MONEY TALK$-

Using Fiscal Analysis to Frame Discussions and Inform Decisions on Growth, Infrastructure and Development

NCTCOG Public Works Roundup
Grapevine, TX
May 21, 2019

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Founder/CEO
verdunity.com
Race to be the Best Place to Live, Work and Play

Post WW2, cities have aggressively pursued higher quality of life in the short-term without consideration of the long-term fiscal and environmental impacts.
What about Maintenance AFTER Growth?
Fragile Economies and Municipal Bankruptcies

- Boise County: $5.4 million
- Stockton: $26 million
- Mammoth Lakes: $43 million
- San Bernardino: $46 million
- Central Falls: $21 million
- City of Detroit: $18.5 billion
- Harrisburg: $300 million
- Jefferson County: More than $4 billion

Source: governing.com
Rapidly Increasing Public and Private Sector Debt

**Graph:**
- **United States:** Real Economy and Financial Sector
- **Index Base:** 1952 = 100
- **Graph Axis:**
  - Y-axis: 0 to 25000
  - X-axis: 1945 to 2010
- **Lines:**
  - Black: Real Economy (Nominal GDP)
  - Green: Private Sector Indebtedness
  - Blue: Public Sector Indebtedness
- **Annotations:**
  - First Life Cycle
  - Second Life Cycle

**Data Points:**
- **1945-1950:** Initial debt levels
- **1950-1960:** Steady rise
- **1960-1975:** Sharp increase
- **1975-2000:** Steep rise
- **2000-2010:** Exponential growth

**Conclusion:**
The graph illustrates a rapid increase in public and private sector debt over time, with distinct life cycles that highlight periods of significant growth.
## Rising Debt Levels and Credit Risk

### Largest funding gaps

<table>
<thead>
<tr>
<th>City</th>
<th>Current IPOD ratio</th>
<th>Norm. IPOD ratio</th>
<th>Funding gap</th>
<th>30-year remediation (mut. exclusive)</th>
<th>W/O remediation, reg. return on assets</th>
<th>Pension funding ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Rem.</td>
<td>Tax increase</td>
<td>Cut in direct non-pension contributions</td>
</tr>
<tr>
<td>Chicago</td>
<td>35%</td>
<td>62%</td>
<td>27%</td>
<td>27%</td>
<td>14%</td>
<td>426%</td>
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<tr>
<td>Houston</td>
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<td>50%</td>
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<td>23%</td>
<td>772%</td>
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<tr>
<td>Austin</td>
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<td>51%</td>
<td>26%</td>
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<td>287%</td>
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<td>45%</td>
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<td>30%</td>
<td>459%</td>
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<td>Baton Rouge</td>
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<tr>
<td>Fort Worth</td>
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<td>44%</td>
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<tr>
<td>Oakland</td>
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<td>51%</td>
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<td>462%</td>
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<td>51%</td>
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<td>41%</td>
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<td>20%</td>
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<td>333%</td>
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<td>52%</td>
<td>19%</td>
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<td>329%</td>
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<tr>
<td>Sacramento</td>
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<td>42%</td>
<td>19%</td>
<td>19%</td>
<td>18%</td>
<td>301%</td>
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<tr>
<td>Minneapolis</td>
<td>18%</td>
<td>36%</td>
<td>18%</td>
<td>18%</td>
<td>18%</td>
<td>217%</td>
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<tr>
<td>Los Angeles</td>
<td>33%</td>
<td>50%</td>
<td>16%</td>
<td>18%</td>
<td>19%</td>
<td>226%</td>
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<tr>
<td>Omaha</td>
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<td>44%</td>
<td>17%</td>
<td>17%</td>
<td>19%</td>
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<td>Honolulu</td>
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<td>51%</td>
<td>17%</td>
<td>17%</td>
<td>21%</td>
<td>76121%</td>
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<tr>
<td>Cleveland</td>
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<td>35%</td>
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<td>16%</td>
<td>15%</td>
<td>207%</td>
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<tr>
<td>El Paso</td>
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<td>41%</td>
<td>16%</td>
<td>16%</td>
<td>16%</td>
<td>200%</td>
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<tr>
<td>Columbus</td>
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<td>34%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>243%</td>
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<tr>
<td>Cincinnati</td>
<td>16%</td>
<td>31%</td>
<td>15%</td>
<td>15%</td>
<td>15%</td>
<td>278%</td>
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</tbody>
</table>

### County

<table>
<thead>
<tr>
<th>County</th>
<th>Current IPOD ratio</th>
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<td>Tax increase</td>
<td>Cut in direct non-pension contributions</td>
</tr>
<tr>
<td>Cook(IL)</td>
<td>11%</td>
<td>30%</td>
<td>19%</td>
<td>19%</td>
<td>33%</td>
<td>577%</td>
</tr>
<tr>
<td>King(WA)</td>
<td>21%</td>
<td>39%</td>
<td>18%</td>
<td>18%</td>
<td>9%</td>
<td>301%</td>
</tr>
<tr>
<td>Pt Georces(MD)</td>
<td>30%</td>
<td>46%</td>
<td>16%</td>
<td>16%</td>
<td>18%</td>
<td>783%</td>
</tr>
<tr>
<td>LAC(CA)</td>
<td>14%</td>
<td>29%</td>
<td>15%</td>
<td>15%</td>
<td>14%</td>
<td>552%</td>
</tr>
<tr>
<td>SanClara(CA)</td>
<td>21%</td>
<td>54%</td>
<td>13%</td>
<td>13%</td>
<td>18%</td>
<td>282%</td>
</tr>
<tr>
<td>Bergen(NJ)</td>
<td>10%</td>
<td>32%</td>
<td>13%</td>
<td>13%</td>
<td>17%</td>
<td>568%</td>
</tr>
<tr>
<td>Shelby(TN)</td>
<td>27%</td>
<td>39%</td>
<td>12%</td>
<td>12%</td>
<td>16%</td>
<td>217%</td>
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<tr>
<td>Suffolk(NY)</td>
<td>14%</td>
<td>26%</td>
<td>12%</td>
<td>12%</td>
<td>11%</td>
<td>3855%</td>
</tr>
</tbody>
</table>

Is Your City Really Fiscally Sustainable?
Long-Term Impacts of Rate and Pattern of Growth

- **Growth phase**
  - Avg. age of city infrastructure decreases.
- **Decline phase**
  - Avg. age of city infrastructure increases.

**Population** changes over time:
- Decreases during the growth phase.
- Increases during the decline phase.

**Time (Years)**
- Graph illustrates the long-term impacts of rate and pattern of growth on city infrastructure and population.
Service Costs Grow with Population & Geographic Expansion

**Today**  
< $1,000/acre

**Tomorrow**

**Buildout**  
$5-8,000/acre
Comparing the Value of Development Patterns

Old and blighted

Shiny and new
Comparing the Value of Development Patterns

Old & Blighted Block
($/acre) $1,136,500

New Fast Food Restaurant
($/acre) $803,200

Chuck Marohn
Strong Towns
Comparing the Value of Development Patterns

Auto Oriented “Big Box”
$0.6M/acre

Traditional Grid Downtown
$1.1M/acre

Chuck Marohn
Strong Towns
Revenue/Infrastructure Cost Gap

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxable Value</td>
<td>$747,552</td>
</tr>
<tr>
<td>Tax Received</td>
<td>$2,176</td>
</tr>
<tr>
<td>Cost of Repair</td>
<td>$36,484</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>5 to 7 yrs</td>
</tr>
</tbody>
</table>

Based on the current taxable value and the current tax rate, it would take **16.77** years for the properties to repay the repairs – that is assuming all of the future tax revenues are dedicated to the replacement costs and no other city services are provided during that same period.
### Revenue/Infrastructure Cost Gap

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Taxable Value</td>
<td>$953,441</td>
</tr>
<tr>
<td>Tax Revenue</td>
<td>$6,114</td>
</tr>
<tr>
<td>Cost of Repair</td>
<td>$206,876</td>
</tr>
<tr>
<td>Life Expectancy</td>
<td>40 years</td>
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</table>

Based on the current taxable value and the current tax rate, it would take **33.84 years** for the properties to repay the repairs – that is assuming all of the future tax revenues are dedicated to the replacement costs and **no other city services** are provided during that same period. **Location: East 32\(^{nd}\) Ave & East Avenue.**

Brownsville, TX
PAIN EXISTS TO... ...COMMUNICATE A WARNING
WE NEED A COMMON LANGUAGE

DISCUSS COMMON PROBLEMS

BUILD COMMON SOLUTIONS
Fiscal Sustainability as a Common Language

Circle City Parcels 2014 Land Use

- Single Family
- Apartments
- Commercial
- Condos / Townhomes
- Duplex/Triplex/Quadplex
- Industrial
- Mixed Use
- Undeveloped
The Potential of Fiscal Analysis

LU 1
Single Family
Added Population
10,568
Projected Tax Rate
$ 0.786

LU 2
Apartments
Added Population
14,331
Projected Tax Rate
$ 0.775

LU 3
Condos
Added Population
15,156
Projected Tax Rate
$ 0.763

LU 4
Mixed Use
Added Population
18,156
Projected Tax Rate
$ 0.557
Closing the Gap: Options for Citizens

1. Keep development patterns and service levels where they are, but charge more (via higher taxes and fees) to cover the true costs.

2. Keep tax rate where it is, but cut services to align with revenues.

3. Shift development pattern and infrastructure design to enable an affordable balance of services and taxes.

Our goal is to align the development pattern and service levels with what citizens are willing and able to pay for – now and in the future.
# Levy Revenue per Acre Mapping

**Cedar Hill, TX**

## Levy Revenue / Acre

<table>
<thead>
<tr>
<th>Lot Size in Acres</th>
<th>Levy / Acre</th>
<th>Avg Impv. Value</th>
<th>Levy Structural SqFt</th>
<th>Portion of City</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1 - 0.2</td>
<td>$5,947.95</td>
<td>$118,800</td>
<td>$0.51</td>
<td>6%</td>
</tr>
<tr>
<td>0.2 - 0.3</td>
<td>$4,889.03</td>
<td>$141,271</td>
<td>$0.51</td>
<td>5%</td>
</tr>
<tr>
<td>0.3 - 0.5</td>
<td>$3,816.16</td>
<td>$174,886</td>
<td>$0.56</td>
<td>2%</td>
</tr>
<tr>
<td>0.5 - 1.0</td>
<td>$2,241.27</td>
<td>$197,265</td>
<td>$0.57</td>
<td>2%</td>
</tr>
<tr>
<td>&gt; 1.0</td>
<td>$1,266.48</td>
<td>$288,126</td>
<td>$0.68</td>
<td>13%</td>
</tr>
</tbody>
</table>

**Cedar Hill Revenue / Acre**

- ≤ $1,696 Per Acre
- ≤ $3,996 Per Acre
- ≤ $5,392 Per Acre
- ≤ $6,697 Per Acre
- ≤ $21,450 Per Acre
<table>
<thead>
<tr>
<th>UNE</th>
<th>Average Improvement Value per Structure</th>
<th>Levy Per Acre</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.023 - 0.25</td>
<td>$128,059.30</td>
<td>$7,276.79</td>
</tr>
<tr>
<td>0.25 - 0.5</td>
<td>$141,451.31</td>
<td>$3,980.05</td>
</tr>
<tr>
<td>0.5 - 1.0</td>
<td>$351,830.54</td>
<td>$4,555.58</td>
</tr>
<tr>
<td>1.0 - 5.0</td>
<td>$1,025,652.08</td>
<td>$3,812.97</td>
</tr>
<tr>
<td>&gt; 5.0</td>
<td>$2,765,479.17</td>
<td>$2,320.21</td>
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</table>
Development Return on Investment (ROI)

2014 Fort Worth

- Agricultural
  - Median ROI: $0.03
  - Mean ROI: $0.00
- Vacant Residential
  - Median ROI: $0.03
  - Mean ROI: $0.15
- Vacant Commercial
  - Median ROI: $0.08
  - Mean ROI: $0.24
- Industrial
  - Median ROI: $0.47
  - Mean ROI: $0.60
- Commercial
  - Median ROI: $0.77
  - Mean ROI: $1.51
- Condos/Townhomes
  - Median ROI: $1.25
  - Mean ROI: $1.85
- Apartments
  - Median ROI: $0.97
  - Mean ROI: $1.16
- Single Family
  - Median ROI: $0.97
  - Mean ROI: $1.16

Return on Investment (ROI)

ROI in Equal Count Intervals 2014 (246344)

- $0.00 - $0.20
- $0.21 - $0.40
- $0.41 - $0.60
- $0.61 - $0.80
- $0.81 - $1.00
- $1.01 - $1.20
- $1.21 - $1.40
- $1.41 - $1.60
- $1.61 - $1.80
- $1.81 - $2.00
- $2.01 - $2.20
- $2.21 - $2.40
- $2.41 - $2.60
- $2.61 - $2.80
- $2.81 - $3.00

VERDUNITY
Development Context Data
Development Context Data

$0.00 - $1.00

Fountain Ridge Boulevard
Village Lane
Southlake Brownstones
Montero Village
Ridglea Apts.
Ridglea Condos
Hulen Apts Condos
West 7th
Southlake Town Square
Ridglea Corridor

$0.54
Development Context Data
Projecting General Fund Costs

2012 2013 2014 2015 2016 2017

Leander (99%)  Georgetown (40%)  Kyle (50%)  Bastrop (15%)  San Marcos (102%)  Cedar Park (47%)  Round Rock (17%)
Forecasting Fiscal Impacts of Development

City of Fate, TX

2015 Net Revenue
- $50,000
- $50,000 – $-1,000
- $-1,000 – $0
- $0 – $1,000
- $1,000 – $50,000
- > $50,000

2015 Net Revenue w/ Street Replacement Costs
- $-50,000
- $-50,000 – $-1,000
- $-1,000 – $0
- $0 – $1,000
- $1,000 – $50,000
- > $50,000

2050 Projected Net Revenue at Buildout
- $-50,000
- $-50,000 – $-1,000
- $-1,000 – $0
- $0 – $1,000
- $1,000 – $50,000
- > $50,000

$72M Deficit
COSTS OF SERVICE & INFRASTRUCTURE

REVENUE GENERATION

PROHIBIT OR LIMIT THESE PATTERNS

INCENTIVIZE THESE PATTERNS

VERDUNITY
Development Modeling Methodology

Scenario A: Existing property tax levy revenue $ minus current operating budget costs (Baseline/existing conditions)

Scenario B: Added projected general fund costs and unfunded street replacement costs spread over 20 years (2020-2040) ($144M deficit ~ $7.2M annually)

Scenario C: Projected ROI of adopted FLUP with street costs spread over 30 years (2040-2070) ($4.6M annual deficit)
Scenario B: Budget + Estimated Deficit (2040)

Annual Deficit of:

$7,228,069

City of Bastrop, TX
Scenario B: Budget + Estimated Deficit (2040)

Annual Deficit of:
$7,228,069
Development Pattern Comparisons (Scenario A vs B)

- Historic Downtown
- Small Lot Residential
- Large Lot Residential

City of Bastrop, TX
## ROI Performance of Existing Land Use

### Single Family

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
<th>Net Weighted Current Per Acre (Scenario A)</th>
<th>Net Weighted Deficit Annual Per Acre (Scenario B)</th>
<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>73,709.07</td>
<td>377,234.13</td>
<td>85.30</td>
<td>148,430.42</td>
<td>171,605.02</td>
<td>2,459.78</td>
<td>0.11</td>
<td>594.08</td>
<td>(2,611.84)</td>
<td>2.16</td>
<td>0.76</td>
</tr>
<tr>
<td>0.02 - 0.2</td>
<td>88,931.65</td>
<td>934,545.79</td>
<td>90.08</td>
<td>154,886.55</td>
<td>164,437.41</td>
<td>5,603.09</td>
<td>0.23</td>
<td>3,734.28</td>
<td>(2,281.17)</td>
<td>1.87</td>
<td>0.64</td>
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<tr>
<td>0.2 - 0.3</td>
<td>97,191.60</td>
<td>532,153.27</td>
<td>82.77</td>
<td>131,344.47</td>
<td>150,883.65</td>
<td>3,448.62</td>
<td>0.15</td>
<td>1,579.79</td>
<td>(3,003.31)</td>
<td>1.58</td>
<td>0.52</td>
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<tr>
<td>0.3 - 0.4</td>
<td>127,272.32</td>
<td>407,079.90</td>
<td>80.19</td>
<td>141,248.16</td>
<td>180,529.89</td>
<td>2,934.44</td>
<td>0.12</td>
<td>1,065.61</td>
<td>(3,151.22)</td>
<td>1.23</td>
<td>0.43</td>
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<tr>
<td>0.4 - 0.5</td>
<td>100,531.91</td>
<td>326,836.11</td>
<td>82.60</td>
<td>148,034.97</td>
<td>184,651.07</td>
<td>2,299.31</td>
<td>0.10</td>
<td>430.47</td>
<td>(3,402.25)</td>
<td>1.22</td>
<td>0.40</td>
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<td>0.5 - 0.75</td>
<td>99,184.98</td>
<td>276,716.10</td>
<td>82.77</td>
<td>167,797.19</td>
<td>217,067.75</td>
<td>2,033.54</td>
<td>0.08</td>
<td>176.25</td>
<td>(3,785.20)</td>
<td>0.79</td>
<td>0.32</td>
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<td>0.75 - 1.0</td>
<td>66,327.77</td>
<td>177,162.39</td>
<td>77.89</td>
<td>155,292.00</td>
<td>205,592.00</td>
<td>1,322.84</td>
<td>0.05</td>
<td>(511.06)</td>
<td>(3,592.92)</td>
<td>0.42</td>
<td>0.19</td>
</tr>
<tr>
<td>&gt; 1.0</td>
<td>129.00</td>
<td>70,181.40</td>
<td>79.12</td>
<td>162,005.78</td>
<td>220,512.12</td>
<td>538.77</td>
<td>0.02</td>
<td>(1,330.06)</td>
<td>(3,403.59)</td>
<td>0.48</td>
<td>0.16</td>
</tr>
</tbody>
</table>

### Mobile Homes

<table>
<thead>
<tr>
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<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>44,234.21</td>
<td>39,664.32</td>
<td>38.67</td>
<td>35,618.03</td>
<td>63,581.52</td>
<td>399.34</td>
<td>0.04</td>
<td>(1,469.49)</td>
<td>(4,403.59)</td>
<td>0.48</td>
<td>0.16</td>
</tr>
</tbody>
</table>

### Apartmets

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
<th>Net Weighted Current Per Acre (Scenario A)</th>
<th>Net Weighted Deficit Annual Per Acre (Scenario B)</th>
<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>1,076,186.34</td>
<td>4,121,628.56</td>
<td>4,594,144.44</td>
<td>6,778.05</td>
<td>6,778.05</td>
<td>4,909.22</td>
<td>0.38</td>
<td>2,922.89</td>
<td>2,922.89</td>
<td>2.81</td>
<td>1.53</td>
</tr>
</tbody>
</table>

### Duplexes

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
<th>Net Weighted Current Per Acre (Scenario A)</th>
<th>Net Weighted Deficit Annual Per Acre (Scenario B)</th>
<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>77,688.07</td>
<td>613,971.47</td>
<td>78.06</td>
<td>162,884.01</td>
<td>159,036.65</td>
<td>1,865.48</td>
<td>0.18</td>
<td>(681.32)</td>
<td>(681.32)</td>
<td>3.20</td>
<td>1.23</td>
</tr>
</tbody>
</table>

### Commercial

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
<th>Net Weighted Current Per Acre (Scenario A)</th>
<th>Net Weighted Deficit Annual Per Acre (Scenario B)</th>
<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>198,854.88</td>
<td>402,804.37</td>
<td>257.45</td>
<td>859,541.30</td>
<td>878,748.68</td>
<td>1,549.42</td>
<td>0.11</td>
<td>(1,852.89)</td>
<td>(1,852.89)</td>
<td>3.14</td>
<td>0.96</td>
</tr>
</tbody>
</table>

### Industrial

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
<th>Net Weighted Current Per Acre (Scenario A)</th>
<th>Net Weighted Deficit Annual Per Acre (Scenario B)</th>
<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>43,383.67</td>
<td>47,788.44</td>
<td>41.71</td>
<td>183,027.25</td>
<td>349,219.25</td>
<td>514.15</td>
<td>0.28</td>
<td>(5,294.54)</td>
<td>(5,294.54)</td>
<td>0.32</td>
<td>0.10</td>
</tr>
</tbody>
</table>

### Agricultural

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
<th>Net Weighted Current Per Acre (Scenario A)</th>
<th>Net Weighted Deficit Annual Per Acre (Scenario B)</th>
<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>172,602.90</td>
<td>669.05</td>
<td>47.62</td>
<td>54,853.93</td>
<td>48.72</td>
<td>0.00</td>
<td>(1,056.08)</td>
<td>(1,056.08)</td>
<td>0.36</td>
<td>0.16</td>
<td></td>
</tr>
</tbody>
</table>

### Vacant

<table>
<thead>
<tr>
<th>Acreage Sizes</th>
<th>Land Value Per Acre</th>
<th>Improvement Value Per Acre</th>
<th>Improvement Value Per SqFt Structure</th>
<th>Average Improvement Value per Structure</th>
<th>Average Tax Value per Lot</th>
<th>Levy Per Acre</th>
<th>FAR</th>
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<th>ROI Weighted Deficit Annual (Scenario A)</th>
<th>ROI Weighted Deficit Annual (Scenario B)</th>
</tr>
</thead>
</table>
ROI Performance of Existing Zoning Districts

City of Bastrop, TX
ROI (Current Operating Budget)
ROI (Budget + Unfunded Street Maintenance Costs)

$65,865,199 Annual Deficit
Applications of Fiscal Modeling

- Provides a language and process to back up the desired outcome of a “fiscally resilient community”

- Align development pattern, infrastructure and services with what citizens are willing and able to pay for now and in the future

- Inform land use, annexation and growth management decisions to balance revenues, costs and debt obligations over time

- Create zoning and design guidelines that encourage financially sustainable development patterns

- Inform infrastructure and economic development investments
3 Takeaways

1. Our current pattern of development is not aligned with what citizens are willing and able to pay. We must accept resource constraints and work within them to build more resilient communities and infrastructure.

2. Where, when and how you add people and development has a direct relationship to your city’s fiscal health and resiliency.

3. Fiscal resilience can be the common language to bring perspectives together, frame discussions and inform decisions for land use, growth management, infrastructure and economic development.
Want to Dig Deeper and Connect with Others?

Visit verdunity.com to:

• Keep up with latest blog and Go Cultivate! podcast episodes
• Subscribe to receive a monthly email digest of recent content
• Request additional information or schedule a follow-up call with our crew
• Book a workshop in your area
• Pre-register for our exclusive online community (launching June 2019!!)

Contact Information:
Kevin Shepherd, P.E., ENV-SP
kevin@verdunity.com
214.425.6720
@k_shepherd @verdunity
Maximizing Service Investments

Blocks: 69  69
Block Size: 300 x 300  300 x 300
Homes: 621  887
Lot Size: 10,000 sf  7,000 sf
Call Volume: 100  143
Call Capacity Per Station: 400  400
Fire Station Annual Costs: $1,000,000  $1,000,000
Avg Value of Home: $300,000  $260,000
Total Value of Homes: $186,300,000  $230,620,000
Property Tax Rate: 0.5  0.5
Total Revenue: $931,500  $1,153,100
Budget Hit: $68,500  $153,100
Maximizing Service Investments

Blocks: 90
Block Size: 300 x 300
Homes: 810
Lot Size: 10,000 sf
Call Volume: 130
Call Capacity Per Station: 400
Fire Station Annual Costs: $1,000,000
Avg Value of Home: $300,000
Total Value of Homes: $243,000,000
Property Tax Rate: 0.5
Total Revenue: $931,500
Budget Hit: $1,215,000

Blocks: 90
Block Size: 300 x 300
Homes: 810
Lot Size: 10,000 sf
Call Volume: 130
Call Capacity Per Station: 800
Fire Station Annual Costs: $2,000,000
Avg Value of Home: $300,000
Total Value of Homes: $243,000,000
Property Tax Rate: 0.5
Total Revenue: $931,500
Budget Hit: $1,068,500
Streets, Roads and STROADS
### Comparing Costs & Benefits

**STREETS** vs. **STROADS**

<table>
<thead>
<tr>
<th></th>
<th>Streets</th>
<th>Stroads</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial infrastructure cost</td>
<td>$$</td>
<td>$$$$$</td>
</tr>
<tr>
<td>Maintenance cost</td>
<td>$$</td>
<td>$$$$$</td>
</tr>
<tr>
<td>Right-of-way required</td>
<td>●●●●●</td>
<td></td>
</tr>
<tr>
<td>Land used for surface parking</td>
<td>●●●●●</td>
<td></td>
</tr>
<tr>
<td>Property tax revenue (/ac)</td>
<td>$$$$$$</td>
<td>$</td>
</tr>
<tr>
<td>Flexibility to repurpose</td>
<td>●●●●●</td>
<td></td>
</tr>
</tbody>
</table>

**CULTIVATE!**

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