

The Effects of Tax/Revenue Caps



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Executive Summary¹

Over the past few decades, numerous states imposed caps on property tax revenue (Center on Budget and Policy Priorities 2008).² These caps usually limit the growth of property tax revenues to a fixed percentage (Lyons and Lav 2007). In Texas, the property tax cap was enacted in 1979 and was made effective in 1982 (Paquin 2015). Currently, property tax revenues collected by Texas cities and counties cannot increase by more than eight percent from year to year. Citizens can also force a vote to lower the property tax rate through a citizen's initiative.³ Since the property tax is a primary source of revenue for local governments, the cap on this major revenue source and its impact has been a long-standing matter of discussion among local policymakers.

This report surveys the existing literature on property tax caps with particular focus on the specific trade-offs of the caps. Houston's experience with Proposition 1, the local property tax revenue cap approved by voters in 2004, is used as a case study to assess the trend of select economic and social indicators, such as government employment and capital projects. Dallas, who also enacted a local property tax revenue cap, is analyzed to provide additional context to Houston's Proposition 1 experience.

Highlights

The following are some key findings on the trade-offs of Houston's property tax cap found in a broad selection of literature.

▪ **Tradeoffs of Property Tax Caps**

Payrolls and public employment: On the one hand, some evidence indicates that property tax caps reduce payrolls and decrease public employment locally (e.g., Lyons and Lav 2007). On the other hand, lower business property taxes driven by a cap can stimulate private capital investment, generating new business and more local jobs (Thaiprasert, Faulk, and Hicks 2011).

Delivery of services: Some studies find property tax caps tend to limit the ability of localities to provide quality education, lead to basic service cuts in communities, and cause delays of sewage and electronic infrastructure repairs (e.g., Lav and Leachman 2018; Oliff and Lav 2010). However, others argue the caps make local governments more efficient and do not result in major service cuts (e.g., Wilson and Ladd 1980).

Capital-intensive projects: Property tax caps restrict the capability of local governments to invest in capital-intensive projects, such as road construction, which can result in more traffic delays and local layoffs (Center on Budget and Policy Priorities 2008).

¹ We thank Houston Deputy City Controller Alexander W. Obregon, and John Seydler (Office of the Houston City Controller) for their assistance.

² <https://www.cbpp.org/sites/default/files/atoms/files/policybasics-taxcaps.pdf>.

³ <https://www.dallasnews.com/news/texas-legislature/2017/01/30/misleading-stats-fuel-republicans-effort-cap-local-property-taxes>.

Economic growth: In some views, property tax caps lead to lower levels of economic growth over the short term as government, business, and households adjust to the changes (e.g., Thaiprasert, Faulk, and Hicks 2010). Conversely, it is believed the caps can increase gross regional product and contribute to the growth of average household income in the long run (e.g., Thaiprasert, Faulk, and Hicks 2011, Texas Public Policy Foundation 2012).⁴ In addition, as the impacts of tax caps on economic income growth are mixed, we believe the cap's effect on local fiscal multipliers would also be mixed.⁵

▪ **The Houston Experience**

According to the City of Houston Ordinance No. 2005-568, in 2004 (November 2), i.e., FY2005, voters in Houston approved Proposition 1, amending the city charter to limit the annual growth of property tax revenue to the lesser of either 4.5 percent or the combined rate of inflation and population growth.⁶ In this report, we specifically look at the trend of particular categories before and after Proposition 1 was passed. FY2005 is thus the separation year. This separation enables us to better examine the effect of the Proposition 1 tax cap because we can assess whether the trends of key economic indicators after Proposition 1 are a reversal or a continuation of the trends before the proposition was approved.

Trends Before and After Proposition 1:

(1) *Employment – citywide full-time equivalent.*

A downward trend presented in public employment before Proposition 1 was passed, whereas an upward trend was shown after the adoption of Proposition 1. Specifically, the citywide total full-time equivalent was decreasing before Proposition 1, but began to experience a dramatic increase following the adoption of the proposition and before the Great Recession. The total increase observed was approximately 6.6 percent between FY2005 and FY2017.

(2) *Delivery of services – fire, police, public works and engineering, solid waste management, libraries, and parks and recreation.*

Before Proposition 1 passed, general fund expenditures (in real dollars) for the Houston Fire Department as well as for the Parks and Recreation Department showed a downward trend; however, the expenditures for these two categories began an upward trend in after Proposition 1. In contrast, general fund expenditures for the Houston Police Department showed an upward trend prior to Proposition 1, which continued after passage. Additionally, general fund expenditures for public works and engineering, for solid waste management, and for libraries displayed a decreasing trend before Proposition 1 passed; and this downward trend remained afterwards.

(3) *Capital projects – capital improvement plans of storm drainage system, street and traffic control and wastewater treatment facilities.*

⁴ https://files.texaspolicy.com/uploads/2018/08/16093238/2012-08-taxswap-laffer-update_0.pdf.

⁵ The fiscal multiplier here refers to the ratio of a change in regional income to the change in local government spending that causes it.

⁶ <https://www.houstonchronicle.com/news/politics/houston/article/Houston-to-consider-tiny-tax-hike-13239683.php>.

The planned appropriations for storm-drainage capital improvement projects began to fall following the passing of Proposition 1. Specifically, the planned appropriations for the storm drainage system had an upward trend beforehand, while a decreasing trend began afterwards. Since FY2005, the proposed budget has decreased by about 40.5 percent (\$47.39 million) for the storm drainage system. Pertaining to the budget for street and traffic control as well as for wastewater treatment facilities, there was no clear trend before and after Proposition 1 was passed, with frequent fluctuations over time.

(4) *Economic growth – gross regional product.*

The gross regional product displayed an upward trend before Proposition 1. It kept growing after the Proposition 1 cap was passed, except during the periods of economic recession. From FY2005-2017, the average increase in gross regional product was around 2.3 percent per year.

Houston and Dallas Experience:

Houston and Dallas are both large metropolitan areas and major contributors to economic development in Texas,⁷ and they are somewhat similar in terms of basic demographic and income statistics.⁸ In this report, we provide a brief comparison between the two cities with respect to property tax rates, general fund expenditures for public safety, capital improvement plans for storm drainage, and street and traffic control. Specifically, according to the annual budget reports of the two cities,⁹ public safety in Houston includes fire, police and municipal courts operations. Similarly, in Dallas, public safety includes fire and rescue, the police department, court and detention services, and the Office of Emergency Management. In addition, Houston's storm drainage capital improvement programs and Dallas' flood protection and storm drainage projects share similar missions.¹⁰

(1) *Property tax rates.*

Compared to Houston, Dallas had higher property tax rates for most of the FY1984-2017 period, especially after Houston passed Proposition 1. In FY2017, the rate in Dallas was 78.250¢/\$100, more than 33 percent greater than that of Houston (58.642¢/\$100). In both cities, property tax rates have regularly been reduced in recent years, in accordance with the revenue cap rules.

(2) *Public safety.*

The general fund expenditure for public safety in Houston was much higher than that in Dallas during FY2002-2017. This is more evident in the periods following the implementation of Houston's Proposition 1. From FY2005 to FY2017, public safety

⁷ <https://www.forbes.com/sites/scottbeyer/2016/07/26/dallas-and-houston-centers-for-economic-development/#5f69fd096bea>.

⁸ United States Census Bureau, QuickFacts,

<https://www.census.gov/quickfacts/fact/table/dallascitytexas,houstoncitytexas/PST045217>.

⁹ For Houston: https://www.houstontx.gov/budget/04budadopt/II_GFS.pdf.

For Dallas: https://dallascityhall.com/departments/budget/financialtransparency/AnnualBudget/FY06-07_BudgetOverview.pdf.

¹⁰ In accordance with the City of Houston's Fiscal Year 2014-2018 Capital Improvement Plan, Storm Drainage System; and the city of Dallas' FY2006-07 Adopted Capital Improvement Budget.

expenditures rose by 34.6 percent in Houston, while in Dallas the increase was 20.5 percent.

(3) *Capital improvement plans.*

The proposed storm drainage capital improvements budget in Houston was generally higher than that of Dallas during FY2003-2017, although exceptions existed after Proposition 1 was implemented. Regarding street and traffic control, the planned appropriations in Houston were also higher than Dallas during both before and after FY2003-2017. For instance, appropriations for street and traffic control in Dallas were approximately 99 and 71 percent lower in FY2003 and FY2017, respectively.

I. Background

Tax and expenditure limits (TEs) restrict the increase of government spending or revenue by capping them at a fixed amount of dollars or limiting their growth rate (Tax Policy Center 2016).¹¹ In economics literature, scholars usually refer to tax/revenue caps¹² more broadly as TEs (e.g., Mullins and Wallin 2004).¹³ In the United States, state or local voter initiatives usually impose a cap on property tax growth at the local level (Tax Policy Center 2016). Property tax revenue is a major source of funding for public services such as schools, roads, and policing in most American communities. Thus, the literature on tax cap effects mainly focuses on the various consequences of limiting this major revenue source on the potential expenditure of local governments as well as on the reduced flexibility for local governments to fund services (e.g., Crain 2003; Gordon 2008; New 2010; Staley 2015, 2017).

This report provides a review of the consequences (both gains and losses) of revenue caps, including (1) payrolls and public employment, (2) delivery of services, (3) capital-intensive projects, and (4) economic growth. Generally, the literature finds mixed results across these indicators, although negative impacts are more dominant regarding delivery of services in localities (e.g., Chapman 1998; New 2010).

¹¹ <https://www.taxpolicycenter.org/briefing-book/what-are-tax-and-expenditure-limits>.

¹² Revenue cap is defined as a restriction on property taxes collected to fund local services and state mandates (https://www.county.org/TAC/media/TACMedia/Legislative/Revenue_Caps_Myths.pdf).

¹³ TEs, (property) tax caps, and revenue caps are interchangeable in this report.

II. Types of Property Tax Caps

In most states, TEL provisions date back to the late 1970s and early 1990s. There are three main types of property tax caps in use throughout the United States (Institute on Taxation and Economic Policy 2011).¹⁴

(1) Caps on property tax rates: the rate cap restricts the tax bill to a certain percentage of a property's value. For example, Indiana limits homestead property tax bills to one percent of the home's value.

(2) Caps on assessed value¹⁵ growth: the cap on the increase in a property's assessed value sets a limit on the growth of taxable home values. California's Proposition 13 (adopted in 1978), for instance, restricts the increase in assessed value to the inflation rate or two percent, whichever is lower.¹⁶

(3) Caps on aggregate property tax revenue growth: the cap on the growth of overall property tax revenue is the most restrictive type and limits the increase in aggregate property tax to a certain amount per year. As an example, Massachusetts's Proposition 2½ (adopted in 1980) requires that the annual increase of overall property tax cannot exceed 2.5 percent.¹⁷

While some notable property tax caps, like Proposition 2½ and Proposition 13, were introduced by citizen initiatives, most of the TELs were enacted by state legislatures. In fact, over the past few decades, numerous states have imposed some form of property tax limits out of

¹⁴ <https://itep.org/wp-content/uploads/pb26caps.pdf>.

¹⁵ Home's assessed value is for tax purpose and is not the same as home's market value.

¹⁶ The 2 percent cap is enacted as long as the property is not sold. Once sold, the property is reassessed at 1 percent of the sale price, and the annual 2 percent cap will be applicable to future years (according to California tax data: <https://www.californiataxdata.com/pdf/Prop13.pdf>).

¹⁷ Besides this levy limit, there is also a levy ceiling in Massachusetts's Proposition 2½, which prevents municipalities from collecting property tax revenue more than 2.5 percent of the assessed value of all taxable property.

concern for the growing property tax bills (Center on Budget and Policy Priorities 2008). Table A1 in the Appendix presents a summary list of state property tax caps from 1970 to 2010.

III. The Search for Revenue Alternatives

As tax caps were enacted across the United States, local policymakers and politicians were left with less power to control fiscal conditions in their jurisdiction. The result has limited the ability of local governments to respond to changing budget conditions and increase costs of services (Lyons and Lav 2007; Staley 2017).

Although local leaders can tax at the maximum capacity to help meet non-discretionary spending (Spring et al. 2007), the nature of property tax caps in most localities tends to make the collected revenue fall well short of the necessary amount to cover existing costs and the ever-rising price of delivering services (i.e., wage increases, inflation, etc.) (Lyons and Lav 2007). In this case, policymakers usually look for alternative approaches of revenue generation, such as increasing the prices for services in the form of significantly higher fees, higher fines, and raising sales tax (Lav and Leachman 2018). However, all of these options possess potential drawbacks. The increased fees are particularly onerous for lower-income communities, which see little benefit from the reduction of property taxes but are impacted by more expensive or less generous services (Newman and O'Rourke 2011).

In addition, local governments can ask state governments to make up for lost revenue-generating power (Mitchell, Leachman and Masterson 2017). In many cases, proponents of tax caps offer up outside sources of funding as a solution to short-term budget deficits (Paquin 2015; Sapotichne et al. 2015). As a result, many local governments have become more dependent on uncertain or unsustainable revenue from state governments. The problem is that the funding from

higher-level governments is temporary and may not keep pace with inflation over the long term as state governments are also likely to face budget crises (Lav and Leachman 2018; Sapotichne et al. 2015).

Local leaders usually have the option to opt-out of tax caps or exempt spending by taking their proposed spending to the voting population (Lav and Leachman 2018). For example, in 2006, the city of Houston succeeded in asking voters to increase the property tax cap by \$90 million for public safety.¹⁸ In fact, for many local communities, this is the only way to fund large-scale capital projects under stressful budget conditions caused by property tax caps (Lyons and Lav 2007).

IV. Tax/Revenue Caps and Budgetary Outcomes

The goal of tax caps is to restrict the amount of money the government can receive in taxation revenue and encourage frugal spending (Mitchell 2010; Mullins and Wallin 2004). Yet, the evidence is mixed on whether they actually limit local budgetary outcomes (Gordon 2008). Some studies find no statistically significant effect on how much money local governments collect or spend (e.g., Cox and Lowery 1990) while other studies (e.g., Shadbegian 1996) conclude tax caps do restrain government revenue and expenditure.

In addition, a recent study by New (2010) posits institutions are likely to play an important role in determining the impact on budgetary outcomes. TELs adopted via citizen initiatives are more effective at limiting government growth than their counterparts enacted through legislation. This is because citizen initiatives tend to be drafted by interest groups that have a strong interest in lowering spending, and thus, they are less prone to possess loopholes. New (2010) suggests it is necessary to take the characteristics of each TEL into consideration when analyzing its effect.

¹⁸ <https://www.houstonchronicle.com/opinion/outlook/article/King-It-s-not-a-revenue-cap-it-s-a-property-tax-11148014.php>.

V. The Effects of Tax/Revenue Caps

This section reviews the mixed effects of property tax caps in detail. On the one hand, regardless of the type, property tax caps limit one guaranteed source of revenue collection for local governments, which reduces their flexibility to fund residential services (Crain 2003; Hnatkovska and Loayza 2003; Staley 2017). This has an immediate negative effect on economic growth as well as on a variety of items financed by property tax revenue, including payrolls and public employment, delivery of services, and capital-intensive projects (Lav and Leachman 2018; Lyons and Lav 2007). On the other hand, there are some positive economic impacts of limiting the increase in property taxes, particularly in the long run (Thaiprasert, Faulk, and Hicks 2011).¹⁹ Table 1 provides a brief overview of these potential trade-offs of adopting property tax caps.

¹⁹ <https://www.njrealtor.com/wp-content/uploads/2016/12/PROPERTY-TAX-CAPS-FINAL.pdf>.

Table 1: The Effects of Property Tax Caps

	Potential Losses	Potential Gains
Payrolls and public employment	Reduce payrolls and decrease public employment locally. (e.g., Lyons and Lav 2007)	Stimulate private capital investment, which generates new business and more jobs locally. (This is an estimated outcome based on a regional computable general equilibrium model: Thaiprasert, Faulk, and Hicks 2011)
Delivery of services	(1) Limit the ability of localities to provide quality education. (2) Cuts to basic community services, such as shutting public libraries and some fire stations. (e.g., Oliff and Lav 2010)	Make local government more efficient and do not cause major service cuts. (e.g., Wilson and Ladd 1980)
Capital-intensive projects	(1) Limit the ability of localities to invest in capital-intensive projects, such as road and school construction. (2) The delays in these projects lead to more traffic congestion and more layoffs locally. (e.g., Center on Budget and Policy Priorities 2008)	
Economic growth	Lead to lower levels of economic growth over the short term. (e.g., Thaiprasert, Faulk, and Hicks 2010)	(1) Increase the gross regional product in the long run. (2) Contribute to the growth of personal income, business expansion, and employment. (e.g., Texas Public Policy Foundation 2012)

a. Payrolls and Public Employment

Property tax revenue contributes to the salaries for local government employees including police officers, firefighters, teachers and the like. When the collected revenue is limited due to property tax caps, local governments are likely to reduce payrolls (Center on Budget and Policy Priorities 2008). As a result, public employment at the local level tends to decrease accordingly. For instance, in the aftermath of Proposition 2½ (in 1980), many communities in Massachusetts

laid off municipal employees such as police officers and firefighters (e.g., Lyons and Lav 2007). Similarly, school districts in California and Illinois have been forced to cut positions and impose wage freezes after the property tax caps were enacted in the two states in 1978 and 1991, respectively (Bell 2004; Dawson 2001; Lyons and Lav 2007).

In contrast, a recent study by Thaiprasert, Faulk, and Hicks (2011) argues that property tax caps are likely to have a positive impact on job creation since tax caps decrease property taxes, although this is an estimated outcome under a regional computable general equilibrium model. Lower business property taxes potentially stimulate private business investment, which could generate new business and more jobs locally in the long term. Taking New Jersey as an example, the 2 percent cap on property tax growth became effective in 2011. Using 2011 as the base year,²⁰ it was predicted that the imposition of this 2 percent cap would increase business investment and employment by 7.4 and 1.6 percent in total, respectively, over a five-year period²¹ (Thaiprasert, Faulk, and Hicks 2011).

These predicted outcomes are consistent with the actual results. In fact, New Jersey's employment increased by 4 percent from 2011 to 2016,²² and business profits went up by more than 16 percent between 2011 and 2015.²³ Moreover, positive effects were also present for economic and household income growth. Specifically, Thaiprasert, Faulk, and Hicks (2011) found that the 2 percent cap would increase the gross regional product (GRP) by 1.5 percent and household income 1.0 percent over five years. The increasing trend predicted for GRP and

²⁰ Note, the authors use 2009 data to represent New Jersey's 2011 economy. The reason is 2009 data was the latest available (Thaiprasert, Faulk, and Hicks 2011).

²¹ In Thaiprasert, Faulk, and Hicks' (2011) article, short run indicates one to two years and long run refers to five years at least.

²² Source: Bureau of Labor Statistics, 2011-2016, <https://data.bls.gov/pdq/SurveyOutputServlet>.

²³ Source: <https://www.state.nj.us/treasury/taxation/pdf/pubs/soi-tables2015.pdf>; 2015 data is the latest available.

household income is also consistent with the upward direction of the New Jersey’s economy from 2011 to 2016. The gross domestic product actually grew by more than 16.6 percent in total during 2011-2016²⁴ and the percentage increase in household income was approximately 5.5.²⁵

b. Delivery of Services

Proponents of property tax caps argue the cap tends to make local governments more efficient and avoid major service cuts (Wilson and Ladd 1980). As the Nassau County Executive Edward Mangano in New York state said, “The tax cap continues to encourage local governments and school districts to pursue efficiencies.”²⁶ However, opponents argue that limiting property tax revenue rarely produces efficiencies as proponents suggest. Instead, they say tax caps result in basic service cuts, which harms the quality of life in many local communities, especially in less wealthy communities that cannot override the cap (Oliff and Lav 2010).²⁷

Evidence suggests property tax caps do have some negative effects on the delivery of services, including the ability of local governments to provide quality education (e.g., Lyons and Lav 2007). Much of the negative educational outcomes are associated with the decline in funding and inability to make up for potential shortfalls (e.g., Chapman 1998). For example, funding for K-12 education in California decreased dramatically under Proposition 13. In the years prior to the adoption of Proposition 13 in 1978, K-12 spending had increased in California and the school system was considered one of the best in the United States. However, a dramatic turning point emerged after Proposition 13 was enacted. Specifically, spending per pupil in California dropped

²⁴ U.S. Bureau of Economic Analysis, Total Gross Domestic Product for New Jersey [NJNGSP], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/NJNGSP>, January 3, 2019.

²⁵ Source: <https://www.deptofnumbers.com/income/new-jersey/>.

²⁶ <https://www.newsday.com/news/region-state/property-tax-cap-tightens-1.12060345>.

²⁷ <https://www.cbpp.org/sites/default/files/atoms/files/5-21-08sfp.pdf>.

from \$600 (in year 2000 dollars) above the national average in 1978 to \$600 below the national average in 2000 (McCombs and Carroll 2005). Today, California's school system no longer has the reputation it once had (McCombs and Carroll 2005).

Education marks just one of the of public service areas negatively affected by the adoption of property tax caps. A tax cap will not make government services cost less. It cannot prohibit service costs, such as the cost of buying gas or oil for fire and police vehicles, and health insurance costs for public employees from growing faster than the tax cap permits (Lyons and Lav 2007; Oliff and Lav 2010). Many local communities are forced to reduce the number of police officers, firefighters, and the like. Other communities have closed some fire stations and police stations, or cut other services, to comply with the tax cap fallout. According to the report by Oliff and Lav (2010), Proposition 2½ made some Massachusetts localities close public libraries and senior centers; as well as caused some potential utility constraints. In one town, streetlights were shut off to decrease expenditures. Lav and Leachman (2018) also emphasized the constraints of local services under property tax caps. In Michigan, for instance, the property tax revenue made up 57 percent of local government revenue in 1978 (when the tax cap was imposed in the state), while this value fell to 44 percent in 2015. Localities in Michigan were forced to cut services to respond to such fiscal distress. Specifically, from 2008 to 2014, police and sheriff services decreased by 13 percent; health and human services fell by 8 percent; and fire services decreased by 14 percent in Michigan cities. Similarly, in New York, services have experienced sharp declines after the enactment of the tax cap in 2011 (Lav and Leachman 2018). From 2011 to 2016, for example, community and health services in New York State fell by 25 and 21 percent, respectively.

c. Capital-Intensive Projects

In many localities, property tax revenue also pays for capital-intensive projects such as road and school construction. As the costs of these projects increase – due to inflation and population growth – tax caps make it harder for local governments to invest (Center on Budget and Policy Priorities 2008). Delays in new road or school construction would also increase layoffs locally, as contracting decreases. Taking Indiana as an example, the state legislature permanently capped property taxes in 2010, which led to major cuts in transportation project funds.²⁸ One of the state’s largest school districts – Fort Wayne Community Schools – had to cut \$2.5 million from its transportation budget in 2015. As a result, they lost 50 buses affecting more than 23 percent of the students in the district. Those students living less than two miles from schools were thus required to walk or find alternative transportation to school, which undoubtedly brought inconvenience to their parents as well.

Delayed road construction also forces residents to endure more traffic congestion and longer commutes; however, the consequences are less harmful if the property tax cap takes effect during a strong economy (Oliff and Lav 2010). In Massachusetts, for example, Proposition 2½ was adopted in 1980 during the “Massachusetts Miracle.” As a result, the rapid economic growth facilitated new construction, which benefitted the property tax rolls and enabled local communities to find a way to compensate for limited revenue under the strict property tax caps (Oliff and Lav 2010).²⁹

²⁸ <https://indianapublicmedia.org/stateimpact/2016/02/18/bill-fund-school-buses-school-districts/>

²⁹ Note, the opposite appears to be true: the cut of services and investment in capital-intensive projects would be more severe if the tax cap were imposed under a weaker economy (Oliff and Lav 2010).

d. Economic Growth

Evidence of the effects of property tax caps on economic growth is also mixed. Recall, Thaiprasert, Faulk and Hicks (2011) found the implementation of the two percent cap on property tax growth in New Jersey (in 2011) had a positive impact on economic activity. In addition, a project of the Texas Public Policy Foundation (2012)³⁰ argued that eliminating or lowering the property tax would attract more businesses in capital-intensive industries to locate in Texas. This is because a lower property tax burden means a lower cost to those capital-intensive entities. More business activity would further increase statewide employment and production. An article published in the Texas Tribune stated that in 2018 businesses paid 52 percent of the local property taxes collected in Plano, Texas (Beckley 2018). An increase in the property tax would be an additional burden on businesses there, which could discourage job creation and economic growth.

Yet, in the short run, the effect of property tax caps on economic growth is expected to be negative (e.g., Thaiprasert, Faulk, and Hicks 2010). For instance, Thaiprasert, Faulk, and Hicks (2010) predicted the GRP in Indiana would decrease by approximately \$296 million (0.12 percent) in the short run (of one to two years)³¹ after the 2008 property tax reform, which included property tax caps. In fact, Indiana's gross domestic product decreased by 4.3 percent from 2008 to 2009 but increased by more than 7 percent from 2009 to 2010.³² As the impacts of tax caps on

³⁰ https://files.texaspolicy.com/uploads/2018/08/16093238/2012-08-taxswap-laffer-update_0.pdf

³¹ In Thaiprasert, Faulk, and Hicks' (2010) article, they define the short run as the "period between the policy change and that time when economic agents have had an opportunity to adjust to the policy changes" (p.3). They find the timing of the effects should be distributed over one to two years in the short run.

³² U.S. Bureau of Economic Analysis, Total Gross Domestic Product for Indiana [INNGSP], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/INNGSP>, January 3, 2019.

economic/income growth are mixed over the short and long run, we believe the cap's effect on local fiscal multipliers would also be mixed.

VI. The Houston Experience

In the case of Houston, property tax revenue has been the largest revenue source of the city for many years (Greater Houston Partnership, Municipal Finance Task Force 2015).³³ In 2004 (FY2005), citizens in Houston approved a tax cap, amending the city charter to restrict the annual growth of property tax revenue to 4.5 percent or the combined rate of inflation and population growth – whichever is lower (Proposition 1). In 2006, however, voters in Houston allowed the city to collect an additional \$90 million more than the applicable revenue limitation for public safety purposes.³⁴

a. Property Tax Rates and Revenues

Figure A1 (in the Appendix) shows historical property tax rates and revenues in the city of Houston across fiscal years. The tax rate is expressed as ¢/\$100 of the property's assessed value. As we can see, the city continuously cut the property tax rate starting in FY2014 so as not to exceed the allowed level of revenue collection per Proposition 1. The rate in 2017 was 58.642 percent, which decreased by almost ten percent since Proposition 1's revenue cap came into effect.

Although there is a tax cap, city revenue presents a growing upward trend in general according to rising property values, with minor fluctuations corresponding to the city's economic

³³ <https://www.houston.org/municipal-finance/pdf/Municipal%20Finance%20Whitepaper%202020-%20Revenues.pdf>.

³⁴ <https://www.houstonchronicle.com/news/politics/houston/article/Houston-to-consider-tiny-tax-hike-13239683.php>.

This proposition 1 revenue cap eliminates the city's tax cap approved by voters in 1982 (see <https://www.chron.com/news/houston-texas/article/City-Council-accepts-results-for-Propositions-1-2-1645893.php>).

performance (Greater Houston Partnership, Municipal Finance Task Force 2015). For instance, from FY2005-2009, property tax revenues increased approximately five percent per year on average. The revenue started falling after the Great Recession but began to rise again starting in FY2011 as Houston recovered from the recession. In the post-Proposition 1 period, property tax revenues increased by 12.2 percent during FY2005-2011, and by a further 22 percent from FY2011-2017.

b. Before and After Proposition 1 Revenue Cap Trend

Concerning the pre- and post-Proposition 1 trends, the key question is whether there have been appreciable changes. Specifically, Figures A2 to A5 illustrate the trend for the key economic indicators discussed above. Table 2 provides a summary of these figures in terms of the total percentage change across the pre- and post-Proposition 1 periods.

Firstly, pertaining to government employment, Figure A2 shows that the citywide total full-time equivalent (FTE) had a downward trend from FY2003 to FY2005 (before Proposition 1 was passed) but began to experience a dramatic increase after Proposition 1. Although the FTE substantially decreased during the Great Recession, it started climbing again as the city's economy recovered. During FY2005-FY2017, the average increase in FTE was approximately 0.6 percent per year, or 6.6 percent in total (Table 2). In particular, FTE increased by 12.3 percent during FY2005-2010, decreased by 7.8 percent for a short period from FY2010-2012, and went up again by 3 percent between FY2012 and FY2017.

Secondly, regarding delivery of services, Figure A3 illustrates the general fund expenditure (millions, real dollar value) in various categories including fire, police, public works and engineering, solid waste management, libraries, and parks and recreation departments. The trend of expenditures for the fire and parks and recreation departments presented reversals during pre-

and post-Proposition 1 periods. From FY2002-2005, the expenditures decreased by 2.8 and 23 percent, respectively, for fire, and parks and recreation; the corresponding percentage increases were 37.9 and 21.2 for FY2005-2017 (Table 2).

The general fund expenditures for the Houston police department rose by 1.7 percent during the pre-Proposition 1 period (FY2002-2005) and expenditures continuously increased post-Proposition 1 with a total increase of 32.1 percent from FY2005-2017 (Table 2). In contrast, the expenditures for public works and engineering experienced a 13.7 percentage decline in total from FY2002-2005. The decline in expenditures was even more dramatic following the passing of Proposition 1. During FY2005-2017, public works and engineering expenditures fell by 72.7 percent (Table 2). Similarly, from FY2002-2005, the expenditures went down by 0.2 and 14.7 percent, respectively, for solid waste management and library services; and the corresponding decreases were 0.02 and 0.45 percent during FY2005-2017 (Table 2).

Table 2: Summary of Trends Before and After Proposition 1 (Figures A2-A5)

		Total Percentage Change in Pre- Proposition 1 Periods (%)	Total Percentage Change in Post-Proposition 1 Periods (%)
FTE	Figure A2	-4.11	6.62
Fire	Figure A3	-2.84	37.92
Police	Figure A3	1.69	32.14
Public works and engineering	Figure A3	-13.74	-72.66
Solid waste management	Figure A3	-0.22	-0.02
Library	Figure A3	-14.67	-0.45
Parks and recreation	Figure A3	-23.02	21.24
Storm drainage system	Figure A4	122.80	-40.55
Street and traffic control	Figure A4	-27.58	-16.01
Wastewater treatment facilities	Figure A4	17.31	-10.20
GRP	Figure A5	22.41	28.57

Thirdly, with respect to capital projects, Figure A4 presents the planned appropriations for the capital improvement plans in specific categories, which include the storm drainage system, street and traffic control, and wastewater treatment facilities. Regarding the proposed budget for street and traffic control, as well as for wastewater treatment facilities, there was little difference before and after Proposition 1, but in both periods, there were frequent fluctuations in proposed appropriations.

On the other hand, the planned amount of appropriations for the storm drainage system showed a downward trend post Proposition 1, while an upward trend was found before Proposition 1 was implemented. During FY2003-FY2005, the proposed budget for storm drainage capital improvements increased by more than 122 percent, but it began to fall after Proposition 1 was passed. The planned appropriations for the storm drainage system fell by 40.6 percent from FY2005-2017 (Table 2).

Lastly, for economic growth, Figure A5 shows an upward trend of GRP (millions, in real dollars) before Proposition 1 was passed. In the aftermath of Proposition 1, the GRP continued to increase except in the periods of recession. In other words, it displayed a steady rise for most of the period between FY2001 and FY2017. The GRP increased by approximately 28.6 percent from FY2005 to FY2017 (Table 2), although there were some low periods.

In general, as we discussed about the trends before and after Proposition 1 in Table 2, the citywide FTE had a downward direction before Proposition 1 was passed, whereas an upward trend presented post Proposition 1. General fund expenditures for the fire department, as well as for parks and recreation spending showed a decreasing trend before Proposition 1 was passed, although the expenditures for these two categories began to increase after Proposition 1. In contrast, general fund expenditures for the police department presented an increasing trend before Proposition 1 fiscal years and expenditures continued to increase after Proposition 1 was passed. Additionally, general fund expenditures for public works and engineering, solid waste management, and libraries displayed a downward trend before Proposition 1 was passed; and this declining trend remained in the aftermath of Proposition 1. The planned appropriations for storm drainage system had an upward trend before the Proposition 1 period, while a decreasing trend presented after Proposition 1. Regarding the budget for street and traffic control, as well as for wastewater treatment facilities, there is not much difference between across the two periods. Finally, the GRP displayed an upward trend before Proposition 1, which continued for most of the years following the adoption of the Proposition 1 cap.

c. Houston and Dallas

We also want to provide a brief comparison between Houston and Dallas in terms of the property tax. Table 3 provides some basic demographic information based on US Census data for both Houston and Dallas. Both are massive metropolitan areas and major contributors to economic development in Texas.³⁵ Houston and Dallas are also similar in terms of some of these basic demographic and income statistics (Table 3). While the total population is larger in Houston, the structure of the population with respect to age, sex, and education are similar in the two cities. The median household income is also close, with Houston's value (\$49,399) slightly higher than the median household income in Dallas (\$47,285).

Table 3: A Basic Comparison of Houston and Dallas

	Census Data	Houston	Dallas
Population	Estimates July 1, 2017, (V2017)	2,312,717	1,341,075
Age and Sex	Persons 65 years and over (%)	10.1	9.8
	Female persons (%) 2013-2017	49.9	50.4
Education	High school graduate or higher, % of persons age 25 years+ 2013-2017	77.9	75.9
Income	Median household income (in 2017 dollars) 2013-2017	\$49,399	\$47,285

Sources: United States Census Bureau, QuickFacts,

<https://www.census.gov/quickfacts/fact/table/dallascitytexas,houstoncitytexas/PST045217>.

Note: V2017 indicates the vintage year, referring to the final year of the series (2010-2017); 2013-2017 refers to 2017 American Community Survey (ACS) 5-year estimates.

³⁵ <https://www.forbes.com/sites/scottbeyer/2016/07/26/dallas-and-houston-centers-for-economic-development/#5f69fd096bea>.

As previously discussed, the city of Houston has a cap that limits the property tax revenue growth to lower than 4.5 percent or the combined rate of inflation and population growth. In Dallas, the property tax revenue collected by the city cannot increase by more than 8 percent from year to year.³⁶ As we can see from Figure A6, which reviews historical property tax rates of the two cities, Dallas had a higher property tax rate for most of the period from FY1984-FY2017. The difference was especially stark after Houston implemented Proposition 1. In FY2017, the rate in Dallas was 78.250¢/\$100, more than 33 percent greater than that of Houston. Similar to Houston, Dallas has also reduced property tax rates in recent years so as not to outpace the eight percent revenue cap.

Figure A7 shows the general fund expenditures in total public safety for the two cities over FY2002-FY2017. Compared to Dallas, Houston's expenditures for public safety were higher during both before and after Proposition 1. From FY2012 to FY2017, for instance, the increase in public safety expenditures in Houston was four percent higher than in Dallas.

The comparison of proposed budgets for some capital projects is shown in Figures A8 and A9. These figures indicate that planned appropriations for storm-drainage capital improvement projects were generally higher in Houston during FY2003-2017, although exceptions existed in several years after Proposition 1 (Figure A8). Regarding street and traffic control, the planned appropriations for it were higher in Houston than in Dallas during both before and after Proposition 1.

³⁶ <https://www.dmagazine.com/frontburner/2018/09/dallas-is-long-on-maintenance-needs-is-there-a-way-to-generate-more-intelligent-revenue/>.

VII. Summary

Table 4 provides a summary of the post-Proposition 1 phenomena in Houston in terms of multiple categories.

Table 4: A Summary of Post-Proposition 1 Phenomena in Houston

Category	Trade-offs	
Employment	Increases in the FTE (most of the time since FY2005, Figure A2).	
Delivery of services	Increases in the general fund expenditure for fire, police, and parks and recreation (most of the time since FY2005, Figure A3).	Decreases in the general fund expenditure for public works and engineering, solid waste management and libraries (most of the time since FY2005, Figure A3).
Capital projects	Decreases in the planned appropriations for the capital improvement plans of storm drainage system, street and traffic control, and wastewater treatment facilities (most of the time since FY2005, Figure A4).	
Economic growth	Increases in the GRP (most of the time since FY2005, Figure A5).	
Others	The caps saved the average homeowner \$436 in total since 2014, according to the Houston Chronicle (see footnote 38 for the reference).	The caps generated \$533 million revenue loss since 2014, according to the Houston Chronicle (see footnote 38 for the reference).

According to a recent article in the Houston Chronicle,³⁷ the tax cap has saved the average homeowner \$436 in total since 2014. Due to the cap, however, the tax rate adjustments since 2014 meant the city was unable to collect \$533 million more in revenues than it otherwise would have (Table 5).

³⁷ “What has Houston’s revenue cap saved you?” (Morris, October 10, 2018). <https://www.houstonchronicle.com/news/politics/houston/article/What-has-Houston-s-revenue-cap-saved-you-13293034.php>.

Policymakers in Houston should note that the major issue is that fixed costs relative to the city's budget are continuously on the rise,³⁸ but the city's largest revenue source (property taxes) is constrained because of the cap. This will obviously lead to fewer services and infrastructure projects than when more tax revenue is available. As we can see in Table 4, although the delivery of services has expanded to some extent with respect to fire, police, and parks and recreation, other services including public works and engineering, solid waste management, and libraries have been cut.

In addition, appropriations for capital improvement plans like the storm drainage program showed contraction, even though such projects are essential for flood protection. How to balance the revenue cap and the growing fixed costs without harming the residents' quality of life is important for local policymakers. In this case, relevant policy studies should put more effort into how to make local government more efficient in order to avoid major service cuts under tax caps.

³⁸ <http://offthekuff.com/wp/?tag=revenue-cap>.

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Appendix

Table A1: A Summary of State Property Tax Caps from 1970 to 2010

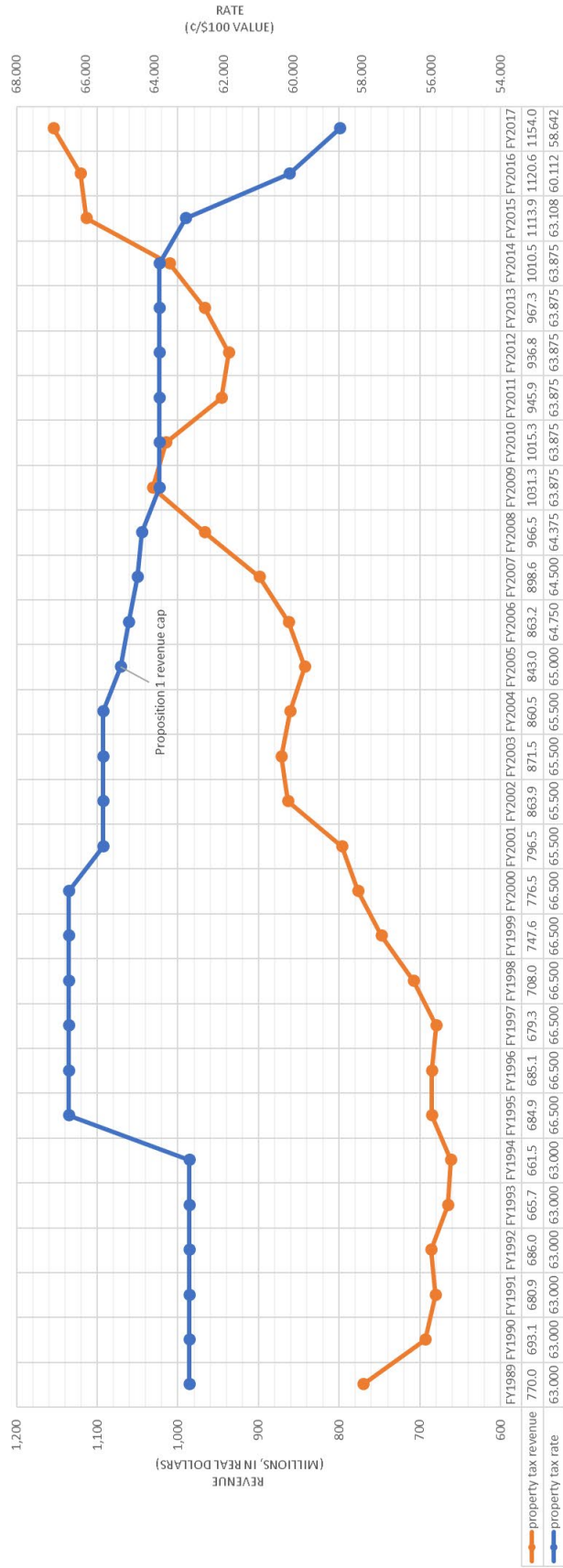
1970	Kansas: levy limit (replaced in 1999)
1971	Minnesota: levy limit (repealed in 1993) Montana: school rate limit New York: assessment limit (New York City and Nassau County only) Washington: levy limit (declared unconstitutional and reinstated in 2007)
1972	Alabama: levy limit Alaska: municipal rate limit and levy limit Delaware: levy Limit Iowa: municipal Rate Limit
1973	Indiana: local rate limit and levy limit New Mexico: county, municipal, and school rate limits North Carolina: county and municipal rate limits Washington: county and municipal rate limits
1974	Louisiana: statewide, municipal, parish, and school rate limits
1975	Montana: assessment limit Maryland: assessment limit Virginia: levy limit (effective 1976)
1976	New Jersey: levy limit Ohio: levy limit
1978	California: assessment limit and overall rate limit Idaho: overall rate limit (never took effect) and assessment limit (effective 1980, repealed 1982) Iowa: assessment limit Louisiana: levy limit Michigan: levy limit Nebraska: levy limit
1979	Idaho: levy limit (repealed 1992) Kentucky: levy limit Nevada: overall rate limit New Mexico: levy limit Texas: levy limit (effective 1982)
1980	Arizona: assessment limit and residential rate limit Massachusetts: rate and levy limit Mississippi: municipal and county levy limits Missouri: levy limit Oregon: assessment limit (repealed 1985)
1981	Arkansas: levy limit New York: assessment limit (agricultural) North Dakota: levy limit
1982	Colorado: assessment limit
1983	Mississippi: school district levy limit Nevada: levy limit Georgia: local option assessment limit
1985	Rhode Island: levy limit
1986	Montana: levy limit (effective 1987)
1987	Connecticut: local option assessment limit
1988	Connecticut (Hartford): rate limit (residential property) (effective 1989; repealed 2006)

1989	Iowa: school rate limit
1990	Oregon: overall rate limit (effective 1991) West Virginia: levy limit
1991	Illinois: levy limit
1992	Colorado: rate and levy limits Florida: assessment limit (homesteads) (effective 1995)
1993	Wisconsin: rate limit (effective 1994)
1994	Michigan: assessment limit and school rate limit
1995	Idaho: levy limit South Carolina: overall rate limit South Dakota: levy limit (effective 1997)
1996	Nebraska: overall rate limit (effective 1998) Oklahoma: assessment limit Oregon: levy limit (never took effect, repealed in 1997)
1997	Oregon: assessment limit and overall rate limit Texas: assessment limit Minnesota: levy limit (effective 1998–1999 only)
1999	Kansas: levy limit (replaced 1970 levy limit)
2000	Arkansas: assessment limit (effective 2001) New Mexico: assessment limit
2002	District of Columbia: assessment limit
2003	Illinois: local option assessment limit
2005	Maine: levy limit Nevada: levy limit Wisconsin: levy limit
2006	District of Columbia: levy limit (residential property) Pennsylvania: levy limit South Carolina: assessment limit
2007	Florida: maximum millage rates
2008	Florida: assessment limit (non-homesteads) Indiana: levy limit (codified in 2010) Minnesota: levy limit (reenacted 1997 limit, effective 2009-2011 only)
2010	District of Columbia: levy limit (commercial property) Georgia: assessment limit (forest land)

Source: Paquin (2015), part of “Appendix B State Property Tax Limits by Year” (pp.20-23) in “Chronicle of the 161-Year History of State-Imposed Property Tax Limitations” (Paquin 2015); available from <https://www.lincolnst.edu/sites/default/files/pubfiles/paquin-wp15bp1.pdf>.

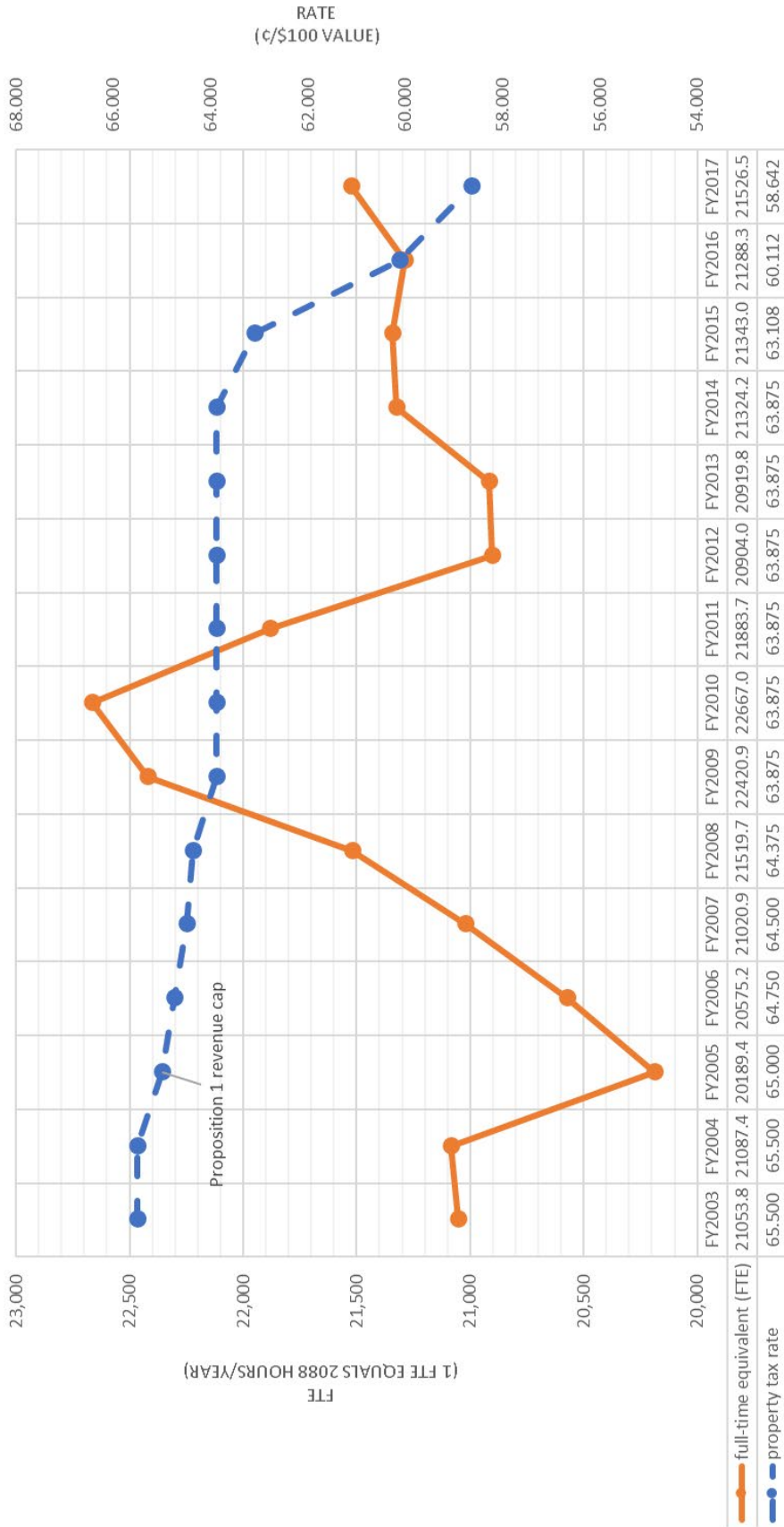
Note: According to Paquin (2015), the rate limit here is the limitation on property tax rates; the levy limit is the cap on property tax revenues; and the assessment limit is the cap on assessed value growth.

Figure A1: Property Tax Rate and Property Tax Revenue



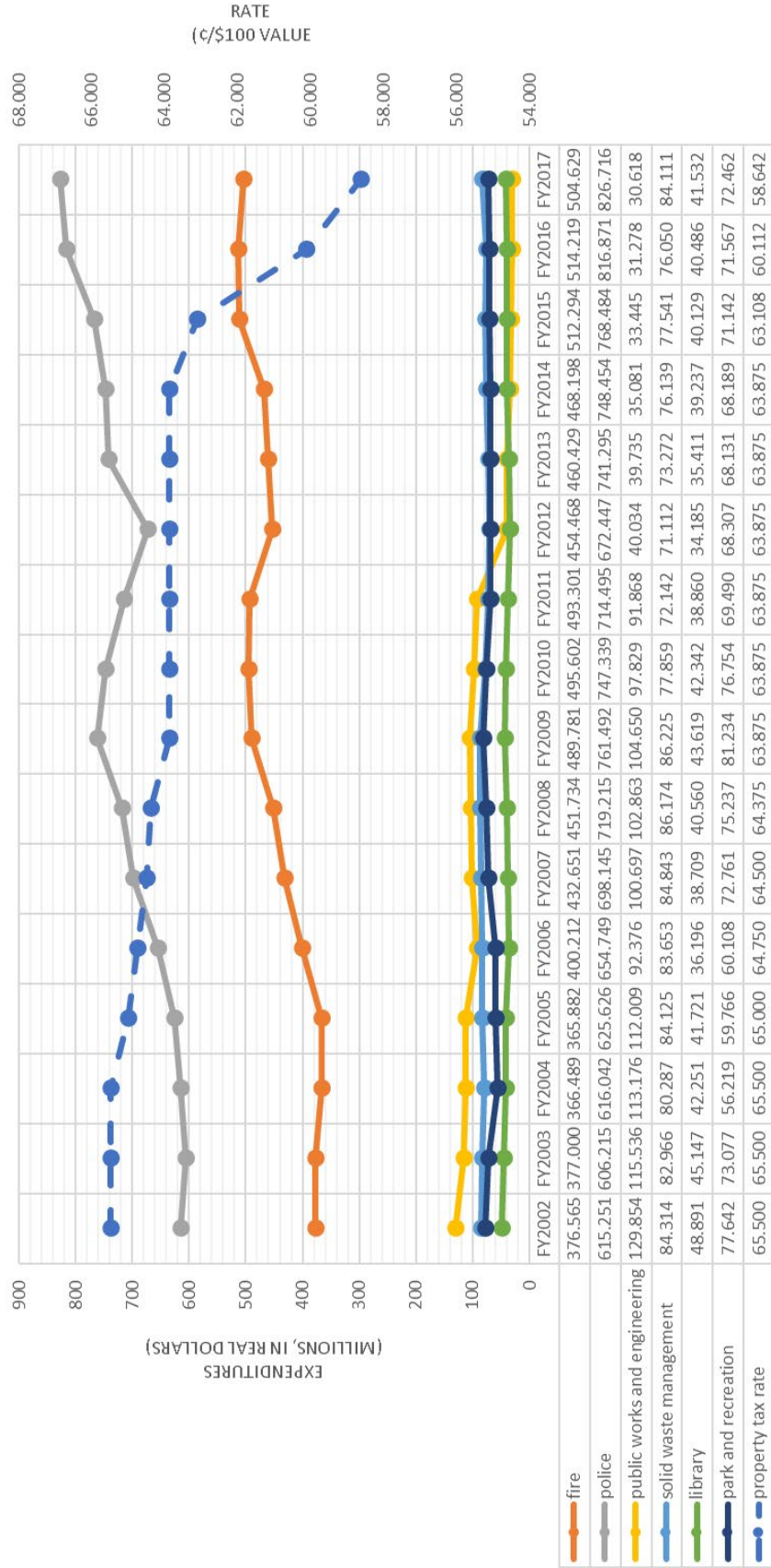
Sources: The City of Houston's Comprehensive Annual Financial Report (CAFR) FY1998-2018; Trends for Fiscal Year 2012, Office of the City Controller; Trends for Fiscal Year 2016, Office of the City Controller; Trends for Fiscal Year 2019, Office of the City Controller; and Houston Chronicle (<https://infogram.com/city-of-houston-property-tax-rate-1ge9m8zeok7lmy6>).

Figure A2: Government Employment – Full-Time Equivalent (FTE)



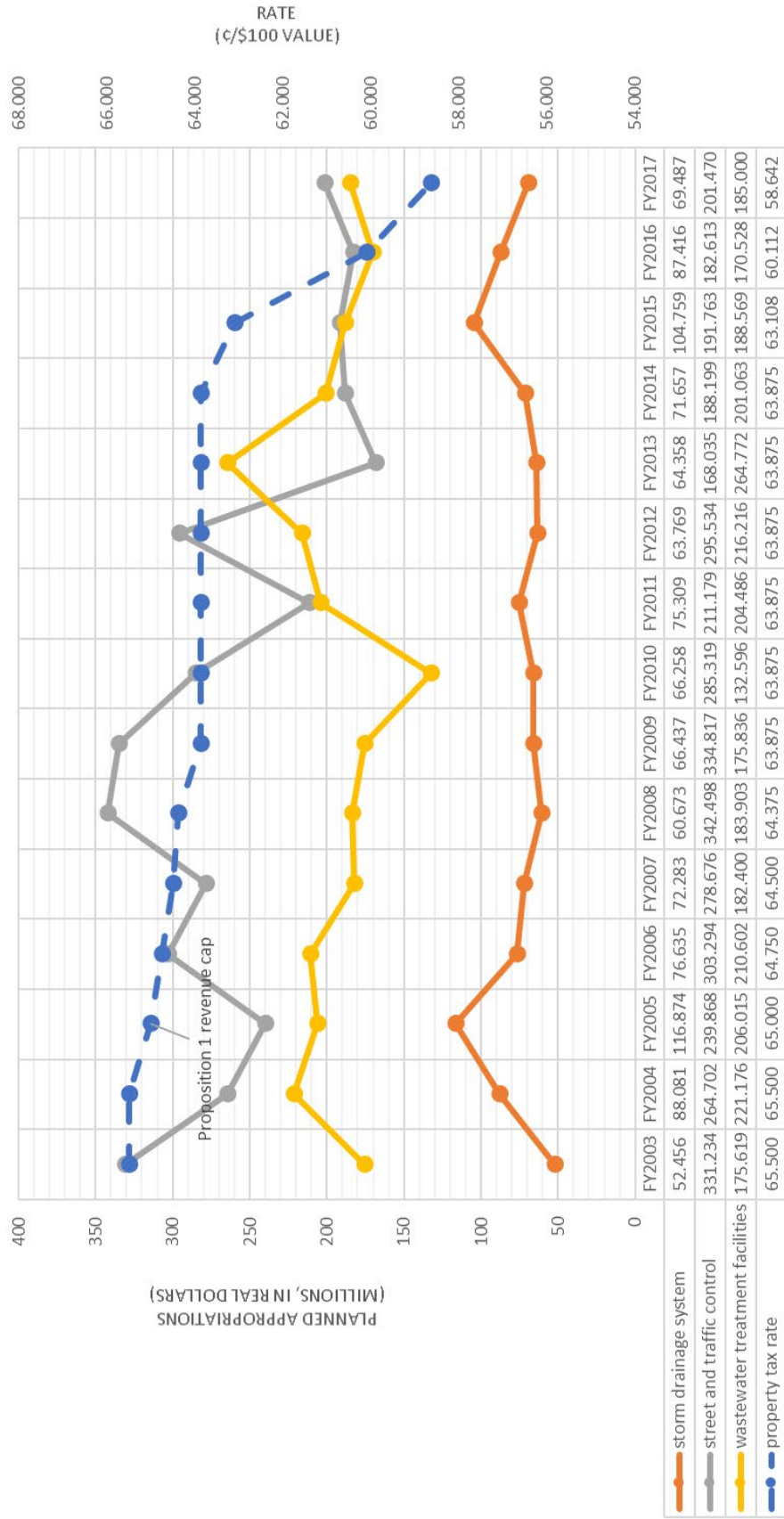
Sources: The City of Houston's fiscal year monthly financial reports FY2004-2018.

Figure A3: Delivery of Services – General Fund Expenditure in Specific Categories



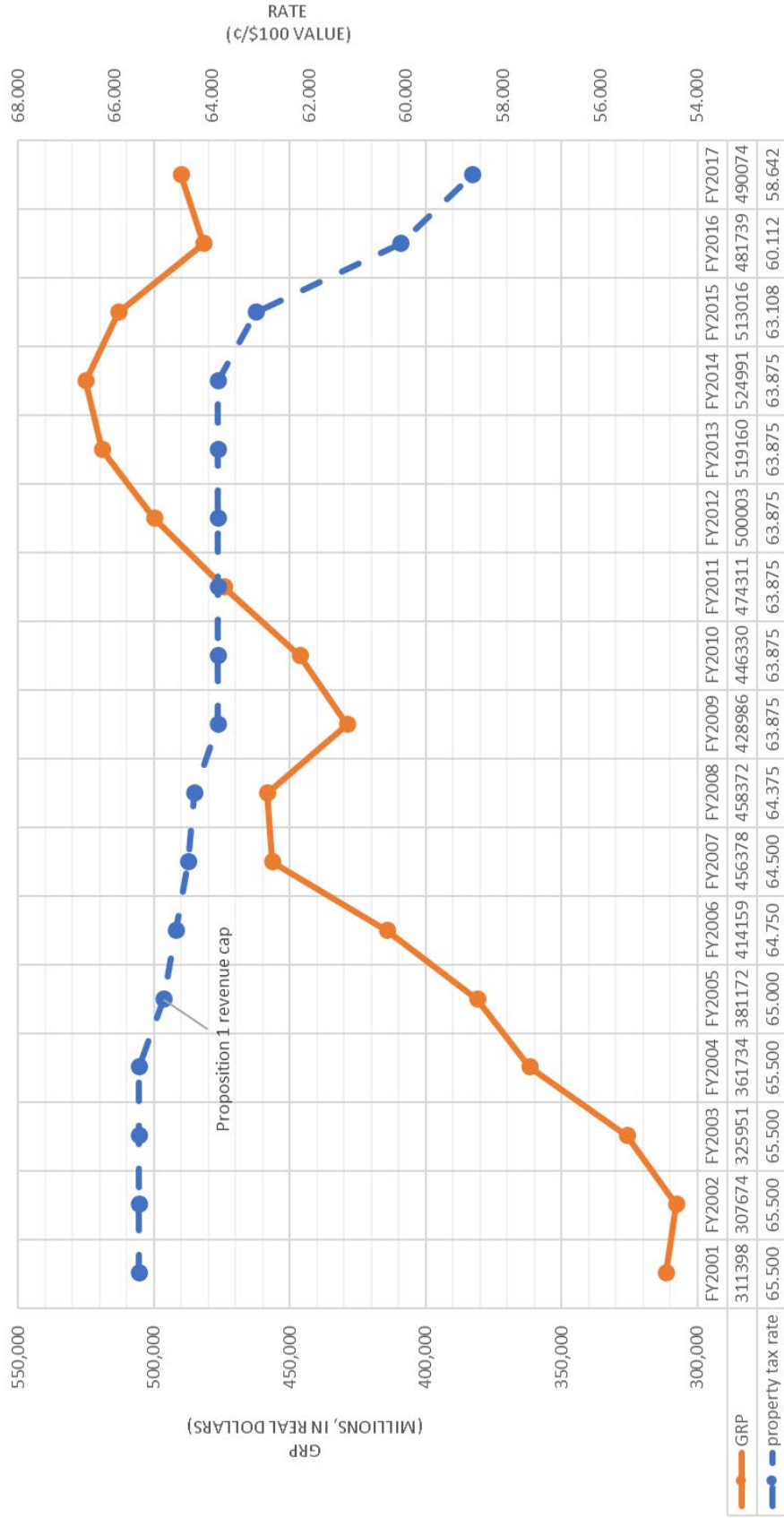
Sources: The City of Houston’s fiscal year operating budgets reports FY2004-2018.

Figure A4: Capital Projects – Capital Improvement Plan in Specific Categories



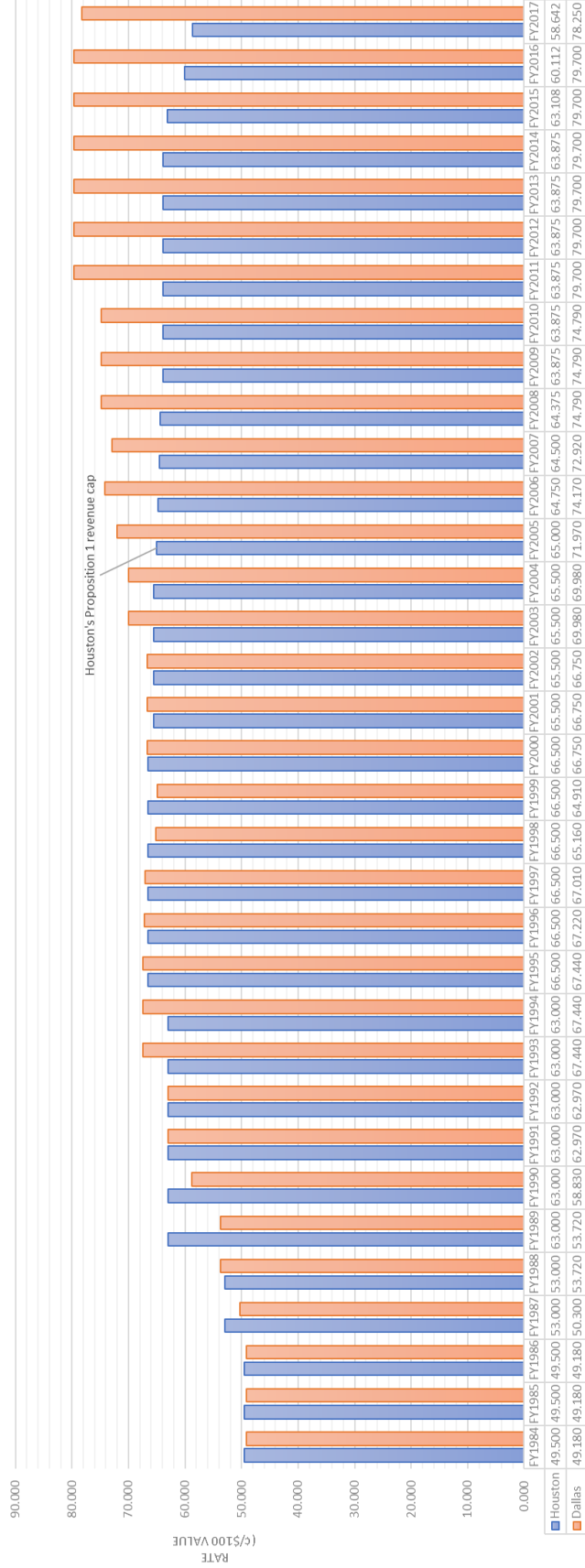
Sources: The City of Houston’s capital budget – adopted capital improvement plan reports FY2003–2018.

Figure A5: Economic Growth – Gross Regional Product (GRP)



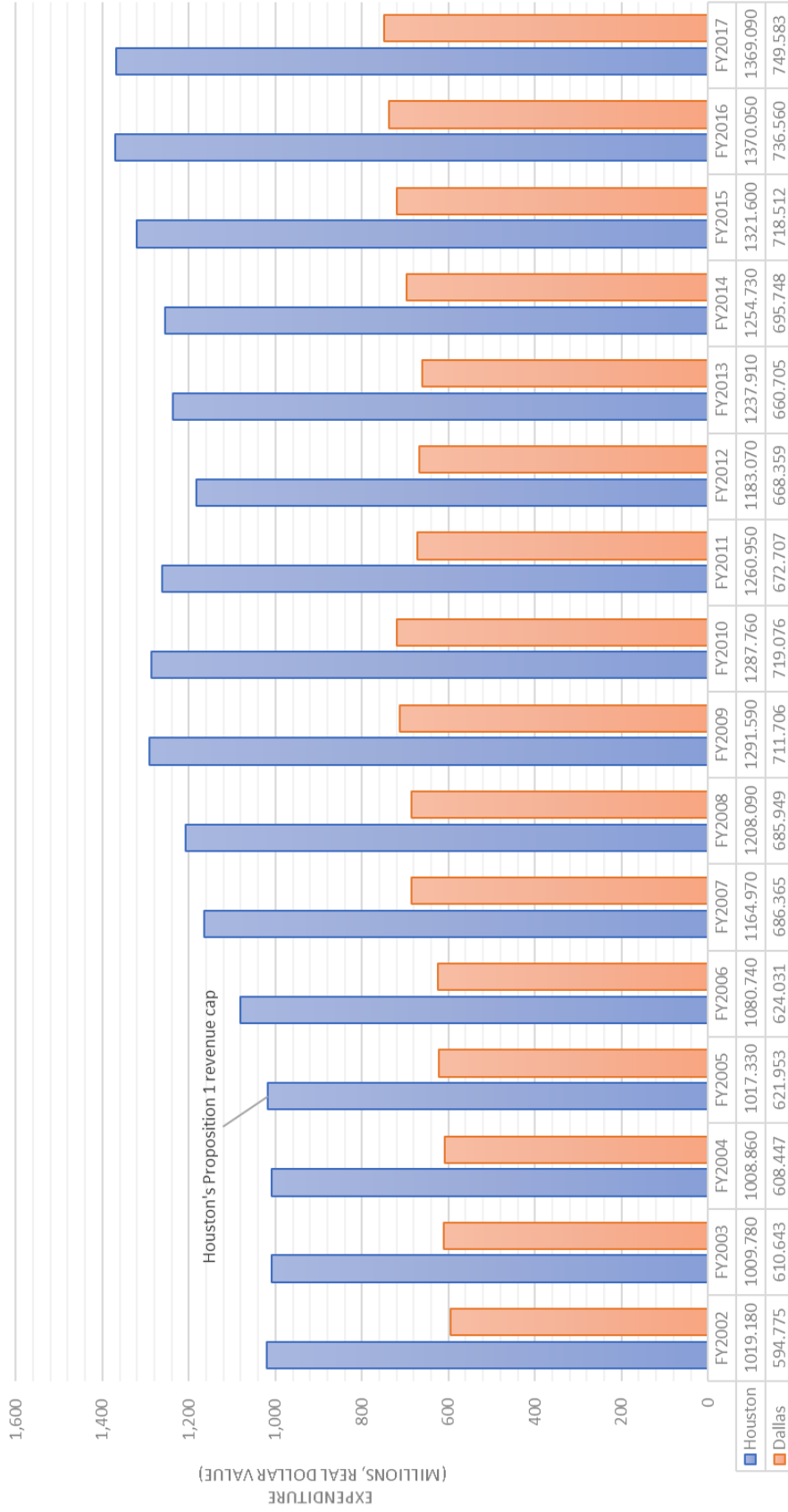
Sources: U.S. Bureau of Economic Analysis, Total Gross Domestic Product for Houston-The Woodlands-Sugar Land, TX (MSA) [NGMP26420], retrieved from FRED, Federal Reserve Bank of St. Louis; <https://fred.stlouisfed.org/series/NGMP26420>, December 16, 2018.

Figure A6: Property Tax Rate: Houston vs. Dallas



Sources: for Houston – listed in Figure A1; for Dallas - FY2018-19 Property Tax Rate State Law Requirements, City Council Briefing, August 14, 2018 (https://dallascityhall.com/departments/budget/financialtransparency/DCH%20Documents/B_FY-2018-19-Property-Tax-Rate-State-Law-Requirements_081418.pdf).

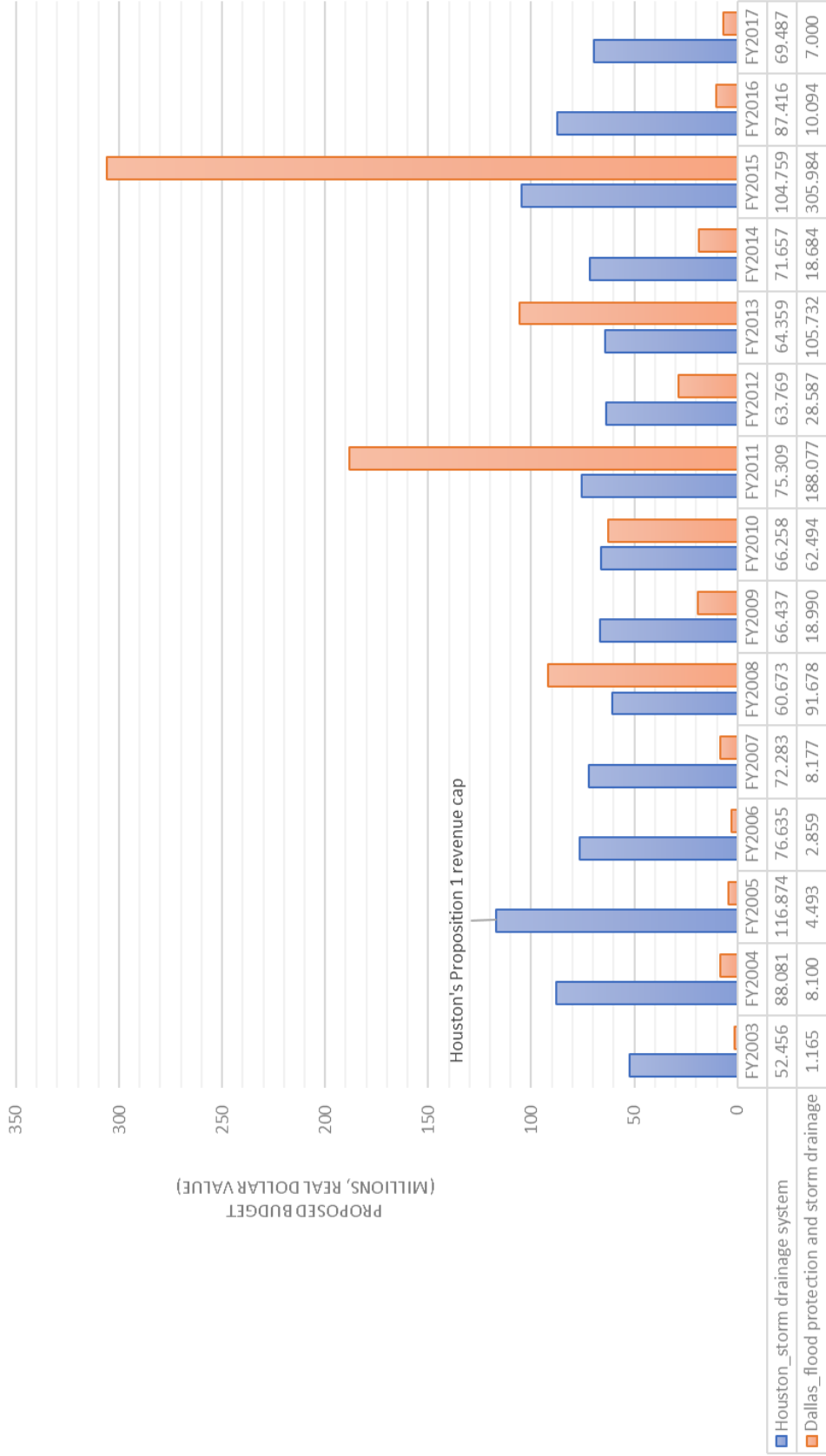
Figure A7: General Fund Expenditure in Public Safety: Houston vs. Dallas



1. Sources: for Houston - fiscal year operating budgets reports FY2004-FY2018; for Dallas - fiscal year annual budget reports FY2002-2018.

2. Note: Public safety in Houston includes fire, municipal courts – administration, municipal courts – justice, and police (https://www.houstontx.gov/budget/04budadopt/II_GFS.pdf); public safety in Dallas includes court & detention services, fire rescue, police department and office of emergency management (https://dallascityhall.com/departments/budget/financialtransparency/AnnualBudget/FY06-07_BudgetOverview.pdf).

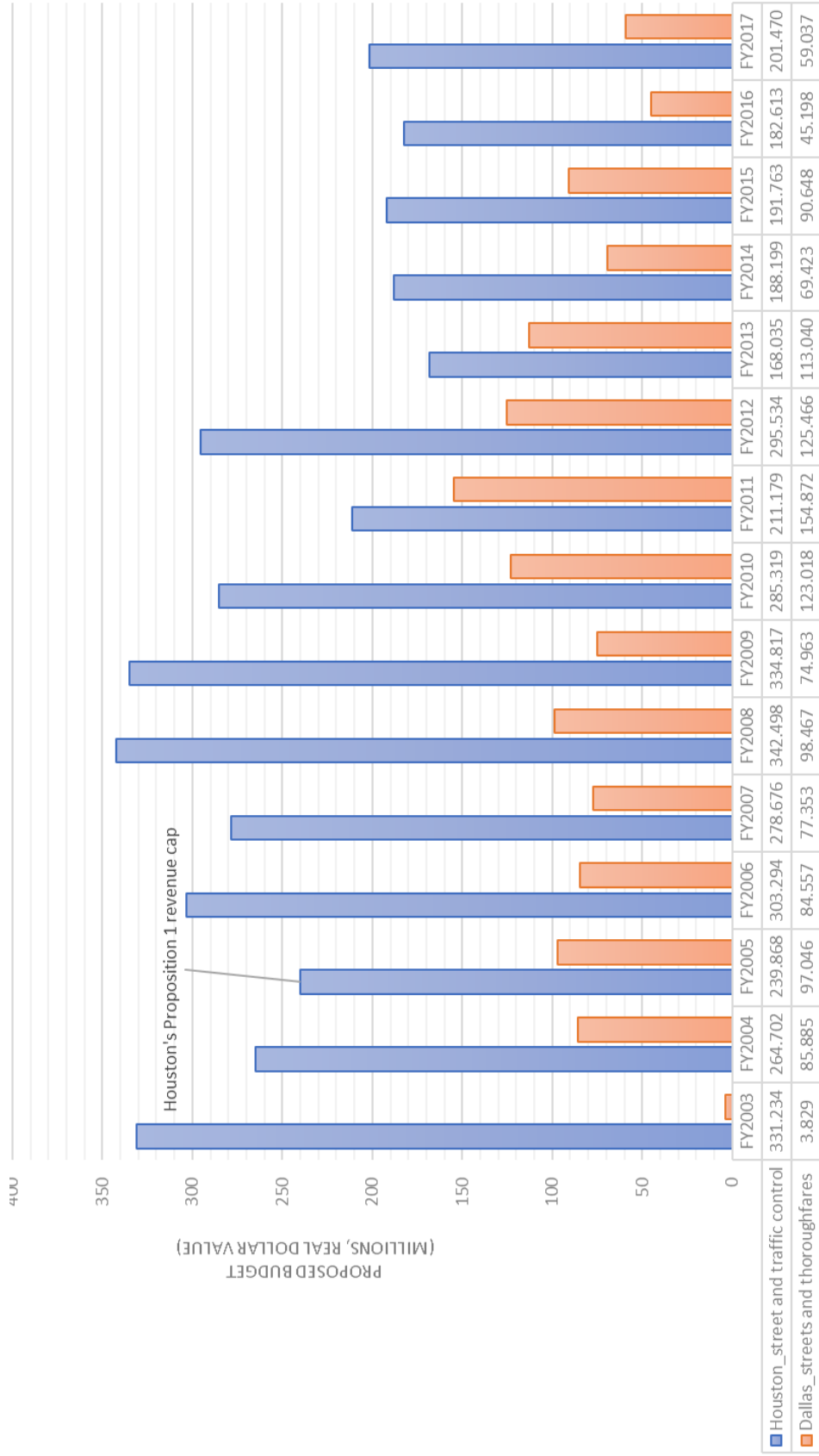
Figure A8: Capital Improvement Plan – Storm Drainage: Houston vs. Dallas



Sources: for Houston – listed in Figure A3; for Dallas - fiscal year annual budget reports FY2002-2018.

Note: Houston’s storm drainage capital improvement program and Dallas’ flood protection and storm drainage one share similar mission (according to the City of Houston’s Fiscal Year 2014-2018 Capital Improvement Plan, Storm Drainage System; and the city of Dallas’ FY2006-07 Adopted Capital Improvement Budget).

Figure A9: Capital Improvement Plan – Street and Traffic Control: Houston vs. Dallas



Sources: for Houston – listed in Figure A3; for Dallas - fiscal year annual budget reports FY2002-2018.