

Land Use Fiscal Analysis

Prepared for the City of New Braunfels, Texas



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Staff:

Robert Camareno
Jordan Matney
Jared Werner
Christopher J. Looney, AICP
Garry L. Ford Jr.
Jeff Jewell
Jean Drew, AICP, CNU-A
Matt Greene, CFM
Elizabeth DuPont

CITY MANAGER
DEPUTY CITY MANAGER
ASSISTANT CITY MANAGER
DIRECTOR OF PLANNING
& DEVELOPMENT SERVICES
DIRECTOR OF TRANSPORTATION
& CAPITAL IMPROVEMENTS
DIRECTOR OF ECONOMIC
& COMMUNITY DEVELOPMENT
ASSISTANT DIRECTOR OF
PLANNING & DEVELOPMENT SERVICES
PRINCIPAL PLANNER
TRANSPORTATION PLANNER

City Council:

Neal Linnartz
Andrés Campos
Christopher Willis
D. Lee Edwards
Lawrence Spradley
Mary Ann Labowski
April Ryan
Harry Bowers

MAYOR
COUNCIL MEMBER DISTRICT 1
COUNCIL MEMBER DISTRICT 2
COUNCIL MEMBER DISTRICT 3
COUNCIL MEMBER DISTRICT 4
COUNCIL MEMBER DISTRICT 5
COUNCIL MEMBER DISTRICT 6
FORMER COUNCIL MEMBER

Consultant Team:

Kevin Shepherd, PE, ENV-SP
Matthew Meals
Antonela Stoica
Marshall Hines, CNU-A
Maddie Capshaw, AICP

Fiscal Analysis Data Timeframe

This analysis represents the fiscal state of New Braunfels' development pattern and budget at a particular moment in time. As such, it's important to note what data sets were used and what years they represent. The property value and tax data was obtained from the 2023 certified tax rolls for Comal and Guadalupe Appraisal Districts, and city budget and cost values were obtained from the City of New Braunfels FY23/24 adopted budget.

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Executive Summary

Study Overview

Where, when, and how a city adds new development and infrastructure has a direct impact on the long-term fiscal health and affordability of the community. Some development patterns produce sufficient property tax revenue to cover service and infrastructure costs, while others require higher home values and subsidies from other funding sources to be sustained. One of the largest unfunded liabilities in cities is the cost to maintain and ultimately replace public streets and infrastructure.

Cities across the U.S. are trending toward spread out, auto-centric

development. This type of development features larger lots, wider roads, and an increase in the number of roads, bridges, and traffic signals. As a result, municipal resource gaps have grown and housing has become more expensive.

To be financially sustainable, a city must have sufficient revenue to cover its service and infrastructure costs now - and in the future. Simultaneously, they also must ensure housing and commercial space remains affordable. Additionally, the more revenue a city can capture from stable, predictable sources (such as property taxes), the more resilient it will

be when more volatile funding streams like sales tax and grant funds aren't as plentiful.

The City of New Braunfels has requested this study to help quantify and communicate the fiscal performance of its current development and service model, identify opportunities to improve current policies to encourage fiscally sustainable development patterns, and inform discussions about ways the City can continue improving its long-term fiscal health. Recommendations from this study will be considered in the City's upcoming update to its Comprehensive Plan.

Report Contents

Introduction

This section expands on the background and purpose for the study, the methodology used, and key questions and issues city staff are looking for this report to help address.

Economics of Land Use

This section includes additional information on key concepts and trends from work across Texas and the U.S. These provide important context for understanding where New Braunfels fits, relative to other communities.

Analysis Results

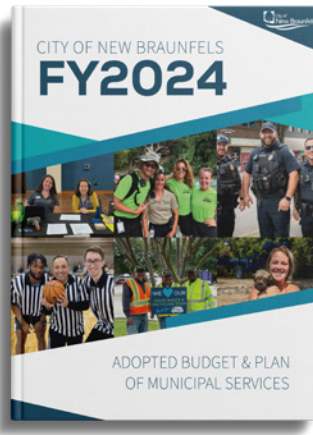
This section includes the analysis results and accompanying maps and charts for the City of New Braunfels, including breakdowns of fiscal performance by land use, zoning district, and individual parcels.

Key Findings & Recommendations

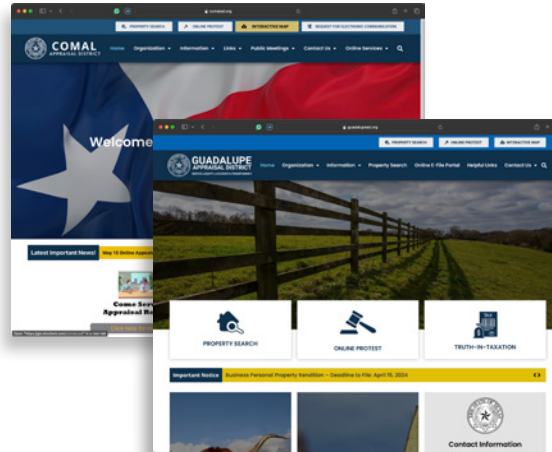
This section includes a summary of the main takeaways from the analysis and recommendations for the City to consider.

Data Sources

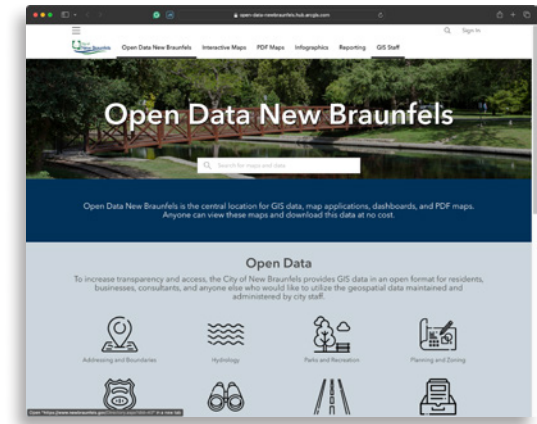
Executive Summary Data Sources



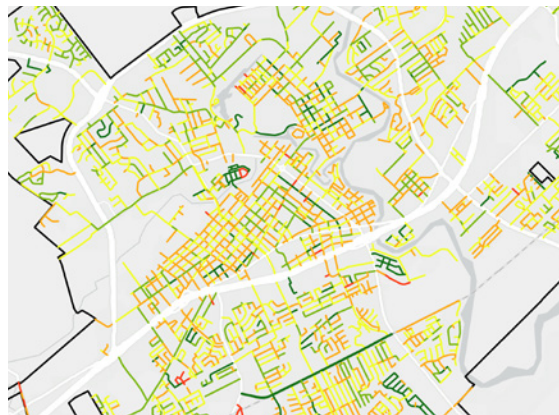
City of New Braunfels Budget and ACFR documents for the past five years (through FY23/24)



2023 certified tax roll data from Comal and Guadalupe Appraisal Districts (and accompanying GIS shape files)



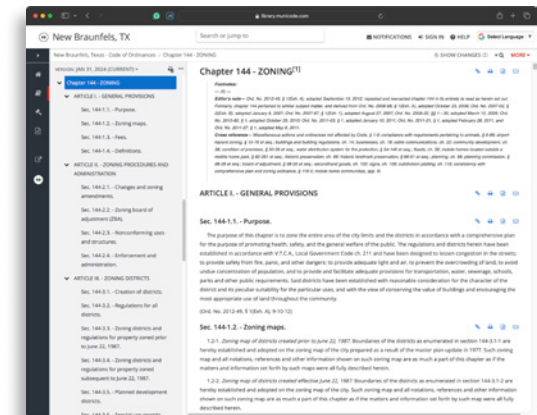
City of New Braunfels GIS shape files for land use, zoning, infrastructure, and existing development



Pavement condition data, provided by city staff



Copies of current long-range plans, including the Comprehensive Plan and Regional Transportation Plan



Currently adopted development codes and zoning district standards

Summary of New Braunfels' Land Use Fiscal Health

New Braunfels is in a healthy position today, but has mounting infrastructure liabilities. These liabilities will require additional funding in the future that could impact residents' share of the cost burden. It could also impact the long-term affordability and inclusiveness of the community. Key factors contributing to New Braunfels' fiscal position include its current development pattern, its general fund revenue portfolio, and the state of its street maintenance and funding.

There are, of course, always potential areas of concern. Pressure to increase lot sizes, widen streets, and build more auto-centric development on the periphery of the city will be constant as the area continues to grow. If this adopted as the primary pattern of development, it will likely drive housing prices and taxes up over time to a point that's not sustainable. This is because the costs to serve the city will outpace revenue production.

Key Factors Affecting New Braunfels' Fiscal Position

Development Pattern

Unlike many suburbs that aggressively pursued autocentric growth over a short period (typically 2-3 decades), New Braunfels historically had steady growth which then rapidly accelerated the past 2 decades. This growth pattern resulted in infrastructure liabilities being spread over a longer time period. Additionally, there are pockets of high value per acre development in the city's core that feature traditional-style development and a diverse mix of housing options. These areas help subsidize the less productive parts of the city. Despite having more mixed-use, traditional development than most Texas cities, additional infill and diversification of housing is needed to keep up with demand and maintain affordability into the future.

General Fund Revenue Portfolio

About 27% of the city's general fund comes from property taxes and there's approximately an equal split between property tax and sales tax. However, roughly 40% of the city's general fund revenue comes from other sources like fees, fines, and interfund transfers, which can also be volatile and difficult to budget for. As New Braunfels continues to build out, it will be important to maintain or even increase the revenue generated from property tax, so the city has the resources it needs to cover future service and infrastructure costs that tend to increase as a city matures.

Street Maintenance and Funding

The city has a life cycle street liability of approximately \$801M, which averages out to \$32.1M per year over 25 years. This amount is significant, but only about 20% of the city's streets are in need of significant repairs or replacement *in the next decade*. The remainder of the streets are in good condition today, so exactly when they will need to be rebuilt will depend on how well the city is able to maintain them in the years ahead. The city is proactively addressing aging streets by increasing staff and equipment resources for preventative maintenance, and utilizing bond-funded capital projects for larger reconstruction projects. More money will be needed to keep the city's streets and infrastructure in good condition. An intentional combination of more robust maintenance now followed by acknowledging and budgeting for larger reconstruction costs coming out in the future is an appropriate approach.

Executive Summary
Summary of New Braunfels'
Land Use Fiscal Health

The purpose of this land use fiscal analysis is to provide information about the revenues, costs, and net fiscal performance of different development patterns. The city's development and service model can then be aligned with what residents are willing and able to pay. This helps ensure the city can offer a diverse mix of housing and neighborhood options that stay affordable and attractive.

Actions to Undertake Today

Executive Summary Actions to Undertake Today

While the city is doing fairly well, there are things that can be done to grow revenues, improve efficiency of city services, manage future liabilities and keep housing affordable.

1

Promote revised development standards that allow flexibility to build small units on small lots, narrower streets, and less parking, and continue to work across all departments in the city to find innovative ways to serve more compact development as opposed to adopting standards that incentivize larger lots and wider roads. This will ensure that smaller products that are critical to keeping housing affordable and preserving and enhancing existing neighborhoods can continue to be built in the city. Aligning codes with fiscally sustainable and affordable development is addressed in more detail later in this section.

2

Prioritize infill projects that add people and buildings in areas with existing infrastructure. This will increase tax revenue without significant impacts on services and infrastructure costs, and distribute cost burdens out across more home/business owners.

3

Perform a fiscal impact analysis on new rezoning requests to understand how they will impact the city's service costs and long-term infrastructure liabilities. The majority of new development should generally have a positive net revenue per acre so the surplus revenue can be directed toward infrastructure maintenance and covering costs of the parts of the city that require subsidy. A Development Fiscal Impact Analysis (DFIA) model tool calibrated to New Braunfels' local context and budget can help expedite this process.

4

Increase preventative maintenance efforts in place to defer and balance out future reconstruction costs. Where the existing context allows, design street projects (rebuilt and new streets) to reduce pavement width and support more walkable, mixed-use development.

5

When surplus funds are available, prioritize these funds toward infrastructure maintenance and projects that preserve and enhance the value and revenue production of existing neighborhoods.

General Recommendations

In addition to the previous specific actions, there are some more general recommendations that should be considered as well. These recommendations are expanded upon in the Key Findings section of this document.

1

Update Development Policy to Focus on Fiscal Health and Affordability

2

Consider Long-Term Costs in Budgeting and Tax Policy

3

Select Capital Improvement Plan (CIP) Projects and Infrastructure Designs that Increase Revenue while Decreasing Cost

4

Engage Residents to Identify Low-Cost Improvements That Would Improve Their Daily Quality of Life

5

Cultivate Small/Incremental Development with Local Developers and Entrepreneurs

Introduction

Background

The dominant development approach implemented across the United States since World War II has prioritized auto-centric design with larger lots and wider roads, fast growth, and low taxes in the near-term without fully considering long-term costs and impacts. While new development adds rooftops and businesses that generate additional revenue, it also increases a city's service and infrastructure liabilities. As cities have shifted to more spread out, auto-centric development, it has reduced the revenue productivity of land and

increased infrastructure costs. Local governments have rarely saved enough money to cover the costs of maintaining and replacing infrastructure initially put in by private developers.

Costs to serve and maintain cities are rising, particularly for older, more mature communities, while resources available to cities are limited. At the same time, the costs to build and live in single-family suburban homes are rapidly increasing. This increase limits who can afford this type of housing and lifestyle. It also limits what residents are willing and able to pay

in taxes and fees.

This resource gap often manifests as deferred maintenance, or maintenance that is put off until a later date. It can also result in frequent bond elections to fund maintenance projects. In more extreme cases, it can result in service area constriction, which means a city permanently removes infrastructure and services.

Introduction
Background



NOTE: For cities to remain vibrant and affordable into the future, they will need to have a development pattern that generates enough revenue to cover service and life cycle infrastructure costs while also providing a mix of housing options at different price points.

The Purpose of this Study

Introduction The Purpose of this Study

Development regulations determine the development patterns that can be built within any community. Those development patterns and the tax revenues they lead to - both property and sales taxes - are what cities rely upon to finance infrastructure and services. The community's fiscal health is determined by how closely those revenues match up to the costs they must cover.

Due to recent legislative decisions, Texas cities are limited on how much revenue they can collect from property taxes. In contrast, Texas cities are

responsible for 100% of their costs, regardless of the amount. This leads to the typical problem of costs quickly outpacing revenue. Cities can tailor development rules to align better with financial capabilities by understanding the link between development patterns and fiscal dynamics.

A land use fiscal analysis provides important data-driven insight on this relationship that can help city leaders make more informed decisions. Concepts like revenue production, cost generation, taxpayer liability, and affordability

are elements of a common language. This language should be used by the community as it makes decisions on: land use and development; infrastructure; budgeting; economic development; and, tax rate adjustments. Armed with data on the fiscal performance of existing development, service costs, and infrastructure liabilities, city leaders can then work to align development and service policies with what citizens are willing and able to pay for - now and in the future.

This Study Can Help to Explain:

1

How existing development in the city is performing in terms of property tax revenue per acre and net revenue per acre when current budget and future infrastructure costs are allocated to parcels.

2

How a city's general fund revenue breakdown is structured between property tax and more volatile sources like sales tax, grants, and fees, and how this "portfolio" needs to evolve as the city shifts from a growth context to a maintenance and redevelopment focus.

3

How compact development typically generates a higher tax base and positive net return to pay for infrastructure and public services (and how more spread out development increases infrastructure and service costs).

4

How wider lanes and roadways impact street maintenance and future reconstruction liabilities, and how street and lot width impact per lot/household cost burdens.

5

How well current zoning and development regulations align with fiscally productive development patterns.

Philosophy and Methodology

Philosophy

Introduction

Philosophy and Methodology

People often talk and think negatively about taxes. However, these tax dollars are what fund all the infrastructure and services that are too important to leave unfunded and unprovided. These include public goods such as clean drinking water, public safety, transportation infrastructure, parks, sewer, drainage, and solid waste.

The general fund is the primary fund used to cover the costs of these services, except where an enterprise fund with a fee structure system has been installed to cover the costs (solid waste, for example). Ideally the taxing and fee structures a city institutes generate enough revenue to cover the costs of maintenance and operations. However, that is rarely the case. A growing number of cities attempt to cover escalating maintenance and operational costs by taking on debt. Alternatively, they opt not to fund some maintenance and services. The largest unfunded component of most city budgets is maintenance and replacement of aging streets.

Typically, a city's general fund in Texas consists of property taxes, retail sales taxes, and fees. The percentage between these varies by city, but most cities share the general philosophy of growing the sales tax base to reduce the

property tax rate. Additionally, in high growth cities, fees from new development such as permitting and impact fees make up a significant portion of the general fund. If or when these revenue streams are reduced, it puts the community in a fragile position, and the city is forced to either raise taxes and fees to generate more revenue, or cut and defer services and infrastructure maintenance, reducing the quality of life and appearance of the community.

When looking at a city's budget it's important to remember that it balances with the expected revenue, not the actual costs of maintaining everything. Most cities operate with a hidden deficit that only grows over time. One of the easiest ways to determine if a city has a resource gap is to look at the backlog of unfunded street maintenance. Maintenance and replacement of aging streets is one of the largest costs cities have, but it tends to take a back seat to public safety, parks and recreation, and staff costs in the annual budgeting process. So, while budgets are balanced every year, there's a hidden deficit when you factor in these unfunded street costs. This becomes a serious problem when street conditions deteriorate to the point that the appearance of neighborhoods declines

and property values in those areas begin to stagnate or drop. It is much easier for a city to proactively set money aside for future street maintenance during its growth years than it is to try to find additional revenue after road conditions, property values and population growth are in a tailspin.

The underlying philosophy behind this study is that in a property tax state (like Texas), the property tax revenue generated from development in the city should be enough to cover the full life cycle costs required to maintain surface infrastructure (primarily streets and sidewalks), as well as a significant portion of other basic services such as public safety and administration. Similarly, utility infrastructure costs should be covered by utility rates and associated enterprise funds. When development produces sufficient property tax revenue to cover these costs, this revenue can replace one-time development fee revenue and frees up sales tax revenue to focus on economic development and quality of life improvements that preserve and enhance property values over time.

Methodology

The study focuses on property taxes, the general fund and those services paid for (or that should be paid for) by the operations and maintenance (O&M) portion of the property tax. This study's methodology can be summarized in the following steps. More detailed explanations of the steps and corresponding information are included later in the document.

1

REVIEW CITY BUDGET DOCUMENTS

This is needed to determine high-level trends for general fund revenues and expenditures, identify the percentage of general fund revenues coming from property tax, and organize expenditures into two main categories: public service costs and infrastructure costs.

2

MAP THE ASSESSED VALUE FOR EACH PARCEL

These maps reflect the assessed value of parcels, but do not account for local tax rates, exemptions, and costs.

3

MAP THE LEVY PER ACRE FOR ALL PARCELS IN THE CITY (LEVEL 1)

This reflects the actual ad valorem (property tax) revenue a city collects from a property. It eliminates non-revenue generating parcels and factors in exemptions to determine the actual revenue collected by the city, and then converts the value into a ratio of revenue per acre. This enables us to look at the tax productivity of all parcels through a single metric (revenue per acre).

4

ADD BUDGET COSTS INTO THE ANALYSIS (LEVEL 2)

Once revenue is mapped, costs are added. The first phase of cost analysis represents existing budget conditions. When the analysis drills down to the parcel level, it becomes apparent which parcels bring in more than they cost to serve, and which ones cost more to serve than they generate in revenue. Public service costs from the budget are allocated using a developed/undeveloped property ratio. Infrastructure costs from the general fund budget are allocated using a served/unserved ratio. In both cases, costs are further allocated to parcels based on proportionate area.

5

INCORPORATE UNFUNDED STREET REPLACEMENT COSTS (LEVEL 3)

In the next step Level 3, future/unfunded street replacement costs are added to the analysis. This reflects a more accurate representation of the full costs associated with development, as the life-cycle costs of infrastructure put in initially by developers are now considered. In some cases, other unfunded costs (additional public safety or other services not covered by revenue) are factored in.

6

ANALYZE DATA TO DETERMINE HOW EACH LAND USE CATEGORY PERFORMS.

Once the revenue and cost allocation is done and mapping is complete, the data is analyzed to evaluate how different land use categories, zoning districts and geographic areas (such as downtown or neighborhoods) perform across the different levels of analysis outlined above.

Key Concept

There is a strong correlation between the physical and spatial characteristics of development patterns and their fiscal value to the city. Characteristics such as building layout, block structure, street design, and architectural standards all impact property tax as well as retail sales tax revenues. They also impact the cost burden required to serve and maintain over time. When considering current tax revenue and budget costs, some development patterns operate at a net gain, while others have a net loss. When future infrastructure replacement costs are incorporated, it increases the cost burden on the city and produces a *resource gap* that needs to be closed.

This gap can be closed by increasing revenue through higher values and/or raising the tax rate; reducing service and infrastructure costs to align with revenues; or adjusting development patterns to be more fiscally productive. *A critical takeaway is that the city can increase revenues and close resource and affordability gaps without raising taxes by adjusting its development pattern. A city doesn't need every parcel to operate at a net gain. A city just needs enough net gainers to compensate for those that operate at a net loss.*

1



**INCREASE
TAXES OR FEES**

2



**REDUCE
SERVICES**

3



**DEVELOP IN A
MORE PRODUCTIVE WAY**

The Economics of Land Use

The Value of Development Patterns

The form and process by which property develops in a community is its development pattern. Development patterns are caused by varied wants, needs, and desires amongst community leaders, residents, and developers. On the right are three of the most common development patterns seen in Texas and across the United States: rural, suburban, and urban. Each of these patterns accommodates a certain amount of people, requires different amounts of infrastructure and public services, and consumes varying amounts of land.

Understanding the economic constraints these patterns present is key to helping build a resilient and fiscally sustainable place. The economics of land use, at a high level, pertains to how these different development patterns generate revenue back to the city in the form of property tax, sales tax, and other revenues. The development patterns also generate costs and liabilities in the form of services and infrastructure that require maintenance over time. To be financially sustainable, a city's development pattern must generate sufficient revenue to pay for services and infrastructure; not just today, but over time.

COMMON DEVELOPMENT PATTERNS



The Economics of Land Use

The Value of Development Patterns

Value Per Acre	LOW
Infrastructure Costs	LOW
Service Levels	LOW
Population Per Acre	LOW
Cost Per Household	LOW

Value Per Acre	MID
Infrastructure Costs	HIGH
Service Levels	HIGH
Population Per Acre	MID
Cost Per Household	HIGH

Value Per Acre	HIGH
Infrastructure Costs	HIGH
Service Levels	HIGH
Population Per Acre	HIGH
Cost Per Household	LOW

The Suburban Growth Experiment

The Economics of Land Use

The Suburban Growth
Experiment

NEW BRAUNFELS YESTERDAY & TODAY¹



Source: USGS



Source: Google

For thousands of years, cities all over the world were built and grew incrementally out (horizontally), up (vertically), and more intensely (higher density), as resources allowed. This traditional pattern of development was characterized by a compact grid, narrower streets, and diverse building types (whose uses were flexible) all geared toward a human scale, and it was built in increments when the demand and money were available. New structures or streets were built next to existing buildings or

infrastructure because this was the most cost-effective way of growing.

When the automobile was invented, it prompted a development shift in the U.S. that engineer and Strong Towns² founder Charles Marohn coined the “suburban experiment.” The creation of the highway system, increasing car ownership, and mass-scale housing programs rolled out after World War II combined to create a new environment where developers were able to purchase and develop land out on the edge for lower costs, and the

suburbs were born. Streets and buildings became more spread out than ever before, and residential, commercial, and other uses were separated. Fewer buildings were designed with unique character or built to last. Instead, they were designed to be cost-effective and mass-produced. Unlike the previous incremental growth, cities began to see massive amounts of housing, streets, and infrastructure being built over a much larger area in a short amount of time - typically just one or two decades.

¹Here, the 2022 New Braunfels City Limits have been isolated to compare the development pattern in 1958 to the development since then.

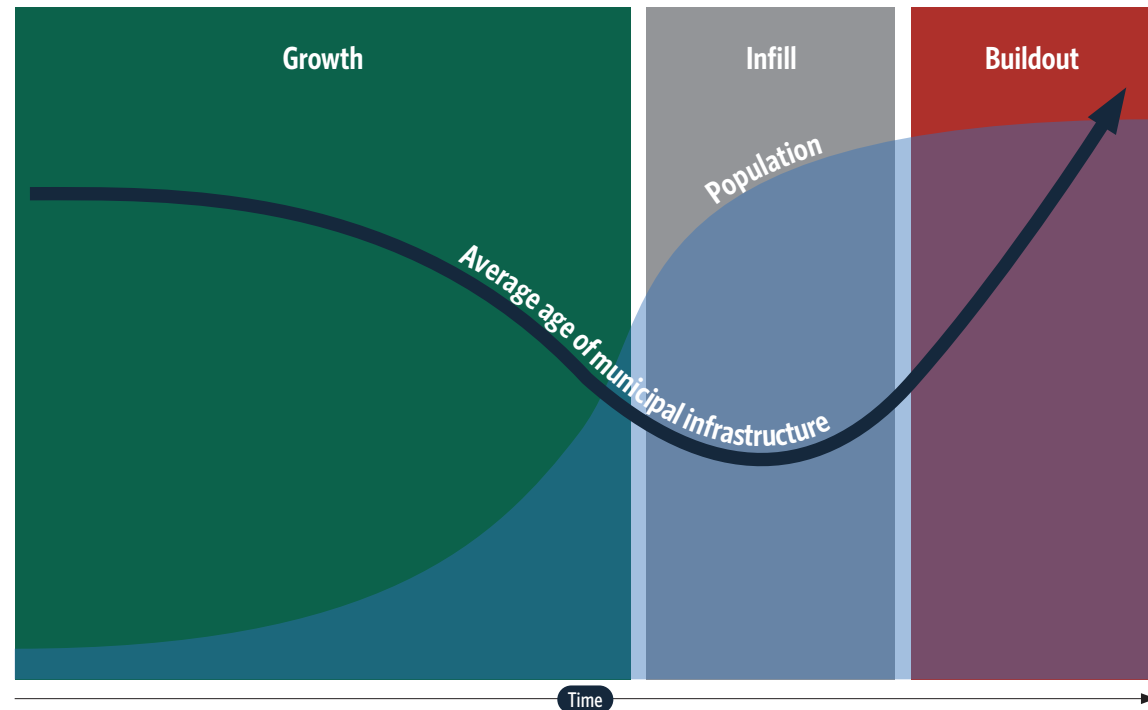
²For more information about Strong Towns, check out the book *Strong Towns: A Bottom-Up Revolution to Rebuild American Prosperity* and visit strongtowns.org

Effects of The Rate and Pattern of Growth

As the suburban growth model caught on, cities across the country began to embrace and encourage rapid growth without fully considering long-term impacts. Private developers built subdivision after subdivision, putting in miles of new infrastructure “at no cost to the city”, selling cities on the additional rooftops and tax revenues. This creates what Marohn refers to as an “illusion of wealth”, where the overall look and feel of the community is new and affluent. During this time, there is also typically pressure to keep property taxes down, and the combination of growing tax revenues and one-time development fees further encourage this approach.

Today, the significant costs of this auto-centric, horizontal expansion-based approach are revealing themselves. As cities continue to age and expand, development and the revenue boost from additional homes and businesses slows down. The neighborhoods, facilities and infrastructure built decades prior have reached the end of their life cycle and are in need of replacement. Community leaders are left struggling to keep up with expectations for basic services, employment, and lifestyle. However, they have limited resources to do so. This starts a cycle where cities fix what they can and postpone what’s left. Eventually

INFRASTRUCTURE AND POPULATION OVER TIME

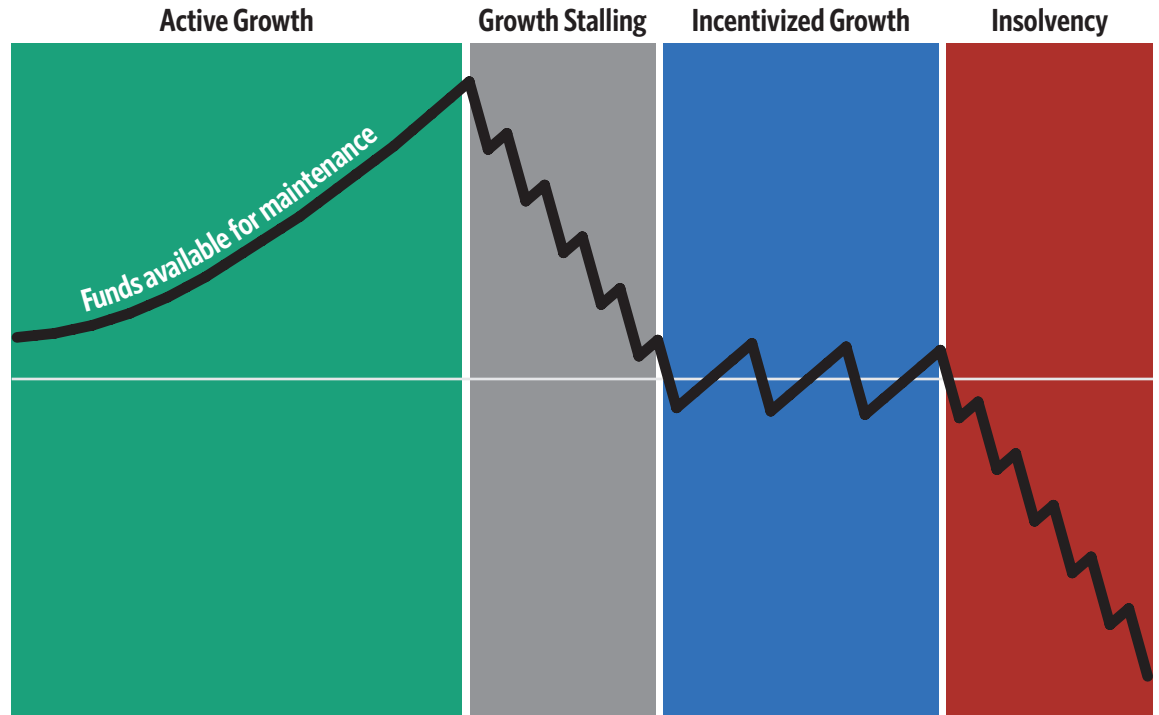


NOTE: Typically in a suburban development pattern, as a city approaches buildout, revenues from new growth flatten out. Simultaneously, costs to replace infrastructure initially built by developers come due as streets and utilities reach the end of their initial life cycle.

neighborhoods deteriorate to the point where residents with the ability to do so move out, while those less fortunate are forced to remain in an environment of decline and neglect.

The extent of service costs and infrastructure liabilities tends to be connected to both the rate new development was constructed in prior years and the pattern and design of the infrastructure. Cities that grow steadily over time spread future maintenance obligations out over a longer duration, whereas ones that experience high population growth over a short time will have more liabilities come due at the same time. Also, cities built in a more compact pattern typically won't have the same infrastructure liabilities and service costs as those that have built in a more spread-out, auto-centric pattern with more, wider roadways, cul-de-sacs, and a larger service footprint.

THE GROWTH PONZI SCHEME















When a city is growing, revenues are boosted from tax revenue from new development, but infrastructure maintenance is minimal because everything is new. After a single life cycle, costs for significant maintenance or reconstruction come due. If the development doesn't generate enough revenue to fund its own maintenance, then city fund balances will decrease as costs exceed revenue. Some cities take steps to incentivize growth to generate short-term income to fill this gap, but when land is no longer available and revenues stall, costs will eventually decline to a level that makes the city insolvent.

Resource Constraints

The extent varies from city to city, but most city managers and mayors will acknowledge it is a daily struggle to keep up with the growing wants and needs of residents with limited resources. In today's environment, most citizens are not willing and/or able to pay more in property taxes or fees, but cities don't have the revenue needed to cover basic

services and maintenance due to the cost of aging infrastructure. Each year, maintenance expenses grow, and citizens' concerns over property taxes and being priced out of their homes do as well. Recent state legislation to cap property taxes and limit annexation and local control of building regulations has only increased this tension.

There are generally three positions that cities find themselves in when it comes to their position on the growth curve and how they are managing the resource gap. These positions are outlined below.

	 SERVICES	 INFRASTRUCTURE	 REVENUE	
IN GOOD SHAPE				The city has quantified service costs, knows what its infrastructure costs are, and has a good, clear plan to generate enough revenue to pay for those things - all while staying within the limits of what the residents there are willing and able to pay for.
DOING OK FOR NOW				These communities tend to be in the middle of their growth phase. Older parts of the city require maintenance, but revenue from new growth is covering these costs. The wave of infrastructure reconstruction costs has not hit these communities yet, but is looming out in the future.
ALREADY RUNNING BEHIND				These are older cities where there is limited growth, and often, decline. Large areas of the city are past their initial life cycle and in need of repair. There are neighborhoods beginning to decline and there is no clear plan for how the city is going to address those needs.

Bridging the Gap

For cities to be financially resilient and affordable for years to come, city leaders must work to quantify and communicate resource and affordability gaps, and then implement strategies to close these gaps over time.

Generally speaking, there are three ways in which a city can close this gap. It is important to explore these three options, and what they mean in a practical way for both the city, and its citizens.

1



**INCREASE
TAXES OR FEES**

Keep development patterns and service levels as-is but charge more (via higher taxes and fees) to cover the true costs. This is a difficult option because an increasing number of people do not have the means to pay much more than they are currently paying.

2



**REDUCE
SERVICES**

Maintain current taxes and fees where they are but cut services to align with revenues. This is what most cities are currently doing, where services and maintenance needs are budgeted to fit available revenue and those that are unfunded get deferred. This can work for a short period, but eventually the neighborhoods and infrastructure must be maintained, or property values will start to decline causing people and businesses to leave the city.

3



**DEVELOP IN A
MORE PRODUCTIVE WAY**

Adjust development and infrastructure to enable an affordable balance of services and taxes. By prioritizing infill, redevelopment, and more financially productive development patterns, the city can generate additional tax base from its service area and improve the return on investment of taxpayer dollars without necessarily having to raise the tax rate or charge more fees. This is the most feasible and effective option.

Evaluating the Fiscal Productivity of Development

To align development, services, and revenues, cities need a common language to discuss common problems and find common solutions. Land use fiscal analysis is a powerful tool that can help frame discussions and inform decisions about land use, development, infrastructure, and budgeting. A land use fiscal analysis like the one covered in this report is a parcel-level analysis of the property taxes (levy or revenue) and general fund service costs for real property throughout the city. The more productive development is from a property tax generation standpoint, the less pressure a city will have to generate additional revenue from sales tax, fees, fines, and other sources to cover basic services and infrastructure liabilities.

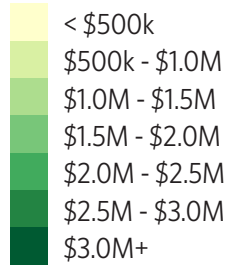
This analysis uses property tax revenue per acre and net revenue per acre on a parcel level to map the net fiscal productivity (parcel revenue to the city minus service costs) of every property in the city. By quantifying and mapping revenues and costs on a parcel and per acre basis, we can see how various land uses and development patterns perform in relation to one another. The analysis also illuminates which parcels generate sufficient property tax revenue to cover the costs to serve them, and which parcels cost more to serve than they generate in revenue, thereby requiring subsidies from other parts of the city and revenue streams.

Not all kinds of development yield the same returns on investment. The most financially productive places, in terms of the property tax revenues they bring in per acre, tend to be clustered around downtown/Main Street and compact, mixed-use neighborhoods. Repeated studies across the country show that street-fronting businesses on small lots in compact, walkable areas—such as those along historic main streets—tend to be vastly more productive per acre than the more suburbanized auto-oriented sites with larger lots and dedicated parking areas. Very little infrastructure cost is associated with this style of development, and units can easily adapt to different uses. Contrast this with the big box and strip mall approach, which consumes valuable land for less tax production, requires significantly more infrastructure, and is more difficult to reuse.

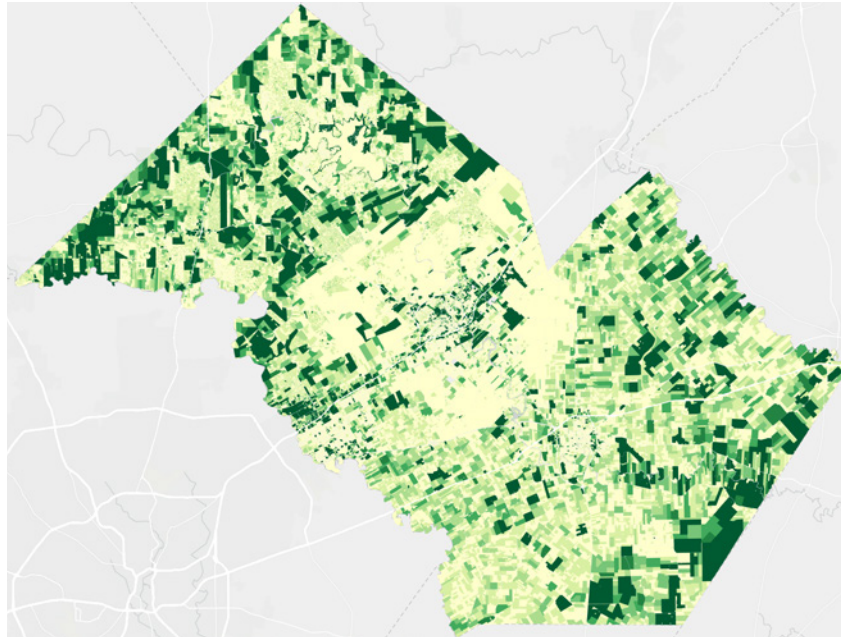
LEGEND

The Economics of Land Use

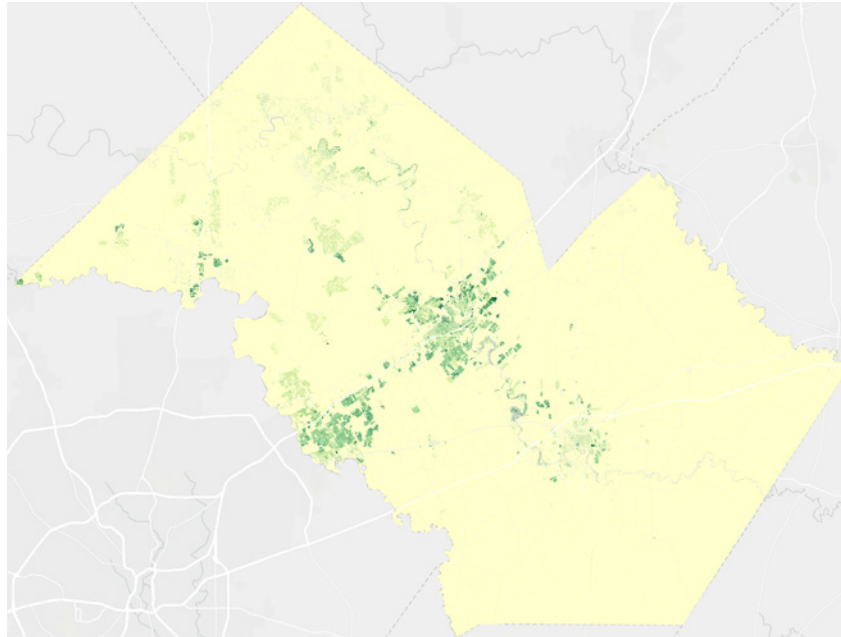
Evaluating the Fiscal
Productivity of Development



GUADALUPE & COMAL COUNTIES ASSESSED VALUE



GUADALUPE & COMAL COUNTIES ASSESSED VALUE PER ACRE



CENTRAL NEW BRAUNFELS ASSESSED VALUE

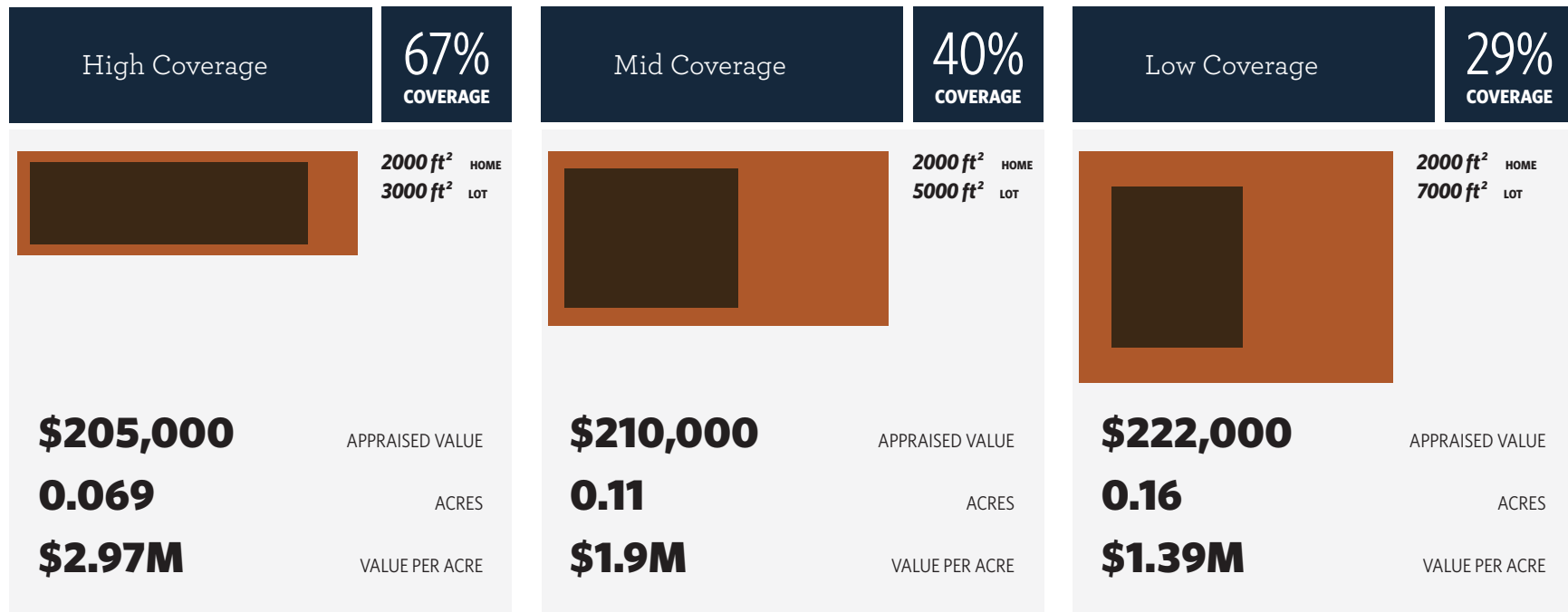


CENTRAL NEW BRAUNFELS ASSESSED VALUE PER ACRE



Factors Affecting Affordability and Fiscal Sustainability

Lot Coverage



When more of a parcel of land is filled with a building, the overall value of that property increases. This is because the value of the property is created by the improvements placed upon it. The taxable value of a property is calculated by adding the land value and the improvement value together. Therefore, a larger building results in a higher total taxable value.




When the taxable value is higher, the city collects more in property taxes. This additional revenue is crucial for funding public services such as schools, parks,

and infrastructure.

In essence, by constructing buildings that take up more of a parcel of land, the more value is created. This increase in property value leads to higher tax revenues, which can then be used to sustain and enhance community services.

Building Height

**The Economics of
Land Use**
Factors Affecting
Affordability and Fiscal
Sustainability

SINGLE-STORY		TWO-STORY		THREE-STORY	
.57	Acres	.57	Acres	.57	Acres
100%	Lot Coverage	100%	Lot Coverage	100%	Lot Coverage
\$150,000	Appraised Value	\$250,000	Appraised Value	\$350,000	Appraised Value
\$263,158	Value Per Acre	\$438,596	Value Per Acre	\$614,035	Value Per Acre

When you build up on a parcel of land by adding additional stories, you significantly increase the property's value.

Adding a second story to a building almost doubles the improvement value because the usable space is doubled without a need for more land. The same principle applies when adding a third story or more; each additional floor further increases the total improvement value.

This increase in the building's size and usability dramatically raises the overall taxable value of the property. The

taxable value combines the land value and the improvement value, so with each added story, the total taxable value of the property grows substantially.

For the city, this means a multiplier effect on revenue generation. As the taxable value increases with each additional story, the city can collect more in property taxes. This higher revenue is crucial for funding public services such as schools, parks, infrastructure, and other community needs.

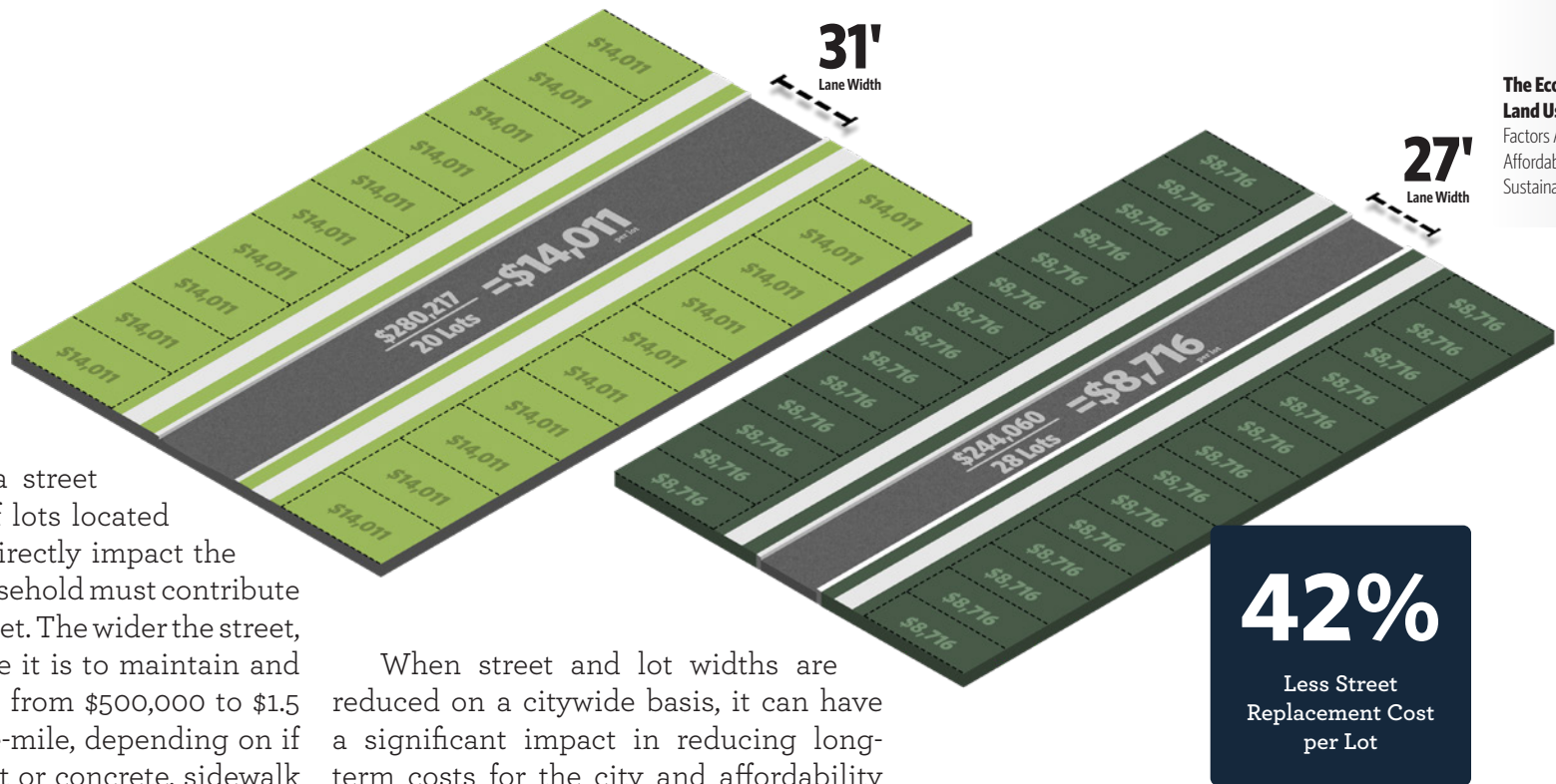
In simple terms, building upwards

on a parcel of land greatly enhances the property's value. This results in a significant boost in tax revenue supporting various public services and community development.

Street and Lot Widths

The width of a street and the number of lots located along that street directly impact the cost each lot or household must contribute to maintain the street. The wider the street, the more expensive it is to maintain and rebuild - anywhere from \$500,000 to \$1.5 million per 11' lane-mile, depending on if the street is asphalt or concrete, sidewalk widths, and other features.

The household or lot's share of the replacement cost is impacted by the number of properties fronting the street. The greater the lot width (70' in this example) the fewer lots on the street, resulting in a higher share of the street cost per lot. Smaller lot widths (50' in this example) mean more lots can be created on the same length of street, spreading the cost among more lots, which reduces each lot's share. The example above illustrates how the combination of reduced street width and narrower lots can impact the per lot cost obligation.



When street and lot widths are reduced on a citywide basis, it can have a significant impact in reducing long-term costs for the city and affordability for residents. Likewise, when streets are wider, street costs and the cost burden per household increase.

In addition to saving money on maintenance and reconstruction costs, narrower streets are also proven to slow speeds and improve the safety of pedestrians and cyclists. Balancing public right-of-way between automobiles and pedestrians and maintaining slower vehicular speeds are key factors in improving walkability and supporting many of the more fiscally productive development patterns that incorporate mixed-use development.

Intensity of Development

The Economics of Land Use

Factors Affecting Affordability and Fiscal Sustainability

Identical Character

It's what we see illustrated by these two scale drawings of blocks with different intensity of development.



These two blocks have a similar character, resembling the residential streets many New Braunfels residents grew up on. However, they accommodate significantly different numbers of families and residents. What maintains their consistent character are elements of the built environment, such as the size and scale of the buildings and their relationship to the street. Higher-density development should not be feared if the city implements development ordinances that effectively regulate these aspects.

URBAN PATTERN, TRADITIONAL DEVELOPMENT

Cost burden shared by 9 households
In this configuration 9 households share a half-block that is functionally identical to the suburban development seen to the right. But because more households share the space, the cost for maintaining the same level of surrounding infrastructure is borne by more people.

39% Lower

Infrastructure Maintenance Cost Burden Per Household

URBAN PATTERN, SUBURBAN DEVELOPMENT

Cost burden shared by 2 households
In this configuration each home should be responsible for half the cost of maintenance for the infrastructure that serves it. Since high-quality urban patterns have commensurate high cost infrastructure this cost burden can become significant when too few homes occupy an area.

KRONBERG
URBANISTS
ARCHITECTS

The intensity of a development pattern has a major influence on the city's ability to cover its costs. In the pair of graphics on this page, Kronberg Urbanists + Architects illustrate how two similar blocks will have the same infrastructure costs associated with them. Both will need access to power, water, and wastewater infrastructure. But one block spreads the cost of that infrastructure over two properties, and the other across many more. This translates to a wildly different

tax burden for the residents of the lower block vs. those on the upper block.

Housing types, like Accessory Dwelling Units (ADUs) and duplexes (two housing units within the same building) have the added benefit of creating a revenue stream for an owner who lives on the property. This makes it feasible for them to age in place, or to live in the place they choose without suffering quality of life problems as they reach a more senior age.

It's common for residents to believe that development like that shown above, with more housing units close together, results in a crowded and unpleasant neighborhood. This scale illustration shows that a higher intensity of development can feel just like the streets that many people grew up on, as long as the building form is scaled to the humans that inhabit it.

Commercial Development

Commercial projects are often prioritized for the sales tax revenue and jobs they create. However, different patterns of commercial development can also impact property tax revenue on a per acre basis. Denser commercial patterns, like those found in downtown main

streets, tend to be more productive than auto-oriented development that requires more land for parking and drive-through lanes. The graphics on this page illustrate examples of the fiscal performance of different commercial patterns in New Braunfels.

The Economics of Land Use

Factors Affecting
Affordability and Fiscal
Sustainability

SUBURBAN BIG BOX

Wal-Mart



23.78

TOTAL ACRES

\$834,740

ASSESSED VALUE PER ACRE

SUBURBAN PAD SITE

Jack In the Box



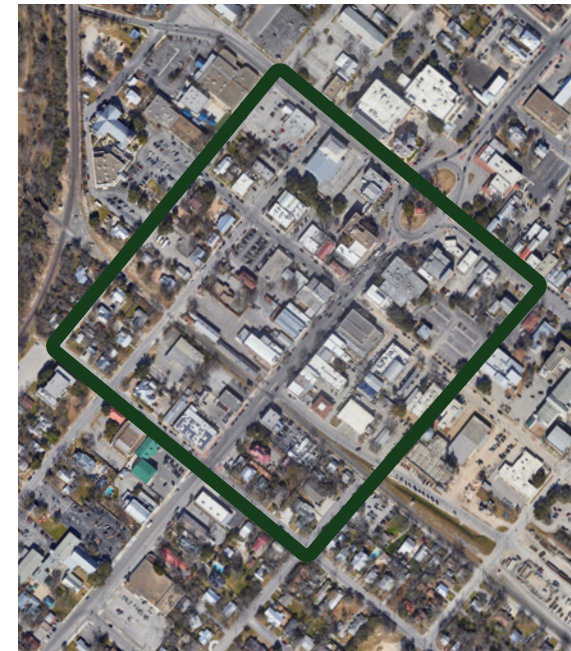
1.17

TOTAL ACRES

\$1,329,929

ASSESSED VALUE PER ACRE

TRADITIONAL DOWNTOWN GRID



33.51

TOTAL ACRES

\$2,176,405

ASSESSED VALUE PER ACRE

Fiscally Sustainable Greenfield Development

The Economics of
Land Use
Fiscally Sustainable
Greenfield Development

Maximizing undeveloped areas to realize their full potential through careful development choices is a prudent approach. While the illustrations on this and the following page do not represent a specific project, they are presented here with purpose. By taking the elements of development patterns covered in this document and showing them applied to a local context, residents can begin to see what shifting the approach can offer, both fiscally and visually.



GREEN SPACE

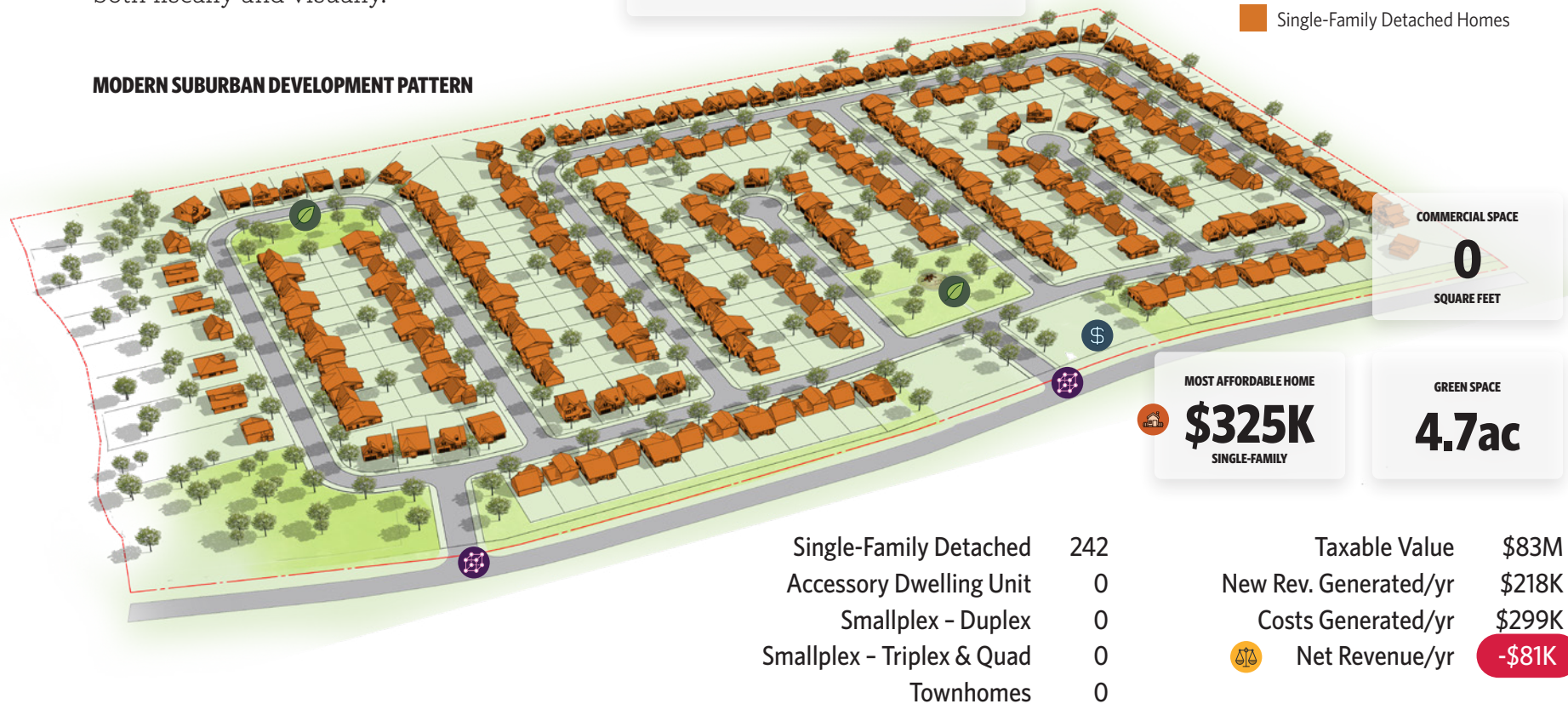
The suburban pattern concentrates green space in a small number of locations. This means that some people are much farther from these park areas than others. The traditional pattern breaks up these spaces and spreads them throughout the development; therefore, some green space is available to everyone. Less insistence on personal yard space also allows things like riparian corridors to operate as undeveloped wild space.



COMMERCIAL OPPORTUNITIES

In suburban development patterns, land is often reserved for future commercial use, but this development is not feasible until enough neighborhoods are built to create sufficient demand. A single low-density suburban neighborhood cannot generate enough demand on its own. In contrast, an interconnected traditional neighborhood pattern supports more people in the same space, allowing small-scale neighborhood commercial development to emerge naturally.

MODERN SUBURBAN DEVELOPMENT PATTERN





DIVERSITY AND AFFORDABILITY OF HOUSING

A pattern of gridded and interconnected streets lends itself well to housing diversity by creating logically sized lots on which many different housing types can be built. That housing diversity can play a massive role in affordability – units like ADUs and Townhomes, which feel right at home in a layout like this, can provide a much lower barrier to entry for people.



CONNECTIVITY

The traditional pattern is fully connected, both inside the neighborhood and to outside development. This means that traffic generated inside this development has many paths to get to the activities they want to enjoy; this results in less congestion on a few key roads. A significant focus on pedestrian connectivity makes walking more pleasant, which reduces the number of cars on the roads.



FINANCIAL IMPLICATIONS

While the net revenue of this traditional neighborhood pattern may not be enormous on its own, it produces enough to cover its own service costs, and still helps to subsidize other, less productive places. It is also easy to see how dire the fiscal situation is when one suburban subdivision requires multiple traditional neighborhoods to make up for the deficit it creates. In the long term, neighborhoods like this one retain their value over time, while suburban neighborhoods most often lose value.

The Economics of Land Use

Fiscally Sustainable
Greenfield Development

Playing Catch Up

New Development and redevelopment must perform dramatically better than suburban patterns.



It is crucial for elected and appointed officials, city staff, and the community to understand that modern developments must do more than just cover their own costs. The suburban development pattern seen in parts of New Braunfels cannot sustain itself financially, which means other areas of the city have to bear the costs. To ensure long-term fiscal sustainability, the city must ensure developers build places with greater inherent value that generate enough revenue to provide all the services desired by the residents.

TRADITIONAL NEIGHBORHOOD PATTERN



Key Advantages of Fiscally Sustainable Development

The Economics of Land Use

Key Advantages of Fiscally
Sustainable Development



Density

When strategically planned and designed, higher-density development can create vibrant and sustainable communities. It is essential to overcome the misconception that higher density leads to overcrowding, increased crime rates, and greedy developers. In the traditional neighborhood pattern, dwelling units are strategically placed to accommodate a larger population while creating ample green space and preserving natural features.



Walkability

The residents in a traditional neighborhood pattern benefit from easy navigation, primarily by walking. They have convenient access to amenities like event lawns, nature play areas, and neighborhood-scale retail establishments. The high walkability factor attracts foot traffic, benefiting businesses of different scales and contributing to a vibrant local customer base. It becomes an active neighborhood rather than one filled with automobile traffic.



Choice

A more comprehensive range of housing options empowers individuals and families to choose living arrangements that best suit their preferences, current needs, and most importantly – budgets.



Citywide Fiscal Health

It is crucial to consider the fiscal sustainability of this approach across the entire city. By using finite land resources more efficiently, the value per acre can be maximized. Narrower streets and a balanced density distribution, rather than concentrated density, reduce the strain on infrastructure maintenance. This approach ensures the long-term sustainability of different neighborhoods in the city and enables resources to be allocated to other areas in the city when needed.

Creating a Fiscally Informed Development Strategy

Review of the information presented in this report and accompanying data can help city leaders make more informed decisions about growth and development in New Braunfels. A few questions the next section of this report addresses include:



How are the current development patterns in the city performing?

Providing a financial report on a more frequent basis to show how different land uses and development patterns are performing over time will inform the city of each development type's financial gain or loss and how it is contributing to the City's overall fiscal health.



What are the city's future street liabilities?

Street maintenance and replacement costs are one of the largest unfunded liabilities in cities. It's important to have a high-level estimate of future replacement costs and when they'll likely be due, and then implement a proactive preventative maintenance program to extend the life of streets whenever possible. Whenever new streets are built, opportunities to reduce pavement width and enhance walkability and other mobility modes should be explored.



How can the current development pattern be modified to provide more value per acre?

Understanding the financial impact of each development type will help the City to capitalize on infill, redevelopment or greenfield opportunities to maximize the City's return on public investments and offset the service costs of under-performing development.



How well-suited are development regulations to support a fiscally productive and resilient pattern?

The patterns that are most fiscally productive for a city are often in conflict with current codes and design standards. Reframing policies and development guidelines to make it possible to build in this more productive way is critical. Some examples include requirements on lot size, parking minimums, and lot coverage.



What people and organizations can partner with the city to build quality infill and small projects?

It is important to foster and bolster local development talent by providing them with the means to be successful in the community. This means that the city needs to explicitly seek out the locals that are willing to build one building, one parcel, or one block at a time and connect them to the resources they need to be successful.

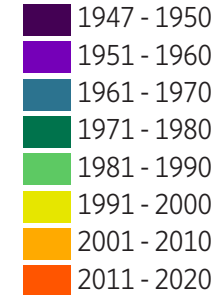
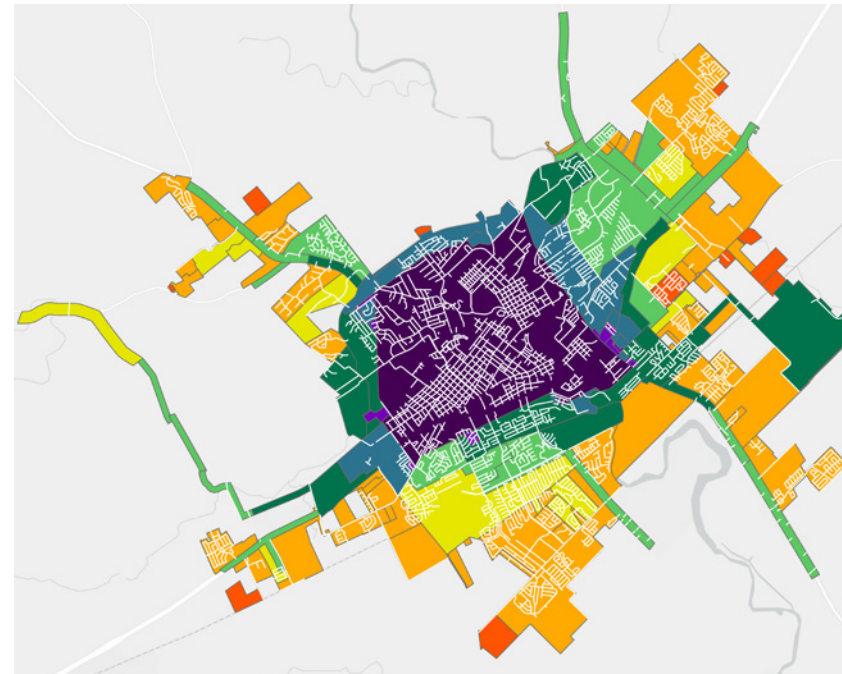
Analysis Results

Population and Growth Pattern

The core of the city was built prior to 1950 in the traditional grid pattern described previously. As the city has grown, the city limits have expanded through annexation, primarily to the east and south. The development pattern in the newer, outer parts of the city is more of an auto-centric, suburban pattern with more spread-out development, larger residential and commercial lots, more infrastructure, and more parking.

There are many fast-growing suburbs around Texas. Most have been adding infrastructure and public services to serve a larger area. At the same time, the overall density of the city is often declining. This leads to a situation where the city footprint is far larger than the population demands. In contrast, New Braunfels has increased its population at a rate that is consistent with its service area. Since 1950, the city's population has grown from 12,000 people to more than 115,000 in 2023 – roughly 9.5×. During this same period, the city's service area has increased by over 5×. The last decade was particularly strong in this regard, with the city's service area growth staying relatively flat while population grew by more than 30%. This combination means city service and infrastructure costs can be distributed across more households and people, which usually results in a lower cost burden per household.

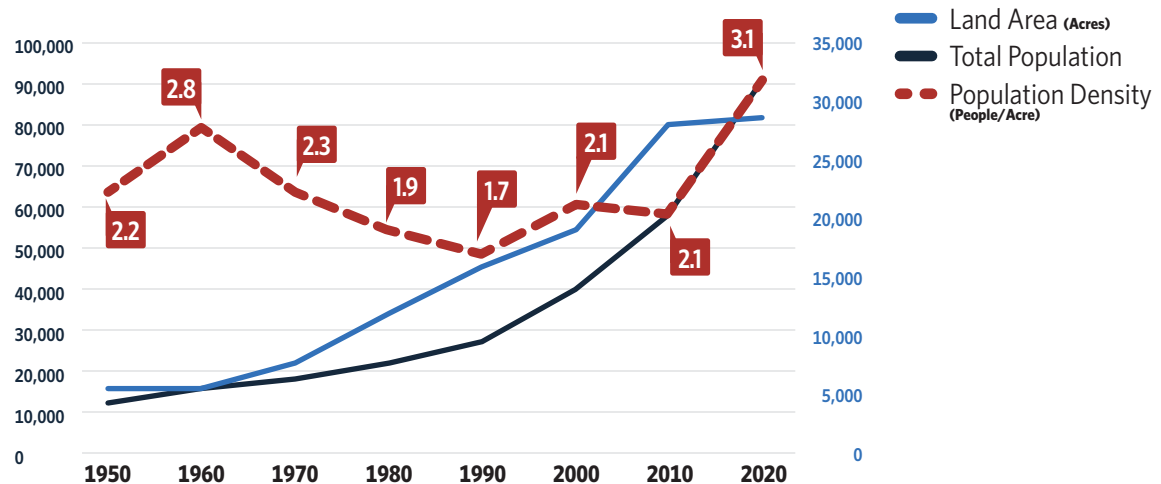
ANNEXATION OVER TIME



Analysis Results

Population and Growth Pattern

POPULATION, POPULATION DENSITY, AND LAND AREA OVER TIME



Budget Analysis

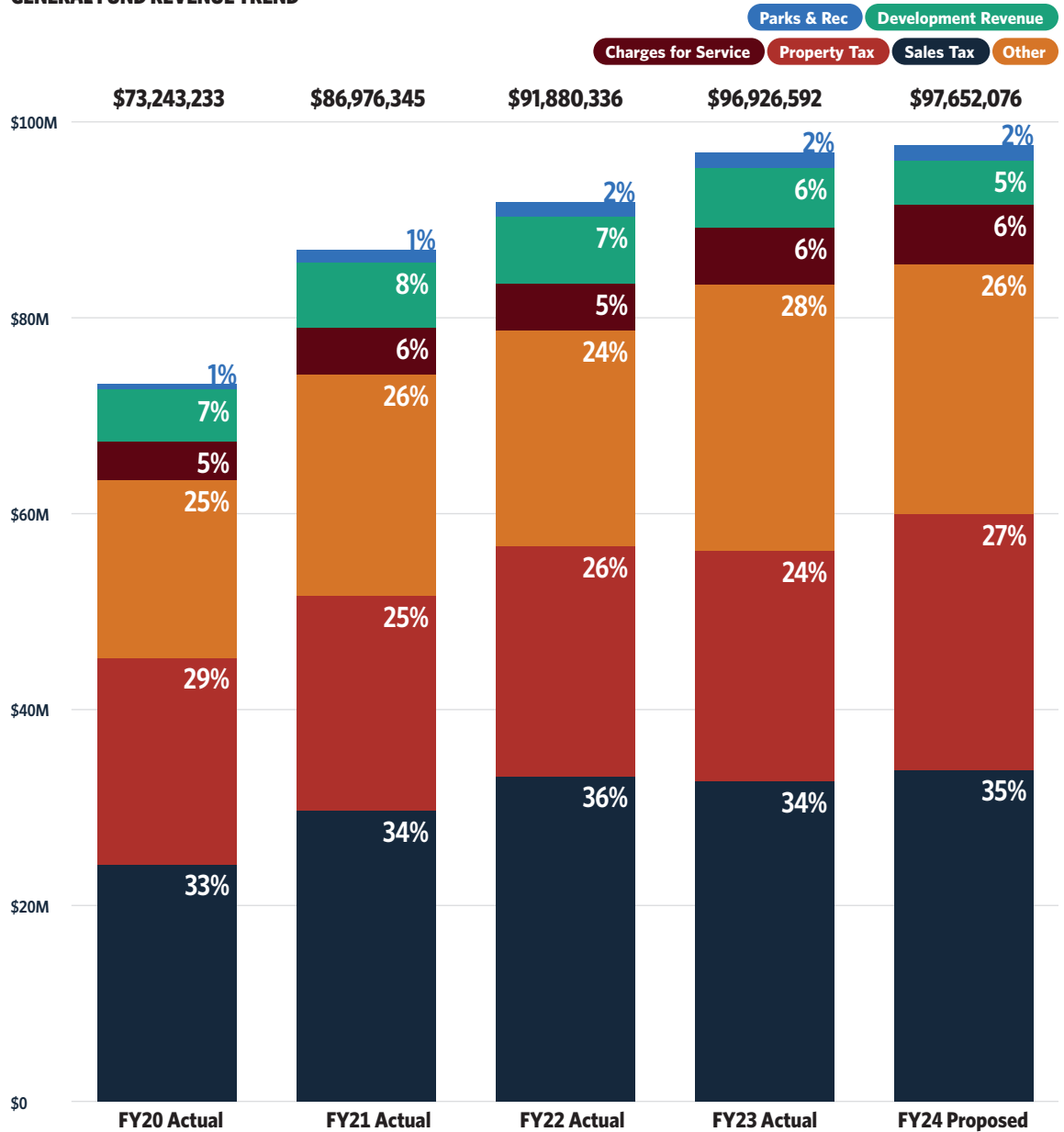
Analysis Results Budget Analysis

General Fund Revenue Trend Analysis

In the City's 2023-2024 fiscal year budget, general fund revenues totaled \$97.7M. Revenues have increased every year, growing by over \$24M from FY20 to FY24.

Property and sales tax are the largest sources of revenue for the City. Both have maintained fairly stable levels and proportion of the general fund over a five-year running trend period (cumulatively making up 58-62% of general fund revenue). The remainder of general fund revenues come from service charges, fees, fines, and interfund transfers.

GENERAL FUND REVENUE TREND



FY23/24 General Fund Revenue

Of the city's \$97.7M in forecasted general fund revenue, property and sales tax make up 27% and 35% respectively. The remainder is made up of development-related fees, service charges, and other miscellaneous sources and transfers. As a maturing city, the amount of open space to develop is decreasing. This means that revenue that come from development is slowing down. The city will therefore need to rely more heavily on property tax revenue going forward.

Growing the property tax percentage of the budget from 27% to 40% or more would improve the city's financial resilience by reducing reliance on sales tax, fees, and fines for basic services. This increase would also cover the reduction in development fee revenue as land area goes away, redevelopment notwithstanding. Sales tax is a less predictable revenue stream. It should be reserved as much as possible for quality of life projects and economic development investments. Encouraging more fiscally-productive development, adaptive reuse, and redevelopment like that described in this report can grow the city's property tax revenues without having to raise the tax rate.



FY23/24 General Fund Expenditures

In the FY23/24 budget, general fund expenditures totaled \$104.7M. This is made up of \$97M in recurring expenditures and \$7.7M in one-time expenditures due to a surplus from prior years. Public safety consumes over half of the city's budget, and administration costs consume another 18%. Infrastructure related expenses such as infrastructure maintenance (such as streets, drainage, watershed management, traffic signals, and signage & street striping), facilities, solid waste, and river & watershed all fall under public works, which makes up roughly 9% of the budget. About \$8 million is dedicated to the parks department, presumably for maintenance and programming. According to the city budget document, 11.1% of the total expenditures are going toward the strategic priority of infrastructure.

These budget splits are fairly typical of cities that have been in growth mode and in the early stages of shifting to a maintenance and redevelopment mode. As New Braunfels' neighborhoods and infrastructure continue to age, more funds will be needed for the public works and parks departments to maintain and replace aging facilities and infrastructure.



Analysis Results
Budget Analysis

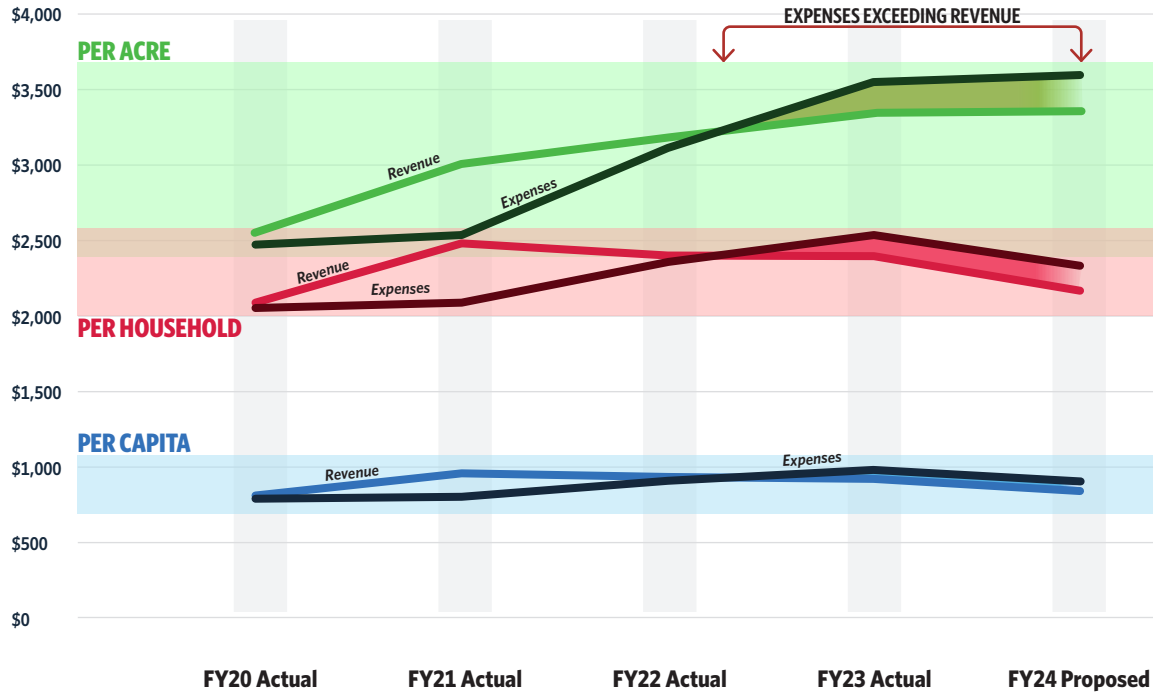
Understanding How the City's Development Pattern Impacts the General Fund and Household Cost Burdens

Reviewing the city's general fund revenues and expenses on a per capita, household, and acre basis can provide additional insight into how the City's service area and density impact costs for the City and its residents. Generally, when a city develops in a more compact manner with higher density, the revenue (and expenditures) per acre increases and the costs per capita and per household decrease due to having more properties to distribute the costs to.

Based on these trends, the city's costs are growing, and the cost burden per household has been increasing as well. As costs continue to increase, revenues will also have to grow. Some revenue growth will come from increased sales tax and fee revenue. Other revenue growth will need to come from property tax revenue.

Higher home values do contribute to an increase in property tax revenue. However, the associated taxes will impact the city's widespread affordability in a negative way. Alternatively, the city can focus on populating areas with existing service and infrastructure. This increases density and distributes costs over more dwellings, bringing the cost per household down over time.

GENERAL FUND BY ACRE, HOUSEHOLD, AND CAPITA



TAKEAWAYS

Expenses per capita and per household increased steadily for four years, but decreased in FY24. Expenses per acre have and are continuing to increase.

Over the last five years, expenses have increased from \$2,476 to \$3,594 per acre. General Fund revenue per acre has only grown from \$2,533 to \$3,353 in this same span.

General Fund expenditures per acre are increasing. This indicates that the city's spending, as a ratio of its service area (city limits), is increasing.

General Fund expenses per capita and per household have both trended upward over the last several years, but in this year's budget, both metrics are projected to decrease.

Service and Infrastructure Cost Allocation

Understanding Cost Categories

Analysis Results
Service and Infrastructure
Cost Allocation

PUBLIC SERVICE COSTS



This category includes the majority of general fund expenditures, including administration, public safety, and all other municipal service costs excluding infrastructure. In this analysis, these costs are allocated with the assumption that a developed property consumes a higher portion of city services than a vacant parcel, and that these costs are based more on the parcel, land use (residential or commercial), and type of service than the size of the property.

This cost category is part of the fiscal analysis

STREET, DRAINAGE, & PARK INFRASTRUCTURE COSTS



This category includes general fund expenditures related to public parks, drainage, and paving infrastructure. This infrastructure is needed to access and support development, and contributes directly to property values and general fund revenues. In this analysis, these costs are allocated based on whether a parcel has infrastructure service to it (public street frontage and water service) and the size (acreage) of the parcel, since larger properties typically have more street frontage.

This cost category is part of the fiscal analysis

ENTERPRISE FUNDED ITEMS

Costs for water, wastewater, and waste management services have been excluded from this analysis. Waste management is covered through a City enterprise fund, and the rates paid by residents who receive trash collection services cover the cost to deliver the service. Water and wastewater services are provided by a variety of outside utility providers that are completely managed, budgeted, and governed separate from the City. Additionally, the service territories of these entities do not line up with the city limits or extra-territorial jurisdiction. However, it's important to note that much like the situation with street infrastructure, more spread out development increases the amount of utility infrastructure required and negatively impacts service efficiency, both of which drive costs up.

This cost category is not part of the fiscal analysis

Budgeted Public Service Cost Allocation

Analysis Results Service and Infrastructure Cost Allocation

Developed properties in the city consume more public services than parcels that are vacant. Additionally, costs for the majority of public services are driven by dwelling units and residents and less dependent on the size of the property. For example, a house on a .2 acre lot with 4 members will utilize a similar amount of public services as the same residence on a 1 acre lot.

The first step in allocating these costs involves determining the number of developed vs undeveloped parcels. For New Braunfels, 88.11% of the parcels

and 60.95% of the acreage are developed, meaning they have at least one building on them.

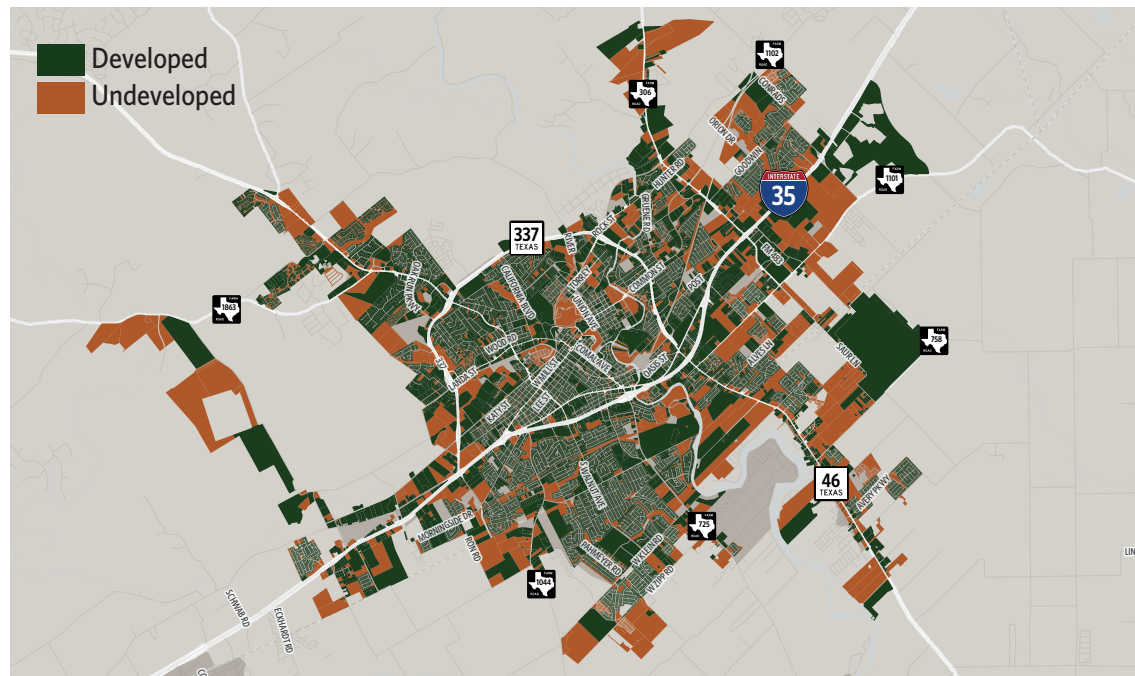
Based on the budget, \$85.1M of the costs were determined to fall under the *Public Service* category (see table on next page). Since 27% of the general fund comes from property tax (refer to "FY23/24 General Fund Revenue" on page 35), this same percentage was used to calculate the amount of public service costs to be covered by property tax, or \$22.8M.

Finally, developed properties in the

city were calculated to assume 88.11% of the public service costs (\$20.1M), while the undeveloped properties carried the remaining 11.89% (\$2.7M). These amounts were then allocated to the properties in the respective developed/undeveloped category using their proportionate area.

On a per parcel basis, the public service cost/parcel citywide is \$2,739/parcel, with \$733 coming from property tax. On a per acre basis, the public service cost/acre citywide is \$4,830/acre, with \$1,293 coming from property tax.

DEVELOPED & UNDEVELOPED LAND



DEVELOPED/UNDEVELOPED SPLITS BY PARCEL, ACREAGE, AND TAX REVENUE

Developed/Undeveloped Parcels/Proportions		
Developed:	31,409 Parcels	88.11%
Undeveloped:	4,239 Parcels	11.89%
Totals:	35,648 Parcels	100%
Developed/Undeveloped Acreages/Proportions		
Developed:	17,815 Acres	60.95%
Undeveloped:	11,414 Acres	39.05%
Totals:	29,229 Acres	100%
Property Tax Revenue Breakdown		
Developed:	\$23,250,570	95.11%
Undeveloped:	\$1,194,156	4.89%
Totals:	\$24,444,727	100%

Understanding the Public Service Cost Calculations

This page aims to connect the metrics from the fiscal analysis to the math. Values are color coded so they can be easily identified in different contexts. For example, the proportion of parcels that are

developed is shown in the table on page 38 in dark green. When used again on this page to illustrate the calculations used to allot costs to parcels, it is again shown dark green.

Analysis Results
Service and Infrastructure
Cost Allocation

PUBLIC SERVICE COST GENERAL FUND COST BREAKDOWN

Public Service General Fund Item	Percent of General Fund	Cost	Allocation
Administration	18.1%	\$18,956,608	Per Parcel
Public Safety	53.8%	\$56,337,650	Per Parcel
Other	9.4%	\$9,807,738	Per Parcel
Total	81.3%	\$85,101,996	

GENERAL FUND REVENUE PROPORTIONS

Property Taxes	Other Sources
26.80%	73.20%

PUBLIC SERVICE COST FROM PROPERTY TAX, ALLOCATION CALCULATIONS

$$\begin{array}{ccccc}
 \$ 85,101,996 & \times & 26.80\% & = & \$ 22,807,335 \\
 \text{Total Public Services} & & \text{Portion of General Fund from Property Tax} & & \text{Public Services Cost from Property Tax}
 \end{array}$$

$$\begin{array}{ccccccc}
 \$ 22,807,335 & \times & 88.11\% & = & \$ 20,095,543 & \div & 17,815 & = & \$ 1128 \\
 \text{Public Services Cost from Property Tax} & & \text{Proportion of Developed Parcels} & & \text{Costs Borne by Developed Parcels} & & \text{Total Developed Area (Acres)} & & \text{Public Service Cost per Developed Acre}
 \end{array}$$

$$\begin{array}{ccccccc}
 \$ 22,807,335 & \times & 11.89\% & = & \$ 2,711,792 & \div & 11,414 & = & \$ 238 \\
 \text{Public Services Cost from Property Tax} & & \text{Proportion of Undeveloped Parcels} & & \text{Costs Borne by Undeveloped Parcels} & & \text{Total Undeveloped Area (Acres)} & & \text{Public Service Cost per Undeveloped Acre}
 \end{array}$$

Budgeted Street, Drainage, and Park Infrastructure Cost Allocation

Analysis Results Service and Infrastructure Cost Allocation

Unlike public service costs that are driven by dwelling units and population, infrastructure costs are driven more by the geographic size and location of the property and whether the property is served by public infrastructure. For example, a larger, wider lot fronts on more of the public street than a narrower lot. Additionally, parcels located further out in a city often require extension of major infrastructure such as thoroughfares, traffic signals, and drainage systems.

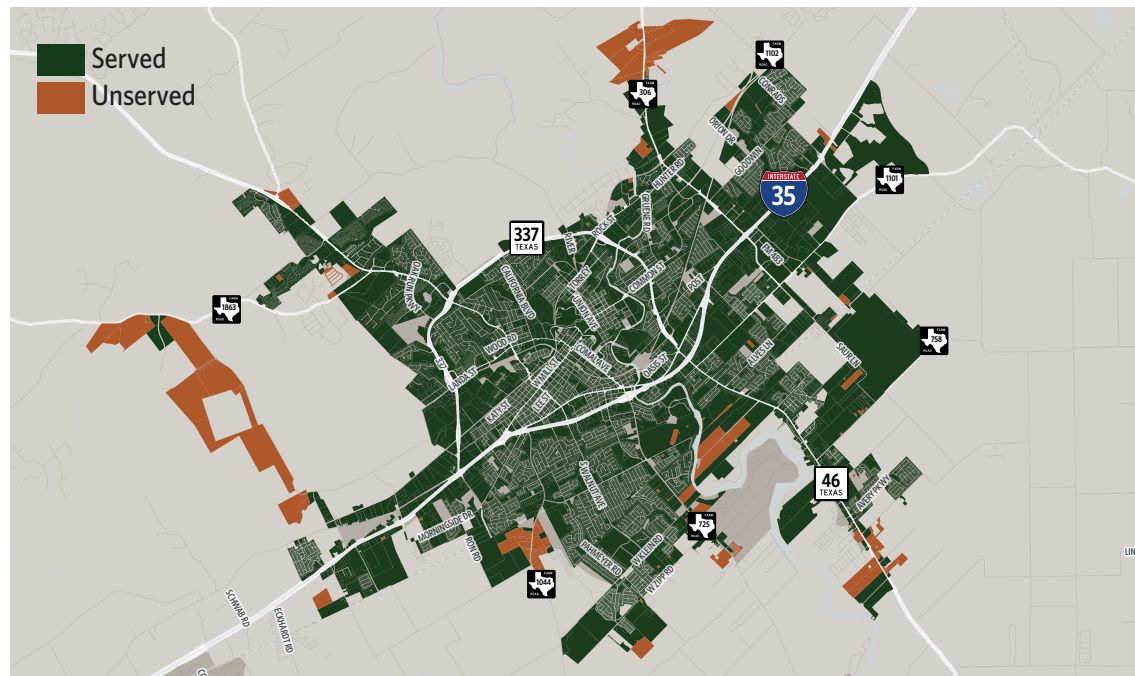
Properties that do not have public street access do not benefit from these services, and therefore aren't assumed in this analysis to carry much of the cost.

Based on the budget, \$19.6M of the costs were determined to fall under the "infrastructure" category (see table on next page). The same ratio of 27% of the general fund coming from property tax ("FY23/24 General Fund Revenue" on page 35) was used here. 27% of the total public infrastructure costs would

be \$5.2M - the amount to be covered by property tax.

In New Braunfels, the vast majority of properties in the city limits are served with infrastructure (97.43%); therefore the public service costs were distributed to all properties in the city. These amounts were then allocated to the properties using their proportionate area.

SERVED & UNSERVED LAND



SERVED/UNSERVED SPLITS BY PARCEL

Served/Unservd Parcels/Proportions		
Served:	34,731 Parcels	97.43%
Unservd:	917 Parcels	2.57%
Totals:	35,648 Parcels	100%

Understanding the Cost Calculation Process

Similarly to page 39 we have laid out the math used to allocate street drainage and park infrastructure costs to each lot. As mentioned on the previous page, we applied these costs proportionally according to each lot's size across every lot in the city limits. This math is simpler than the allocation for public services. Unlike services allocated based on a parcel being developed or undeveloped, these costs are based on whether or not the lot is served by city-owned infrastructure, such as direct access to a city street. In New Braunfels' case, this means that 97.43% of the city is already served; therefore, it makes sense to treat all parcels equally with respect to infrastructure.

STREET, DRAINAGE, AND PARK INFRASTRUCTURE GENERAL FUND COST BREAKDOWN

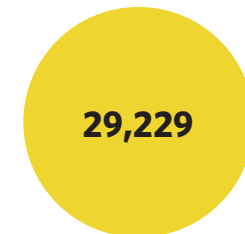
Infrastructure General Fund Item	Percent of General Fund	Cost	Allocation
Public Works	8.9%	\$9,272,041	Per Acre
Transportation & Capital Improvements	2.3%	\$2,377,418	Per Acre
Parks & Recreation	7.6%	\$7,922,930	Per Acre
Total	18.7%	\$19,572,389	

Analysis Results
Service and Infrastructure
Cost Allocation

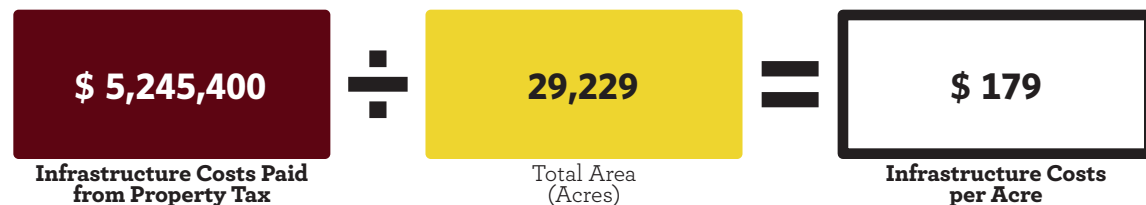
GENERAL FUND REVENUE PROPORTIONS



TOTAL SIZE IN ACRES OF THE CITY OF NEW BRAUNFELS



STREET, DRAINAGE, AND PARK INFRASTRUCTURE COST FROM PROPERTY TAX, ALLOCATION CALCULATIONS



Unfunded (Future) Infrastructure Liabilities

As discussed previously, cities do not currently have the revenue needed to continue to serve and maintain basic public services and infrastructure into the future. This resource gap is due to a combination of factors.

Deferral of Infrastructure Replacement

When cities are under pressure to reduce costs, infrastructure is typically the area that gets cut. Services such as police and fire, staff salaries, are all deemed as critical items, whereas infrastructure is viewed as something that can wait a year or two. But in times where cities have a surplus, elected officials often vote to lower the tax rate instead of using the surplus to catch up on projects. These deferred costs accumulate over the years, which can result in a backlog of projects, the majority of which continue to deteriorate while construction costs continue to go up.

Auto-Centric Development Pattern

Another factor driving up infrastructure costs is expanding the service area and filling it with lower density development that requires significantly more infrastructure. The more a city expands outward, the more roads, bridges, traffic signals, and drainage facilities are

required. The amount of park facilities that have to be serviced, maintained, and improved over time also grows.

Government Accounting Practices

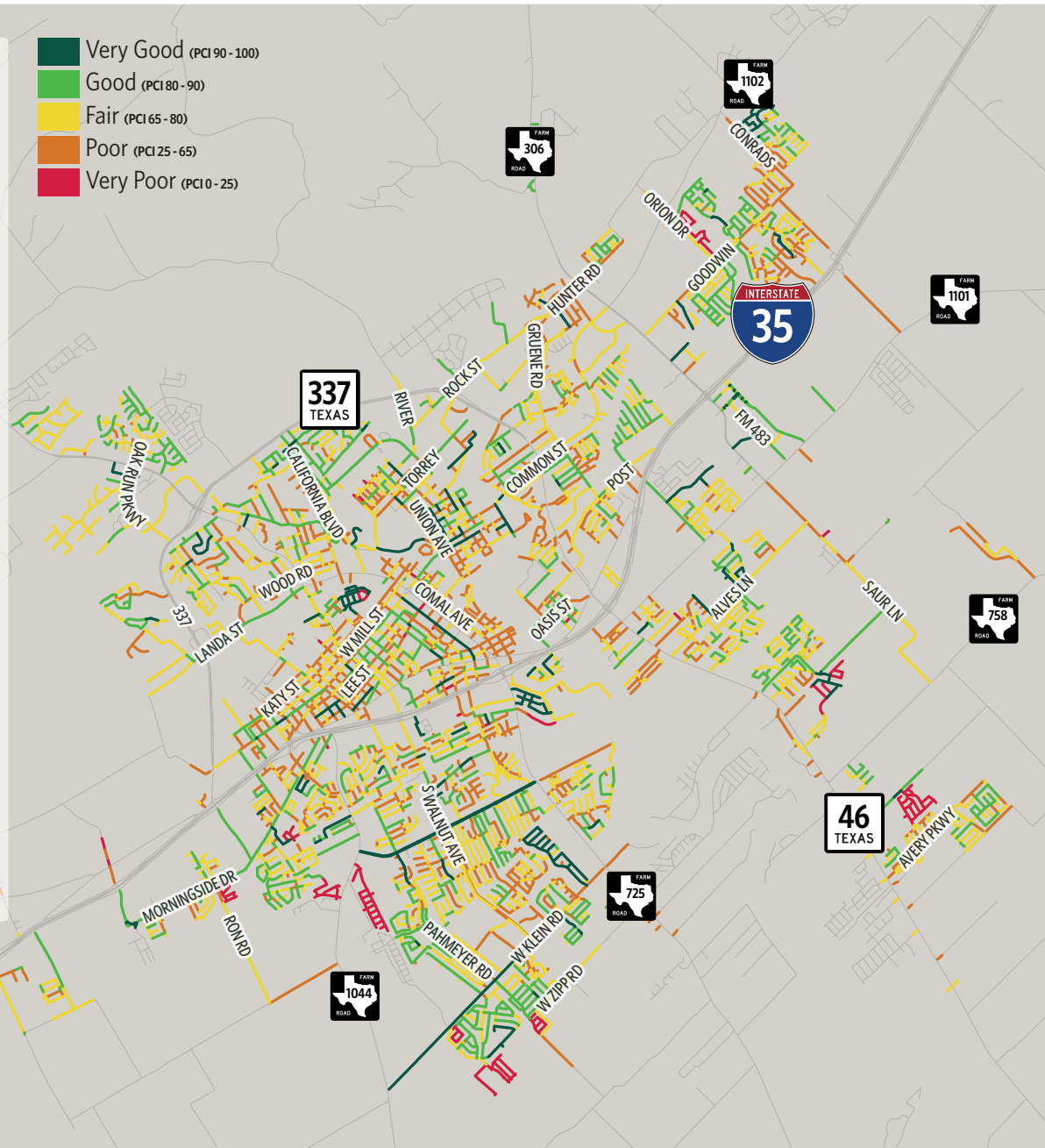
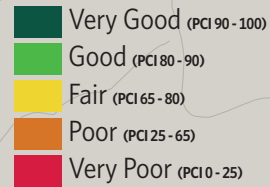
The long-term costs of infrastructure are not discussed as much because they are accurately accounted for in city's annual budgets. First, current budget practices account for infrastructure as a depreciating asset, meaning that the value of infrastructure shows up on the positive side of a city's balance sheet. The value of a road is entered as the initial construction cost, and then depreciated over the estimated life cycle of the road. So, if a road is built for \$4 million and is assumed to last 40 years, the value on the books will start at \$4 million and then decrease by \$100,000 each year. At the end of the road's life cycle, it would be worth nothing, but then require another up front investment to rebuild the road, and the depreciation cycle would begin again. This replacement value, however, is not accounted for unless it is included as an upcoming capital project expense. Altering this approach to account for infrastructure as a liability and planning for the future replacement cost would be a clearer way to account for infrastructure and make discussions about future replacement much more routine.

In order to be financially sustainable long-term and maintain or improve service levels, the City will need to generate additional revenue to cover the costs of what is realistically required to do so. The first step is to prepare a general estimate of what future infrastructure reconstruction and service costs will be, and project them out into future years so they can be factored in during budget and long-range financial planning discussions. Once these costs are known, various strategies can be employed to bridge the gap. Raising the property tax rate and/or implementing fees for street, drainage and park maintenance can help. Another strategy worth considering is adjusting the city's growth and development approach to prioritize infill, reduce pavement widths, and incorporate higher value-producing development.

PAVEMENT CONDITION INDEX MAP

Projected Future Street Replacement Costs

At the time of this study, New Braunfels has 389 centerline miles of city-owned streets – roughly 1,068 11' lane-miles. Using an average replacement cost of \$750,000 per 11' lane mile, it would require over \$801 million to replace the existing streets when they reach the end of their life cycle. Averaged over 25 years, this would require the City to be saving or spending an average of \$32.1M per year to rebuild existing streets. This is about a third of its entire general fund revenues (\$98M). This would also equate to an average investment of \$160.5M every five years. As additional development is built, the number of streets to maintain and replace in the future will continue to increase.



Analysis Results
Unfunded (Future)
Infrastructure Liabilities

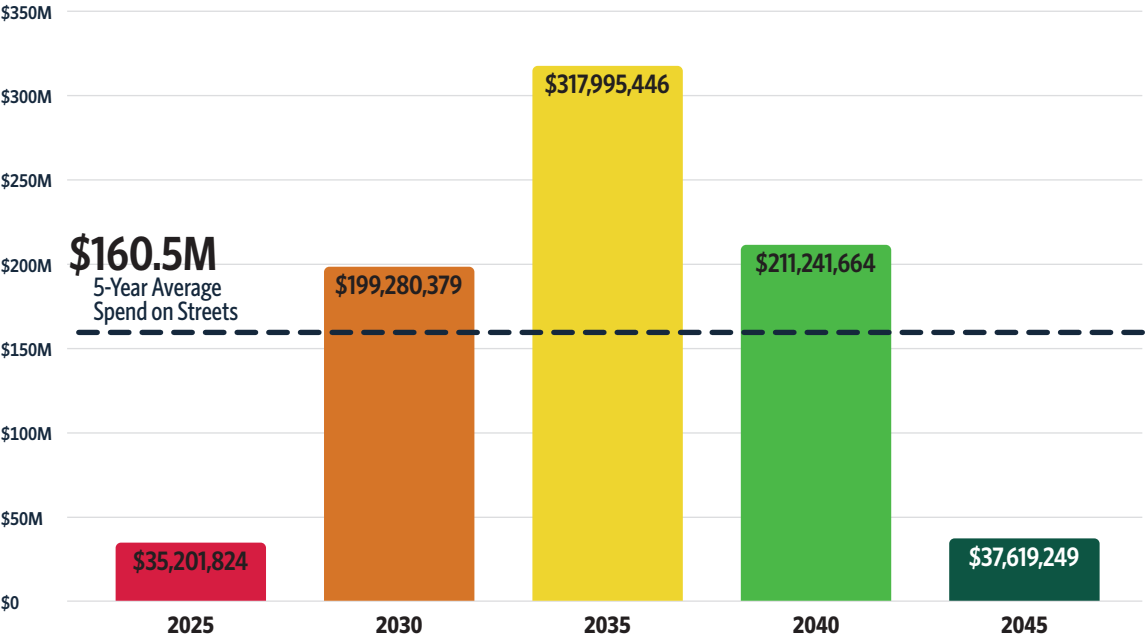
The city provided pavement condition data from the most recent pavement study. This data was mapped to illustrate pavement condition of city-maintained streets in the city limits.

The city has a combination of older, narrower streets in the original part of town and newer, but wider roads on the periphery. According to the Pavement Condition Index (PCI) information provided by staff, roughly 29% of the city's streets are in "Very Poor" or "Poor" condition. Streets in the "Very Poor" category are in need of full reconstruction, and should be addressed within the next 1-2 years. Streets in the "Poor" category are also beyond the point of maintenance and in need of reconstruction, but not as urgent as the previous category. These amount to almost \$200 million and have been shown in the chart below to be addressed in years 2026-2030. Around

40% of the streets are in "Fair" Condition, and are shown to be replaced by 2035. This amount (\$318M) is almost double what the city's average 5-year investment needs to be (\$160.5M) to keep up. While some of these streets will need to be rebuilt in this timeframe, aggressive maintenance work on targeted streets in the next few years could help push full reconstruction out to future years. The remaining 31% are newer streets that are in "Good" or "Very Good" condition. Improved quality of the initial construction combined with intentional preventative maintenance will help these streets last much longer than those built in earlier years.

The City has invested in additional equipment and resources to implement a preventative maintenance program, and established a separate department to focus on managing transportation and capital improvements. These efforts combined with one-time investments of surplus funds and bond financing for capital projects will help to close the city's street funding gap, but are not sufficient to cover all of the future liabilities. Continuing to track liabilities and utilize a combination of these revenue streams and prioritization of infill and higher value producing development will be important for the City to eventually get caught up.

PROJECTED STREET COST, 5-YR INCREMENTS GRAPH



- Very Good (PCI 90 - 100)
- Good (PCI 80 - 90)
- Fair (PCI 65 - 80)
- Poor (PCI 25 - 65)
- Very Poor (PCI 0 - 25)

NOTE: Pavement condition scores can be used to project when funds for future maintenance and replacement will be needed. In this chart, replacement costs for roads in the worst condition are shown to be needed in 2025-2029, while costs to repair roads in the best condition are forecasted out at the end of a 25 year life cycle, in years 2045-2049. The majority of the city's roads are in between these, and forecasted for replacement between 2030-2044.

Street Cost Allocation

Future street costs were allocated using a three-step process. First, the average annual replacement costs (\$32.1M total) were separated into two categories: major thoroughfares and local streets. TxDOT roads were not included in the analysis, so additional funds need to be set aside for any cost sharing agreements with TxDOT or the County. Costs for thoroughfares were allocated across the entire city, since these roads are used by everyone in the city. Costs for local streets were allocated to sub areas within the city, or “street districts” (as shown by the map to the right), with the logic being that the primary benefactors of local streets are the properties in the vicinity. Then costs in each category (citywide or street district) were allocated to parcels using served/unserved status and proportionate area.

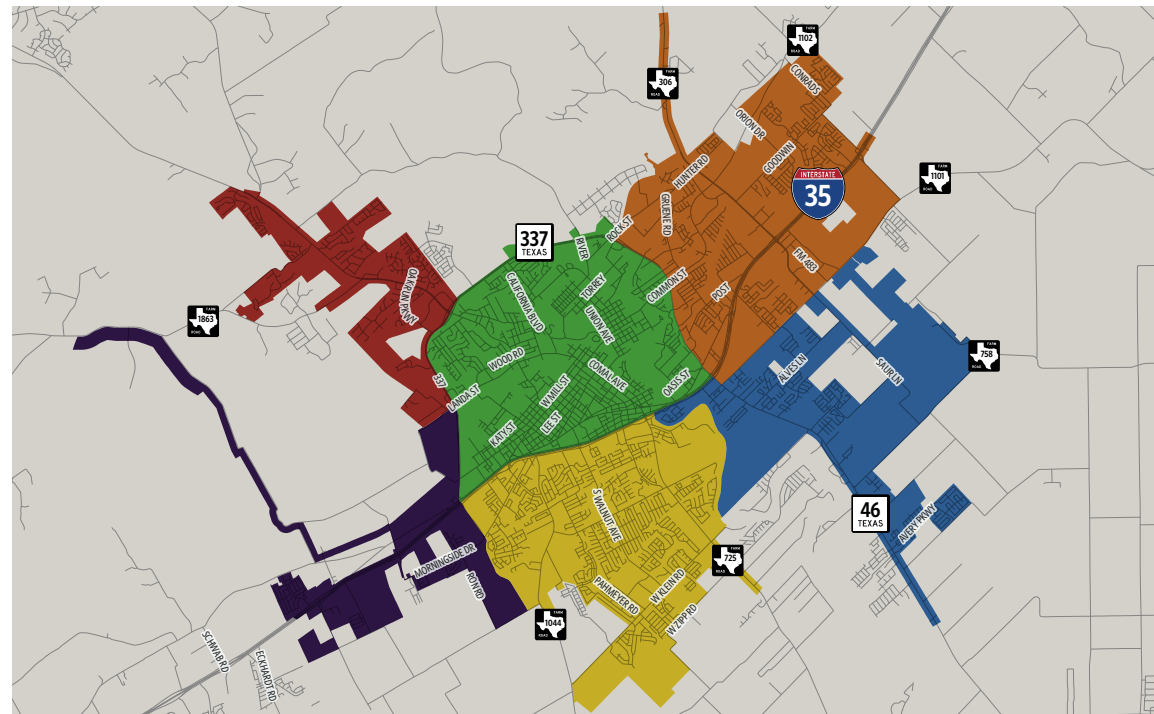
MAJOR THOROUGHFARE COST BREAKDOWN

City Area (AC)	11' Lane Miles	Road Costs / Year	Year Costs per Acre
29,126	93	\$2,796,074	\$96

LOCAL STREET COSTS BREAKDOWN (BY STREET DISTRICT)

District	Area (AC)	11' Lane Miles	Road Costs / Year	Year Costs per Acre
1	2,647	62	\$1,874,792	\$708
2	6,130	311	\$9,321,471	\$1,521
3	6,469	169	\$5,075,680	\$785
4	4,900	106	\$3,177,050	\$648
5	6,194	280	\$8,412,503	\$1,358
6	2,781	47	\$1,395,973	\$502

STREET DISTRICT MAP



Analysis Results
Unfunded (Future)
Infrastructure Liabilities

Planning for Future Needs

Analysis Results Planning for Future Needs

When evaluating the city's general fund and cost obligations at a macro level, there are some key numbers to be aware of. First, based on the current budget, service area and development pattern, the general fund per acre is around \$3,341 and property tax revenue per acre is \$894. If the city wants to cover future street reconstruction liabilities with total property tax rate and M&O rate at current levels, it would need to increase the average property tax revenue/acre citywide to \$1,991, and if property tax makes up the same 27% of the overall general fund as it does currently, this would mean the general fund per acre would need to be around \$7,400.

If the city continues to add development on the periphery of the city that requires additional thoroughfares, local streets, and public services, these values could increase to more than \$3,000/acre for property tax and a general fund per acre of \$11,500 or more.

These higher values can be achieved by raising the tax rate or increasing other fees, but also through prioritizing new development that is more financially productive and infill that increases value capture in areas that already have services and infrastructure.

¹ These targets assume a 0.19% Maintenance & Operations tax rate. This is the current M&O tax rate. If this rate changes the targets themselves would change.

TODAY'S VALUES

Current Budget

These values represent calculations based on the FY23/24 Budget, FY23/24 Tax Rate and the 2023 Certified CAD Appraisals.

FISCAL TARGETS

To Cover Unfunded Streets

These values are calculated by utilizing the same budget, tax rate, and CAD data, but also adds the cost for future reconstruction of existing streets.

To Cover Future Growth

These values are calculated by utilizing the same budget, tax rate, and CAD data, reconstruction of existing streets and adds a similar level of infrastructure on your remaining developable land.

GENERAL FUND PER ACRE

\$3,341

\$7,439

\$11,553

PROP. TAX REVENUE PER ACRE

\$894

\$1,991

\$3,092

ASSESSED VALUE PER ACRE¹

\$468,678

\$1,043,531

\$1,620,723

Assessed Value per Acre Mapping

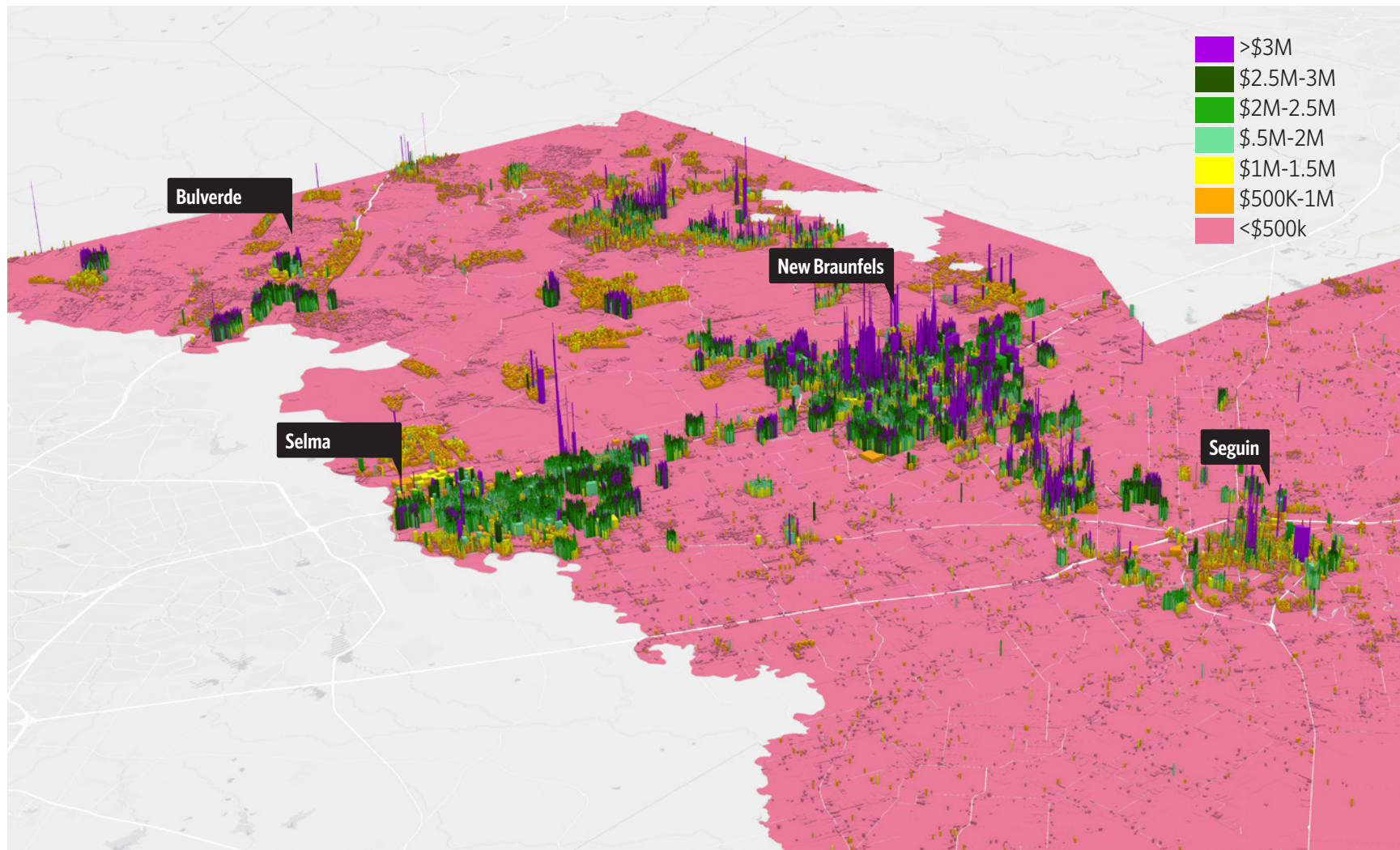
Mapping the assessed value per acre of parcels provides the ability to compare the value of parcels across the two-county area on an “apples to apples” basis before

city tax rates, exemptions, and costs are incorporated into the analysis. This metric is calculated by taking the parcel’s assessed value and dividing it by the size

of the parcel (in acres). In the maps below and on the following page, the parcels in purple are the ones with the highest assessed value per acre.

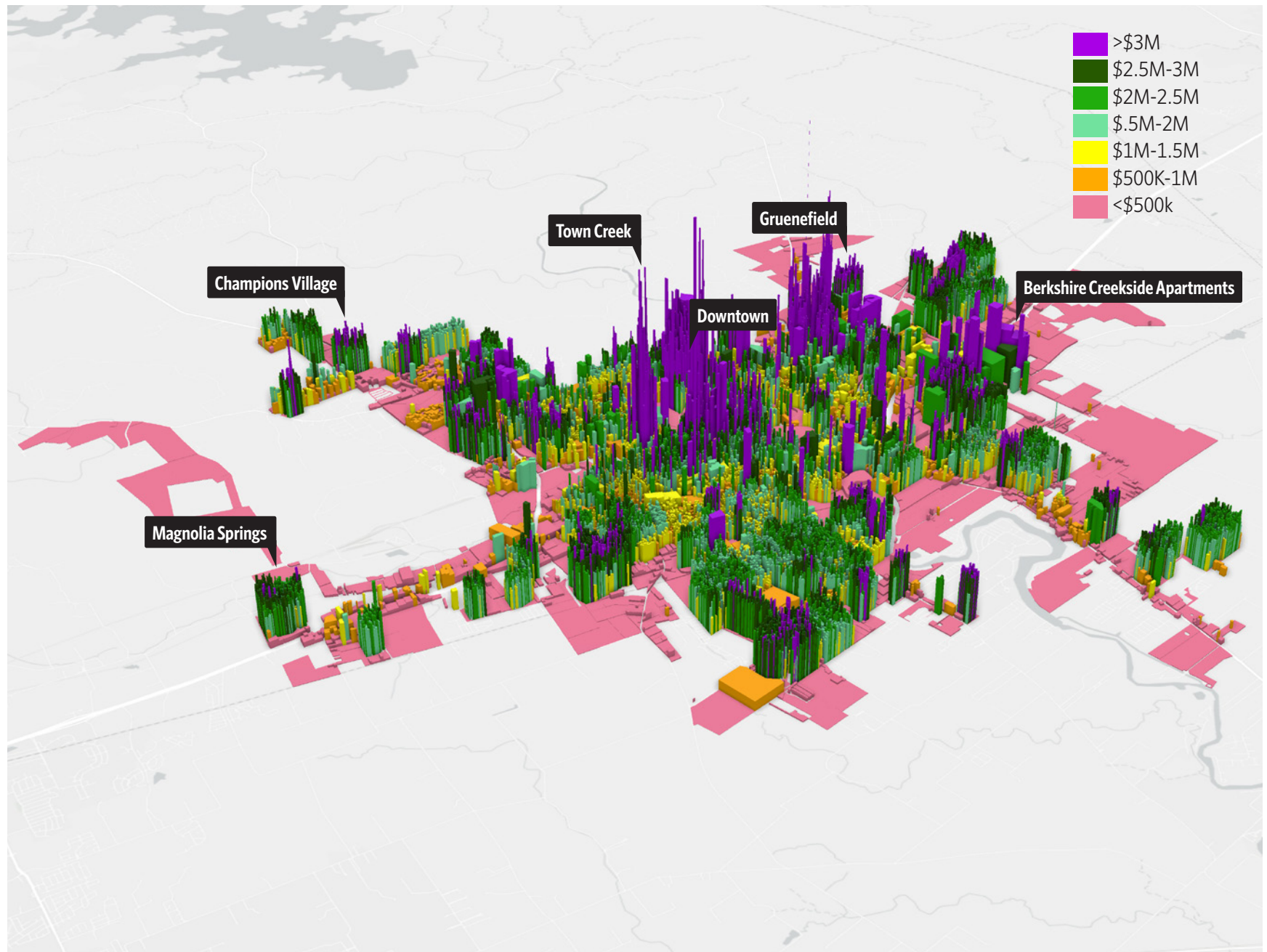
Analysis Results
Assessed Value per Acre
Mapping

ASSESSED VALUE PER ACRE, GUADALUPE AND COMAL COUNTIES 3D MAP

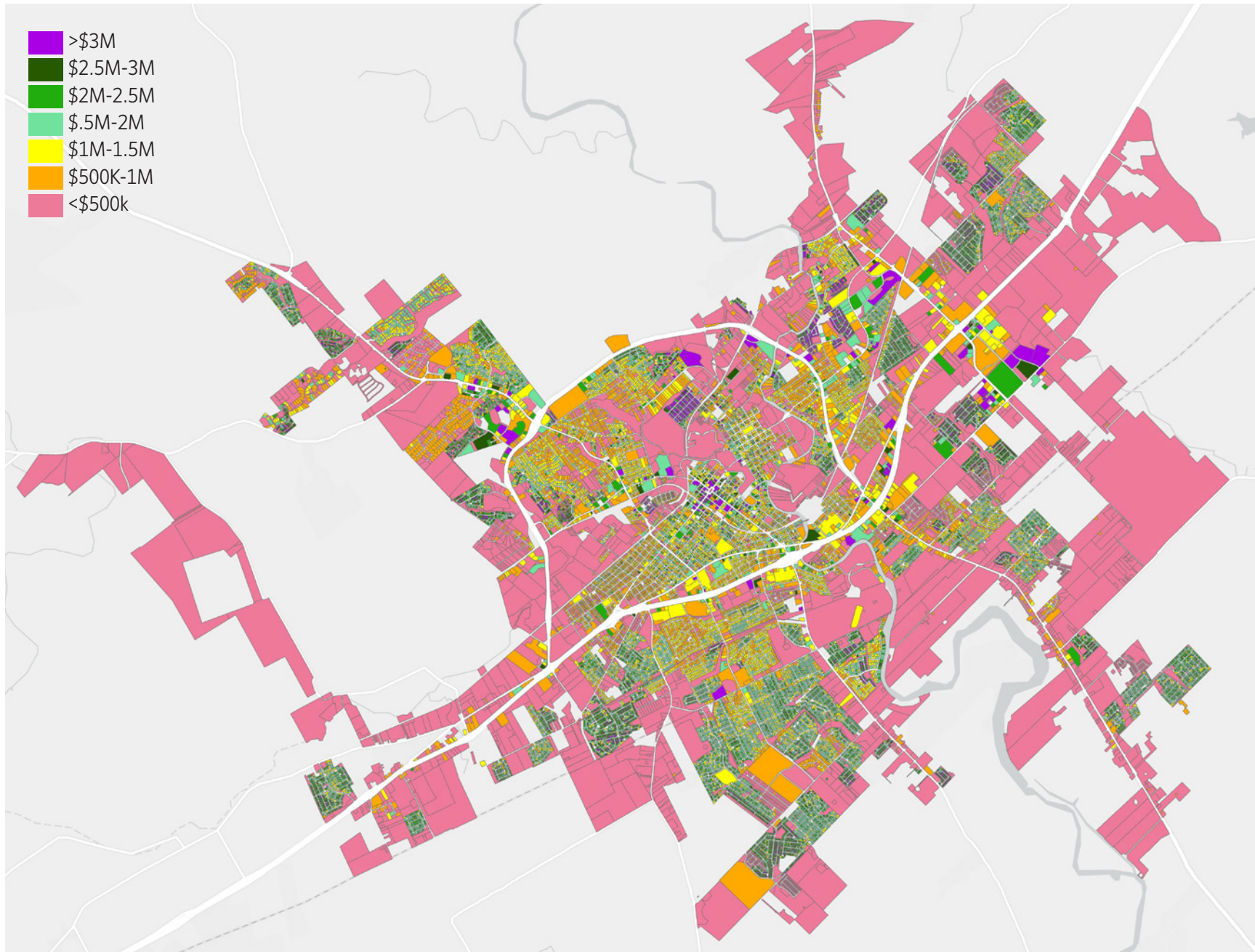


ASSESSED VALUE PER ACRE 3D MAP

Analysis Results
Assessed Value per Acre
Mapping



ASSESSED VALUE PER ACRE 2D MAP



Analysis Results
Assessed Value per Acre
Mapping

Level 1 Analysis

Analysis Results Level 1 Analysis

Property Tax Revenue per Acre

The first level of the analysis process involves mapping the revenue side of the fiscal equation. Property data and property tax levy amounts were pulled directly from the County Appraisal Districts' 2023 certified tax rolls. Levy amounts were verified with the City's adopted budget. The assessed values, and the actual levy paid after exemptions, were mapped at a parcel level. Exempt parcels such as City-owned properties, churches, and other

tax-exempt areas such as street rights-of-way were removed from the analysis.

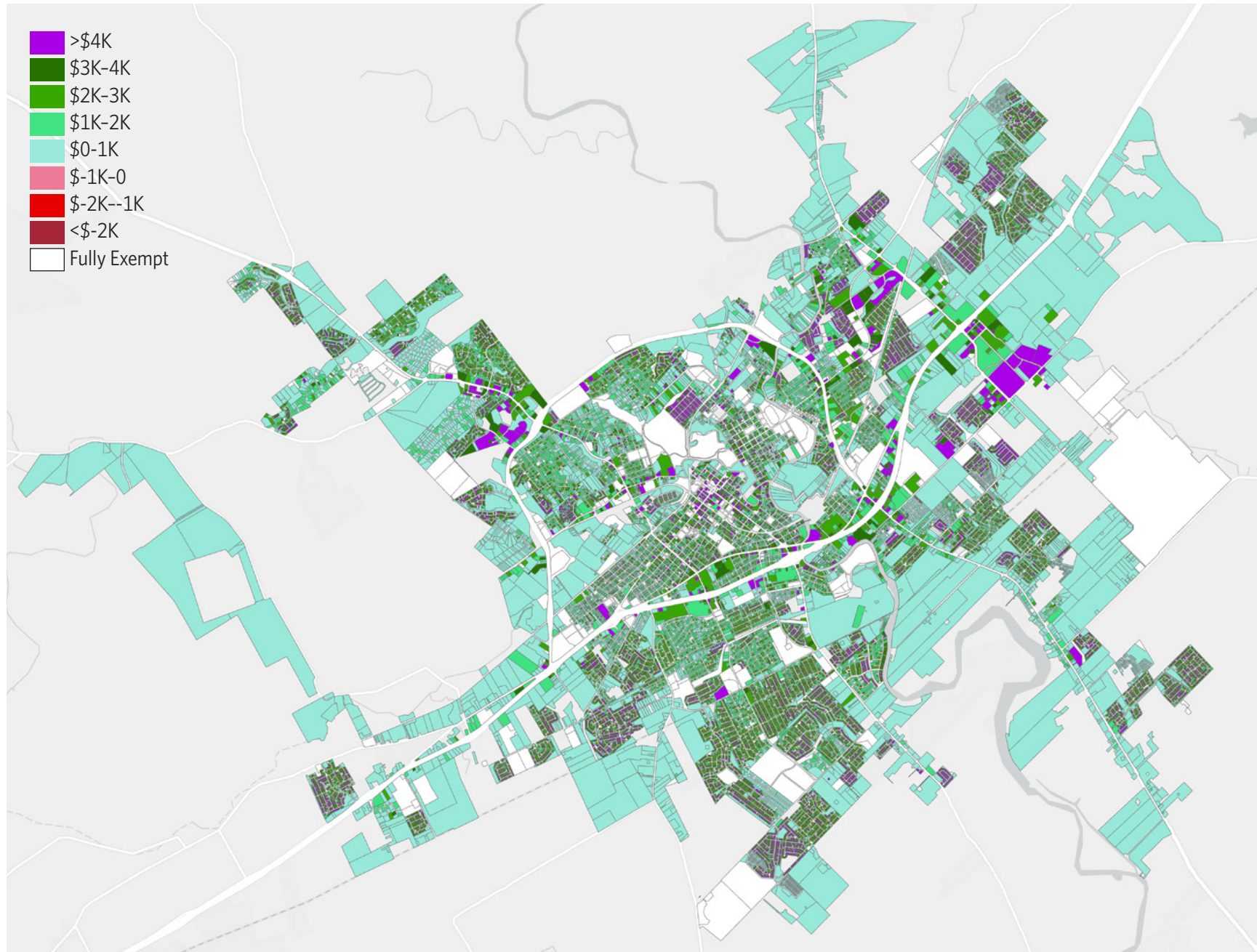
The map below illustrates the property tax levy per acre for parcels in New Braunfels. Three reference points are important when reviewing this map. First, the current property tax revenue per acre in the city is \$894/acre. In order to cover current budget costs and replacement of existing streets with property tax revenue, the City needs to have an average levy

per acre value of almost \$2000/acre, more than double what it's currently collecting. Finally, should the city continue to build out in a pattern similar to what's been built there so far, the average levy per acre value would need to be over \$3000/acre to cover costs with 27% of the general fund budget coming from property tax.

PROPERTY TAX REVENUE PER ACRE 3D MAP



PROPERTY TAX REVENUE PER ACRE 2D MAP



Analysis Results
Level 1 Analysis

Level 2 Analysis

Analysis Results Level 2 Analysis

Net Property Tax Revenue per Acre with Current Budget Expenditures

The revenue mapping alone does not tell the full story. In order to understand the fiscal impacts of different development patterns, costs for services and infrastructure must also be taken into account. The second level of analysis focuses on allocating general fund service costs from the current year's budget to the parcels. Only costs covered from the general fund and property taxes were considered in this analysis. Costs

for water and wastewater infrastructure were not factored in, as those are typically funded and managed by separate entities.

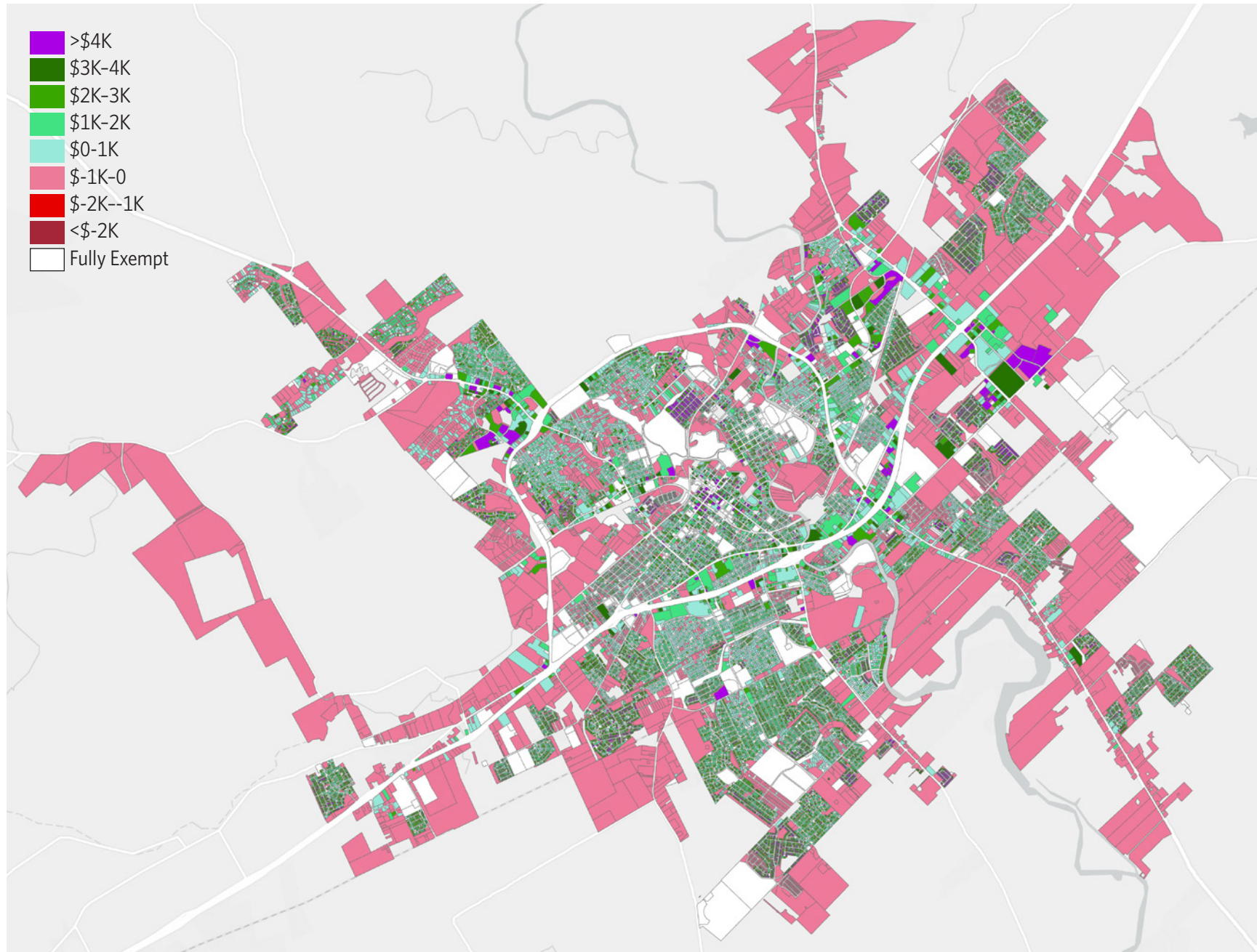
Adding costs to parcels helps illuminate which parcels generate surplus revenue based on current budget costs, and which ones cost more to serve than they generate in tax revenue. The maps to the right show the net value per acre for each parcel when you take the revenue the parcel generates and subtract the parcel's

portion of general fund costs. Any parcels shown in red cost more to serve than they generate in property tax, while the parcels in the green to purple spectrum are generating a surplus amount to cover current budget conditions.

NET PROPERTY TAX REVENUE PER ACRE WITH CURRENT BUDGET EXPENDITURES 3D MAP



NET PROPERTY TAX REVENUE PER ACRE WITH CURRENT BUDGET EXPENDITURES 2D MAP



Analysis Results
Level 2 Analysis

Level 3 Analysis

Analysis Results Level 3 Analysis

Net Property Tax Revenue per Acre with Budget and Unfunded Street Replacement Costs

The final step in the fiscal analysis projects what additional revenue the city would need to replace existing streets when they reach the end of their life cycle. Typically, cities budget an annual amount for preventative maintenance and fund a few capital improvement (CIP) projects through bond programs every 3-5 years, but these two combined sources do not cover the full amount needed. While replacement costs are often out in the future, they are

significant, and having a plan to reserve and build up funds annually will ensure the funding is there when it's needed.

The additional amount it would take for the city to replace existing streets was estimated to be roughly \$801 million, or \$32.1M/yr for 25 years. These additional costs were then allocated to each parcel. This version of the “red/green” map shows how different parcels perform when considering the true infrastructure

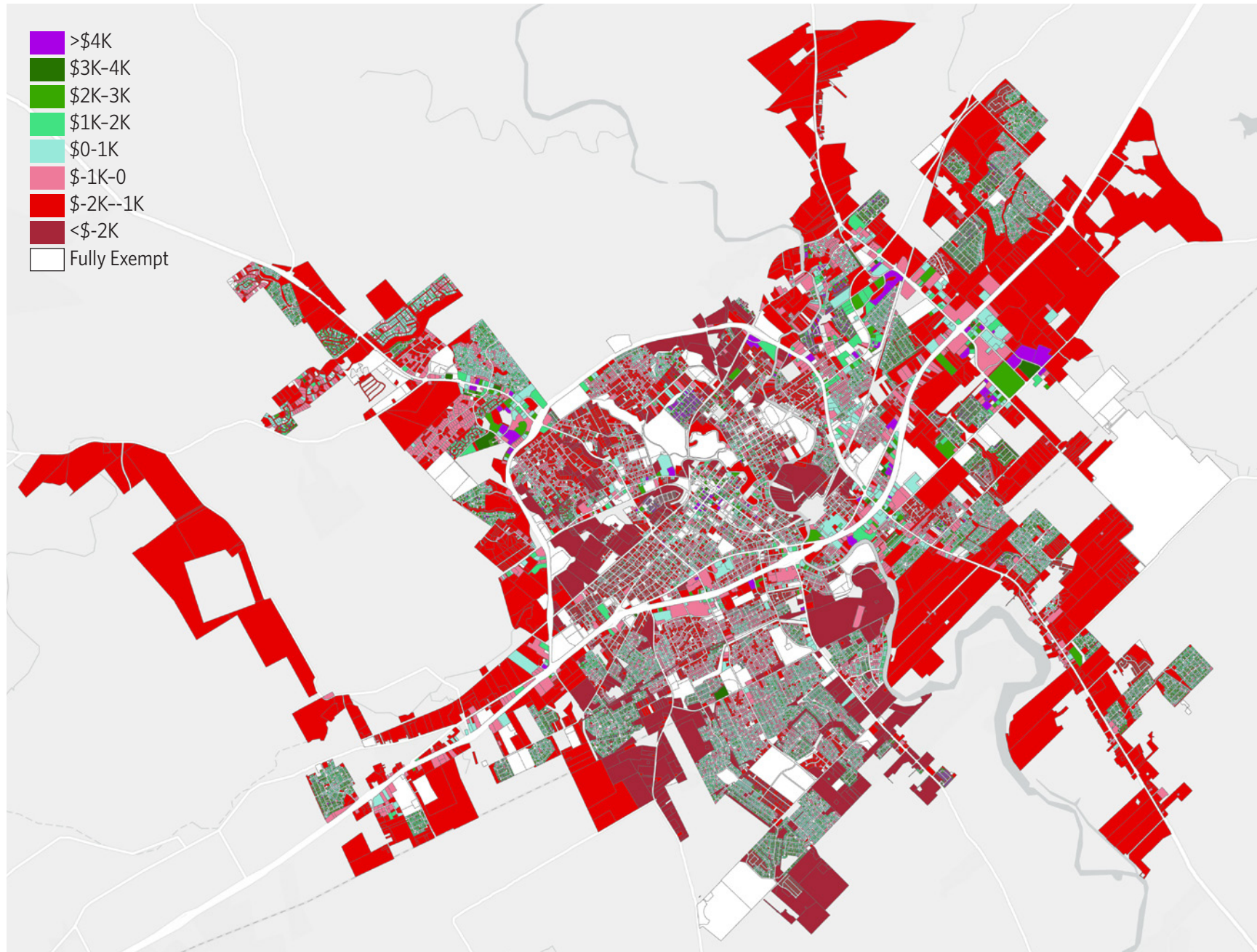
burden and assuming these costs are covered from property tax revenue. This map demonstrates that under the current budget and tax rate structure, while there are some development patterns and properties in the city that generate a surplus, most of the city is not generating enough revenue to pay for the future replacement of streets.

NET PROPERTY TAX REVENUE PER ACRE WITH BUDGET AND UNFUNDED STREET REPLACEMENT COSTS 3D MAP



It's important to note that this step only accounts for replacement of existing streets and assumes that the city does not build or take on (from new development) any additional pavement, either through widening of existing roads or adding new ones.

NET PROPERTY TAX REVENUE PER ACRE WITH BUDGET AND UNFUNDED STREET REPLACEMENT COSTS 2D MAP



Analysis Results
Level 3 Analysis

General Zoning Productivity

Analysis Results

General Zoning Productivity

When assessing the productivity of the city's development, it is useful to begin by breaking things down into large but logical groupings (or categories) to ascertain basic truths. A good way to do this is by exploring the current zoning of parcels. The data can then be refined further to look for more nuanced information within these categories. This combination of broad categories supplemented by more specific subcategories reflecting uses, building types, and lot size helps illuminate the specific factors that make up the most *and least* productive development patterns in New Braunfels.

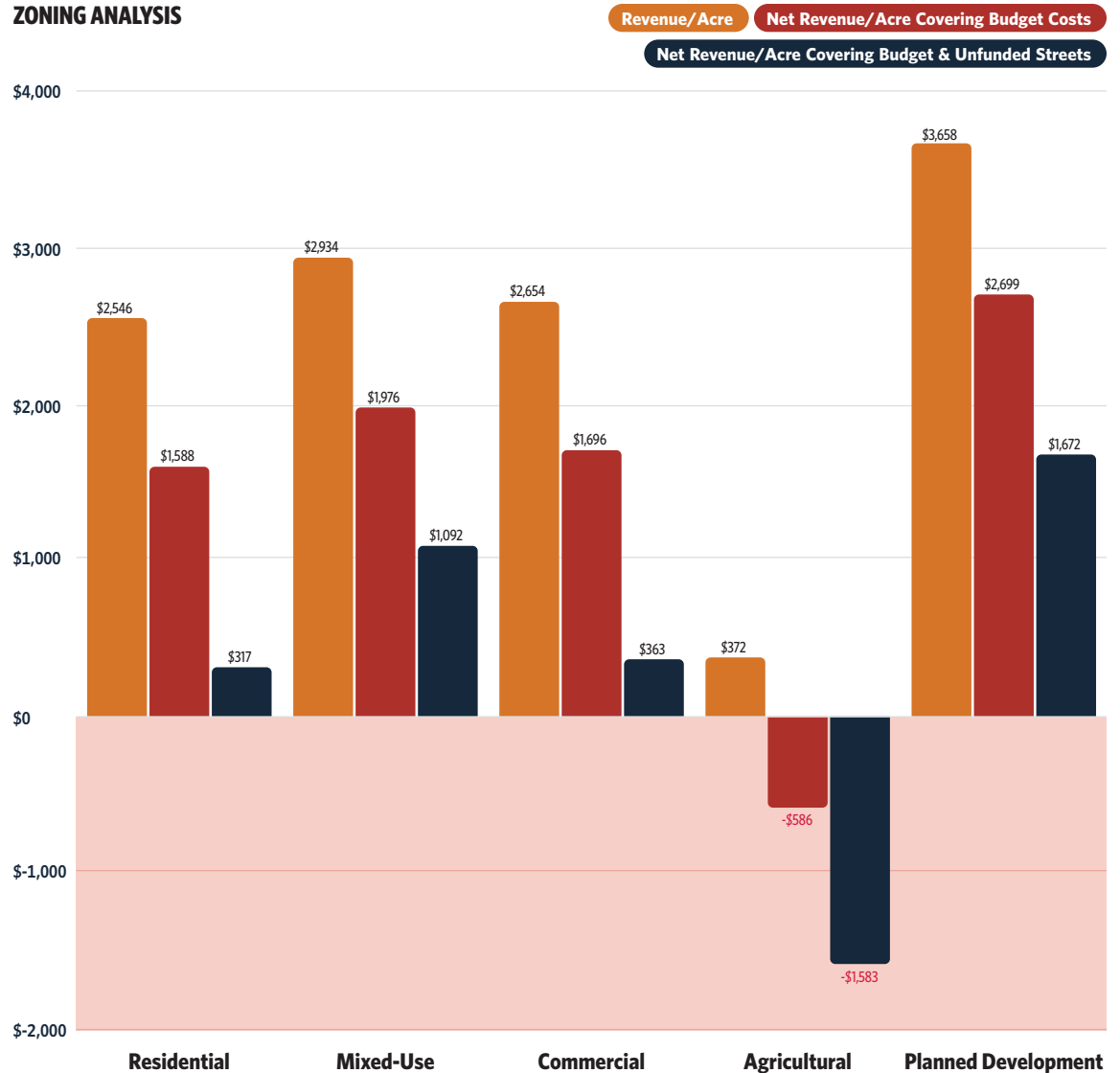
With large groupings, most show that they are still net positive to the city. This means they produce enough revenue to cover their own infrastructure maintenance, with agricultural being an exception. But that alone does not tell the whole story.

Planned Development and Mixed-Use perform well, but Commercial and Residential (*the two mostly single-use zoning categories*) are only slightly above break even. The last two categories span from small zero lot line single-family homes to large multi-family developments, main street businesses to big box stores, so breaking down these varied scales of development further is critical to understanding New Braunfels' fiscal picture.

For the categories used through this section of the document the following zoning districts were used:

RESIDENTIAL: R-1, R-1A-4, R-1A-5.5, R-1A-6.6, R-1A-8, R-2, R-2A, R-3, R-3H, R-3L, B-1, B-1A, B-1B, TH, TH-A, ZH, ZH-A
MIXED-USE: MU-A, MU-B
COMMERCIAL: C-1, C-1A, C-1B, C-2, C-2A, C-3, C-4, C-4A, C-4B, C-O, M-1, M-1A, M-2, M-2A
AGRICULTURAL: APD
PLANNED DEVELOPMENT: PD

ZONING ANALYSIS



Residential Productivity

When residential parcels are broken down into smaller categories according to their zoning districts, some patterns begin to emerge. In every district that has parcels larger than 10,000 ft², those large parcels start to become a net drain. That is they start to cost more to serve than they generate in revenue for the city when you factor in budgeted costs and deferred infrastructure costs. In contrast, development which takes place on smaller residential parcels is generally a net positive for the city.

A notable exception in the single-family districts is the 2,501-5,000 square foot lots. These parcels are net negative when accounting for current budget and future street reconstruction costs, but given that the sample size (only eight parcels total) and the relatively low improvement value (\$104,523), this is likely a reflection of these individual properties more than the scale of the development pattern. Every other residential district with properties at that parcel size is net positive when accounting for budget costs and future street liabilities.

	Parcel Sizes (ft²)	Revenue	Parcel Count	Average Improvement Value	Rev./Acre	Net Rev./Acre COVERING BUDGET	Net Rev./Acre COVERING BUDGET & UNFUNDED STREETS
Single Family R-1, R-1A-4, R-1A-5.5, R-1A-6.6, R-1A-8	0 - 2,500	\$323	2	\$20,871	\$3,946	\$2,988	\$1,371
	2,501 - 5,000	\$1,298	8	\$104,523	\$2,273	\$1,315	\$(302)
	5,001 - 7,000	\$409,890	888	\$255,394	\$3,083	\$2,125	\$838
	7,001 - 10,000	\$2,481,280	4,874	\$297,061	\$2,901	\$1,943	\$719
	10,001 - 25,000	\$2,113,165	3,539	\$347,834	\$2,036	\$1,077	\$(173)
	25,001 - 50,000	\$332,073	377	\$567,983	\$1,085	\$127	\$(883)
	>50,001	\$135,070	143	\$920,767	\$685	\$(274)	\$(1,262)
	Total	\$5,473,099	9,831	\$330,824	\$2,505	\$1,547	\$318
Mobile Homes B-1, B-1A, B-1B	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$-	0	\$-	\$-	\$-	\$-
	5,001 - 7,000	\$5,290	34	\$43,869	\$1,018	\$60	\$(1,290)
	7,001 - 10,000	\$29,855	146	\$60,934	\$1,027	\$68	\$(952)
	10,001 - 25,000	\$66,939	190	\$130,598	\$1,066	\$108	\$(1,031)
	25,001 - 50,000	\$1,709	8	\$108,208	\$260	\$(699)	\$(2,153)
	>50,001	\$38,255	2	\$4,438,380	\$507	\$(451)	\$(1,331)
	Total	\$142,048	380	\$118,273	\$1,027	\$68	\$(1,049)
Zero Lot Line Home District ZH, ZH-A	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$311,920	680	\$214,026	\$4,367	\$3,408	\$2,291
	5,001 - 7,000	\$408,871	828	\$254,893	\$3,832	\$2,874	\$1,617
	7,001 - 10,000	\$141,147	263	\$283,189	\$2,922	\$1,963	\$599
	10,001 - 25,000	\$49,525	91	\$275,361	\$2,080	\$1,121	\$(297)
	25,001 - 50,000	\$-	0	\$-	\$-	\$-	\$-
	>50,001	\$1,170	1	\$528,470	\$553	\$(405)	\$(1,286)
	Total	\$912,633	1,863	\$245,118	\$3,814	\$2,856	\$1,628
Townhouse Residential TH, TH-A	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$11,279	47	\$151,429	\$5,286	\$4,328	\$2,711
	5,001 - 7,000	\$374	1	\$262,740	\$3,145	\$2,186	\$570
	7,001 - 10,000	\$834	1	\$253,260	\$4,283	\$3,325	\$1,708
	10,001 - 25,000	\$-	0	\$-	\$-	\$-	\$-
	25,001 - 50,000	\$-	0	\$-	\$-	\$-	\$-
	>50,001	\$-	0	\$-	\$-	\$-	\$-
	Total	\$12,488	49	\$155,779	\$5,170	\$4,211	\$2,595
Single Family & Two-Family R-2, R-2A	0 - 2,500	\$954	2	\$152,635	\$8,415	\$7,456	\$5,839
	2,501 - 5,000	\$73,944	143	\$155,143	\$5,040	\$4,082	\$2,523
	5,001 - 7,000	\$365,940	827	\$203,259	\$3,170	\$2,212	\$877
	7,001 - 10,000	\$1,388,783	2,853	\$236,921	\$2,598	\$1,640	\$368
	10,001 - 25,000	\$1,310,505	2,278	\$292,297	\$1,897	\$939	\$(486)
	25,001 - 50,000	\$251,941	347	\$392,465	\$1,015	\$56	\$(1,372)
	>50,001	\$265,330	248	\$780,492	\$517	\$(442)	\$(1,643)
	Total	\$3,657,398	6,698	\$278,012	\$2,337	\$1,378	\$35
Multifamily R-3, R-3H, R-3L	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$449	1	\$137,250	\$4,048	\$3,090	\$1,473
	5,001 - 7,000	\$7,548	20	\$201,608	\$3,064	\$2,105	\$489
	7,001 - 10,000	\$35,705	75	\$219,082	\$2,565	\$1,607	\$33
	10,001 - 25,000	\$73,356	110	\$296,469	\$2,210	\$1,252	\$(291)
	25,001 - 50,000	\$14,322	12	\$448,460	\$2,089	\$1,130	\$(108)
	>50,001	\$165,352	32	\$2,978,010	\$1,495	\$537	\$(679)
	Total	\$296,732	250	\$615,560	\$2,314	\$1,356	\$(156)

Analysis Results

Residential Productivity

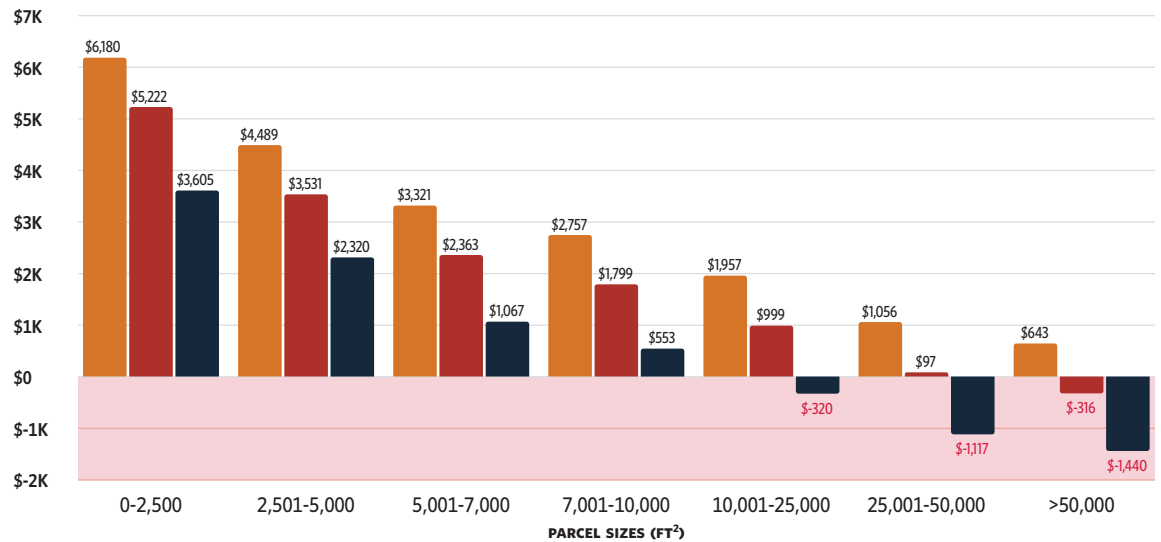
Not every zoning district has parcels in each of the parcel size groupings shown. When that is the case you will see parcel count '0' listed, and the values for the various other elements will be shown as '\$-'.

Overall Residential Property Productivity and Development Scale

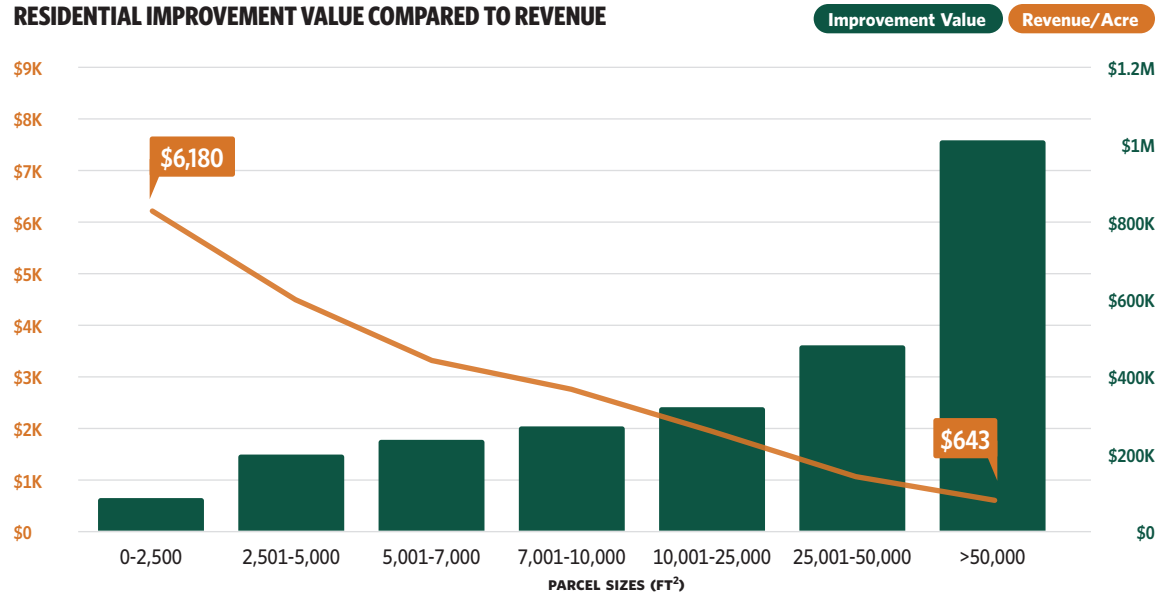
The chart *Residential Revenue per Acre* to the right shows the fiscal performance across all residential properties by lot size. This chart shows a clear trend where the net revenue per acre declines as lot size increases. A common perception is that larger lots create more value for a city, but when you consider the value generated by the amount of land consumed, this is not the case. If generating the most property tax revenue from a certain amount of land is the top priority, then filling the site with smaller lots is the way to achieve this.

The second chart shows the average improvement value and the revenue per acre across all residential properties by lot size. This chart illustrates another aspect of the power of smaller lots, which is that they are also the most affordable for residents. Affordability is a significant challenge in New Braunfels and nearly every city, so prioritizing more smaller residential buildings on smaller lots is a win-win: the city gets more tax revenue, while those seeking more affordable housing options will have more options available to them. An important caveat here is that building small does not necessarily mean the quality is compromised. If the city's development code is set up to allow more small development options, there are ways to build a variety of high quality small housing options.

RESIDENTIAL REVENUE PER ACRE



RESIDENTIAL IMPROVEMENT VALUE COMPARED TO REVENUE



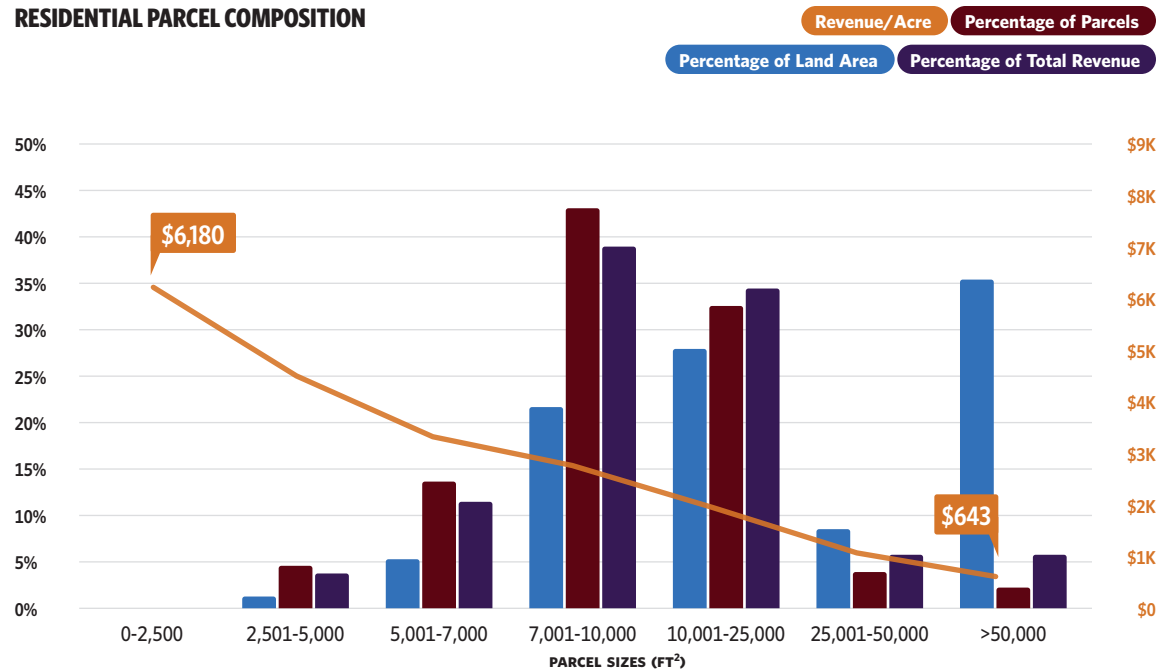
Overall Development Trend In Residential

The most productive residential development lot size (0-2,500 ft² parcels) makes up less than 1% of the total residential acreage in the city. Conversely, the least productive category (50k+ ft² lots) consumes the most acreage.

Prioritizing more residential development on smaller lots and adding units on larger parcels will generate more property tax revenue for the city without having to raise the tax rate or rely on unreasonably high home values. More compact development and accommodating more people within the city's service area also increases efficiency of services and infrastructure, and helps to maintain or even reduce household cost burdens over time.

To keep housing attainable for all residents, there needs to be a sufficient supply and mix of residential options, particularly more on the smaller and less expensive end of the spectrum. Prioritizing more small-lot residential development in the city will help achieve this. Providing a combination of ownership and rentals across these offerings is also a factor in affordability, but not specifically relevant in terms of the fiscal productivity to the city.

RESIDENTIAL PARCEL COMPOSITION



Analysis Results
Residential Productivity

Parcel Sizes (ft ²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 2,500	\$6,180	\$86,753	0%	0%	0%
2,501 - 5,000	\$4,489	\$200,015	1%	5%	4%
5,001 - 7,000	\$3,321	\$235,459	5%	14%	11%
7,001 - 10,000	\$2,757	\$270,807	22%	43%	39%
10,001 - 25,000	\$1,957	\$318,834	28%	33%	34%
25,001 - 50,000	\$1,056	\$479,250	9%	4%	6%
>50,001	\$643	\$1,009,233	35%	2%	6%
Total	\$2,546	\$302,951	100%	100%	100%

Smallplex Productivity

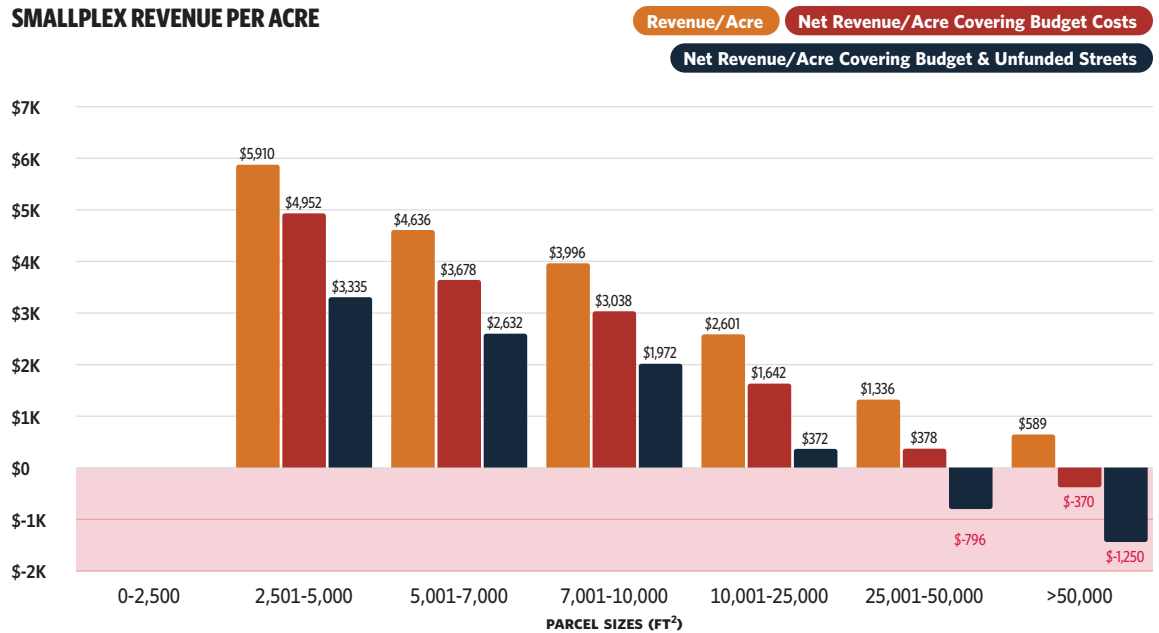
Analysis Results Residential Productivity

Ascertaining the performance of 'Missing Middle' housing can sometimes be difficult due to limitations in available data. In Guadalupe and Comal Counties, both CADs use the B2 state land use code fairly reliably to signify properties upon which a two, three, or four-unit building (smallplex) stands. These properties were used to obtain results for this particular category.

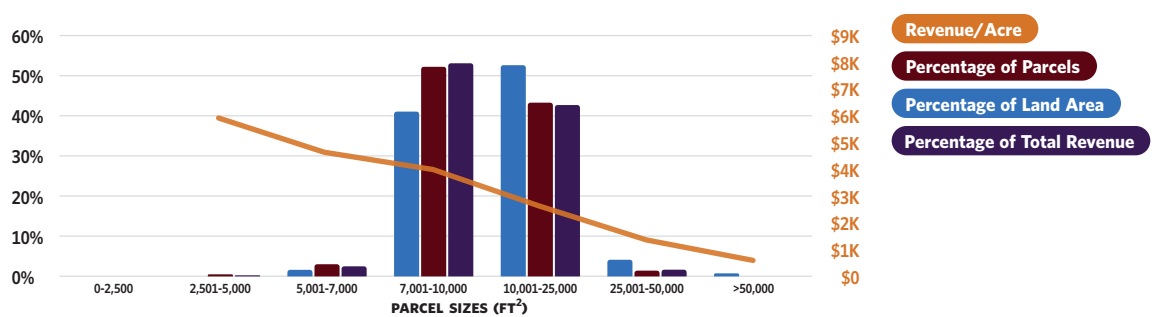
New Braunfels has more middle-scale housing than many communities in Texas, and comparing it to other residential properties in the city is useful. There are both new and historic examples of two- and four-unit buildings within the city limits. At every parcel size grouping, these middle-scale units outperform the aggregate residential properties citywide, indicating that they are a good investment for the city at any parcel size, but as is the case for most land uses the real value lies in the smaller parcels.

Today, no duplexes on a parcel less than 2,500 ft² exist. It is a safe assumption that should one be built, it would instantly become the most productive duplex in the city. The city should explore opportunities to encourage and support this middle-scale housing at smaller parcel sizes. Two-unit buildings on lots under 5,000 ft² and four-unit buildings on lots under 7,000 provide real value with truly residential character.

SMALLPLEX REVENUE PER ACRE



SMALLPLEX PARCEL COMPOSITION



Parcel Sizes (ft ²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 2,500	\$-	\$-	0%	0%	0%
2,501 - 5,000	\$5,910	\$119,544	0%	0%	0%
5,001 - 7,000	\$4,636	\$263,631	2%	3%	2%
7,001 - 10,000	\$3,996	\$350,029	41%	52%	53%
10,001 - 25,000	\$2,601	\$325,867	52%	43%	43%
25,001 - 50,000	\$1,336	\$337,817	4%	1%	2%
>50,001	\$589	\$407,420	1%	0%	0%
Total	\$3,378	\$336,159	100%	100%	100%

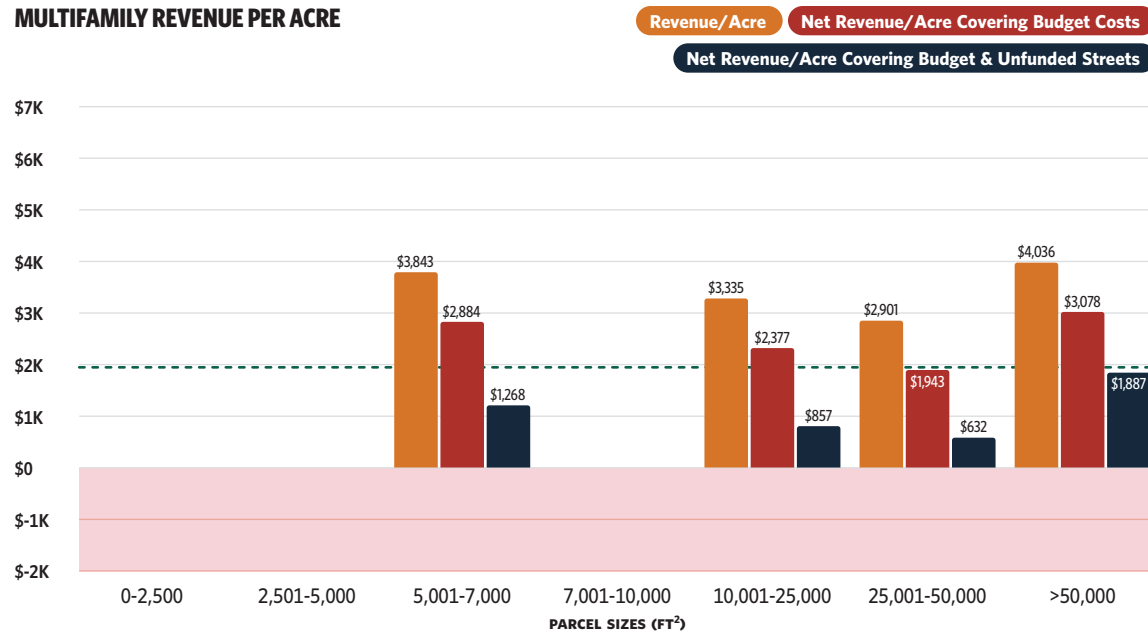
Multifamily Property Productivity

Multifamily properties were analyzed in a manner similar to how the smallplex units were done. The land use code B1 indicates parcels that contain buildings with five or more units in them. Broadly, this is a reasonable way to determine multifamily development across various scales. This approach picks up condos that are used as short-term rentals or seasonal hotel-like uses.

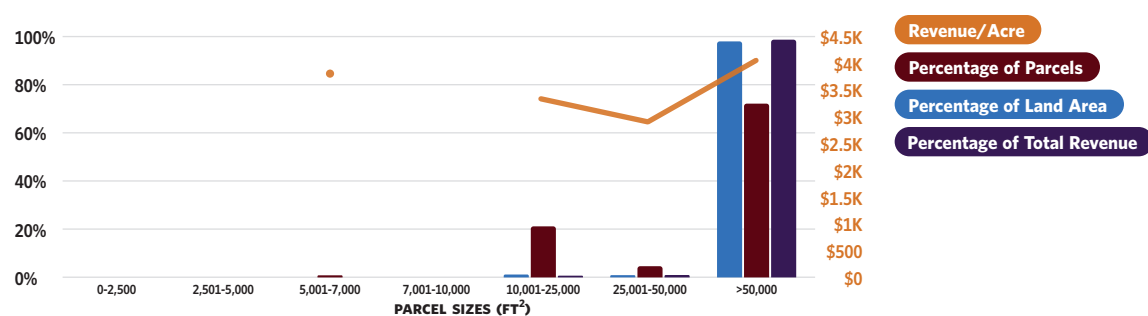
In New Braunfels, larger multifamily properties outperform smaller ones, bucking the trend of other subsets of residential. This can be attributed to most high-value, newer apartment complexes being the much larger suburban variety. When exploring the data further, even these often 'luxury' apartments don't outperform the more modest smallplex units on smaller lots shown on the previous page.

Another factor to consider is that there are very few neighborhood-scale apartments that sit on 10,000 square foot or smaller lots. These small apartments typically have eight to 10 units, are positioned on corner lots, and are often the most productive housing in a city. Smaller apartment buildings allow for more people in an area without compromising the character of single-family neighborhoods. Where possible, more of these should be encouraged.

MULTIFAMILY REVENUE PER ACRE



MULTIFAMILY PARCEL COMPOSITION



Parcel Sizes (ft²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 2,500	\$-	\$-	0%	0%	0%
2,501 - 5,000	\$-	\$-	0%	0%	0%
5,001 - 7,000	\$3,843	\$164,992	0%	1%	0%
7,001 - 10,000	\$-	\$-	0%	0%	0%
10,001 - 25,000	\$3,335	\$447,444	1%	22%	1%
25,001 - 50,000	\$2,901	\$608,250	1%	5%	1%
>50,001	\$4,036	\$14,567,554	98%	72%	98%
Total	\$3,833	\$10,639,938	100%	100%	100%

Analysis Results

Residential Productivity

\$1,972

Net Revenue/Acre Covering Budget & Unfunded Streets
Smallplexes 7,001-10,000 ft²

A rather striking observation made during this analysis was that every Smallplex category under 10,000 ft² outperformed every multifamily category without exception.

Mixed-Use Productivity

Broadly speaking, places that have been zoned mixed-use provide a good return for the city. Even when accounting for budgeted cost and future street liabilities, only a small subset of MU-B, 10,001-25,000 square foot parcels, are net negative. When reviewing the ten specific parcels in this category at the time of this study in 2024, most were found to be from a single tract that has not yet been fully developed, indicating that the data does not yet fairly represent this scale of development.

When a mix of uses are developed on a single parcel of land property tax revenue generally does go up. When this is done at a neighborhood scale, it is often viewed as a major benefit to neighborhoods, providing things like corner stores, coffee shops, and small restaurants that residents enjoy within walking distance of their homes. Moreover, places that mix commercial in alongside residential development have the added benefit of being able to generate sale tax revenue in an area that would otherwise only generate only property tax revenue.

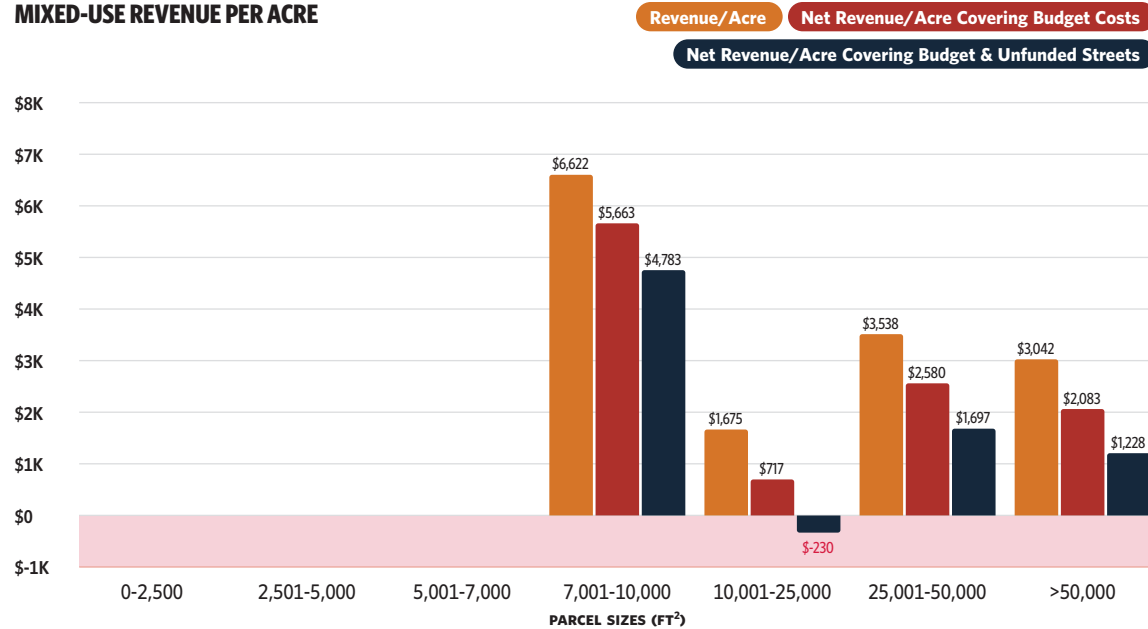
	Parcel Sizes (ft ²)	Revenue	Parcel Count	Average Improvement Value	Rev/Acre	Net Rev/Acre COVERING BUDGET	Net Rev/Acre COVERING BUDGET & UNFUNDED STREETS
Low-Intensity Mixed-Use MU-A	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$-	0	\$-	\$-	\$-	\$-
	5,001 - 7,000	\$-	0	\$-	\$-	\$-	\$-
	7,001 - 10,000	\$1,275	1	\$438,493	\$6,622	\$5,663	\$4,783
	10,001 - 25,000	\$-	0	\$-	\$-	\$-	\$-
	25,001 - 50,000	\$4,972	4	\$412,037	\$2,043	\$1,084	\$20
	>50,001	\$114,024	8	\$6,160,820	\$3,067	\$2,109	\$1,209
	Total	\$120,271	13	\$3,951,784	\$3,022	\$2,063	\$1,110
High-Intensity Mixed-Use MU-B	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$-	0	\$-	\$-	\$-	\$-
	5,001 - 7,000	\$-	0	\$-	\$-	\$-	\$-
	7,001 - 10,000	\$-	0	\$-	\$-	\$-	\$-
	10,001 - 25,000	\$8,121	10	\$346,069	\$1,675	\$717	\$(230)
	25,001 - 50,000	\$26,762	7	\$1,495,865	\$4,393	\$3,434	\$2,656
	>50,001	\$294,085	14	\$9,398,455	\$3,029	\$2,071	\$1,238
	Total	\$328,969	31	\$4,693,875	\$2,900	\$1,942	\$1,085

Mixed-Use Productivity and Development Scale

It is difficult to draw any meaningful conclusions from the limited data available for this particular zoning category at the time of this study. Based on the data that is available, the majority of the lot size categories stay positive, even when additional costs are factored in. Closer examination of the properties in this category reveals that many of them are in progress, and therefore the taxable value represents only a portion of what the full value is likely to be once the property[ies] are fully developed. As the properties continue to develop, assessed values and accompanying tax revenue will increase, further improving the net fiscal performance.

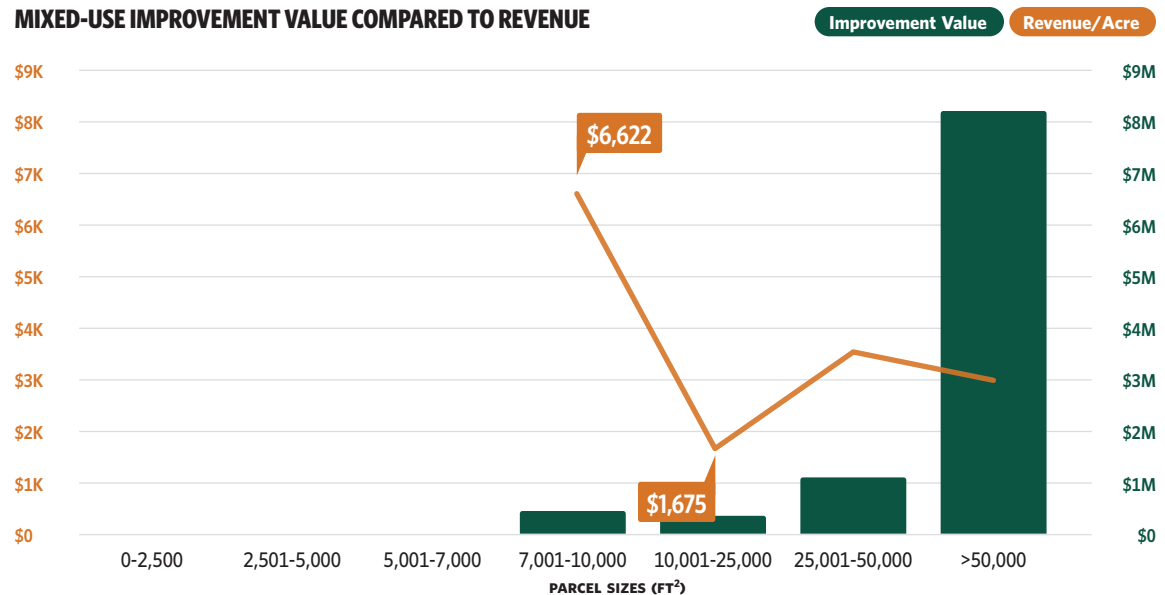
These properties and this category in general should be evaluated again in a few years to see how the fully developed properties perform.

MIXED-USE REVENUE PER ACRE



Analysis Results
Mixed-Use Productivity

MIXED-USE IMPROVEMENT VALUE COMPARED TO REVENUE

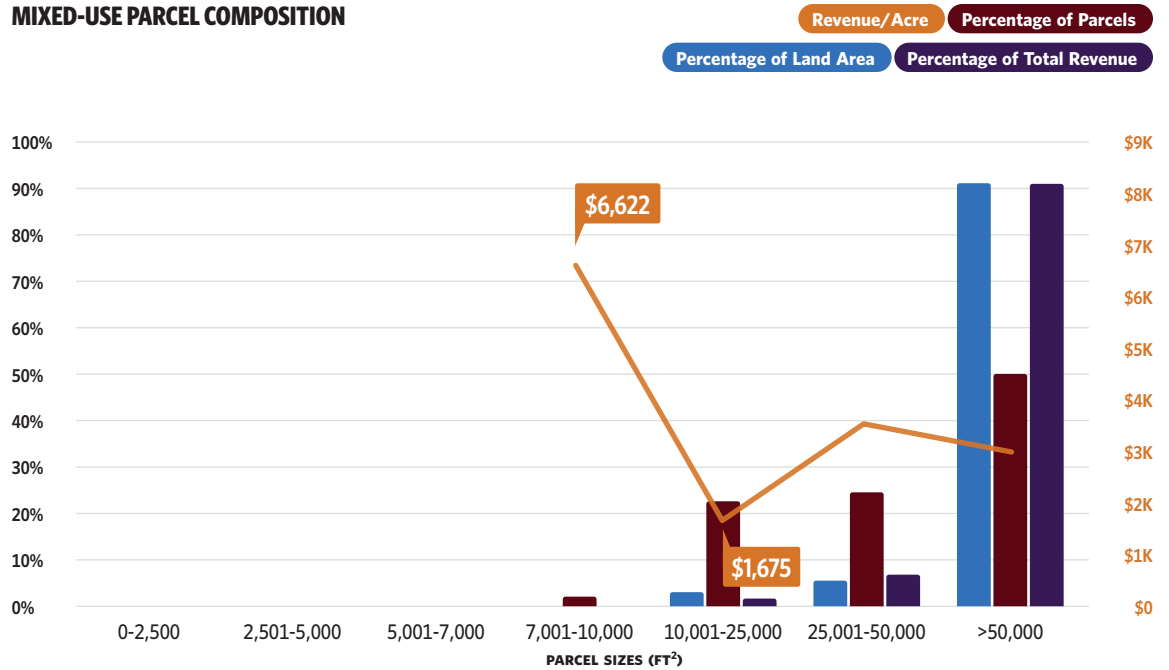


Current Development Trend In Mixed-Use

Analysis Results Mixed-Use Productivity

There are only 44 parcels in the city that are zoned mixed-use. All of them are on larger parcels, with half of them on tracts of 50,000 ft² or more. It is common for major mixed-use development to occur on large tracts, but the context and character of these developments has a direct impact on the fiscal performance. Auto-oriented, “horizontal mixed-use” sites with large buildings and parking lots are typically lower in value and fiscal productivity than mixed-use developments that prioritize a mix of uses and building types, heights and sizes in a more walkable context.

MIXED-USE PARCEL COMPOSITION



Parcel Sizes (ft²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 2,500	\$-	\$-	0%	0%	0%
2,501 - 5,000	\$-	\$-	0%	0%	0%
5,001 - 7,000	\$-	\$-	0%	0%	0%
7,001 - 10,000	\$6,622	\$438,493	0%	2%	0%
10,001 - 25,000	\$1,675	\$346,069	3%	23%	2%
25,001 - 50,000	\$3,538	\$1,101,746	6%	25%	7%
>50,001	\$3,042	\$8,221,133	91%	50%	91%
Total	\$2,934	\$4,474,621	100%	100%	100%

Commercial Productivity

Commercial properties in the aggregate are net positive for the city when accounting for current budget costs and future street reconstruction costs, but not by much. While all Local Business districts are net positive, larger General Business districts struggle, and in the C-3 district most are not able to cover their costs except for a sweet spot between 50,001 and 100,000 square foot parcels. This indicates that the uses and development character associated with that particular zoning district perform best for the city at parcels in this range.

A common refrain with commercial is that businesses also bring in sales tax revenue, and that makes up for any deficiency on the property tax side. Sales tax is a more volatile revenue source, and should not be relied on to cover basic services and infrastructure. Additionally, economic development is trending more toward place- and experience-based design that aligns well with characteristics of more fiscally productive development patterns. Encouraging commercial development that can sustain its own infrastructure and service costs based on its own property value while also boosting sales tax revenues is a much more fiscally responsible approach.

	Parcel Sizes (ft ²)	Revenue	Parcel Count	Average Improvement Value	Rev/Acre	Net Rev/Acre COVERING BUDGET	Net Rev/Acre COVERING BUDGET & UNFUNDED STREETS
Local Business C-1, C-1A, C-1B	0 - 10,000	\$40,501	85	\$165,855	\$2,882	\$1,924	\$370
	10,001 - 25,000	\$178,012	199	\$312,464	\$2,566	\$1,608	\$174
	25,001 - 50,000	\$249,216	129	\$567,504	\$2,409	\$1,450	\$365
	50,001 - 75,000	\$192,430	70	\$937,132	\$2,291	\$1,333	\$207
	75,001 - 100,000	\$158,341	38	\$1,593,502	\$2,431	\$1,473	\$312
	100,001 - 200,000	\$273,259	39	\$2,800,341	\$2,319	\$1,361	\$283
	>200,001	\$402,958	36	\$9,916,841	\$2,628	\$1,670	\$636
	Total	\$1,494,718	596	\$1,244,728	\$2,522	\$1,564	\$282
General Business C-2, C-2A	0 - 10,000	\$115,178	157	\$293,778	\$6,157	\$5,199	\$3,597
	10,001 - 25,000	\$203,408	199	\$359,932	\$3,174	\$2,216	\$615
	25,001 - 50,000	\$82,836	32	\$947,717	\$3,923	\$2,965	\$1,501
	50,001 - 75,000	\$10,058	9	\$1,303,307	\$2,485	\$1,526	\$(90)
	75,001 - 100,000	\$10,589	4	\$4,030,157	\$2,471	\$1,512	\$264
	100,001 - 200,000	\$2,447	8	\$3,877,150	\$557	\$(401)	\$(1,282)
	>200,001	\$-	0	\$-	\$-	\$-	\$-
	Total	\$424,517	409	\$505,976	\$4,415	\$3,457	\$1,870
Commercial C-3	0 - 10,000	\$145,498	353	\$142,660	\$2,395	\$1,436	\$(150)
	10,001 - 25,000	\$175,607	235	\$202,548	\$2,177	\$1,219	\$(141)
	25,001 - 50,000	\$230,987	140	\$400,525	\$2,055	\$1,097	\$(160)
	50,001 - 75,000	\$172,156	57	\$882,620	\$2,218	\$1,260	\$142
	75,001 - 100,000	\$126,590	34	\$1,070,794	\$2,050	\$1,091	\$45
	100,001 - 200,000	\$256,930	51	\$1,706,170	\$1,688	\$729	\$(336)
	>200,001	\$583,603	42	\$4,923,848	\$1,560	\$601	\$(587)
	Total	\$1,691,371	912	\$586,145	\$2,186	\$1,227	\$(154)
Resort Commercial C-4, C-4A, C-4B	0 - 10,000	\$16,477	26	\$295,758	\$3,626	\$2,667	\$1,051
	10,001 - 25,000	\$13,521	15	\$311,499	\$2,735	\$1,776	\$160
	25,001 - 50,000	\$13,924	6	\$553,642	\$2,820	\$1,861	\$368
	50,001 - 75,000	\$20,165	8	\$583,466	\$1,725	\$767	\$(656)
	75,001 - 100,000	\$11,760	4	\$861,287	\$2,066	\$1,107	\$(264)
	100,001 - 200,000	\$20,069	6	\$682,883	\$1,161	\$203	\$(1,119)
	>200,001	\$231,676	15	\$6,983,858	\$2,088	\$1,130	\$21
	Total	\$327,593	80	\$1,658,151	\$2,704	\$1,745	\$266
Commercial Office C-O	0 - 10,000	\$1,742	3	\$190,410	\$3,389	\$2,431	\$814
	10,001 - 25,000	\$2,611	5	\$286,431	\$2,209	\$1,251	\$(122)
	25,001 - 50,000	\$3,364	2	\$612,736	\$2,291	\$1,332	\$(203)
	50,001 - 75,000	\$1,564	1	\$273,740	\$1,002	\$44	\$(837)
	75,001 - 100,000	\$-	0	\$-	\$-	\$-	\$-
	100,001 - 200,000	\$-	0	\$-	\$-	\$-	\$-
	>200,001	\$-	0	\$-	\$-	\$-	\$-
	Total	\$9,281	11	\$318,418	\$2,459	\$1,500	\$71
Industrial M-1, M-1A, M-2, M-2A	0 - 10,000	\$126,173	239	\$221,918	\$3,455	\$2,496	\$1,216
	10,001 - 25,000	\$76,951	121	\$213,334	\$1,917	\$959	\$(424)
	25,001 - 50,000	\$177,231	96	\$584,056	\$2,160	\$1,202	\$121
	50,001 - 75,000	\$175,270	67	\$817,744	\$1,990	\$1,031	\$(9)
	75,001 - 100,000	\$120,543	33	\$1,147,545	\$1,987	\$1,028	\$133
	100,001 - 200,000	\$277,547	53	\$1,955,468	\$1,621	\$663	\$(236)
	>200,001	\$1,997,340	100	\$9,150,775	\$1,609	\$651	\$(281)
	Total	\$2,951,056	709	\$1,757,823	\$2,422	\$1,463	\$307

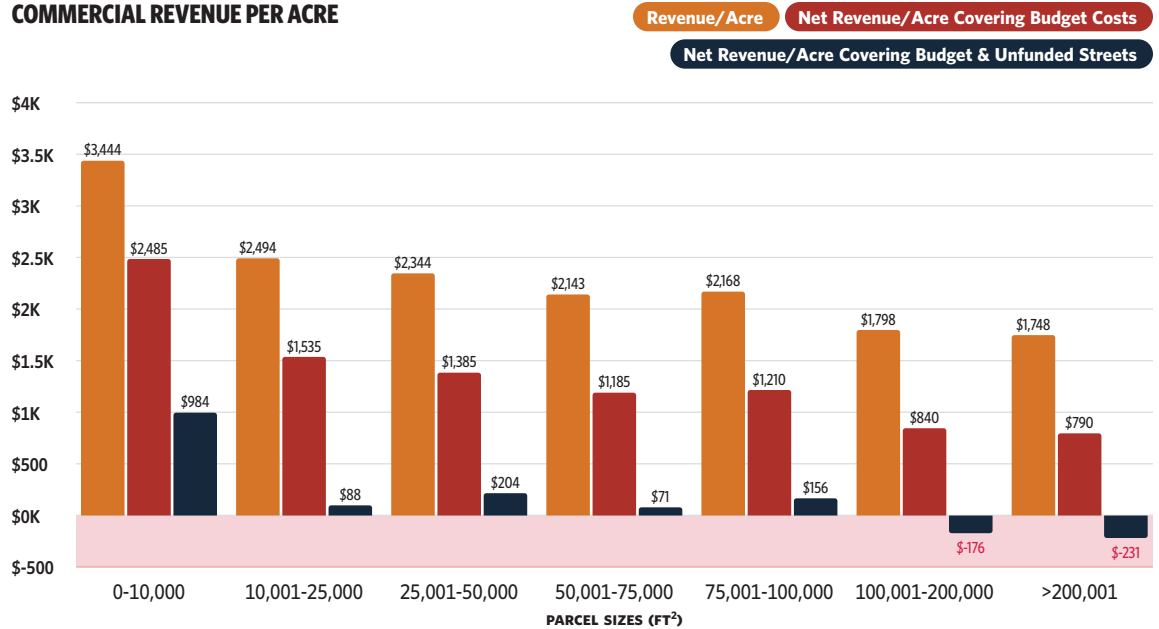
Analysis Results
Commercial Productivity

Commercial Property Productivity, and Development Scale

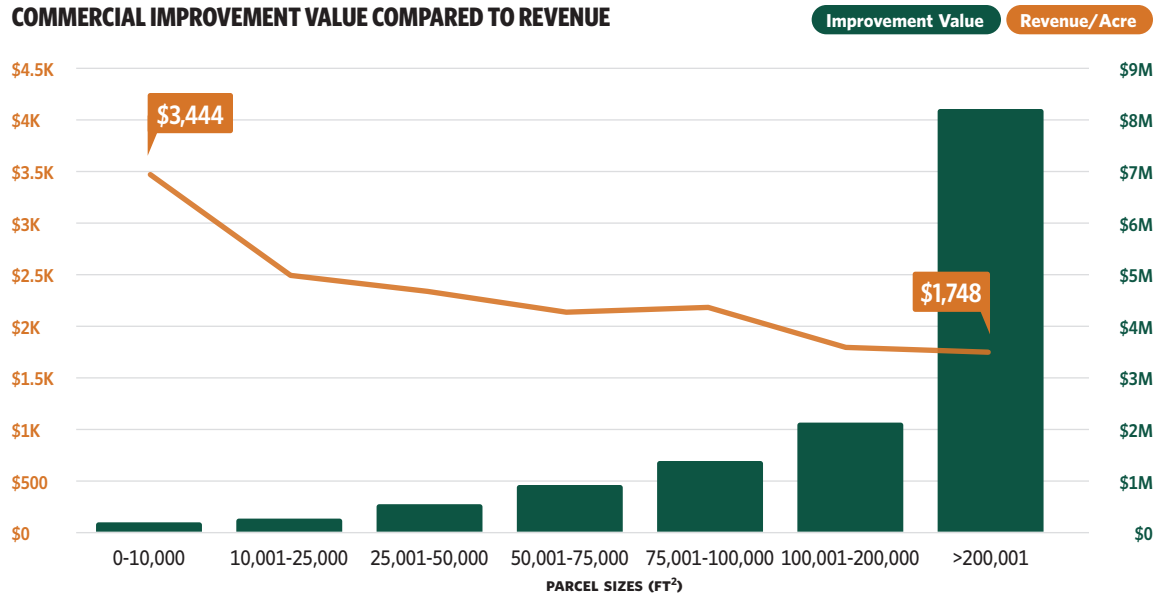
The top chart shows the fiscal performance across all commercial properties by lot size. Similar to the residential chart, this also shows a trend where the revenue per acre declines as lot size increases. Net revenue per acre after factoring in budget and future street costs is significantly higher for the smallest lot size category (<10,000 ft²).

The second chart shows the average improvement value and revenue per acre across all commercial properties by lot size. Commercial properties on the largest lots are by far the most expensive and produce the lowest revenue per acre, while the smallest lots are the most affordable and produce the highest revenue per acre. When evaluating performance of the smallest commercial properties further, the data reveals that sites less than 2,500 ft² have by far the highest revenue per acre of any lot size group. The improvement values in this category are the highest of properties on lots below 10,000 ft², but still significantly less than those on the larger commercial lots. The higher values on these smaller sites are most likely due to many of them being located in the city's downtown, where properties are well maintained and routinely invested in. These properties show what is possible when high quality businesses are built on small lots and part of a walkable, mixed-use neighborhood.

COMMERCIAL REVENUE PER ACRE



COMMERCIAL IMPROVEMENT VALUE COMPARED TO REVENUE

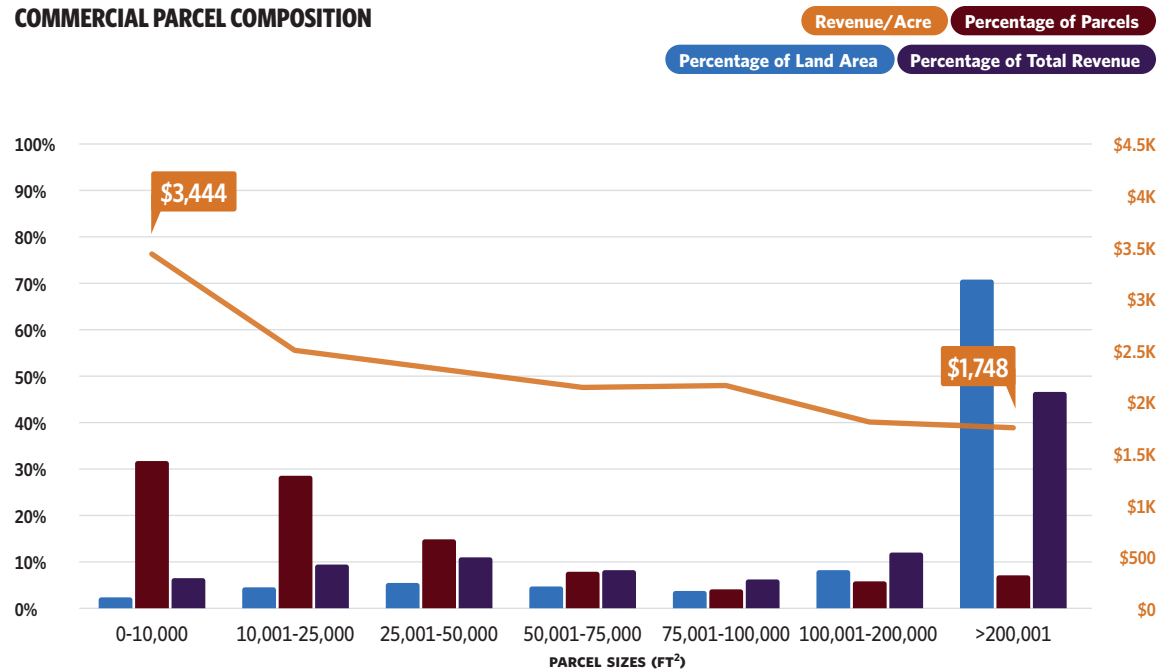


Current Development Trend In Commercial

The chart and table on this page illustrate how the commercial properties in New Braunfels break down in acreage, parcel count, and property tax revenue. 60% of the commercial properties in the city are under 25,000 ft², but they only occupy 7% of the commercial acreage. While the most fiscally productive in terms of property tax revenue per acre, they only generate 15% of the total property tax revenue from commercial development in the city. The largest lot category (>200,000 ft²) consumes over 70% of the city's commercial acreage and generates 47% of the commercial property tax revenue.

Continuing to provide a balance of high quality small commercial buildings and businesses and larger, more autocentric businesses that draw employees and customers from a broader area is important to keeping New Braunfels' economy healthy. That said, where there are opportunities to build more small lot commercial to enhance existing neighborhoods, expand downtown, or complement some of the larger commercial properties, they should be prioritized as they will boost both property and sales tax revenue while requiring less land and infrastructure.

COMMERCIAL PARCEL COMPOSITION



Parcel Sizes (ft ²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 10,000	\$3,444	\$199,165	2%	32%	6%
10,001 - 25,000	\$2,494	\$275,612	5%	28%	9%
25,001 - 50,000	\$2,344	\$543,766	6%	15%	11%
50,001 - 75,000	\$2,143	\$883,814	5%	8%	8%
75,001 - 100,000	\$2,168	\$1,366,326	4%	4%	6%
100,001 - 200,000	\$1,798	\$2,133,645	8%	6%	12%
>200,001	\$1,748	\$8,205,405	71%	7%	47%
Total	\$2,654	\$1,054,773	100%	100%	100%

Analysis Results
Commercial Productivity

Agricultural Productivity

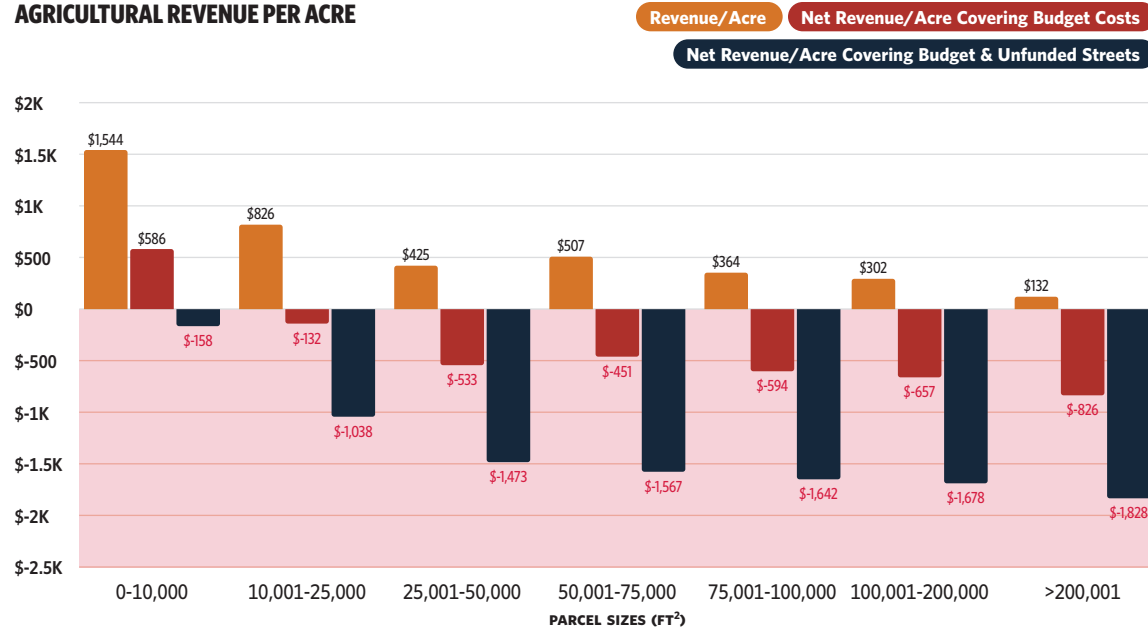
Parcels that are zoned Agricultural tend to be much larger in size and have limited improvements on them. Because of this, they tend to have lower revenue per acre and are negative when costs are factored in. When these properties have active farming or other ag-related operations on them, they produce higher property tax revenue, while also adding value to the local economy and surrounding communities in other ways. On the other hand, properties in this category that are completely vacant (undeveloped) but are served with public services and infrastructure are costing the city and its taxpayers money, because the costs of these services must be paid for by the developed properties.

	Parcel Sizes (ft²)	Revenue	Parcel Count	Average Improvement Value	Rev/Acre	Net Rev/Acre COVERING BUDGET	Net Rev/Acre COVERING BUDGET & UNFUNDED STREETS
Agricultural <i>APD</i>	0 - 10,000	\$500	2	\$80,820	\$1,544	\$586	\$(158)
	10,001 - 25,000	\$7,126	22	\$159,251	\$826	\$(132)	\$(1,038)
	25,001 - 50,000	\$17,124	46	\$181,636	\$425	\$(533)	\$(1,473)
	50,001 - 75,000	\$13,987	20	\$244,557	\$507	\$(451)	\$(1,567)
	75,001 - 100,000	\$22,044	35	\$329,413	\$364	\$(594)	\$(1,642)
	100,001 - 200,000	\$34,815	35	\$266,298	\$302	\$(657)	\$(1,678)
	>200,001	\$61,718	67	\$499,681	\$132	\$(826)	\$(1,828)
	Total	\$157,314	227	\$313,833	\$372	\$(586)	\$(1,583)

Agricultural Productivity, and Development Scale

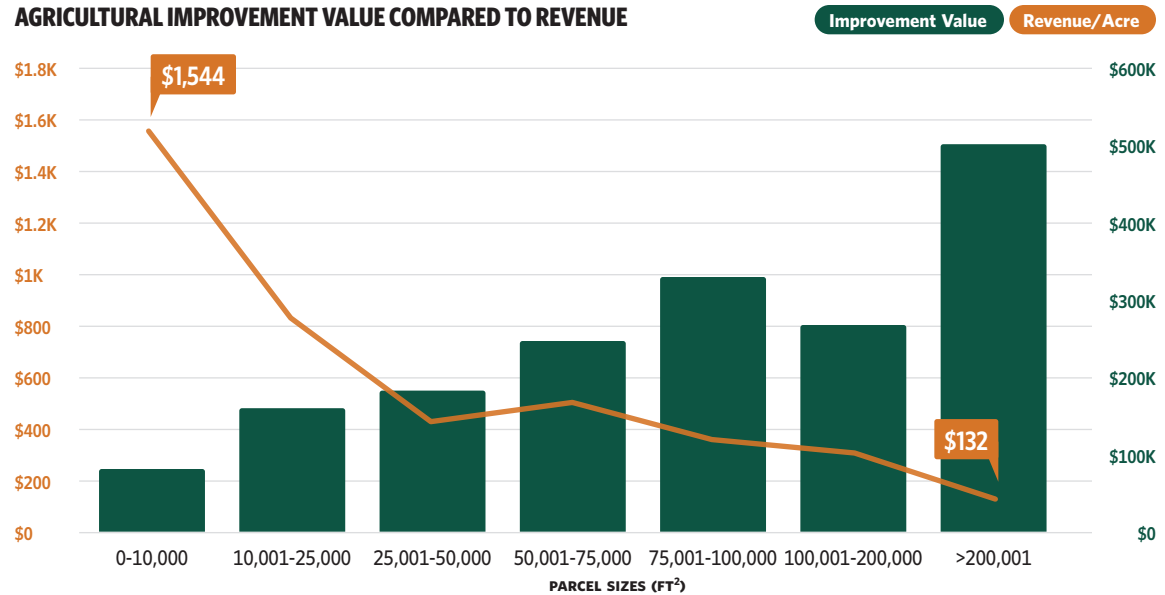
Larger properties in this category have higher improvement values than smaller properties, but like we've seen in other categories, the smaller properties have the higher revenue per acre. Regardless of lot size, all the properties in the Ag category are net negative when factoring in service and infrastructure costs.

AGRICULTURAL REVENUE PER ACRE



Analysis Results
Agricultural Productivity

AGRICULTURAL IMPROVEMENT VALUE COMPARED TO REVENUE

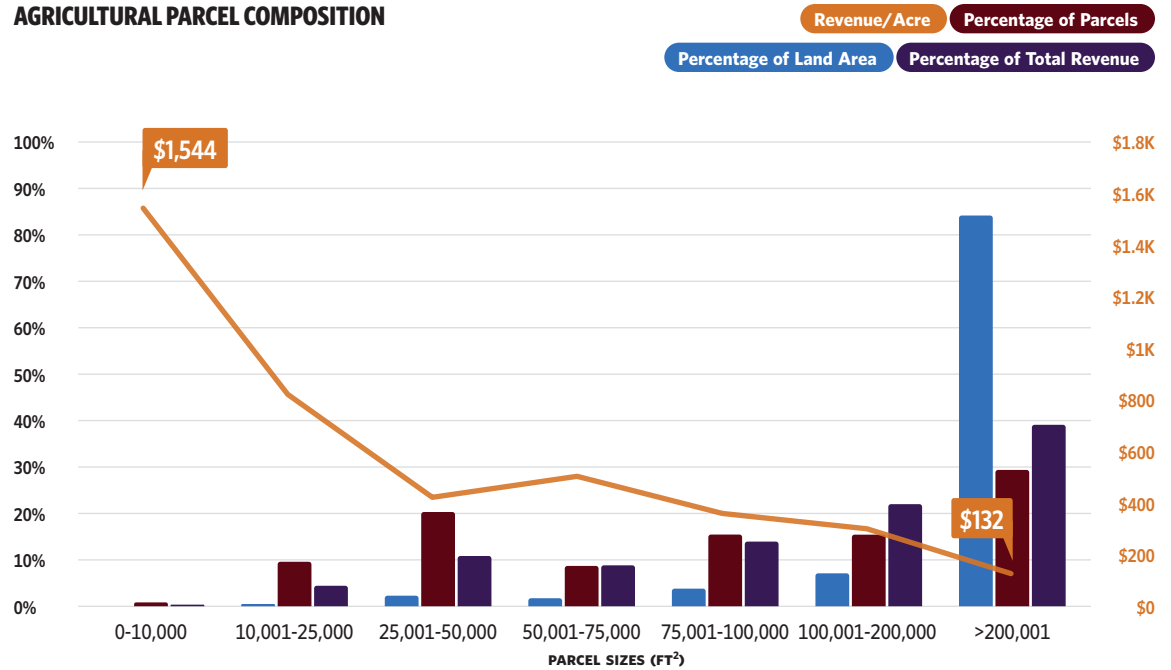


Current Development Trend In Agricultural

Analysis Results Agricultural Productivity

The vast majority of parcels and acreage in this zoning category are in the largest lot size groups. This is unlikely to change, since properties in this category tend to be either large tracts used for farming or vacant areas that remain this way until they are purchased and rezoned for development.

AGRICULTURAL PARCEL COMPOSITION



Parcel Sizes (ft²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 10,000	\$1,544	\$80,820	0%	1%	0%
10,001 - 25,000	\$826	\$159,251	1%	10%	5%
25,001 - 50,000	\$425	\$181,636	2%	20%	11%
50,001 - 75,000	\$507	\$244,557	2%	9%	9%
75,001 - 100,000	\$364	\$329,413	4%	15%	14%
100,001 - 200,000	\$302	\$266,298	7%	15%	22%
>200,001	\$132	\$499,681	84%	30%	39%
Total	\$372	\$313,833	100%	100%	100%

Planned & Special District Productivity

New Braunfels has endeavored to hold its planned district developments to a higher standard. From a fiscal standpoint, this has been successful in that parcels at all sizes are net positive when accounting for budgeted costs and future street liabilities. As the City continues its ongoing process to update its Land Development Ordinance, incorporating the lessons learned through these high-quality developments into the final LDO can help ensure better fiscal health is a part of future as-of-right development.

The Special Districts in the city are largely made up of an area which has a historic street grid, some with alleys, and mid-sized lots. Land uses are primarily homes, with minor commercial uses intermixed. Schurz Elementary and the Ninth Grade Center are within SND-1. Because of this fairly traditional neighborhood pattern, we see smaller lots performing very well, with some falloff in productivity at and above 10,000 square foot lots. Many lots in this area are deep and have the ability to increase intensity incrementally through uses like ADUs. This would push these larger lots into net positive territory.

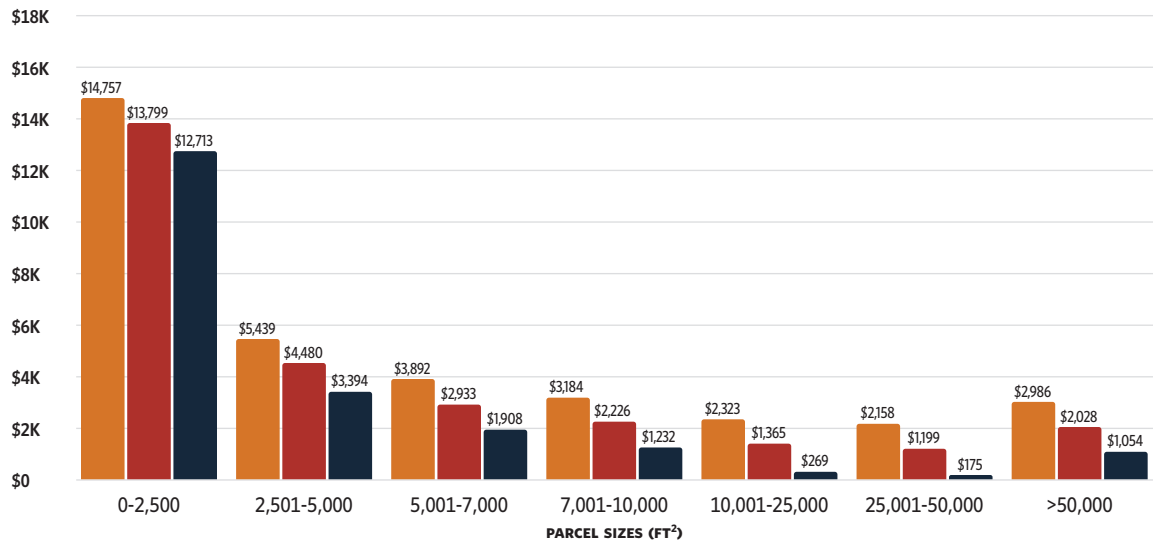
	Parcel Sizes (ft ²)	Revenue	Parcel Count	Average Improvement Value	Rev/Acre	Net Rev/Acre COVERING BUDGET	Net Rev/Acre COVERING BUDGET & UNFUNDED STREETS
Planned Development PD	0 - 2,500	\$32,211	43	\$379,756	\$14,757	\$13,799	\$12,713
	2,501 - 5,000	\$268,540	495	\$296,770	\$5,439	\$4,480	\$3,394
	5,001 - 7,000	\$2,295,753	4,461	\$284,323	\$3,892	\$2,933	\$1,908
	7,001 - 10,000	\$1,351,802	2,475	\$321,415	\$3,184	\$2,226	\$1,232
	10,001 - 25,000	\$598,549	884	\$398,260	\$2,323	\$1,365	\$269
	25,001 - 50,000	\$99,067	68	\$760,376	\$2,158	\$1,199	\$175
	>50,001	\$173,866	27	\$6,448,638	\$2,986	\$2,028	\$1,054
	Total	\$4,819,789	8,453	\$331,832	\$3,658	\$2,699	\$1,672
Special Districts SND-1, ADSD - Advantage Drive SD, Walnut Neighborhood - Comm., Walnut Neighborhood - MU	0 - 2,500	\$6,420	14	\$184,667	\$8,596	\$7,638	\$6,831
	2,501 - 5,000	\$10,700	28	\$168,710	\$4,331	\$3,373	\$2,067
	5,001 - 7,000	\$24,911	54	\$234,072	\$3,486	\$2,528	\$928
	7,001 - 10,000	\$92,111	188	\$232,344	\$2,659	\$1,701	\$84
	10,001 - 25,000	\$99,094	165	\$329,280	\$2,234	\$1,276	\$(341)
	25,001 - 50,000	\$1,744	5	\$453,001	\$770	\$(189)	\$(1,805)
	>50,001	\$1,230	6	\$3,887,743	\$690	\$(269)	\$(1,885)
	Total	\$236,210	460	\$312,070	\$2,882	\$1,923	\$354
Wurstfest Special District WSD	0 - 2,500	\$-	0	\$-	\$-	\$-	\$-
	2,501 - 5,000	\$-	0	\$-	\$-	\$-	\$-
	5,001 - 7,000	\$-	0	\$-	\$-	\$-	\$-
	7,001 - 10,000	\$-	0	\$-	\$-	\$-	\$-
	10,001 - 25,000	\$-	0	\$-	\$-	\$-	\$-
	25,001 - 50,000	\$-	0	\$-	\$-	\$-	\$-
	>50,001	\$3,669	3	\$823,313	\$533	\$(426)	\$(2,042)
	Total	\$3,669	3	\$823,313	\$533	\$(426)	\$(2,042)

Analysis Results
Planned & Special District Productivity

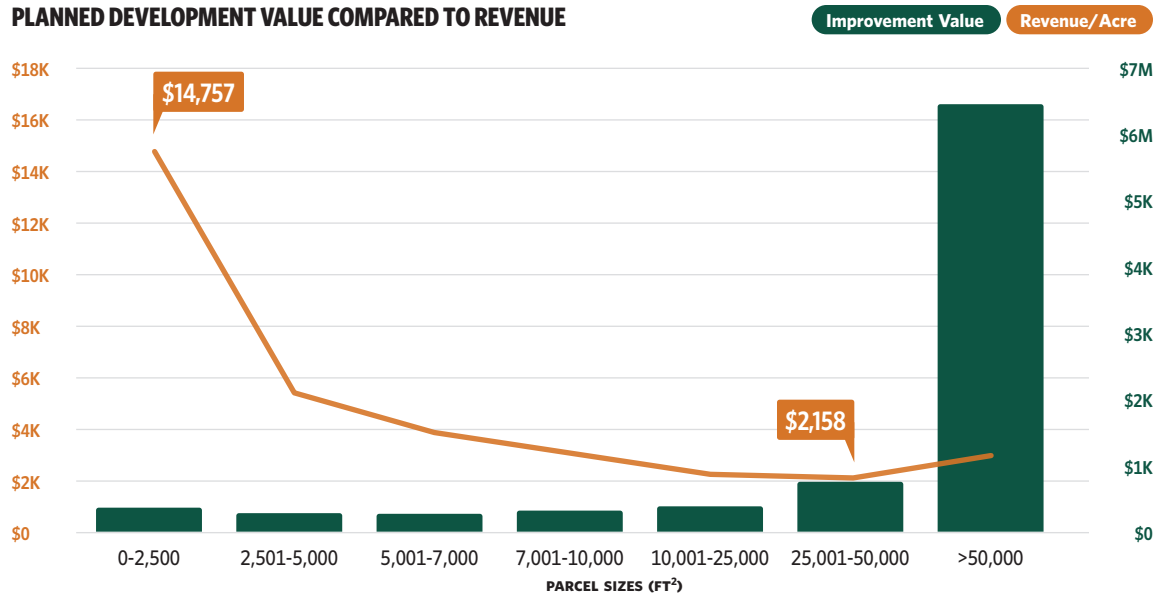
Planned Development Property Productivity, and Development Scale

Looking at the charts on this page, it's clear that the smallest lots in the planned districts are quite valuable to the city. However, it's also interesting to note that the net values accounting for budget and future street costs of the parcels in every lot size grouping outpace the corresponding values for residential or commercial districts.

PLANNED DEVELOPMENT REVENUE PER ACRE



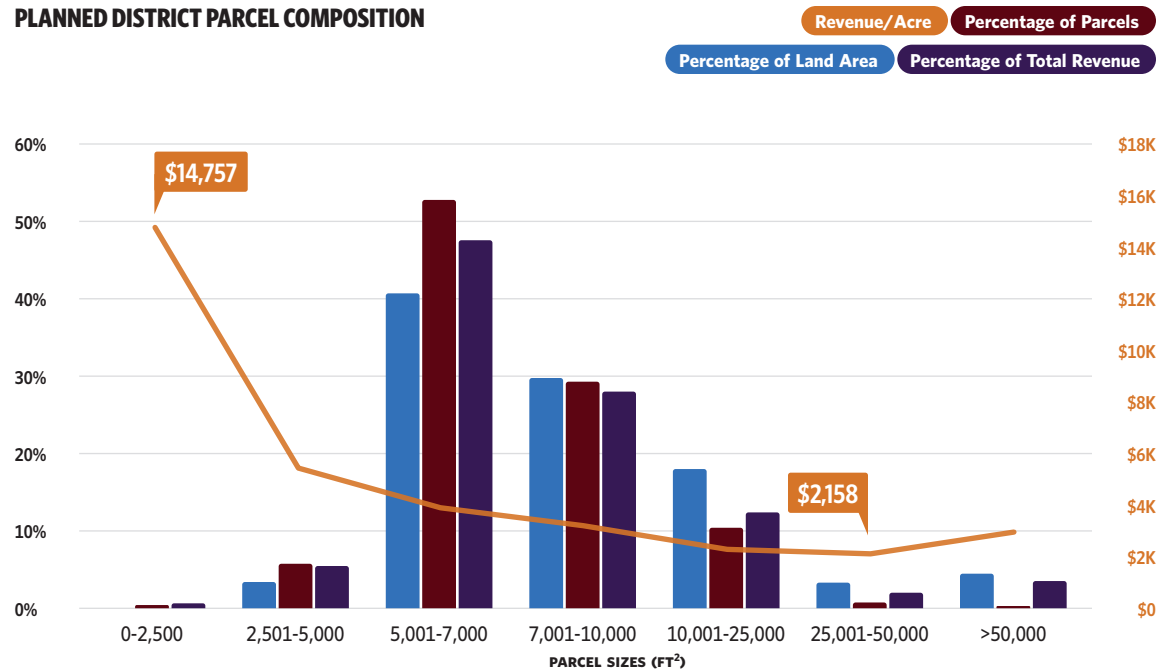
PLANNED DEVELOPMENT VALUE COMPARED TO REVENUE



Planned Districts Property Productivity and Development Scale

Improvement values for all but the largest lot sizes are relatively equal, while the value of properties in the largest lot size are significantly higher. However, the revenue per acre and net per acre after costs are considered are the best in the smallest lots, and by a large margin. A key takeaway from these charts is that planned districts hold their value regardless of the size of the lot they are on.

PLANNED DISTRICT PARCEL COMPOSITION



Analysis Results

Planned & Special District Productivity

Parcel Sizes (ft²)	Revenue / Acre	Average Imp. Value	Percentage of Land Area	Percentage of Parcels	Percentage of Total Revenue
0 - 2,500	\$14,757	\$379,756	0%	1%	1%
2,501 - 5,000	\$5,439	\$296,770	3%	6%	6%
5,001 - 7,000	\$3,892	\$284,323	41%	53%	48%
7,001 - 10,000	\$3,184	\$321,415	30%	29%	28%
10,001 - 25,000	\$2,323	\$398,260	18%	10%	12%
25,001 - 50,000	\$2,158	\$760,376	3%	1%	2%
>50,001	\$2,986	\$6,448,638	5%	0%	4%
Total	\$3,658	\$331,832	100%	100%	100%

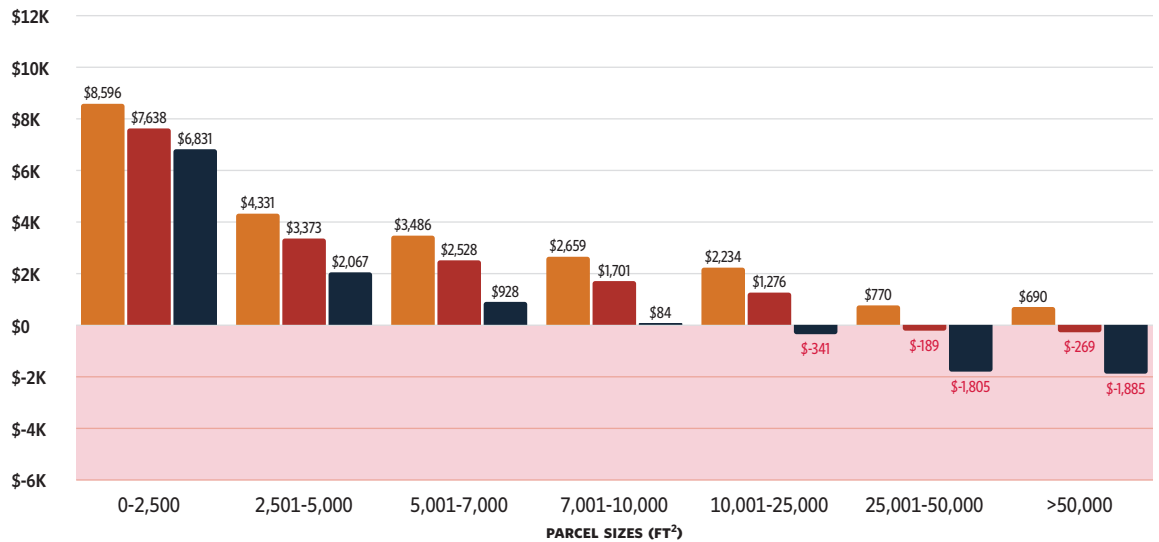
Special Districts Property Productivity, and Development Scale

Because such a large proportion of the parcels pulled in this category come from SND-1 and surrounding Special Districts and the character of this area is of a historically gridded semi-mixed use neighborhood, it's no surprise to see the smaller lots performing so well. There are not very many large lots that are not public property and the ones that exist are generally of historic value. They are net negative because they are relatively small homes for the size lot they occupy, but they are a relatively low proportion of the lots overall.

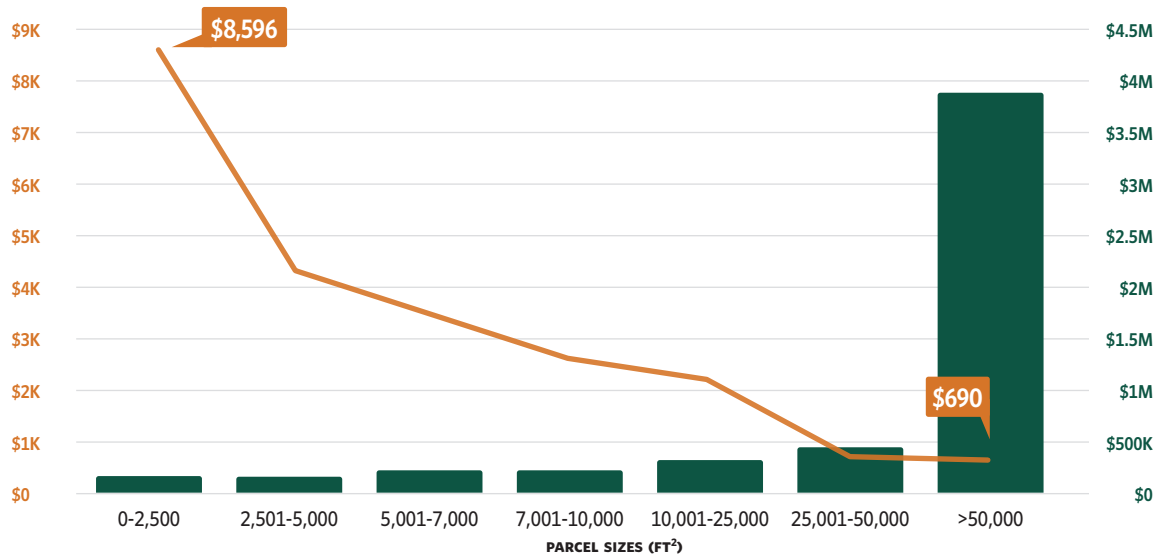
Current Development Trend In Special Districts

Because of the nature of special districts, assessing a trend associated with parcel size is not as useful of an endeavor as in other districts. That said, it's clear especially in SND-1 and the surrounding Walnut Ave special districts that gentle thickening of the development pattern would be a trend worth encouraging. This would benefit the residents in that it would not upset the character of the existing neighborhood while providing new housing and services within walking distance of homes. It would also benefit the city as it would create more revenue productivity without major new infrastructure outlay.

SPECIAL DISTRICTS REVENUE PER ACRE

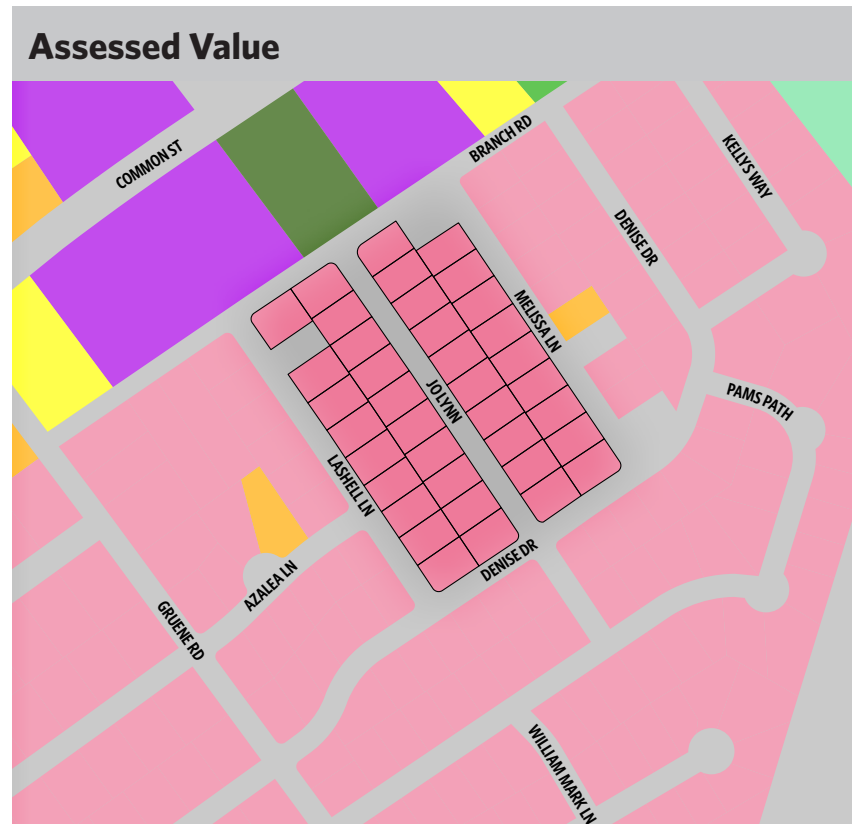


SPECIAL DISTRICTS IMPROVEMENT VALUE COMPARED TO REVENUE



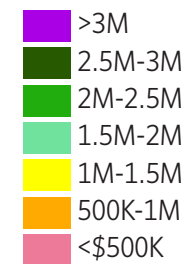
Local Development Example 1

Traditional Development Pattern, with Alleys



Analysis Results
Local Development
Examples

Average Lot Size	0.1810 Acres
Average Improvement Value	\$ 351,339
Average Assessed Value	\$ 376,169
Average Property Tax Revenue/Acre	\$ 2,858

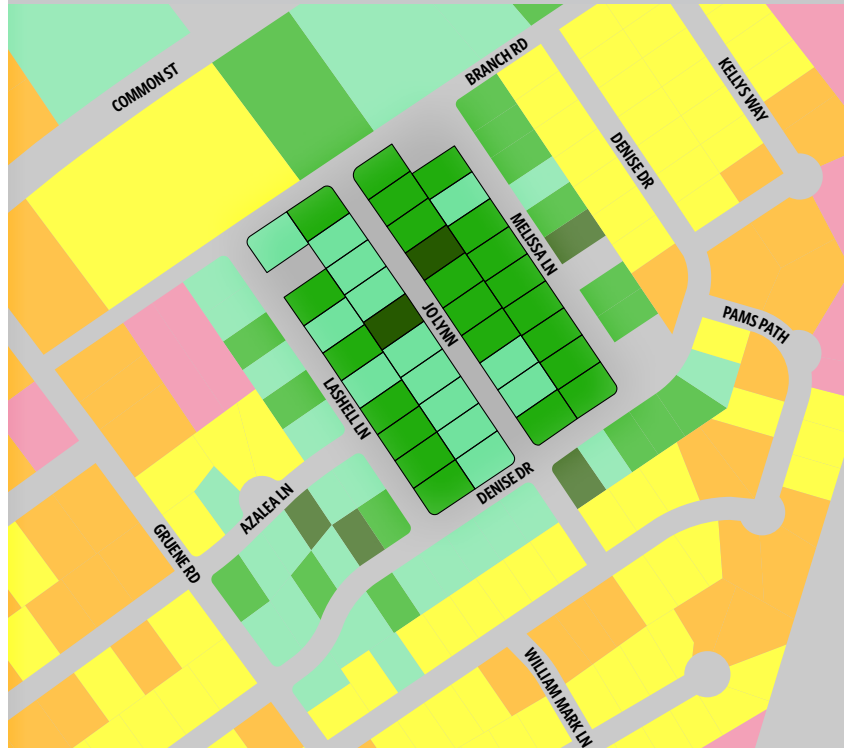


Local Development Example 1, Continued

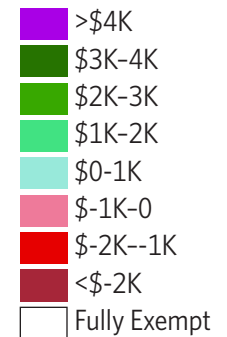
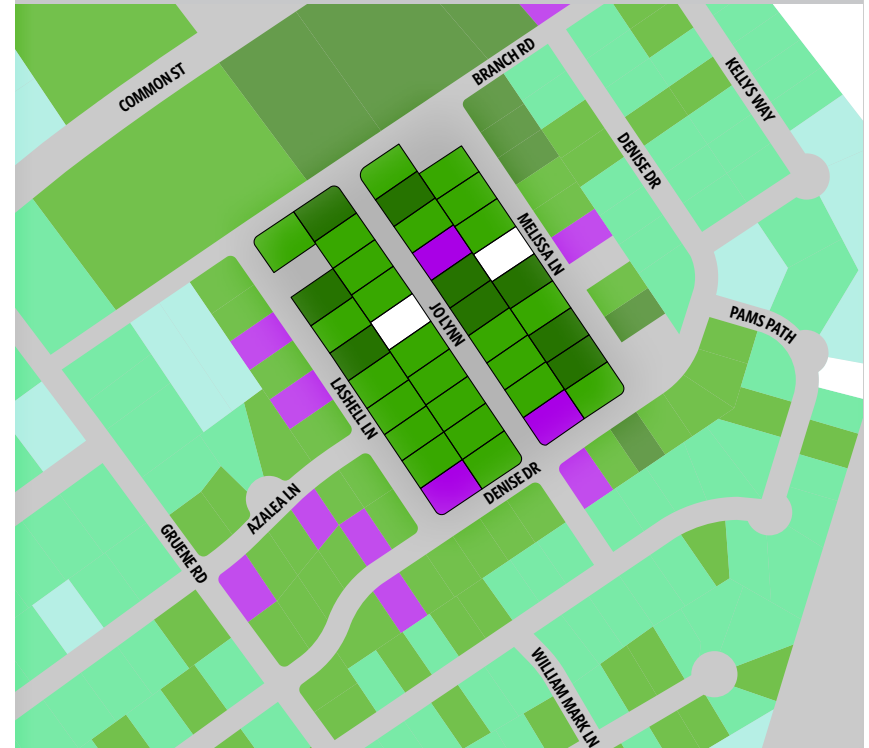
Analysis Results
Local Development
Examples

Traditional Development Pattern, with Alleys

Assessed Value Per Acre



Tax Revenue Per Acre

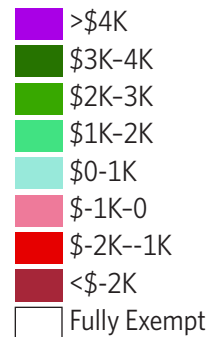
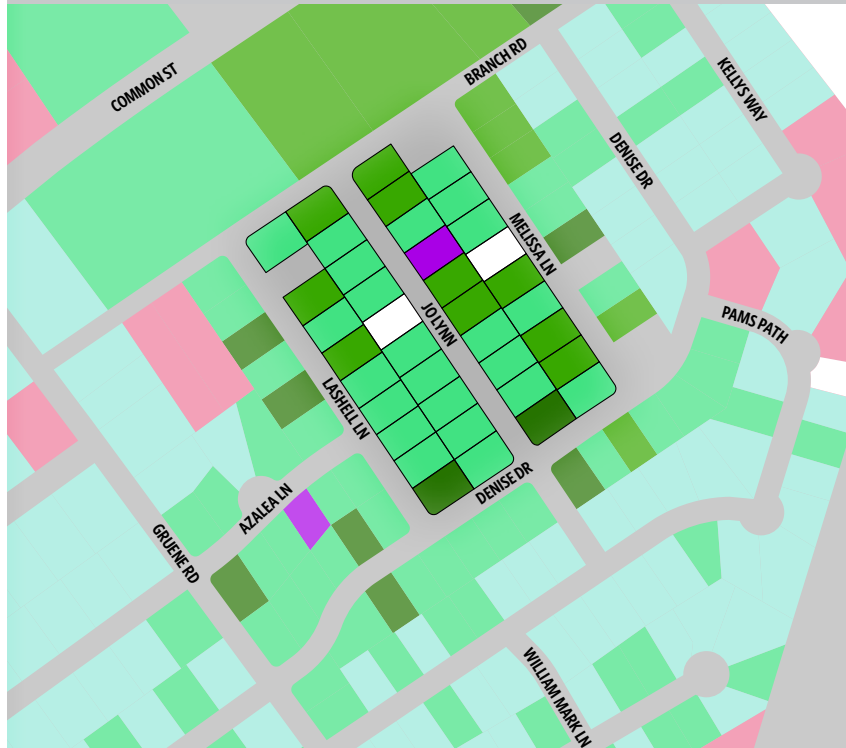


Local Development Example 1, Continued

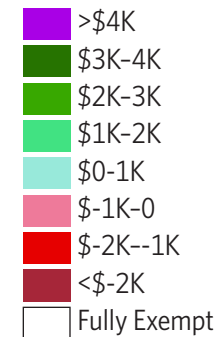
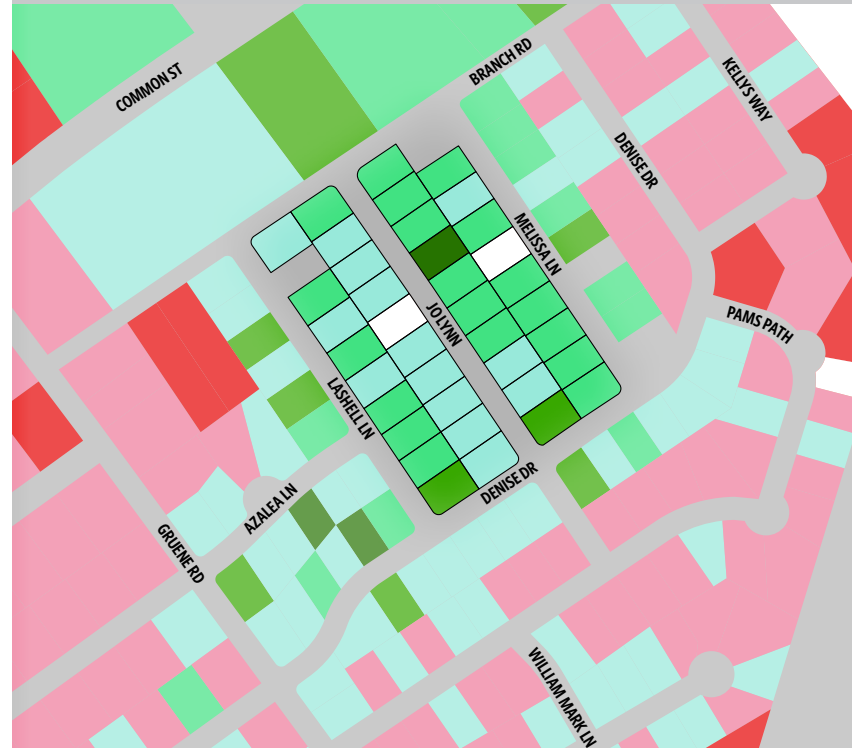
Traditional Development Pattern, with Alleys

Analysis Results
Local Development
Examples

Tax Revenue Per Acre with Current Budget



Tax Revenue Per Acre with Budget & Future Liabilities



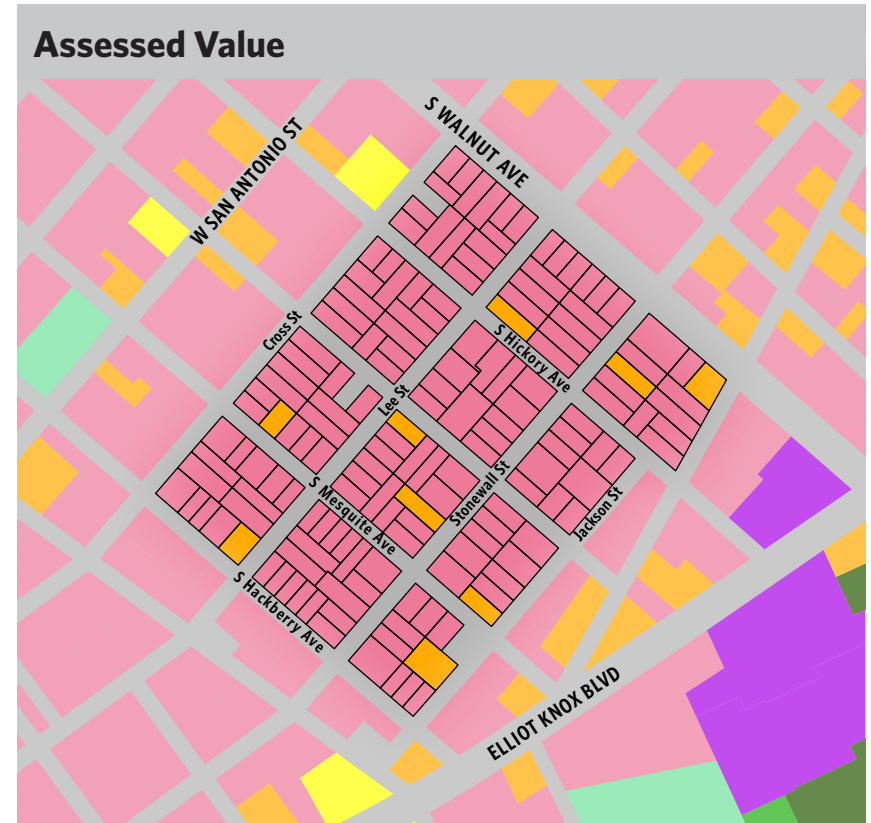
Local Development Example 2

Analysis Results
Local Development
Examples

Traditional Development Pattern, without Alleys



Average Lot Size	0.2263 Acres
Average Improvement Value	\$ 251,587
Average Assessed Value	\$ 317,051
Average Property Tax Revenue/Acre	\$ 2,319

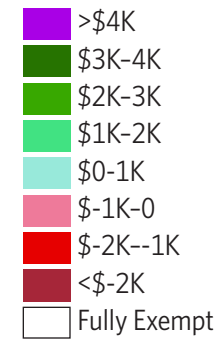
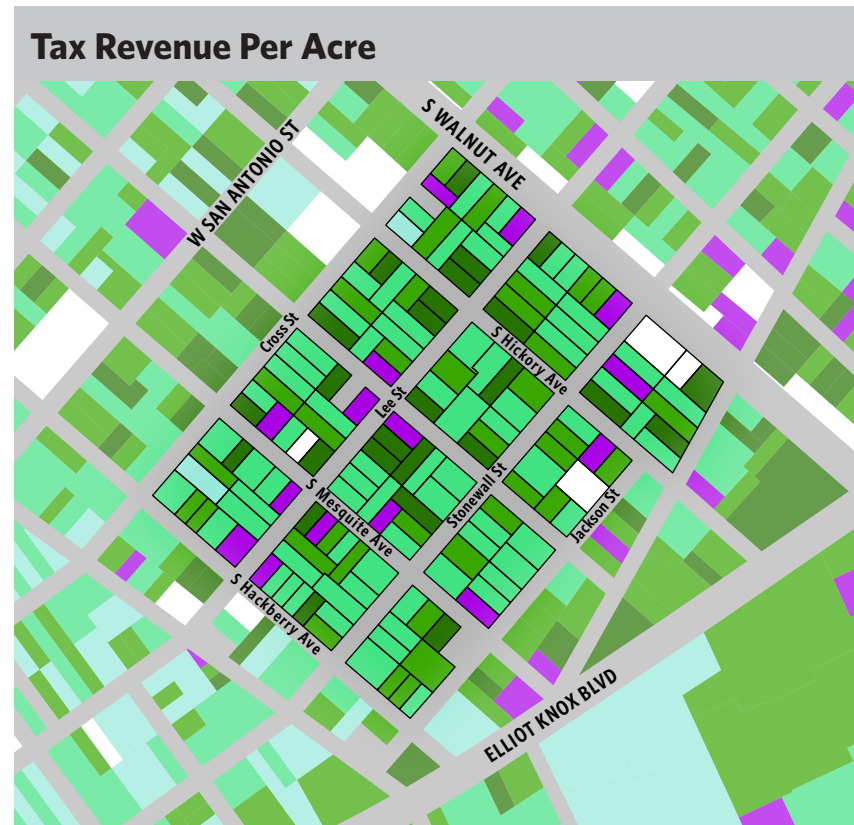
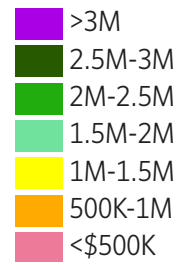
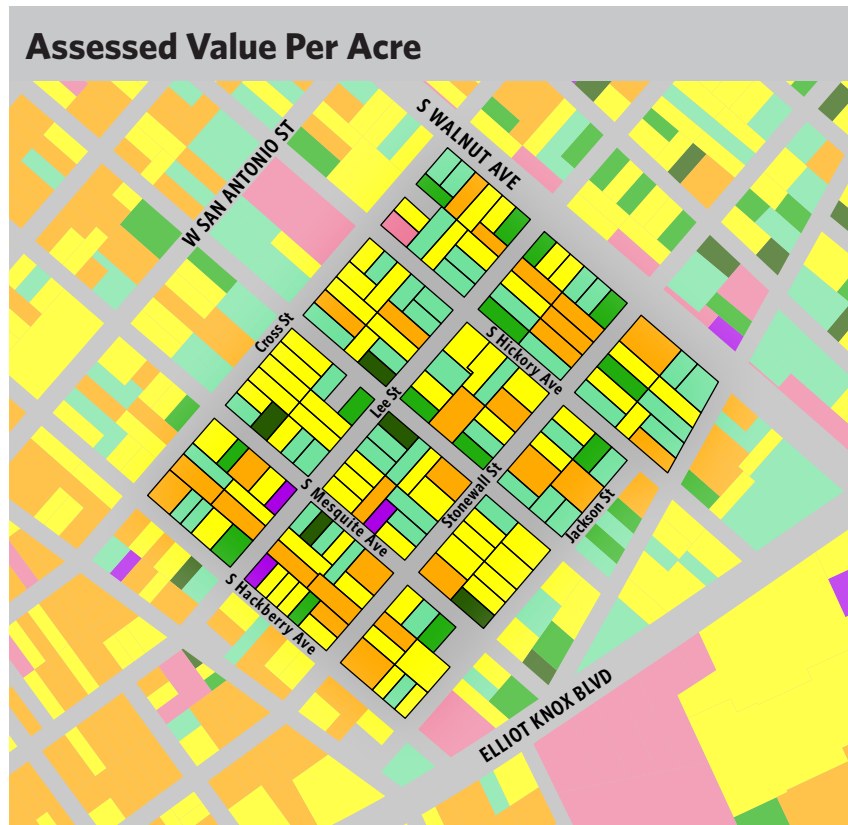


- >3M
- 2.5M-3M
- 2M-2.5M
- 1.5M-2M
- 1M-1.5M
- 500K-1M
- <\$500K

Local Development Example 2, Continued

Traditional Development Pattern, without Alleys

Analysis Results
Local Development
Examples

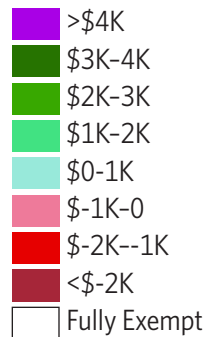
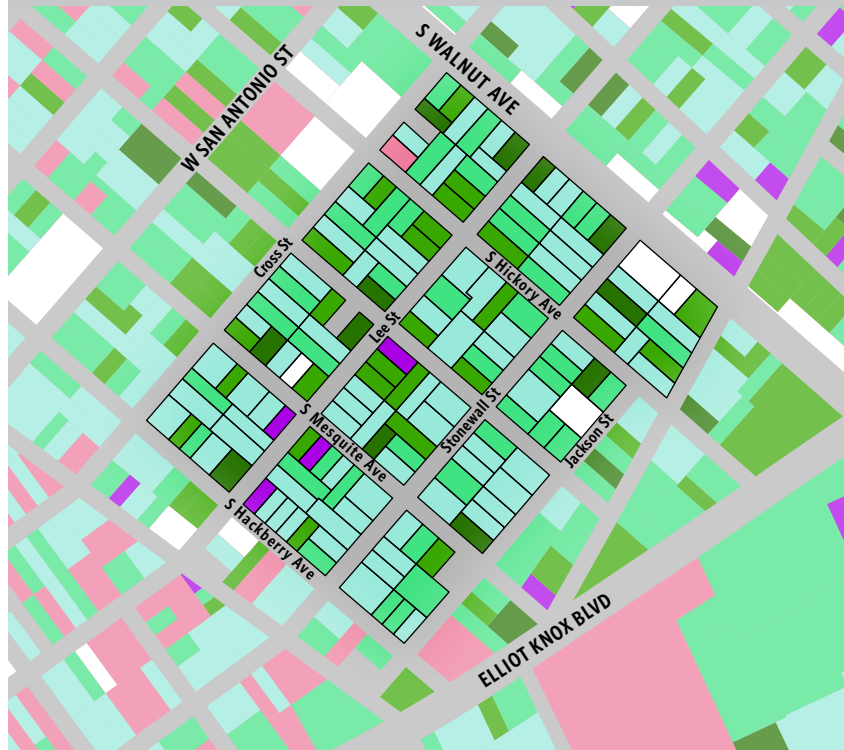


Local Development Example 2, Continued

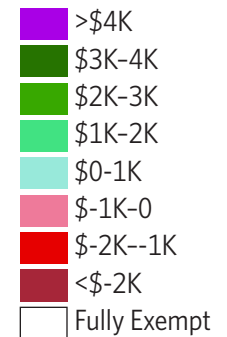
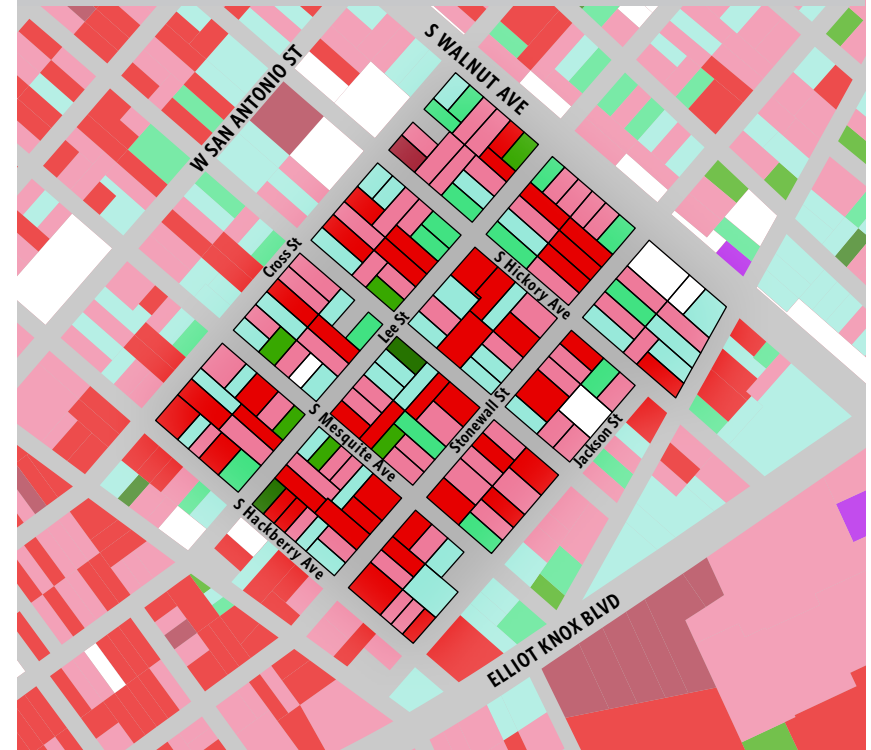
Analysis Results
Local Development
Examples

Traditional Development Pattern, without Alleys

Tax Revenue Per Acre with Current Budget

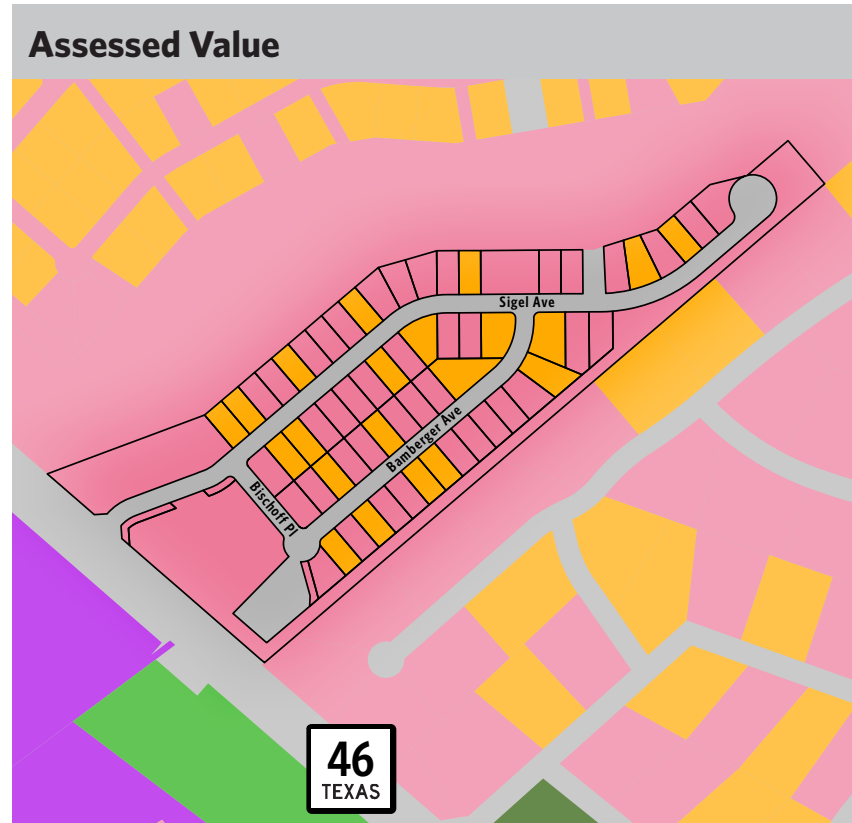


Tax Revenue Per Acre with Budget & Future Liabilities



Local Development Example 3

Suburban Development Pattern, Villas at Manor Creek Subdivision



Analysis Results
Local Development
Examples

Average Lot Size	0.1811 Acres
Average Improvement Value	\$ 370,730
Average Assessed Value	\$ 443,873
Average Property Tax Revenue/Acre	\$ 3,798

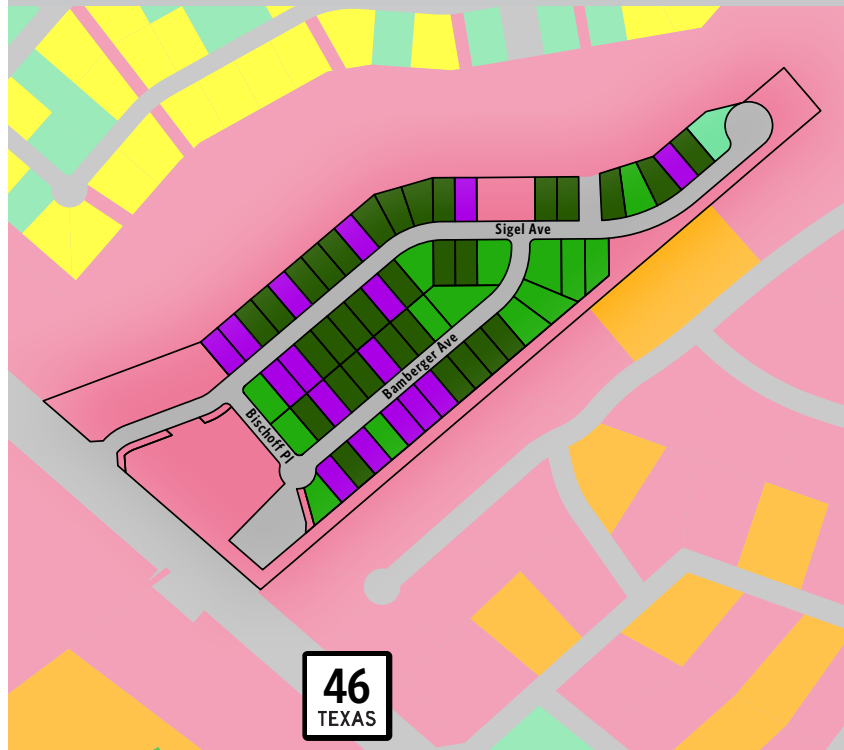


Local Development Example 3, Continued

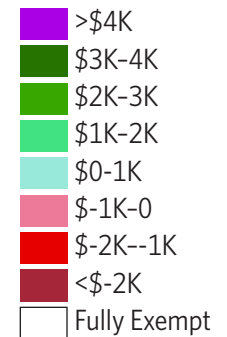
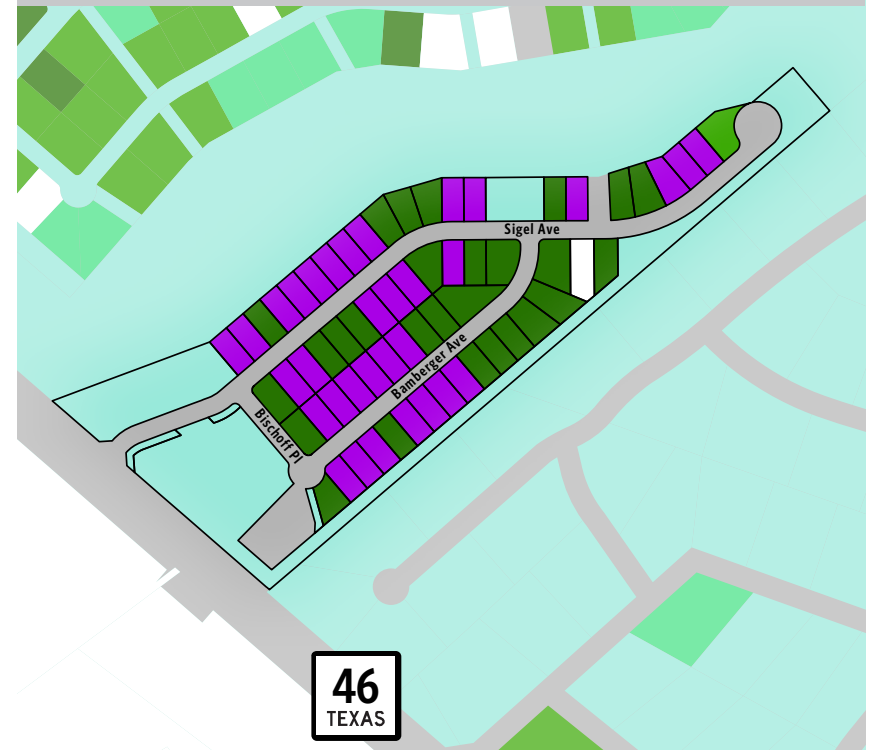
Analysis Results
Local Development
Examples

Suburban Development Pattern, Villas at Manor Creek Subdivision

Assessed Value Per Acre



Tax Revenue Per Acre

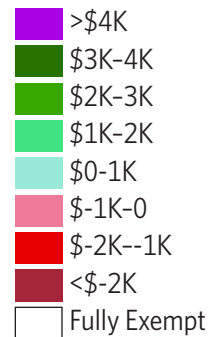
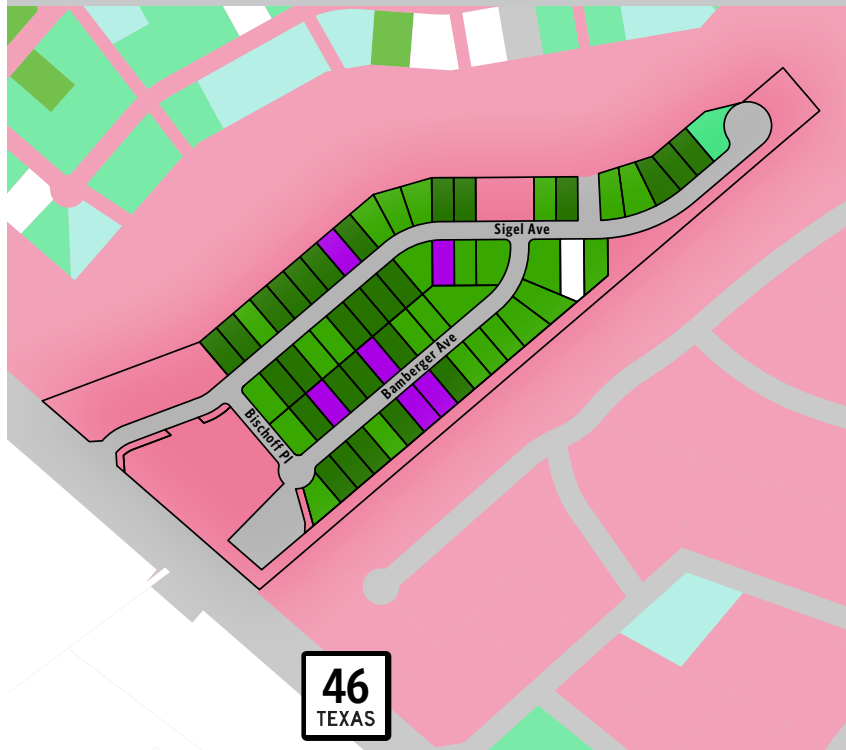


Local Development Example 3, Continued

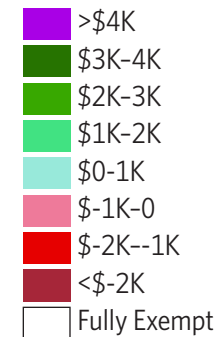
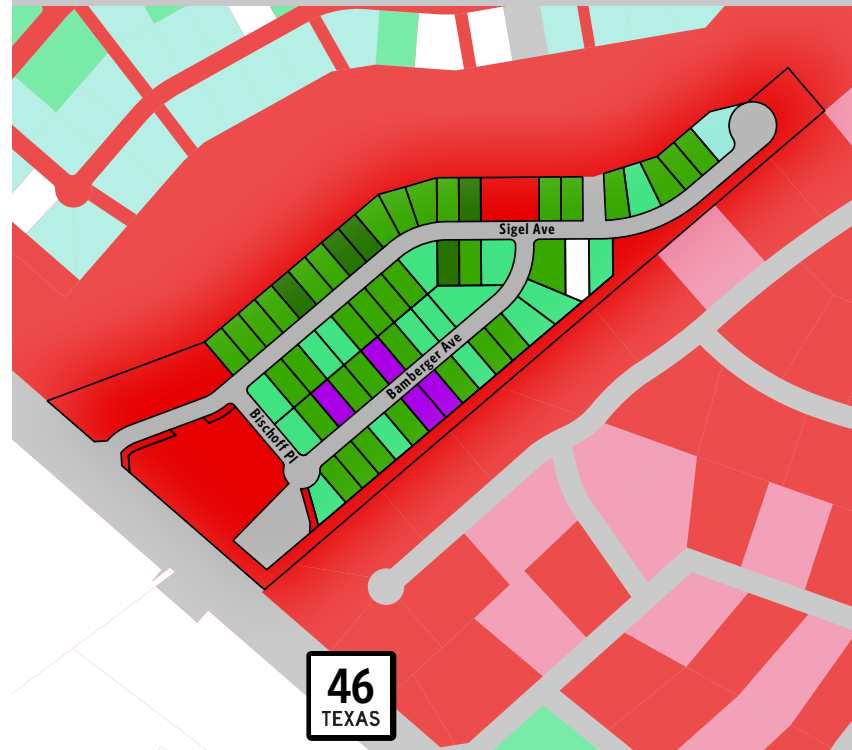
Suburban Development Pattern, Villas at Manor Creek Subdivision

Analysis Results
Local Development
Examples

Tax Revenue Per Acre with Current Budget



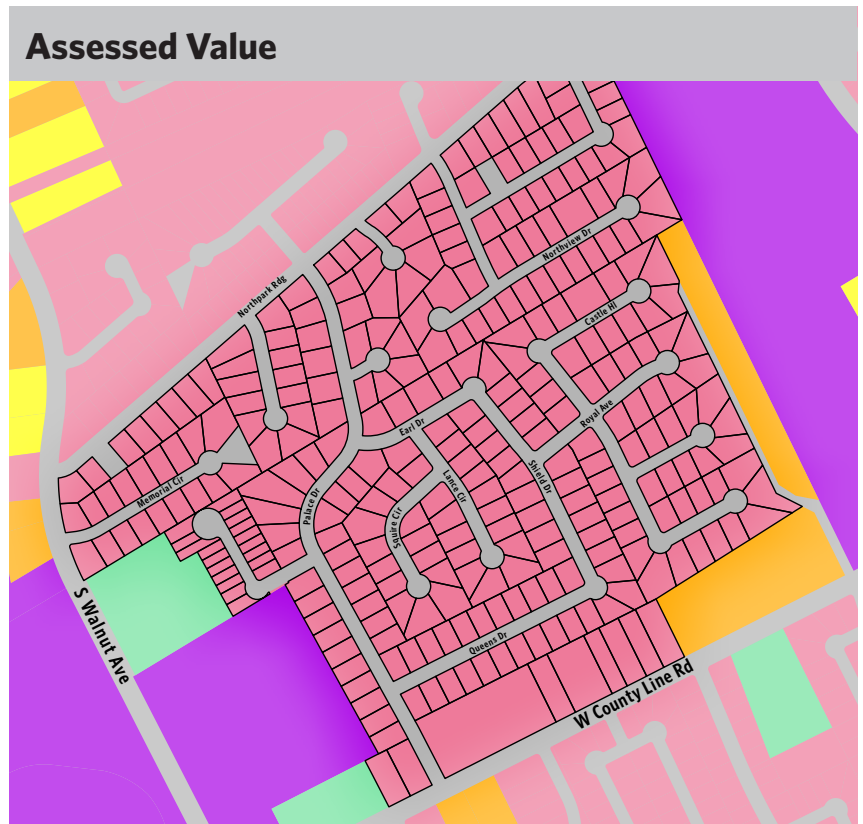
Tax Revenue Per Acre with Budget & Future Liabilities



Local Development Example 4

Analysis Results
Local Development
Examples

Suburban Development Pattern, Bordered by Walnut Avenue



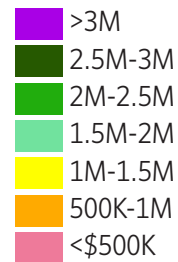
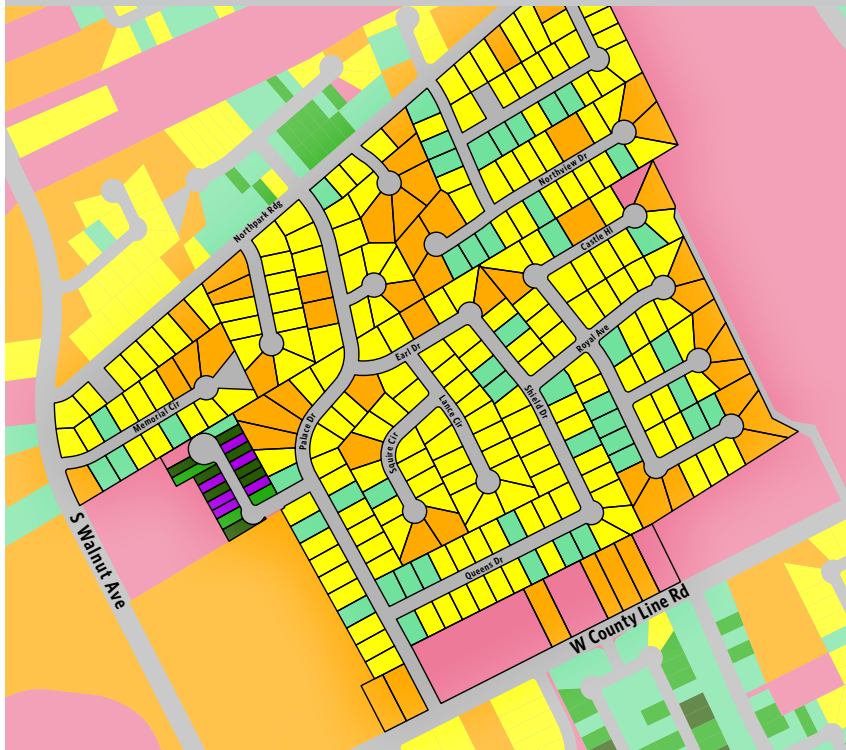
Average Lot Size	0.2869 Acres
Average Improvement Value	\$ 335,219
Average Assessed Value	\$ 334,924
Average Property Tax Revenue/Acre	\$ 1,941

Local Development Example 4, Continued

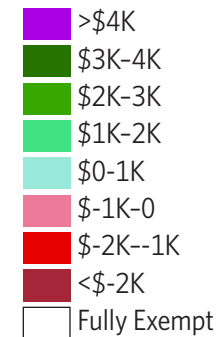
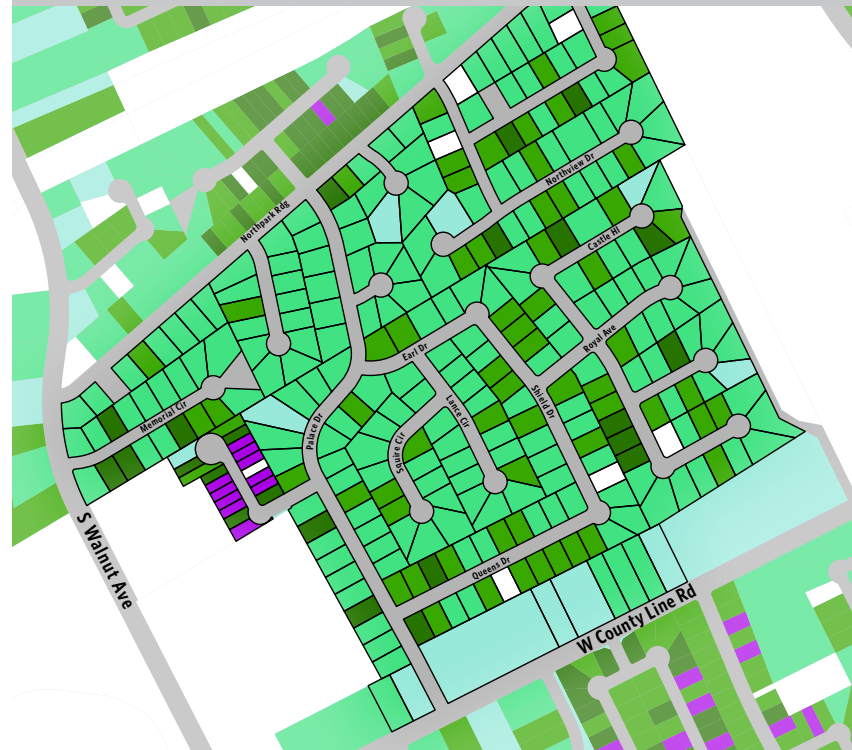
Suburban Development Pattern, Bordered by Walnut Avenue

Analysis Results
Local Development
Examples

Assessed Value Per Acre



Tax Revenue Per Acre

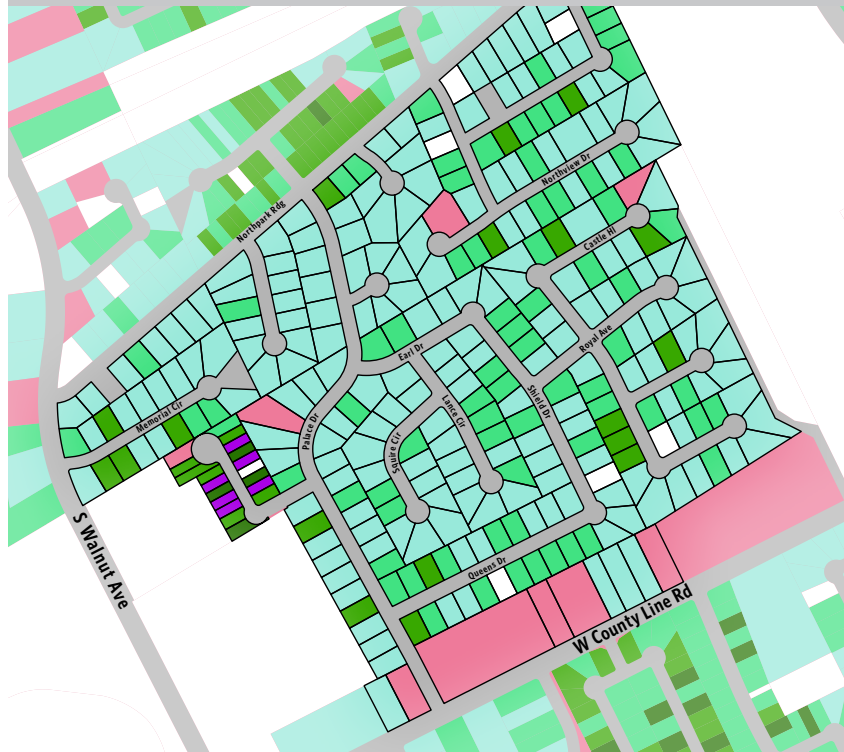


Local Development Example 4, Continued

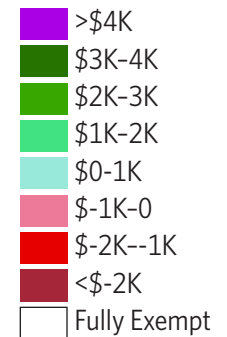
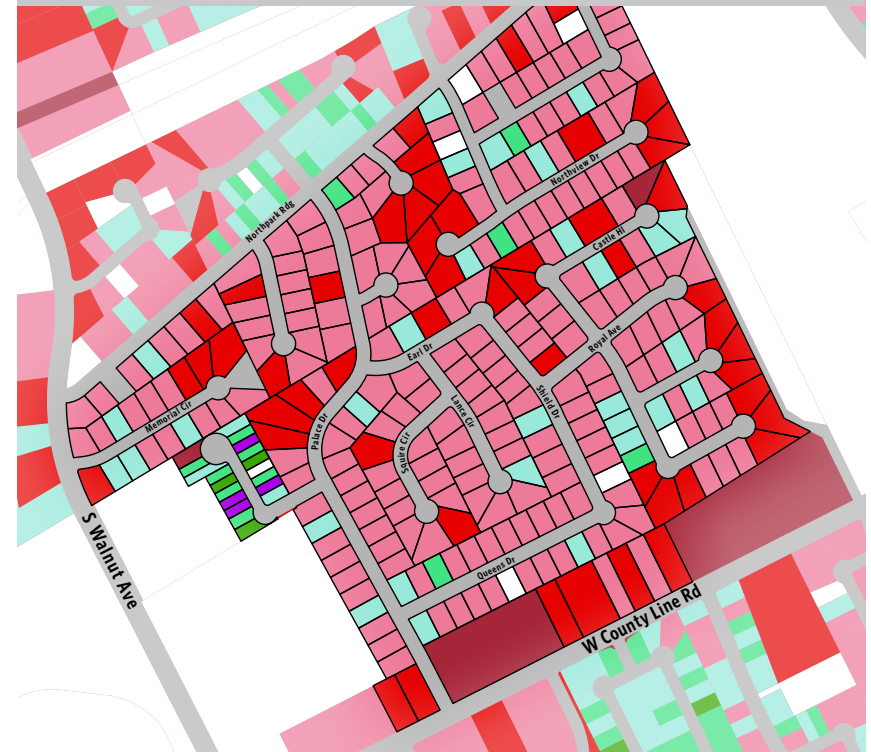
Analysis Results
Local Development
Examples

Suburban Development Pattern, Bordered by Walnut Avenue

Tax Revenue Per Acre with Current Budget

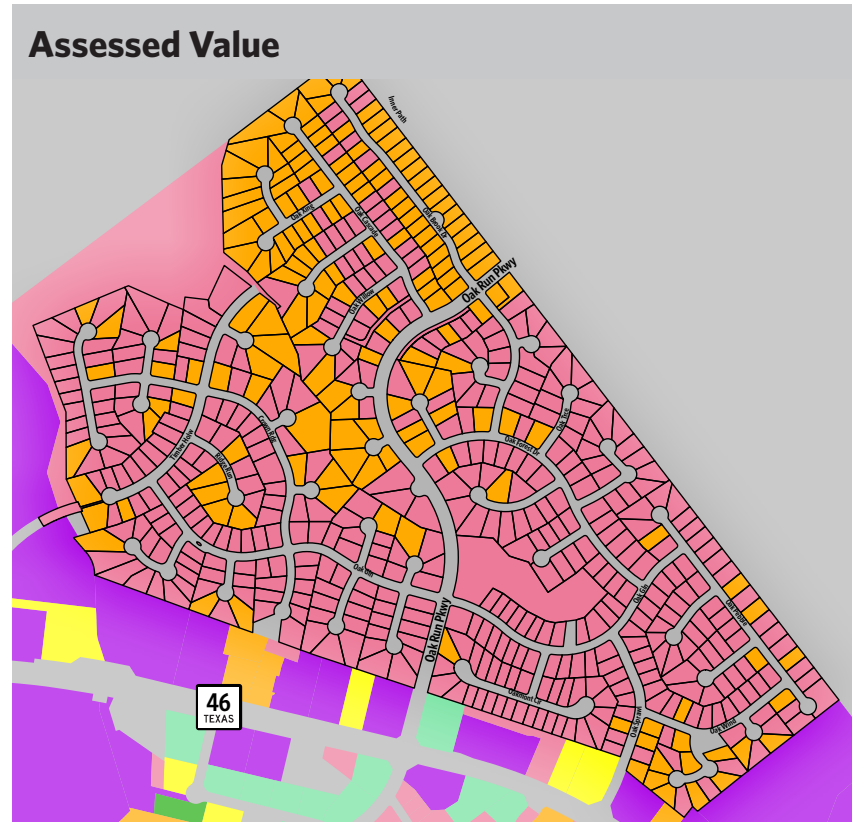


Tax Revenue Per Acre with Budget & Future Liabilities



Local Development Example 5

Suburban Development Pattern, Oak Run Subdivision



Average Lot Size	0.2957 Acres
Average Improvement Value	\$ 355,330
Average Assessed Value	\$ 452,963
Average Property Tax Revenue/Acre	\$ 2,411



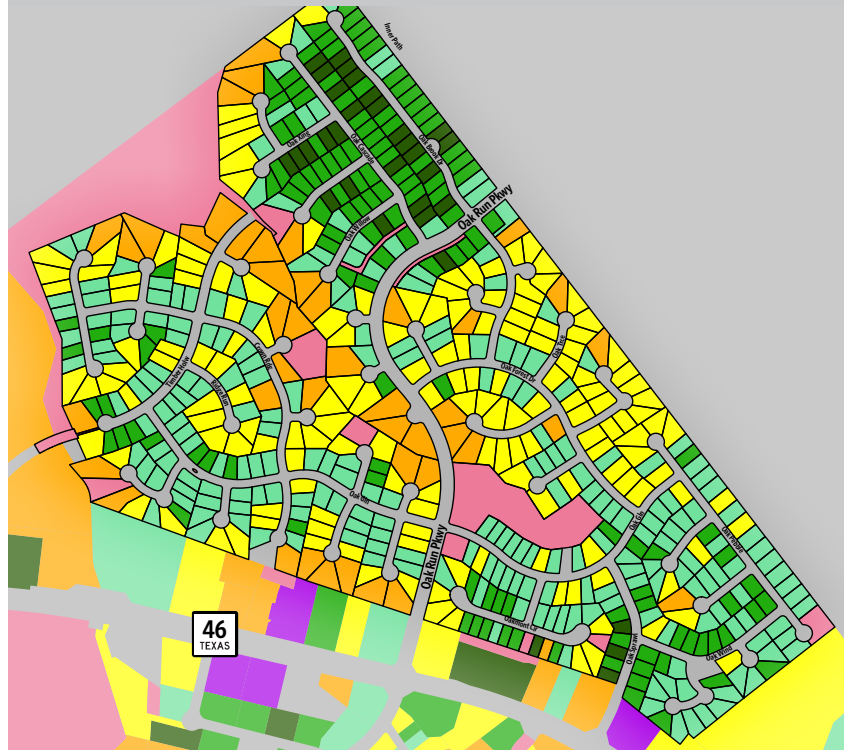
Analysis Results
Local Development
Examples

Local Development Example 5, Continued

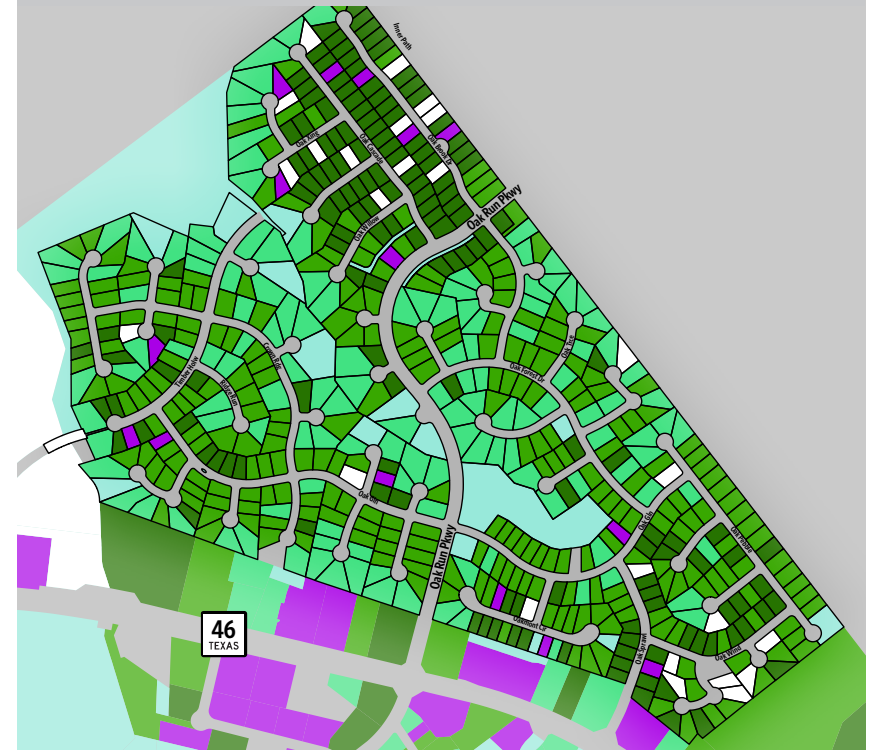
Analysis Results
Local Development
Examples

Suburban Development Pattern, Oak Run Subdivision

Assessed Value Per Acre



Tax Revenue Per Acre

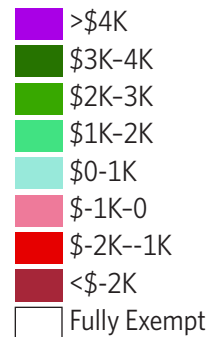
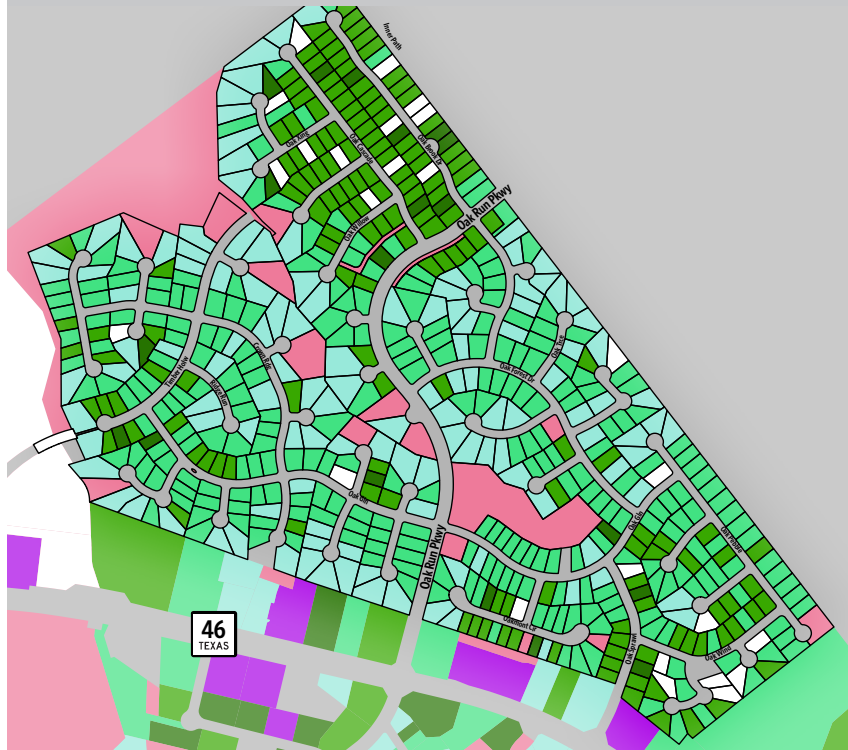


Local Development Example 5, Continued

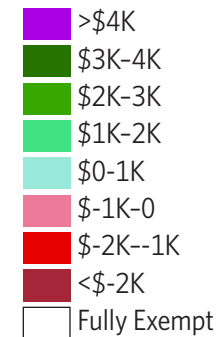
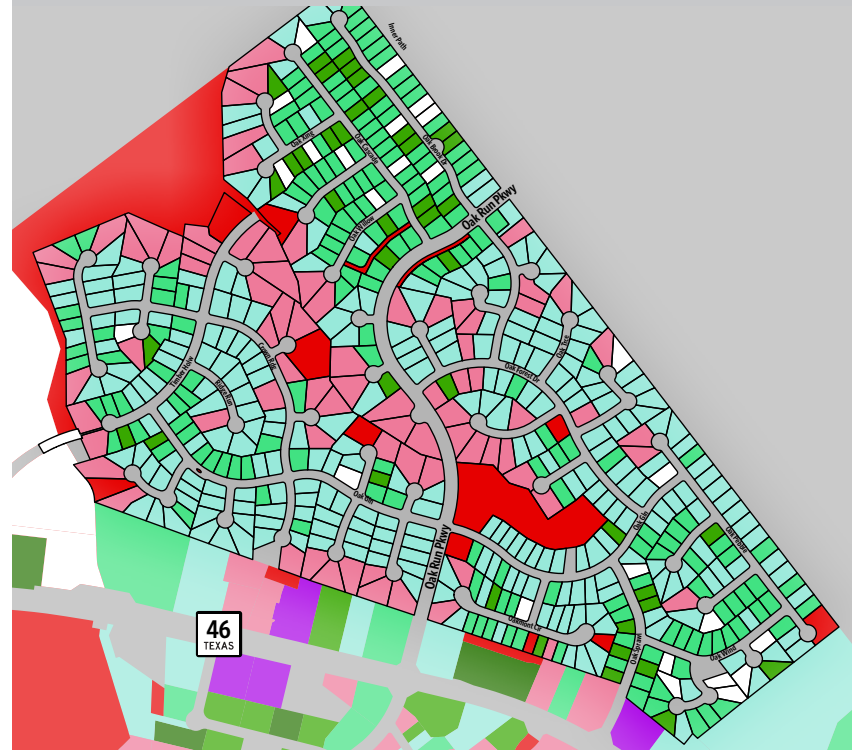
Suburban Development Pattern, Oak Run Subdivision

Analysis Results
Local Development
Examples

Tax Revenue Per Acre with Current Budget



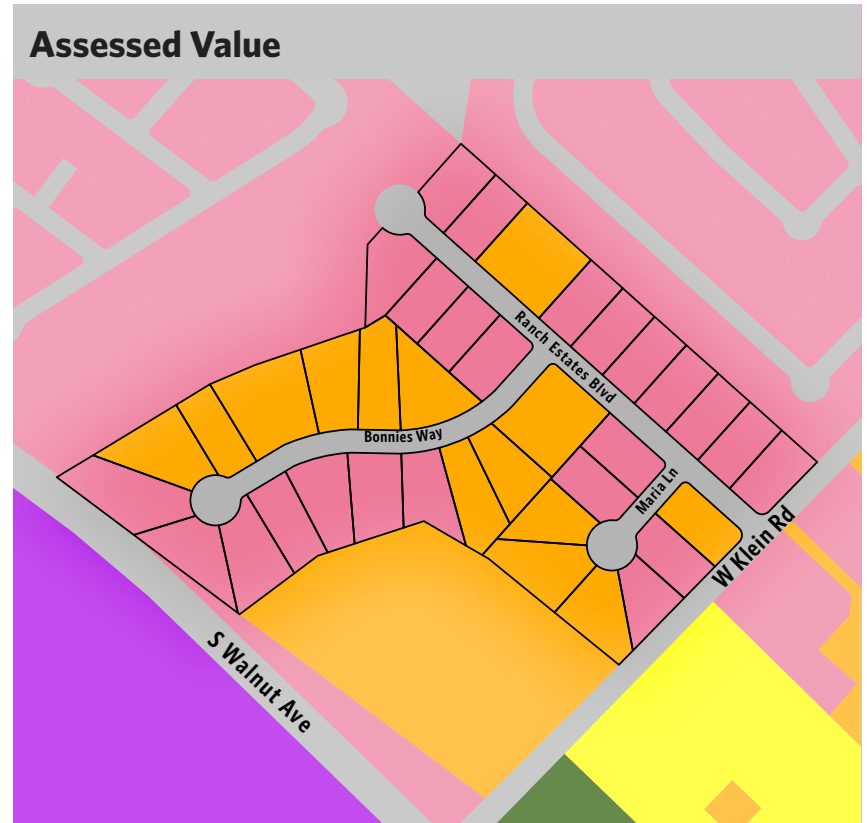
Tax Revenue Per Acre with Budget & Future Liabilities



Local Development Example 6

Analysis Results
Local Development
Examples

Rural Development Pattern (Compact), Bordered by Klein Road



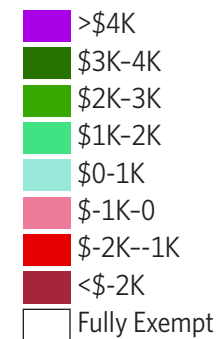
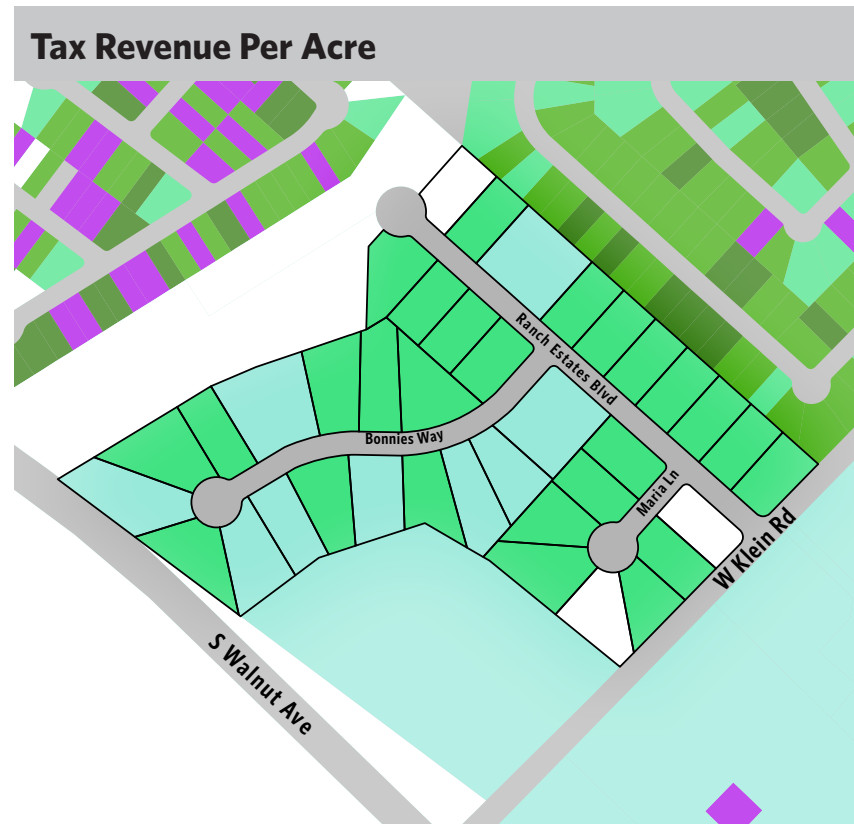
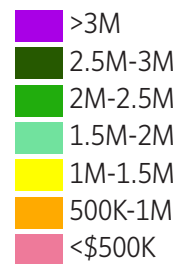
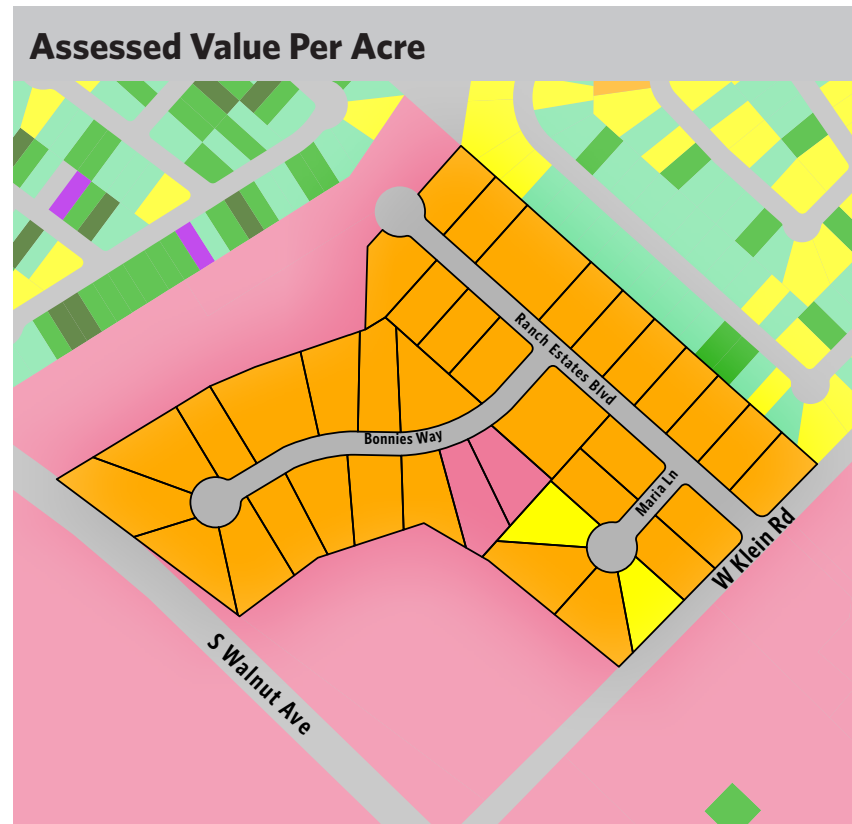
Average Lot Size	0.6601 Acres
Average Improvement Value	\$ 409,469
Average Assessed Value	\$ 489,930
Average Property Tax Revenue/Acre	\$ 1,090



Local Development Example 6, Continued

Rural Development Pattern (Compact), Bordered by Klein Road

Analysis Results
Local Development
Examples

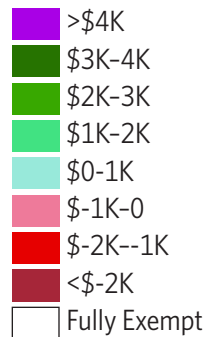
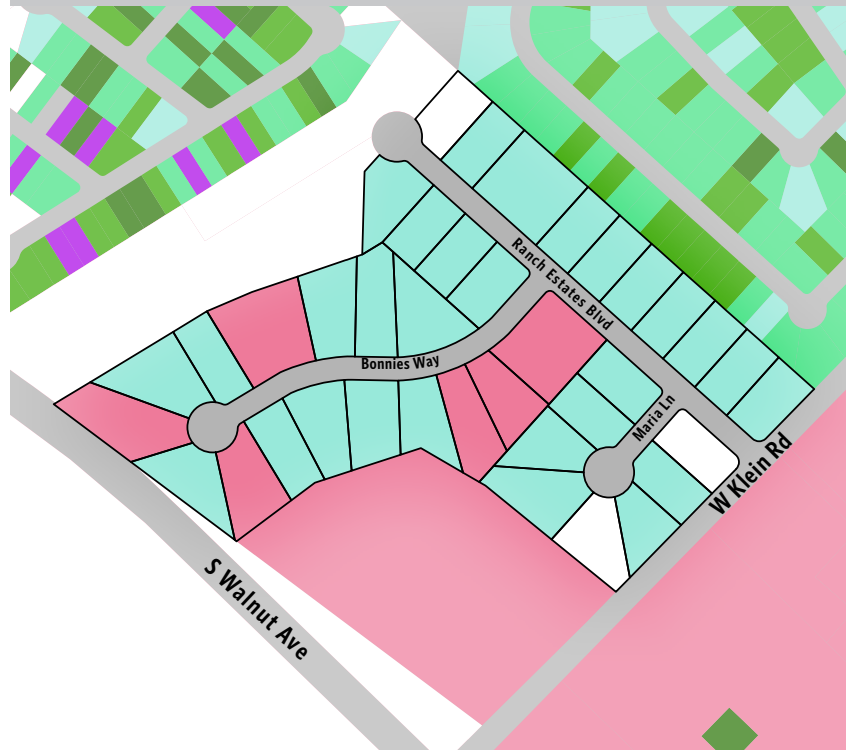


Local Development Example 6, Continued

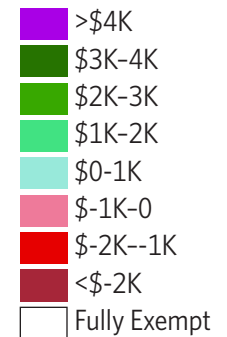
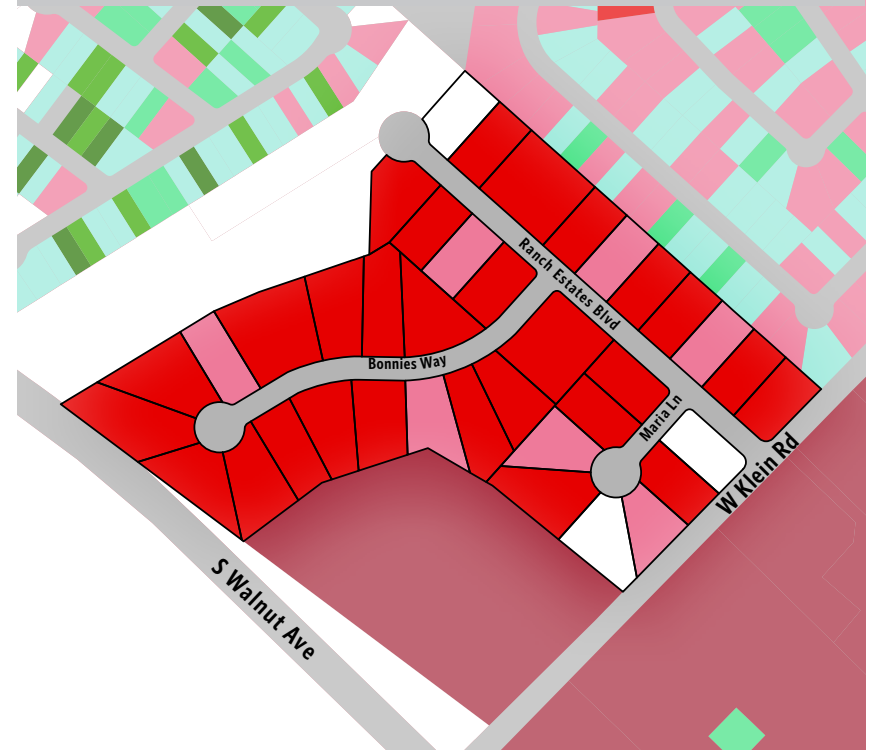
Analysis Results
Local Development
Examples

Rural Development Pattern (Compact), Bordered by Klein Road

Tax Revenue Per Acre with Current Budget

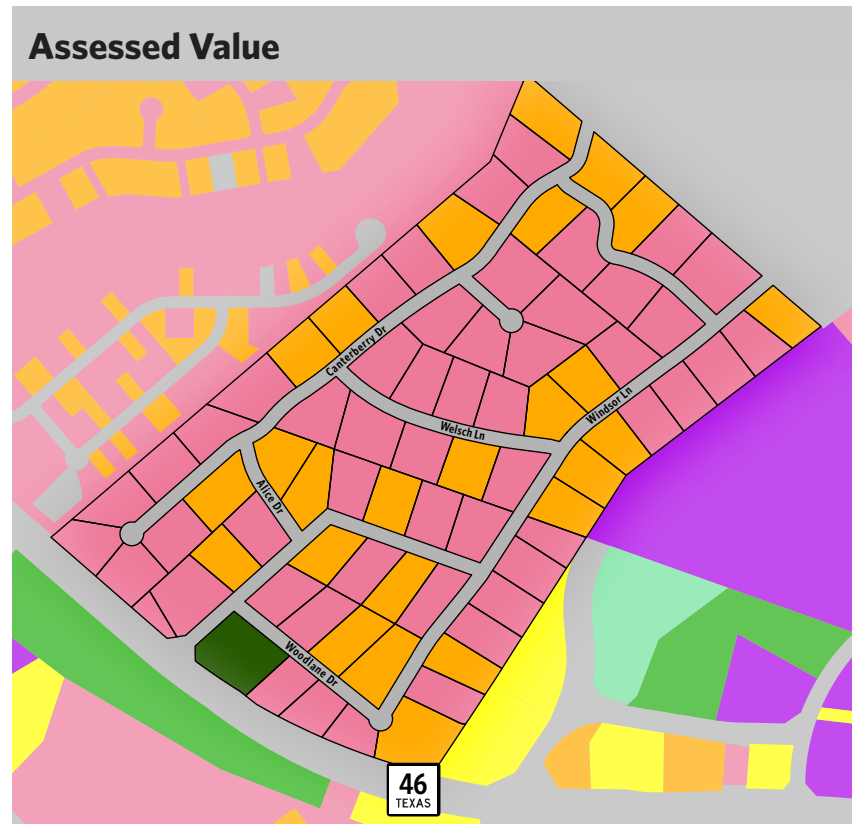


Tax Revenue Per Acre with Budget & Future Liabilities

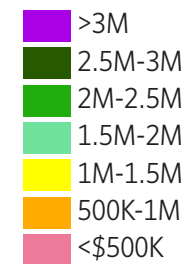


Local Development Example 7

Rural Development Pattern, Northwoods Subdivision



1.0794	1.0794 Acres
Average Improvement Value	\$ 392,479
Average Assessed Value	\$ 471,685
Average Property Tax Revenue/Acre	\$ 660



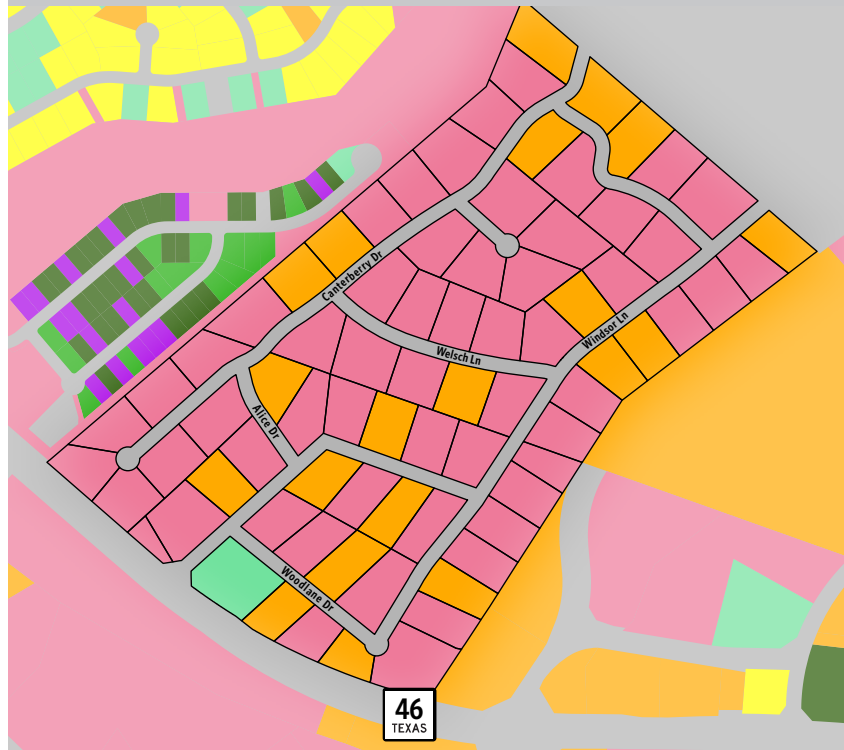
Analysis Results
Local Development
Examples

Local Development Example 7, Continued

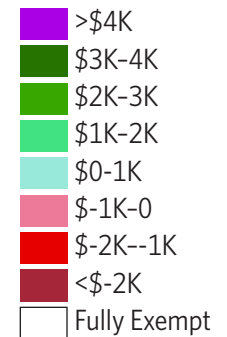
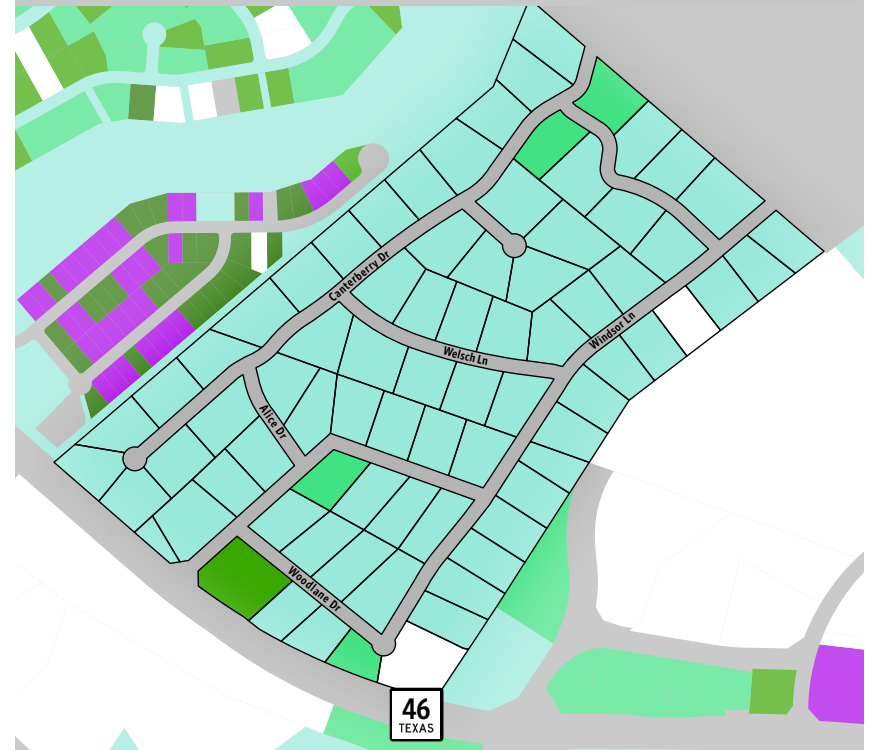
Analysis Results
Local Development
Examples

Rural Development Pattern, Northwoods Subdivision

Assessed Value Per Acre



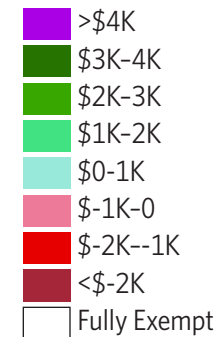
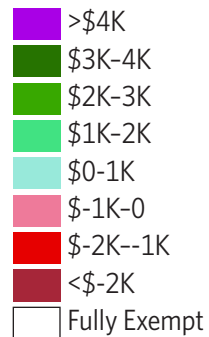
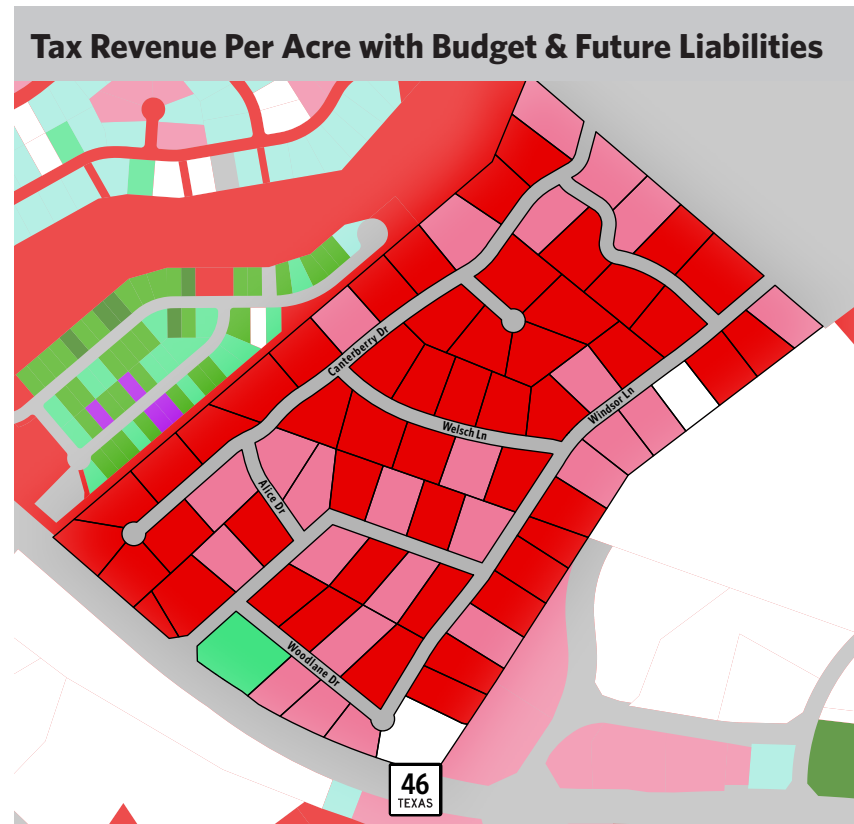
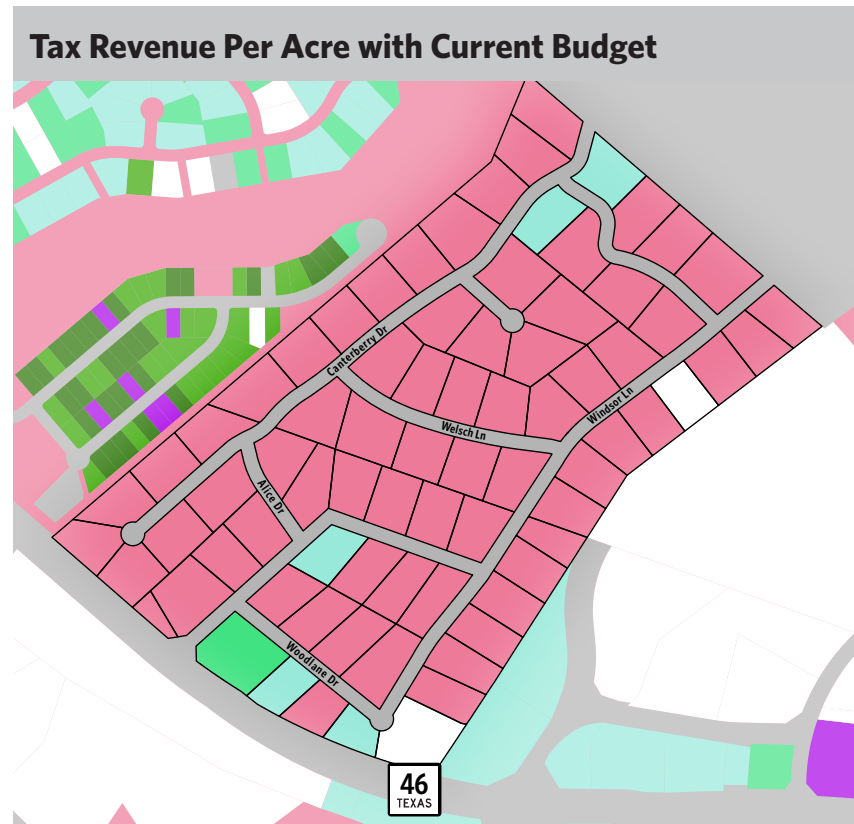
Tax Revenue Per Acre



Local Development Example 7, Continued

Rural Development Pattern, Northwoods Subdivision

Analysis Results
Local Development
Examples



Key Findings & Recommendations

Key Findings from the Analysis

Evaluating the fiscal health and sustainability of a community is a fluid process, as development, services, and budgets in cities are always evolving. Every development or infrastructure project has the potential to either increase or close resource gaps. Cities can stay on top of their fiscal situation by conducting robust fiscal analyses of new projects to quantify impacts on revenues and costs, and pausing every few years to evaluate how development and current service models are performing and refine development policies.

Based on the results of this analysis, New Braunfels is in a better position than many of the suburban style communities across Texas. This is due to the combination of the rate and pattern of the city's growth (and policies that have guided past development), general fund revenue mix, and a proactive plan to address aging street infrastructure. Takeaways in each of these categories are expanded below.

Development Pattern

Rate of Growth

Unlike newer suburbs that have aggressively pursued growth and horizontal expansion over a relatively short (typically 2-3 decade) period, New Braunfels experienced relatively steady growth until the past two decades, when growth has been occurring much faster. The earlier gradual growth has resulted in infrastructure liabilities being spread over a longer time period, which enables better alignment of revenues and costs across growth and maintenance.

Expansion of the City Service Area (City Limits)

Since 1950, New Braunfels' population has increased roughly 9.5x. During this same period, the city's service area has increased over 5x. The city annexed land gradually between 1960 and 2000, then annexed aggressively between 2000 and 2010, and then slowed down again after 2010. Looking broadly over the past 70 years, the city has been adding infrastructure and public services to serve a larger area at a fairly steady rate. Population growth lagged behind the city limit area expansion until 1990, but has been outpacing service area growth over the past thirty years, increasing the city's population density. To continue the trend of increasing density and reducing per household cost burdens, the city should prioritize filling in undeveloped parcels and limit further annexation as much as possible.

Development Context

The large amount of traditional style development in the core and a diverse mix of housing options, particularly high density multifamily and missing middle options on smaller lots (such as townhomes, duplexes, etc.), have produced pockets of high value per acre development that help subsidize the less productive parts of the city.

City Codes and Development Standards

Most of the city's more fiscally productive development happened many years ago or was the result of certain developers electing to build something better than what the city's development codes allow. Looking forward, the city's current codes and approach to development should be revised to allow more infill and mixed-use development by right. These standards should be improved to ensure it is efficient and cost effective for developers to build infill and compact development that produces the highest returns to the city and ensures the city has a diverse mix of housing that will be attractive and affordable.

Key Findings & Recommendations

Key Findings from the Analysis

General Fund Analysis

Key Findings & Recommendations

Key Findings from the Analysis

General Fund Growth

The city's general fund has been growing steadily over the past five years (33% from FY20 to FY24). Over this same five-year period, sales tax has grown 40%, while property tax has grown 24%.

Revenue Breakdown

In the FY 23/24 budget, 27% of the city's general fund revenue comes from property taxes and 35% from sales tax. This split between property tax and sales tax puts the city in a more resilient position if revenue from sales tax or development fees drops off due to market conditions outside the city's control, but more than 40% of the general fund revenues come from other sources like fees, fines, and transfers that are also not as predictable. As New Braunfels continues to build out, it will be important to maintain or even increase the revenue generated from property tax so the city has the resources it needs to cover future service and infrastructure needs that tend to increase as a city matures and revenue from new development flattens out.

General Fund Infrastructure Expenses

Based on the high-level assessment completed with this study, approximately \$9M of the city's \$105M general fund expenditures was dedicated to parks and street maintenance. Bond programs have provided additional funding for capital projects, but this amount will need to increase in coming years as park and street maintenance and replacement needs increase.

Expenditures per Capita, Household, and Acre

Expenses per capita and per household decreased in FY24 after increasing steadily for the previous four years, while expenses per acre have continued to increase steadily through FY24 as well. This is even with the additional one-time expenses incorporated. Based on the five-year trend, the city's costs are growing, and the cost burden per household has been increasing as well.

Aligning Revenues and Costs

As costs continue to increase, revenues will also have to grow. Some of this growth will come from increased sales tax and fee revenue, but some of this will need to come from property tax revenue as well. Some of the increased property tax revenue will likely come through higher home values, but higher values and accompanying taxes will impact the city's affordability. On the other hand, if the city limits additional annexation and focuses population into areas with existing services and infrastructure (thereby continuing to increase density), costs can be distributed over more dwellings, bringing the cost per household down over time.

Street Maintenance and Funding

Life Cycle Street Costs (Liabilities)

The city has been gradually increasing its budget for preventative maintenance of streets, but eventually streets will have to be rebuilt. To rebuild every street in the city today would cost roughly \$801M. If this cost is averaged out over a 25-year pavement life cycle, the city would need to be saving or spending an average of \$32.1M per year over 25 years. When pavement condition is taken into account, only about 30% of those streets will need investment in the next decade. This relatively small, immediate need doesn't mean the city can ignore planning for the funds needed to replace the remaining 70% of existing streets that will be needed in the next two to three decades. A portion of these liabilities are being addressed through bond programs and the Capital Improvement Program (CIP), but this is a fraction of what will eventually be needed to keep the city's street network in good condition.

Historic Development Pattern's Fiscal Effect

The City's total street replacement liabilities could have been much higher if the city had developed more auto-centric, low-density areas in the historic core. Thanks to the compact development pattern in and around downtown, the city has less pavement to maintain, and the projected replacement costs are more evenly distributed. New Braunfels should recognize that the autocentric, suburban pattern generates significantly more roadway maintenance and replacement liabilities than the compact, traditional street pattern in the historic core. The takeaway is that this pattern should be a requirement for all future developments and redevelopments.

Proactive Pavement Management

The staff are aware of these liabilities and are working proactively to repair and rebuild aging streets through capital projects funded with bond programs and one-time investments from surplus funds. Additional resources and equipment have been budgeted in recent years to help expand preventative maintenance efforts as well, which can help spread out future reconstruction costs over a longer period of time.

Key Findings & Recommendations

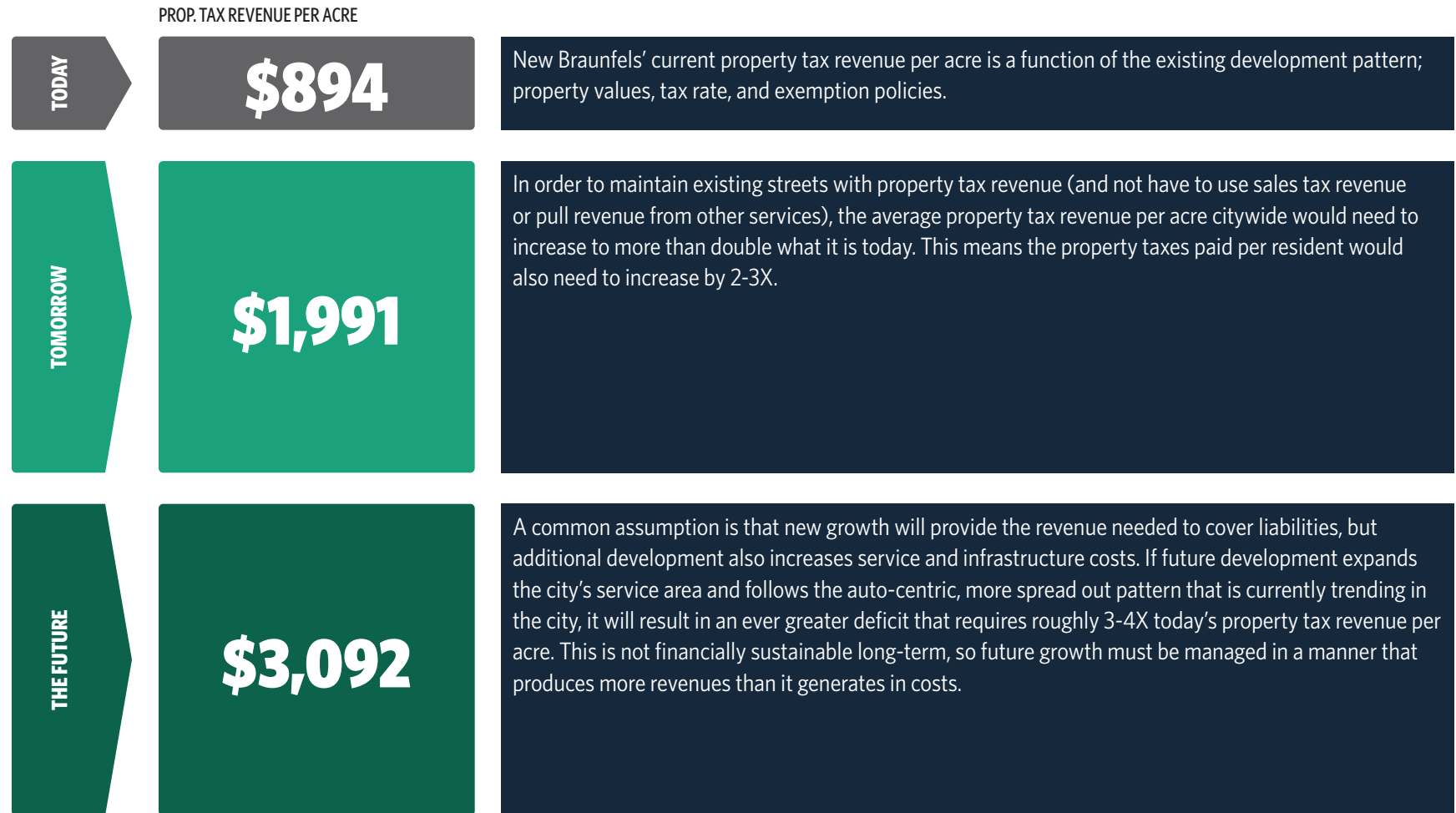
Key Findings from the Analysis

Quantifying New Braunfels' Resource Gap

Pressure to increase lot sizes, widen streets, and build more auto-centric development on the periphery of the city are cause for concern. This pattern of development adds costs that outpace revenue production and will likely drive housing prices and taxes up over time to a

point that's not sustainable. Interestingly, recent changes to state limits on annexation will have an unexpected positive result by limiting auto-centric development on the periphery. When we think about the implications of buckling to these pressures it is a useful exercise to

consider what that would mean to the tax burden of regular property owners in New Braunfels.



Actions to Undertake Today

While the city appears to be financially strong today, there are future liabilities that need to be funded and affordability concerns that need attention for the community to remain vibrant, inclusive, and affordable for years to come. There are steps that can be taken now to grow revenues, improve efficiency of city services, manage future liabilities and make housing more affordable. Top recommendations for the city to consider are:

1

Promote revised development standards that allow flexibility for small units on small lots, narrower streets, relaxed height limits, and reduced parking requirements. Continue collaborating across city departments to support compact development, rather than incentivizing larger lots and wider roads, ensuring smaller, affordable housing options and neighborhood preservation. Further details on aligning codes with fiscally sustainable and affordable development are provided later in this section.

2

Prioritize infill projects that add people and buildings in areas with existing infrastructure. This will increase tax revenue without significant impacts on services and infrastructure costs, and distribute cost burdens out across more home/business owners.

3

Perform a fiscal impact analysis on new rezoning requests to understand how they will impact the city's service costs and long-term infrastructure liabilities. The majority of new development should generally have a positive net revenue per acre so the surplus revenue can be directed toward infrastructure maintenance and covering costs of the parts of the city that require subsidy. A Development Fiscal Impact Analysis (DFIA) model tool calibrated to New Braunfels' local context and budget can help expedite this process.

4

Increase preventative maintenance efforts in place to defer and balance out future reconstruction costs. Where the existing context allows, design street projects (rebuilt and new streets) to reduce pavement width and support more walkable, mixed-use development.

5

When surplus funds are available, prioritize these funds toward infrastructure maintenance and projects that preserve and enhance the value and revenue production of existing neighborhoods.

Key Findings & Recommendations
Actions to Undertake Today

General Recommendations

1 Align Development Policy to Support Fiscal Health and Affordability

A city's primary tool for guiding growth and development comes in the form of policy. Specifically, a city's taxing and development policies will largely determine their ability to adjust their fiscal reality. New Braunfels' development regulations touch directly on all five bullet points above. The city's comprehensive plan, zoning ordinance, and subdivision ordinance all need to contribute toward encouraging these characteristics. This conversation is happening in New Braunfels right now. If New Braunfels wants to continue providing quality services with homes and tax structure most people can afford, increasing minimum lot sizes and street widths will make this extremely difficult.

Adjusting codes to establish minimum structural footprint and maximum parking footprint is where to start. These changes help to increase the taxable value per acre, and therefore the property tax revenue the city collects.

Lot shape and size have a big impact on cost footprint. A five thousand square foot lot will have a larger and larger cost burden the wider it gets simply due to the increased amount of pavement dedicated to serving a single lot. Wider lots also spread development out further along the road network which increases service

vehicle (solid waste, police, fire, EMS) response time, increasing the need for more service facilities and operators.

Larger lots and spread out development also thins out a city's market service area, which can reduce and hinder retail sales tax generation and create an economic environment more favorable for regional commercial rather than local. That can be risky when surrounded by other cities competing for retail sales tax revenue. As market service areas grow, so do the chances of a neighboring city developing commercial services which meet the needs of your own citizens, and consequently decreasing the likelihood of commercial development in your own city. It's not uncommon to see multiple grocery stores in one city absorb the grocery needs of multiple neighboring cities because the service areas of those stores encompass the neighboring cities. Like parking and footprint, most cities operate with lot width and size minimums. Incorporating lot size and width maximums could have a substantial positive impact fiscally.

A similar opportunity exists with structural height. While most cities regulate a maximum height, they do not consider the benefits of a minimum height. Requiring a multi-story structure

(even for only a percentage of the structure) requires a denser development pattern. Consider the impact if half the commercial structures in the city had been built as multi-story structures. At minimum they'd decrease the overall commercial footprint by half or double the inhabitable space. If a 50,000 square foot store must build two stories, then its footprint will either decrease to 25,000 ft² preserving the additional space for more development or provide an additional 50,000 ft² of usable space on the second story. The additional space could consist of more commercial, office, or even residential space. Such a scenario would also dramatically increase the concentration of the property by either providing the same value on a smaller footprint or doubling the value on the same footprint.

Lastly, keep in mind that these development characteristics correlate strongly with design elements that contribute to a higher quality of life. These include walkability, the ability to age in place, freedom for children to roam, less time stuck in traffic, housing options for different stages of life, and local economic opportunity.

2 Consider Long-Term Costs in Budgeting and Tax Policy

Recent legislation from the State of Texas has made adjusting the municipal tax rate very difficult. It's worth observing that property tax rates vary widely city to city and very few of those rates get set based on an analysis of long-term financial obligations. Most tax rates get set based on the previous year's budget and the roll back rate. This analysis provides a great opportunity for the City to engage its citizens in an informed discussion about their current tax rate, whether it's sufficient to cover the costs of services it's responsible for, and what types of changes citizens would most support if they're needed. If citizens can't afford or don't want to pay higher taxes and street fees to generate additional funds to help pay for street maintenance, then they might consider making changes to the development regulations to encourage more fiscally productive development patterns.

3 Coordinate Capital Improvement Plan (CIP) Projects and Infrastructure Design to Increase Revenues and Decrease Costs

Often, the standards that dictate infrastructure design and location of capital projects negatively contribute to a city's fiscal health. For example, neighborhood streets are often defaulted to a 31-foot pavement width or more, which are wider than necessary. Wider streets and lanes encourage high speeds, which while appropriate for major roadways, is not ideal for local neighborhoods. In New Braunfels, the current standard is 27 feet, which is a good compromise between cost, access, and safety. If reducing infrastructure costs and improving safety is a priority, staff could consider design standards that reduce neighborhood street widths further to have 11 or even 10-foot-wide lanes. Corridors where moving cars quickly is the priority should continue to utilize 11-foot lanes.

Another example revolves around a city's capital improvement projects. These programs often prioritize extending service to new development on the edge that does not perform well fiscally. A capital improvement program designed to improve fiscal health would prioritize projects that address the most pressing condition needs while also supporting development or redevelopment that bumps value capture. Road design can impact the forms of development alongside it. For example, a complete

street that takes into account active forms of transportation (such as bicyclists and pedestrians) can encourage a development pattern that is more mixed use in style, whereas a corridor designed primarily for cars will encourage auto centric development with bigger parking lots (and less value per acre). When selecting and designing a project, consideration should always include improving the existing infrastructure not simply by replacing it but reconfiguring it to better fit the goal of fiscal sustainability and maximize its usage. Existing wider streets can be retrofitted through CIP projects, for example narrowing the travel lanes to provide room for sidewalks or bike lanes without acquiring additional right of way. In addition, estimation of the life-cycle costs and benefits of each project should be part of the prioritization process – not just the initial construction costs.

4 Engage Residents to Identify Low-Cost Improvements That Would Improve Their Daily Quality of Life

One of the greatest resources a city has is active and engaged residents. One way that citizens can help to improve the community is to identify infrastructure shortcomings and potential in neighborhoods where they grew up, started their family, live, or work. Engaging with the people who use neighborhoods each and every day provides a better understanding of what is truly needed or wanted. This engagement should be an ongoing dialogue, not an infrequent one. Transformative engagement and relationship building must be reached by meeting people where they are, listening to their perspectives, and demonstrating a commitment with small incremental modifications they can see and appreciate in a short period of time. It also includes sharing this analysis and explanation of fiscal sustainability principles with them and helping them to both see the problem and be a part of the solution. The typical hearings and public meetings are largely ineffective, and providing a variety of methods to collect insights from residents is critical.

5 Cultivate Small/Incremental Development with Local Developers and Entrepreneurs

Developing in downtown and existing neighborhoods requires different guidelines than other areas, most notably allowing smaller lots and relaxed parking and stormwater requirements for individual sites (which can be managed through an area plan approach). Larger developers and builders that are used to building bigger projects with multiple lots are not typically interested in infill development. Building infill and smaller projects has lower profit margins and requires more work, since codes are often not set up to support them, so partnerships with the city, EDC, and other community organizations are critical. The city might consider hosting a workshop to bring together property owners, entrepreneurs, community banks and investors, and others in the community who are passionate about creating a vibrant downtown and neighborhoods to learn more, explore opportunities, connect resources and use that knowledge to inform actionable language for code revision projects.

Colophon

This document principally employs the typeface Archer in running text *though notably, not here*. Archer was designed by Johnathon Hoefler. We have set headlines most often in various weights of Whitney, or its Condensed or Narrow iterations – it was designed by Tobias Frere-Jones.

The document was laid out and typeset, and graphic elements were designed by Marshall Hines in Adobe InDesign, Illustrator, and Photoshop on Macintosh Computers. Layouts generally conform to a six column setup which provides the capacity for both two and three column variations within the textblock. Across the document a 14 point baseline grid is utilized, though exceptions are found where needed. Maps were generated by Maddie Capshaw, Matt Meals, and Antonela Stoica in ArcGIS on Windows computers. Some maps were prepared for publication in Adobe Illustrator.

Land Use Fiscal Analysis

Prepared for the City of New Braunfels, Texas