centers can result from a large-scale master-planned neighborhood or develop gradually within existing retail and employment nodes.

Large-scale projects

Mission Farms

Piecemeal development

North Plaza Area – Westport Rd

Housing Closer to Jobs

- "Mixed-use" doesn't need to be vertical

- Small lot single family, main street retail and office can be walkable and transit-friendly

Creating Market-Feasible New Centers

- **First draft: architect's dream**
  - 3-story vertical mixed use
  - Structured parking
  - 40% open space
  - **($37 million short)**
    - **65% of total project value**

- **Refinement in ROI Model**
  - Horizontal mixed use (main street retail with adjacent housing)
  - More cottage homes and small lot single family
  - Surface and on-street parking
  - +4% Return
  - ***Feasible with 10% rent premium – could be feasible with good design and amenities***

Embrace the Market: Smaller Lot Single Family

- Cottage Homes
- Townhomes
- Compact Single Family
  - 12-20 units per acre
  - Potential for hundreds of new units near downtown cores
  - No subsidy required
  - Transit efficient and walkable/bikeable

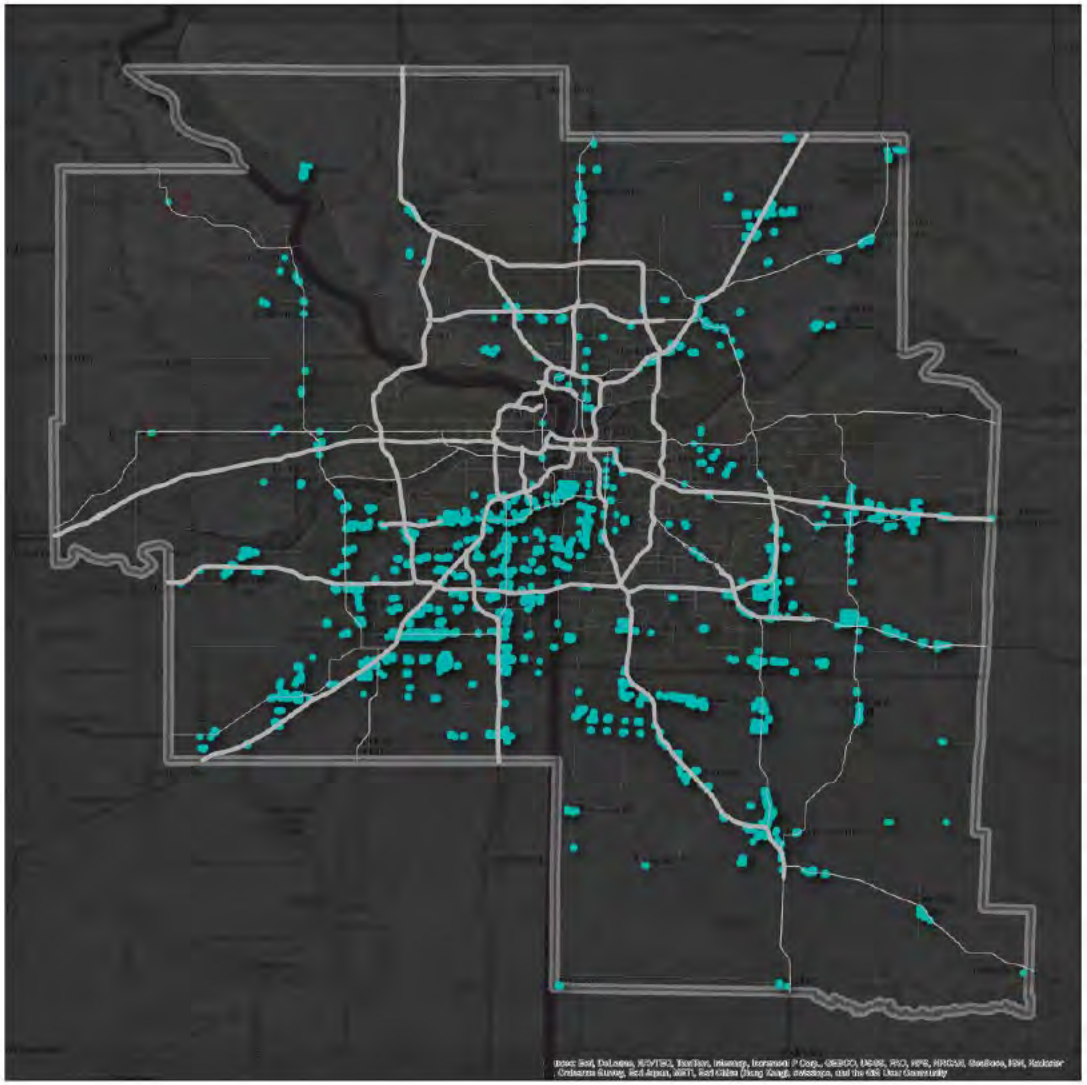
Commercial Reuse

Rents are higher, but don't justify vertical mixed use construction. Land is cheap, mostly vacant or low-density commercial. This strategy repurposes strip commercial and develops out parcels to incrementally increase employment density.

Commercial Reuse

Criteria:

- Low density commercial/employment FLU
- Less than $15 value per square foot
- Average wage of residents > $40,000
- Access to less than 300,000 jobs within a 10 minute auto trip



Incorporate Improvements for Pedestrians and Bicyclists

Commercial Reuse: Transforming Vacant Big Boxes

Heartland Community Church, formerly Rhodes Furniture, Strang Line Road, Olathe, KS

Former Walmart now houses four businesses in Blue Springs, MO

Source: http://www.bizjournals.com/kansascity/stories/2010/01/25/focus1.html

Big-Box Retail Rehabilitation

Abandoned big-box retail store site

Site size:
360,000 Square Feet

Big-Box Retail Rehabilitation

Redesigned to include

Big-Box Retail Rehab
81,680 sf (gross)
- 19 new retail spaces (one
- local grocery store (28,725 sf) with atrium space

3 over 1 (Office over Retail)
Retail: 34,300 sf (gross)
Office: 127,800 sf (gross)

1 level retail/restaurant
3,180 sf

Surface parking: 406 stalls

Big-Box Retail Rehabilitation

Today, Noland Road and Hwy 350

Noland Road Visualization, Fregonese Associates

With initial public improvements

Noland Road Visualization, Fregonese Associates

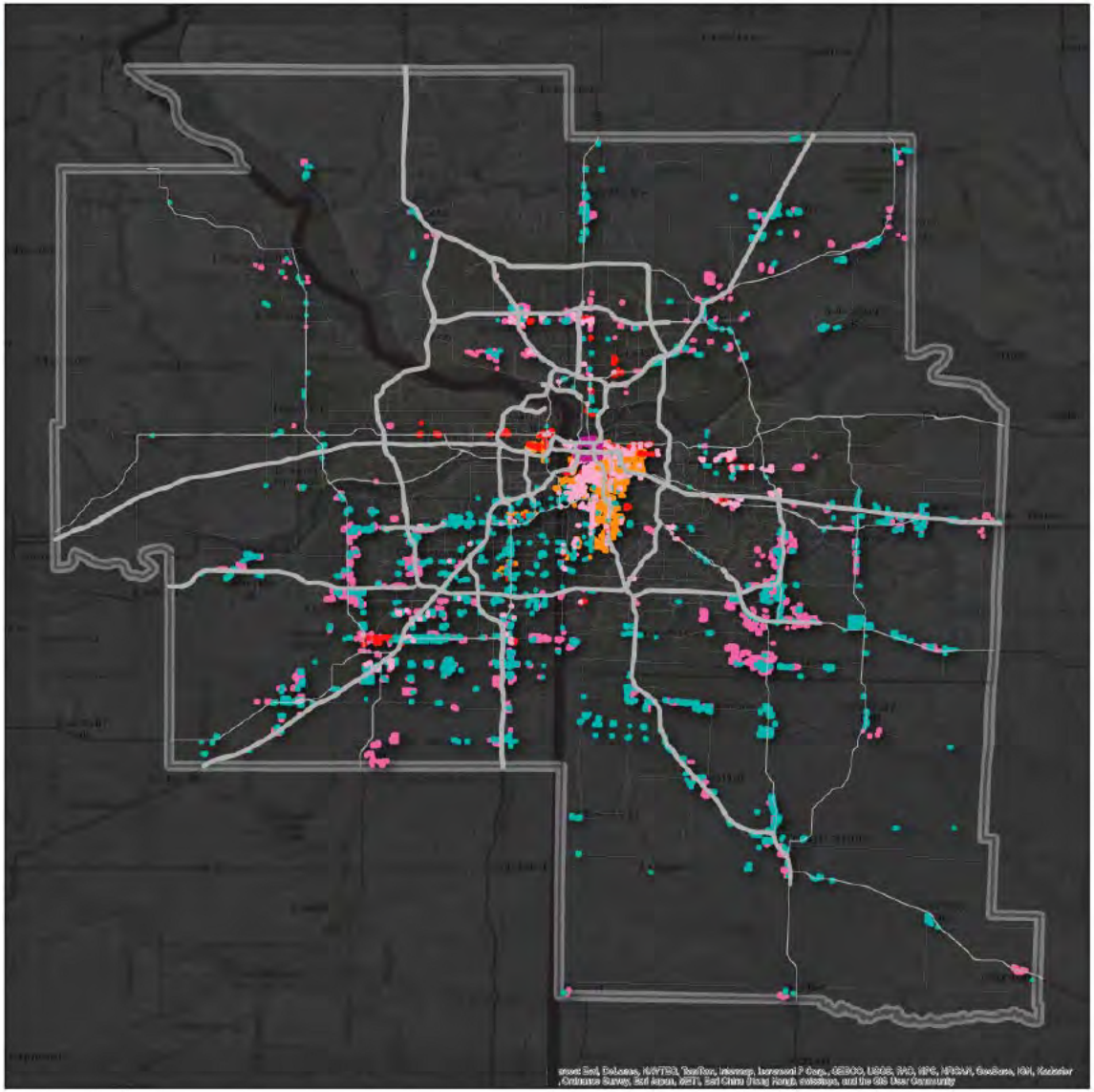
With corresponding private investment

Noland Road Visualization, Fregonese Associates

With corresponding private investment

Noland Road Visualization, Fregonese Associates

All Opportunity Sites



A Real Opportunity for a Sustainable Future

- **Get creative**
  - Use what we have – adaptive reuse
  - Allow less expensive, well designed solutions
- **Target emerging markets**
  - Housing options and employment space for young "urban pioneers"
  - Housing for downsizing, empty nesters
- **Clear the path to implementation**
  - Soup-to-nuts audit of development process
  - Audit code and development standards (fire etc)
  - Ensure all steps are clear and certain - ombudsman

REGION 2040

OMPASS BLUEPRINT
partnerships. serving communities.

Envision Utah
How we grow matters.

THE GRAND VISION

Great Lakes

Superstition Vistas

ENVISION CENTRAL TEXAS
YOUR IDEAS ★ OUR REGION'S FUTURE

Louisiana Speaks
Regional Plan
Vision and Strategies
for Regional Recovery and Growth

Florida


Wasatch
CHOICE for 2040
Heartland 2050
VIBRANT
NEO 2040
Creating Sustainable Places
VIBRANT
CONNECTED
SUSTAINABLE PLACES Project
THRIVE
2055
REACHING BEYOND TODAY
Florida

Creating Sustainable Places

A Centers-and-Corridors Strategy for Regional Sustainability

Regional Opportunities for Sustainable Growth and Redevelopment

December 6, 2013