Fiscal Impact Analysis of Hunter/Cole Ranch Municipal Management Districts

Fiscal Impact Analysis Report

City of Denton, Texas

Prepared for:
The City of Denton

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FISCAL | ECONOMIC | PLANNING

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I. EXECUTIVE SUMMARY

The purpose of this Fiscal Impact Analysis ("FIA") is to provide information to the City of Denton related to the fiscal impact of the proposed Hunter Ranch and Cole Ranch Municipal Management Districts ("Hunter/Cole MMD" or "Hunter/Cole Ranch"). An FIA determines whether revenues generated by development are sufficient to cover the costs resulting from that development — specifically, those costs associated with maintaining current levels of service given the additional service and facility demands that growth places on a jurisdiction.

The City of Denton has been in discussions with Hillwood and Stratford Land ("the developers" or "development team") regarding the development of Hunter Ranch and Cole Ranch on a 6,340-acre area to the Southwest of the city's downtown since 2008. In February 2019 the City passed a resolution of support for the formation and operation of the Hunter Ranch and Cole Ranch Municipal Management Districts. Municipal Management Districts ("MMDs") are special tax assessment districts and political subdivisions of the State of Texas. MMDs may levy taxes and issue bonds in order to provide the infrastructure needed to serve raw land development. As development progresses, the Management District can then provide supplemental services and improvements.

Hunter/Cole Ranch has the potential to significantly expand the City of Denton's economic base and municipal tax base. As an MMD, it also has the authority and revenue raising tools to self-fund a portion of the improvement projects needed to serve the development proposed as well as some of the ongoing expenses associated with maintaining those improvements.

The City of Denton is currently evaluating the impact of the proposed project and negotiating terms of approval with the development team. TischlerBise is one of several consulting firms working with the City to inform this decision-making process. TischlerBise's role was to calculate **the net fiscal impact of the proposed Hunter/Cole Ranch development to the City's general operating and debt service funds, the Roadway Impact Fee Fund, and the Street Improvement Fund. Additionally, we examined the fiscal impact to the City's Utility Funds to provide the City with cost and revenue projections for use in its own rate analyses.** The City of Denton owns and operates the electric, water, wastewater, and solid waste utilities that would serve Hunter/Cole Ranch.

This report describes our approach and methodology, presents our findings, and discusses their significance.

DEVELOPMENT PROGRAM

The Hunter Ranch and Cole Ranch developments propose a mix of uses and industries across 6,340 acres of undeveloped land. The City of Denton provided us with the developers' baseline build-out scenario for residential units and commercial and industrial acreage. We derived estimates for the other key indicators from federal and local governmental sources.

Figure 1 below presents the development scenario for Hunter/Cole Ranch in cumulative 10-year increments.

Figure 1. Development Scenario

Development Scenario Summary
Cumulative Growth: 2019 - 2059, 10 year increments
City of Denton, Texas - Hunter and Cole Ranch FIA

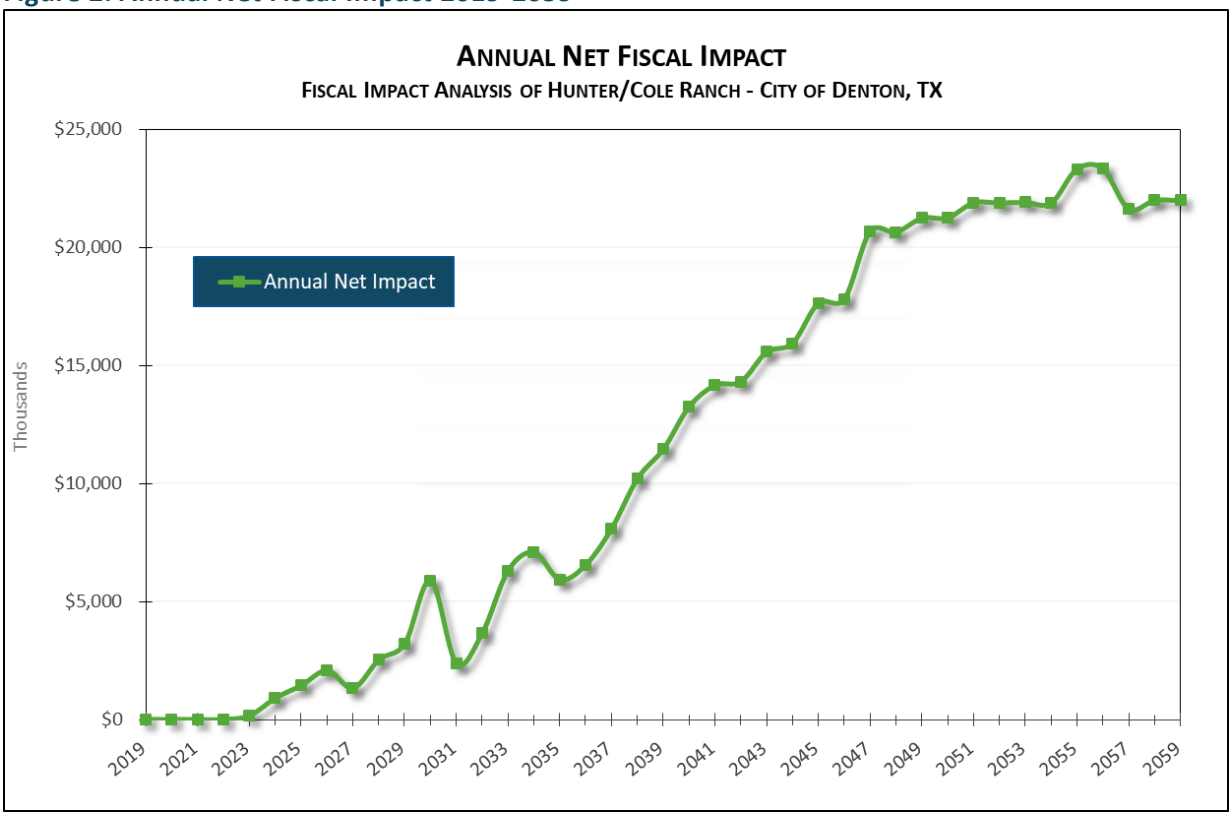
	EXISTING	Year 10	Year 20	Year 30	Year 40
	2019	2029	2039	2049	2059
POPULATION	***134,460***	**11,600**	**40,800**	**55,805**	**55,805**
% growth from existing		*9%*	*30%*	*42%*	*42%*
RESIDENTIAL LOTS	***NA***	**3,600**	**9,600**	**12,400**	**12,400**
SINGLE FAMILY	*30,450*	3,000	9,000	12,400	12,400
MULTIFAMILY	*19,190*	800	4,800	6,450	6,450
TOTAL UNITS	***49,640***	**3,800**	**13,800**	**18,850**	**18,850**
% growth from existing		*7.7%*	*27.8%*	*38.0%*	*38.0%*
NONRESIDENTIAL ACRES	***NA***	**71**	**486**	**741**	**741**
RETAIL SF	*5,470,258*	137,214	1,692,306	2,957,724	2,957,724
OFFICE SF	*6,429,066*	137,214	1,692,306	2,957,724	2,957,724
INDUSTRIAL SF	*13,619,179*	585,446	2,536,934	3,122,381	3,122,381
INSTIT SF	*4,529,955*	0	0	0	0
TOTAL NR DEVELOPMENT (SF)	***30,048,460***	**859,874**	**5,921,546**	**9,037,829**	**9,037,829**
% growth from existing		*3%*	*20%*	*30%*	*30%*
RETAIL JOBS	*12,818*	203	2,498	4,365	4,365
OFFICE JOBS	*19,782*	203	2,498	4,365	4,365
INDUSTRIAL JOBS	*15,772*	864	3,744	4,608	4,608
TOTAL JOBS	***48,372***	**1,269**	**8,739**	**13,338**	**13,338**
% growth from existing		*2.6%*	*18.1%*	*27.6%*	*27.6%*

Source: City of Denton; U.S. Census American Community Survey, 2015 - 2017 estimates; ITE 10th Edition (2017).

SUMMARY OF FISCAL IMPACT RESULTS

The fiscal impacts of growth are shown below in the following figures. Net fiscal results are **revenues minus costs in each year**, reflecting operating and capital costs for all services modeled. Data points above the $0 line represent annual surpluses; points below the $0 line represent annual deficits. Surpluses in any one year are not carried forward to the next year.

Figure 2. Annual Net Fiscal Impact 2019-2059



The cumulative totals shown below reflect total revenues and expenditures over the 40-year time frame. As shown, there is a cumulative positive fiscal impact for the funds analyzed, with the exception of the Roadway Impact Fee Fund for which the fiscal impact is essentially neutral. It should be noted that this analysis projects roadway impact fee revenues based on the conceptual phase development program and impact fee rates from the City of Denton's 2015 Roadway Impact Fee Study; costs are projected separately based on the projected increase in transportation demand.[1] In practice, roadway impact fee rates are likely to be adjusted periodically to reflect changes to growth and the Roadway Capital Improvement Plan. The MMD will also contribute revenue from a Contract Tax as outlined in the Operating Agreement to assist in funding impact fee-eligible projects.

Figure 3. Summary of 40-Year Cumulative Fiscal Impacts to City of Denton

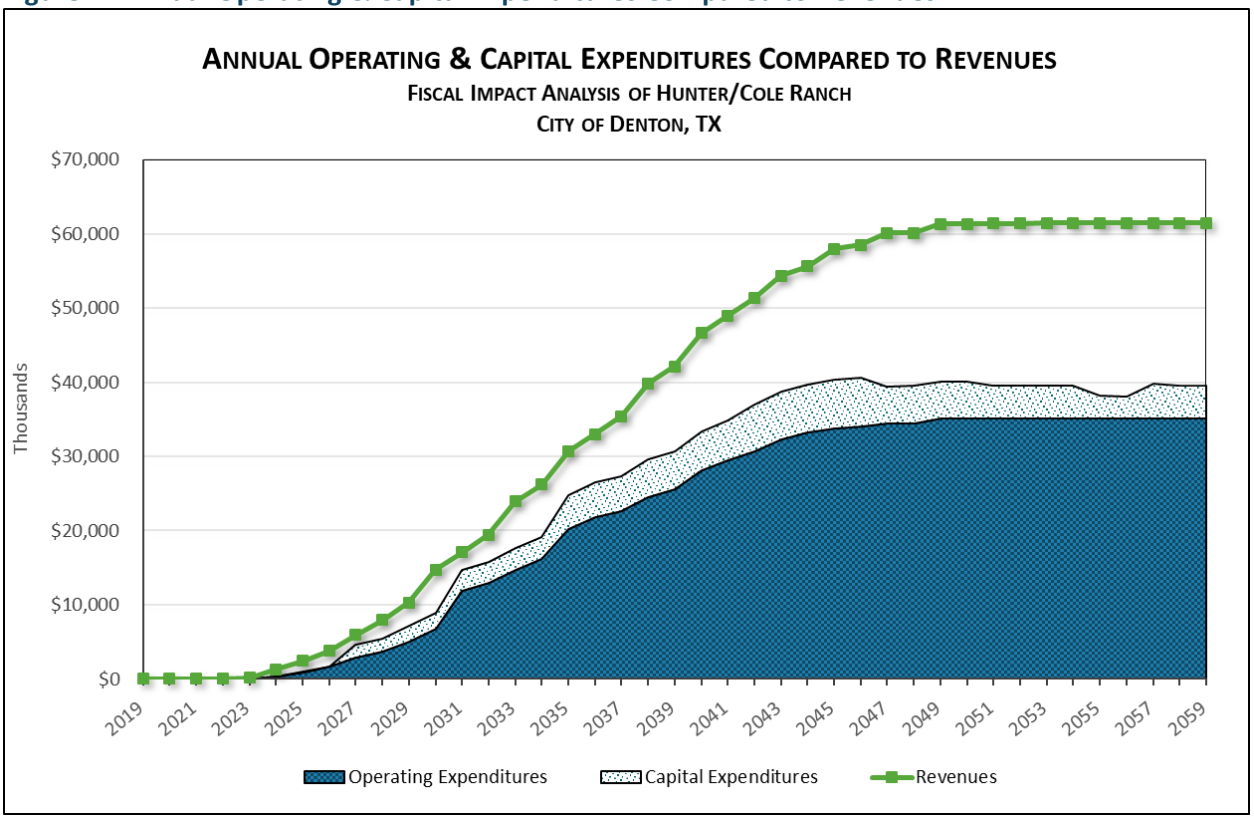
Cumulative Fiscal Impact (x$1,000s)
City of Denton - Fiscal Impact Analysis

CATEGORY	Cumulative Revenues	%	Cumulative Expenditures	%	Net Fiscal Impact
General Fund	$1,148,231	*70%*	$867,704	*77%*	**$280,528**
Debt Service Fund	$335,073	*21%*	$142,035	*13%*	**$193,038**
Special Revenue: Street Improvement Fund	$96,975	*6%*	$69,372	*6%*	**$27,603**
Special Revenue: Roadway Impact Fee Fund	$49,008	*3%*	$51,657	*5%*	**($2,648)**
TOTAL	**$1,629,288**	***100%***	**$1,130,768**	***100%***	**$498,520**

For further detail, operating and capital impacts are separated in the following figure.

[1] The 2015 City of Denton Impact Fee Schedule provides distinct impact fee rates to a detailed inventory of potential land uses. The conceptual phase build-out projections have not yet identified land uses to the level of detail needed to assign applicable impact fee rates to specific land uses. For example—supermarkets and department stores both fall into the "Retail" land use category. Per the 2015 Roadway Impact Fee Schedule, impact fees for "Supermarket" (ITE Land Use Code 850) are collected at the rate of $5,204.04 per 1,000 SF, compared to a collection rate of $1,123.46 per 1,000 SF for "Department Store" (ITE Land Use Code 875). The difference in these rates is related to the level of demand each land use is expected to place on roadway infrastructure. The FIA used the ITE Trip Generation Rate for Land Use Code 810 ("Shopping Center") for Retail, which reflects travel demand for an average Retail land use. "General Office Building" or ITE Land Use Code 710 was utilized for Office, which is likewise the closest approximation to an average Office land use in terms of trip generation.

Figure 4. Annual Operating & Capital Expenditures Compared to Revenues



As a development-finance tool, Municipal Management Districts allow private property owners to access low-interest financing for public infrastructure projects. The development team and the City of Denton have identified improvement projects required to serve the Hunter/Cole Ranch Master Planned Community that will be financed by the MMD or the developer.

The table below inventories the infrastructure projects and other capital investments triggered by the proposed development of Hunter/Cole Ranch. Capital costs are categorized as either "City Funded" or "MMD/Developer Funded." **Only those projects required to maintain current levels of service are identified here—planned investments in private amenities for the exclusive use of Hunter/Cole Ranch MMD residents are excluded from this analysis and from the list below.**

Non-utility capital projects and costs are allocated to the City of Denton and the MMD/Developer in the detailed capital project inventory depicted in Figure 5 on the following page. The methodology underlying these projections and cost assumptions is discussed in detail in the *Revenue and Expenditure Methodology Chapter* of the report.

Figure 5. Capital Facilities and Expenditure Inventory (General, Special, and Debt Service Funds)

Non-Utility Capital Facilities and Allocation of Costs ($1,000s)

Fiscal Impact Analysis - Denton, TX

DEPARTMENT - Facility	Quantity	Total Square Footage	Capital Costs ($1,000s) Total	City of Denton	MMD / Developer
Parks and Recreation*					
Recreation Center Building	1	70,000	$11,900	$11,900	$0
Hunter Ranch City Park (54 acres)	1	2,352,240	$12,493	$8,534	$3,959
Cole Ranch City Park (50 acres)	1	2,178,000	$11,861	$7,902	$3,959
Neighborhood Parks (5 acres ea)	4	653,400	$4,214	$0	$4,214
Pocket Parks / Dog Parks (2 acres ea)	30	2,613,600	$3,000	$0	$3,000
Regional Trails	23 miles	1,212,275	$11,537	$0	$11,537
Community Trails	35 miles	1,112,958	$13,860	$0	$13,860
Parks & Rec Department - Vehicles	24	-	$864	$864	$0
Parks & Rec Department - Service Station Annex	1	10,684	$1,537	$1,537	$41
Parks & Rec Department - Parking	1	10,667	$480	$480	$41
Fleet & Facilities Management					
Facilities - Service Station Annex	1	45,652	$8,394	$8,394	$176
Facilities - Vehicles and Equipment	24	-	$523	$523	$0
Fleet - Service Station Annex	1	186,474	$13,910	$13,193	$718
Fleet - Vehicles and Equipment	150	-	$2,700	$2,700	$0
General Government					
General Government - Administrative Space	-	67,913	$11,142	$11,142	$0
General Government - Vehicles	38	-	$1,140	$1,140	$0
Transportation					
On-Site and Regional Roadway Projects[4]	-	-	$241,157	$0	$241,157
Systemwide Improvements[5]	-	-	$40,116	$40,116	$0
Streets - Vehicles	53	-	$3,028	$3,028	$0
Streets - Service Station	-	61,765	$4,561	$4,324	$238
Lakes / Dams/ Spillways etc.	TBD		$37,800	$0	$37,800
Police					
Police - Substation	20,630	-	$5,000	$0	$5,000
Police - Patrol Vehicles	109	-	$4,711	$4,711	$0
Fire and EMS					
Fire - Fire Substation*^^	2	15,721	$9,670	$4,670	$5,000
Fire - Fire Engines / Ladder Trucks	8	-	$6,975	$6,975	$0
Fire - Vehicles	32	-	$7,360	$7,360	$0
Library					
Library^	1	21,516	$4,564	$4,564	$0
		TOTAL:	**$500,026**	**$168,866**	**$331,593**

^ Library cost estimate includes opening day collection materials.
^^ Fire Substation is the second of two substations triggered by the development; the first will be funded by the developer.
*Developer contribution towards City Parks of $3,950,000 provided by City of Denton 01/16/2020

General Notes:

[1] Cost estimates represent the initial purchase and, for vehicles and equipment, replacement costs.

[2] Debt financing expenses are not included.

[3] 50 percent of Service Station Annex costs identified in Quorum report are attributable to Hunter/Cole Ranch.

[4] Costs reflect the specific project cost estimates identified in February 12, 2020 version of Cole and Hunter Ranch Developments Travel Demand Model Report submitted by HDR Engineering, Inc.

[5] Costs reflect projected growth in system-level transportation demand over the analysis' study period.

UTILITY FUNDS

Utility Funds were included in our analysis at the request of the City of Denton to evaluate whether the income generated from new customers and users would cover the costs required to provide service to the MMD while maintaining existing levels of service throughout the city.

CUMULATIVE FISCAL IMPACT FOR UTILITY FUNDS

As depicted in the figure below, the net fiscal impact of the MMD is positive across all utility funds. Capital Expenditures include utility infrastructure projects, as well as capital equipment and vehicles. A detailed inventory of capital expenditures is presented in Figure 7.

Figure 6. Cumulative 40-Year Net Fiscal Impact by Utility Fund (1,000s)

40-Year Net Cumulative Impact - Utilty Funds
City of Denton - Fiscal Impact Analysis

Electric Fund*	
Operating Revenues	$966,695
Operating Expenditures	$565,517
Capital Expenditures	$115,077
NET CUMULATIVE IMPACT	**$286,102**
Water Fund	
Operating Revenues	$389,015
Impact Fee Revenues	$153,035
Operating Expenditures	$238,853
Capital Expenditures	$241,963
NET CUMULATIVE IMPACT	**$61,235**
Wastewater Fund	
Operating Revenues	$279,736
Impact Fee Revenues	$144,469
Operating Expenditures	$196,973
Capital Expenditures	$226,743
NET CUMULATIVE IMPACT	**$490**
Solid Waste	
Revenues	$304,055
Operating Expenditures	$246,914
Capital Expenditures	$36,378
NET CUMULATIVE IMPACT	**$20,763**

*Electric Fund projections provided by City of Denton.

The table below inventories the utility infrastructure projects and other capital investments triggered by Hunter/Cole Ranch. Capital costs are categorized as either "City Funded" or "MMD/Developer Funded."

Note that replacement facilities and major maintenance are not included in the capital costs presented below. Facilities needed to serve new growth are reflected. For capital improvements that are purchased—vehicles, equipment, etc., the model and fiscal results include both the initial purchase cost and the cost to replace the item after it reaches its useful life.

Figure 7. Capital Facilities and Expenditure Inventory (Utility Funds)

Utility Funds - Capital Facilities and Expense Allocation ($1,000s)

Fiscal Impact Analysis - Denton, TX

FUND - Facility	Quantity or Square Footage	Capital Costs ($1,000s) Total	City of Denton	MMD / Developer
Water Fund				
CIP Projects per FNI Report**	19 projects	$224,341	$153,035	$71,307
Service Station Annex	17,902	$1,969	$1,900	$69
Vehicles	24	$987	$987	$0
Wastewater Fund				
CIP Projects per FNI Report***	15 projects	$231,837	$144,469	$87,367
Service Station Annex	11,264	$1,282	$1,239	$43
Vehicles	21	$924	$924	$0
Solid Waste Fund				
Materials Recovery Facility	37,500	$3,144	$3,000	$144
Transfer Station	25,000	$6,975	$6,075	$900
Bulk Drop Off Facilities & Weigh Station	4,159	$1,788	$1,772	$16
Administrative Space	2,900	$649	$638	$11
Solid Waste Haulers / Commercial Trucks	38	$5,510	$5,510	$0
Roadway to Transfer Station	25,725	$660	$561	$99
Vehicle Maneuvering	65,000	$705	$455	$250
Electric Fund*				
Substation	1	$18,077	$18,077	$0
Distribution Lines (Cost to Serve)	NA*	$38,147	$38,147	$0
Main Feeder Circuits	NA*	$41,357	$41,357	$0
Vehicles	37	$2,250	$2,250	$0
Lighting	NA*	$12,177	$0	$12,177
Administrative / Shop Space	40,960	$10,350	$10,192	$158
TOTAL:		**$603,132**	**$430,589**	**$172,542**

Source: Quorum; TischlerBise; City of Denton; FNI

*Cost estimates for total distribution lines and feeder circuits provided by DME.

**Developer will also contribute 2.5 acres of land for Water Booster Pump Station.

**Developer will also contribute 1.5 acres of land for Hickory Creek Wastewater Lift Station.

General Notes:

[1] Cost estimates represent the initial purchase and, for vehicles and equipment, replacement costs.

[2] Debt financing expenses are not included.

[3] 50 percent of Service Station Annex square footage identified in Quorum Analysis (Jan 16, 2020) is attributable to Hunter/Cole

[4] Per the Hunter-Cole Development Analysis submitted by FNI on Feb 7, 2020, total CIP Projects for Water and Wastewater Funds equal $328,612,700 and $290,441,800 respectively (land excluded). Of these costs, $224,341,400 and $231,836,500, respectively, are a result of projected demand from the Hunter/Cole Ranch developments. The remainder is attributable to projected use by the entire system.

The methodology and approach utilized to arrive at the capital cost projections is detailed in the *Revenue and Expenditure Detail* chapter of this report.

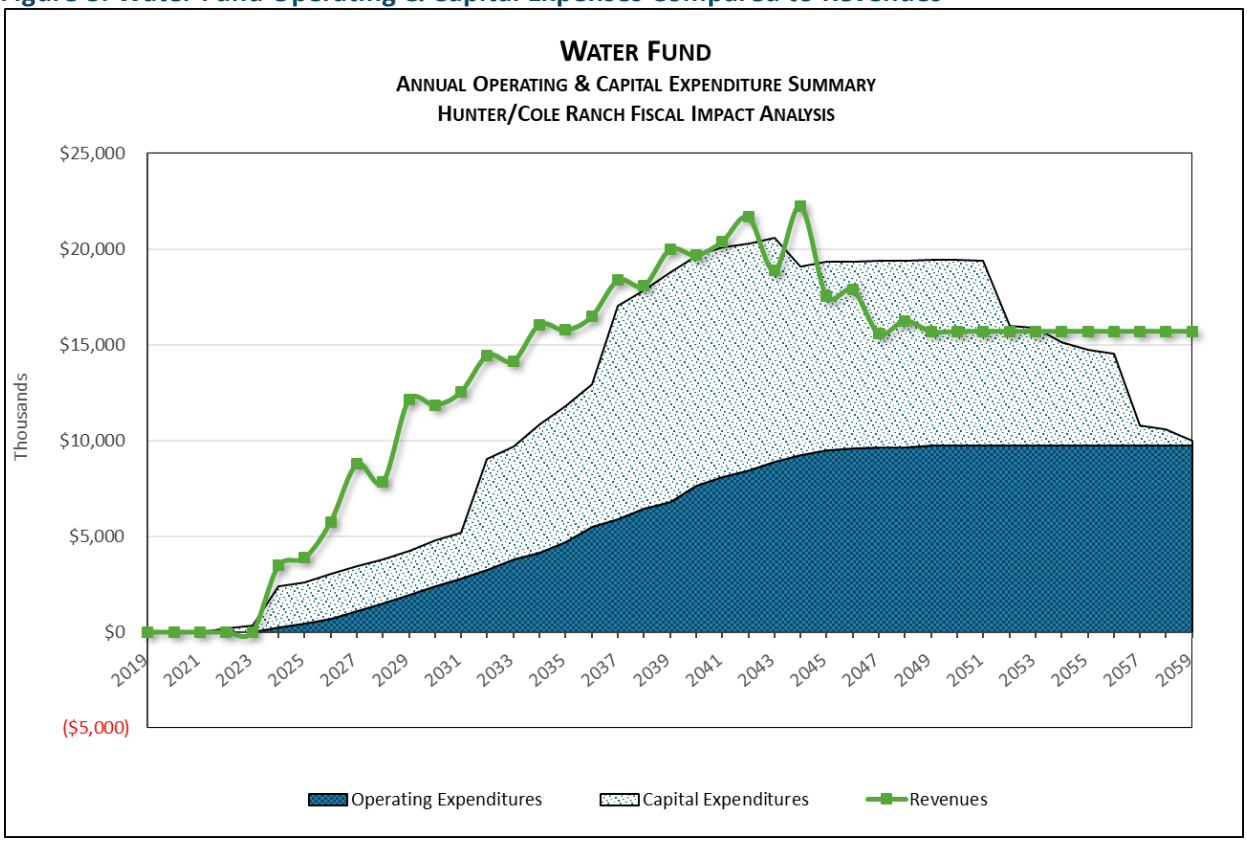
Net Annual Fiscal Impact for Utility Funds

The annual net fiscal impact on the utility funds is presented in the figures that follow.

Water Fund

Water Fund revenues are expected to exceed operating expenditures throughout the study-period. Minor capital deficits in the amounts of approximately $172,000 and $345,000 are incurred in 2022 and 2023, respectively, as design and predevelopment expenditures for the first of three expansions to the Lake Ray Roberts Water Treatment Plant are incurred prior to the delivery of revenue-generating residential and nonresidential development. Revenues are then projected to exceed capital expenditures until 2043, as depicted in the figure below. Note that the spikes depicted in Water Fund revenues are the result of impact fees.

Figure 8. Water Fund Operating & Capital Expenses Compared to Revenues

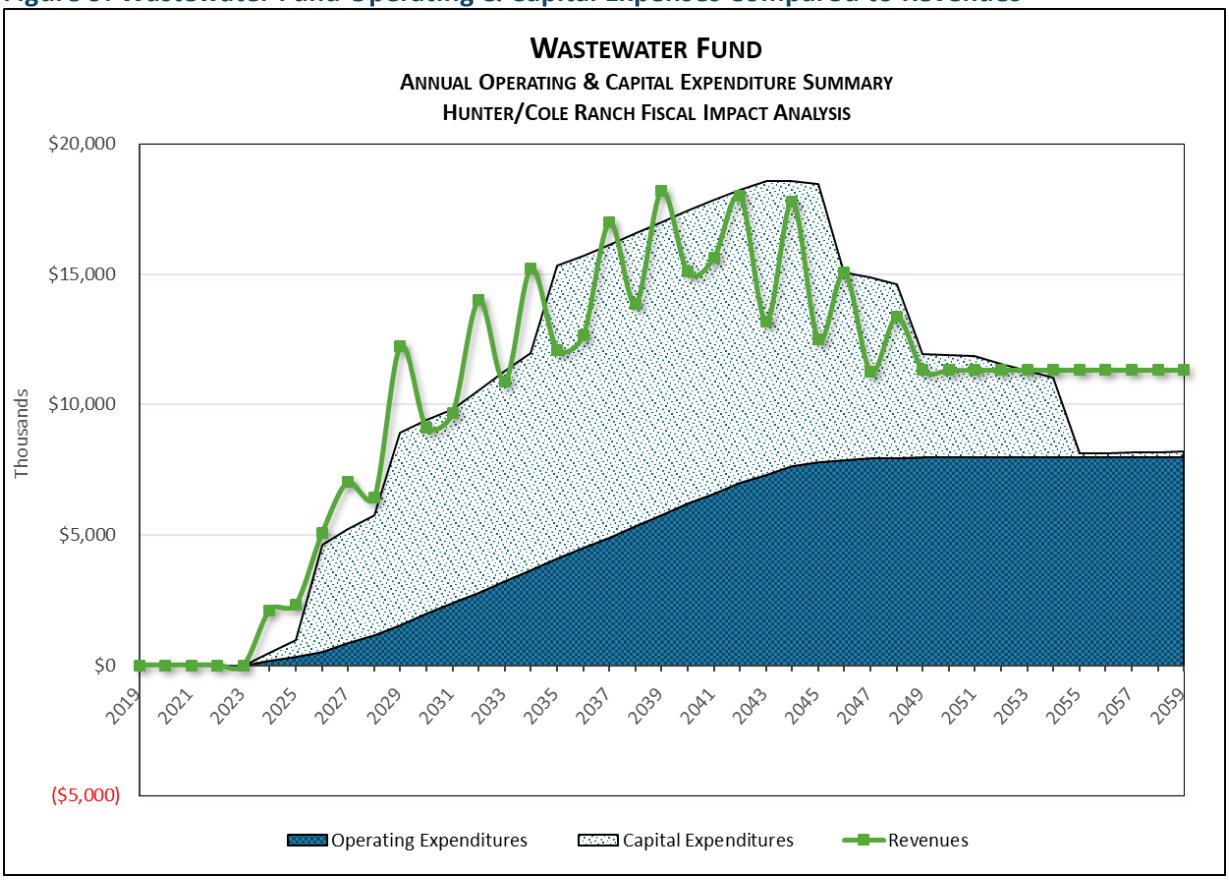


The capital expenditures included in this analysis are directly attributable to demand from Hunter Cole.[2] For the purposes of this analysis, these projects are projected to be debt financed and occur between 2024 and 2039. New development, and thus impact fee revenue begins to peak around 2039, and from 2045-2054 annual deficits are incurred as impact fee revenue declines and then stops while debt payments for the major infrastructure projects projected in the *FNI Report* and developed from 2024-2039 continue. **The impact fee revenue surplus accrued during the first half of the study period is projected to be sufficient to compensate for the capital deficit projected in the second half of the development period.** Per conversations with City staff, the MMD will also contribute revenue from a Contract Tax as outlined in the Operating Agreement to assist in funding impact fee eligible Water projects.

Wastewater Fund

Wastewater Fund revenues are generally expected to meet or exceed operating and capital expenditures over the course of the development, as depicted in Figure 9 below.

Figure 9. Wastewater Fund Operating & Capital Expenses Compared to Revenues



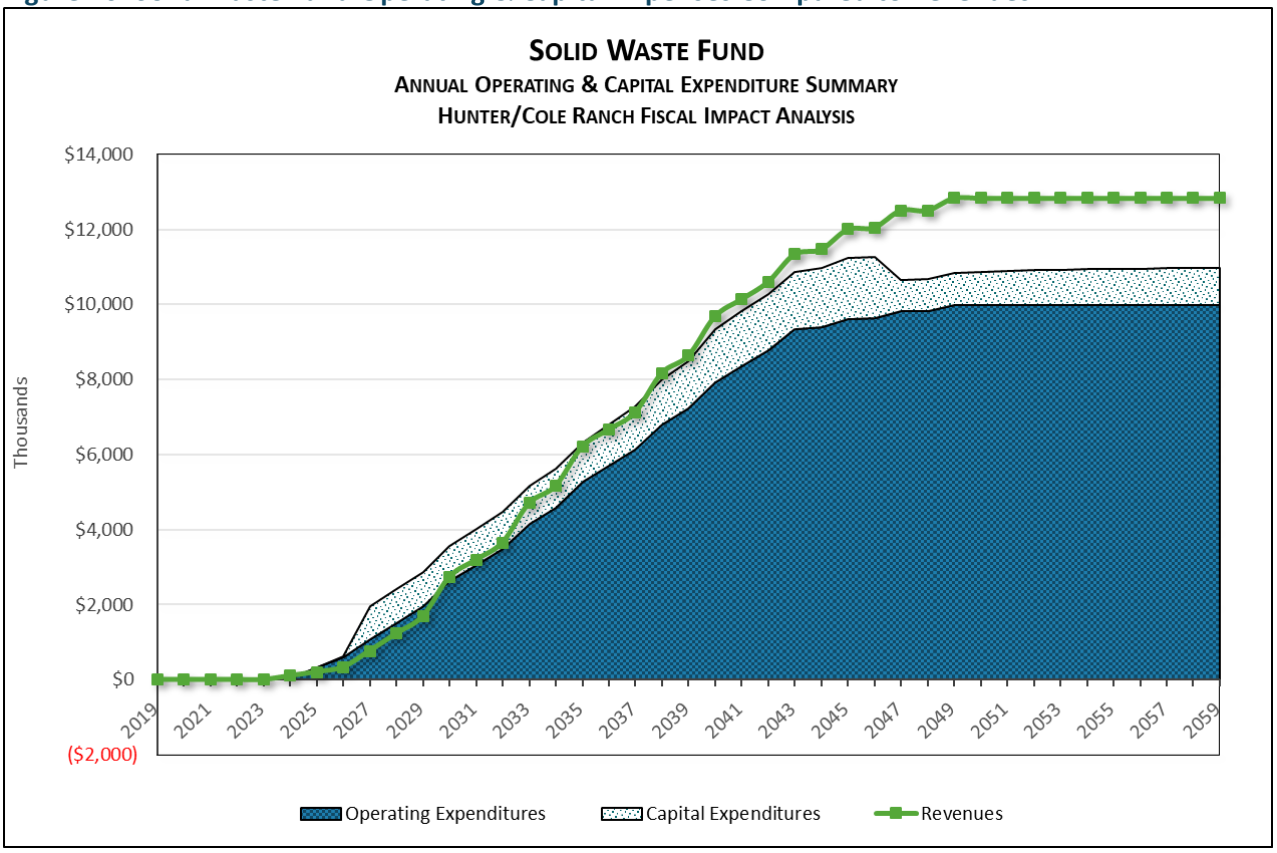
[2] The January 7th, 2020 FNI report calculated the share of project costs attributable to Hunter Cole (based on projected Hunter/Cole demand relative to demand from the broader service area); these cost estimates were used for the fiscal impact analysis.

The spikes in the figure above represent impact fee payments. Although the timing of impact fee payments does not directly correspond with capital costs, revenues accrued in years where impact fees exceed capital expenses cover deficits in other years. Impact-fee eligible Wastewater projects will also receive funding from the MMD's Contract Tax as outlined in the Operating Agreement.

Solid Waste Fund

As depicted in the figure below, Hunter/Cole Ranch is projected to have a relatively neutral net annual fiscal impact to the City of Denton's Solid Waste Fund for most of the study period. Deficits occur, however, from 2025-2037. This analysis assumed that construction of the planned Material Recovery Facility and Transfer Station will occur in 2027 (included in the Service Station Annex). The minor deficits projected prior to the delivery of the Service Station Annex are due to projected capital investments in Solid Waste vehicles including haulers and commercial trucks, which are needed to serve new customers.

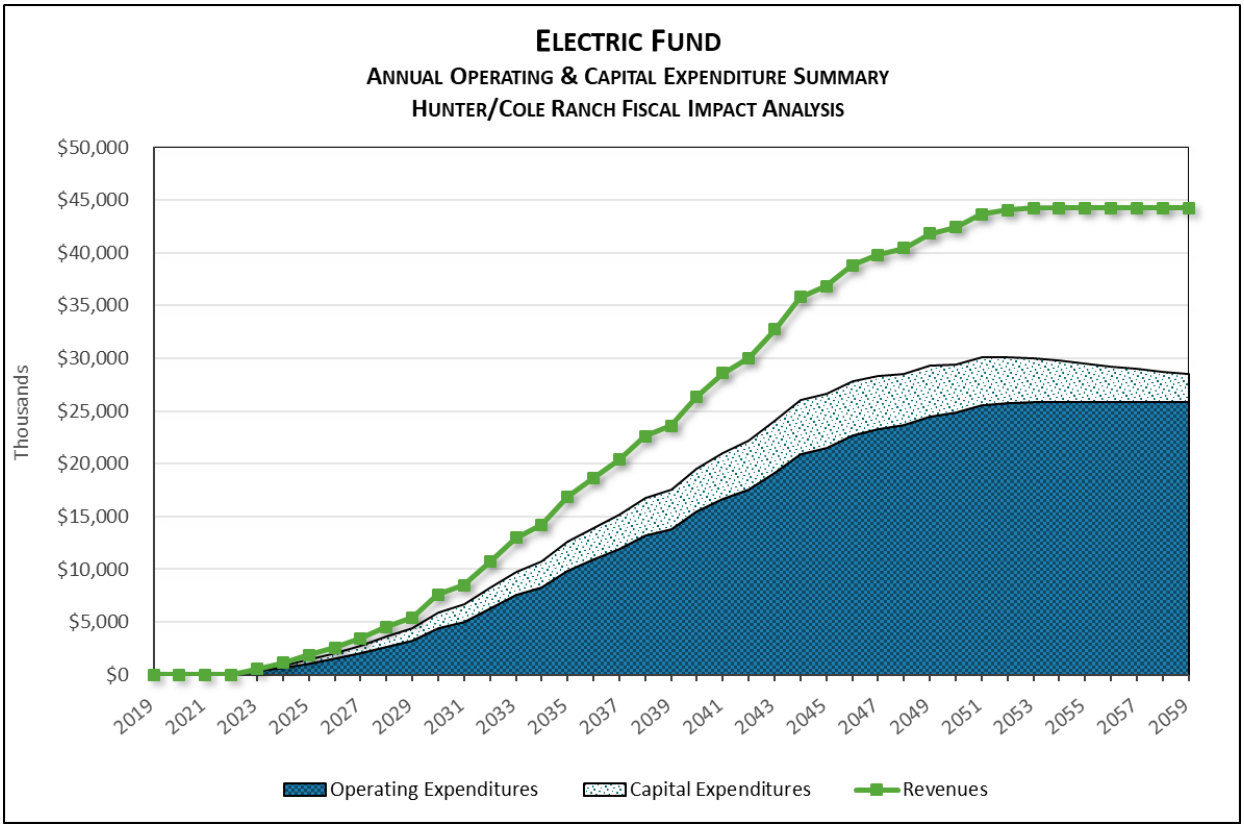
Figure 10. Solid Waste Fund Operating & Capital Expenses Compared to Revenues



Electric Fund

Electric revenues and expenses associated with Hunter Cole were provided by the City of Denton and are illustrated in terms of revenues relative to capital and operating expenditures in the figure below. Revenues are projected to exceed expenditures for each year of the study period.

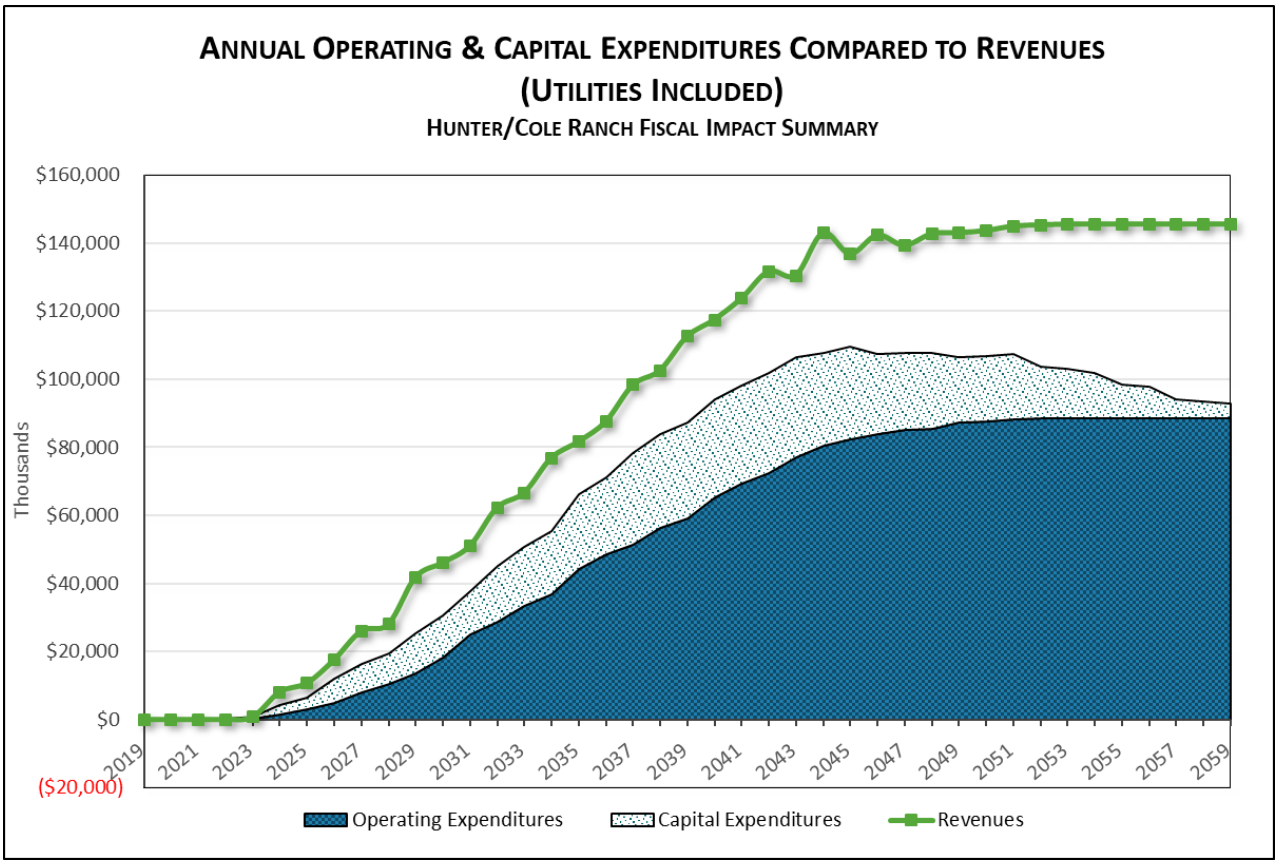
Figure 11. Electric Fund Operating & Capital Expenses Compared to Revenue



OVERALL RESULTS

Per direction from City of Denton staff, the figure below compares annual revenues to annual operating and capital expenditures for the funds analyzed, including utility funds. Note that under current City policy, utility fund revenues are restricted use and cannot be used toward any other fund's activities.

Figure 12. Operating and Capital Expenditures Compared to Revenues for Funds Analyzed Combined



KEY FINDINGS & CONCLUSIONS

The following conclusions can be drawn from the FIA results presented in this report:

GENERAL, DEBT SERVICE, AND SPECIAL REVENUE FUNDS

- The proposed Hunter/Cole Ranch development is projected to have a net cumulative positive fiscal impact on the City over the 40-year study period. The net positive impacts are driven primarily by sales and property tax revenue from development. This allows for the City of Denton to benefit fiscally from the development proposed.

- It should be noted that, on average, the resulting annual net positive impact to the General Fund and Debt Service Fund is approximately $7.0 million, which reflects approximately 5.4 percent of the City of Denton's Fiscal Year 2019 operating budget.

- The Street Improvement Fund is funded through franchise fees including utility fund revenue surpluses (as well as non-growth-related revenues). The Street Improvement Fund's projected cumulative surplus is partially attributable to the fact that utility fund revenues will increase as a result of Hunter/Cole Ranch. Another reason for the surplus is that although the additional roadways added to the City of Denton's lane mile inventory increase Street Improvement Fund operating and capital outlay costs, major capital expenditures are generally accounted for in other funds. Per conversations with City staff, this analysis assumes that roadway construction is either funded by the MMD through adjustments to the District tax rate or by future development through the Roadway Impact Fee Fund. Public works equipment and the Service Station Annex are funded out of the General Debt Service Fund.

    - Note that the increases in franchise fee revenue could be allocated to another fund at the City's discretion. As discussed previously, this analysis assumed that the 10-year policy of transferring excess franchise fee revenue to the Street Improvement Fund would continue throughout the 40-year study period.

- Demand for fire services will trigger the need to expand capital facilities during the second half of the development's growth period, beyond the developers' initial land and financial contributions as identified in the draft Operating Agreement. A new fire substation is triggered in 2028—to be funded up to $5 million from the developer—and a second fire substation is triggered in 2039, which is assumed as a City cost.

- Although the projected growth in revenue is relatively significant, the City should continue to plan and be prepared to expand both its facilities and operational capacity—the Hunter/Cole Ranch development is projected to be fiscally balanced in the sense that it is projected to produce enough revenue to cover its costs, but it will not be self-contained. Growth in population, vehicle trips, and police and fire calls, for instance, is projected to increase average annual operating expenditures to the City by approximately $21 million per year.

- Overall, Hunter/Cole Ranch is projected to generate sufficient revenue to cover both the capital and operating costs associated with meeting the additional demand it will place on City services.

UTILITY FUNDS

- Water and Wastewater Fund revenues cover operating expenditures throughout the 40-year study period. Water and Wastewater impact fee revenue is sufficient to cover the development's share of water and wastewater capital costs.

- Impact fee revenue is a function of the City of Denton's current fee schedule and projected development—to the extent that development does not keep pace with projections, impact fee revenue may fall short of projections. Because major Water and Wastewater infrastructure must be constructed prior to full build-out in order to serve new residents and businesses, the City may incur capital deficits for these funds if development does not proceed at the rate or intensity presented in the baseline scenario. To mitigate this risk, the MMD will adjust District tax rates as needed to fund the difference between impact fee revenue and the Water/Wastewater Capital Improvement Plan project costs attributable to the development.

- This report assumed that the Solid Waste Service Station Annex including the Materials Recovery Facility and Transfer Station would be "front-loaded" and completed in one phase in 2027 per the Public Facilities report completed by Quorum Architects as a party of this analysis. This results in six years of capital deficits. To the extent possible, direct financing of recurring capital costs such as solid waste haulers, would improve the fiscal results for the Solid Waste fund.

- Given the current level of detail available regarding the number and service requirements of commercial Solid Waste customers, however, additional analysis of the net fiscal impact of Hunter/Cole Ranch on the Solid Waste Fund should be completed as property-specific details of the development program are established.

- Overall, the cumulative fiscal impact on all utility funds is projected to be positive.

II. MAJOR ASSUMPTIONS & METHODOLOGIES

OVERVIEW OF METHODOLOGY

An FIA determines whether revenues generated by new development are sufficient to cover the costs resulting from that development—specifically, those costs associated with maintaining current levels of service given the additional service and facility demands that growth places on a jurisdiction.

Levels of Service ("LOS") reflect public services and infrastructure as currently funded and are typically expressed as a *cost per demand unit***.** For example, maintenance of parks would be expressed as a *cost per acre of parks* to maintain. For the City of Denton, we analyzed the fiscal impact of the proposed Hunter/Cole Ranch development based on current citywide levels of service and any known infrastructure or service needs.

GENERAL APPROACH

The Fiscal Impact Analysis for the City of Denton incorporates the case study-marginal cost approach wherever possible. The **case study-marginal methodology** is the most realistic method for evaluating fiscal impacts. Unique demographic or other characteristics of new development are accounted for, as well as the extent to which a particular infrastructure or service operates under, over, or close to capacity. Available facility capacity determines the need for additional capital facilities and associated operating costs.

Certain costs are impacted by general growth, regardless of location; these are projected using a **marginal/average cost hybrid methodology** that incorporates capacity and thresholds for staffing, but projects non-salary operating costs using an average cost approach. Some costs and revenues are not expected to be impacted by growth and are therefore considered fixed in this analysis.

The levels of service and cost assumptions used in this analysis are based on TischlerBise's discussions with City of Denton staff, input from the development team, and a detailed analysis of *the City of Denton FY18-19 Adopted Budget and Capital Improvements Programs; City of Denton's Roadway Impact Fee Study; the 2019 Water and Wastewater Impact Fee Study, the FY2018 Comprehensive Annual Financial Report, the Parks and Trails Master Plan,* staff reports, other relevant financial and planning documents. Additionally, our national experience conducting over 800 fiscal impact analyses was beneficial.

Our analysis also incorporated known roadway, water and wastewater utility, and public works infrastructure needs, as identified in HDR's *Travel Demand Report* (Dec 10, 2019), FNI's *Hunter-Cole Water/Wastewater Impact Analysis* (Feb 7, 2020), and *Quorum Architects City Facility Needs Assessment Report* (Jan 16, 2020). We also completed a thorough evaluation of the draft Operating Agreements between the City and the MMD, convened with City staff, and conducted background research regarding legally reimbursable costs to apportion expenses triggered by growth between the City of Denton and the MMD.

The assumptions outlined in this report are utilized along with the growth projections to calculate the potential fiscal impacts to the City of Denton of the Hunter/Cole Ranch Development over a 40-year time frame. Only citywide impacts are included in this report—for instance, onsite private amenities are excluded from the analysis.

To summarize, our methodological approach included the following steps.

1. Existing demand base and cost and revenue factors such as current population, housing units, employment, and nonresidential square footage were established.[3]
2. Current Levels of Service were identified.
3. The growth scenario to be analyzed was defined.
4. General assumptions regarding the allocation of capital projects and maintenance responsibilities to the developer versus the City of Denton were established.[4]
5. The fiscal impact model was designed to account the assumptions established in Steps 1-4.

The results presented in this report were calculated using a customized fiscal impact model designed specifically by TischlerBise for this assignment.

[3] These are detailed in Appendix A.

[4] Through the MMD structure, the development team will finance a portion of the infrastructure required to maintain current levels of service; the MMD will also be responsible for the operations and maintenance of some facilities that would otherwise be publicly owned and maintained. Likewise, certain infrastructure projects funded by Hunter/Cole MMD will, upon completion, transfer to the City of Denton; for instance, with the exception of private roads, the City will ultimately be responsible for roadway maintenance (excluding right-of-way landscaping) for the majority of MMD funded lane miles.

KEY ASSUMPTIONS

FISCAL YEAR 2019 BUDGET

The Fiscal Year 2019 Budget (Oct 1, 2018 – Sep 30, 2019) is used to represent a "snapshot" of the City's current costs and levels of service. The "snapshot" approach does not attempt to speculate about how services or costs will change over time or whether current levels of service are sufficient or insufficient. Instead, it evaluates the cost implications to the City as it conducts business under the FY2019 budget. The following exceptions and assumptions should be noted:

- **Ad Valorem Property Tax Rate:** Under advisement from City of Denton staff, the FY2020 tax rate of 0.590454 was utilized to project tax revenues. The General Fund portion is 0.385364, and the General Debt Service Obligation Fund portion is 0.20509.
- **Police Expenditures:** Base year police expenditures were adjusted upwards from the FY2019 budget by 20 percent under direction from City staff. Since adopting the FY2019 budget the City of Denton has increased appropriations for the Police Department; per the City Finance Department, this increase in funding and police levels of service is a permanent shift in policy that reflects the City' 5-year Strategic Plan. The upward adjustment to base year police expenditures therefore yields projections that more accurately reflect the costs associated with maintaining current levels of service under the proposed growth scenario.
- **Franchise Fees:** The City collects franchise fees from utility funds—specifically, the Water Fund, Wastewater Fund, Solid Waste Fund, and Electric Fund—among other smaller funds such as gas and cable, in an amount equal to 5 percent of gross annual revenues. FY2019 was the third year of a 10-year policy to transfer all franchise fee revenue in excess of the FY2016 dollar amount to the Streets Improvement Fund, rather than directly to the General Fund. This analysis assumes that this policy remains intact throughout the study period.
- **Revenue Surpluses and Tax Rates:** Positive fiscal impacts are represented as revenue surpluses; as a Fiscal Impact Study, this analysis holds all tax rates constant throughout the 40-year term. ***In reality, the City of Denton will budget based according to its priorities and policies, and surpluses could translate into a potential decrease in the applicable tax rate, whereas deficits may lead to an increase in that rate.***

VARIABLE VERSUS FIXED COSTS AND REVENUES

Costs and revenues that are directly attributable to Hunter/Cole Ranch are included in the fiscal analysis of the development. In all cases, some costs and revenues are not impacted by demographic changes and are assumed to be "fixed." To determine fixed variables, TischlerBise interviewed City staff and reviewed the FY2019 budget and available supporting documentation. Examples of budget items modeled as "fixed," or non-growth related, include:

- Staffing for certain leadership positions; this varies by department, but in many cases, the position of Director is held fixed as the staffing structure does not require or support multiple department heads.
- One-time costs for services unrelated to growth and development.
- Revenue sources that are not growth-related.

LEVELS OF SERVICE

The cost projections are based on a "snapshot approach" in which it is assumed the current level of service, as funded in the City budget and as provided in current capital facilities, will continue through the 40-year analysis period. The 2019 existing demand base data was used to calculate unit costs and service level thresholds. Examples of demand base data include population, dwelling units, employment by industry, vehicle trips, etc. The "snapshot" approach does not attempt to speculate about how levels of service or cost factors will change over time. Instead, it evaluates the implications of development to the City as conducted under the FY2019 budget and informed by discussions with staff.

INFLATION RATE

The rate of inflation is assumed to be zero throughout the projection period, and cost and revenue projections are in constant 2019 dollars. This assumption is in accord with current budget data and avoids the difficulty of forecasting as well as interpreting results expressed in inflated dollars. In general, including inflation is complicated and unpredictable. ***This is particularly the case given that some costs, such as salaries, increase at different rates than other operating and capital costs such as contractual and building construction costs. These costs, in turn, almost always increase in variation to the appreciation of real estate.*** Using constant 2019 dollars reinforces the snapshot approach and avoids these problems.

ENTERPRISE FUNDS

In practice, utility funds are self-sufficient; the City of Denton adjusts rates in order to cover the actual cost of service while also generating a Return on Investment ("ROI") as identified from time to time in targeted municipal policies. The City of Denton is in the process of conducting rate analyses in order to forecast the timing and extent to which utility rates may need to be adjusted to fund potential growth-related capacity expansion projects.

The Utility Fund analysis included in this report presents the fiscal impact of the development to the City's utility funds, assuming no rate adjustments, per direction from the City's Finance Department. Costs are therefore projected based solely on the increase in customers and usage for each utility; revenues are projected based on the current cost of water, wastewater, solid waste, and electric service per the appropriate demand factor (e.g. water produced).

NON-FISCAL EVALUATIONS

It should be noted that while a Fiscal Impact Analysis is an important consideration in planning decisions, it is only one of several issues that should be considered. Environmental and social issues, for example, should also be considered when making planning and policy decisions. The above notwithstanding, this analysis will enable interested parties to understand the fiscal implications of development in the Hunter/Cole Ranch MMD.

DEVELOPMENT PROGRAM

The Hunter Ranch and Cole Ranch developments propose a mix of uses and industries across 6,340 acres of undeveloped or "raw" land. The City of Denton provided us with the developers' baseline build-out scenario for residential units and commercial and industrial acreage. We derived estimates for the other key indicators from federal and local governmental sources.

Figure 13 below presents the development scenario for Hunter/Cole Ranch in cumulative 10-year increments.

Figure 13. Development Scenario

Development Scenario Summary
Cumulative Growth: 2019 - 2059, 10 year increments
City of Denton, Texas - Hunter and Cole Ranch FIA

	EXISTING	Year 10	Year 20	Year 30	Year 40
	2019	2029	2039	2049	2059
POPULATION	***134,460***	**11,600**	**40,800**	**55,805**	**55,805**
% growth from existing		*9%*	*30%*	*42%*	*42%*
RESIDENITAL LOTS	***NA***	**3,600**	**9,600**	**12,400**	**12,400**
SINGLE FAMILY	*30,450*	3,000	9,000	12,400	12,400
MULTIFAMILY	*19,190*	800	4,800	6,450	6,450
TOTAL UNITS	***49,640***	**3,800**	**13,800**	**18,850**	**18,850**
% growth from existing		*7.7%*	*27.8%*	*38.0%*	*38.0%*
NONRESIDENITAL ACRES	***NA***	**71**	**486**	**741**	**741**
RETAIL SF	*5,470,258*	137,214	1,692,306	2,957,724	2,957,724
OFFICE SF	*6,429,066*	137,214	1,692,306	2,957,724	2,957,724
INDUSTRIAL SF	*13,619,179*	585,446	2,536,934	3,122,381	3,122,381
INSTIT SF	*4,529,955*	0	0	0	0
TOTAL NR DEVELOPMENT (SF)	***30,048,460***	**859,874**	**5,921,546**	**9,037,829**	**9,037,829**
% growth from existing		*3%*	*20%*	*30%*	*30%*
RETAIL JOBS	*12,818*	203	2,498	4,365	4,365
OFFICE JOBS	*19,782*	203	2,498	4,365	4,365
INDUSTRIAL JOBS	*15,772*	864	3,744	4,608	4,608
TOTAL JOBS	***48,372***	**1,269**	**8,739**	**13,338**	**13,338**
% growth from existing		*2.6%*	*18.1%*	*27.6%*	*27.6%*

Source: City of Denton; U.S. Census American Community Survey, 2015 - 2017 estimates; ITE 10th Edition (2017).

The development team's concept plan categorizes nonresidential acreage as either commercial or industrial. We applied the following assumptions to the Developers' acreage projections in order to estimate the Retail square footage, Office square footage and Industrial square footage displayed in Figure 13.

- To extrapolate square footage from acreage projections, we assumed an average floor-to-area ratio ("FAR") of 0.28, per input from the development team and based on permitted FAR per zoning.[5]
- Commercial development is allocated equally between Retail space and Office space. This conforms with the development team's prototype projects, including the Alliance Town Center, and generally aligns with the land use assumptions utilized in the Travel Demand Model Report and the Hunter/Cole Water and Wastewater Impact studies completed concurrently with this FIA as a part of the City's decision-making process.[6]

[5] This assumption generally conforms to existing land use patterns while accounting for higher intensity development permitted under the December 2019 zoning amendment for the Hunter/Cole Ranch Master Planned Community. It also aligns with the December 10th, 2019 Draft of the Transportation Demand Management's average estimated FAR.

[6] The development team and City staff instructed TischlerBise to refer to Alliance Town Center as a comparable development in terms of land-use mix assumptions.

III. FISCAL IMPACT ANALYSIS RESULTS

The fiscal impacts to the City of Denton of Hunter/Cole Ranch Municipal Management District are analyzed and discussed in this section of the report. Fiscal impact results are presented in several ways:

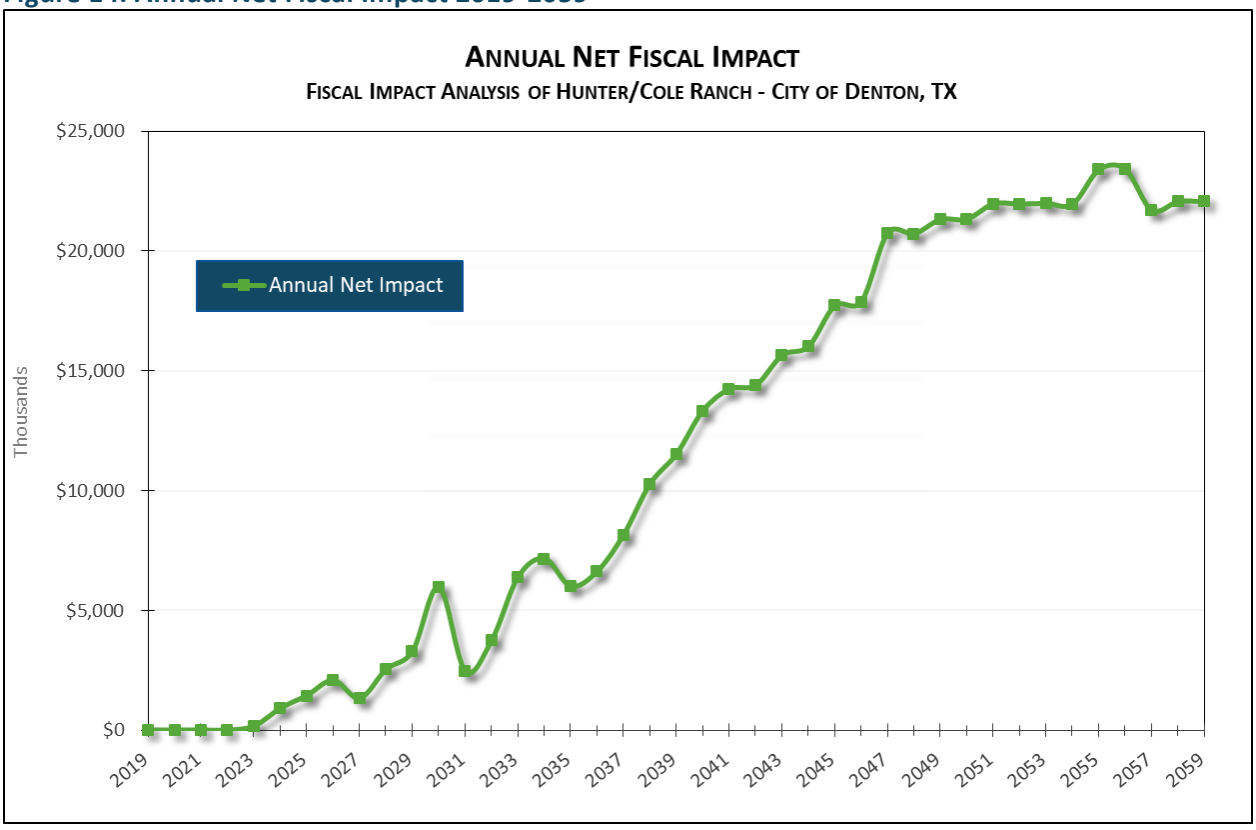
- **Annual net fiscal** results that include all revenues and costs in the funds analyzed (General Fund, Debt Service Obligation Fund, the Roadway Fee Impact Fund, and the Street Improvement Fund) are shown—**non-utility operating and capital impacts from growth are combined**.
    - Annual net fiscal results are then shown for operating and capital separately and compared to revenues.
- **Cumulative net fiscal** results are shown next (for non-utility funds).
    - Cumulative net results convey the projected grand total revenues minus grand total expenditures over the 40-year period to determine the overall net surplus or deficit.
- **Utility Fund** net fiscal results are show separately from other operating and capital expenditures.
    - The cumulative net results for each utility fund are depicted.
    - Annual net fiscal results, shown separately for operating and capital, compared to revenues are presented.

Annual Net Fiscal Impacts

The chart below shows the annual net fiscal results to the City over each year of the 40-year development period; the General Fund, Debt Service Obligation Fund, the Roadway Fee Impact Fund, and the Street Improvement Fund were analyzed. By showing the annual results, the magnitude, rate of change, and timeline of deficits and revenues can be observed over time. The "bumpy" nature of the annual results during particular years represents an initial capital impact being "front-loaded" and/or major operating costs being incurred (further explained in the *Capital Expenditure Methodologies* section of the full report).

Net fiscal results shown below are revenues minus costs in each year, including operating and capital costs for all services modeled. Data points above the $0 line represent annual surpluses; points below the $0 line represent annual deficits. Surpluses in any one year are not carried forward to the next year. The scale for the chart is in thousands ($1,000s).

Figure 14. Annual Net Fiscal Impact 2019-2059



Development of Hunter/Cole Ranch begins with lot delivery in 2023 as depicted in Figure 14. The first six years of growth are expected to generate year-over-year growth in net surpluses to the City. Project build-out during this time period results in a relatively steady uptick in property tax revenue. Equipment and personnel, particularly within Public Safety, Public Works (i.e., Fleet Maintenance & Fuel and Facilities Management) and the Street Department, are also added during the first six years of growth.

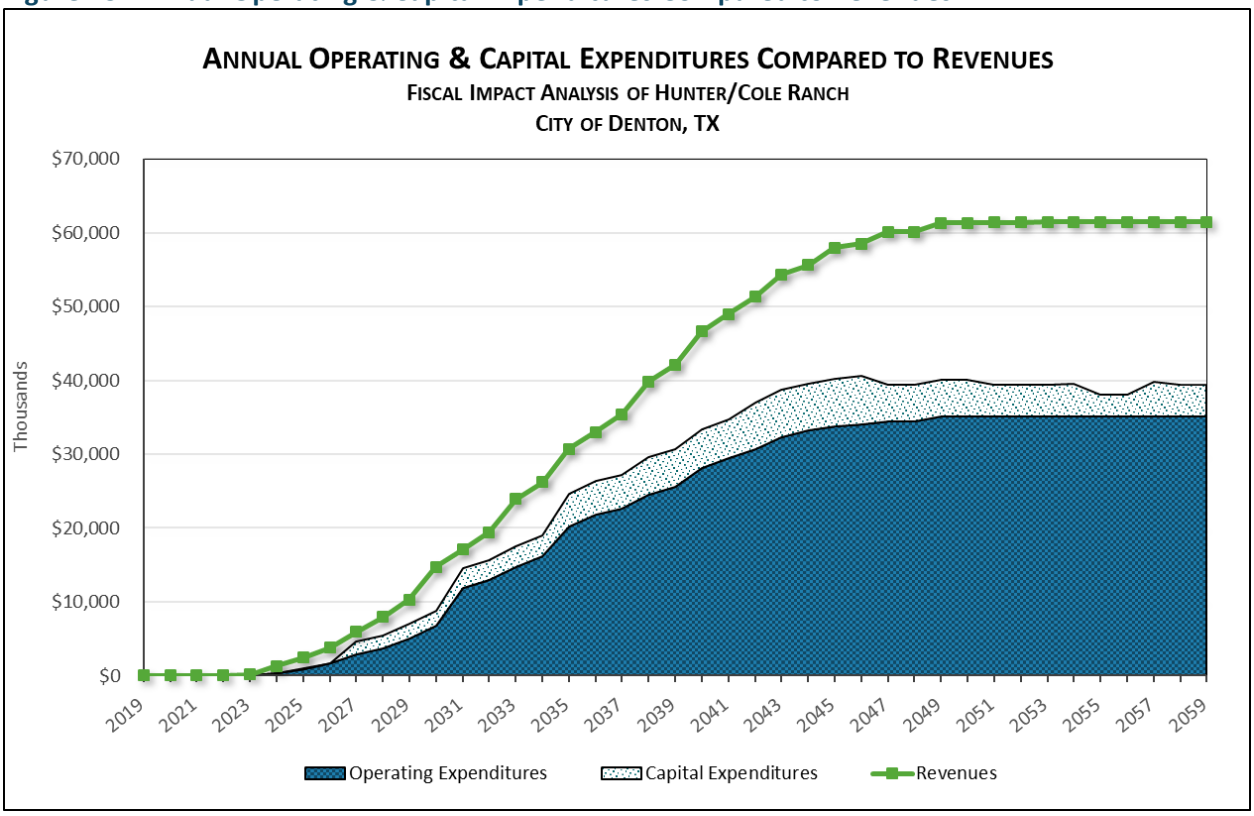
The downward "ticks" in net fiscal impact observed in 2027, 2031, and 2035 are the result of growth triggering the need for several significant capital investments simultaneously:

- In 2031, growth exceeds available capacity for park facilities and triggers the development of one of two planned City Parks.
- Between 2027-2031 over 500,000 square feet of the Service Station Annex[7] are developed as a result of the Hunter/Cole Ranch development to serve Fleet Services, Street Improvements Fund, Solid Waste, and Facilities Management.
- The second of the two planned 50-acre City Parks is also triggered in 2035.

Annual net results are further analyzed in the figure below. Although the City will see an increase in both operating and capital costs as a result of growth, our analysis shows that ***total revenues to the City exceed total costs projected to be incurred to the City.***

[7] Expansions of public works facilities will be required to provide space for public works employees and equipment as a result of the development; these were quantified by department in the Facilities Needs report dated December 10, 2019, completed by Quorum. In the FIA, 50 percent of the Service Station Annex capital and operating costs are attributable to the proposed development, per direction from City of Denton staff.

Figure 15. Annual Operating & Capital Expenditures Compared to Revenues



As a development-finance tool, Municipal Management Districts allow private property owners to access low-interest financing for public infrastructure projects. The development team and the City of Denton have identified improvement projects required to serve the Hunter/Cole Ranch Master Planned Community that will be financed by the MMD or the developer.

The table below inventories the infrastructure projects and other capital investments triggered by the proposed development of Hunter/Cole Ranch. Capital costs are categorized as either "City Funded" or "MMD/Developer Funded." **Only those projects required to maintain current levels of service are identified here—planned investments in private amenities for the exclusive use of Hunter/Cole Ranch residents are excluded from this analysis and from the list below.**

Non-utility capital projects and costs are allocated to the City of Denton and the MMD/Developer in the detailed capital project inventory depicted in the figure on the following page. The methodology underlying these projections and cost assumptions is discussed in detail in the *Revenue and Expenditure Methodology Chapter* of the report.

Figure 16. Capital Facilities and Expenditure Inventory (General, Special, and Debt Service Funds)

Non-Utility Capital Facilities and Allocation of Costs ($1,000s)

Fiscal Impact Analysis - Denton, TX

DEPARTMENT - Facility	Quantity	Total Square Footage	Capital Costs ($1,000s) Total	City of Denton	MMD / Developer
Parks and Recreation*					
Recreation Center Building	1	70,000	$11,900	$11,900	$0
Hunter Ranch City Park (54 acres)	1	2,352,240	$12,493	$8,534	$3,959
Cole Ranch City Park (50 acres)	1	2,178,000	$11,861	$7,902	$3,959
Neighborhood Parks (5 acres ea)	4	653,400	$4,214	$0	$4,214
Pocket Parks / Dog Parks (2 acres ea)	30	2,613,600	$3,000	$0	$3,000
Regional Trails	23 miles	1,212,275	$11,537	$0	$11,537
Community Trails	35 miles	1,112,958	$13,860	$0	$13,860
Parks & Rec Department - Vehicles	24	-	$864	$864	$0
Parks & Rec Department - Service Station Annex	1	10,684	$1,537	$1,537	$41
Parks & Rec Department - Parking	1	10,667	$480	$480	$41
Fleet & Facilities Management					
Facilities - Service Station Annex	1	45,652	$8,394	$8,394	$176
Facilities - Vehicles and Equipment	24	-	$523	$523	$0
Fleet - Service Station Annex	1	186,474	$13,910	$13,193	$718
Fleet - Vehicles and Equipment	150	-	$2,700	$2,700	$0
General Government					
General Government - Administrative Space	-	67,913	$11,142	$11,142	$0
General Government - Vehicles	38	-	$1,140	$1,140	$0
Transportation					
On-Site and Regional Roadway Projects[4]	-	-	$241,157	$0	$241,157
Systemwide Improvements[5]	-	-	$40,116	$40,116	$0
Streets - Vehicles	53	-	$3,028	$3,028	$0
Streets - Service Station	-	61,765	$4,561	$4,324	$238
Lakes / Dams/ Spillways etc.	TBD		$37,800	$0	$37,800
Police					
Police - Substation	20,630	-	$5,000	$0	$5,000
Police - Patrol Vehicles	109	-	$4,711	$4,711	$0
Fire and EMS					
Fire - Fire Substation*^^	2	15,721	$9,670	$4,670	$5,000
Fire - Fire Engines / Ladder Trucks	8	-	$6,975	$6,975	$0
Fire - Vehicles	32	-	$7,360	$7,360	$0
Library					
Library^	1	21,516	$4,564	$4,564	$0
		TOTAL:	**$500,026**	**$168,866**	**$331,593**

^ Library cost estimate includes opening day collection materials.
^^ Fire Substation is the second of two substations triggered by the development; the first will be funded by the developer.
*Developer contribution towards City Parks of $3,950,000 provided by City of Denton 01/16/2020

General Notes:

[1] Cost estimates represent the initial purchase and, for vehicles and equipment, replacement costs.

[2] Debt financing expenses are not included.

[3] 50 percent of Service Station Annex costs identified in Quorum report are attributable to Hunter/Cole Ranch.

[4] Costs reflect the specific project cost estimates identified in February 12, 2020 version of Cole and Hunter Ranch Developments Travel Demand Model Report submitted by HDR Engineering, Inc.

[5] Costs reflect projected growth in system-level transportation demand over the analysis' study period.

CUMULATIVE NET FISCAL IMPACTS

Cumulative net fiscal impact results convey the projected grand total revenues minus grand total expenditures over the 40-year period from future growth/development. Figure 17 below shows the cumulative fiscal impacts over the 40-year study period for all major growth-related funds.

Figure 17. Summary of 40-Year Cumulative Fiscal Impacts to City of Denton

Cumulative Fiscal Impact (x$1,000s)
City of Denton - Fiscal Impact Analysis

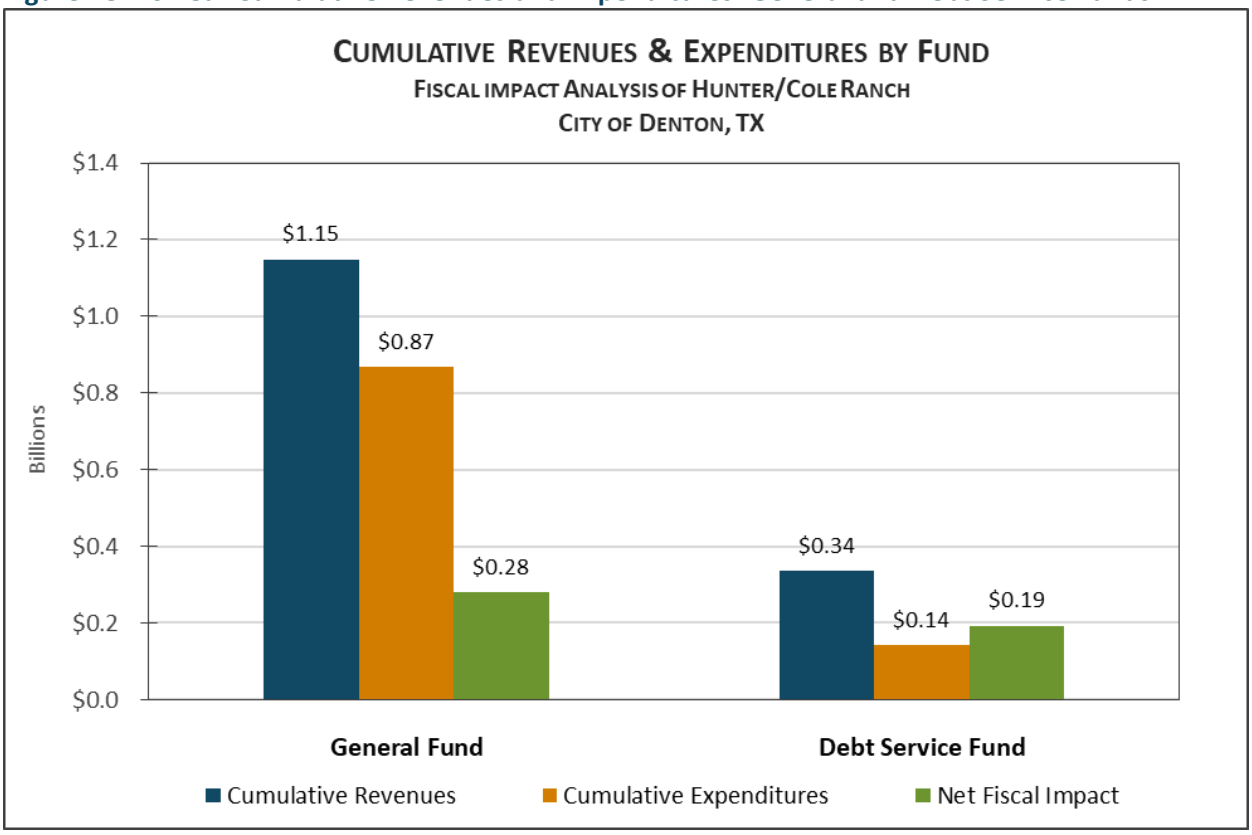
CATEGORY	Cumulative Revenues	%	Cumulative Expenditures	%	Net Fiscal Impact
General Fund	$1,148,231	*70%*	$867,704	*77%*	**$280,528**
Debt Service Fund	$335,073	*21%*	$142,035	*13%*	**$193,038**
Special Revenue: Street Improvement Fund	$96,975	*6%*	$69,372	*6%*	**$27,603**
Special Revenue: Roadway Impact Fee Fund	$49,008	*3%*	$51,657	*5%*	**($2,648)**
TOTAL	**$1,629,288**	***100%***	**$1,130,768**	***100%***	**$498,520**

The development yields net positive fiscal impacts for both the General Fund and Debt Service Fund (i.e., operating and capital expenditures); and the Street Improvement Fund. The Roadway Impact Fund is projected to incur a $2.65 million cumulative net deficit, which is the equivalent of $66,206 per year over the 40-year study timeframe.[8]

Cumulative impacts are depicted graphically for the General Fund and Debt Service Fund in Figure 18 below.

[8] It should be noted that this analysis projects roadway impact fee revenues based on the conceptual phase development program and impact fee rates from the City of Denton's 2015 Roadway Impact Fee Study. In practice, roadway impact fee rates are likely to be adjusted periodically to reflect changes to growth and the Roadway Capital Improvement Plan.[8] The MMD will also contribute to revenue from a Contract Tax as outlined in the Operating Agreement to assist in funding impact fee eligible projects, per conversations with City staff.

Figure 18. 40-Year Cumulative Revenues and Expenditures: General and Debt Service Funds



UTILITY FUNDS

Utility Funds were included in our analysis at the request of the City of Denton to evaluate whether the income generated from new customers and users would cover the costs required to provide service to the MMD while maintaining existing levels of service throughout the city.

CUMULATIVE FISCAL IMPACT FOR UTILITY FUNDS

As depicted in Figure 19 below, the net fiscal impact of the Hunter/Cole Ranch development is positive across all utility funds. Capital Expenditures include utility infrastructure projects, as well as capital equipment and vehicles. A detailed inventory of capital expenditures is presented in Figure 20.

Figure 19. Cumulative 40-Year Net Fiscal Impact by Utility Fund (1,000s)

40-Year Net Cumulative Impact - Utilty Funds
City of Denton - Fiscal Impact Analysis

Electric Fund*	
Operating Revenues	$966,695
Operating Expenditures	$565,517
Capital Expenditures	$115,077
NET CUMULATIVE IMPACT	**$286,102**
Water Fund	
Operating Revenues	$389,015
Impact Fee Revenues	$153,035
Operating Expenditures	$238,853
Capital Expenditures	$241,963
NET CUMULATIVE IMPACT	**$61,235**
Wastewater Fund	
Operating Revenues	$279,736
Impact Fee Revenues	$144,469
Operating Expenditures	$196,973
Capital Expenditures	$226,743
NET CUMULATIVE IMPACT	**$490**
Solid Waste	
Revenues	$304,055
Operating Expenditures	$246,914
Capital Expenditures	$36,378
NET CUMULATIVE IMPACT	**$20,763**

*Electric Fund projections provided by City of Denton.

The table below inventories the utility infrastructure projects and other capital investments triggered by Hunter/Cole Ranch. Capital costs are categorized as either "City Funded" or "MMD/Developer Funded."

Note that replacement facilities and major maintenance are not included in the capital costs presented below. Facilities needed to serve new growth are reflected. For capital improvements that are purchased—vehicles, equipment, etc., the model and fiscal results include both the initial purchase cost and the cost to replace the item after it reaches its useful life.

Figure 20. Capital Facilities and Expenditure Inventory (Utility Funds)

Utility Funds - Capital Facilities and Expense Allocation ($1,000s)

Fiscal Impact Analysis - Denton, TX

FUND - Facility	Quantity or Square Footage	Capital Costs ($1,000s) Total	City of Denton	MMD / Developer
Water Fund				
CIP Projects per FNI Report**	19 projects	$224,341	$153,035	$71,307
Service Station Annex	17,902	$1,969	$1,900	$69
Vehicles	24	$987	$987	$0
Wastewater Fund				
CIP Projects per FNI Report***	15 projects	$231,837	$144,469	$87,367
Service Station Annex	11,264	$1,282	$1,239	$43
Vehicles	21	$924	$924	$0
Solid Waste Fund				
Materials Recovery Facility	37,500	$3,144	$3,000	$144
Transfer Station	25,000	$6,975	$6,075	$900
Bulk Drop Off Facilities & Weigh Station	4,159	$1,788	$1,772	$16
Administrative Space	2,900	$649	$638	$11
Solid Waste Haulers / Commercial Trucks	38	$5,510	$5,510	$0
Roadway to Transfer Station	25,725	$660	$561	$99
Vehicle Maneuvering	65,000	$705	$455	$250
Electric Fund*				
Substation	1	$18,077	$18,077	$0
Distribution Lines (Cost to Serve)	NA*	$38,147	$38,147	$0
Main Feeder Circuits	NA*	$41,357	$41,357	$0
Vehicles	37	$2,250	$2,250	$0
Lighting	NA*	$12,177	$0	$12,177
Administrative / Shop Space	40,960	$10,350	$10,192	$158
TOTAL:		**$603,132**	**$430,589**	**$172,542**

Source: Quorum; TischlerBise; City of Denton; FNI

*Cost estimates for total distribution lines and feeder circuits provided by DME.

**Developer will also contribute 2.5 acres of land for Water Booster Pump Station.

**Developer will also contribute 1.5 acres of land for Hickory Creek Wastewater Lift Station.

General Notes:

[1] Cost estimates represent the initial purchase and, for vehicles and equipment, replacement costs.

[2] Debt financing expenses are not included.

[3] 50 percent of Service Station Annex square footage identified in Quorum Analysis (Jan 16, 2020) is attributable to Hunter/Cole

[4] Per the Hunter-Cole Development Analysis submitted by FNI on Feb 7, 2020, total CIP Projects for Water and Wastewater Funds equal $328,612,700 and $290,441,800 respectively (land excluded). Of these costs, $224,341,400 and $231,836,500, respectively, are a result of projected demand from the Hunter/Cole Ranch developments. The remainder is attributable to projected use by the entire system.

The methodology and approach utilized to arrive at the capital cost projections is detailed in the *Revenue and Expenditure Detail* chapter of this report.

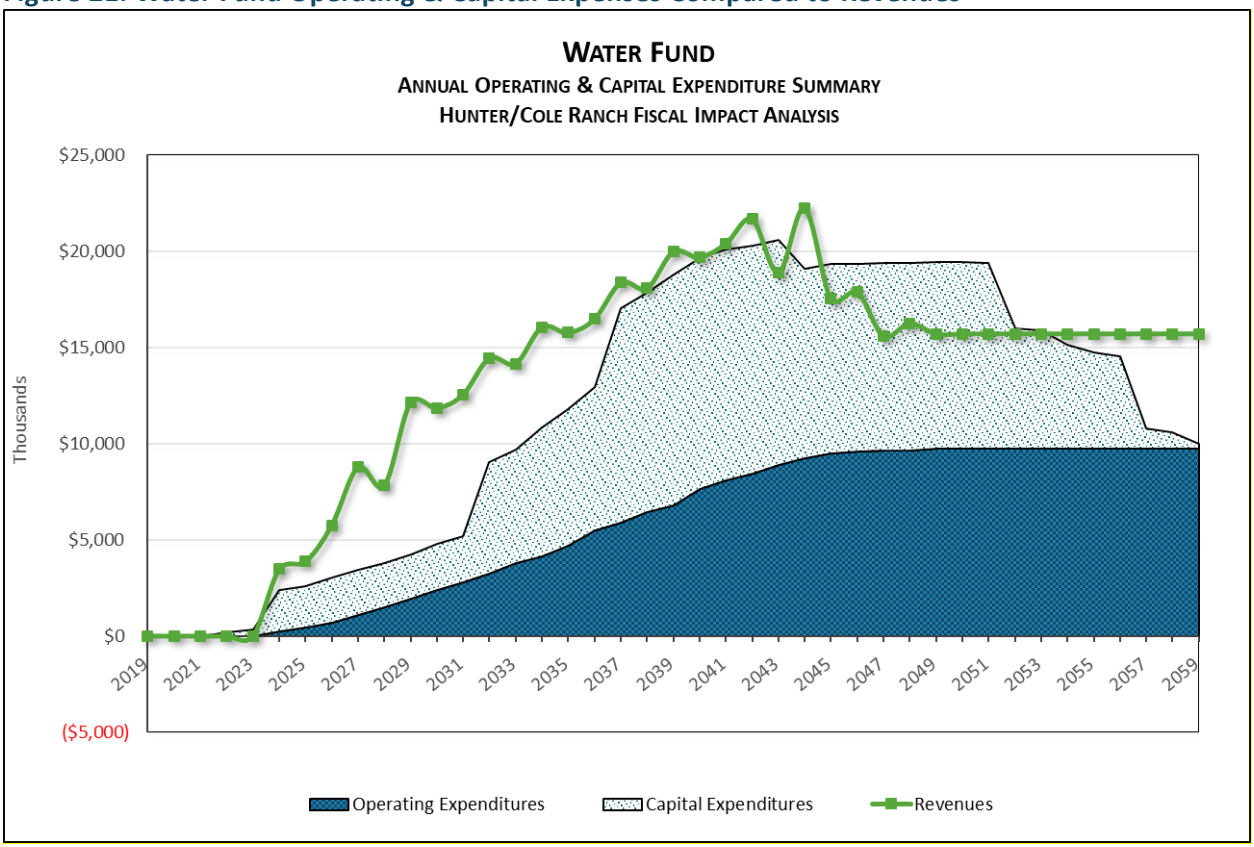
Net Annual Fiscal Impact for Utility Funds

The annual net fiscal impact on the utility funds is presented in the figures that follow.

Water Fund

Water Fund revenues are expected to exceed operating expenditures throughout the study-period. Minor capital deficits in the amounts of approximately $172,000 and $345,000 are incurred in 2022 and 2023, respectively, as design and predevelopment expenditures for the first of three expansions to the Lake Ray Roberts Water Treatment Plant are incurred prior to the delivery of revenue-generating residential and nonresidential development. Revenues are then projected to exceed capital expenditures until 2043, as depicted in Figure 21 below. Note that the spikes depicted in Water Fund revenues are the result of impact fees. This analysis assumes that the MMD will also contribute revenue from a Contract Tax as outlined in the Operating Agreement to assist in funding impact fee eligible Water infrastructure projects.

Figure 21. Water Fund Operating & Capital Expenses Compared to Revenues



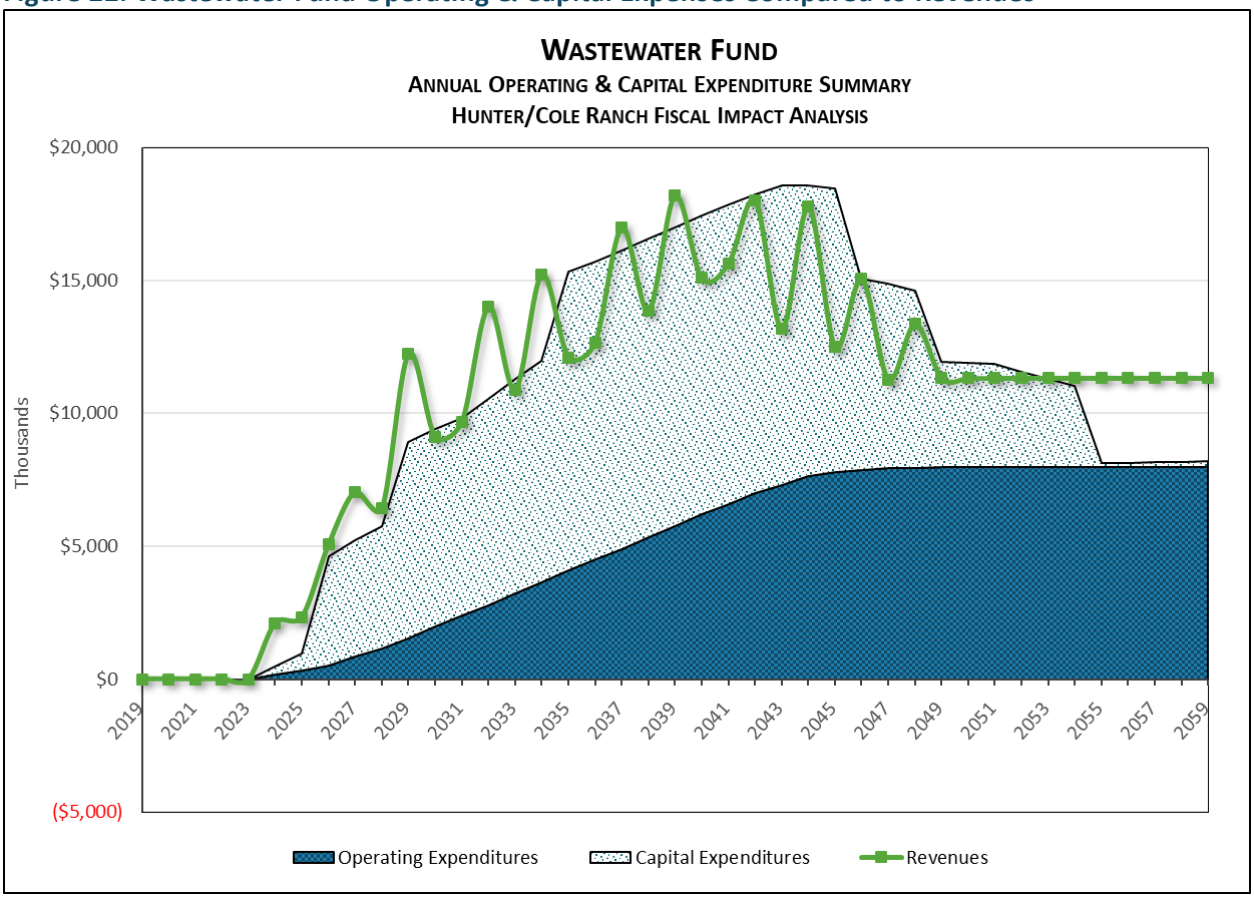
The capital expenditures included in this analysis are directly attributable to demand from Hunter Cole.[9] These projects are debt financed and occur between 2024 and 2039. New development, and thus impact fee revenue begins to peak around 2039, and from 2045-2054 annual deficits are incurred as impact fee revenue declines and then stops while continued debt payments for the major infrastructure projects projected in the *FNI Report* and developed from 2024-2039 continue. The impact fee revenue surplus accrued during the first half of the study period is sufficient to compensate for the capital deficit projected in the second half of the development period.

A detailed breakdown of year over year water revenues and expenditures resulting from growth is included in Appendix B.

Wastewater Fund

Wastewater Fund revenues are expected to generally meet or exceed operating and capital expenditures over the course of the development, as depicted in Figure 22 below.

Figure 22. Wastewater Fund Operating & Capital Expenses Compared to Revenues



[9] The February 7th, 2020 FNI report calculated the share of project costs attributable to Hunter Cole (based on projected Hunter/Cole demand relative to demand from the broader service area); these cost estimates were used for the fiscal impact analysis.

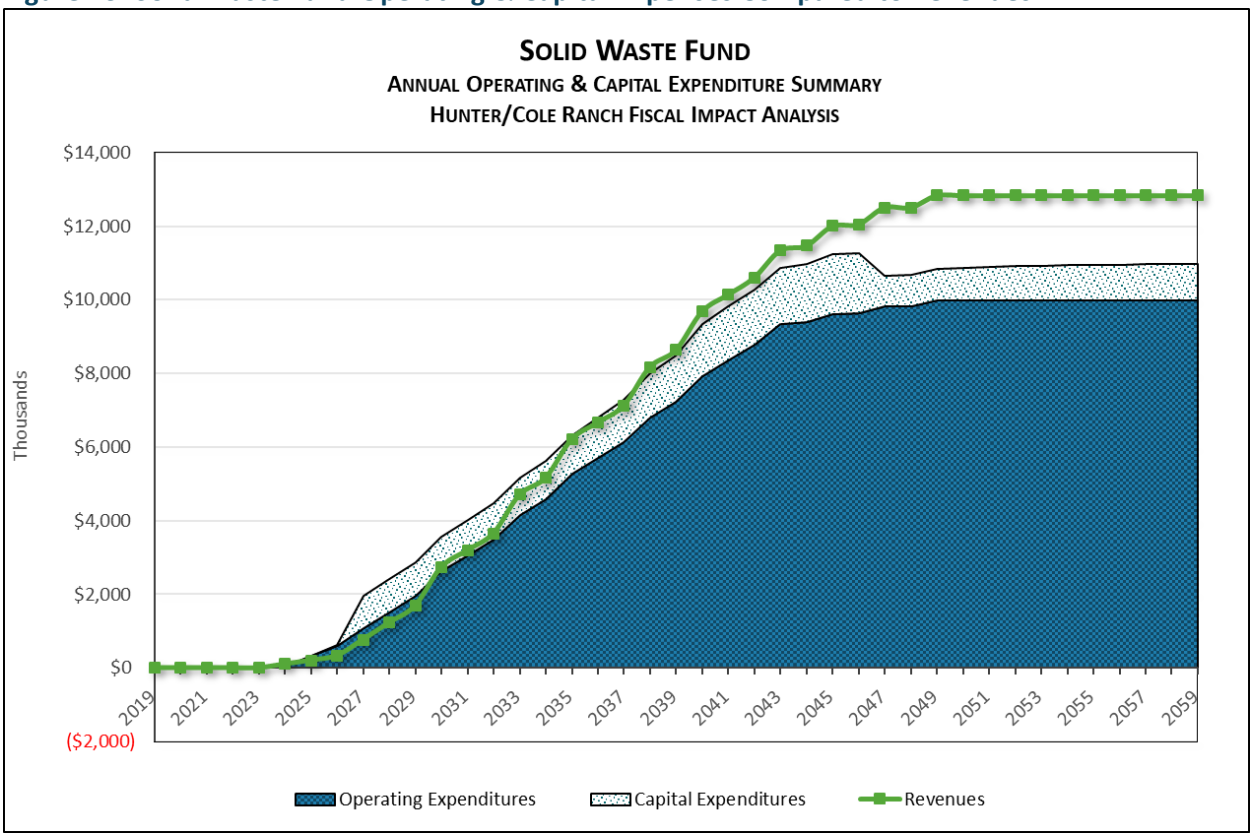
The spikes in the figure above represent impact fee payments. Again, new development in the MMD is assumed to be completed by 2049, at which point impact fee revenues cease. Although the timing of impact fee payments does not directly correspond with capital costs, revenues accrued in years where impact fees exceed capital expenses cover deficits in other years. Note that per discussions with City of Denton staff, impact-fee eligible Wastewater infrastructure projects will also receive funding from MMD Contract Tax revenue as outlined in the Operating Agreement.

The capital expenditures included in this analysis represent all planned Wastewater Fund capital infrastructure projects required to serve Hunter/Cole Ranch, as well as City facilities needed to house staff and equipment.

Solid Waste Fund

As depicted in the figure below Hunter/Cole Ranch is projected to have a relatively neutral net annual fiscal impact to the City of Denton's Solid Waste Fund. Deficits occur, however, from 2025-2037. This analysis assumed that construction of the planned Material Recovery Facility and Transfer Station will occur in 2027 (included in the Service Station Annex). Because the facility is debt financed, its costs are spread out over time, but they are nevertheless projected to result in deficits for the first ten years following construction. The other capital cost contributing to these deficits are investments in Solid Waste vehicles including haulers and commercial trucks, which are needed to serve new customers.

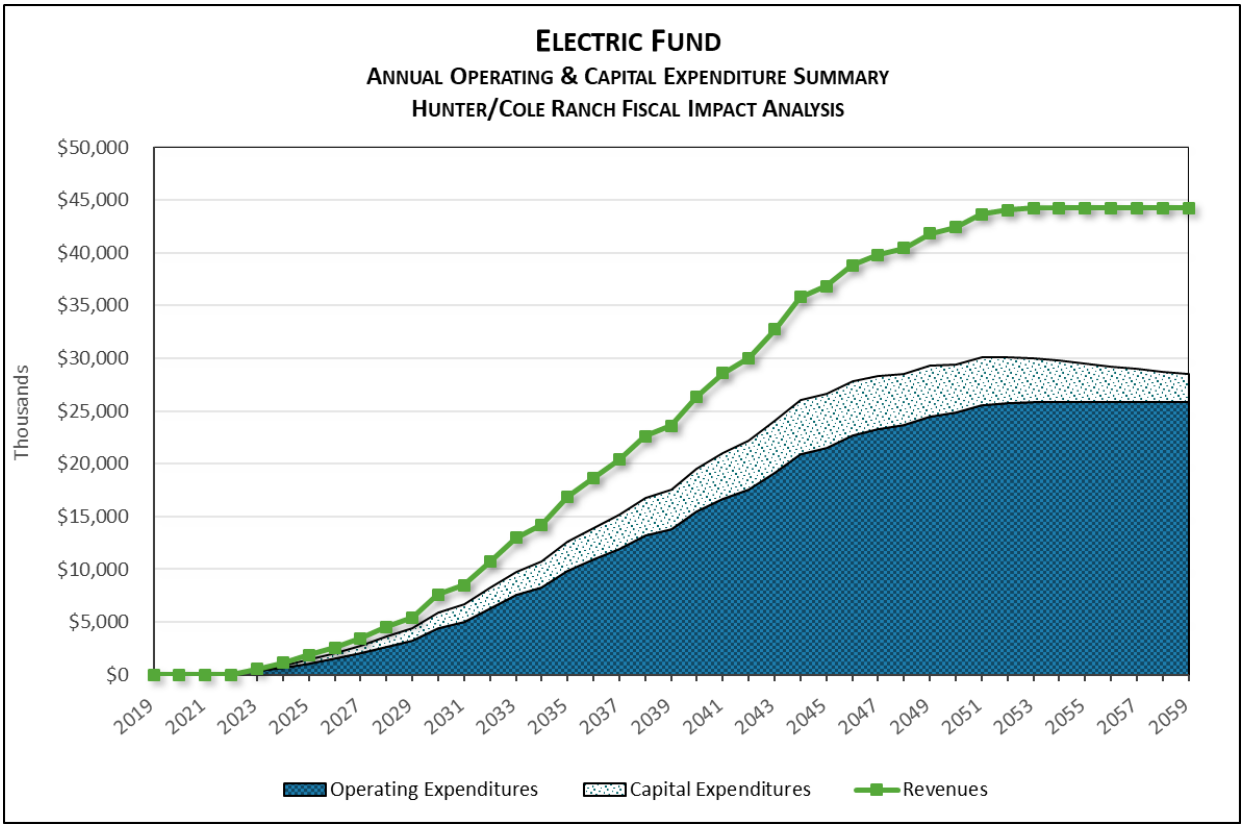
Figure 23. Solid Waste Fund Operating & Capital Expenses Compared to Revenues



Electric Fund

Electric revenues and expenses associated with Hunter Cole were provided by the City of Denton and are illustrated in terms of revenues relative to capital and operating expenditures in the figure below. Revenues are projected to exceed expenditures for each year of the study period.

Figure 24. Electric Fund Operating & Capital Expenses Compared to Revenue



KEY FINDINGS & CONCLUSIONS

The following conclusions can be drawn from the FIA results presented in this report:

GENERAL, DEBT SERVICE, AND SPECIAL REVENUE FUNDS

- The proposed Hunter/Cole Ranch development is projected to have a net cumulative positive fiscal impact on the City over the 40-year study period. The net positive impacts are driven primarily by sales and property tax revenue from development. This allows for the City of Denton to benefit fiscally from the development proposed.

- It should be noted that, on average, the resulting annual net positive impact to the General Fund and Debt Service Fund is approximately $7.0 million, which reflects 5.4 percent of the City of Denton's Fiscal Year 2019 operating budget.

- The Street Improvement Fund is funded through franchise fees from utility fund revenue surpluses (as well as non-growth-related revenues). The Street Improvement Fund's projected cumulative surplus is partially attributable to the fact that utility fund revenues will increase as a result of Hunter/Cole Ranch. Another reason for the surplus is that although the additional roadways added to the City of Denton's lane mile inventory increase Street Improvement Fund operating and capital outlay costs, major capital expenditures are generally accounted for in other funds. Per conversations with City staff, this analysis assumes that roadway construction is either funded by future development through the Roadway Impact Fee Fund or by the MMD through adjustments to the District tax rate as needed. Public works equipment and the Service Station Annex are funded out of the General Debt Service Fund.

    - Note that the increases in franchise fee revenue could be allocated to another fund at the City's discretion. As discussed previously, this analysis assumed that the 10-year policy of transferring excess franchise fee revenue to the Street Improvement Fund would continue throughout the 40-year study period.

- Demand for fire services will trigger the need to expand capital facilities during the second half of the development's growth period, beyond the developers' initial land and financial contributions as identified in the draft Operating Agreement. A new fire substation is triggered in 2028—to be funded up to $5 million from the developer—and a second fire substation is triggered in 2039, which is assumed as a City cost.

- Although the projected growth in revenue is relatively significant, the City should continue to plan and be prepared to expand both its facilities and operational capacity—the Hunter/Cole Ranch development is projected to be fiscally balanced in the sense that it is projected to produce enough revenue to cover its costs, but it will not be self-contained. Growth in population, vehicle trips, and police and fire calls, for instance, is projected to increase average annual operating expenditures to the City by approximately $21 million per year.

- Overall, Hunter/Cole Ranch is projected to generate sufficient revenue to cover both the capital and operating costs associated with meeting the additional demand it will place on City services.

UTILITY FUNDS

- Water and Wastewater Fund revenues cover operating expenditures throughout the 40-year study period. Water and Wastewater impact fee revenue is sufficient to cover the development's share of water and wastewater capital costs.

- Impact fee revenue is a function of the City of Denton's current fee schedule and projected development—to the extent that development does not keep pace with projections, impact fee revenue may fall short of projections. Because major Water and Wastewater infrastructure must be constructed prior to full build-out in order to serve new residents and businesses, the City may incur capital deficits for these funds if development does not proceed at the rate or intensity presented in the baseline scenario. To mitigate this risk, the MMD will adjust District tax rates as needed to fund the difference between impact fee revenue and the Water/Wastewater Capital Improvement Plan project costs attributable to the development.

- This report assumed that the Solid Waste Service Station Annex including the Materials Recovery Facility and Transfer Station would be "front-loaded" and completed in one phase in 2027. The result is six years of moderate fiscal deficits. To the extent possible, direct financing of recurring capital costs such as solid waste haulers, would improve the fiscal results for the Solid Waste fund. New solid waste customers are projected to trigger the acquisition of 37 solid waste vehicles over the 40-year time frame; with an estimated average useful life of 10 years, this results in a total of 108 solid waste vehicles, including replacement vehicles.

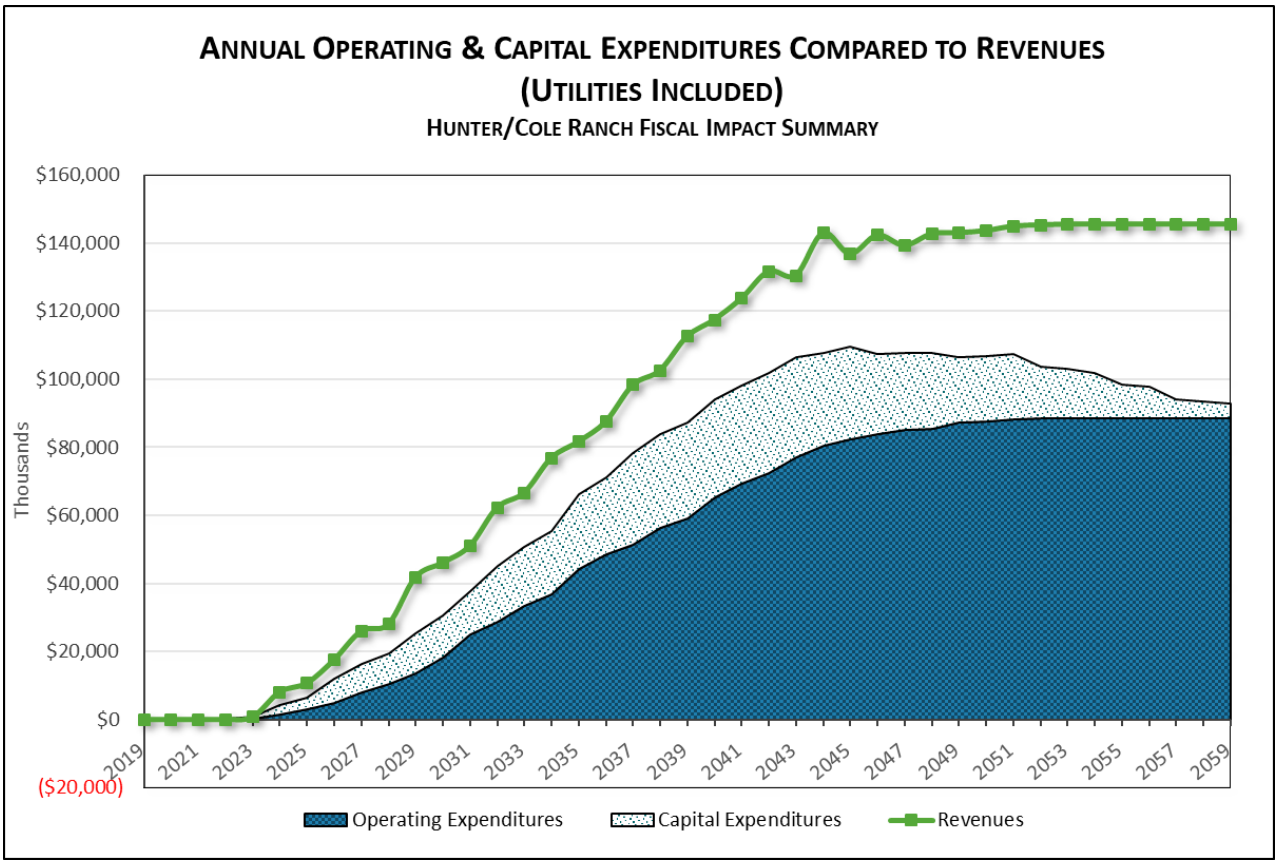
- Given the current level of detail available regarding the number and service requirements of commercial Solid Waste customers, however, additional analysis of the net fiscal impact of Hunter/Cole Ranch on the Solid Waste Fund should be completed as property-specific details of the development program are established.

- Overall, the cumulative fiscal impact on all utility funds is projected to be positive.

OVERALL RESULTS

Per direction from City of Denton staff, the figure below compares annual revenues to annual operating and capital expenditures for the funds analyzed, including utility funds. Note that under current City policy, utility fund revenues are restricted use and cannot be used toward any other fund's activities.

Figure 25. Operating and Capital Expenditures Compared to Revenues for Funds Analyzed Combined



IV. REVENUE AND EXPENDITURE DETAIL

REVENUE METHODOLOGIES

This chapter provides detail on projection methodologies for revenue included in the analysis. Growth-related revenues are modeled in this analysis in the following funds:

- General Fund
- General Debt Service Fund
- Special Revenue Funds:
  - Street Improvement Fund
  - Roadway Impact Fee Fund

- Utility Funds
  - Water Fund
  - Wastewater Fund
  - Electric Fund
  - Solid Waste Fund

Other funds that are not included are Internal Service Funds or considered fixed (unaffected by growth).

GENERAL FUND REVENUES

A snapshot of the City General Fund from the model is shown below by specific category and line item. The table shows the specific revenue category and source, base year (FY2019) budget amount, projection methodology, and the level of service (LOS) standard, or dollar per demand unit. For instance, for those categories projected based on "POPULATION," the current budget amount is divided by the estimated population for base year 2019.

Figure 26. General Fund Revenues

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Ad Valorem Taxes	Current Year Ad Valorem	$45,674,373	CUM AV	$0.38536
	Delinquent Ad Valorem	$296,883	FIXED	$0.00
	Current Year - Penalties and Interest	$161,424	FIXED	$0.00
	Prior Year - Penalties and Interest	$96,290	FIXED	$0.00
	Rendition Penalties	$31,013	FIXED	$0.00
Sales Tax	Sales Tax	$41,425,582	DIRECT ENTRY	$0.00
Franchise Agreements	DMU Electric	$2,162,610	FIXED	$0.00
	DMU Water	$463,295	FIXED	$0.00
	DMU Wastewater	$307,640	FIXED	$0.00
	Solid Waste Fund	$413,356	FIXED	$0.00
	Gas	$298,753	FIXED	$0.00
	Private Electric	$105,949	FIXED	$0.00
	Cable	$410,188	FIXED	$0.00
	Telephone	$201,058	FIXED	$0.00
Other Taxes	Mixed Beverage Tax	$484,924	POP AND JOBS	$2.47
	Bingo Tax	$21,012	POP AND JOBS	$0.11
Service Fees	Community Building Rentals	$240,705	FIXED	$0.00
	Ambulance Service Fees	$3,700,000	POP AND JOBS	$18.85
	Hazardous Materials Billing	$6,000	FIXED	$0.00
	Fire Inspections	$200,000	FIXED	$0.00
	Restaurant Inspections	$288,400	FIXED	$0.00
	Swimming Pool Inspections	$32,571	TOTAL UNITS	$0.66
	Reinspection Fees	$47,363	TOTAL UNITS	$0.95
	Electrical Inspections	$57,000	TOTAL UNITS	$1.15
	Plumbing Inspections	$163,838	TOTAL UNITS	$3.30
	Gas Well Inspections	$329,665	FIXED	$0.00
	Library Non-Resident Fees	$54,000	FIXED	$0.00
	Parks Identification Card Fees	$37,000	POPULATION	$0.28
	Athletic Program Fees	$54,000	POPULATION	$0.40
	Special Events - Parks	$8,300	FIXED	$0.00
	Natatorium Fees	$440,312	POPULATION	$3.27
	Water Works Parks Fees	$1,124,640	POPULATION	$8.36
	Swimming Pool	$70,034	POPULATION	$0.52
	Cemetery Fees	$29,000	FIXED	$0.00
	Development Fees	$120,408	POP AND JOBS	$0.61
	Police Academy Revenue	$75,000	FIXED	$0.00
	Sale of Documents	$275,400	FIXED	$0.00
	Plan Review Fees	$600,000	POP AND JOBS	$3.06
	Parking Meter Receipts	$14,171	VEHICLE TRIPS	$0.04
	Development Postage	$13,484	FIXED	$0.00
	Traffic/Police Reports	$38,000	POP AND JOBS	$0.19
	Copy Charges	$94,760	FIXED	$0.00

Fines and Fees	Warrant Fees	$130,000	FIXED	$0.00
	Juvenile Case Manager	$100,000	FIXED	$0.00
	Library Fines & Fees	$150,000	POPULATION	$1.12
	Animal Services Fees	$199,000	POPULATION	$1.48
	Animal Services Fines	$5,000	FIXED	$0.00
	Auto Pound Fees	$36,000	VEHICLE TRIPS	$0.09
	Mowing Recovery Fees	$10,000	FIXED	$0.00
	Police Escort & Guard Fees	$30,000	FIXED	$0.00
	Civil Fines	$10,000	FIXED	$0.00
	Arrest Fees	$100,000	TOTAL POLICE CALLS	$1.18
	Inspection Fines & Fees	$7,000	FIXED	$0.00
	Fire Department Fees	$6,000	TOTAL FIRE CALLS	$0.40
	School Crossing Fines	$10,000	FIXED	$0.00
	Denton Municipal Fines	$1,300,000	VEHICLE TRIPS	$3.31
	UNT Police Fines	$140,000	FIXED	$0.00
	TWU Police Fines	$22,000	FIXED	$0.00
	Parking Fines	$260,000	VEHICLE TRIPS	$0.66
	Uniform Traffic Fees	$43,000	VEHICLE TRIPS	$0.11
	False Alarm Fees	$65,000	FIXED	$0.00
	Court Cost Service/Admin Fees	$1,080,000	POP AND JOBS	$5.50
	Truancy Preventon Fees	$20,000	FIXED	$0.00
Licenses and Permits	Food Handler Permits	$500	FIXED	$0.00
	Zoning Permits	$116,844	POP AND JOBS	$0.60
	Moving Permits	$380	FIXED	$0.00
	Demolition Permits	$6,500	FIXED	$0.00
	Pool, Spa, Hot Tub Permits	$26,235	FIXED	$0.00
	Building Permits	$3,377,335	POP AND JOBS	$17.21
	Electrical & Plumbing Licenses	$0	POP AND JOBS	$0.00
	Curb Cut Permits	$579	FIXED	$0.00
	Mobile Home Park Licenses	$15,909	FIXED	$0.00
	Sign Permits	$55,335	FIXED	$0.00
	Fence Permits	$45,000	SINGLE FAMILY	$1.48
	Mechanical Permits	$57,915	POP AND JOBS	$0.30
	Certificate of Occupancy Fees	$80,000	POP AND JOBS	$0.41
	Variance Fees	$500	FIXED	$0.00
	Landscape Fees	$2,200	FIXED	$0.00
	Miscellaneous Permits	$5,882	FIXED	$0.00
	Gas Well Permits	$7,800	FIXED	$0.00
	Park Vendor Fees	$23,000	FIXED	$0.00
	Beer & Wine Permits	$36,110	RETAIL SF	$0.01
	CPR Training	$5,500	FIXED	$0.00
Misc. Revenues	Misc. Revenues	$2,286,026	FIXED	$0.00
Return on Investment	Return on Investment - Water	$1,339,555	DIRECT ENTRY	$0.00
	Return on Investment - Wastewater	$882,684	DIRECT ENTRY	$0.00
	Return on Investment - Electric	$6,204,970	DIRECT ENTRY	$0.00
	Return on Investment - Airport	$0	FIXED	$0.00
	Admin Transfer - Bond Sale	$0	FIXED	$0.00
Cost of Service Trans.	Cost of Service Transfers	$8,733,146	FIXED	$0.00
Other	Use of Fund Balance	1,483,131	FIXED	$0.00
	TOTAL	**$129,184,437**		

CUSTOMIZED/MARGINAL CALCULATIONS FOR GENERAL FUND

The following details the custom methodology used for certain revenue streams.

- **City Sales Tax** is attributed to nonresidential development. To determine the level of revenue for each nonresidential category, we annualized recent sales tax revenue data by industry provided by the City of Denton. Dividing sales tax revenue by the estimated floor area of current nonresidential development yields average Sales Tax Revenue per square foot for the land use types projected. Shown in Figure 27, retail development averages $4.26 in annual sales tax per square foot compared to $1.51 per square foot for office and $0.83 per square foot for industrial development.

Figure 27. Sales Tax per Square Foot

LAND USE	2019 Sales Tax Revenue	Square Feet	Sales Tax Revenue / SF
RETAIL	$21,068,738	4,950,150	$4.26
OFFICE	$6,781,393	4,493,658	$1.51
INDUSTRIAL	$8,516,851	10,248,796	$0.83

Source: City of Denton Finance Department. Three Year Sales Tax by NAICS; Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

- **Property Tax** is projected based on the respective cumulative assessed values (see below for additional detail) of the property projected in the scenario. Cumulative assessed values are multiplied by the FY2020 General Fund tax rate of $0.38536 per $100 valuation. The FY2020 tax rate was utilized per direction from the City of Denton Finance Department. As shown, assessed values for residential real property and nonresidential real property were projected separately to allow for comparison by type of development.

Figure 28. Assessed Value by Land Use Type

LAND USE	Assessed Value
Residential*	**Unit**
Single Family	$350,000
Single Family Lot	$70,000
Multifamily	$90,000
Nonresidential	**Square Foot**
Retail	$120.17
Office	$120.17
Industrial	$70.71

Source: City of Denton
*Single Family Values shown are prior to homestead exemption of $5,000.

- **Return on Investment ("ROI")** revenues were calculated as 3.5 percent of gross revenues from the Water, Wastewater, and Electric Fund, per the City's ROI policy and discussions with staff.

- **Licenses & Permits, Charges for Services, Fines & Fees:** Based on discussions with City staff and an analysis of relevant financial documents, several line items' revenues are likely to increase with growth in *Population*, *Jobs*, or *Population and Jobs.* Certain revenues associated with specific services such as Fire and Police are expected to increase based on *Total Police Calls*, *Total Fire Calls*, and *Vehicle Trips*.

Fixed Revenues

- **Franchise Fee** revenues to the General Fund are fixed; growth in Franchise Fee is instead allocated to the Street Improvement Fund per the City of Denton's current policy to transfer franchise fee revenue in excess of FY2016 dollar amounts to the Street Improvement Fund.

- **Cost of Service Transfer** revenues are transfers from other funds to the General Fund for general government services; Utility Fund Costs of Service were first modeled on the expenditure side. Cost of Service revenues to the General Fund are set to equal those expenditures. Expenditure projection methodology including the approach to modeling Cost of Service revenues is detailed in the following sections of this chapter.

- **Miscellaneous revenues** were conservatively assumed to be fixed per conversations with City staff.

GENERAL DEBT SERVICE FUND

The General Debt Service Fund receives unrestricted revenue from Ad Valorem Property taxes; the FY2020 rate of 0.20509 per $100 of assessed value was used to project property tax revenues resulting from Hunter/Cole Ranch.

"Transfers In" are fixed. These line items, seen below in Figure 29 reflect restricted revenue funds making debt service payments, which are accounted for within the capital expense analysis presented later in this chapter.

Figure 29. General Debt Service Fund

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
General Debt Service Fund	Current Year Ad Valorem	$24,293,126	CUM AV	$0.20509
	Interest Income	$200,000	FIXED	$0.00
	Transfer in - Drainage	$0	FIXED	$0.00
	Transfer in - Solid Waste	$8,995,034	FIXED	$0.00
	Transfer in - Fleet	$245,027	FIXED	$0.00
	Transfer in - Street Improvements	$129,250	FIXED	$0.00
	Transfer in - Materials Mgmt	$0	FIXED	$0.00
	Transfer in - Communication	$10,150	FIXED	$0.00
	Transfer in - Electric	$36,314,570	FIXED	$0.00
	Transfer in - Water	$12,700,195	FIXED	$0.00
	Transfer in - Wastewater	$6,858,067	FIXED	$0.00
	Use of Reserves	$533,272	FIXED	$0.00
	TOTAL	**$90,278,691**		

SPECIAL REVENUE FUNDS

The fiscal impact analysis also includes revenues from Special Revenue Funds, capturing revenues that are anticipated to be generated from growth.

STREET IMPROVEMENT FUND

The Street Improvement Fund includes all Street Department activities; the Street Department is responsible for street maintenance and repair and is funded primarily through franchise fee revenues. The majority of these franchise fee revenues are paid by major utility funds. Franchise Fee revenue resulting from the Hunter/Cole Ranch development is calculated as 5 percent of projected Water, Wastewater, Electric, and Solid Waste revenue, per City policy. Other franchise fee revenue[10] to the Street Improvement Fund is not expected to be affected by the proposed development.

[10] Other franchise fees are paid from private electric, cable, telephone, and gas utility providers.

Figure 30. Street Improvement Fund

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Street Improvement Fund	Street Cut Reimbursements	$364,140	FIXED	$0.00
	Bond Sale Savings	$1,196,404	FIXED	$0.00
	Misc. Income	$10,000	FIXED	$0.00
	Franchise Fee - DMU Electric	$6,701,633	DIRECT ENTRY	$0.00
	Franchise Fee - DMU Water	$1,898,986	DIRECT ENTRY	$0.00
	Franchise Fee - DMU Wastewater	$1,260,978	DIRECT ENTRY	$0.00
	Franchise Fee - Solid Waste Fund	$1,755,737	DIRECT ENTRY	$0.00
	Other Franchise Fees	$1,902,577	FIXED	$0.00
	TOTAL	$15,090,455		

Roadway Impact Fee Fund

The Roadway Impact Fee Fund accounts for Roadway Impact Fees paid to the City of Denton by developers and homebuilders. Development within the Hunter/Cole Ranch MMD is projected to generate revenue to the Roadway Impact Fee Fund based on the impact fees currently in place per the 2015 Roadway Impact Fee Study. The majority of the development is located in Roadway Impact Fee Service Area A with the following impact fee rates, which are therefore applied to new development projected in the Hunter/Cole Ranch. The City is currently in the process of updating its Roadway Impact Fee Study and potentially adjusting its fee schedule, but per conversations with City staff, the 2015 fees were appropriate for use in this analysis. Note that the MMD will also contribute Contract Tax revenue per the Operating Agreement to assist with funding impact fee eligible roadway projects.

Figure 31. Roadway Impact Fee Assumptions

Development Type	Impact Fee (per Unit / 1,000 SF of Nonres. Floor Area)
Single-Family Detached	$2,000
Multifamily	$1,251
Retail*	$2,100
Office**	$2,737
Industrial	$588

Source: City of Denton 2015 Roadway Impact Fee Study. Service Area A, Current Collection Rates.

*Impact Fee for Shopping Center, ITE Land Use Code 820.

**Impact Fee for General Office Building, ITE Land Use Code 710.

UTILITY FUNDS

The methodology used to project utility fund revenues is summarized for the Water, Wastewater, Solid Waste, and Electric Funds in this section of the report. Note that a customized methodology was used for all growth-related revenues, as indicated by "DIRECT ENTRY".

WATER AND WASTEWATER REVENUE PROJECTION ASSUMPTIONS

A customized methodology was used to project operating and impact fee revenues for water and wastewater revenues, per the snapshot from the fiscal model below.

Figure 32. Utility Fund Revenue Projection Methodology

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Water Fund	Interest Operating	$251,000	FIXED	$0.00
	Water Sales Residential	$19,496,211	DIRECT ENTRY	$0.00
	Water Sales Commercial	$16,841,145	DIRECT ENTRY	$0.00
	Water for Resale	$1,168,296	FIXED	$0.00
	Other Water	$767,349	FIXED	$0.00
	Cost of Service - GF	$436,024	FIXED	$0.00
	Cost of Service - Electric	$474,839	FIXED	$0.00
	Cost of Service - Wastewater	$447,929	FIXED	$0.00
	Cost of Service - Solid Waste	$128,970	FIXED	$0.00
	Impact Fee Revenues	$5,700,000	DIRECT ENTRY	$0.00
	Use of Reserves	$4,480,271	FIXED	$0.00
Wastewater Fund	Interest Operating	$208,000	FIXED	$0.00
	Wastewater Residential	$10,657,173	DIRECT ENTRY	$0.00
	Wastewater Commercial	$12,168,689	DIRECT ENTRY	$0.00
	Wastewater Effluent Irrigation	$68,576	FIXED	$0.00
	Wastewater Wholesale	$694,234	FIXED	$0.00
	Other Wastewater	$1,674,678	FIXED	$0.00
	Drainage Fees	$4,727,006	DIRECT ENTRY	$0.00
	Transfers In	$551,795	FIXED	$0.00
	Impact Fee Revenues	$2,000,000	DIRECT ENTRY	$0.00
	Use of Reserves	$4,721,103	FIXED	$0.00

Rate revenue and facility charge revenue were projected separately by land use. Per conversations with City staff, we utilized data from the January 2020 *Hunter-Cole Development Analysis* completed by Freese and Nichols ("the FNI report") as well as current facility charges and rates to project revenue per residential unit and nonresidential acre.[11]

Figure 33. Water and Wastewater Billing Assumptions

Water & Wastewater Revenue - Billing & Consumption Assumptions by Land Use

City of Denton, Texas - Hunter and Cole Ranch FIA

	SINGLE FAMILY (PER UNIT)	MULTIFAMILY (PER UNIT)	NONRESIDENITAL (PER ACRE)
WATER			
Monthly GPD (1,000s)*	16	13	66
Facility Charge**	$16.00	$12.59	$64.00
Rate per 1,000 gallons**	$4.15	$4.45	$4.45
AVERAGE ANNUAL REVENUE	**$1,010**	**$841**	**$4,276**
WASTEWATER			
Facility Charge**	$11.00	$26.50	$26.50
Rate per 1,000 gallons***	$3.80	$4.85	$4.85
AVERAGE ANNUAL REVENUE	**$420**	**$406**	**$1,839**
DRAINAGE FEE			
Monthly Fee Estimate****	$12.00	$1.15	$27.62
AVERAGE ANNUAL REVENUE	**$144**	**$14**	**$331**

* Derived from average GPD per City of Denton's Design Criteria and FNI Hunter Cole Development Analysis (Feb 7, 2020).

** City of Denton Utility Brochure and Rate Booklet (FY19/20)

*** Billing based on FY2019 Rate Booklet formulas and average GPD per FNI Hunter Cole Development Analysis, (Feb 7, 2020).

**** Assumes 24 multifamily dwelling units per acre per HDR's TDM Report Feb 12, 2020).

The average annual revenue per single family unit, multifamily unit, and nonresidential acre was multiplied by the projected residential and nonresidential growth on a cumulative annual basis to arrive at operating revenue projections.

[11] Per the FNI report, single-family and multifamily units will require water production of 170 GPD per capita, with household sizes averaging 3.2 persons and 2.5 persons respectively. Nonresidential consumption is 120 GPD per employee, assuming 18 employees per acre. Monthly GPDs for each unit type are shown in the first row of the figure.. Per the FY2020 City of Denton Utility Rate Booklet, the Facility Charge for a Single Family Unit is $16.00 per month, and multifamily facility charges vary depending on the meter size. We thus applied the Single Family-to-Multifamily GPD ratio (16:13, or 79 percent), to the Single Family facility charge to estimate the average monthly multifamily facility charge. The same methodology was used to estimate the average nonresidential facility charge. The result of these calculations is average annual water revenue of $1,000, $841, and $4,276 per Single Family unit, Multifamily unit, and Nonresidential acre, respectively. Average annual wastewater revenue per unit and per acre was calculated utilizing the per capita consumption/production (measured in GPD) from the FNI Report, and the 2020 Booklet rates and formulas. The Drainage fees utilized are calculated on a per unit per acre basis for residential development and on a per acre basis for nonresidential development, assuming an average impervious surface area of 60 percent for all land uses, which is supported by the Master Planned Community's zoning.

Impact Fee Revenue Projections

The following impact fee schedule, based on the *City of Denton's 2018 Water and Wastewater Impact Fee Study*, was utilized to project Water and Wastewater impact fee revenue attributable to Hunter/Cole Ranch. See the footnote in Figure 34 for detail regarding how the multifamily fee per unit and nonresidential fee per acre were calculated.

Figure 34. Water and Wastewater Impact Fee Assumptions

Impact Fee Assumptions
City of Denton - Fiscal Impact Analysis

FUND	Single Family (SFE)	Multifamily (Unit)*	Nonresidential (Acre)**
Water	$7,638	$6,011	$26,383
Wastewater	$4,716	$3,712	$83,739

**Calculated by subtracting the total estimated SFE and Multifamily Water/Wastewater from the Impact Fee Revenue projected in the FNI Report, and dividing the result by the total nonresidential acreage projected.

*Applies 73% W/WW Consuption/Production Rate to SFE Impact Fees.

By multiplying the fee amounts depicted in Figure 34 by projected growth in residential and nonresidential development, annual water and wastewater impact fee revenue was calculated for each year of the study period. Note that the MMD will contribute revenue from a Contract Tax, as outlined in the Operating Agreement, to help finance impact fee eligible Water and Wastewater capital projects.

Electric Fund

The Electric Fund revenue assumptions depicted in Figure 35 were provided by the City of Denton. The per unit and per acre annual electric revenues were applied to the development program to project rate revenues. This FIA utilized the City of Denton's estimated annual lighting revenue per year; the City's revenue assumptions for lighting are shown in the figure below on a per lot and per mile basis.

Figure 35. Utility Fund Revenue Projection Methodology

Land Use Category	Per Unit / Per Acre Annual Revenue
Multi Family Annual Revenue / Unit 775kWH	$1,024
Single Family Annual Revenue / Unit /1875 kWH	$2,091
Commercial Annual Revenue / Acres	$46,395
Industrial Annual Revenue / Acres	$26,182
Lighting Category	**Per Lot / Per Mile**
Residential Lighting 6.6 Lots /100W	$129
Arterial Lighting 250W 21.12 lights per mile	$226

Source: City of Denton (DME) - Dec 12, 2019.

Solid Waste Fund

Solid Waste Fund revenue was projected by multiplying the annualized FY2020 rate for Single Family refuse and recycling collection (standard cart size) to the Single Family units projected under the development plan on a cumulative annual basis. Rates were confirmed with City of Denton staff. Nonresidential rates were projected using nonresidential square footage ["TOTAL NR SF"] as the demand base, since nonresidential rates vary depending on characteristics on nonresidential properties that are unknown at this conceptual phase of the development program.

Figure 36. Solid Waste Fund Revenue Projection Methodology

Revenue Category	Revenue Name	Base Year Budget Amount	Project Using Which Demand Base?	LOS Std $ per Demand Unit
Solid Waste Fund	Refuse & Recycling Fees - Residential	$11,125,873	SINGLE FAMILY	$256.92
	Refuse Fees - Commercial	$14,533,461	TOTAL NR SF	$0.48
	Commercial Recycling	$1,505,187	TOTAL NR SF	$0.05
	Landfill Gate and Material Sales	$5,967,459	FIXED	$0.00
	Recycled Materials Sales	$60,590	FIXED	$0.00
	Asset Sales & Interest Income	$459,217	FIXED	$0.00
	Other Revenues	$871,268	FIXED	$0.00
	Use of Reserves	$348,606	FIXED	$0.00

REVENUE OUTPUTS

This section details revenue outputs from the Fiscal Impact Analysis.

REVENUE PROJECTIONS

The following figures illustrate the projected revenues in the City's General Fund and other non-utility Funds modeled. Results are shown as a cumulative total over the 40-year projection period as well as an average annual figure. As noted in the figures, the listed dollar amounts are in $1,000s.

Figure 37. 40-Year Revenue Totals for all Non-Utility Funds

40-Year Total Revenues (x$1,000)

City of Denton's Fiscal Impact Model

Category	Cumulative Revenues	%	FTEs
General Fund Revenues			
Ad Valorem Taxes	$627,009	55%	0.00
Sales Tax	$374,893	33%	0.00
Franchise Agreements	$0	0%	0.00
Other Taxes	$5,981	1%	0.00
Service Fees	$51,509	4%	0.00
Fines and Fees	$29,384	3%	0.00
Licenses and Permits	$2,170	0%	0.00
Miscellaneous Revenues	$0	0%	0.00
Return on Investment	$57,241	5%	0.00
Cost of Service Transfer	$45	0%	0.00
Subtotal General Fund Revenues	**$1,148,231**	**100%**	**0.00**
Subtotal General Debt Service Fund Revenues	**$335,073**		
Subtotal Street Improvement Fund Revenues	**$96,975**		
Subtotal Roadway Improvement Fund Revenues	**$49,008**		
GRAND TOTAL REVENUES	**$1,629,288**		
AVERAGE ANNUAL REVENUES	**$40,732**		

Revenue total and average annual revenue over the 40-year study period is shown for each Utility Fund included in the analysis in Figure 38.

Figure 38. Revenue Totals and Annual Average for Utility Funds

40-Year Net Cumulative Impact - Utilty Funds

City of Denton - Fiscal Impact Analysis

Electric Fund*	
Cumulative Total	**$966,695**
Average Annual Revenue	**$24,167**

Water Fund	
Operating Revenues	$389,015
Impact Fee Revenues	$153,035
Cumulative Total	**$542,050**
Average Annual Revenue	**$13,551**

Wastewater Fund	
Operating Revenues	$279,736
Impact Fee Revenues	$144,469
Cumulative Total	**$424,205**
Average Annual Revenue	**$10,605**

Solid Waste	
Cumulative Total	**$304,055**
Average Annual Revenue	**$7,601**

*Electric Fund projections provided by City of Denton.

OPERATING EXPENDITURE METHODOLOGIES

All variable operating expenditures are projected, including personnel and operating costs. Capital Expenditures are discussed in a separate section.

GENERAL AND SPECIAL REVENUE FUNDS

For most City departments, operations and personnel costs are projected separately. A summary of the approach is provided below. It should be noted that many departments have some portion of their budget that is considered "fixed" and will not increase with growth. That is, existing operations will be able to absorb a portion of additional impacts from growth in the City. In the figures below, "fixed" is only indicated for those categories that are considered entirely "fixed."

Figure 39. General and Special Revenue Operating Expenditures Approach

Expenditure Category	Department	Population	Population & Jobs	Lane Miles	Vehicle Trips	Total Police Calls	Total Fire and EMS Calls	City FTEs	Custom Analysis	Fixed	Staff Modeled?
General Fund											
Administrative & Community Services	City Manager		x								x
	Economic Development		x								x
	Facilities Management								Facilities SF		x
	Finance/Accounting		x					x			x
	Human Resources							x			x
	Internal Audit							x			x
	Legal Administration		x					x			x
	Public Affairs		x								x
	Non-Departmental									x	
Neighborhood Services	Library	x							Library SF		x
	Parks And Recreation								Parks SF		x
	Development Services		x								x
Public Safety	Public Safety Communications					x	x				x
	Municipal Court		x								x
	Municipal Judge		x								x
	Police				x	x					x
	Animal Services	x									x
	Fire						x				x
Transportation	Transportation Admin			x							x
	Traffic Operations			x							x
Special Revenue Funds											
Streets Improvement Fund	NA			x							x
Roadway Impact Fee Fund	NA			x							NA

CUSTOM METHODOLOGIES

All growth-related departments except for Facilities Management, Library, and Parks and Recreation are modeled using basic growth indicators derived from the development scenario (i.e., population, jobs, etc.) as the basis for projecting demand. Further explanation of those metrics is found in Appendix A. Descriptions of the customized methodology used for Facilities Management, Library, Parks and Recreation, and the Roadway Impact Fee Fund are found below.

- *Facilities Management:* Facilities Management expenditures are expected to increase over base year expenditures in accordance with the addition or expansion of City owned facilities. Facilities Management is currently responsible for 1,341,696 square feet of City-owned facilities.[12] As future development triggers the construction of new facilities (discussed in detail in the following chapter) the Facilities Management department will need to increase its capacity in order to maintain levels of service. Facilities Management expenditures are thus projected utilizing "FACILITIES SF." The expansion of capital facilities is discussed in detail in the next section of this chapter.

- *Parks & Recreation*: Parks and Recreation Operating Expenditures are projected based on square feet of City-maintained parks that will be developed as a result of Hunter/Cole Ranch. The table below summarizes the public park facilities and amenities that will be developed and which entity—the City or the MMD—will be responsible for their maintenance.

Figure 40. City Maintained Parks and Recreation Facilities for Operating Expense Projections

PARK CATEGORY	Number	Prototype Size	Total Area Developed
City Maintained			
Recreation Center	1	26,000 sf	26,000 sf
Hunter Ranch 54-acre City Park	1	54 acres	2,352,240 sf
Cole Ranch 50-acre City Park	1	50 acres	2,178,000 sf
TOTAL CITY MAINTAINED PARKS (SF):			**4,382,000 sf**
MMD or HOA Maintained			
Neighborhood Parks	4	5 acres	20 acres
Pocket Parks / Dog Parks	30	2 acres	60 acres
Regional Trails	23	1 mile	23 miles
Community Trails	35	1 mile	35 miles

[12] Source: City of Denton Facilities with Updated Property Values 2019. Provided by City of Denton Finance Department.

- *Library*: Library operating expenditure projections are based, in part, on library square footage. One additional library is triggered by growth, as detailed in the next section of this chapter. Using current costs per Library SF, the fiscal model projects increases in Library operating expenditures.

UTILITY FUND OPERATING EXPENDITURES

As Enterprise Funds, Utility Funds are self-funding in the sense that rates are adjusted as needed to cover operating and capital expenditures. As requested by the City of Denton, however, this FIA examined the fiscal impact of the proposed development on Utility Funds if utility rates were to be held constant over time. Expenditures were projected utilizing the methodological approaches summarized Figure 41.

Figure 41. Utility Funds Operating Expenditures Approach

Expenditure Category	Name	Revenue	Production*	Facilities	Custom Analysis	Staff Modeled?
Utility Funds						
Water Fund	Personnel					x
	Operations		x			
	Franchise Fees				[5% of Gross Rev.]	
	Return on Investment				[3.5% of Gross Rev.]	
	Cost of Service - Transf.	x				
	Capital Outlay		x			
Wastewater Fund	Personnel					x
	Operations	x	x			
	Franchise Fees				[5% of Gross Rev.]	
	Return on Investment				[3.5% of Gross Rev.]	
	Cost of Service - Transf.	x				
	Capital Outlay		x			
Electric Fund	Personnel				*Quorum Report Projections*	
	Operations				*Estimates from DME*	
	Franchise Fees				[5% of Gross Rev.]	
	Return on Investment				[3.5% of Gross Rev.]	
	Cost of Service - Transf.	x				
	Capital Outlay				*Estimates from DME*	
Solid Waste Fund	Personnel					x
	Operations		x		[Single Family Units] / [Nonresidential SF]	
	Franchise Fees				[5% of Gross Rev.]	
	Cost of Service - Transf.	x				
	Capital Outlay		x			

*Production/consumption utilizes the following metrics: Water - thousands of gallons per year; Wastewater - thousands ofof gallons (discharge) per year; Solid Waste - landfilled (tons); recyclin collections (tons)

CAPITAL EXPENDITURE METHODOLOGIES

Capital costs and infrastructure improvements to serve new development are modeled based on demand generated by the proposed development. Capital facilities, infrastructure, vehicles, and equipment are projected for General Government, Parks and Recreation, Library, Fire, Police, Public Works, Facilities Management, Fleet Management, Transportation and Street Departments, DMU Water, DMU Wastewater, DMU Electric, and Solid Waste.

Many of the assumptions on which the analysis is based can be viewed as policy-making decision points, which if modified would affect the overall results. For example, most of the capital expenditures assumed in the analysis, and the resulting costs (assumed in most cases as debt financed), are projected independent of the current capital improvement programs and debt capacity guidelines. Rather, the capital costs projected in this analysis reflect the potential cost to serve new growth, regardless of whether the resources are available to cover the costs. The City will continue to balance its annual budgets considering financial guidelines and policies, applicable operating impacts, and available resources.

An important aspect of the capital expenditure methodology is that per direction from the City of Denton's Finance Department, it is assumed that the funding of new facilities will be debt financed. This is in keeping with the City's current practices and allows the City to fund necessary infrastructure investments for which it has insufficient cash on hand. From a fiscal impact perspective, it should be noted that debt financing can understate the full cost of a capital project; because the payments are made over a 20-year period, the fiscal model's 40-year projection period may not capture the full cost of capital facilities constructed or assets acquired after year 21.

GENERAL GOVERNMENT FACILITIES

To serve residential and nonresidential development in the scenarios, the population and job growth is multiplied by the current level of service of general government administrative offices. The level of service is found by dividing the current floor area of City Hall (*City Hall, City Hall East less Police Department floor area, City Hall West, and Finance*) by population and job total in the City (192,782 square feet / 196,274 population and jobs = 0.98 square feet per population and job). As residential and nonresidential growth occurs in the scenarios, the demand factor of **0.98 square feet per population or job** is applied to General Government capital costs.

General Government vehicles are also projected using this approach; the base year 2019 vehicle count is 33 as provided by the City of Denton's FY2019 Fleet Inventory Asset List. Note that General Government city vehicles are assigned an average useful life of eight years, and replacement vehicles are also included in this analysis.

PARKS AND RECREATION

Parks and Recreation infrastructure improvement needs resulting from the development of Hunter/Cole Ranch were provided by the City of Denton and are documented in the draft Operating Agreement between the City and the development team and the Developer's Draft Parks Location Plan.

We projected when development would trigger the need for the planned capital facilities based on current levels of service for Recreation Facilities, City Parks, Neighborhood Parks, Pocket Parks, Regional Trails, and Community Trails. See Figure 40 for a summary of anticipated Parks & Recreation infrastructure improvements.

Costs were estimated based on recently completed or design-phase park project cost estimates,[13] industry standards adjusted for regional cost factors,[14] and replacement costs for the City of Denton's current parks and recreational facilities.[15] Capital costs were then allocated between the City and the Developer/MMD as directed by the City of Denton per the December 2019 Draft Operating Agreement and input from City staff.

TRANSPORTATION

To project the impact growth will have on roadway infrastructure over the 40-year study period on, the current level of service was calculated by dividing base year 2019 lane miles (1,326 lane miles) by estimated base year 2019 vehicle trips (392,167 vehicle trips). As citywide vehicle trips increase due to development, the construction of additional lane miles will be required. Vehicle trips are projected utilizing trip generation rates from the Institute of Transportation Engineers (ITE) Trip Generation Manual 10th Edition (2017). The demand factor of **0.0034 lane miles per vehicle trip** is then applied to total vehicle trips to calculate additional lane miles.

Roadway infrastructure improvements required to provide access to Hunter/Cole Ranch MMD were projected by HDR and are documented in the January 2020 Draft TDM Plan.[16] The roadway infrastructure costs presented in this report represent the difference between the total roadway investment needed to meet the projected transportation demand from Hunter/Cole Ranch over the analysis period and the capital costs associated with the specific projects identified in the Draft TDM Plan. Based on input from City of Denton staff, it is assumed that roadway impact fees and MMD Contract Tax revenue contributions will help fund these costs.

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[13] City Council Meeting Materials – Agenda ID# 191337, Exhibit 2. June 18th, 2019. Carnegie Park aka Patrick Park Construction Cost Estimates.
[14] North Carolina State University. 2015. Cost Analysis for Improving Park Facilities to Promote Park Based Physical Activity. Available:https://content.ces.ncsu.edu/cost-analysis-for-improving-park-facilities-to-promote-park-based-physical-activity
[15] City of Denton Facilities with Updated Property Values 2019. Provided by City of Denton Finance Department.
[16] HDR. Dec 10, 2019. City of Denton Cole-Hunter 2040 Draft TDM Report.

POLICE

Police capital facilities impacted by growth include patrol vehicles and police facility square feet. The current level of service standard for police facilities is 2019 facility square feet (26,925 SF) per Police Calls for Service (84,666) or ***0.32 square feet per call for service***. Police Calls for Service were projected over the 40-year study period based on the methodology in Appendix A. This 0.32 level of service standard was applied to Police Calls for Service to project additional police facility square feet needed to serve growth. Square footage was then converted to facilities needed assuming an average facility size of 20,630 square feet, per current substation design plans.[17]

Per conversations with City staff, one vehicle is needed for every two patrol officers. Sworn Officers added to the force as a result of additional demand for police services was projected based on police calls for service (which will increase due to population and employment growth in the MMD, as described in Appendix B). Vehicle acquisition is triggered by the addition of new sworn officers. The useful life for Police patrol vehicles is an average of five years. Average vehicle costs were provided by the City of Denton.

FIRE AND EMS

Fire and EMS services were projected utilizing an approach similar to that used for Police services. Current facility levels of service were calculated in terms of base year substation square feet per Fire and EMS Calls for Service (94,500 square feet divided by 15,002 calls for service = ***6.53 square feet per call for service***. The fire substation facility prototype is equal in square footage to the recently constructed Fire Station #4 (15,721 square feet). Projected facility square feet were converted to facilities, assuming the average new substation size will be 15,721 square feet.

LIBRARY

The City of Denton currently has three libraries; total square footage is 78,304 square feet, and libraries range from 21,516 square feet to 33,708 square feet. Total collection materials, or library items, equal 281,651. Demand for additional library capital facilities was projected by applying the current library LOS of ***0.58 square feet per population*** to projected population growth. The average library size of 26,101 square feet was used to estimate the number of new facilities that will need to be added to meet demand generated by growth resulting from the Hunter/Cole Ranch MMD.

[17] Source: https://www.cityofdenton.com/CoD/files/17/172108de-784b-4c3b-b297-a7c6ef888e4f.pdf

SERVICE STATION ANNEX

Per direction from City of Denton staff, we assumed that 50 percent of the planned "Service Station Annex" detailed in the *City of Denton Capital Facilities Needs Assessment* completed by Quorum Architects would be attributable to growth from Hunter/Cole Ranch.[18]

[18] Quorum Architects. Jan 16, 2020. City of Denton Facility Needs Assessment.

EXPENDITURE OUTPUTS

This section details expenditure outputs from the Fiscal Impact Analysis.

Regarding capital expenditures, the analysis assumes that all capital projects will be debt financed; the capital expenditure totals in the figures within this section of the report reflect this assumption. Note that they therefore differ slightly from the capital expenditures listed by item in the inventory of capital costs presented in Chapter 2 of this report. The capital project and cost inventory presented in Chapter 2 depicts project costs as if they were cash-financed to allow for a straightforward comparison of City and Developer/MMD costs.

OPERATING AND CAPITAL EXPENDITURE PROJECTIONS

Operating and capital expenditure results are provided in this section based on the expenditure methodologies discussed above.

For operating expenditure projections, the 40-year cumulative total is shown. Public Safety expenditures account for the majority of costs. New staffing for the Police Department (89 FTEs) and Fire Department (73 FTEs) are driving the operating expenses. Shown in Figure 42, Transportation costs account for just 1 percent of the total expense increase attributable to Hunter/Cole Ranch. The majority of operating and major road maintenance costs resulting from the projected increase in City-Maintained Lane Miles are within the Street Improvement Fund.

Figure 42. Operating Expenditure Projections

Cumulative Operating Expenditures (x$1,000)

City of Denton's Fiscal Impact Model

Category	Cumulative Expenditures	%
Administrative & Community Services	$186,825	22%
Neighborhood Services	$114,448	13%
Public Safety	$554,534	64%
Transportation	$11,897	1%
SUBTOTAL GENERAL FUND EXPS	**$867,704**	**100%**
SUBTOTAL STREET IMPROVEMENT FUND EXPS	**$69,372**	
GRAND TOTAL OPERATING EXPS	**$937,076**	
AVERAGE ANNUAL EXPS	**$23,427**	

The capital results for General Fund departments are shown below in Figure 43. Note that "Public Works," as referenced in this FIA, includes Fleet Maintenance & Fuel and Facilities Management. Fleet and Facilities expenditures represent the majority of General Fund-financed capital expenses, in part because the City is 100 percent responsible for funding the Service Station Annex, whereas capital expenditures in other departments are at least partially funded by the developer or MMD.

Another reason Fleet and Facilities expenditures are heavily impacted by growth is because these departments are already near capacity in terms of both space and staffing. Moreover, Hunter/Cole Ranch is not proximate to the existing Service Station, which houses Fleet Maintenance and Facilities Management. It is therefore necessary for the City to develop a Service Station Annex to accommodate the expansion of these two departments. The Service Station Annex will also accommodate the Streets Department and Parks and Recreation, as well as Solid Waste, Water, Wastewater, and a portion of DMU Electric.

The capital costs presented in this analysis for the Service Station Annex reflect only those that are the result of growth stemming from Hunter/Cole Ranch.

Figure 43. Summary of Non-Utility Capital Costs

Cumulative Capital Expenditures (x$1,000)
City of Denton's Fiscal Impact Model

Category	Cumulative Expenditures	%
Streets	$11,519	8%
Parks and Recreation	$49,659	35%
Library	$7,018	5%
Fire	$11,459	8%
Police	$5,633	4%
General Government	$18,294	13%
Public Works	$38,454	27%
SUBTOTAL GENERAL DEBT CAP EXPS	**$142,035**	**100%**
SUBTOTAL ROADWAY IMPACT FEE EXPS	**$51,657**	
GRAND TOTAL CAPITAL EXPS	**$193,692**	

Figure 44. Summary of Utility Fund Capital Costs

Cumulative Capital Expenditures (x$1,000) - Utility Funds
City of Denton's Fiscal Impact Model

Category	Cumulative Expenditures	%
Electric	$115,077	23%
Water	$241,963	48%
Wastewater	$226,743	45%
Solid Waste	$36,378	7%
TOTAL	**$505,084**	**100%**

APPENDIX A. DEMOGRAPHIC & DATA ASSUMPTIONS

BASE YEAR DEMOGRAPHIC ESTIMATES

The table below summarizes estimates of the base year population, housing units, employment, nonresidential space, and facility factors in the City of Denton. These estimated values serve as the basis for the fiscal impact analysis and are used to determine the cost and revenue factors used in the analysis.

Figure 45. Base Year Input Data

		Year->	Base 2019	
Population[1]	POPULATION		134,460	
	POP AND JOBS		196,274	
Housing Units by Type [1]	SINGLE FAMILY		30,450	
	MULTIFAMILY		19,190	
	TOTAL UNITS		49,640	
Jobs by Type [4]	RETAIL JOBS		12,818	
	OFFICE JOBS		19,782	
	INDUSTRIAL JOBS		15,772	
	INSTITUTIONAL JOBS		13,442	
	TOTAL JOBS		61,814	
Nonresidential Floor Area	RETAIL SF		5,470,258	
(SF = Square Feet)	OFFICE SF		6,429,066	
	INDUSTRIAL SF		13,619,179	
	INSTITUTIONAL SF		4,529,955	
	TOTAL NR SF		30,048,460	
Vehicle Trips [3]	RESIDENTIAL TRIPS		239,023	
	NONRES TRIPS		153,144	
	VEHICLE TRIPS		392,167	
Facility Factors [2][6][7]	CITY MAINTAINED LN MILES		1,321	
	CUM PARK SF_CITY		41,033,520	
	REC FACILITIES SF		173,036	
	CITY PARK ACRES		587	
	CITY VEHICLES		1,225	
	FACILITY SF		1,341,696	
	LIBRARY ITEMS		281,651	
	LIBRARIES		3	
	RESIDENTIAL LN MILES		843	
	ARTERIAL LN MILES		225	
	COLLECTOR LN MILES		253	
Police Factors [4][7]	RES POLICE CALLS		62,706	
	NONRES POLICE CALLS		21,960	
	TOTAL POLICE CALLS		84,666	
Fire Factors [4][7]	RES FIRE CALLS		11,111	
	NONRES FIRE CALLS		3,891	
	TOTAL FIRE CALLS		15,002	
Utility Factors [2][5][7]	DME VEH		169	
	WATER VEH		110	
	WW VEH		105	
	SW UTILITY VEH		64	
	WATER PRODUCTION		7.14	Billion Gallons
	WW DISCHARGE		4.455	Billion Gallons
	SW LANDFILLED		276,537	Tons
	RECYCLING COL		105,493	Tons

[1] City of Denton Staff (8/29/19 email)
[2] City ofDenton FY2018-19 Buget
[3] TischlerBise; ITE
[4] City of Denton Staff
[5] FY2019 Fleet Inventory provided by City of Denton
[6] FY2019 City Assets Updated Property Values provided by City of Denton
[7] Based on information from City of Denton CAFR

POPULATION AND JOB FACTORS

Household size is used to project population over the planning horizon; employees per acre of nonresidential space are used to project future employment. Per direction from City of Denton staff, we utilized the following assumptions.

- **Single Family**: 3.2 Persons per Household
- **Multifamily**: 2.5 Persons per Household
- **Nonresidential Employees per Acre:** 18 Employees per Acre

VEHICLE TRIPS

Vehicle trips are used to project some operating and capital expenditures in the fiscal impact analysis. Average Weekday Vehicle Trip Ends by type of development (or trip generation rates) are from the reference manual, Trip Generation, *10TH Edition*, published by the Institute of Transportation Engineers (ITE), in 2017. A "trip end" represents a vehicle either entering or exiting a development (as if a traffic counter were placed across a driveway). Trip rates have been adjusted to avoid overestimating the number of actual trips because one vehicle trip is counted in the trip rates of both the origination and destination points.

RESIDENTIAL VEHICLE TRIPS

Vehicle trip generation for residential land uses are calculated by using ITE's average daily trip end rates and a trip adjustment factor customized for the City of Denton.

A vehicle trip end is the out-bound or in-bound leg of a vehicle trip. To not double count trips, a standard 50 percent adjustment is applied to trip ends to calculate a vehicle trip. For example, the out-bound trip from a person's home to work is attributed to the housing unit and the trip from work back home is attributed to the employer.

However, an additional adjustment is necessary to capture City residents' work bound trips that are outside of the City. The trip adjustment factor includes two components. According to the National Household Travel Survey (2009), home-based work trips are typically 31 percent of out-bound trips (which are 50 percent of all trip ends). Also, utilizing the most recent data from the Census Bureau's web application "OnTheMap," 72 percent of Denton workers travel outside the City for work. In combination, these factors account for 11 percent of additional production trips (0.31 x 0.50 x 0.72 = 0.11). Shown in Figure 46 the total adjustment factor for residential housing units includes attraction trips (50 percent of trip ends) plus the journey-to-work commuting adjustment (11 percent of production trips) for a total of 61 percent.

Figure 46. Trip Adjustment Factor for Commuters

Employed Denton Residents (2017)	61,129
Denton Residents Working in the City (2017)	17,162
Denton Residents Commuting Outside of the City for Work	***43,967***
Percent Commuting out of the City	**72%**
Additional Production Trips	**11%**
Standard Trip Adjustment Factor	**50%**
Residential Trip Adjustment Factor	**61%**

Source: U.S. Census, OnTheMap Application, 2017

NONRESIDENTIAL VEHICLE TRIPS

Vehicle trip generation for nonresidential land uses are calculated by using ITE's average daily trip end rates and adjustment factors found in their recently published 10th edition of Trip Generation. To estimate the trip generation in the City of Denton the weekday trip end per 1,000 square feet factors highlighted in **Figure** 47 are used.

Figure 47. Trip Generation Factors

ITE Code	Land Use	Demand Unit	Wkdy Trip Ends Per Dmd Unit	Wkdy Trip Ends Per Employee	Emp Per Dmd Unit	Sq Ft Per Emp
110	Light Industrial	1,000 Sq Ft	4.96	3.05	1.63	615
130	Industrial Park	1,000 Sq Ft	3.37	2.91	1.16	864
140	Manufacturing	1,000 Sq Ft	3.93	2.47	1.59	628
150	Warehousing	1,000 Sq Ft	1.74	5.05	0.34	2,902
254	Assisted Living	bed	2.60	4.24	0.61	na
530	High School	1,000 Sq Ft	14.07	22.25	0.63	1,581
540	Community College	student	1.15	14.61	0.08	na
550	University/College	student	1.56	8.89	0.18	na
565	Day Care	student	4.09	21.38	0.19	na
610	Hospital	1,000 Sq Ft	10.72	3.79	2.83	354
620	Nursing Home	1,000 Sq Ft	6.64	2.91	2.28	438
710	General Office (avg size)	1,000 Sq Ft	9.74	3.28	2.97	337
770	Business Park	1,000 Sq Ft	12.44	4.04	3.08	325
820	Shopping Center (avg size)	1,000 Sq Ft	37.75	16.11	2.34	427
310	Hotel	Room	8.36	14.34	0.58	1,715
932	Sit-Down Restaurant	1,000 Sq Ft	112.18	21.26	5.28	190
934	Fast-Food Restaurant	1,000 Sq Ft	470.95	45.49	10.35	97
840	Auto Sales (New)	1,000 Sq Ft	27.84	11.20	2.49	402

Source: Trip Generation, Institute of Transportation Engineers, 10th Edition (2017).

A simple factor of 50 percent is applied to the Office, Industrial, and Institutional land uses. The Retail category has a trip factor of less than 50 percent because this type of development attracts vehicles as they pass-by on arterial and collector roads. For example, when someone stops at a convenience store on their way home from work, the convenience store is not their primary destination.

BASE YEAR VEHICLE TRIP TOTALS

Trip rates and adjustment factors are shown in the figure. Using trips generated from single family units as an example, the formula is as follows: 30,450 units x 9.44 vehicle trips per unit x 61% adjustment = 175,343. As shown in Figure 48, residential development accounts for an estimated 61 percent of total daily trips and nonresidential development accounts for an additional 39 percent.

Figure 48. Vehicle Trips

Vehicle Trips on an Average Weekday		
Residential Units	*Assumptions*	
Single Family	30,450	
Multifamily	19,190	
*Average Weekday Vehicles Trip Ends Per Unit***	*Wkdy Trip Ends*	*Trip Factors*
Single Family	9.44	61%
Multifamily	5.44	61%
Residential Vehicle Trip Ends on an Average Weekday		
Single Family	175,343	
Multifamily	63,680	
TOTAL RESIDENTIAL TRIPS	***239,023***	*61%*
Nonresidential Vehicle Trips on an Average Weekday		
*Nonresidential Gross Floor Area (1,000 sq. ft.)**	*Assumptions*	
Retail	5,470	
Office	6,429	
Industrial	13,619	
Institutional	4,530	
Average Weekday Vehicle Trip Ends per 1,000 Sq. Ft.**	*Wkdy Trip Ends*	*Trip Factors*
Retail	37.75	33%
Office	12.44	50%
Industrial	3.37	50%
Institutional***	9.74	50%
Nonresidential Vehicle Trips on an Average Weekday		
Retail	68,146	
Office	39,989	
Industrial	22,948	
Institutional	22,061	
TOTAL NONRESIDENTIAL TRIPS	***153,144***	*39%*
TOTAL TRIPS	**392,167**	*100%*

*Floor area estimates are derived from employment figures provided by the City of Denton.
**Trip rates are from the Institute of Transportation Engineers (ITE) Trip Generation Manual (2017)
***Assumes trip rate of the average office.

FUNCTIONAL POPULATION

Both residential and nonresidential developments increase the demand on City services and facilities. To calculate the proportional share between residential and nonresidential demand on service and facilities, a functional population approach is used. The functional population approach allocates the cost of the facilities to residential and nonresidential development based on the activity of residents and workers in the City through the 24 hours in a day.

Residents that do not work are assigned 20 hours per day to residential development and 4 hours per day to nonresidential development (annualized averages). Residents that work in the City of Denton are assigned 14 hours to residential development and 10 hours to nonresidential development. Residents that work outside the City are assigned 14 hours to residential development, the remaining hours in the day are assumed to be spent outside of the City working. Inflow commuters are assigned 10 hours to nonresidential development. Based on 2017 functional population data, residential development accounts for 74 percent of the functional population, while nonresidential development accounts for 26 percent, see Figure 49.

Figure 49. City of Denton Functional Population

	Demand Units in 2017		Demand Hours/Day	Person Hours	Proportionate Share
Residential					
Estimated Residents	131,097				
Residents Not Working		69,968	20	1,399,360	
Workers Living in City		61,129			
Residents Working in City		17,162	14	240,268	
Residents Working outside of City		43,967	14	615,538	
			Residential Subtotal	2,255,166	**74%**
Nonresidential					
Residents Not Working		69,968			
Jobs Located in City		56,412	4	225,648	
Residents Working in City		17,162	10	171,620	
Non-Resident Workers		39,250	10	392,500	
			Nonresidential Subtotal	789,768	**26%**
			TOTAL	3,044,934	**100%**

Source: U.S. Census Bureau, OnTheMap 6.1.1 Application and LEHD Origin-Destination Employment Statistics

POLICE CALLS FOR SERVICE

A custom methodology is used to allocate police costs based on an analysis of calls for service in the City of Denton.

As shown in Figure 49, 74 percent of the functional population in the City is attributed to residential purposes and 26 percent of the functional population is attributed to nonresidential purposes. These factors are used to allocate costs to residential and nonresidential land uses. This percentage split is used to allocate the total police calls.

To project future Police calls for service from new development, the above data is used to determine a call per person and call per nonresidential trip. This methodology seeks to capture demand for services from both residential and nonresidential development. Since specific records on calls for service by type of nonresidential land use is not available, vehicle trips by type of nonresidential land use are utilized as a realistic proxy. This methodology reflects that the greatest number of calls for service on a per square foot basis. If calls for service were allocated on a per employee basis, office uses would generate the greatest number of calls due to its high employment density, which is contrary to actual experience.

Shown in Figure 50, to find the residential police demand factor, the City's population is applied to the total residential calls for service to find a level of service of 0.4664 calls per person. The number of nonresidential vehicle trips is applied to the total nonresidential calls for service to find a level of service of 0.1434 calls per nonresidential trip. These factors are then applied to projected population and nonresidential vehicle trips in each growth scenario to project new Police calls for service.

Figure 50. Police Service Call Demand Factors

POLICE CALLS FOR SERVICE DATA		
Land Use	***FY 2019 Est.***	***Percent***
Residential	62,706	74.1%
Nonresidential	21,960	25.9%
TOTAL CALLS FOR SERVICE	**84,666**	**100.0%**
Calls for Service Projection Factors		
Current Population		134,460
Current Nonresidential Vehicle Trips (Avg Daily)		153,144
Current Vehicle Trips (Avg Daily)		392,167
Calls per Capita		***0.4664***
Calls per Nonres. Trip		***0.1434***

Source: Based on information provided by FY18 CAFR

FIRE CALLS FOR SERVICE

As shown in Figure 51, in 2019, the Fire Department received an estimated 15,003 calls for service. Of the total, 74 percent were attributed to residential development and 26 percent were attributed to nonresidential development.

To project future Fire calls for service from new development, the above data is used to determine a call per person and call per nonresidential trip. This methodology seeks to capture demand for services from both residential and nonresidential development. Since specific records on calls for service by type of nonresidential land use is not available, *vehicle trips by type of nonresidential land use are utilized as a realistic proxy.* This methodology reflects that the greatest number of calls for service on a per square foot basis. If calls for service were allocated on a per employee basis, office uses would generate the greatest number of calls due to its high employment density, which is contrary to actual experience.

Shown in Figure 51, to find the residential fire demand factor, the City's population is applied to the total residential calls for service to find a level of service of 0.0826 calls per person. The number of nonresidential vehicle trips is applied to the total nonresidential calls for service to find a level of service of 0.0254 calls per nonresidential trip. These factors are then applied to projected population and nonresidential vehicle trips in each growth scenario to project new Fire calls for service.

Figure 51. Fire Department Demand Factors

FIRE/RESCUE DATA INPUT AREA		
Land use	***FY2019 Est.***	***Percent***
Residential Land Uses	11,111	74%
Nonresidential Land Uses	3,891	26%
TOTAL CALLS FOR SERVICE	**15,003**	**100.0%**
Calls for Service Projection Factors		
Current Population		134,460
Current Nonresidential Vehicle Trips		153,144
Calls per Capita		***0.0826***
Calls per Nonres. Trip		***0.0254***

Source: Based on information provided by FY18 CAFR