

4/14/2024

Opposition to Rezoning and Further Housing Development on Featherline Road

Opposition Analysis for Case Number Z24-04



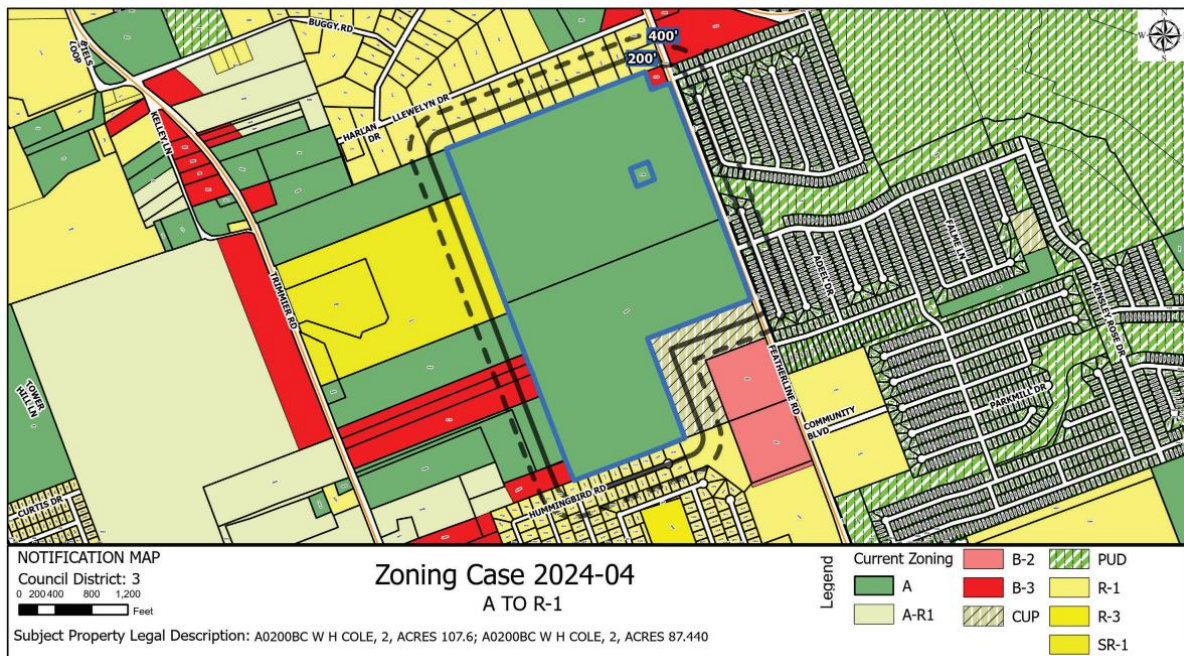
James Sills
RESIDENT OF KILLEEN, TX

Executive Summary

On March 18, 2024, the City of Killeen Planning and Zoning Commission unanimously **DISAPPROVED** (5-0) rezoning Case Z24-04 proposed properties from “A” to “R-1”.

Background

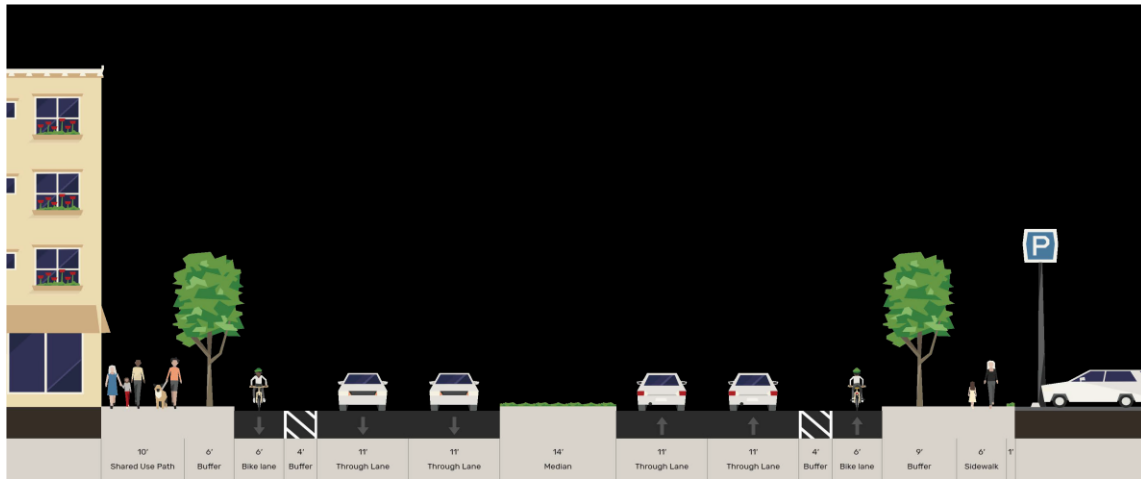
On March 6, 2024, the City of Killeen Development Services and Planning division mailed notification letters to residents pertaining to a request submitted by TCG Engineering, on behalf of GWC Holdings, LLC and McLean Commercial Ltd. (Case #Z24-04) to rezone approximately 195.04 acres of the W H Cole Survey, Abstract No. 200 (1,000 feet south of the intersection of Llewellyn Ln and Featherline Rd) from “A” (Agricultural District) to “R-1” (Single-Family Residential District), for development of single-family detached housing.



Featherline Road – Minor Arterial Requirements

On June 10, 2014, Memorandum for Resolution 14-067R was approved by Mayor Rodney Scott Cosper, and included in the City's 2015 Throughfare Plan, to reclassify Featherline Rd as a Minor Arterial. The minimum lane width and Right-of-Way (ROW) requirements for a Minor Arterial varies between Bell County Throughfare Plan, City of Killeen Comprehensive Plan, and City of Killeen Code of Ordinance, but consensus is 3-5 lanes and 80-120 feet ROW. Today, Featherline Rd is two lanes with ~30 feet of total pavement, and 50-60 feet ROW in some cases which does not meet Code of Ordinance Sec. 26-101. Featherline Rd has one of the highest Average Daily Traffic (7,966) of any two-lane road in Killeen and comparable to Stagecoach and

Chaparral Rd ADT's; both of which are and/or will be funded to meet Minor Arterial requirements. Featherline Rd is not funded for any future projected reconstruction to meet Code of Ordinance Sec. 26-101.



Water Supply and FEMA 2022 Floodplain and National Wetlands Designations

When looked at holistically, FEMA floodplain and National Wetland designated areas consume a large portion of the GWC Holdings, LLC proposed property (ID 463637).



According to FEMA's Flood Map Service Center, the floodplain area is designated as Zone AE. These zones require flood insurance and there is a 26% chance of a home flooding over the life of a 30-year mortgage. American Planning Association, PAS Report 584 - SUBDIVISION DESIGN AND FLOOD HAZARD AREAS states "Avoid new development in the floodplain whenever feasible". Concurrently, there are National

Wetland designations which stretch from the KISD Transportation Facility to Featherline Rd. The floodplain and wetlands on these proposed properties provide water to Yowell Creek which eventually supplies Stillhouse Hollow Lake. Stillhouse Hollow Lake, along with Lake Belton, are the primary water source for Bell County Water Control & Improvement District #1 (WCID1). The City of Killeen sources all its water from Bell County WCID1. As stated, these areas are critical to providing natural water supply to Stillhouse Hollow Lake, water diversion and storage, and wildlife habitats. Modifying these areas can cause serious issues not only to new homes and wildlife, but in existing residential homes as well.

Impacts to Public Works

Yowell Ranch residents suffer from Texas Commission of Environmental Quality (TCEQ) identified minimum low water pressure (35-50psi).



According to the TCEQ “The system must maintain a minimum pressure of at least 35 psi throughout the distribution system during normal operations, and a minimum of 20 psi during emergencies, as specified in 30 TAC 290.46(r)”. Projected storage tank and water pipe additions on Chaparral Rd do not account for the new construction of Jimmie Don Aycock Middle School, commercial properties (Battery Plant, Gas Stations), Yowell Ranch phases, Thousand Oaks subdivisions, or the 600 homes in the proposed rezoning. Even with storage tank and water pipe additions, Yowell Ranch residents are projected to maintain 35-50psi water pressure in 2029. Concurrently, the Wastewater and Sewer, and Solid Waste divisions do not account for the proposed rezoning or additional homes. Future projected expansion of Wastewater and Sewer to service surrounding areas do not expand services for Llewellyn Ln, Featherline Rd, or Yowell Ranch residents.

Quality of Life Impacts

The Garland D. Sheridan Transportation Facility (Bus Barn) on West Trimmier Road is adjacent to the proposed properties. The facility houses hundreds of school

buses which are presumably equipped with 90-110 decibel (db) horns and backup/reverse alarms. The Bus Barn conducts pre-inspection or “testing” on the buses prior to departure which results in repetitive horn honking and alarms. This usually occurs between 5:00am to 7:00am and in the afternoon between 1:00pm to 2:45pm. Based on Inverse Square Law, the audible sound from the horns and alarms will be approximately 50-65 db on the surrounding proposed properties once constructed.

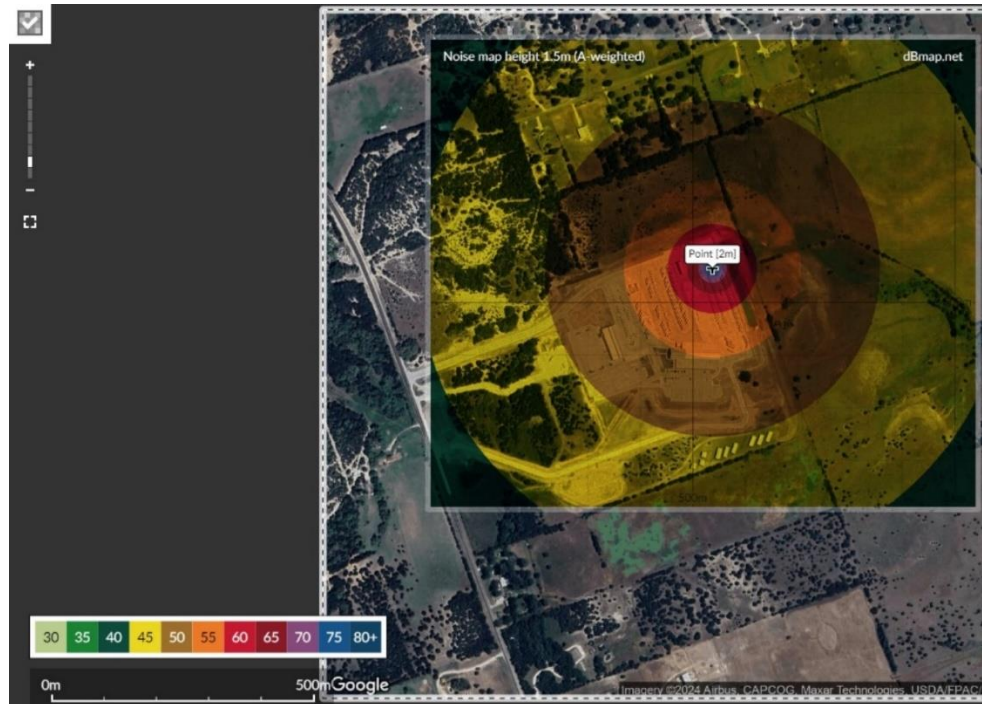


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Case Z24-04 Background

On March 6, 2024, the City of Killeen Development Services and Planning division mailed notification letters to residents pertaining to a request submitted by TCG Engineering, on behalf of GWC Holdings, LLC and McLean Commercial Ltd. (Case #Z24-04) to rezone approximately 195.04 acres of the W H Cole Survey, Abstract No. 200 (1,000 feet south of the intersection of Llewellyn Ln and Featherline Rd) from “A” (Agricultural District) to “R-1” (Single-Family Residential District), for development of single-family detached housing. The property is located approximately one thousand feet south of the intersection of Llewellyn and Featherline Rd, Killeen, TX. The proposed rezoning encompasses two separate properties; Property ID 463637, 107.60 acres, owned by GWC Holdings, LLC, and Property ID 53268, 87.44 acres, owned by McLean Commercial Ltd.

Notification letters were sent to residents who own property within 400 feet of the rezoning boundary (dotted line). Approximately sixty-two residential property owners fall within the 200-foot boundary (solid line) which impacts residents between Llewellyn Ln, Featherline Rd, Hummingbird Rd, Shawlands Rd, Ashlyn Dr, and Glynhill Ct locations.

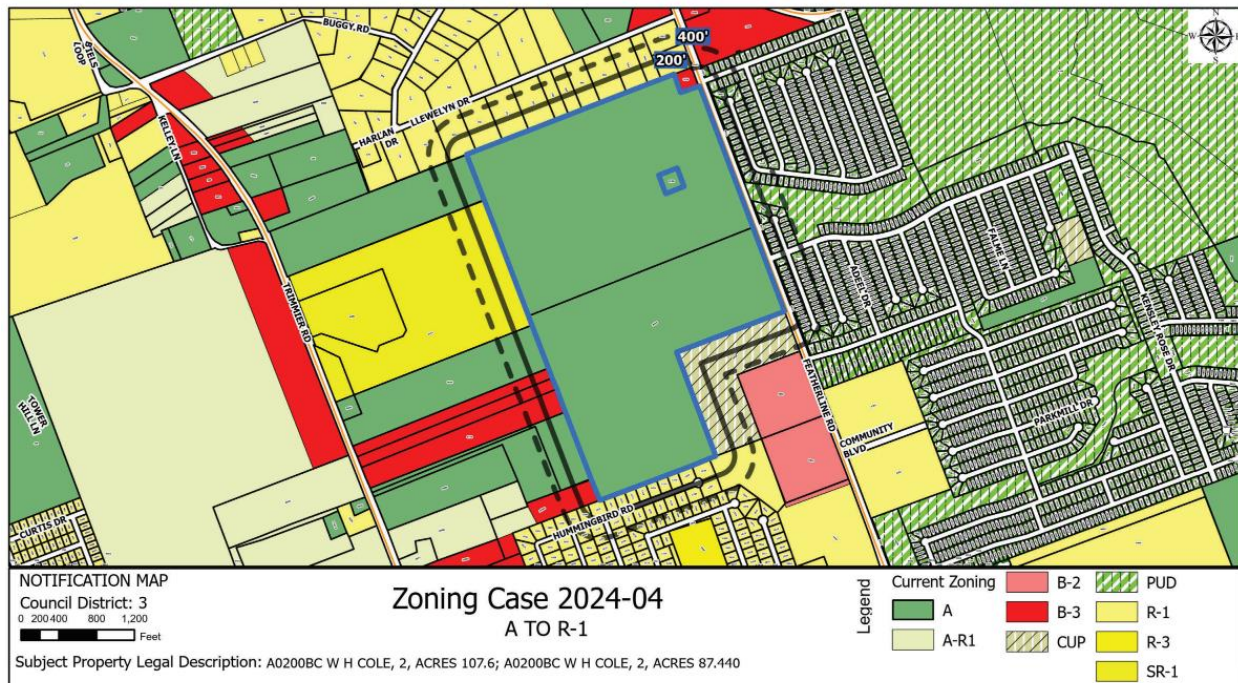


Figure 1 - Proposed Rezone, Case Z24-04

Texas Statute Local Government Code Sec 211.004 states municipalities must design zoning regulations to:

1. **lessen congestion in the streets;**
2. **secure safety from fire, panic, and other dangers;**
3. **promote health and the general welfare;**

4. provide adequate light and air;
5. **prevent the overcrowding of land;**
6. **avoid undue concentration of population;** or
7. **facilitate the adequate provision of transportation, water, sewers, schools, parks, and other public requirements.**

Featherline Road – Minor Arterial Requirements

Background

The subject properties were annexed into City limits on April 30, 2004, via Ordinance No. 04-12. At this time, Featherline Rd intersecting Right-of-Way (ROW) with Stagecoach Rd was owned by Mr. Bruce Whitis. According to City of Killeen's Memorandum for Resolution CCM/R 14-076R, Featherline Rd was classified as a "Collector Street" (see Figure 2) until new classification in June 2014.

movements. W.S. Young Drive currently terminates at Stagecoach Road and does not continue south to the City limits. The nearest street for traffic traveling south from the terminus of W.S. Young Drive at Stagecoach Road is Featherline Road, a collector street. A collector street's primary function is to carry traffic from minor streets to major streets. This offset poses a significant functionality issue due to the lack of alternate routes located in this area. Additionally, the residential development to the north and south of the W.S. Young Drive/Stagecoach Road intersection, and constraints from neighboring cities, limit the ability to connect the W.S. Young Drive and Featherline arterials. Anticipating that development and population will continue to push south, City staff predicts that the traffic at these intersections will become severely congested and inefficient in the coming years.

Figure 2 – Featherline Rd, Collector Street

On June 10, 2014, Memorandum for Resolution 14-067R was approved by Mayor Scott Cospers and included in the City's 2015 Throughfare Plan. The resolution officially modified Featherline Rd's classification from a "Collector Street" to a "Minor Arterial". Additionally, as part of the resolution, Mr. Bruce Whitis verbally committed to donating the required ROW "if the City will commit to preserving the right-of-way and **express intent to prioritize improvements to Featherline Road** as a future community improvement project, including constructing continuous flow configurations with the future improvement of Featherline Road".

As of today, Featherline Rd has undergone one improvement as part of the Stagecoach Rd expansion completed in 2016 by McLean Construction Inc. This improvement only focused on the intersection of Featherline Rd and Stagecoach Rd and traffic light system.

Technical Information

As stated in 14-067R, the general definition of a collector street is “to carry traffic from minor streets to major streets.”. According to TxDOT Roadway Design Manual (RDM) Section 2, the Functional Classification of a Collector is “connects local roads to arterials (moderate mobility, moderate access)”.

The minimum lane width and ROW requirements for a Collector varies between Bell County Throughfare Plan, City of Killeen Comprehensive (Comp) Plan, and City of Killeen Code of Ordinance.

- Bell County Throughfare Plan: 11' Lane Width, 60' ROW
- City of Killeen Comp Plan
 - Residential Collector: 10' Lane Width, 65' ROW
 - Arterial Collector: 11' Lane Width, 80' ROW (See Figure 3)
- City of Killeen Code of Ordinance
 - Residential Collector: 36' Total Pavement Width, 65' ROW
 - Commercial/Mixed Use Collector: 48' Total Pavement Width, 80' ROW



Figure 3 - Arterial Collector

By Contrast, a Minor Arterial is “primarily used for higher speed and higher volume traffic” as stated in 14-067R. The Comp Plan states arterials are the “the main links in the city’s mobility network” and “have four or six lanes, divided by a median, and should have a design speed of 40 to 45 mph”.

The minimum lane width and ROW requirements for a Minor Arterial varies between Bell County Throughfare Plan, City of Killeen Comp Plan, and City of Killeen Code of Ordinance Sec. 26-101.

- Bell County Throughfare Plan: 10' Lane Width (3-5 lanes), 80'-120' ROW
- City of Killeen Comp Plan: 11' Lane Width (4 lanes), 100'-110' ROW (See Figure 4)
- City of Killeen Code of Ordinance: 48-73' Total Pavement Width, 100' ROW

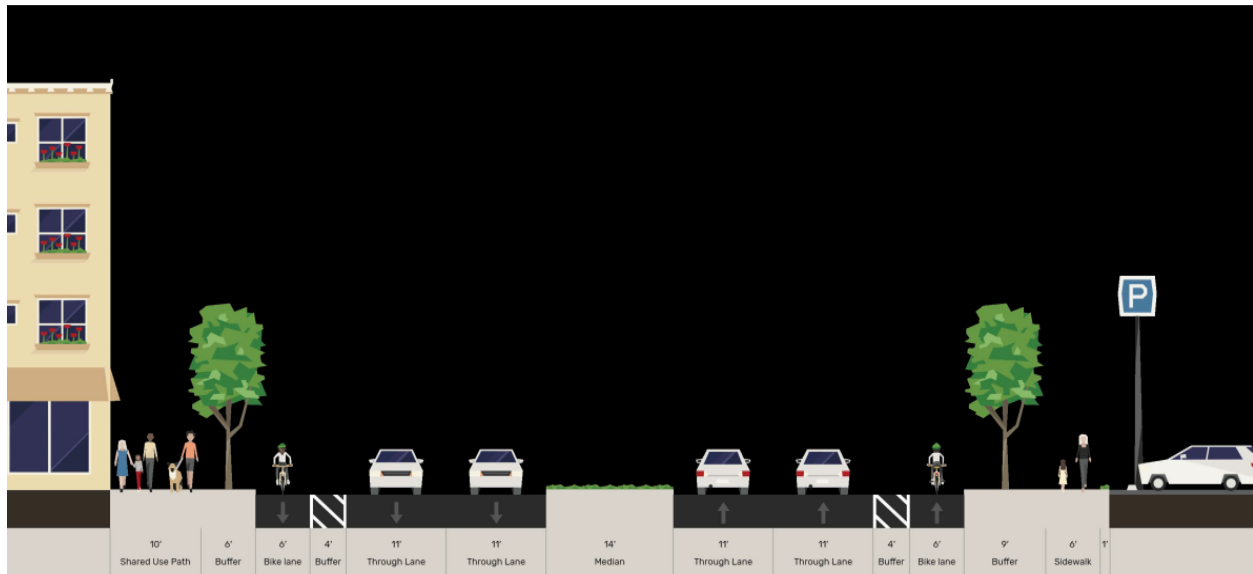


Figure 4 - Minor Arterial

As of today, Featherline Rd pavement measures at **maximum ~30' total pavement width** (~15' lane width) and in some cases as little as 28' total width (14' lane width). By contract, Stagecoach Rd is a Minor Arterial with ~60' total pavement width, 5 lanes, a continuous center lane, sidewalks, and gravity drainage. **Featherline Rd does not meet the total pavement width and total ROW requirements of a Minor Arterial per requirements in TxDOT, Bell County Throughfare Plan, City of Killeen Comp Plan, nor City of Killeen Code of Ordinance Sec. 26-101.**

In addition to not meeting total pavement width and total ROW requirements, Featherline Rd does not meet designated Clear Zone requirements as a Rural Arterial with an Average Daily Traffic (ADT) volume over 750 (See Figure 5). Per TxDOT RDM Section 7, a Clear Zone is “the unobstructed, traversable area provided beyond the edge of the through traveled way for the recovery of errant vehicles. The clear zone includes shoulders, bicycle lanes, and auxiliary lanes, except those auxiliary lanes that function like through lanes. Such a recovery area should be clear of unyielding objects where practical or shielded by crash cushions or barrier”.

Table 2-12: 4R Clear Zones

Location	Functional Classification	Design Speed (mph)	Avg. Daily Traffic ²	Clear Zone Width (ft) ^{1,3,4,5}	
				Minimum	Desirable
-	-	-	-	30 (16 for ramps)	
Rural	Freeways	All	All	30 (16 for ramps)	
Rural	Arterial	All	≤ 750	16	30
			≥ 750	30	--
Rural	Collector	≥ 50	All	Use above rural arterial criteria.	
Rural	Collector	≤ 45	All	10	--
Rural	Local	All	All	10	--
Suburban	All	All	< 8,000	10 ⁶	10 ⁶
Suburban	All	All	8,000 - 12,000	10 ⁶	20 ⁶
Suburban	All	All	12,000 - 16,000	10 ⁶	25 ⁶

Figure 5 - TxDOT Clear Zones

Average Daily Traffic (ADT), per TxDOT, is “the total traffic for a year divided by 365, or the average traffic volume per day”. While TxDOT does not recommend using it as sole basis for design, it is an important factor when considering overall traffic health and safety. In 2022, Featherline Rd had an ADT of 7,966. By contrast, Stagecoach Rd, a five-lane Minor Arterial, had an ADT of 8,263 (see Figure 6).

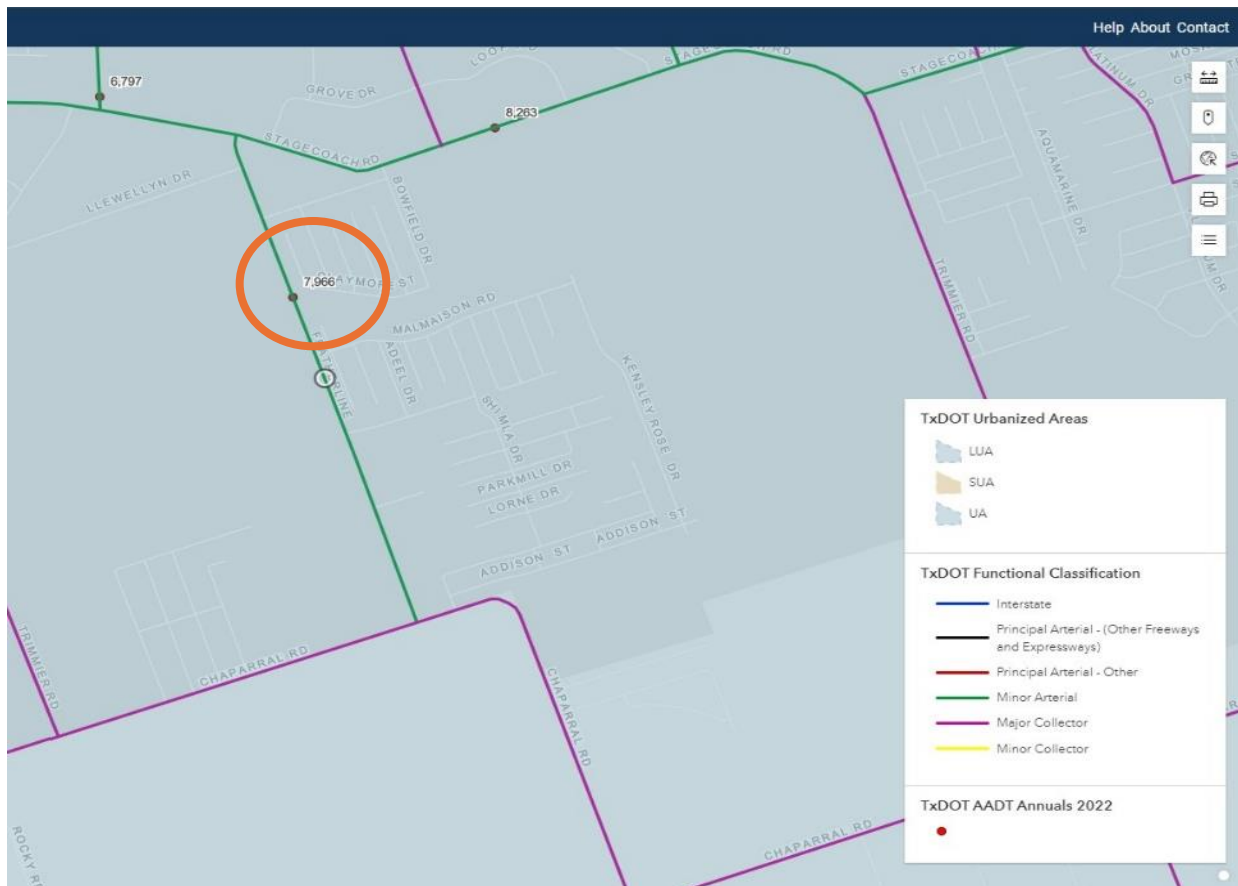


Figure 6 - Featherline ADT

Additionally, Featherline Rd was projected to increase ADT by 38% due to recent Chaparral High School addition (see Figure 7) and other subdivision phase additions. **Featherline Rd has one of the highest ADT's for a two-lane road in Killeen, TX.**

STATION DATA

Directions: 2-WAY NB SB ?

AADT ?

	Year	AADT	DHV-30	K %	D %	PA	BC	Src
	2022	7,966 ⁹				7,044 (88%)	922 (12%)	PBV
	2021	7,966 ²						KC
	2020	7,887	655	8	56	6,971 (88%)	915 (12%)	
	2019	8,257 ⁹	716	9	51	7,940 (96%)	316 (4%)	
	2018	8,257	764	9	54	7,927 (96%)	330 (4%)	

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Travel Demand Model

	Model Year	Model AADT	AM PHV	AM PPV	MD PHV	MD PPV	PM PHV	PM PPV	NT PHV	NT PPV
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VOLUME COUNT

	Date	Int	Total
	Mon 5/4/2020	15	7,539
	Mon 10/14/2019	15	7,693
	Wed 9/5/2018	15	8,212
	Mon 11/6/2017	15	6,770
	Mon 4/13/2015	15	5,668

VOLUME TRENDS ?

Year	Annual Growth
2023	38%
2022	0%
2021	1%
2020	-4%
2019	0%
2018	25%
2017	14%
2015	14%

Figure 7 - ADT Growth

Due to this growth and lack of reconstruction, Featherline Rd is missing basic safety features, and is already showing signs of deterioration. Vehicles can wait up to 10-15 minutes at the Featherline Rd and Stagecoach Rd intersection to turn left (east). Due to this congestion, vehicles needing to turn right (west) are exiting the pavement which has caused broken pavement and a significant drop-off in the clear zones (See Figure 8). Essentially, vehicles are creating their own “lanes” to circumvent congestion due to Featherline Rd not meeting Code of Ordinance requirements.



Figure 8 - Featherline and Stagecoach

Featherline Rd Summary

Since Featherline Rd's designation as a "Minor Arterial" in 2014, the City of Killeen has completed Stagecoach Rd reconstruction to meet Minor Arterial requirements (3-5 lanes, sidewalks, ROW requirements, etc.), and recently approved funding to reconstruct Chaparral Rd to meet Minor Arterial requirements. Featherline Rd, which interconnects Stagecoach Rd and Chaparral Rd and maintains a similar traffic volume, barely meets Rural Collector requirements let alone Minor Arterial requirements. Featherline Rd has no funding assigned on Comprehensive Plan or Bell County Throughfare Plan. Featherline Rd is listed on the Killeen-Temple Metropolitan Planning Organization (KTMPO) Transportation Improvement Plan. It is ranked 18th on the priority list with a projected cost of \$7.8M (See Figure 9).



Figure 9 - KTMPO

Rezoning the properties on Featherline Rd to add 600 more residential homes, subdivision phases, and commercial properties is not sustainable. Featherline Rd does not meet Minor Arterial designated requirements to meet its daily traffic volume, let alone the potential of 1200-1800 additional traffic ingress/egress instances.

Featherline Rd is not safe as it lacks the proper total pavement width and overall ROW for daily traffic, and the Clear Zones for disabled vehicles or pedestrian traffic. Rezoning should be disapproved until the City of Killeen reconstructs Featherline Rd to meet City of Killeen Code of Ordinance as a Minor Arterial Road.

Water Supply and FEMA 2022 Floodplain and National Wetlands Designations

Background

According to City of Killeen Code of Ordinance Sec 12-7, Areas of Special Flood Hazard are “identified by the Federal Emergency Management Agency in a scientific and engineering report entitled, "The Flood Insurance Study, Bell County, Texas," dated September 26, 2008, with accompanying flood insurance rate maps and flood boundary-floodway maps (FIRMs and FBFM) and any revisions thereto are hereby adopted by reference and declared to be a part of this chapter.”

Designated FEMA flood zones, areas of special flood hazard, and floodplains can be viewed at the following sites:

- <https://msc.fema.gov/portal/home>
- <https://killeengis.killeentexas.gov/gis/apps/webappviewer/index.html?id=244a9c943e18449a9dd05d58c61b7b1b>

FEMA also designates “Zones” to determine the severity of the flood risk for the areas. By definition, "Special Flood Hazard Areas (SFHA) are labeled as Zone A, Zone AO, Zone AH, Zones A1-A30, Zone AE, Zone A99, Zone AR, Zone AR/AE, Zone AR/AO, Zone AR/A1-A30, Zone AR/A, Zone V, Zone VE, and Zones V1-V30. Moderate flood hazard areas, labeled Zone B or Zone X (shaded) are also shown on the FIRM, and are the areas between the limits of the base flood and the 0.2-percent-annual-chance (or 500-year) flood. The areas of minimal flood hazard, which are the areas outside the SFHA and higher than the elevation of the 0.2-percent-annual-chance flood, are labeled Zone C or Zone X (unshaded).”

In addition to FEMA designated zones, the U.S Fish and Wildlife Service assigns Wetland Classification Codes. These codes best describe wetland habitats and their characteristics. The below link provides a table to decode the classification codes.

<https://www.fws.gov/sites/default/files/documents/national-wetland-inventory-water-regime-restriction-table.pdf>

As stated by the U.S Fish and Wildlife Service, “wetlands provide a multitude of ecological, economic, and social benefits. They provide habitat for an array of fish, wildlife, and plants; recharge groundwater; reduce flooding; provide clean drinking water; offer food and fiber; and support cultural and recreational activities”.

Additionally, the City of Killeen sources its water from the Bell County Water Control & Improvement District #1 (WCID1). The WCID1 sources its water from Lake Belton and Stillhouse Hollow Lake and in turn sells it to Killeen, Harker Heights, Copperas Cove,

Nolanville (WCID 3) and Belton along with Fort Cavazos and 439 Water Supply Corporation.

The City of Killeen has been in Stage 2 of the Water Conservation Plan since August 1, 2023 as Lake Belton and Stillhouse Hollow Lake are at or near 60-70% capacity (See Figure 10).

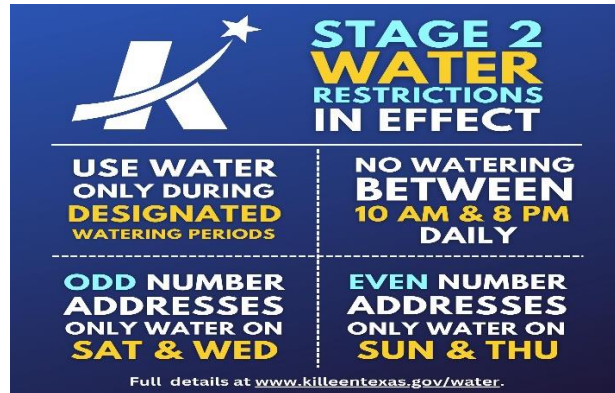


Figure 10 - Stage 2

Technical Information

According to FEMA's Flood Map Service Center, a large area of the GWC Holdings, LLC proposed property falls within a designated SFHA (See Figure 11). This area stretches almost to the boundary properties on Llewellyn Ln south to Featherline Rd before crossing into Yowell Ranch.



Figure 11 - FEMA SFHA

The City of Killeen's Case #Z24-04 Agenda Item Report Environmental Assessment states "The property is within Zone X, a FEMA-regulatory Special Flood Hazard Area (SFHA). There is a known wetland area (PFO1C) a freshwater Forested/Shrub Wetland on the property as identified on the National Wetlands Inventory". However, according to FEMA's Flood Map Service Center, the location is designated as Zone AE (See Figure 12).

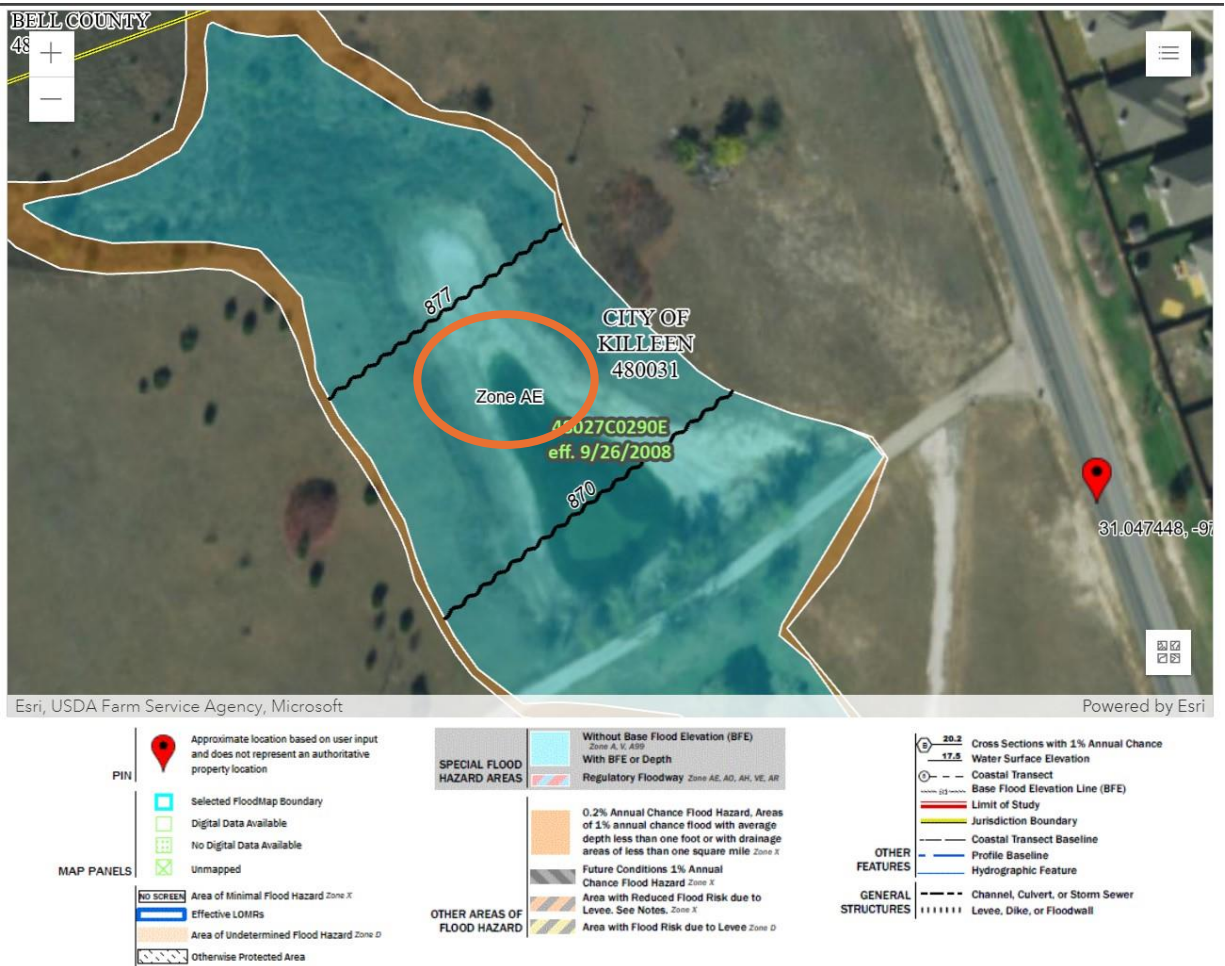


Figure 12 - Zone AE

Zone AE designations require flood insurance and there is a 26% chance of a home flooding over the life of a 30-year mortgage (See Figure 13).

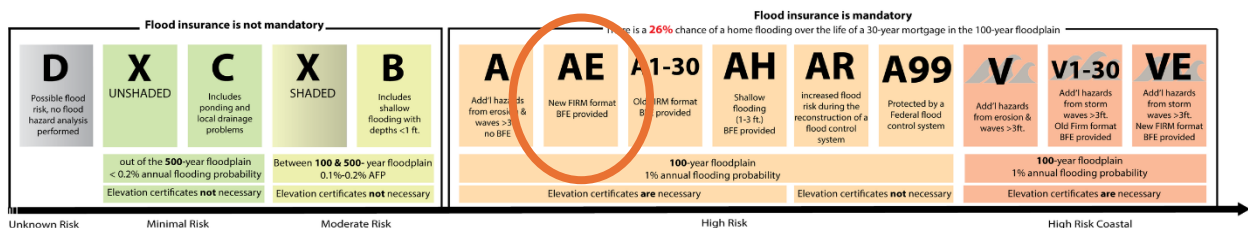


Figure 13 - Zone AE Designation

According to the American Planning Association, PAS Report 584 - SUBDIVISION DESIGN AND FLOOD HAZARD AREAS, there are five general principles for mitigating flood hazards within subdivision design:

1. Maintain natural and beneficial functions of the floodplain.
2. Adopt a No Adverse Impact approach to floodplain management.
3. **Avoid new development in the floodplain whenever feasible.**
4. Focus on data-driven decision making, using only the best available data to assess risk and inform decisions.
5. Consider future conditions of the floodplain, including development impacts and climate change.

Additionally, they recommend specific recommendations for Layout and Design as well as Platting (See Figure 14). As stated, “a persuasive argument to elected officials is that new development must not create conditions for future problems for those property owners, **nor should it result in higher flood risks for existing residents of the community**”.

Layout and Design

Depending on the size of the subdivision, the stormwater created by the development itself can result in increased flood risk to on-site buildings and infrastructure as well as offsite impacts. For practicing planners, a persuasive argument to elected officials is that new development must not create conditions for future problems for those property owners, nor should it result in higher flood risks for existing residents of the community.

Recommended standards for layout and design include the following:

- Ensure that conservation subdivisions protect and preserve natural features. Prohibit the creation of new lots in the floodplain, or require that new lots have adequate buildable areas above the 100-year flood elevation.
- Perform an impact analysis and mitigation by prohibiting the subdivision of land that is unsuitable for development due to flooding, poor drainage, or other conditions that may endanger health, life, or property. Require evaluation of communitywide impacts. Adopt a No Adverse Impact standard.
- Require use restrictions prohibiting the platting of land for uses that may increase dangers to health, life, or property. Prohibit new lots in the floodplain without a natural grade elevation above the regulatory floodplain. Prohibit the use of fill. Do not allow critical facilities in the floodplain extent or the flood of record extent, whichever is greater. Do not locate land reserved for schools or fire stations in the floodplain.
- Require new private or public streets in the subdivision to access an existing “dry” road during the 100-year flood and/or be constructed above the 100-year floodplain.

Platting

While subdivision plats may not ever be viewed by subsequent buyers of lots, they nonetheless can serve an important function in providing information on flood risk. However, thought should be put into how this information is conveyed so that it is not implied that a flood hazard never changes (e.g., not putting a flood elevation on a plat unless it is also accompanied by an explanation that flood risk can change over time).

Recommended platting standards include the following:

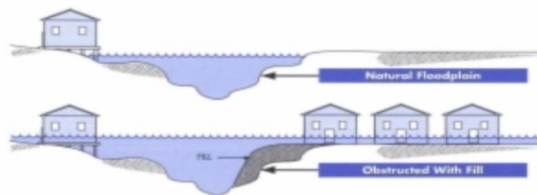
- Require flood hazard information on plats and plans. This includes 100-year and 500-year flood elevations and boundaries, specific references to FIRM panels, and relevant information about elevation and flood insurance requirements.
- Permit density bonuses when coupled with restrictive covenants and easements. Require conservation and drainage easements in floodplain communities where lots may not be developed.
- Require physical monumentation of floodplain boundaries.

Figure 14 - APA Recommendations

Per the Bell County Floodplain Management office, “Flood plains are supposed to store floodwater. If storage space is filled with dirt and other material, future flooding may worsen. Floodplain fill can alter other functions beside backwater, including wildlife habitats and wetlands”. (See Figure 15).

Floodplain fill can make things worse

Floodplains are supposed to store floodwater. If storage space is filled with dirt and other material, future flooding may worsen. You are required to perform an engineering analysis to show how the floodplain fill will alter flooding. Floodplain fill can alter other functions beside backwater, including wildlife habitats and wetlands.



Make sure your floodplain fill project won't harm your neighbors. Floodway fill is allowed only if an engineering study and the floodplain administrator can determine if the “no rise” in the flood level will occur.

If you have questions please contact the County Engineer's Office at (254) 933-5275.

Figure 15 - Bell Country Floodplain

For residents in Llewellyn Estates, they lack groundwater management, capture, or run-off. There are no curbs, sewer or capture diversion, or city engineered water run-off solutions. Currently, a large influx of water run-off is diverted between properties 701 and 619 Llewellyn Ln. The run-off feeds the designated wetland and floodplain areas. (See Figure 16).



Figure 16 - Llewellyn Water Drainage

It is critical these natural run-offs into the designated wetland and floodplains remain for the surrounding residents. **Introducing additional infill, as previously shown in Figure 15, will alter water drainage, storage, backwater, and impact wildlife habitats.**

The City of Killeen's Case #Z24-04 Agenda Item Report does not contain all National Wetlands Inventory (NWI) Designations assigned to the proposed properties for its Environmental Assessment. These designations are important to determine the type of impact caused by infilling these areas and the impacts to surrounding habitats and residents.

The NWI shows there are four designations: PEM1A, PEM1C, PUBFh, and R4SBC. Figure 17 shows the overview of the designations on the proposed property.



Figure 17 - NWI Overview

The light blue on the far left of Figure 17 is R4SBC (See Figure 18). R4SBC is a .45-acre Riverine with the following descriptions:

- **System Riverine (R):** The Riverine System includes all wetlands and deepwater habitats contained within a channel, with two exceptions: (1) wetlands dominated by trees, shrubs, persistent emergents, emergent mosses, or lichens, and (2) habitats with water containing ocean-derived salts of 0.5 ppt or greater. A channel is an open conduit either naturally or artificially created which periodically or continuously contains moving water, or which forms a connecting link between two bodies of standing water.
- **Subsystem Intermittent (4):** This Subsystem includes channels that contain flowing water only part of the year. When the water is not flowing, it may remain in isolated pools or surface water may be absent.

- **Class Streambed (SB):** Includes all wetlands contained within the Intermittent Subsystem of the Riverine System and all channels of the Estuarine System or of the Tidal Subsystem of the Riverine System that are completely dewatered at low tide.
- **Water Regime Seasonally Flooded (C):** Surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.



Figure 18 - R4SBC

The long green line stretching to Yowell Creek in Figure 17 is PEM1C (See Figure 19). PEM1C is a 1.80-acre Freshwater Emergent Wetland with the following descriptions:

- **System Palustrine (P):** The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.
- **Class Emergent (EM):** Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.

- **Subclass Persistent (1):** Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.
- **Water Regime Seasonally Flooded (C):** Surface water is present for extended periods especially early in the growing season but is absent by the end of the growing season in most years. The water table after flooding ceases is variable, extending from saturated to the surface to a water table well below the ground surface.



Figure 19 - PEM1C

The shorter green line in Figure 16 is PEM1A (See Figure 20). PEM1A is a 0.40-acre Freshwater Emergent Wetland with the following descriptions:

- **System Palustrine (P):** The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.
- **Class Emergent (EM):** Characterized by erect, rooted, herbaceous hydrophytes, excluding mosses and lichens. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants.
- **Subclass Persistent (1):** Dominated by species that normally remain standing at least until the beginning of the next growing season. This subclass is found only in the Estuarine and Palustrine systems.

- **Water Regime Temporary Flooded (A):** Surface water is present for brief periods (from a few days to a few weeks) during the growing season, but the water table usually lies well below the ground surface for most of the season.



Figure 20 - PEM1A

The blue circle in Figure 16 is PUBFh (See Figure 21). PUBFh is a This 0.28-acre Freshwater Pond with the following descriptions:

- **System Palustrine (P):** The Palustrine System includes all nontidal wetlands dominated by trees, shrubs, persistent emergents, emergent mosses or lichens, and all such wetlands that occur in tidal areas where salinity due to ocean-derived salts is below 0.5 ppt. It also includes wetlands lacking such vegetation, but with all of the following four characteristics: (1) area less than 8 ha (20 acres); (2) active wave-formed or bedrock shoreline features lacking; (3) water depth in the deepest part of basin less than 2.5 m (8.2 ft) at low water; and (4) salinity due to ocean-derived salts less than 0.5 ppt.
- **Class Unconsolidated Bottom (UB):** Includes all wetlands and deepwater habitats with at least 25% cover of particles smaller than stones (less than 6-7 cm), and a vegetative cover less than 30%.
- **Water Regime Semi-Permanently Flooded (F):** Surface water persists throughout the growing season in most years. When surface water is absent, the water table is usually at or very near the land surface.
- **Special Modifier Diked/Impounded (h):** These wetlands have been created or modified by a man-made barrier or dam that obstructs the inflow or outflow of water.



Figure 21 – PUBFh

The floodplain and wetlands on these proposed properties outflow via surface or ground water into Yowell Creek which traverses to Trimmier Creek. Trimmier Creek is one of the many inflows into the Stillhouse Hollow Lake. Along with Lake Belton, Stillhouse Hollow Lake is one of the main sources for Bell County WCID1. However, recent weather pattern changes, aggressive property development, and population growth has led to lower water availability in Killeen. **From 1970-2011, Stillhouse Hollow Lake and Lake Belton fell below 71% capacity only once. Since 2010, Stillhouse Hollow Lake and Lake Belton have fallen below 71% eight times.** These trends may continue which makes the preservation of natural inflow sources even more critical. Infilling these designated areas will not only impact surface water, but ground water as well.

Summary

When looked at holistically, FEMA floodplain and National Wetland designated areas consume a large portion of the GWC Holdings, LLC proposed property (See Figure 22).



Figure 22 - FEMA/NWI Overview

Recognizing the FEMA 2022 and National Wetlands Inventory designated areas are critical to sustaining natural water run-off, water storage (surface and underground), and wildlife habitats. Modifying these areas can cause serious issues not only to underground water tables and downstream creeks, riverine, and lakes. These designations should be protected and avoided at all costs.

Impacts to Public Works (Water, Wastewater, Residential Services)

Background

The Public Works Department is the backbone to the City of Killeen's infrastructure and provides the following services:

- Capital improvement projects planning and administration
- Quality engineering, planning, and land use services
- Solid waste services
- Street and traffic maintenance
- Utility systems

The City of Killeen Public Works department has the following divisions:

- The Engineering Division provides plan review and inspections services for development and city-sponsored projects.
- The Environmental Services Division administers the State-required storm water discharge permit. It is responsible for the development of the city's Storm Water Drainage Master Plan and for implementing a drainage capital improvements program.
- The Transportation Division is responsible for the maintenance of the city's streets, sidewalks, and drainage ways.
- The Solid Waste Division has four divisions: residential collection, commercial collection, recycling services, and transfer station. The Solid Waste Department is responsible for all aspects of garbage collection and disposal.
- The Water and Sewer Division is responsible for maintaining the city's 800+ miles of water and sewer mains; water tanks and towers; sewage lift stations; and fire hydrants. The department is responsible for the delivery of potable water to the customer and collection of wastewater to the treatment plant.

Verdunity and TBG Partners surveyed residents of Killeen, and along with the City of Killeen Staff, visiting several Killeen subdivisions during the City of Killeen Comprehensive Plan development. Of particular note, they spoke with residents in Yowell Ranch which is an adjacent subdivision to the proposed property location. Residents in Yowell Ranch expressed displeasure for basic services such as water

pressure issues, water and sewage, and transportation maintenance for roads and streets (See Figure 23).

YOWELL RANCH:

VERDUNITY:

- HOA neighborhood
- Newer homes
- ~~WIDE streets~~
- Lots of street parking
- Has a splashpad and pool for community
 - Water pressure issues
- ** how much rain does Killeen get annually
- Rosewood/stagecoach
 - Concerned about traffic
 - ~~Attractions as amenities for youth~~
 - Get them off the streets and causing trouble
- Lots of cul-de-sacs
- Walking paths are there but are not easily accessed
- Chose to live here because of school and PROMISED amenities
- Water tower? Where is it?
- New-ish YMCA
- Close to soon to be finished HIG
- Traffic around the neighborhood is bound to go up but streets cant handle it
- ~~One playground for all these houses? NEED more~~
- 30 mph speed limit
 - Cars feel more like they are going 40-45mph
- Want/need for unique and different attractions
- Reduce crime by adding attractions
- \$99 for HOA fee
- Events hosted by HOA out at NH amenities
- Better scheduling of city events and offerings would help to gather more attendees
 - Evenings and weekends
- Natural attractions but not attractive or approachable for use

TBG:

[Moved here because schools & the amenities and HOA] Only community in Killeen with HOA and amenities.

- ~~Communication by city and staff, not good~~
- New growth versus serving existing growth on south side.
- Water pressure – worse w/ more residents
 - Kitchen / shower
 - Fire issues
 - Water Park

Figure 23 - Yowell Ranch

Technical Information

A majority of properties in Llewellyn Estates, Yowell Ranch, and surrounding subdivisions utilize the 2.5 Million Gallon (MG) Southeast Storage Tank. The City of Killeen's Water and Wastewater Master Plan legend states the orange dots located in Yowell Ranch denote a water pressure of 35-50psi. (See Figure 24).



Figure 24 - Water Pressure Current

According to the Texas Commission of Environmental Quality (TCEQ), “The system must maintain a minimum pressure of at least 35 psi throughout the distribution system during normal operations, and a minimum of 20 psi during emergencies, as specified in 30 TAC 290.46(r)”. The yellow dots denote a water pressure of 50-80psi.

Within the Water and Wastewater Master Plan, they also projected the water pressure values for 2029 (See Figure 25) which still has numerous residents with projected 35-50psi.

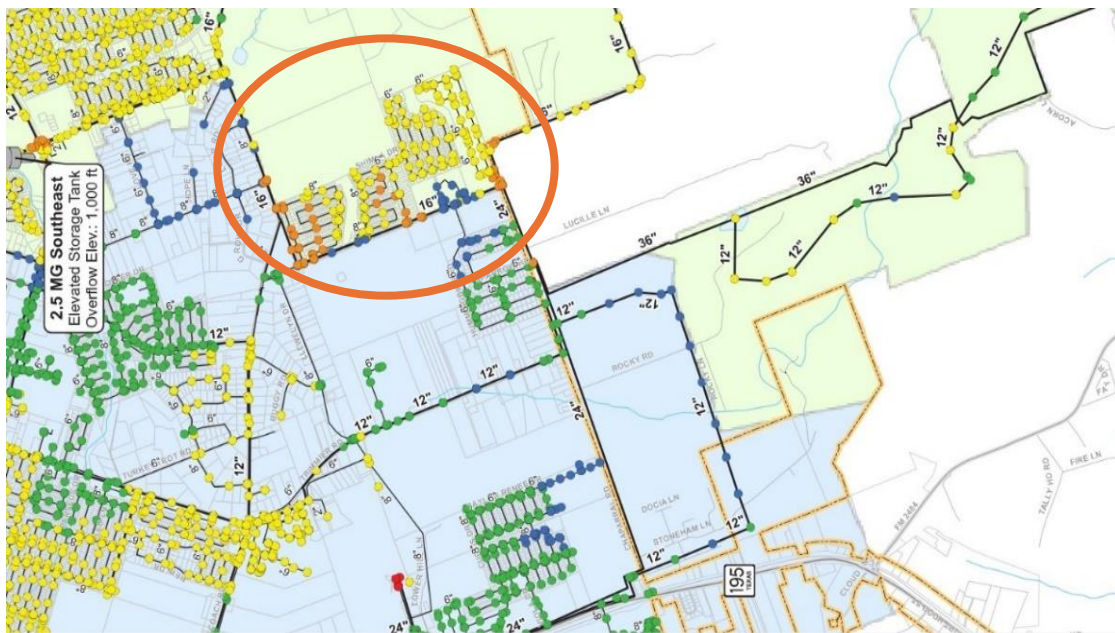


Figure 25 - Water Pressure 2023

The 2029 projection in Figure 25 includes the Chaparral Elevated Storage Tank, Turnbo Ranch piping addition, and other surrounding piping additions. However, it does not include 600 additional homes for the proposed property nor the addition of Jimmie Don Aycock Middle School, commercial properties (Battery Plant, Gas Stations, etc.), Yowell Ranch phases, and Thousand Oaks subdivisions. As stated in the City of Killeen’s Case #Z24-04 Agenda Item Report, this proposed property rezoning would tie to existing services and no funding is allotted to expand water services specifically for Featherline Rd. **Yowell Ranch, without this proposed rezoning, still has numerous residents who have 35-50psi water pressure which is the lowest acceptable level. The addition of 600 more homes in the adjacent lot will continue to strain the already limited water pressure available.**

Wastewater and Sewer services and Solid Waste continue the same trend. The City of Killeen's Water and Wastewater Master Plan in 2029 depicts additions around the proposed properties, but do not directly assist in expansion of services for Featherline Rd or Llewellyn Ln residents (See Figure 26). These expansions do not account for the additional proposed homes on these properties. Also, the current proposal lacks any type of maintenance and services financial analysis for the miles of additional piping.

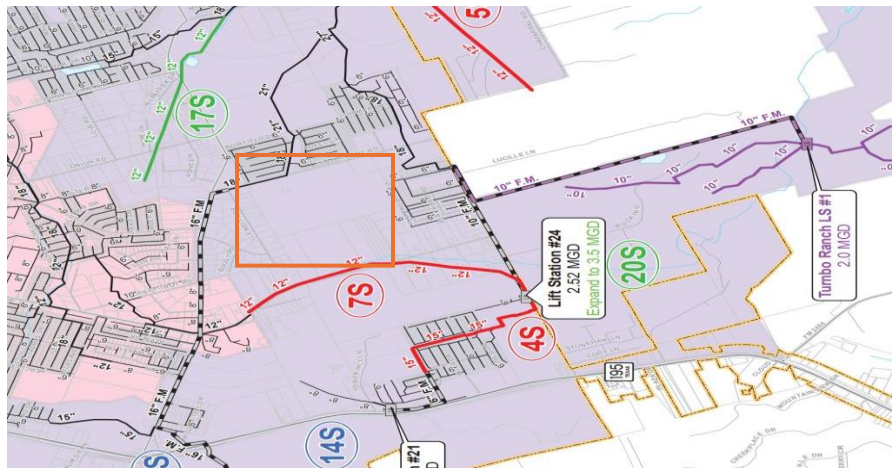


Figure 26 - Wastewater 2029

Furthermore, Solid Waste pickup locations for Llewellyn Ln and Featherline Rd are included the largest service areas in Killeen (See Figure 27). The addition of 600 homes may require additional personnel, trucks, or resources to service these additions along with Turnbo Ranch, subdivision phase expansions, commercial buildings, and other new properties.

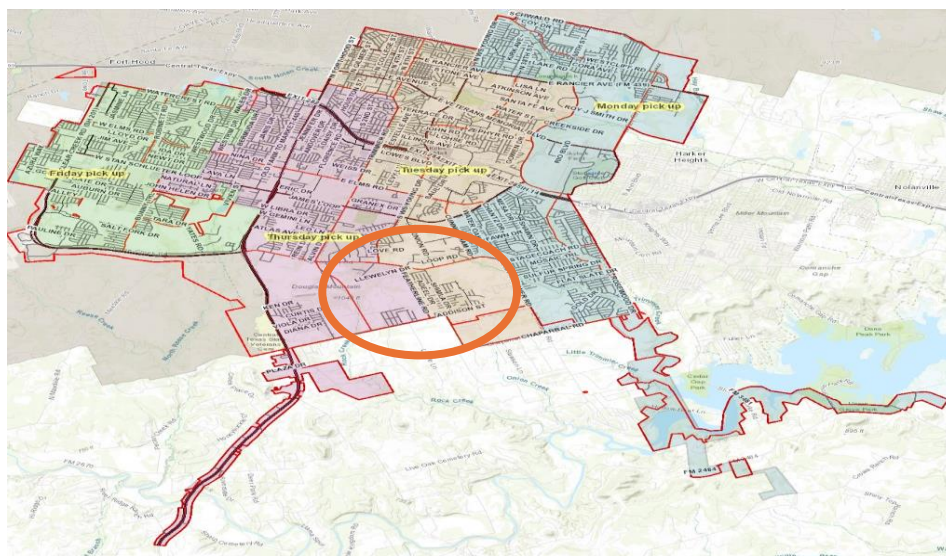


Figure 27 - Solid Waste

Summary

Currently, some Yowell Ranch residents suffer from low water pressure (35-50psi). Projected storage tank and water pipe additions do not account for the new construction of Jimmie Don Aycock Middle School, commercial properties (Battery Plant, Gas Stations, etc.), Yowell Ranch phases, Thousand Oaks subdivisions, or the 600 homes in the proposed rezoning. Even with storage tank and water pipe additions, Yowell Ranch residents are projected to have 35-50psi water pressure in 2029. Concurrently, the Wastewater and Sewer, and Solid Waste divisions do not account for this rezoning or additional homes in future projections. Future expansion is to service surrounding areas, but do not expand service for Llewellyn Ln, Featherline Rd, or Yowell Ranch residents. To date, no financial impact analysis has been conducted by the City of Killeen to determine the totality of cost to service and maintain additional Water, Wastewater, Sewer, and Solid Waste infrastructure additions to support this proposed property. **Rezoning should be disapproved until the City of Killeen conducts financial and personnel impact analysis, and funds expansion or additions to service the additional properties.**

Quality of Life Impacts

Background

In August 2015, the City of Killeen and Killeen Independent School District opened the Garland D. Sheridan Transportation Facility on West Trimmier Road. The Transportation Facility (Bus Barn) contained a 9,000 square foot structure and a parking lot to house roughly 100 buses. In 2023, the Bus Barn was expanded to add 200+ parking spaces and an additional 6,000 square foot facility. The Bus Barn runs adjacent to the GWC Holdings, LLC proposed property line for roughly 1,400 feet (See Figure 28).



Figure 28 - Bus Barn Property Distance

The City of Killeen Code of Ordinance Sec 16-79(a) states “It shall be unlawful to create, generate, produce or emanate an unreasonable noise or noise nuisance when, using the A-weighted scale, fast response, it exceeds 3 decibels over the ambient noise, or a maximum of 50 decibels, whichever is higher, or using the C-weighted scale, fast response, it exceeds 5 decibels over the ambient noise, or a **maximum of 60 decibels**, whichever is higher. Measurement shall be taken at the property line of the noise-producing property, or beyond, in accordance with sec. 16-81(e)”.

Sec 16-79(b) states “**Regardless of the measurable decibels level established above and measured as provided in section 16-81(e), it shall be unlawful to generate, produce or emanate an unreasonable noise or noise nuisance which, by its manner, volume, intensity, or duration is such as to annoy, distress or disturb the comfort or repose of any reasonable person of ordinary nervous sensibilities within the vicinity or hearing** thereof; or so as to endanger or injure the safety or health of humans or animals; or so as to interfere with the physical well being of humans or animals; or so as to endanger or injure personal or real property”.

In most cases, school bus horns emit a 90-110 decibel (db) sound between 400-600hz.

Note: KISD school bus horn decibels are unknown at this time.

A horn this loud is required for safety reasons to alert other drivers and protection of school riders. School buses are also equipped with a backup/reverse alarm to notify surrounding vehicles and pedestrians the school bus is performing a reverse maneuver. The backup/reverse alarms typically range 90-105 db and range from 700-2800hz.

Technical Information

Presumptively, Killeen Independent School District Transportation requires pre-inspection and/or “testing” of the school bus horns and backup/reverse alarms prior to departure from the Bus Barn. For surrounding residents, this testing can occur between 5:30am to 7:00am, and in the afternoon between 1:00pm to 2:45pm. Typically, “testing” results in repetitive horn honking and alarms. Figure 28 captures a small audio snippet of “testing” which occurred between 6:00am and 6:30am on different days from a residence approximately 900 feet away. The “testing” is a noise nuisance for residents in the surrounding area and is excessive when dealing with a significant number of vehicles conducting it simultaneously.



(Audio)

BusBarn_6-630am_Re

Figure 29 - Bus Barn Noise

Using the Inverse Square Law, a person can calculate an approximate decibel level based on a distance from the Bus Barn. As stated, Figure 30 is an approximation and in accordance City of Killeen Code of Ordinance Sec 16-81(d) a decibel meter will be required to measure the A-weighted or C-weighted scale. However, as shown, a 110db sound at 400hz can emit 50-65db in the proposed rezoned properties.

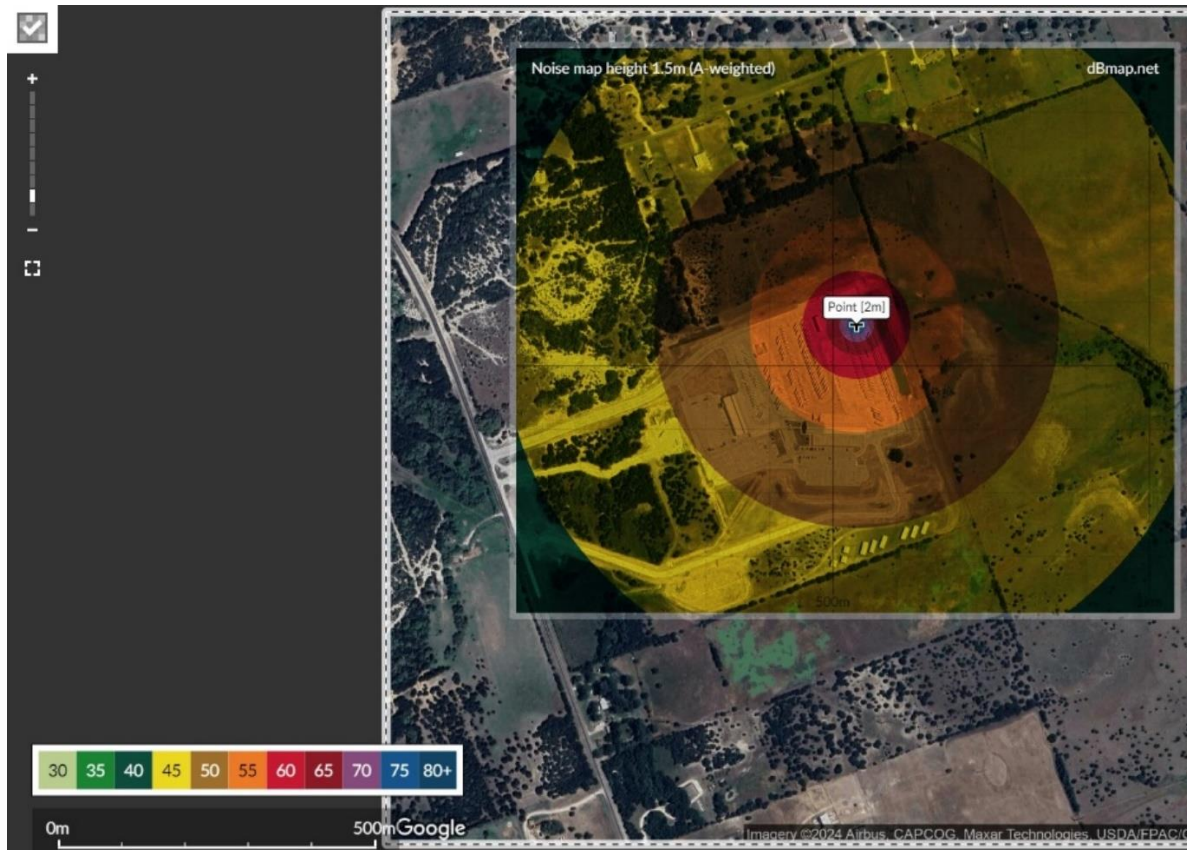


Figure 30 - Bus Barn Decibel Level

For full disclosure, City of Killeen Code of Ordinance Sec 16-80(a)(3) states there are exceptions for “sound produced by any governmental body in the performance of a governmental function”. However, it is unnecessary for any Government entity or developer to place residents within an area which contains “unreasonable noise or noise nuisance which, by its manner, volume, intensity, or duration is such as to annoy, distress or disturb the comfort or repose of any reasonable person of ordinary nervous sensibilities within the vicinity or hearing”. The sounds are a nuisance and disturbs residents 700-1000 feet away, and it will be much worse for residents within 200-400 feet away.

Summary

The Garland D. Sheridan Transportation Facility (Bus Barn) on West Trimmier Road is adjacent to the proposed properties. The facility houses hundreds of school

buses which are presumably equipped with 90-110 decibel (db) horns and backup/reverse alarms. The Bus Barn conducts pre-inspection or “testing” on the buses prior to departure which results in repetitive horn honking and alarms. **Based on Inverse Square Law, the audible sound from the horns and alarms will be approximately 50-65 db on the proposed properties. Regardless of City of Ordinance Exemptions, residents should not be subject to noise pollution and no homes should be built within this area.**