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)

US
- 77%
- 10%
- 12%

MARC
- 64%
- 25%
- 12%

- <35 (Starter Units)
- 35-64 (Peak Space Demand)
- 65+ (Empty-nesting, downsizing)
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.

Walkability is in Increasing Demand

- More than 50% of local residents want to be 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
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

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

![Monthly Household Costs (H + T + E)](chart)

**Existing**
- Housing: $900
- Transportation: $72
- Energy: $687

**Base Zone Build Out**
- Housing: $1,863
- Transportation: $75
- Energy: $664

**SDAT**
- Housing: $1,921
- Transportation: $75
- Energy: $660

**UT Studio**
- Housing: $2,058
- Transportation: $83
- Energy: $633

Legend:
- Green: Transportation Cost / Mo
- Grey: Energy Cost / Mo
- Yellow: Housing Cost / Mo
Regional “Balance” Analysis

- Jobs-Housing balance impacts transportation
- GIS tool to identify imbalanced areas
- Envision Tomorrow Tools:
  - Jobs-Worker Balance
  - Income-Wage 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 in Transportation Air Pollutants
How Urban Form Affects Travel

- Academic research
- The “D” Variables
  - Density, Design, Diversity (of uses), Destinations, Demographics

Street Maps at the Same Scale

Venice, Italy
1,500 intersections/square mile

Los Angeles, CA
150 intersections/square mile

Irvine, CA
15 intersections/square mile

“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

<table>
<thead>
<tr>
<th>Developer Impact</th>
<th>Internal Rate of Return</th>
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<tbody>
<tr>
<td></td>
<td>4.4%</td>
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<table>
<thead>
<tr>
<th>Key Building Stats</th>
<th></th>
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<tbody>
<tr>
<td>Housing Units</td>
<td>1</td>
</tr>
<tr>
<td>Housing Unit Density</td>
<td></td>
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<tr>
<td>Jobs</td>
<td>41</td>
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<tr>
<td>Job Density</td>
<td>27.6</td>
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<tr>
<td>FAR</td>
<td>0.25</td>
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<tr>
<td>Net Building Square Feet</td>
<td>14,082</td>
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### Site Inputs

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

### FAR & Density Checks

<table>
<thead>
<tr>
<th>Maximum FAR (if applicable)</th>
<th>FAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of Allowed FAR Used</td>
<td></td>
</tr>
<tr>
<td>Maximum residential density (if applicable)</td>
<td>units/acre</td>
</tr>
<tr>
<td>Percent of Allowed Density Used</td>
<td></td>
</tr>
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</table>

### Building Uses

<table>
<thead>
<tr>
<th>Residential</th>
<th>None</th>
</tr>
</thead>
<tbody>
<tr>
<td>select single family, townhome, multifamily or none</td>
<td>select owner, renter or none</td>
</tr>
</tbody>
</table>
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:
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:
- 42%
- 45%
- 13%
- 0%
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
Visualizations

Powerful tools to communicate neighborhood scale changes

Troost & Armour
Kansas City, MO
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
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

Development Square Feet

Scenario A
- Industrial: 33,095
- Office: 70,484
- Retail: 103,002
- Residential: 97,302

Scenario B
- Industrial: 33,095
- Office: 70,484
- Retail: 103,002
- Residential: 97,302

Impervious vs. Pervious Surfaces
Parking Indicators

Parking Spaces

Scenario A: 927
Scenario B: 648

Parking Lot Coverage

Scenario A: 78%
Scenario B: 49%

Parking Spaces per 1,000 sqft of Development

Scenario A: 9.00
Scenario B: 3.22
# Environmental Indicators

<table>
<thead>
<tr>
<th></th>
<th>Scenario A</th>
<th></th>
<th>Scenario B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Per HH</td>
<td>Per Emp</td>
<td>Per HH</td>
</tr>
<tr>
<td>Energy Use (Million BTU/Yr)</td>
<td>-</td>
<td>136.6</td>
<td>96.1</td>
</tr>
<tr>
<td>Carbon Emissions (Tons/Yr)</td>
<td>-</td>
<td>12.7</td>
<td>8.9</td>
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<tr>
<td>Landscaping Water Use (G/Day)</td>
<td>-</td>
<td></td>
<td>659.7</td>
</tr>
<tr>
<td>Internal Water Consumption (G/Day)</td>
<td>-</td>
<td>68.0</td>
<td>60.7</td>
</tr>
<tr>
<td>Waste Water (G/Day)</td>
<td>-</td>
<td>38.0</td>
<td>104.0</td>
</tr>
<tr>
<td>Solid Waste (lbs/Day)</td>
<td>-</td>
<td>5.0</td>
<td>2.6</td>
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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

**Housing by Type**

- Multifamily: 51%
- Townhome: 35%
- Small Lot Single Family: 9%
- Conventional Lot Single Family: 5%
Close In Opportunity Areas

Existing areas with strong connectivity, mix of uses, and great regional access.
Significant Capacity at Opportunity Sites

- Hundreds of thousands of people can be accommodated
- Leverage existing infrastructure
- Housing for the future population
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 $\geq 3$
- At least $\frac{1}{2}$ acre of vacant land (unless surface parking lot)
- Access to at least 300,000 jobs within a 10 minute auto trip
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

Return on Investment

- 12% for Adaptive Reuse
- -5% for New Construction
Retro activists: Friends join to restore Commerce Tower — and Downtown’s glory

These "Mad Men"-esque renderings of Commerce Tower come from a 1965 leasing brochure.
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 \(\geq 3\)
• Walk score \(>2\)
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

Market Directions
Potential future
Potential future
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 residential 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 $\geq 3$
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

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
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
Creating Sustainable Places
A Centers-and-Corridors Strategy for Regional Sustainability

Regional Opportunities for Sustainable Growth and Redevelopment

December 6, 2013