Transportation Utility Feasibility Study

City of Killeen, TX

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I. OVERVIEW

A Transportation Utility Fee (TUF) or Transportation User Fee (TUF) is a monthly fee based on use of the transportation system. The fees are calculated proportionately to road demand usage based on vehicle miles traveled per land use. Typically the transportation utility fee would be collected through a regular local water bill. This fee will provide a dedicated and stable funding source to the City of Killeen to finance maintenance and operations of their transportation system.

The establishment of a TUF to fund road maintenance lessens the reliance on general funds for roadway maintenance and improvements. Since the general fund is often strained with multiple requests from many departments, the allocation amount dedicated for road maintenance and operations can change every year. A TUF will prevent this reliance on year to year changes of budget allocations from the general fund.

The TUF is comprised of two main components:

1) Annual Cost: City of Killeen's Maintenance and Operations (M&O) and Annual Capital Expenses

   – The current estimate is $4,909,270 for M&O and $7,487,512 for Capital. This is a annual cost of $12,396,782.

2) Total demand of vehicle-miles within the City limits of Killeen.

   – The current estimate is 287,936 vehicle miles.

This translates to $3.59 per vehicle-mile per month

[$12,396,782/ 287,936 vehicle-miles / 12 months].

An example monthly fee calculation per development type is illustrated below:

Example Monthly Fee Calculation			
Land Use Classification	***Total Monthly M&O User Fee***	***Total Monthly Capital User Fee***	***Total Monthly User Fee***
Commercial	*$ 11.65*	*$ 17.78*	*$ 29.43*
Industrial	*$ 6.91*	*$ 10.54*	*$ 17.45*
Institutional	*$ 0.68*	*$ 1.04*	*$ 1.72*
Lodging	*$ 2.87*	*$ 4.37*	*$ 7.24*
Medical	*$ 22.09*	*$ 33.69*	*$ 55.78*
Multi-Family	*$ 3.61*	*$ 5.51*	*$ 9.12*
Office	*$ 6.36*	*$ 9.69*	*$ 16.05*
Religious	*$ 1.65*	*$ 2.52*	*$ 4.17*
Single Family	*$ 5.83*	*$ 8.88*	*$ 14.71*

This report consists of a detailed discussion of the methodology for the computation of utility components – Transportation Utility Cost Components, Vehicle-Mile Calculation, and Transportation Utility Fee Calculation.

II. TRANSPORTATION UTILITY COST COMPONENTS

The role of NewGen Strategies and Solutions, LLC ("NewGen") in this project was to quantify both the direct and indirect costs incurred by the City of Killeen ("City") related to Streets, Traffic and Transportation services provided to its citizenry. Such costs are for consideration in establishing a Transportation Utility Fee ("TUF") for ongoing support of a separate Transportation Utility Enterprise Fund ("Transportation Utility"). NewGen's understanding of the various City operations undertaken that provide support to the Streets, Traffic and Transportation functions comes from on-site interviews with key employees from a widespread sample of City departments and an extensive document review process. The resulting costs cover a broad range of activities that include not only the direct activities, such as Street Department crews applying road subgrade material, but also the indirect activities of various overhead City departments providing support services to Street, Traffic and Transportation employees.

The Cost Summary gives a general overview and illustration of the total estimated Transportation Utility related costs. Based on the analysis as described above, the current estimate is an annual cost of approximately $12.4M. Department-related maintenance and operations ("M&O") budget costs have been broken down into Primary and Secondary departments. Primary departments, which make up 35% of the total, are those with key roles or with budgeted costs directly attributable to the City roadways. Secondary departments include all others with support or tangential roles, but with clear contributions towards the Transportation Utility operations or employees performing Transportation Utility functions. Secondary departments account for 5% of the total. Capital component costs include both Existing and Projected Debt and also Fleet Replacement Expenses, making up 55% and 5% of the total respectively. While the actual amounts vary from year to year, these last two elements are shown as the annualized average amounts assumed for inclusion in the prospective TUF.

The following table summarizes each of these cost components.

SUMMARY			
M&O Cost Component	**Total Considered**	**Amount Allocable**	**% Allocable**
Primary Departments	$ 6,349,409	$ 4,312,583	67.9%
Secondary Departments	65,502,760	596,687	0.9%
Subtotal	***$ 71,852,169***	***$ 4,909,270***	***6.8%***
Capital Component Annualized Expenses		**Amount Allocable**	
Fleet Replacement		671,105	
Existing Debt (average annual)		6,178,655	
Projected Debt (average annual)		637,751	
Subtotal		***$ 7,487,512***	
TOTAL		***$ 12,396,782***	

As the table above illustrates, NewGen considered various departmental budgets with a combined total of nearly $72 million. Of this, 6.8% was ultimately directly assigned or allocated for the development of a Transportation Utility Fee. The portion of each budgeted line item was assigned or allocated using cost causal metrics as provided by City Staff. The metrics include a combination of employee time devoted to Transportation Utility activities, various activity counts, assignment of various equipment and software used for Transportation Utility operations, and identification of City facility space used by Streets, Traffic and Transportation operations. Because a full time and motion study or process mapping are both beyond the scope of this project, allocation factors used are based on staff feedback from interviews and the most appropriate data available. A table showing each type of allocation factor used is shown of the following page:

ALLOCATION TYPES

Allocation Factor Type	Method or Calculation	Description
Salary Composite	Total allocated wages *Divided by* Total wages	Produces percentage allocation applied to budgeted lines linked to earnings
Full Time Equivalent ("FTE") Composite	Total allocated FTE's *Divided by* Total FTE's	Produces percentage allocation applied to budgeted lines linked to employee count
Staff Estimates	Staff estimated time spent on Transportation Utility related activities	Produces percentage allocations of both Salary and FTE to be applied to budgeted lines as applicable
Activity Metrics	Available performance metrics used as representative basis of distributing costs among benefitting departments or divisions	Produces percentage allocation applied to budgeted lines of service providing department or division
Unrecovered Costs	Average Billed EMS Billings *Divided by* Total Fire and EMS Billing Budget *Times* % Uncollected for Fire Traffic Accident Response	Produces percentage allocation applied to Fire for budgeted lines linked to earnings or employee count and to the entire budget for EMS Billing
Special Events Labor	Annual Hours for events *Times* Average Wage or OT Rate *Divided by* Total Annual Salaries & Wages	Produces percentage allocation applied to budgeted lines linked to earnings or employee count
Indirect Cost Study Offsets	Calculates Indirect Costs of an activity to be paid by or recovered from another Utility's rates	Avoids double-recovery of indirect costs if present. Discussed more fully in later section.
Equipment Replacement Allocations	Estimated Fleet Value *Divided by* 8 (Based on 8 year average life)	Assumes full fleet replacement every 8 years and is applied only to Fleet Replacement Schedule
CIP Allocations	Reproduces Debt Schedules based on user inputs	Returns annual and/or average annual debt service revenue requirement

Detailed allocations for each budget can be found in the attached Model, but the tables below briefly outline the allocation factors and any special notes for each department considered.

DEPARTMENTAL ALLOCATION TYPES USED

	Department / Cost Center	Allocation Factor(s) Used	% Allocable
*	Traffic	Salary and FTE Composites	100.0 %
	Note:	All Utility related	
*	Streets	Salary and FTE Composites	73.5 %
	Note:	Mostly Utility related, but some sidewalk and concrete crews excluded.	
*	Transportation	Salary and FTE Composites	100.0 %
	Note:	All Utility related	
*	Street Lights	Include All	100.0 %
	Note:	All Utility related	
*	Water Fund Street Maintenance	Include All	100.0 %
	Note:	Offset, All Utility related, fully funded elsewhere	
*	Solid Waste Mowing	Staff Estimate	0.0 %
	Note:	Half related to Streets, but fully funded elsewhere. Can be updated	
	Drainage Supervision	Salary and FTE Composites	2.4 %
	Note:	Oversight from Manager of Mowing and Drainage, Has Option to Offset	
	Public Works Administration	Staff Estimate	27.0 %
	Note:	Based on level distribution between reporting units	
	City Council	Staff Estimate and Indirect Offset	8.6 %
	Note:	Based on City Manager Estimate of 15% less Indirect as Proxy for Council	
	City Manager	Staff Estimate and Indirect Offset	8.6 %
	Note:	15% on Utility related including regional planning efforts less Indirect	
	External Asst. City Manager	Staff Estimate and Indirect Offset	5.2 %
	Note:	Based on level distribution between reporting units less Indirect	
	Internal Asst. City Manager	FTE Composite, Activity Metrics and Indirect Offset	2.4 %
	Note:	Activity Metrics for reporting Units by FTE less Indirect	
	City Auditor	Staff Estimate and Indirect Offset	3.4 %
	Note:	Based on City Auditor Estimate of 6% less Indirect	
	Public Information	Staff Estimate and Indirect Offset	6.8 %
	Note:	Based on Staff Estimate by employee less Indirect	
	City Attorney	Staff Estimate and Indirect Offset	3.2 %
	Note:	Based on Staff Estimate by employee less Indirect	
	City Secretary	Staff Estimate and Indirect Offset	0.3 %
	Note:	Based on Staff Estimate of 1% less Indirect	
	Finance	FTE Composite, Activity Metrics and Indirect Offset	4.3 %
	Note:	Based on Journal Entry and other Transactions less Indirect	
	Purchasing	FTE Composite, Activity Metrics and Indirect Offset	6.8 %
	Note:	Based on Bid, Purchase Order or P-Card Processing less Indirect	

*** Indicates Primary Department**

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DEPARTMENTAL ALLOCATION TYPES USED (cont'd)

Department / Cost Center	Allocation Factor(s) Used	% Allocable
Building Services	Activity Metrics and Indirect Offset	1.5 %
Note:	Based on Square footage supported less Indirect	
Custodial Services	Activity Metrics and Indirect Offset	1.5 %
Note:	Based on Square footage supported less Indirect	
Printing Services	Salary and FTE Composites and Indirect Offset	3.1 %
Note:		
Support Services	Salary and FTE Composites and Indirect Offset	3.2 %
Note:		
Human Resources	Salary and FTE Composites and Indirect Offset	2.8 %
Note:		
Information Technology	Activity Metrics and Indirect Offset	1.8 %
Note:	Based on supported software/platforms less Indirect	
Parks Administration	Special Events Labor	0.8 %
Note:	Based on Staff estimates of time for Special Events supported	
Planning and Development	Staff Estimate and Indirect Offset	2.9 %
Note:	Based on Staff Estimate by employee less Indirect	
Community Development	No Allocation	0.0 %
Note:	Can be added in later years if justified	
Fire Department	Unrecovered Costs for Road Hazard Clean Up	0.2 %
Note:	Based on Uncollected Fire Traffic Accident Response Billings	
EMS Billing-Collection	Unrecovered Costs for Road Hazard Clean Up	0.3 %
Note:	Based on Uncollected Fire Traffic Accident Response Billings	
Police Department	Special Events Labor	0.0 %
Note:	Based on Staff estimates of Time for Special Events supported	
Municipal Court	No Allocation	0.0 %
Note:	Can be added in later years if justified	
Code Enforcement	No Allocation	0.0 %
Note:	Can be added in later years if justified	
Employee Asst. Program	FTE Composites	4.8 %
Note:	Based on Employee Counts	
General Administration	Activity Metrics and Indirect Offset	1.5 %
Note:	Based on Square footage supported less Indirect	
Electricity	All Related Included	10.2 %
Note:	All Traffic Signal and Street Lighting Accounts Included	
Bell County Community Center	No Allocation	0.0 %
Note:	Can be added in later years if justified	
City Hall	FTE Composites and Indirect Offsets	3.1 %
Note:	Based on Organizations with Employee Allocator less Indirect	
Public Services	FTE Composites	0.0 %
Note:	Based on FTE Allocator for Help Center – Utilities Account	

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DEPARTMENTAL ALLOCATION TYPES USED (cont'd)		
Department / Cost Center	**Allocation Factor(s) Used**	**% Allocable**
Municipal Annex	FTE Composites and Indirect Offsets	3.1 %
Note:	Based on Organizations with Employee Allocator less Indirect	
Consolidated	FTE Composites and Indirect Offsets	2.1 %
Note:	Based on FTE Allocator less Indirect	
Fleet Services	No Allocation	0.0 %
Note:	Utility expenses are being invoiced to Primary department budgets	

As evidenced by most of the General Fund departmental budgets included in the Table above, there is an Indirect Cost offset before determining an amount that can be included in the development of the Fee. The Indirect Costs refer to approximately $5 million dollars of General Fund departmental costs that are already being recovered from Water and Wastewater, Solid Waste and Drainage Utilities, and Airport funds. Budgeted transfers from these funds to the General Fund effectively support over 40% of the listed General Fund departments.

If the allocation from each of the affected General Fund departments to these other funds is not included as an offset in this study, the Transportation Utility Fee would double count such costs. To curb this affect, the Project Team included an offset to any departmental budgets included in the development of the City's budgeted indirect cost allocation. However, to the extent that the current rates for Water, Wastewater, Solid Waste and Drainage do not fully include these transfers to the General Fund, the model provides for a reduction to the indirect costs to be offset. A detailed analysis can be found within the Model on the Sheet named Indirect Cost Study Impacts.

III. TOTAL VEHICLE-MILES CALCULATION

The proportional share of the transportation utility is determined by the amount of vehicle-miles each parcel generates. The vehicle-miles per development unit calculation is shown in the table below.

For each land use, the development unit that defines the development's magnitude with respect to transportation demand is shown (per 1,000 sq. ft. or dwelling unit). The trip rates presented for each land use is a fundamental component of the vehicle-mile calculation. The trip rate is the average number of trips generated during the afternoon peak hour by each land use per development unit. The next column, if applicable to the land use, presents the number of trips to and from certain land uses reduced by pass-by trips since the travel demand is accounted for in the land use calculations relative to the primary trip, it is necessary to discount the retail rate to avoid double counting trips. This reduction only occurs in the commercial land use classification. The source of the trip generation and pass-by statistics is the *ITE Trip Generation Manual, 9th Edition*, the latest edition for trip generation data. This manual utilizes trip generation studies for a variety of land uses throughout the United States, and is the standard used by traffic engineers and transportation planners for traffic impact analysis, site design, and transportation planning.

To convert vehicle trips to vehicle-miles, it is necessary to multiply trips by trip length. The trip length values are based on the *Killeen-Temple Metropolitan Planning Organization (MPO) model.* Note these trip lengths are adjusted by 50% to account for an origin-destination reduction to avoid double counting of trips.

The following table lists the total vehicle-miles per development unit by land use classification in the City of Killeen.

Vehicle-Miles Calculation by Land Use Classification					
Land Use Classification	***Development Unit***	***Trip Rate per Development Unit***	***Pass By Percentage***	***Trip Length***	***Vehicle-Miles per Development Unit***
Commercial	*1000 sq. ft.*	*3.71*	*34%*	*3.35*	*8.20*
Industrial	*1000 sq. ft.*	*0.97*	*0%*	*5.01*	*4.86*
Institutional	*1000 sq. ft.*	*0.16*	*0%*	*3.00*	*0.48*
Lodging	*1000 sq. ft.*	*0.60*	*0%*	*3.35*	*2.01*
Medical	*1000 sq. ft.*	*5.18*	*0%*	*3.00*	*15.54*
Multi-Family	*Dwelling Unit*	*0.62*	*0%*	*4.10*	*2.54*
Office	*1000 sq. ft.*	*1.49*	*0%*	*3.00*	*4.47*
Religious	*1000 sq. ft.*	*0.55*	*0%*	*2.10*	*1.16*
Single Family	*Dwelling Unit*	*1.00*	*0%*	*4.10*	*4.10*

A. PARCEL ANALYSIS

The first step in determining the total vehicle-miles was to classify each parcel of property within the City of Killeen into specific land use categories in order to ascertain the total area developed. Spatially referenced parcel data was obtained from the Bell County Appraisal District and the City of Killeen. This data included information regarding the geographic size, developed area, county's land use classification, year built and the appraised property value for each parcel of property. Using the county's land use classification and developed square footage field as a guide, the land use classification of each parcel was highlighted in four fields: *Developed, Property Description, Basic Land Use Classification and Detailed Classification.*

- *Developed:* Identifies the development status of each parcel of property as a value of "Y" or "N." Properties assigned the value of "Y" are currently developed while properties assigned a value of "N" have no development.

- *Property Description:* Offers a brief description of the type of development on each property. For example, the type of unit associated with Multi-Family Residential properties are identified as a Duplex, Multiplex, or Apartment in this field. Other descriptions identify properties as churches, schools, mobile homes, public facilities, restaurants, gas stations, warehouses, medical, lodging, automotive, etc.

- *Basic Land Use:* Classifies the land use of each property as Basic, Residential (Single Family or Multi-Family), Planned Development, Retail, Service or Undeveloped.

- *Detailed Land Use*: Offers a more detailed land use classification of each property. The land use categories include Agricultural, Commercial, Industrial, Institutional, Lodging, Medical, Office, Planned Development, Religious, Residential (Single Family or Multi-Family), and Undeveloped.

The information in the four fields listed above was established by consulting aerial imagery for each individual appraised parcel within the City of Killeen using ArcGIS.

The City of Killeen contained 46,354 parcels of which 40,210 parcels were identified with a land use category and development unit. The other parcels were generally considered undeveloped.

The following table lists the total developments by land use category in the City of Killeen.

Parcel Analysis				
Land Use Classification	Total Area (Sq. Ft.)	Total Parcels	Development Units	Total Development
Commercial	9,269,537	937	1000 sq. ft.	9,269.54
Industrial	2,941,884	160	1000 sq. ft.	2,941.88
Institutional	1,920,421	61	1000 sq. ft.	1,920.42
Lodging	1,183,636	36	1000 sq. ft.	1,183.64
Medical	481,490	29	1000 sq. ft.	481.49
Multi-Family	15,386,171	3,303	Dwelling Unit	13,505.00
Office	1,351,662	214	1000 sq. ft.	1,351.66
Religious	1,239,162	100	1000 sq. ft.	1,239.16
Single Family	59,607,732	35,370	Dwelling Unit	35,370.00
Total	**95,139,406**	**40,210**		

B. TOTAL VEHICLE-MILES

Utilizing the parcel analysis the total development units were multiplied by the total vehicle-miles per development unit by land use category to determine the total vehicle-miles as shown in the table below.

Vehicle Mile Calculation					
Land Use Classification	Development Unit	Trip Rate	Pass By	Trip Length	Total Vehicle Miles
Commercial	1000 sq. ft.	3.71	0.34	3.35	76,036.25
Industrial	1000 sq. ft.	0.97	0	5.01	14,296.67
Institutional	1000 sq. ft.	0.16	0	3.00	921.80
Lodging	1000 sq. ft.	0.6	0	3.35	2,379.11
Medical	1000 sq. ft.	5.18	0	3.00	7,482.35
Multi-Family	Dwelling Unit	0.62	0	4.10	34,329.71
Office	1000 sq. ft.	1.49	0	3.00	6,041.93
Religious	1000 sq. ft.	0.55	0	2.10	1,431.23
Single Family	Dwelling Unit	1	0	4.10	145,017.00
Total					**287,936.06**

IV. TRANSPORTATION UTILITY FEE CALCULATION

The TUF is comprised of two main components:

1) Transportation Utility Cost Components (Chapter II)

– The current estimate is $12,396,782 ($4,909,270 for M&O/$7,487,512 for Capital)

2) Vehicle Miles Calculation (Chapter III).

– The current estimate is 287,936 vehicle miles.

This translates to $3.59 per vehicle-mile per month

[$12,396,782 / 287,936 vehicle-miles / 12 months].

Based on the assumptions in this report the following is an example monthly fee calculation:

Example Monthly Fee Calculation			
Land Use Classification	*Total Monthly M&O User Fee*	*Total Monthly Capital User Fee*	*Total Monthly User Fee*
Commercial	*$ 11.65*	*$ 17.78*	*$ 29.43*
Industrial	*$ 6.91*	*$ 10.54*	*$ 17.45*
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Religious	*$ 1.65*	*$ 2.52*	*$ 4.17*
Single Family	*$ 5.83*	*$ 8.88*	*$ 14.71*

V. NEXT STEPS

The following are recommended next steps:

- Present the Transportation Utility Fee Feasibility Study
- Begin Writing Ordinance after Feasibility of Transportation Utility Fee is Complete
- Develop Methodology for Citywide Database Development (Implementation)
- Develop Messaging/Public Outreach/Communication Campaign
- Refine Transportation Utility Fee Rate