



*** PUBLIC NOTICE ***

**NOTICE OF A CITY COUNCIL REGULAR SESSION IMMEDIATELY FOLLOWING
A WORKSHOP SESSION
OF THE CITY OF CORINTH**

**Thursday, October 17, 2019, 5:45 P.M.
CITY HALL - 3300 CORINTH PARKWAY**

CALL TO ORDER:

WORKSHOP BUSINESS AGENDA

1. Receive a presentation and update on the Climate Ready Communities project.
2. Discuss Regular Meeting Items on Regular Session Agenda, including the consideration of closed session items as set forth in the Closed Session agenda items below.
3. Receive a presentation and discuss the Tax Increment Reinvestment Zone (TIRZ) and the Transit Oriented Development (TOD) District.
4. Review water meter reading software.

ADJOURN WORKSHOP SESSION

***NOTICE IS HEREBY GIVEN** of a Regular Session of the Corinth City Council to be held at Corinth City Hall located at 3300 Corinth Parkway, Corinth, Texas. The agenda is as follows:

CALL TO ORDER, INVOCATION, PLEDGE OF ALLEGIANCE & TEXAS PLEDGE:

"Honor the Texas Flag: I pledge allegiance to thee, Texas, one state under God, one and indivisible".

CONSENT AGENDA

All matters listed under the Consent Agenda are considered to be routine and will be enacted in one motion. Should the Mayor, a Councilmember, or any citizen desire discussion of any Item that Item will be removed from the Consent Agenda and will be considered separately.

1. Consider and act on minutes from the August 22, 2019 Workshop Session.
2. Consider and act on minutes from the August 22, 2019 Regular Session.

CITIZENS COMMENTS

In accordance with the Open Meetings Act, Council is prohibited from acting on or discussing (other than factual responses to specific questions) any items brought before them at this time. Citizen's comments will be limited to 3 minutes. Comments about any of the Council agenda items are appreciated by the Council and may be taken into consideration at this time or during that agenda item. Please complete a Public Input form if you desire to address the City Council. All remarks and questions addressed to the Council shall be addressed to the Council as a whole and not to any individual member thereof. Section 30.041B Code of Ordinance of the City of Corinth.

PUBLIC HEARING

3. **The Corinth City Council will hold a public hearing, consider testimony, and act upon a request for a zoning change from C-2, Commercial to Planned Development (PD) with a base zoning district of C-2, Commercial in order to operate a motorcycle dealership with light repairs on a 1.13 acre tract of land legally described as Kensington Park Addition, Block A, Lot 3 in the City of Corinth, Denton County, Texas, and is more commonly known as 7700 South I-35E. This property is located north of FM 2181, south of Riverview Drive, east of S. Garrison Rd. and west of IH35. (Twisted Cycles Planned Development)**
 1. Staff Presentation
 2. Applicant Presentation
 3. Public Hearing
 4. Staff Response
 5. Take Action

BUSINESS AGENDA

4. Consider authorizing the City Manager to complete the second phase (Phase II) of a Transit Stop Study being conducted with the Denton County Transportation Authority (DCTA) for a transit stop concept plan and a cost estimate for the City of Corinth.

COUNCIL COMMENTS & FUTURE AGENDA ITEMS

The purpose of this section is to allow each councilmember the opportunity to provide general updates and/or comments to fellow councilmembers, the public, and/or staff on any issues or future events. Also, in accordance with Section 30.085 of the Code of Ordinances, at this time, any Councilmember may direct that an item be added as a business item to any future agenda.

CLOSED SESSION

The City Council will convene in such executive or (closed session) to consider any matters regarding any of the above agenda items as well as the following matters pursuant to Chapter 551 of the Texas Government Code.

Section 551.071. (1) Private consultation with its attorney to seek advice about pending or contemplated litigation; and/or settlement offer; and/or (2) a matter in which the duty of the attorney to the government body under the Texas Disciplinary Rules of Professional Conduct of the State of Texas clearly conflicts with chapter 551.

a. MCM Contract for Lake Sharon Roadway Extension.

Section 551.072. To deliberate the purchase, exchange, lease or value of real property if deliberation in an open

meeting would have a detrimental effect on the position of the governmental body in negotiations with a third person.

Section 551.074. To deliberate the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; or to hear a complaint or charge against an officer or employee.

Section 551.087. To deliberate or discuss regarding commercial or financial information that the governmental body has received from a business prospect that the governmental body seeks to have locate, stay, or expand in or near the territory of the governmental body and with which the governmental body is conducting economic development negotiations; or to deliberate the offer of a financial or other incentive to a business prospect.

After discussion of any matters in closed session, any final action or vote taken will be in public by the City Council. City Council shall have the right at any time to seek legal advice in Closed Session from its Attorney on any agenda item, whether posted for Closed Session or not.

RECONVENE IN OPEN SESSION TO TAKE ACTION, IF NECESSARY, ON CLOSED SESSION ITEMS.

ADJOURN:

Posted this 11th day of October, 2019 at 11:30 a.m. on the bulletin board at Corinth City Hall.

Lana Wylie for Kim Pence

Kimberly Pence, City Secretary
City of Corinth, Texas

WORKSHOP BUSINESS ITEM 1.

City Council Regular and Workshop Session

Meeting Date: 10/17/2019
Title: Climate Ready Communities
Submitted For: Helen-Eve Liebman, Director
Submitted By: Patrick Hubbard, Development Coordinator
City Manager Review: Approval: Bob Hart, City Manager
Strategic Goals: Land Development
Infrastructure Development
Economic Development
Citizen Engagement & Proactive
Government
Regional Cooperation

AGENDA ITEM

Receive a presentation and update on the Climate Ready Communities project.

AGENDA ITEM SUMMARY/BACKGROUND

Receive a presentation and update from staff concerning the progress of the Climate Ready Communities project including an overview of the Climate Hazard Assessment and a preliminary report on workshop findings.

RECOMMENDATION

NA

Attachments

Climate Hazard Assessment



CLIMATE READY CORINTH
CLIMATE HAZARD ASSESSMENT

Climate Hazard Assessment

Introduction

In 2011, Texas experienced its driest year since the beginning of modern recordkeeping, which began in 1895. The drought caused \$7.6 billion in losses to Texas agricultural producers in a single year. In addition, this drought killed an estimated 5.6 million trees in urban areas and 301 million rural trees and took the lives of 6 people in forest fires exacerbated by this extreme drought. According to the Texas Legislative Budget Board, State agencies incurred \$253 million in costs and \$132 million in losses due to the drought in fiscal years 2011 and 2012, respectively. (Texas Comptroller, Texas Water Report, Pages 10-12)

The most destructive hurricane in Texas history, Hurricane Harvey, struck the coast in 2017 directly affecting 41 Texas counties with total property damages estimated at \$125 billion, second only to Hurricane Katrina as the most destructive hurricane in American history. More than 750,000 people evacuated their homes and 30% of the State's population was directly impacted. 80,000 homes had 18 inches or more of water inside of them and 23,000 homes had more than 5 feet of water inside of them during the storm. 106 Americans lost their lives to the storm (Natsios, A, Page 5).

The impacts of climate on the wellbeing of communities are evident in these examples. Even day-to-day climate conditions have a wide range effects on the lives of residents, visitors and businesses in Corinth. Recognizing the importance of climate trends on the welfare of our community, the City of Corinth seeks to understand and accurately predict climatic trends in order to provide appropriate, cost-effective and equitable solutions to potential hazards. The first step in developing these solutions is thoroughly researching and assessing the city's exposure to a myriad of climate related risks. Part of this research pertains to assessing how climate conditions in Corinth may change over time. There are numerous factors that affect the climate but there is consensus that some amount of change has already occurred and that this change will continue.

This hazard assessment serves as a basis for future planning and as an educational tool for community members and decision makers. The following sections provide an overview of climate trends in Corinth, a baseline hazard analysis utilizing data on current climate conditions, and a multidimensional hazard assessment based on possible future conditions.

Climate and Environmental Background

Corinth is located in Denton County, Texas just south of Denton and just north of Lake Lewisville, in the northern portion of the Dallas/Ft. Worth Metroplex. The Metroplex has a humid subtropical climate and it is located approximately 250 miles north of the Gulf of Mexico and near the headwaters of the Trinity River. Corinth has an elevation of 607 ft. Being continental, Corinth experiences a wide temperature and precipitation range, with precipitation ranging from 20 inches to more than 50 inches per year. Rainfall in Corinth typically occurs at night with rainy weather typically lasting for 1 to 2 days. Much of the region's precipitation comes in the form of thunderstorms that provide heavy precipitation over a short period. The highest frequency of storms occurs in spring. Dallas Fort Worth enjoys a freeze-free period of about 249 days with the average first and last freezes occurring in late November and mid-March, respectively. Daytime summer temperatures frequently exceed 100 °F while northers (fast moving cold fronts marked by a rapid drop in temperature, strong winds, and dark blue or "black" skies) typically occur about three times per month, sometimes triggering extreme temperature drops and winter precipitation events during winter months. The cold front originates from the north, hence the name "norther," and can send temperatures plummeting by 20 or 30 degrees within a few minutes (US Department of Commerce, & NOAA).

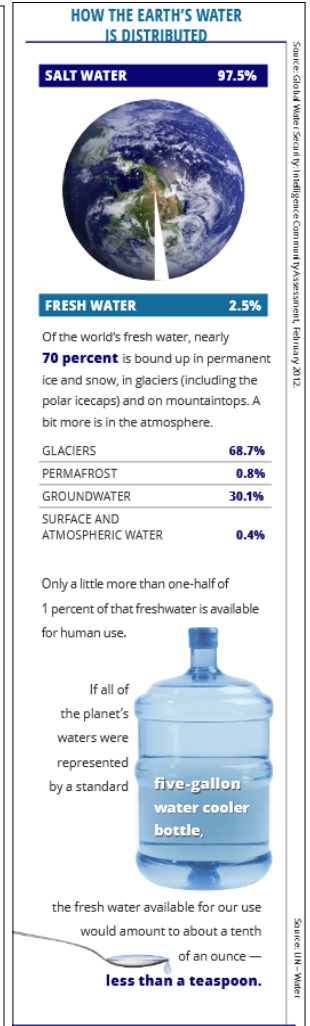
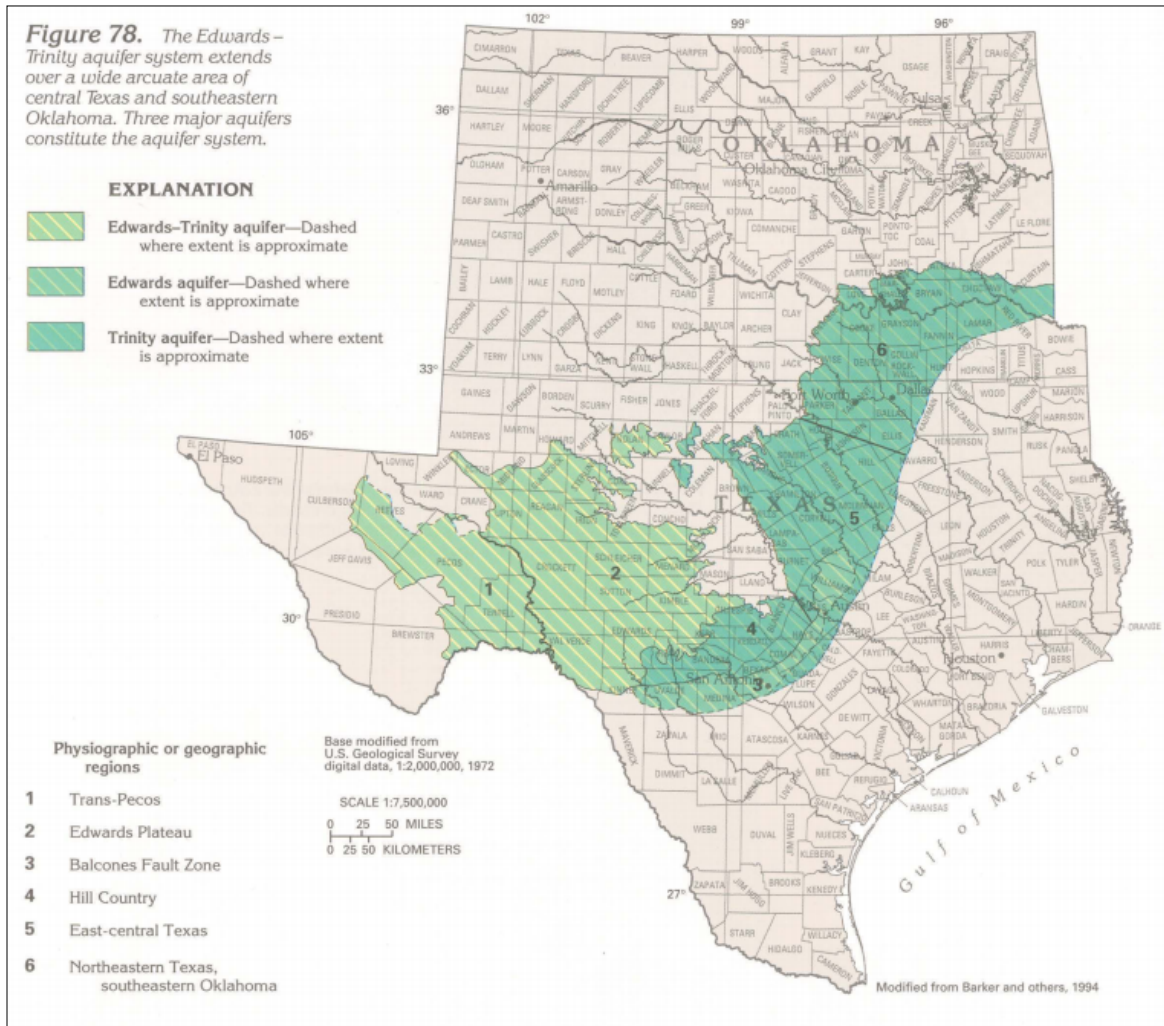
Approximately 2.65% of the population of the City of Corinth is presently located in the 1% chance floodplain with an expected loss of \$20k of value of improved property being incurred annually due to flooding with .000001781% of the total assessed value of improvements at risk during a 1% chance event (Denton County, Pages D-1 – D-46). Wide year-to-year variability in precipitation contributes to the uncertainty associated with flooding.

Extreme heat and drought are also difficult to predict due to the wide year-to-year variation in temperature and precipitation rates that the City experiences, however, mean annual temperatures statewide have increased approximately 1°F since the first half of the 20th century (NOAA National Centers for Environmental Information).

In addition to these broader climate condition, Corinth is significantly affected by water supply issues. Corinth is located in the Trinity Aquifer, a component of the Edwards-Trinity aquifer system. Most of this aquifer is used by cities, but some of it is used for agricultural purposes. According to the Texas Water Development Board, “some of the state’s largest water level declines, ranging from 350 to more than 1,000 feet, have occurred in counties along the IH-35 corridor from McLennan County to Grayson County, but they have slowed over the past decade as a result of increasing reliance on surface water” (Whitehead, R.L, Pages 21-27) (George, P., Pages 67-72).

The City of Corinth purchases drinking water from the Upper Trinity Regional Water District. Upper Trinity identifies surface water, principally from lakes, as the most reliable source of water for the region and reports that the present supply is adequate to meet the needs of the region for 25 years. Local water is provided from nearby Lewisville Lake and Ray Roberts Lake while additional water is supplied from Chapman (Cooper) Lake in Northeast Texas. Upper Trinity has shown tremendous commitment to promoting and implementing strategies for water conservation and

reuse but has stated that an expansion in available water supply is “absolutely critical” and Upper Trinity is working to provide access to a proposed new water supply, Lake Ralph Hall, along the North Sulphur River in Fannin County, just northeast of the DFW Metroplex (Upper Trinity Regional Water District).



(Source: Whitehead, R.L, Page 21; Right: Texas Comptroller of Public Accounts, Page 3)

Baseline Hazard Analysis

The Corinth Addendum to the Denton County Hazard Mitigation Plan (HazMap) provides an overview of present hazards impacting the City. The Priority Risk Index (PRI) included in the Hazard Mitigation Plan serves as a valuable baseline risk assessment useful for quantifying and contextualizing the City’s current risks. This helps to provide some context for how potential future climate conditions may exacerbate existing hazards (Denton County, Pages D-1 – D-46).

The Priority Risk Index (PRI) used in the Denton County HazMap categorizes potential hazards for The City of Corinth to aid in determining which hazards pose the most significant threat to the community based on a variety of factors. Although the PRI is not scientifically based, it is designed to be utilized as an objective and systematic planning tool for classifying and prioritizing hazard risks in Denton County based on standardized criteria. The PRI provides numerical values that allow identified hazards to be ranked against one another. It ranks each hazard as high, moderate, low, or negligible to no risk. The higher the PRI value, the greater the hazard’s risk. These values were obtained by assigning varying degrees of risk to four categories for each hazard: Probability, Life Impact, Property Impact, and Spatial Extent. Each category has been assigned an Index Value (0 to 3) and a Weighting Factor (0 – 100%). These values may be adjusted during future plan updates.

In order to evaluate the risk of each hazard, the assigned PRI Value for each category is multiplied by the weighting factor. Then, the PRI for each hazard is calculated by adding the product obtained in each category. According to the weighting scheme applied for Denton County, the highest possible PRI value is 3.0. The sum of all four categories equals the final PRI value, as shown below:

$$\text{PRI Value} = (\text{Probability} \times .30) + (\text{Life Impact} \times .35) + (\text{Property Impact} \times .25) + (\text{Spatial Extent} \times .10)$$

The following table from the Denton County Hazard Mitigation Plan states Corinth’s 2014 hazard risk rankings:

High Risk (PRI 2 - 3)	Tornado Extreme Heat
Moderate Risk (PRI 1.05 -1.9)	Drought Winter Storm Hail Lightning High Winds Earthquake
Low Risk (PRI 0.50 – 1)	Flooding Wildfire
Negligible to No Risk (PRI 0 – 0.49)	Dam Failure Expansive Soil

(Source: Denton County, Pages D-1 – D-46)

This is the best available localized source of baseline information included in current City of Corinth plans regarding climate hazards and helps to contextualize and provide a framework for the subsequent report sections on potential future hazards. The following sections will address each of these hazards excluding earthquakes, expansive soil and dam failure because these hazard types are out of scope or present negligible to no risk (Denton County, Pages D-1 – D-46).

Potential Future Hazard Conditions

The City’s existing assessment of our baseline hazard conditions provides a clear understanding of the minimum level of threat that we can expect to persist into the future, but Federal Government data compiled from multiple departments and agencies show how the level of threat presented by each of these hazards may change. Each of these threats is discussed in the following sections.

Extreme Heat

The Denton County HazMap identifies extreme heat along with tornado as the highest risk environmental hazard affecting the City. This is a significant concern locally as well as nationally. According to Karl et al., “model studies indicate that intense heat waves that now occur once every 20 years are projected to occur about every other year in much of the country by the end of this century.” According to the U.S. Climate Resilience Toolkit, average temperatures in Denton County may increase from 78 degrees to between 80 and 81.5 degrees by 2050, based on low and high change scenarios, respectively. Though an increase in average temperatures of 2 to 3.5 degrees may appear small in a day to day sense, the impacts of this increase over the course of a year or sustained over several years may be quite substantial. This change could have a transformative effect on environmental conditions within the city and a disastrous impact on the health of vulnerable residents. In addition, Corinth’s continental climate subjects the City to a broad range of temperature variation both within seasons and year-to-year. Consequently, individual years may vary significantly, but the general trend is more stable over time.

For Denton County, days with high temperatures over 90 degrees may increase from about 100 days per year to between 125 and 135 days per year by 2050 while days with high temperatures exceeding 105 degrees may increase from about 5 per year to between 10 and 15 per year over the same time period, based on case scenarios analyzed by the NOAA Climate Program Office. Similarly, days with lows below freezing may decrease from about 40 days per year to between 28 and 36 days per year (NOAA Climate Program Office). These data are summarized in the following chart:

Scenario Comparison (for year 2050)			
	Current	Low Scenario	High Scenario
Average Temperature (°F)	78	80 (+2)	81.5 (+3.5)
Days with Highs Above 90°F	100	125 (125%)	135 (135%)
Days with Highs Above 100°F	5	10 (200%)	15 (300%)
Days with Lows below 32°F	40	28 (70%)	36 (90%)

Extreme heat is responsible for more deaths than any other type of natural disaster. The burdens created by extreme heat most heavily impact low-income people, people who work outside, the elderly, and people with disabilities and/or chronic illnesses due to their sensitivity to the heat and the lessened amount of access or time spent in climate controlled spaces (Environmental Protection Agency, Page 1-4).

This extreme heat is compounded by the Urban Heat Island Effect. This phenomena results in a temperature increase of 2-22°F in urban areas compared to the rural areas around them and is responsible for 5-10% of summertime electricity demand. Urban heat islands form when cities replace natural land cover such as trees, grass and wetlands, with pavement and buildings. Vegetation has a natural cooling effect through shade and the evaporation of water while building and paving materials absorb more heat than natural cover and release that heat at night, impacting nighttime highs. This is further intensified by tall buildings blocking wind flow and by waste heat released by vehicles, factories and air conditioning units. This waste heat is the product of inefficient electrical technologies and suboptimal weatherization. This adversely affects people's health, air and water quality, and energy use. The cumulative impact of urban heat islands can substantially change the living conditions of humans, plants, and animals in an urban area (Environmental Protection Agency, Page 1-4).

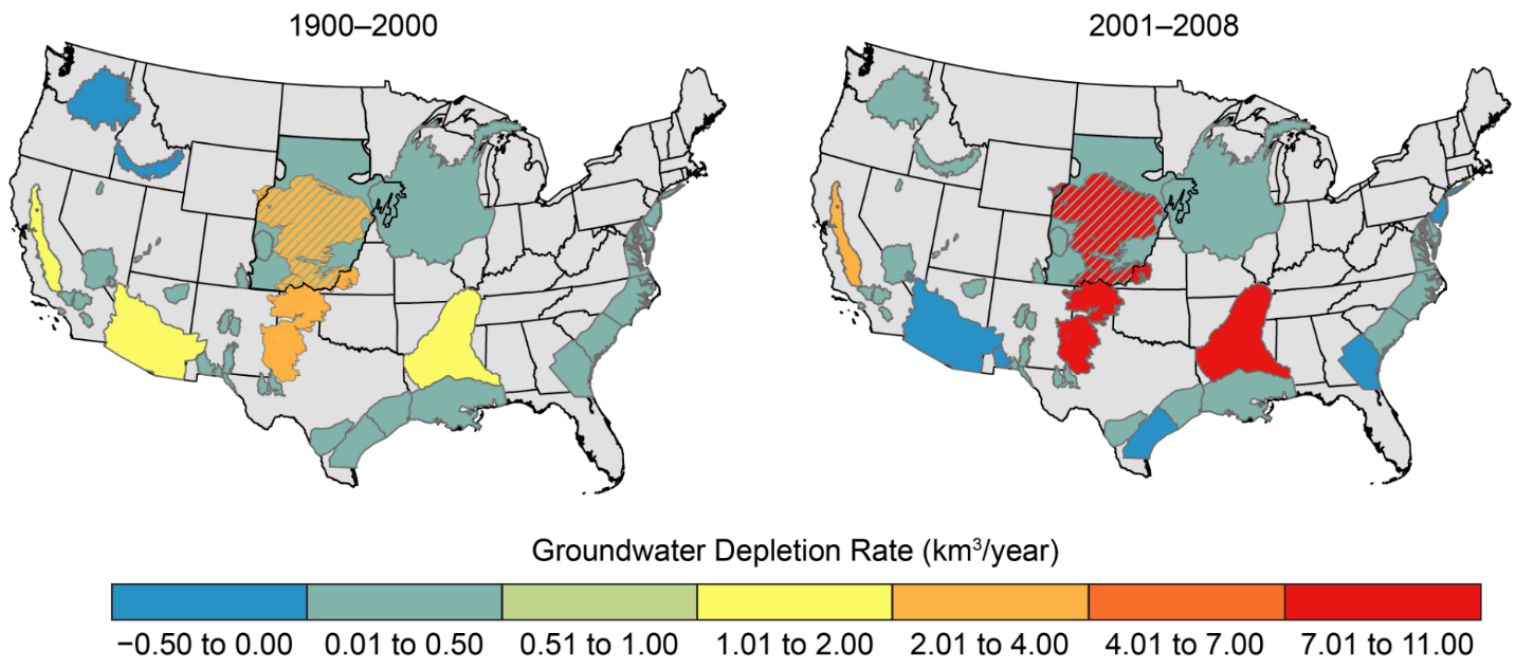
Some of the uncertainty associated with climate change projections comes from variation among different global climate models (GCMs). Most uncertainty, however, stems from the fact that we don't know how much greenhouse gas emissions will continue to be released. Two emissions pathways were considered – RCP 4.5 and RCP 8.5. RCP 4.5 assumes that emissions are aggressively reduced, while RCP 8.5 assumes that emissions continue to increase unabated.

Drought

Drought was identified by the Denton County HazMap as the second highest risk category for Corinth. The issues of extreme heat and drought are closely related because rising temperatures greatly exacerbate drought and aridity of the overall climate of the North Texas area. Drought “can be broadly defined as a temporary, recurring reduction in the precipitation in an area” while “aridity is a measure of long-term average climatic conditions” (Maliva, Pages 21-37). Specifically, aridity is the opposite of humidity and can be regarded as low levels of moisture in a climate region. This has a wide range of landscape manifestations and downstream impacts on flora and fauna. “Arid regions are” ... “more prone to droughts and may experience more severe impacts from droughts” (Maliva, Pages 21-37).

Reviewing historic data, Texas Almanac reports that North Central Texas experienced drought, (defined by less than 75% of average annual rainfall), in 4 years from 2000-2014 including the historic 2011 drought. For comparison, the region experienced drought in 4 years from the period of 1950-1999 (Texas State Historical Association). Denton County HazMap, using a less strict definition of drought, reports that Denton County and participating jurisdictions have experienced 45 drought events, ranging from Abnormally Dry/Mild Drought to Exceptional Drought, from January 1996 to March 2014 (Denton County, Pages D-1 – D-46).

The 4th National Climate Assessment predicts an increase in aridity throughout the Southern Great Plains Region. Higher temperatures are associated with greater evaporation, which is expected to lead to increases in drought stress and aridity throughout the region, even if precipitation increases moderately. The frequency and intensity of heavy storms may increase, but the occurrence of soaking rains will decline as the overall rate of precipitation increases only slightly. This leaves a longer “drying out” period between rain events. Therefore, the Southern Great Plains region as a whole is trending more towards desert-like conditions and away from higher humidity conditions, though these impacts are not uniformly felt (Maliva, Pages 21-37)(US Global Change Research Program). As stated previously, Corinth may experience between 25 and 35 more days with high temperatures above 100 degrees by 2050 and this is expected to continue to increase to between 20 and 70 days by the end of the 21st Century (NOAA Climate Program Office).



(Source: US Global Change Research Program)

As shown in the image above, the groundwater depletion rate in major aquifers through the region, and the country overall, was at a higher level of depletion from 2001-2008 as opposed to from 1900-2000. This will vary year-to-year, but the trend towards higher levels of depletion is expected to continue or accelerate.

In addition to exposure created by changes in climate, the State of Texas has stated that Texas’ rapid rate of urban population growth will lead to a sharp increase in water consumption. In addition, the American Geophysical Union has classified both Denton-Lewisville and Dallas-Fort Worth-Arlington as areas with medium vulnerability for limited water (Texas Comptroller of Public Accounts, The Impact of the 2011 Drought and Beyond, Pages 1-12)(Texas Comptroller of Public Accounts, Texas Water Report, Pages 1-23). Therefore, the data indicate a falling water supply being met with an increasing demand. The impacts of this trend have the potential to be rather dramatic in drier years and the impacts of related shortages are broadly felt. The 4th National Climate Assessment frames concern about changing rates of precipitation with the Food, Energy and Water Nexus. According to the assessment:

“Food, energy, and water systems are inseparable. Any change in demand for one will impact demand on the other two.” ... “As the population in the region grows, rapid urbanization and economic development opportunities will drive an increase in the demand for food, energy, and water. Water is used in every aspect of agricultural production and electricity generation. Energy is required to extract and deliver water of sufficient quality for diverse human and agricultural use, as well as healthy consumption and wastewater treatment. Both water and energy are required to irrigate and process agricultural products and livestock to feed the region’s increasing population. The complex interdependencies at the food–

energy–water nexus create enormous challenges.” (US Global Change Research Program).

As a result of this relationship, the presence of drought conditions, increased population, and the gradual change in precipitation averages trending towards greater aridity places strain not just on domestic water use, but also on energy markets and agricultural production. Not only do these sectors all suffer from a decrease in this supply, the demand for a shrinking water supply drives competition between these sectors for the use of limited water resources. The nationwide total damage from drought in 2012 was \$33 billion (in 2018 dollars). This is largely a result of harvest failures of major crops such as corn, sorghum and soybeans (US Global Change Research Program).

Wildfire

Drought conditions also increase the risk of wildfire. Wildfire is generally considered a low risk hazard for Corinth, however, there are some heavily wooded areas of the City which are visible on Urban Wildland Interface maps and the Denton County HazMap states that approximately 55% of the City is vulnerable to wildfires to some degree. This is in part because Denton County contains considerable agricultural and wildland (Denton County, Pages D-1 – D-46).

Table 3.13 Agricultural Land in Denton County

Jurisdiction	Total Acres	Agricultural Land Acres	Percentage (%) of Total Acres
Denton County*	302,058.55	261,216.35	86.48%
Argyle	6,945.19	4,818.33	69.38%
Aubrey	1,077.93	492.75	45.71%
Corinth	4,393.80	1,176.01	26.77%
Cross Roads	4,048.86	2,764.78	68.29%
Denton	294,080.68	34,658.54	11.79%
Double Oak	1,459.47	196.54	13.47%
Flower Mound	25,374.08	8,840.99	34.84%
Hickory Creek	2,464.91	375.13	15.22%
Highland Village	3,661.83	198.31	5.42%
Justin	1,229.76	502.73	40.88%
Krugerville	736.21	224.64	30.51%
Krum	1,298.23	606.07	46.68%
Lake Dallas	1,515.16	148.39	9.79%
Lewisville	23,989.64	3,629.98	15.13%
Little Elm	12,282.56	2,905.56	23.66%
Pilot Point	1,996.67	1,075.22	53.85%
Ponder	1,924.59	1,450.18	75.35%
Roanoke	3,795.21	993.39	26.17%
Sanger	6,617.13	5,009.61	75.71%
Shady Shores	1,879.02	638.27	33.97%
The Colony	9,092.48	2,196.47	24.16%
Denton County (Total)**	711,921.96	334,118.24	46.93%

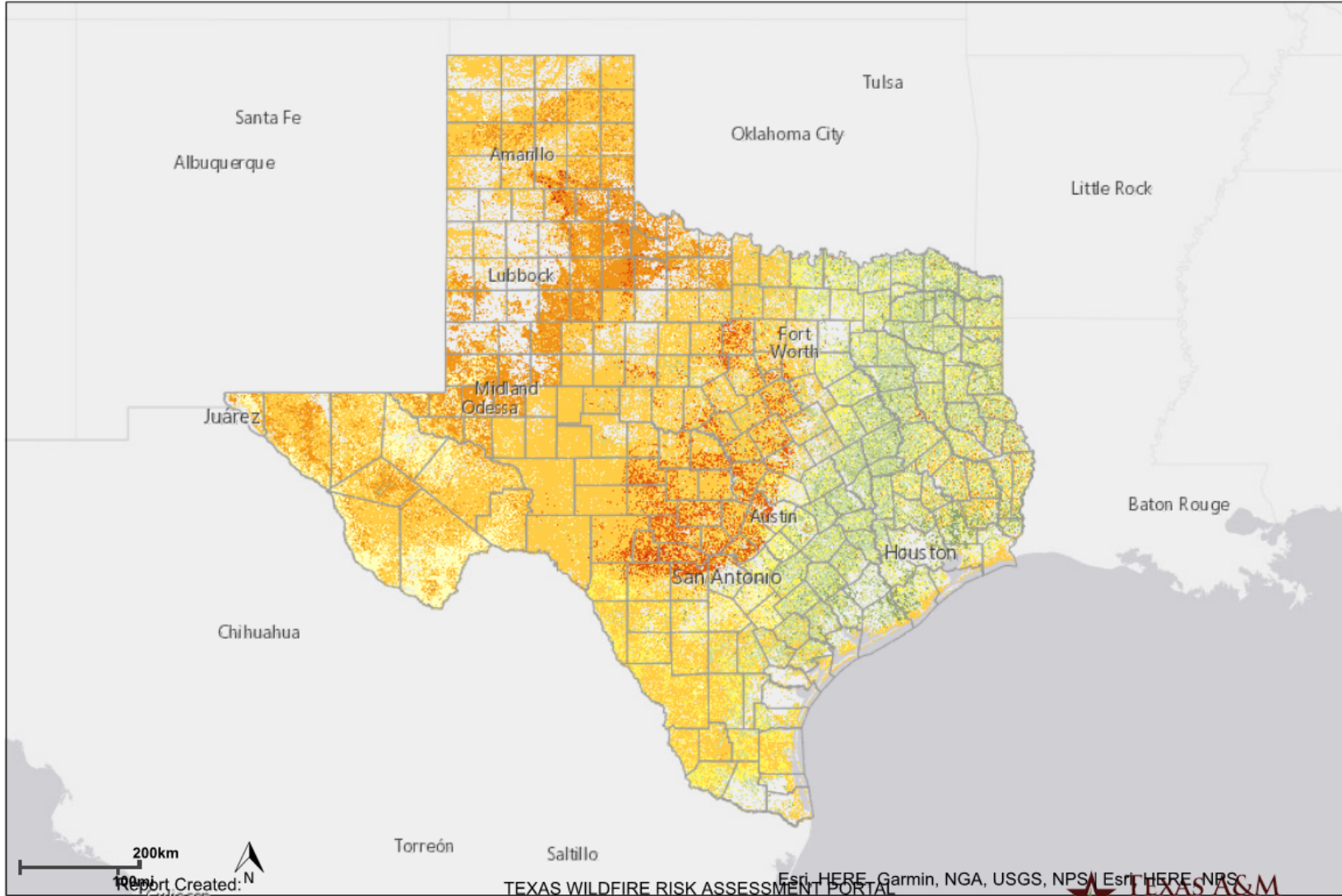
Sources: Texas Forest Service, U.S. Geological Survey, and local jurisdictions

* Denton County unincorporated areas

** Does not include acreage from incorporated jurisdictions that are not participating in the plan.

(Source: Denton County, Pages D-1 – D-46)

Wildfire Risk: Statewide



The user assumes the entire risk related to their use of the Texas Wildfire Risk Assessment and either the published or derived products from these data. Texas A&M Forest Service is providing these data "as is" and disclaims any and all warranties, whether expressed or implied, including (without limitation) any implied warranties of merchantability or fitness for a particular purpose. In no event will Texas A&M Forest Service be liable to you or to any third party for any direct, indirect, incidental, consequential, special or exemplary damages or lost profit resulting from any use or misuse of these data.

(Source: Texas A&M Forest Service)



Air Quality

Though not explicitly addressed in the Denton County Hazard Mitigation Plan, air quality is significantly impacted by temperature variation. In particular, ozone concentration is strongly dependent on temperature and will increase as temperature increases, increasing substantially during heat waves. According to the North Central Texas Council of Governments “Clinical studies indicate prolonged exposure to elevated concentrations of ground level ozone may reduce lung function, increase the frequency of asthma episodes, and reduce the body’s ability to resist respiratory infections. In addition to threatening human health, high ground-level ozone concentrations pose a risk to the environment, wildlife, and agriculture” (North Central Texas Council of Governments, Page 3).

Denton County is presently in nonattainment status with the Environmental Protection Agency for ozone. As a consequence, the County is subject to increased emission-control requirements. Ozone pollution is a result of the reaction of other pollutants, called precursor pollutants. Specifically, it results from the emission of Volatile Organic Compounds (VOC) and Nitrogen Oxides (NO_x). VOC makes up a much larger portion of the precursor pollutants in North Central Texas and the region is considered “NO_x limited.” Therefore, the region is susceptible to small variations in NO_x. In addition, a significantly higher percentage of NO_x is man-made while a majority, though not all, of VOC emissions are naturally occurring from plant sources. As a result, primary efforts to reduce ozone in the region focus on NO_x, the majority of which come from transportation sources.

In addition to heat, drought can significantly affect air quality. Precipitation can remove soluble trace gases and aerosols, which cleans the air. Additionally, drought can alter plants’ normal interactions with air pollution and lead to changes in VOC concentrations. This results in worse air quality as levels of drought increase (Peterson, Pages 184-197) (North Central Texas Council of Governments, Pages 1-26).

Flooding

Corinth has considerable floodplain area and the area designated by the Federal Emergency Management Agency (FEMA) has increased with the preliminary floodplain maps issued in 2019. This is largely due to improvements in the quality of data, however, rather than an increase in actual floodplain area. Stormwater in Corinth drains principally into Lake Lewisville through several creeks such as Lynchburg Creek and Hickory Creek. Some of the creek areas in the City have been designated as Greenbelts in accordance with the Denton County Greenbelt Plan while other low lying areas have been designated as drainage areas. Present and historic greenbelt areas of the city closely overlap with designated floodplain areas. Still, much of the area that was historically occupied by forested creeks and streams has been urbanized. Some stream segments in the city have been filled, to varying degrees, through erosion and construction projects occurring in the city since its founding. Nevertheless, new developments over 1 acre in size are required to limit discharge of stormwater to the same rate as existing conditions and floodplain development is strongly discouraged. In addition, the city has adopted or is working to adopt drainage and water quality standards that will improve overall storm water and watershed conditions citywide, by means of becoming an Integrated Stormwater Management (iSWM) silver recognized community through the North Central Texas Council of Governments.

Though there is uncertainty with respect to future average precipitation, both high and low emissions models for precipitation averages in Denton County suggest little change in annual precipitation as a whole or in the number of days featuring greater than 1 inch of precipitation. Additionally, the 4th National Climate Assessment states that, in the Southern Great Plains Regions, “Average annual precipitation projections suggest small changes in the region, with slightly wetter winters, particularly in the north of the region, and drier summers.” Despite this, the assessment also states that “the frequency and intensity of heavy precipitation are anticipated to continue to increase” and this increase “implies fewer soaking rains and more time to dry out between events.” Therefore, while the amount of rainfall is not expected to see a major change in terms of overall quantity, the nature of storm events is expected to trend towards higher intensity events throughout the Southern Great Plains region. This suggests a greater frequency of major storm events as a proportion of rain events but not an actual increase in total precipitation at the regional level while County level data suggest little change in the total number of storm events. NOAA’s Atlas 14 indicates that current rainfall rates have remained consistent with historic rainfall rates as reflected in historic rainfall data and the extent to which changes in precipitation will occur is unclear. This change should be understood as a shift in the average and, as noted in the climate summary, Corinth is subject to considerable year to year variation in weather due to numerous factors (NOAA Climate Program Office)(Perica, 1-32) (US Global Change Research Program).

These findings are consistent with the risk level identified in the Denton County Hazard Mitigation Plan. Therefore, while the impacts of flooding are potentially devastating to individual property owners and flood hazards may adversely affect specific properties, there is little evidence to support the claim that local flood risks will increase on a systemic level sufficient to necessitate major policy changes. This assumes that all elements of our present drainage infrastructure,

including naturally present geological and ecological features, are maintained in good condition and that development standards remain consistent with industry best practices. This does not conclusively determine that no increase will be felt. But, present and proposed infrastructure standards appear to accommodate high change scenarios based on current data.

Extreme Weather Events (Tornado, Winter Storms, Hail, Lightning, High Winds)

The remaining hazards in the Denton County Hazard Mitigation Plan are addressed herein collectively as Extreme Weather events. Attempts to project future vulnerabilities to these hazards have been inconclusive. They are impacted by a variety of factors and are difficult to quantify or predict. According to the 4th National Climate Assessment:

“The role of climate change in altering the frequency of the types of severe weather most typically associated with the Southern Great Plains, such as severe local storms, hailstorms, and tornadoes, remains difficult to quantify” ... “Indirect approaches suggest a possible increase in the circumstances conducive to such severe weather, including an increase in the instances of larger hail sizes in the region by 2040, but changes are unlikely to be uniform across the region, and additional research is needed.” (US Global Change Research Program)

Based on this prognosis, it is sensible to reserve judgement on what impacts to expect until more conclusive data are available, however, the 4th National Climate Assessment does predict an increase in the overall intensity of precipitation events, as noted elsewhere, so it is reasonable to expect some change to occur insofar as these types of events are related to each other. For example, a heavy storm is likely to have high winds and lightning. Overall, the data are inclusive regarding these factors and capacity for more intensive analysis is limited (US Global Change Research Program). That being said, the highly destructive potential of these hazards ensures that they will remain a subject of concern at all levels through resiliency and hazard mitigation planning regardless of long term changes in their probability of occurrence.

Conclusion

The City of Corinth acknowledges that the future presents uncertainty and has made resilience and sustainability an integral part of our ongoing planning and development efforts. As part of this process, Corinth has sought to develop a clear understanding of our true climate risks in order to develop localized solutions rooted in the best available science. The City wishes to be sensitive to the potential seriousness of climate hazards but also prudent in its analysis, seeking to be neither reactionary nor negligent. The preceding sections present the findings of this endeavor based on the best available scientific data and expert insights.

Broadly speaking, where data show clear trends, the conclusions of this hazard assessment are generally consistent with the previous assessment of risk contained within the Denton County Hazard Mitigation Plan. Research has shown the greatest hazard to the Corinth community stems from extreme heat and drought conditions while other risks are less certain. The data suggest that precipitation throughout the region will become more intense but less frequent. It is uncertain how this will affect the incidence of extreme weather events such as winter storms and tornados.

This report provides a sound basis for the creation of the Climate Resilience plan which will provide specific strategies based on industry best practices, innovative ideas and community input to provide locally tailored, efficient solutions to climate challenges.

References

- Denton County (2015). *Hazard Mitigation Action Plan*.
- Environmental Protection Agency (2014). *Keeping your cool: How Communities Can Reduce the Heat Island Effect*. Publication Number: 430F14041
- George, P. G., Mace, R. E., & Petrossian, R. (2011). *Aquifers of Texas*. Austin, TX: Texas Water Development Board.
- Natsios, A. S. (2018). *Hurricane Harvey: Texas at risk* (Texas General Land Office).
- Texas Comptroller of Public Accounts. (2014). *Texas water report: Going deeper for the solution*. Austin, TX: Texas Comptroller of Public Accounts.
- Texas Comptroller of Public Accounts. (2012). *The Impact of the 2011 Drought and Beyond*.
- Maliva, R.G; Missimer, Th. M (2012). *Arid Lands Water Evaluation and Management*. ISBN: 978-3-642-29103-6
- NOAA Climate Program Office, *The Climate Explorer*. Retrieved April 30, 2019, from: <https://crt-climate-explorer.nemac.org/>
- NOAA National Centers for Environmental Information (2019). State Climate Summaries: Texas. NOAA National Centers for Environmental Information. Retrieved May 29, 2019 from: <https://statesummaries.ncics.org/chapter/tx/>
- North Central Texas Council of Governments (2018). *Air Quality Handbook*. North Central Texas Council of Governments
- Perica, Sanja; Pavlovic, Sandra; St. Laurent, Michael; Trypaluk, Carl; Unruh, Dale; Wilhite, Orlan (2018); *NOAA Atlas 14: Precipitation-Frequency Atlas of the United States. Volume 11 Version 2.0: Texas*
- Peterson, Thomas C.; Karl, Thomas R.; Kossin James P.; Kunkel, Kenneth E.; Lawrimore, Jay H.; McMahon, James R.; Vose, Russell S.; Yin, Xungang (2014). *Changes in weather and climate extremes: State of knowledge relevant to air and water quality in the United States*, Journal of the Air & Waste Management Association, 64:2, 184-197, DOI: 10.1080/10962247.2013.851044
- Texas A&M Forest Service. *Texas Wildfire Risk Assessment Portal*. Retrieved February 18, 2019, from <https://www.texaswildfirerisk.com/Map/Public/#whats-your-risk>
- Texas State Historical Association (2018). *Texas Droughts*. Texas Almanac. Retrieved April 30, 2019, from <https://texasalmanac.com/topics/environment/texas-droughts>
- Upper Trinity Regional Water District (2019). *Long-Term Water Supply Sources*. Retrieved May 30, 2019 from: http://www.utrwd.com/Treated_Water_Supply.html
- US Department of Commerce, & NOAA. (2017). *DFW Climate Narrative*. Retrieved April 25, 2019, from <https://www.weather.gov/fwd/dnarrative>

US Global Change Research Program (2018). *Fourth National Climate Assessment*. US Global Change Research Program. Retrieved on April 30, 2019, from <https://nca2018.globalchange.gov/>

Whitehead, R. L. (1996). *Ground water atlas of the United States*, U.S. Geological Survey

WORKSHOP BUSINESS ITEM 3.

City Council Regular and Workshop Session

Meeting Date: 10/17/2019
Title: Tax Increment Reinvestment Zone and Transit Oriented Development District
Submitted For: Bob Hart, City Manager **Submitted By:** Jason Alexander, Director
Finance Review: N/A **Legal Review:** N/A
City Manager Review: Approval: Bob Hart, City Manager
Strategic Goals: Land Development
Infrastructure Development
Economic Development
Regional Cooperation

AGENDA ITEM

Receive a presentation and discuss the Tax Increment Reinvestment Zone (TIRZ) and the Transit Oriented Development (TOD) District.

AGENDA ITEM SUMMARY/BACKGROUND

As complementary components, the TIRZ and the TOD are intended to spur mixed-use development focused around a commuter rail stop. The purpose of this presentation is to provide the City Council with a list of projects --- and their requested funding --- in support of development within the TIRZ and the TOD. Further, the purpose of this presentation to engage Council in a discussion about the projects, the requested financial contributions and the process for moving forward with finalizing the financial plan for the TIRZ and securing Denton County's participation in the same.

RECOMMENDATION

N/A.

WORKSHOP BUSINESS ITEM 4.

City Council Regular and Workshop Session

Meeting Date: 10/17/2019
Title: Water Meter Reading Software
Submitted For: Bob Hart, City Manager **Submitted By:** Kim Pence, City Secretary
Finance Review: N/A **Legal Review:** N/A
City Manager Review: Approval: Bob Hart, City Manager
Strategic Goals:

AGENDA ITEM

Review water meter reading software.

AGENDA ITEM SUMMARY/BACKGROUND

RECOMMENDATION

CONSENT ITEM 1.

City Council Regular and Workshop Session

Meeting Date: 10/17/2019
Title: August 22, 2019 Workshop Session
Submitted For: Kim Pence, City Secretary
City Manager Review: Approval: Bob Hart, City Manager
Strategic Goals: Citizen Engagement & Proactive Government

Submitted By: Kim Pence, City Secretary

AGENDA ITEM

Consider and act on minutes from the August 22, 2019 Workshop Session.

AGENDA ITEM SUMMARY/BACKGROUND

Attached are the minutes from the August 22, 2019 Workshop Session. The minutes are in draft form and are not considered official until formally approved by the City Council.

RECOMMENDATION

Staff recommends approval of the August 22, 2019 Workshop Session minutes.

Attachments

Minutes

**STATE OF TEXAS
COUNTY OF DENTON
CITY OF CORINTH**

On this the 22nd day of August 2019 the City Council of the City of Corinth, Texas met in Workshop Session at the Corinth City Hall at 5:45 P.M., located at 3300 Corinth Parkway, Corinth, Texas. The meeting date, time, place and purpose as required by Title 5, Subtitle A, Chapter 551, Subchapter C, Section 551.041, Government Code, with the following members to wit:

Members Present:

Mayor Heidemann
Sam Burke, Mayor Pro-Tem
Scott Garber, Council Member
Kelly Pickens, Council Member
Tina Henderson, Council Member
Lowell Johnson, Council Member

Members Absent:

None

Staff Members Present

Bob Hart, City Manager
Kim Pence, City Secretary
Lee Ann Bunselmeyer, Finance, Administration, Communications & Marketing Director
Patricia Adams, Messer, Rockefeller, & Fort
Jerry Garner, Police Chief
Cody Collier, Public Works Operations Director
Helen-Eve Liebman, Planning and Development Director
George Marshall, City Engineer
Jason Alexander, Economic Development Corporation Director
Brenton Copeland, Technology Services Assistant Manager
Chris Rodriguez, Assistant Finance Director
Brett Cast, Engineering Services Coordinator
Lori Levy, Senior Planner
Garret Skrehart, GIS Manager
Ben Rodriguez, Planning & Development Manager
Lana Wylie, Senior Administrative Assistant

CALL TO ORDER:

Mayor Heidemann called the meeting to order at 5:45 p.m.

WORKSHOP BUSINESS AGENDA:

- 1. Receive a report, hold a discussion, and provide staff direction on the Fiscal Year 2019-2020 Annual Program of Services and Capital Improvement Program.**

Bob Hart, City Manager – Tonight we are looking at the utility fund and capital improvements. We will begin with the utility fund. Cody is here to answer any questions.

Utilities

📍 DEPARTMENT BUDGET OVERVIEW

Division	FTE	2019-20
Water	10	7,561,658
Wastewater	9	4,399,663
General Services	-	33,292
		19 \$11,994,613

👥 **19**
Employees

📈 **553k**
New Program Funding

New Program Funding:

- Work Order/Asset Management System - \$45,000
- Dump Bed Trailer - \$8,500
- Utility Asset Management Reserve Transfer - \$250,000
- Rate Stabilization Reserve Transfer - \$250,000

🎯 GOALS FOR 2019-2020

- Upgrade and replace all commercial & residential meters that are 15 years or older.
- Meet state requirements for the City's public water system to be recognized with the Outstanding award from TCEQ.
- Integrate pump replacement in lift stations that have pumps older than 20 years.

📊 DEPARTMENT BUDGET

Category	Amount
Transfers	\$1,383,257
Debt Service	\$1,464,498
Capital Outlay	\$8,500
Training	\$12,700
Vehicle & Fuel	\$78,000
Utilities/Communication	\$447,482
Supplies	\$81,397
Maint & Operations	\$318,173
Professional Fees	\$148,753
UTRWD Charges	\$6,794,311
Wages & Benefits	\$1,257,542

Engineering

📍 DEPARTMENT BUDGET OVERVIEW

Division	FTE	2019-20
Engineering	4	\$518,629

👥 **4**
Employees

📈 **\$0**
New Program Funding

New Program Funding:

- No new program funding.

🎯 GOALS FOR 2019-2020

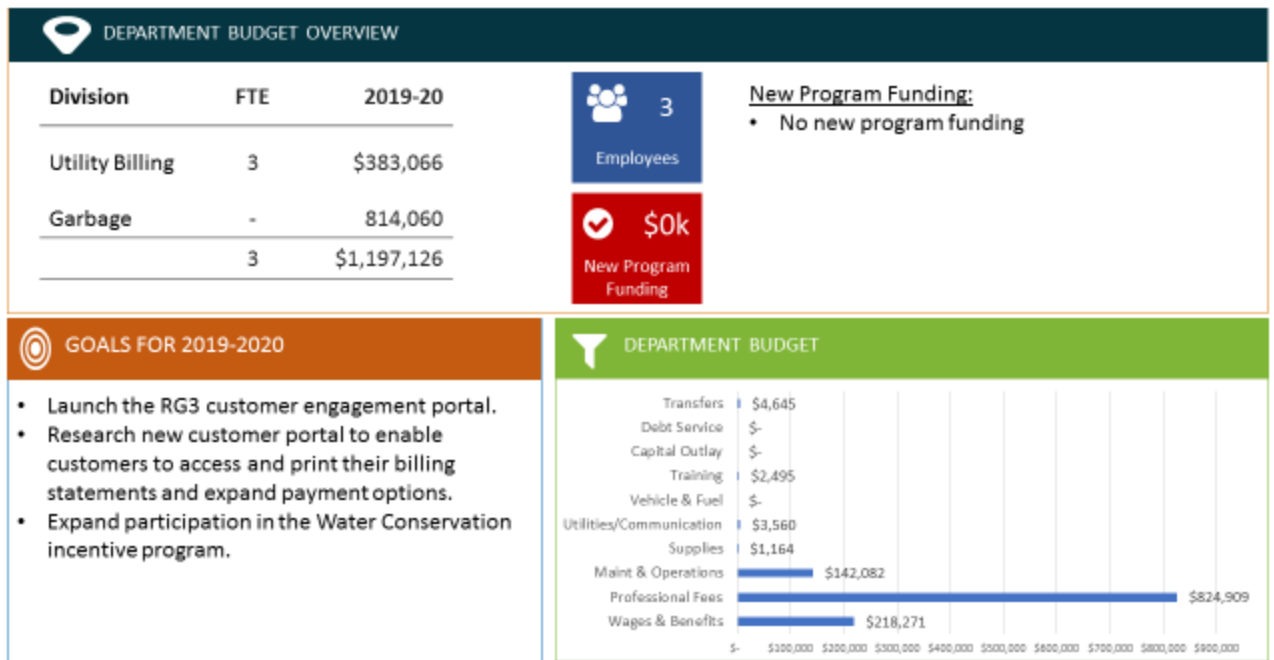
- Pursue grant funding for Lynchburg Creek mitigation.
- Incorporate Asset Management Program into CIP
- Lake Sharon/Dobbs/Quail Run alignment
- Elevated water storage tank
- Parkridge service area development
- Tax Increment Financing District Analysis

📊 DEPARTMENT BUDGET

Category	Amount
Transfers	\$4,362
Debt Service	\$-
Capital Outlay	\$-
Training	\$10,269
Vehicle & Fuel	\$4,500
Utilities/Communication	\$4,806
Supplies	\$4,229
Maint & Operations	\$7,615
Professional Fees	\$74,549
Wages & Benefits	\$408,299

We have the CIP coming up. A lot of what is on here, we will cover in the CIP.

Utility Billing & Garbage



This includes the meter change out, getting the program up and activated, this will occur the upcoming fiscal year. This is the overview, there are no recommendation for changes in the utility rates.

Utility Fund Financial Forecast

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
Estimated Beginning Fund Balance	\$3,800,952	\$3,686,678	\$3,431,165	\$3,560,735	\$3,588,946
Other Revenues	1,597,307	1,533,598	1,546,703	1,559,818	1,573,061
Water - City	2,442,829	2,862,813	2,949,342	2,993,582	3,038,485
Water - UTRWD	5,113,802	5,623,256	5,791,954	5,965,713	6,144,684
Wastewater - City	2,206,403	2,206,403	2,062,238	2,093,172	2,124,570
Wastewater - UTRWD	1,215,413	1,228,664	1,493,366	1,515,766	1,538,503
Use of Fund Balance	113,864	255,634			
Total Resources	\$12,689,618	\$13,710,368	\$13,843,603	\$14,128,051	\$14,419,303
Expenditures	11,409,654	11,692,370	11,997,844	12,362,410	12,636,664
Debt Service	1,215,964	1,464,498	1,266,189	1,537,430	1,535,675
New on-going Programs	4,500				
One-time Programs	59,500	53,500			
Transfer to AMP Fund		250,000	225,000	100,000	100,000
Transfer to Rate Stabilization		250,000	225,000	100,000	100,000
Total Expenditures	\$12,689,618	\$13,710,368	\$13,714,033	\$14,099,840	\$14,372,339
Revenues over Expenditures			129,570	28,211	46,964
Estimated Ending Fund Balance	\$3,686,678	\$3,431,165	\$3,560,735	\$3,588,946	\$3,635,910
% of Total Expenditures	29.05%	25.03%	25.96%	25.45%	25.29%
Policy Target	25.00%	25.00%	25.00%	25.00%	25.00%

Upper Trinity is going up about 2.5%, we will be able to absorb those and over the course of the next couple of years we will look at where it ends up.

Council Member Garber – The Upper Trinity that is increasing, is that not part of the pass through?

Bob Hart, City Manager – We do have it as a pass through but they are going up some in the water and down in wastewater. I think if we get through this next year, we will reconcile between the water and wastewater side. We have some adjustments we need to do but we can do it at the end of the upcoming year. We also included putting money into the Asset Management Plan and the Rate Stabilization Fund. For the future, we have some funding out there, we will stay with our reserve requirement. It means we do have capacity for future debt. If we do issue debt, we would not be able to make the transfers because it will actually go to the debt of service. I think as we watch what will happen with the TIF in the next year, I think some of the dust will begin to settle.

Council Member Henderson – This one-time fee of the \$53,500 for the one time programs, is that the meters or something else?

Lee Ann Bunselmeyer - Director of Finance, Communication & Strategic Services – The asset system. We have \$45,000 for the work order asset management system and \$8,500 for a dump bed trailer.

UTRWD Fixed Cost Analysis

	<u>FY2018-19</u>	<u>FY2019-20</u>	<u>Increase</u>
Total Customer Count	7,228	7,291	94 1.32%
FIXED CHARGES			
Subscription payment for 7.5 mgd	\$3,297,375	\$3,399,375	
Administration Fee	6,085	6,140	
Minimum Daily Volume 1.35 mgd	593,528	611,888	
Total Water Fixed Charges	\$3,896,988	\$4,017,403	\$120,415 3.08%
Fixed fee per Customer/per month	\$44.93		
Individual Facilities (Pipeline)	\$50,530	\$50,660	
Individual Facilities (Booster Station)	33,340	33,160	
Joint facilities charge	672,165	654,450	
WWTP O&M Charge	648,830	648,830	
Total Wastewater Fixed Charges	\$1,404,865	\$1,387,100	(\$17,765) (1.25%)
Fixed fee per Customer/per month	\$16.19		
VOLUMETRIC CHARGES /1,000 GALLONS			
Water volume charge	\$1.09	\$1.12	
Wastewater treatment volume charge	\$1.25	\$1.25	
Pipeline usage volume charge	\$0.055	\$0.055	

Bob Hart, City Manager – Scott, this goes back to your question on Upper Trinity. The water is increasing but the wastewater is decreasing. We need to get our piece back into balance. We were over collecting on wastewater so this gets us better in balance. The fixed cost would increase some but that is your gallon changes that is occurring. It is pretty minimal.

On the storm water drainage overview, the storm water system on the budget is relatively straight forward. Dealing with some of the engineering analysis and some of the drainage areas we discussed at the last session and looking at resubmitting the Lynchburg Creek application. We are waiting for the analysis from FEMA. Hopefully we will receive that and it will sort out where we go. This is again, looking at the five year forecast. We still are maintaining the transfer to the Asset Management Plan, it is built into the five year plan.

Storm Drainage

@ DEPARTMENT BUDGET OVERVIEW

Division	FTE	2019-20			
Drainage	3	\$899,445		3 Employees	\$233k New Program Funding

New Program Funding:

- Work Order/Asset Management System - \$13,500
- Lake Sharon Engineering - \$31,500
- Corinth Parkway Engineering - \$37,500
- Blake Street Engineering - \$51,000
- Drainage Asset Management Transfer - \$100,000

@ GOALS FOR 2019-2020

T DEPARTMENT BUDGET

- Continue reducing resident work order requests with proactive maintenance.
- Continue to meet or exceed TCEQ Storm Water Compliance regulations and BMP's.
- Continue public education campaign on preventing storm water pollution.
- Continue Mosquito Abatement Program.
- Lynchburg Drainage grant submittal.

Category	Amount
Transfers	\$198,353
Debt Service	\$181,870
Capital Outlay	\$120,000
Training	\$2,236
Vehicle & Fuel	\$13,500
Utilities/Communication	\$4,464
Supplies	\$8,042
Maint & Operations	\$24,701
Professional Fees	\$147,334
Wages & Benefits	\$198,945

Storm Drainage Financial Forecast

	2018-2019	2019-2020	2020-2021	2021-2022	2022-2023
	Estimate	Proposed			
Estimated Beginning Fund Balance	\$675,141	\$375,150	\$230,805	\$233,667	\$225,310
Revenues	754,750	755,100	762,651	770,278	777,980
Use of Fund Balance	299,991	144,345			
Total Resources	\$1,054,741	\$899,445	\$762,651	\$770,278	\$777,980
Expenditures	433,156	497,170	506,714	518,987	524,156
Debt Service	221,585	168,775	168,075	154,648	154,525
New on-going Programs					
One-time Programs	400,000	133,500			
Transfer to AMP Fund		100,000	85,000	95,000	95,000
Total Expenditures	\$1,054,741	\$899,445	\$759,789	\$768,635	\$773,681
Revenues over Expenses			\$2,862	\$1,643	\$4,299
Estimated Ending Fund Balance	\$375,150	\$230,805	\$233,667	\$225,310	\$229,609
% of Total Expenditures	35.57%	25.66%	30.75%	29.31%	29.68%
Policy Target	25.00%	25.00%	25.00%	25.00%	25.00%

If you remember, going back about a year and a half ago, we discussed participating in the Thriving Earth Exchange Program with The American GeoPhysical Union. Everyone has been hard at work with the project.

Ben Rodriguez, Planning & Development Manager – The project was related to green infrastructure and ways we can use green methods to either detain or mitigate storm water run-off from properties. About a year ago, the city and TEX (Thriving Earth Exchange) reached out to begin this project. There has been change and turnover but we have worked together but have obtained a result that everyone will be happy with.

The goal is to keep our waterways, lakes, creeks, streams clean from oils and pollutants that run off from driveways and parking lot into those water bodies. We explored using different methods to not only detain the water but also filter and clean it before it gets to Lake Lewisville or Lynchburg Creek.

Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist– Texas A&M AgriLife Extension Service – I am a green infrastructure specialist. I am here presenting AGU. I was matched as a volunteer scientist to assist the city with this project. Basically I am a volunteer but this is what I do for a living too. We will show an approach to help the city developers, planners, engineers to think about more sustainable ways they can integrate, in their development, to keep the rivers and the lakes of the city clean.

Green Infrastructure Program

Corinth's First Interactive Educational Outreach



Project Team:

Fouad Jaber, Ph.D., P.E.
Associate Professor and Extension Specialist
Texas A&M AgriLife Extension Service

City of Corinth
Planning & Development Department
Lori Levy, AICP, Senior Planner
Ben Rodriguez, AICP, Planning Manager
Garrett Skrehart, GIS Manager
George Marshall, P.E., City Engineer
Helen-Eve Liebman, AICP, Director



Thriving Earth Exchange (TEX)

Assists scientists, community leaders and sponsors working together to solve local challenges related to natural resources, climate change and natural hazards.

BACKGROUND OF PROJECT

Approximately a year ago, the Planning & Development Department explored the opportunity of TEX assisting the City of Corinth with a project.

Planning & Development chose Lynchburg Creek for our project requesting assistance from TEX by pairing us with a scientist to help with strategies to manage stormwater and preserve the creek integrating iSWM (Integrated Stormwater Management) standards.

TEX matched us with local scientist and associate professor, Fouad Jaber, Ph.D., P.E., Texas A&M AgriLife Extension who provided technical assistance and chose Green Infrastructure techniques as our methodology.

Future deliverables may include a color poster and a companion color handout for the AGU/TEX fall meeting.

WHAT IS GREEN INFRASTRUCTURE?

Green Infrastructure combines naturally occurring features in the environment and constructed elements to manage water efficiently, economically, and in an ecologically sensitive manner.

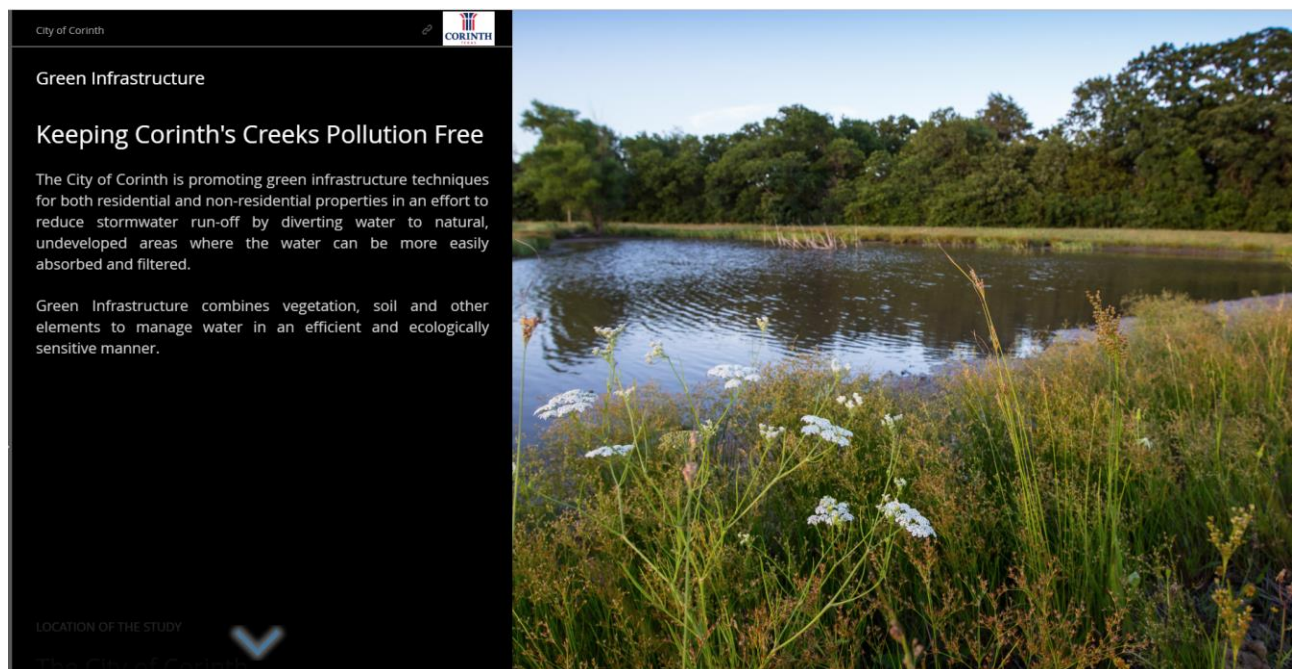
WHAT WAS THE GOAL OF THE PROJECT?

The project team wanted an **innovative, non-traditional plan utilizing a web-based interactive map**, and would also be a fluid document that can easily be expanded and updated.

The link to the Green Infrastructure Plan is:
www.cityofcorinth.com/greeninfrastructure



Garret Skrehart, GIS Manager – You are looking at a story map, it is a great vehicle, if you're focused on one topic, for walking, people that visit a website, through your story. This is a website, there is nothing to download. You go to www.cityofcorinth.com/greeninfrastructure and anyone can see this.



City of Corinth

Green Infrastructure

Keeping Corinth's Creeks Pollution Free

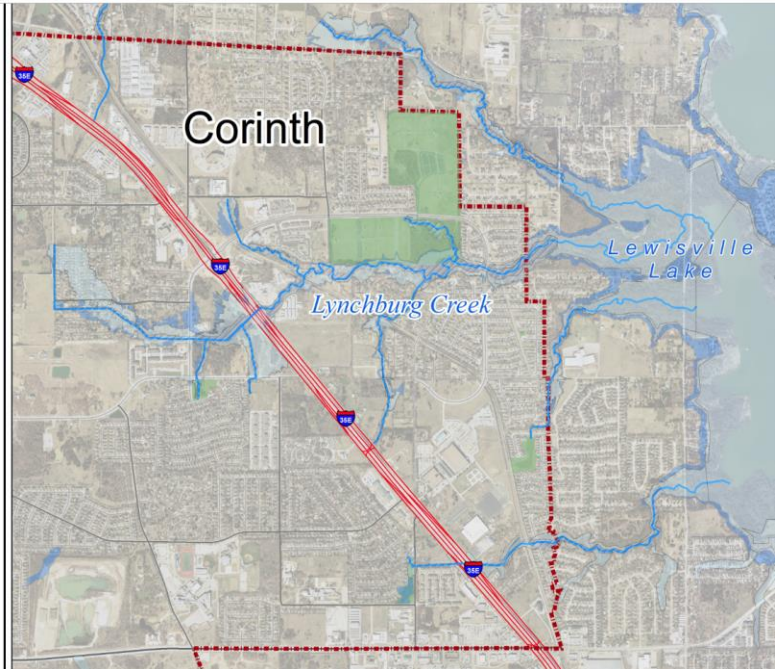
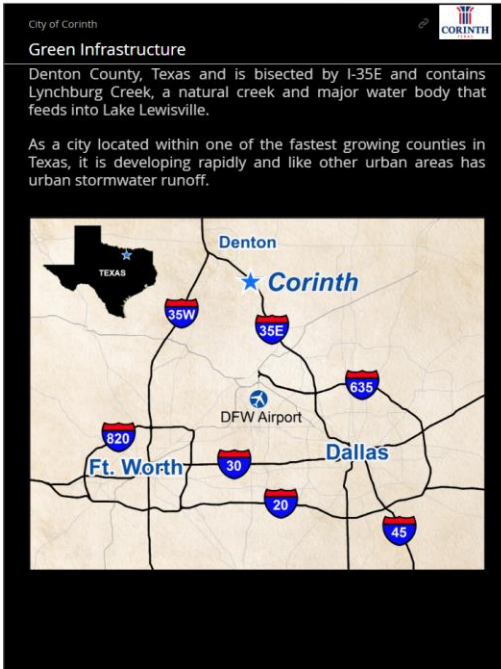
The City of Corinth is promoting green infrastructure techniques for both residential and non-residential properties in an effort to reduce stormwater run-off by diverting water to natural, undeveloped areas where the water can be more easily absorbed and filtered.

Green Infrastructure combines vegetation, soil and other elements to manage water in an efficient and ecologically sensitive manner.

LOCATION OF THE STUDY

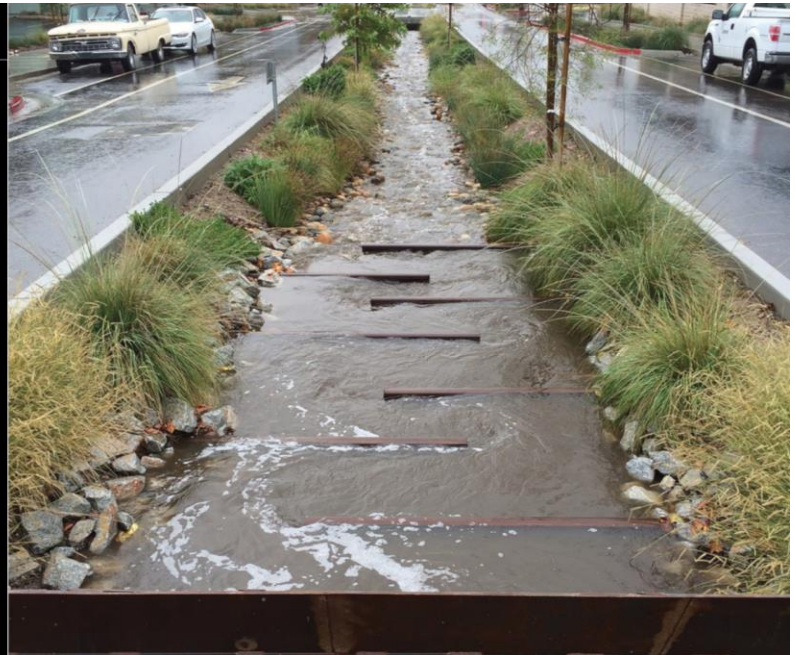
Ben Rodriguez, Planning & Development Manager – This page shows our overall study area. The idea is that this will be presented in Washington DC so we wanted to have a slide to show where Corinth is and what we are all about. This shows where we are in relation to Lake Lewisville and it

also show how Lynchburg Creek bisects the community.

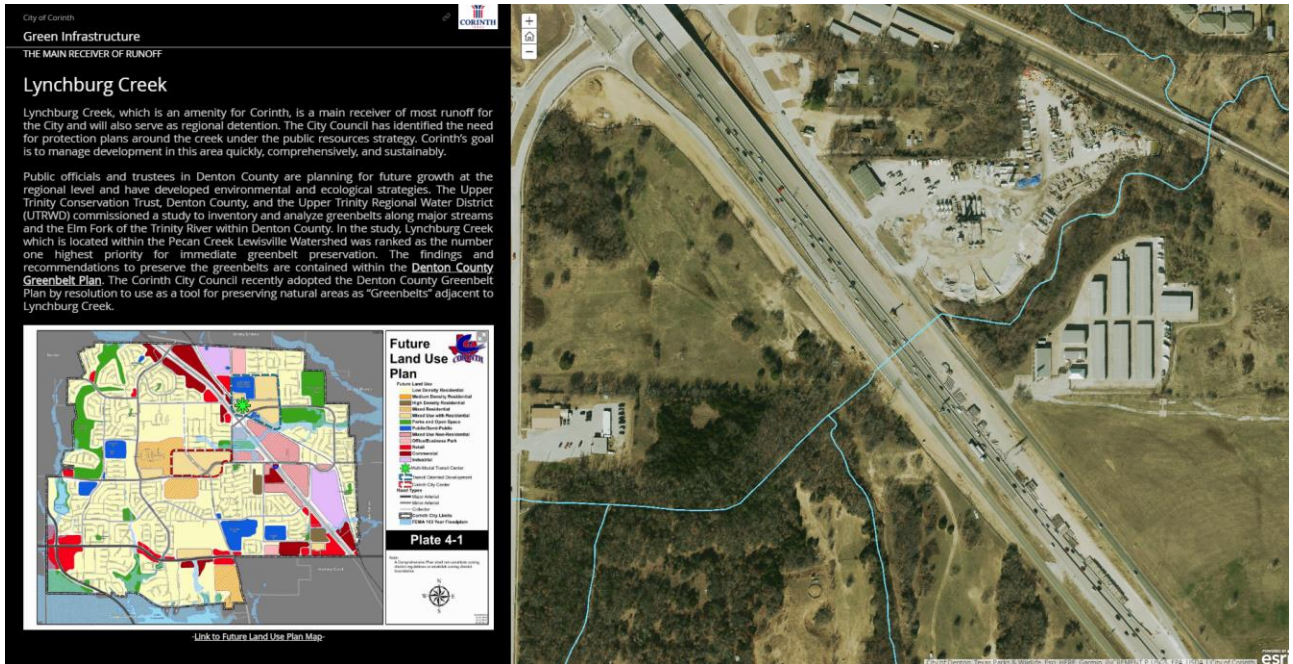


This shows innovative ways that storm water can be mitigated and filtered in a community. This example is from California where they use the median to hold the water and filter it, and also to slow the rate of the flow which reduces the amount of erosion impact downstream.

This is an example of what Millennium Development will be doing in Corinth, where they will be utilizing something similar, as more of an amenity feature in the development. They will have patio seating alongside the waterway, instead of just a hole in the ground on the corner of a property. They are trying to leverage it and make it a nice part of the community.



Garret Skrehart, GIS Manager – On this slide, we are reintroducing, going into a lot of detail about our study area, which is Lynchburg Creek. The story map is fully interactive. This is FEMA’s map of Lynchburg Creek line with our 3” aerial photography on the back. The user can zoom around the community. While they are scrolling through, learning about Lynchburg Creek.



Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist– **Texas A&M AgriLife Extension Service** – I received a call asking if I would be interested in working with the City of Corinth as a volunteer representative of AGU. I have been a member for 20 years and it sounded an interesting opportunity. I worked with staff to hone down on the objectives of the project and came up with a nice plan to develop, with a focus on green infrastructure and you can see the list here, of the practices that we are going to talk with you more in details later. This project, Thriving Earth Exchange, is going to be presented in the AGU Fall Conference in San Francisco in December. They have several of these projects and they highlight them in a large reception room where thousands of people come and see them. I will not be in the country but maybe one of you could go.

City of Corinth
Green Infrastructure

OUR PARTNER IN PROMOTING POSITIVE CHANGE

American Geophysical Union Thriving Earth Exchange (AGU TEX)

Corinth sought assistance with the scientific community and partnered with a local scientist through AGU's Thriving Earth Exchange (TEX) to assist us with strategies to improve drainage. Regional approach initiatives will be applied using Green Infrastructure techniques such as:

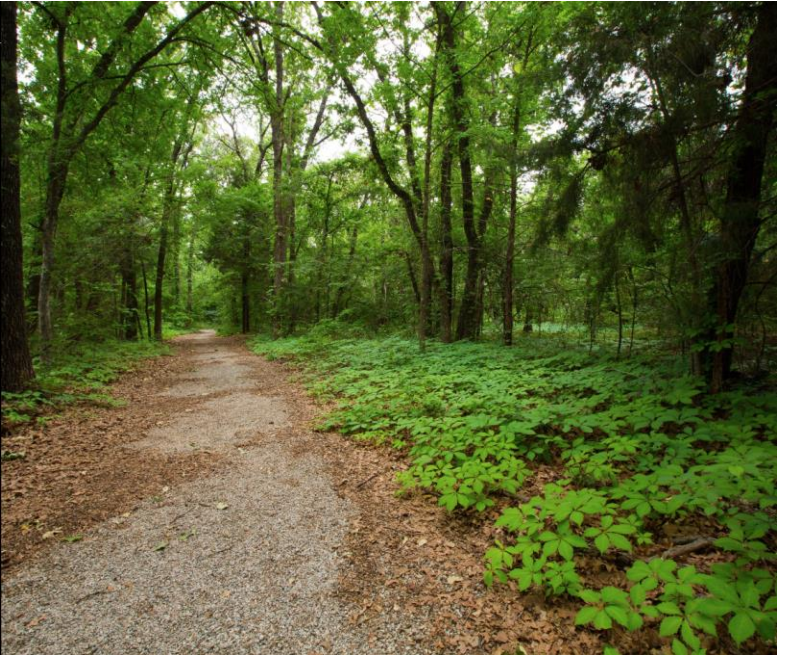
- Bioswales
- Bioretention
- Rain Gardens
- Rainwater Harvesting
- Permeable Pavement
- Conservation Easements
- Vegetated Filter Strips
- Wet Detention Ponds
- Other Practices to Improve Water Quality

Green Infrastructure is a cost-effective, resilient approach to managing wet weather impacts that provide many community benefits. ↓



WHERE SHOULD THESE TECHNIQUES BE APPLIED?

Green Infrastructure Techniques



Garret Skrehart, GIS Manager – We are looking at green infrastructure techniques, you can see Lake Lewisville, and as soon as it hits our city limits, you use these different techniques depending on how far away from our creeks you are. You can read about that here and then as you scroll down, we zoom in to an area in Corinth. We go into a lot of detail about zones. As you know, this is the Amity Village type area, right off Lynchburg Creek and you can scroll through the different techniques that are promoted in Zone 1 and you can click on all of the links, they hyperlink.

City of Corinth
Green Infrastructure

A DEEP DIVE INTO THE GREEN INFRASTRUCTURE ZONES

Three Zones

Different green infrastructure practices are appropriate for each zone and are outlined below.

Zone 1: within 1000 feet of the creek
Protecting the creek is most important in this location. Practices such as riparian buffers, vegetated filter strips, bioswales, conservation easements, wet detention ponds, as well as picking up dog waste, managing grass clippings and reducing runoff from irrigation are to be prioritized. Residential and commercial sites within this zone can install typical runoff prevention practices described in the hyperlinks below.

Links

- Riparian Buffers
- Vegetated Filter Strips
- Bioswales
- Conservation Easements
- Wet Detention Ponds
- Practices to Improve Water Quality

Zone 2: 1000 -> 5000 feet from the creek
In this zone, reducing runoff from urban areas, as well as managing runoff from upstream is recommended. Practices such as bioswales, rain gardens, conservation easements, and rainwater harvesting would serve this purpose.

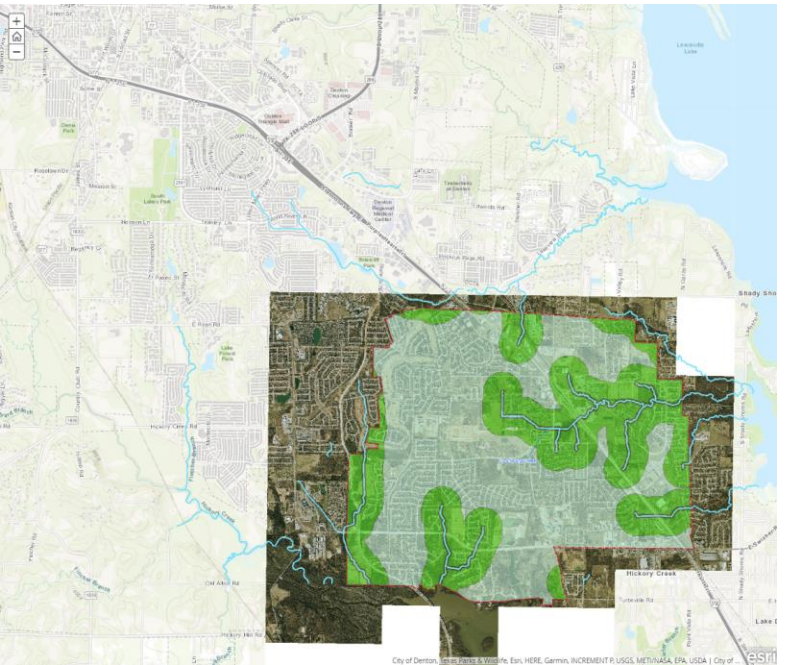
Links

- Bioswales
- Rain Gardens
- Conservation Easements
- Rainwater Harvesting

Zone 3: greater than 5000 feet
This zone is where runoff begins and common practices to protect water resources include: picking up dog waste, managing grass clippings, and reducing runoff from irrigation. Rainwater harvesting and rain gardens are easy tools to improve impacts from drainage.

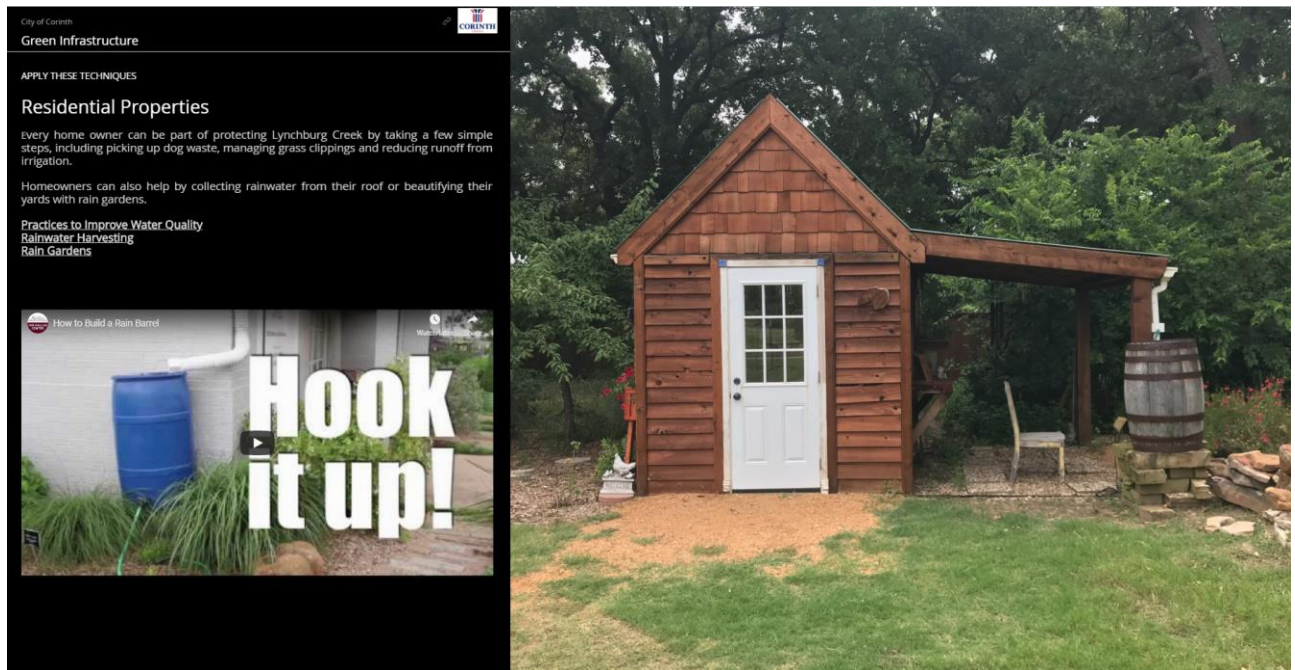
Links

- Rainwater Harvesting
- Rain Gardens
- Practices to Improve Water Quality



Ben Rodriguez, Planning & Development Manager – We also wanted to provide some examples of things that individual homeowners could do to help reduce the amount of storm water that runs off their property. Rain barrels and permeable driveways and various other methods can be used to

help mitigate the amount of storm water that comes off a residential home site. Our assistant Fouad helped put together a video as well as some examples of a case study of a random lot in Corinth, to show what could be done to help.



Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist– Texas A&M AgriLife Extension Service – This is detailed, so if a developer or engineer is interested, it would give them enough information to start thinking and doing the design themselves. I randomly selected a house, as you can see, the orange is permeable pavement. The driveway which is pavement that can hold the weight of a car but it also allows water to infiltrate through so it would reduce runoff. The small red circle is rainwater harvesting. That is a recommended 2,000 gallon tank because of the size of the roof. It can collect enough water to meet 2/3 of that person's water requirement and at the same time, reduce run-off. The walkway to the entrance of the house can also be permeable pavement, a different type that won't cost as much because it is just for walking. In the dark green, the right of way, the section between the sidewalk and the road, that can be converted into a rain garden. It can have an opening in the curb and as water is running down, along the street, from upstream, it enters that right of way which can be done as a depression. Water can go in it, infiltrate the vegetation selected for that rain garden which can handle both wet and drought conditions. There are list of trees and vegetation that can handle these conditions. For each of the practices I did the design, determined what was needed and summarized the details, in white.

City of Corinth
Green Infrastructure

Example and Calculations

Case Study: Residential Property

A Corinth residence was chosen at random and used as a case study to show examples of various green infrastructure techniques that can be incorporated into a residential setting.


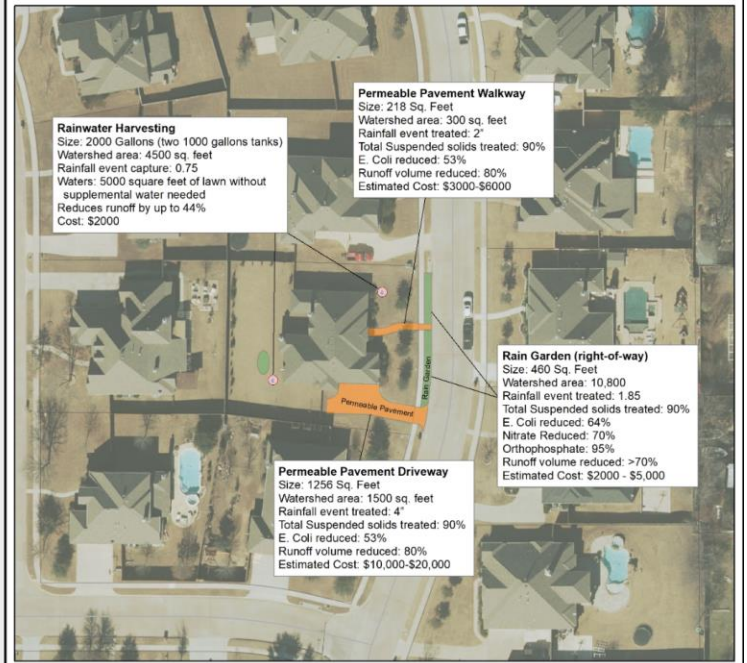
This map provides an example of how some of these techniques can be applied and the positive impacts on drainage, as well as potential cost savings that can be realized by implementing these green infrastructure techniques.

Apply these Techniques

Public and Commercial

Property owners of public and commercial sites can implement several practices that can reduce runoff and associated pollution. These include large rainwater harvesting systems, bioswales, rain gardens, permeable pavement and detention / retention ponds. These can be installed in parking lots or near large structures.

Examples:
Bioswale Info
Conservation Easements
Permeable Pavement

Ben Rodriguez, Planning & Development Manager – This is an example of what some of our businesses have already started doing here in Corinth. At the Subaru dealership, they put in a bioswale. The design has a pervious pipe so water will accumulate and filter through the ground and be clean before it hits our drainage system. It provides us a cleaner water source before it gets to our creeks and streams.


City of Corinth
Green Infrastructure

Apply these Techniques

Public and Commercial

Property owners of public and commercial sites can implement several practices that can reduce runoff and associated pollution. These include large rainwater harvesting systems, bioswales, rain gardens, permeable pavement and detention / retention ponds. These can be installed in parking lots or near large structures.

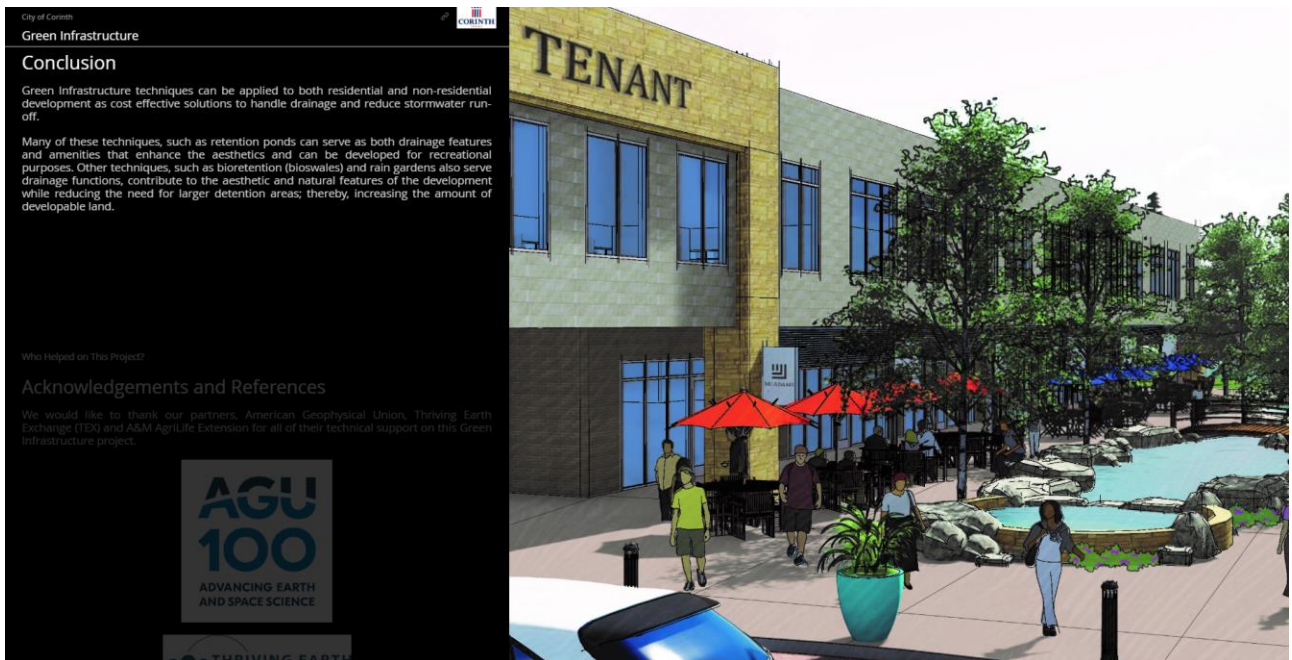
Examples:
Bioswale Info
Conservation Easements
Permeable Pavement




Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist– Texas A&M AgriLife Extension Service – We selected the City of Corinth for a commercial facility case study. The island in the visitor’s parking lot can be converted into a watershed without any modification of the

parking lot slope. Where the rain falls in the blue area it will drain straight to the island. If we convert the island from an elevated island that is contributing run off into a rain garden that is depressed with curb openings, water can infiltrate and be treated. The red and yellow area do not flow into the island. We put the permeable pavement where water can flow into which treats the rain water and sediment from these systems. We did a similar system for the employee parking and from the building we put a large rain water harvesting based on the size of where the downspout on the southwest corner of the building. The watershed area is in green. Water comes into that downspout and based on the size, we would recommend a 7,500 gallon tank that can be used to water landscape. Same as with the residential case study, we calculated in white, the details of the suggested modifications.

The goal is to provide a visual for developers or engineers who are interested in keeping the lakes and streams clean, to understand what is needed and the practices available; to have enough information though the links to be able to drill down and understand the concept of design. We have an example of residential and commercial systems. The goal is to have an easy to see menu. We have discussed having a series of lectures that addresses each of these practices that can be open to the public, developers, engineers, anyone who is interested.



City of Corinth
Green Infrastructure
Who Helped on This Project?

Acknowledgements and References

We would like to thank our partners, American Geophysical Union, Thriving Earth Exchange (TEX) and A&M AgriLife Extension for all of their technical support on this Green Infrastructure project.






1 Definition of Green Infrastructure by EPA, United States Environmental Protection Agency

Photos provided by City staff, A&M AgriLife, G&A/McAdams, and public images on-line



Bob Hart, City Manager – We have been working with the Pennell family about getting some of the property along Lynchburg Creek for drainage and walking trails. We have discussed working with the Upper Trinity trust fund to take title of those properties. We have had some conversations and they were particular about what they wanted to protect. We met with them yesterday and in advance of the meeting I sent them the link to the Green Infrastructure Program. When I arrived, they had already been through the presentation and said, anything Corinth wants to do, any way you want to set it up, to pass this land through, we are on board; we like everything that is going on here.

Council Member Pickens – The permeable driveways, what does a traditional concrete driveway cost?

Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist– Texas A&M AgriLife Extension Service – A square foot of parking is in the range of \$6 - \$10. The permeable material is not much more expensive, it is \$8 - \$12 but there is a need for pre-preparation of the area that can cost \$3 - \$4 per square foot. When you use these systems in a development, if the developer uses this system, it can replace a required detention pond or reduce the size of a detention pond; and as a result they can add another home and that house will make the developer enough profit to cover the cost. These additions will also increase your property value by five to 10 percent. There are ways to make it more appealing to developers.

Council Member Garber – Are we planning on writing this into development standards or is it an option? Are there any issues with residents harvesting rain in Corinth? Are there any regulations against, outside of HOA's?

Bob Hart, City Manager– That will be one of the conversations discussed in the comprehensive land use plan. It will be a discussion in the spring.

Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist – Texas A&M AgriLife Extension Service – It is illegal to ban water harvesting in Texas. There is a state bill, you can have regulations on it but cannot ban it.

Council Member Garber – Do we have regulations regarding it, regarding location? If we are presenting rain water harvesting, I think folks may be excited about it. It may be good to get a link to our regulations.

Lori Levy – Senior Planner – In the intro sheets, we have a link, with each of the infrastructure techniques. On that sheet it has minimum construction standards for each of them from the iSWIM manual, from NCTCOG. There is also maintenance of any of the techniques, included.

Council Member Henderson – Would the HOA’s approve those types of drives?

Council Member Pickens – Does the driveway look different than concrete?

Fouad Jaber, Ph.D., P.E., Associate Professor and Extension Specialist– Texas A&M AgriLife Extension Service – You use interlocking pavers. They have space in between with gravel. There is pervious asphalt, which looks like regular asphalt. There are different options and HOA’s can probably place limits.

Bob Hart, City Manager – This is the overview of the CIP, this is projects over \$50,000. Items such as acquisition of property, water, streets, waste water lines, buildings and so forth. They are broken down within the tax increment district, within the transit development and other.

Capital Improvement Program Overview

Capital Program by Fund	2019-20	2020-21	2021-22	2022-23	2023-24	Total	Over 5 Years
Water	\$61,875	\$607,250	\$673,975	\$492,000	\$708,100	\$2,543,200	\$3,291,000
Wastewater	661,875	599,250	1,315,200	492,000	1,603,200	4,671,525	9,261,000
Drainage	2,020,000	2,930,000	-	-	75,000	5,025,000	500,000
Streets	2,690,000	4,119,000	8,980,500	9,138,250	4,049,075	28,976,825	22,150,750
Parks	-	-	490,000	950,000	1,160,000	2,600,000	-
General	172,000	322,000	172,000	322,000	247,000	1,235,000	-
Total Capital Improvement Plan	\$5,605,750	\$8,577,500	\$11,631,675	\$11,394,250	\$7,842,375	\$45,051,550	\$36,362,750

Funding Sources	2019-20	2020-21	2021-22	2022-23	2023-24	Total	Over 5 Years
Unissued/Unauthorized Bond Proceeds	\$2,476,875	\$8,577,500	\$11,631,675	\$11,394,250	\$7,842,375	\$41,922,675	\$36,362,750
Issued Bond Proceeds							
Grant	1,600,000					1,600,000	
Wastewater Impact Fees/Escrow	661,875					661,875	
Roadway Impact Fees	25,000					25,000	
Sales Tax Funds	250,000					250,000	
Operating Funds	592,000					592,000	
Total Resources	\$5,605,750	\$8,577,500	\$11,631,675	\$11,394,250	\$7,842,375	\$45,051,550	\$36,362,750

City of Corinth Capital Improvement Plan

- To be included in the Capital Improvement Program
 - cost > \$50,000
 - useful life > debt issuance period

- Capital Projects include
 - acquisition of property;
 - roadways and sidewalks;
 - buildings;
 - water, wastewater, and drainage systems;
 - architectural and engineering fees;
 - site development.



CAPITAL IMPROVEMENT PROGRAM

FY 2020-2024

Project Title	Proposed FY2019-20	Planned					Total
		FY2020-21	FY2021-22	FY2022-23	FY2023-24	5 Plus Years	
General Fund Capital							
Streets	\$ 2,690,000	\$ 4,119,000	\$ 8,980,500	\$ 9,138,250	\$ 4,049,075	\$ 22,150,750	\$ 51,127,575
Parks & Recreation	-	-	490,000	950,000	1,160,000	-	2,600,000
Technology & Public Safety	172,000	322,000	172,000	322,000	247,000	-	1,235,000
	2,862,000	4,441,000	9,642,500	10,410,250	5,456,075	22,150,750	54,962,575
Utility Fund Capital							
Water	61,875	607,250	673,975	492,000	708,100	3,291,000	5,834,200
Wastewater	661,875	599,250	1,315,200	492,000	1,603,200	9,261,000	13,932,525
	723,750	1,206,500	1,989,175	984,000	2,311,300	12,552,000	19,766,725
Storm Drainage Fund Capital							
Storm Drainage	2,020,000	2,930,000	-	-	75,000	500,000	5,525,000
Total	\$ 5,605,750	\$ 8,577,500	\$ 11,631,675	\$ 11,394,250	\$ 7,842,375	\$ 35,202,750	\$ 80,254,300

CAPITAL IMPROVEMENT PROGRAM		FY 2020-2024						
Row Labels	Grand Total	Total Construction Cost	Total ROW COST	Total Water Cost	Total Wastewater Cost	Total Engineering - Street Cost	Total Engineering - Water Cost	Total Engineering - Wastewater Cost
TOD/Other	\$ 37,000,001	\$ 12,214,892	\$ -			\$ 932,234		
Land Acquisition FY 19/20 From To	\$ 6,000,000	\$ 6,000,000						
Park Pavilion FY 20/21	\$ 3,000,000	\$ 2,608,696	\$ -			\$ 391,304		
Parking Garage FY 23/24	\$ 3,000,000	\$ 2,608,696	\$ -			\$ 391,304		
TOD 20-04 - Drainage FY 19/20 From Walton To Lynchburg Main channel	\$ -	\$ 997,500	\$ -			\$ 149,625		
TOD 22-01 Rail Stop FY 22/23 From Walton To Corinth Pkwy	\$ 25,000,000	\$ -	\$ -			\$ -		
TOD/CP	\$ 22,391,563	\$ 11,990,000	\$ 5,235,000	\$ 1,464,375	\$ 1,464,375	\$ 1,798,500	\$ 219,656	\$ 219,656
TOD 20-01 Walton Dr FY 21/22 From Frontage (I-35E) To Shady Rest	\$ 5,205,750	\$ 3,300,000	\$ 462,000	\$ 412,500	\$ 412,500	\$ 495,000	\$ 61,875	\$ 61,875
TOD 20-02 N. Corinth Street FY 20/21 From NCTC To Corinth Pkwy	\$ 4,242,500	\$ 2,200,000	\$ 1,080,000	\$ 275,000	\$ 275,000	\$ 330,000	\$ 41,250	\$ 41,250
TOD 20-03 Main St FY 21/22 From Corinth Pkwy To NCTC	\$ 2,801,750	\$ 1,540,000	\$ 588,000	\$ 192,500	\$ 192,500	\$ 231,000	\$ 28,875	\$ 28,875
TOD 21-01 NCTC Way FY 20/21 From Frontage (I-35E) To N. Corinth St	\$ 2,421,250	\$ 1,300,000	\$ 840,000	\$ 137,500	\$ 137,500	\$ 165,000	\$ 20,625	\$ 20,625
TOD 21-02 Lion Blvd - A FY 22/23 From N. Corinth St To Main	\$ 2,058,063	\$ 995,000	\$ 714,000	\$ 116,875	\$ 116,875	\$ 140,250	\$ 17,531	\$ 17,531
TOD 23-01 Hospital Drive FY 23/24 From NCTC Way To Corinth Pkwy	\$ 3,287,938	\$ 1,705,000	\$ 837,000	\$ 213,125	\$ 213,125	\$ 255,750	\$ 31,969	\$ 31,969
TOD 23-02 Corinth Pkwy Narrowing FY 23/24 From Main St To Hospital Dr	\$ 316,250	\$ 275,000	\$ -			\$ 41,250	\$ -	\$ -
TOD 25-01 Lion Blvd - B FY 5+ From Main St To W. Side of Trails at Shady Rest	\$ 2,058,063	\$ 995,000	\$ 714,000	\$ 116,875	\$ 116,875	\$ 140,250	\$ 17,531	\$ 17,531
TIRZ	\$ 72,916,664	\$ 53,641,500	\$ 5,138,476	\$ 6,684,250	\$ 3,609,250	\$ 2,375,475	\$ 964,481	\$ 503,231
Lake Sharon Bridge/overpass FY 23/24 From I-35E To Lake Sharon	\$ 28,000,000	\$ 28,000,000						
Parking Structure	\$ 4,000,000	\$ 4,000,000						
Realty Capital FY From To	\$ -	\$ -						
ROW FY 20/21 From I-35E To Corinth Pkwy	\$ 1,626,976	\$ -	\$ 1,626,976					
ST 20-01 Shady Shores Road FY 5+ From Old 77 To Eastern Edge of TRZ	\$ 2,530,000	\$ 1,760,000		\$ 220,000	\$ 220,000	\$ 264,000	\$ 33,000	\$ 33,000
ST 25-01 Tower Ridge Drive FY 5+ From Cliff Oaks To FM 2181	\$ 1,344,063	\$ 995,000		\$ 116,875	\$ 116,875	\$ 140,250	\$ 17,531	\$ 17,531
ST18-01 Lake Sharon/Dobbs FY 18/19 From Tower Ridge To Quail Run	\$ 4,910,000	\$ 3,770,000	\$ 1,140,000					
ST19-01 Quail Run Realignment FY 18/19 From Dobbs/ Lake Sharon To Frontage (I-35E)	\$ 2,543,750	\$ 2,095,000		\$ 254,375	\$ 254,375			
ST19-02 Parkridge FY 21/22 From Church To Lake Sharon	\$ 9,724,313	\$ 5,115,000	\$ 2,371,500	\$ 639,375	\$ 639,375	\$ 767,250	\$ 95,906	\$ 95,906
TZ 20-05 LC Area 2 - Drainage FY 19/20 From Corinth Pkwy To I-35E	\$ 1,147,125	\$ 997,500	\$ -			\$ 149,625		
TZ 22-01 Riverview FY 22/23 From Fairview To Frontage (I-35E)	\$ 1,328,250	\$ 904,000		\$ 115,500	\$ 115,500	\$ 138,600	\$ 17,325	\$ 17,325
TZ 22-02 Garrison Street FY 22/23 From Frontage (I-35E) To Cliff Oak	\$ 2,609,063	\$ 1,815,000		\$ 226,875	\$ 226,875	\$ 272,250	\$ 34,031	\$ 34,031
TZ 25-01 Old Hwy 77 FY 5+ From Post Oak To NCTC Way	\$ 6,166,875	\$ 4,290,000		\$ 536,250	\$ 536,250	\$ 643,500	\$ 80,438	\$ 80,438
TZ 25-03 SS Parkridge/Long Lake FY 5+ From FM 2181 To	\$ 1,725,000				\$ 1,500,000	\$ -	\$ -	\$ 225,000
WALB-01 Quail Run Elevated Storage Tank (E.S.T.) FY 18/19 From Quail Run To CoServ	\$ 4,197,500			\$ 3,650,000		\$ -	\$ 547,500	\$ -
WALB-02 20" E.S.T. Offsite Water FY 18/19 From I-35E To E.S.T.	\$ 1,063,750			\$ 925,000		\$ -	\$ 138,750	\$ -
Grand Total	\$ 132,308,227	\$ 77,846,392	\$ 10,373,476	\$ 8,148,625	\$ 5,073,625	\$ 5,106,209	\$ 1,184,138	\$ 722,888

Here we are looking at street improvements. They are broken down within the Tax Increment District, Transit Development and other. The next slide has the map which is easier to understand.

George Marshall, City Engineer – The cells bordered in red, we are looking to get participation from Denton County. The blue is what changed from what was published in your budget book. We reviewed the projects, some required modifications and put some projects in different places.

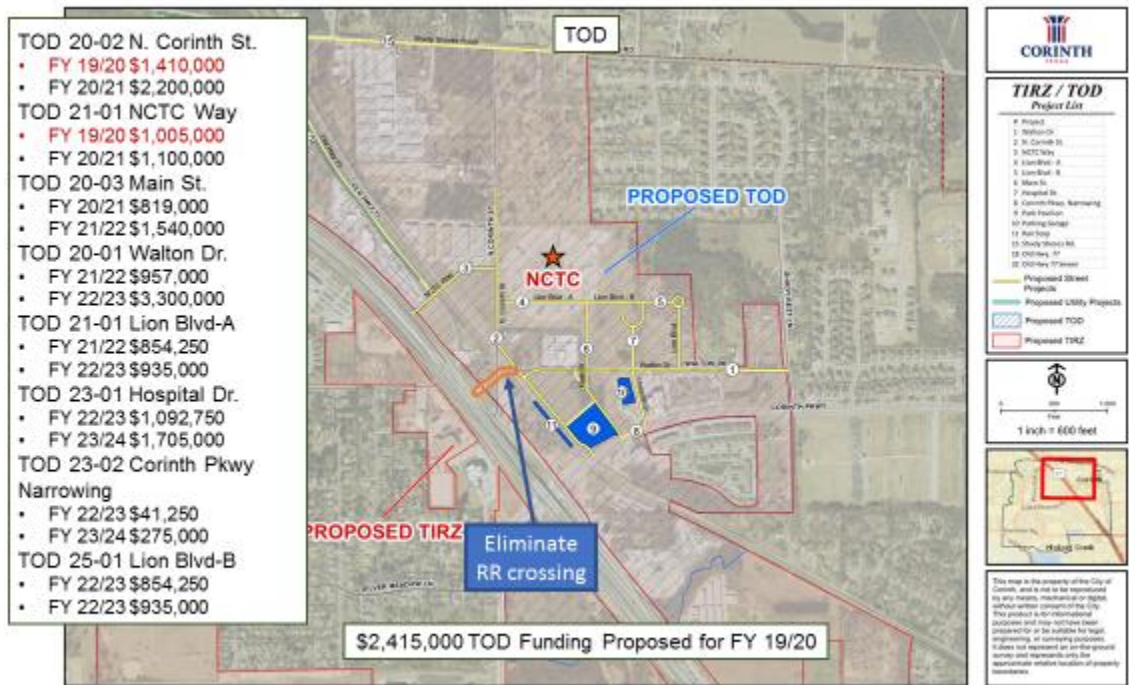
CAPITAL IMPROVEMENT PROGRAM		FY 2020-2024								
		CAPITAL IMPROVEMENT PROGRAM STREET IMPROVEMENTS								
PROJECT NO.	CAPITAL COSTS	DESCRIPTION	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Over 5 Years	Total 19-5+
ST 20-01	Shady Shores Road	Agency Coordination	\$ -	\$ 25,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 25,000
***	Old Hwy 77	Mill & Overlay	-	200,000	-	-	-	-	-	200,000
***	Riverview	Mill & Overlay	-	80,000	-	-	-	-	-	80,000
***	Lake Sharon Ext. to FM 2499 (MCM/Wildstone)	FM 2499 to Oakmont	-	-	-	-	-	-	-	-
ST 25-03	Cliff Oak Drive								3,442,700	3,442,700
ST 22-01	Vintage					103,400		176,000		279,400
ST 20-01	Shady Shores Road									
ST 25-02	Post Oak Road								2,118,875	2,118,875
ST 25-01	Tower Ridge Drive								6,907,500	6,907,500
									2,783,000	2,783,000
TAX INCREMENT REINVESTMENT ZONE (TIRZ)										
ST 18-01	Lake Sharon/Dobbs Realignment		\$ 4,910,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ST 19-01	Quail Run Realignment	Dobbs/Lake Sharon/Corinth Pkwy	1,500,000							
ST 19-02	Parkridge Collector Rd	Church to Lake Sharon	3,138,750			\$ 5,115,000				5,115,000
TZ 22-01	Riverview	Fairview to Frontage of I-35E				136,600		924,000		1,060,600
TZ 22-02	Garrison Street	Frontage (I-35E) to Cliff Oaks				272,250		1,815,000		2,087,250
ST 20-01	Shady Shores Road	Old 77 to Eastern Edge of TIRZ							2,024,000	2,024,000
ST 25-01	Tower Ridge Drive	Tower Ridge to FM 2181							1,075,250	1,075,250
TZ 25-01	Old Hwy 77	Post Oak Rd to NCTC Way							4,933,500	4,933,500
TRANSIT ORIENTED DEVELOPMENT (TOD)										
TOD 20-01	Walton Dr	N. Corinth Street to Shady Rest	\$ -	\$ -	\$ -	\$ 937,000	\$ 3,300,000	\$ -	\$ -	\$ 4,237,000
TOD 20-02	N. Corinth Street	NCTC to Corinth Pkwy	-	1,410,000	2,200,000	-	-	-	-	3,610,000
TOD 20-03	Main St	Corinth Pkwy to NCTC	-	-	819,000	1,540,000	-	-	-	2,359,000
TOD 21-01	NCTC Way	Frontage (I-35E) to N. Corinth St	-	1,005,000	1,100,000	-	-	-	-	2,105,000
TOD 21-02	Lion Blvd - A	N. Corinth St to Main St	-	-	-	854,250	935,000	-	-	1,789,250
TOD 23-01	Hospital Drive	Lion Blvd to Corinth Pkwy	-	-	-	-	1,092,750	1,703,000	-	2,797,750
TOD 23-02	Corinth Pkwy Narrowing	Main St to Hospital Dr	-	-	-	-	41,250	273,000	-	314,250
TOD 25-01	Lion Blvd - B	Main St to Eastern TOD Boundary	-	-	-	-	854,250	995,000	-	1,789,250
Total			\$ 9,549,750	\$ 2,480,000	\$ 4,119,000	\$ 6,980,500	\$ 9,138,250	\$ 2,913,000	\$ 23,204,829	\$ 21,127,575

Recategorized CIP:

- Transit Oriented Development (TOD)
- Transportation Reinvestment Zone (TIRZ)
- Other – (does not fall into TOD or TIRZ)

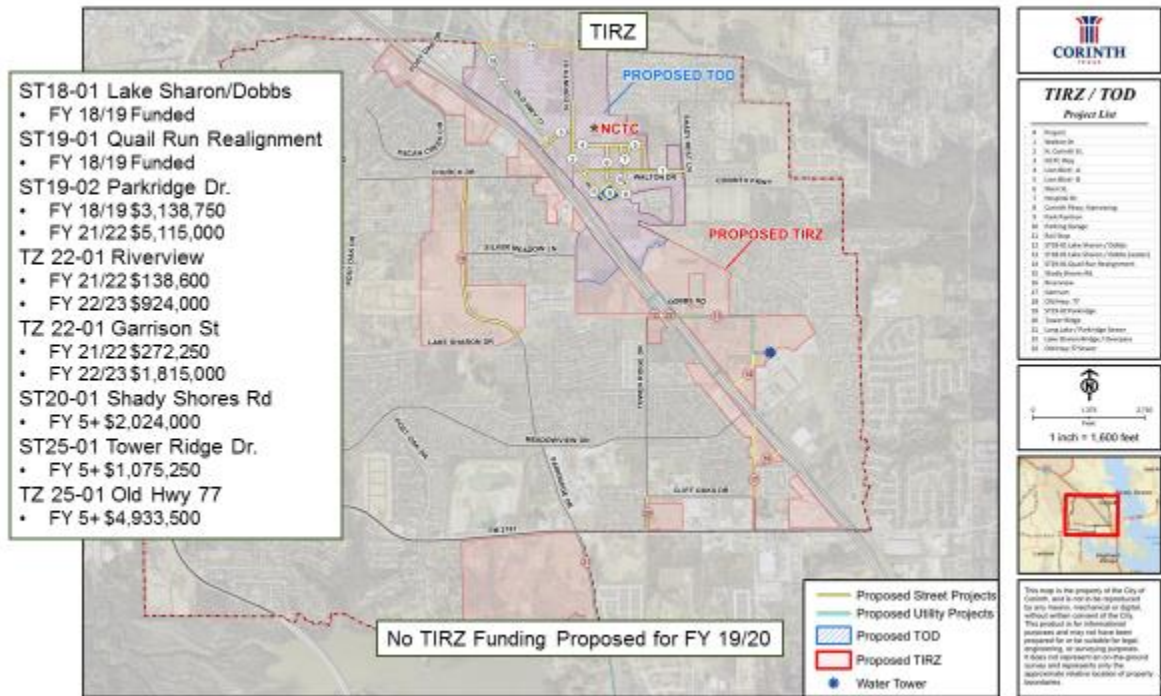
Bob Hart, City Manager – This is within the TOD. We will be going to Denton County requesting participation on the TIF. We will bring the ordinance to you September 5th. Denton County is also looking at a transportation bond election on the November or May 2020 ballot. We will discuss the TIF and about getting projects in. As we talk about the CIP, it is with that in mind. We had a great visit with John Polster. We have to deal with the judge and Hugh Coleman. We had a lengthy visit on strategy.

The conversation with Paris Rutherford, the original plan had NCTC Way coming out and North Corinth Street would come down, connect with Walton. When we met with DCTA we talked with Lockwood Anderson Engineers, the problem we would have with the rail stop, in this location is the rail crossing at Corinth Parkway and the rail crossing at Walton and North Corinth Street were too close. They need a minimum of 1,400 – 1,500 feet. This will be revised so that North Corinth Street will come down, bend over and Walton would dead end and come down to Corinth Parkway. This was showing on the plan but we eliminate is the crossing to connect back to the frontage road. We will have two crossings that gives you the length to have the stop work. If we do it this way, we have to have North Corinth Street and NCTC Way built when the rail stop starts so you can get in and out. It actually works better for the properties. The traffic flow is much better. What you see on the budget is the design and the right of way for these two projects show up here and here with the following year we would be rebuilding the street. That would eliminate the railroad crossing.

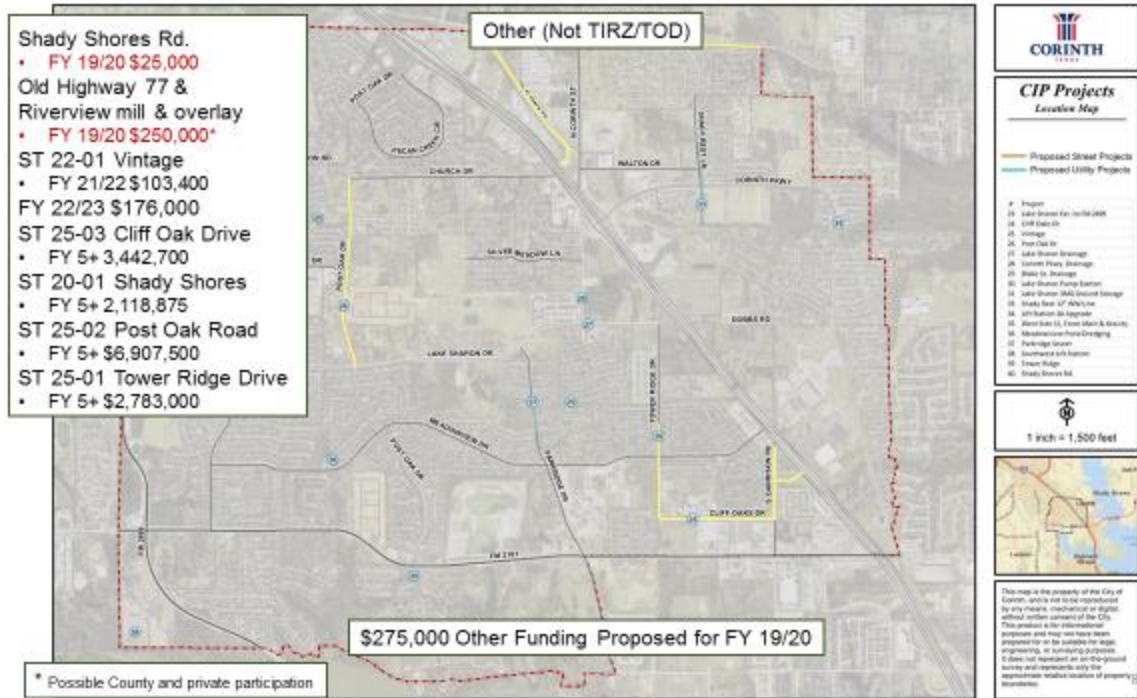


Within the TIF and this goes back to the conversation with the county, everything in the TOD we want to go to the county. We are showing the Lake Sharon/Dobbs alignment, we are moving forward. That is what you would see we focused on this year and also trying to finalize the Quail Run realignment. All the other projects, we will discuss Parkridge participation with the county. We have talked about Garrison, Riverview, old 77. The next five we will pick up with Shady Shores. This will end up being a prime candidate for county participation either within the TIF or within the county bond program, which may be a better way. We have included in the budget about \$25,000 with the idea of trying to conversation started between us, Shady Shores, Denton and Denton County. We might need to spend

some money to do some concept designs. We also have included a mill overlay in the budget on old 77 and on Riverview. Riverview is the number one complaint we receive on street conditions.



We have included about \$25,000 with the idea of getting conversation started between us and Shady Shores, Denton and Denton County. We might need to spend on design or concept design work. We have also included a mill overlay at old 77 and on Riverview. Riverview is the number one complaint we receive on street conditions.



Here is Wastewater, it's the same kind of map but everything will be tied together with the TIF and the TOD and Water.

George Marshall, City Engineer – As you will see, there is no highlighted red because typically the county is not going to participate in utility work unless the work is directly related to the street being realigned and the utilities have to be moved. We will review this when each project moves forward.

Bob Hart, City Manager – The first is the engineering work that will be related to North Corinth Street and NCTC Way that you saw on the street, a while ago. The following year, building the water and wastewater lines. On the Wastewater side we have the Parkridge sewer.

George Marshall, City Engineer – We are under design with the leg from the southern city limit line down to Turberville which would get us into a gravity line and that gets us the 60gpm capacity. Moving it to next year, once the plans are available and we see there's a potential development wanting to come through, then we would go to constructing that. Most of these funds for water and wastewater are all tied back to the impact fees.

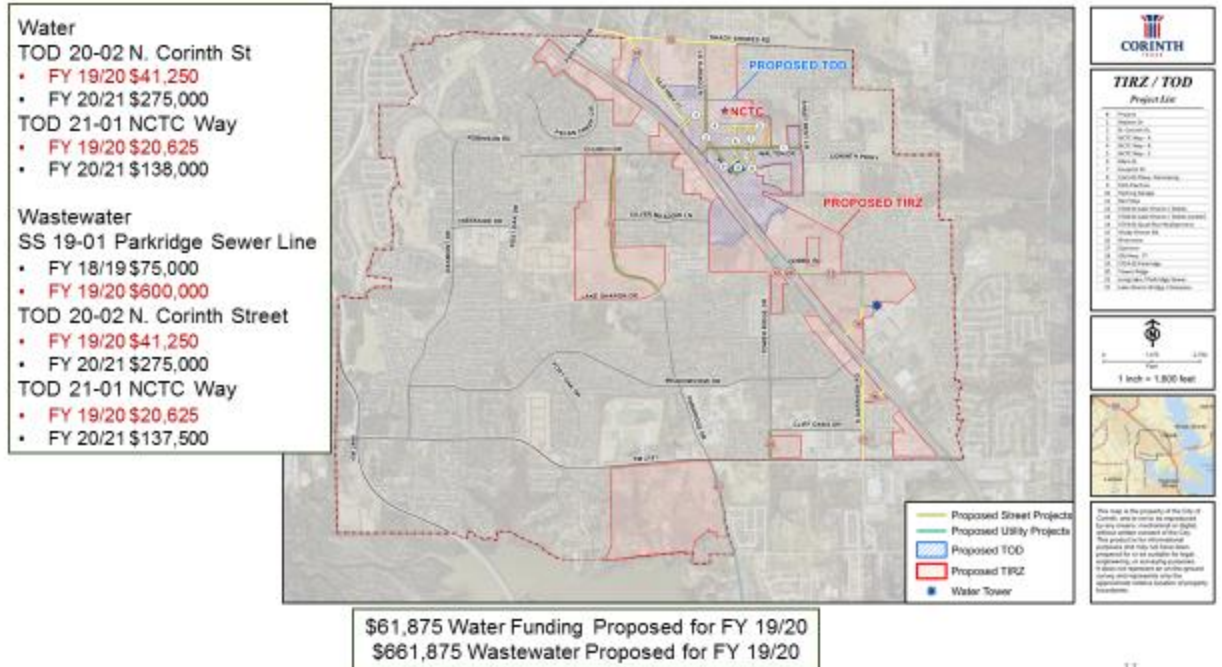
Wastewater

CAPITAL IMPROVEMENT PROGRAM WASTEWATER IMPROVEMENTS											
PROJECT NO.	CAPITAL COSTS	DESCRIPTION	Red border notes potential Denton Funding			Blue Border notes changes from Published Budget					
			2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Over 5 Years	Total 19-5+	
SS 19-01	Parkridge Sewer (south)	City Limit to LCMUA	\$ 75,000	\$ 600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 600,000
SS 25-01	LCMUA (Lift Station/Sewer Main)	Ultimate Condition for LCMUA solution	-	-	-	-	-	225,000	1,500,000	-	1,725,000
SS 25-02	Burl St Lift Station	UTRWD lift station improvements	-	-	-	-	-	300,000	2,000,000	-	2,300,000
SS 25-03	Shady Rest 12" Sewer Line	Replace & upsise	-	-	-	-	-	75,000	500,000	-	575,000
SS 25-04	Lift Station 3A Upgrade	Add pump and force main upgrade	-	-	-	-	-	70,500	470,000	-	540,500
SS 25-05	Southwest Lift Station, Force Main and Gravity Improvements	New lift station	-	-	-	-	-	330,000	2,200,000	-	2,530,000
SS 25-06	Parkridge Gravity Sewer Improvements	New gravity sewer near Amherst	-	-	-	-	-	15,000	100,000	-	115,000
TAX INCREMENT REINVESTMENT ZONE (TRIZ)											
ST19-01	Guail Run Realignment	Dobbs/Lake Sharon/Corinth Pkwy	\$ 255,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ST 19-02	Parkridge Collector Rd	Church to Lake Sharon	-	-	96,000	640,000	-	-	-	-	736,000
TZ 22-01	Riverview	Fairview to Frontage of I-35E	-	-	-	17,600	116,000	-	-	-	133,600
TZ 22-02	Garrison Street	Frontage (I-35E) to Cliff Oaks	-	-	-	35,000	227,000	-	-	-	262,000
ST 25-01	Shady Shores Road	Old 77 to Eastern Edge of TRIZ	-	-	-	-	-	33,000	220,000	-	253,000
ST 25-02	Tower Ridge Drive	Cliff Oaks to FM 2181	-	-	-	-	-	17,600	117,000	-	134,600
TZ 25-01	Old Hwy 77	Post Oak Rd to NCTC Way	-	-	-	-	-	80,500	537,000	-	617,500
TZ 25-03	Parkridge/Long Lake	Sewer along Parkridge to serve future development	-	-	-	-	-	225,000	1,500,000	-	1,725,000
TRANSIT ORIENTED DEVELOPMENT (TOD)											
TOD 20-01	Walton Dr	N. Corinth Street to Shady Rest	\$ -	\$ -	\$ 61,875	\$ 412,500	\$ -	\$ -	\$ -	\$ -	\$ 474,375
TOD 20-02	N. Corinth Street	NCTC to Corinth Pkwy	-	41,250	275,000	-	-	-	-	-	316,250
TOD 20-03	Main St	Corinth Pkwy to NCTC	-	-	28,875	192,500	-	-	-	-	221,375
TOD 21-01	NCTC Way	Frontage (I-35E) to N. Corinth St	-	20,625	137,500	-	-	-	-	-	158,125
TOD 21-02	Lion Blvd - A	N. Corinth St to Main St	-	-	-	17,600	117,000	-	-	-	134,600
TOD 23-01	Hospital Drive	Lion Blvd to Corinth Pkwy	-	-	-	-	32,000	21,400	-	-	246,000
TOD 25-01	Lion Blvd - B	Main St to Eastern TOD Boundary	-	-	-	-	17,600	117,000	-	-	134,600
Total			\$ 330,000	\$ 661,875	\$ 599,250	\$ 1,315,200	\$ 492,000	\$ 1,603,200	\$ 9,261,000	\$ 13,932,525	

Water

CAPITAL IMPROVEMENT PROGRAM WATER IMPROVEMENTS											
PROJECT NO.	CAPITAL COSTS	DESCRIPTION	Red border notes potential Denton Funding			Blue Border notes changes from Published Budget					
			2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Over 5 Years	Total 19-5+	
***	Lake Sharon/Oakman to FM2499	New WL	\$ 601,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
WA 20-01	Trim Impellers on Existing Lake Sharon Pumps		-	-	103,500	-	-	-	-	-	103,500
WA 25-01	Lake Sharon Pump Station & Expansion	Add Pump	-	-	-	-	-	90,000	600,000	-	690,000
WA 25-01	Lake Sharon 3MG Ground Storage Tank Rehabilitation	Rehab Tank	-	-	-	-	-	255,000	1,700,000	-	1,955,000
TAX INCREMENT REINVESTMENT ZONE (TRIZ)											
WA18-02	20' E.S.T. Offsite Water	Tower Ridge to Guail Run	\$ 925,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -	\$ -
ST19-01	Guail Run Realignment	Dobbs/Lake Sharon/Corinth Pkwy	255,000	-	-	-	-	-	-	-	-
ST19-02	Parkridge Collector Rd	Church to Lake Sharon	736,000	-	-	-	-	-	-	-	-
TZ 22-01	Riverview	Fairview to Frontage of I-35E	-	-	-	17,325	116,000	-	-	-	133,325
TZ 22-02	Garrison Street	Frontage (I-35E) to Cliff Oaks	-	-	-	34,050	227,000	-	-	-	261,050
ST 25-01	Shady Shores Road	Old 77 to Eastern Edge of TRIZ	-	-	-	-	-	33,000	220,000	-	253,000
ST 25-02	Tower Ridge Drive	Cliff Oaks to FM 2181	-	-	-	-	-	18,000	117,000	-	135,000
TZ 25-01	Old Hwy 77	Post Oak Rd to NCTC Way	-	-	-	-	-	80,500	537,000	-	617,500
WA18-01	Guail Run Elevated Storage Tank (E.S.T.)		3,630,000	-	-	-	-	-	-	-	-
TRANSIT ORIENTED DEVELOPMENT (TOD)											
TOD 20-01	Walton Dr	N. Corinth Street to Shady Rest	-	-	\$ 61,875	\$ 412,500	\$ -	\$ -	\$ -	\$ -	\$ 474,375
TOD 20-02	N. Corinth Street	NCTC to Corinth Pkwy	-	41,250	275,000	-	-	-	-	-	316,250
TOD 20-03	Main St	Corinth Pkwy to NCTC	-	-	28,875	192,500	-	-	-	-	221,375
TOD 21-01	NCTC Way	Frontage (I-35E) to N. Corinth St	-	20,625	138,000	-	-	-	-	-	158,625
TOD 21-02	Lion Blvd -A	N. Corinth St to Main St	-	-	-	17,600	117,000	-	-	-	134,600
TOD 23-01	Hospital Drive	Lion Blvd to Corinth Pkwy	-	-	-	-	32,000	21,400	-	-	246,000
TOD 25-01	Lion Blvd - B	Main St to Eastern TOD Boundary	-	-	-	-	17,600	117,000	-	-	134,600
Total			\$ 6,167,000	\$ 61,875	\$ 607,250	\$ 673,975	\$ 492,000	\$ 708,100	\$ 3,291,000	\$ 5,884,200	

Bob Hart, City Manager – This is the water and wastewater within the TIF boundaries. Again, going back to North Corinth Street, NCTC Way in the TOD.



Then with Storm water/Drainage. We will resubmit the Lynchburg Grant and if you remember from the map, this is where they will begin doing the engineering analysis to come up with a plan to fix some of the drainage issues.

George Marshall, City Engineer – Then you have the design would potentially be necessary for the site for the TOD if there’s wetlands or flood plain mitigation and also the Lynchburg Creek area number two, the Robert Ray tract, there is some flood plain mitigation that would be necessary there as well so we would incorporate that into the plan.

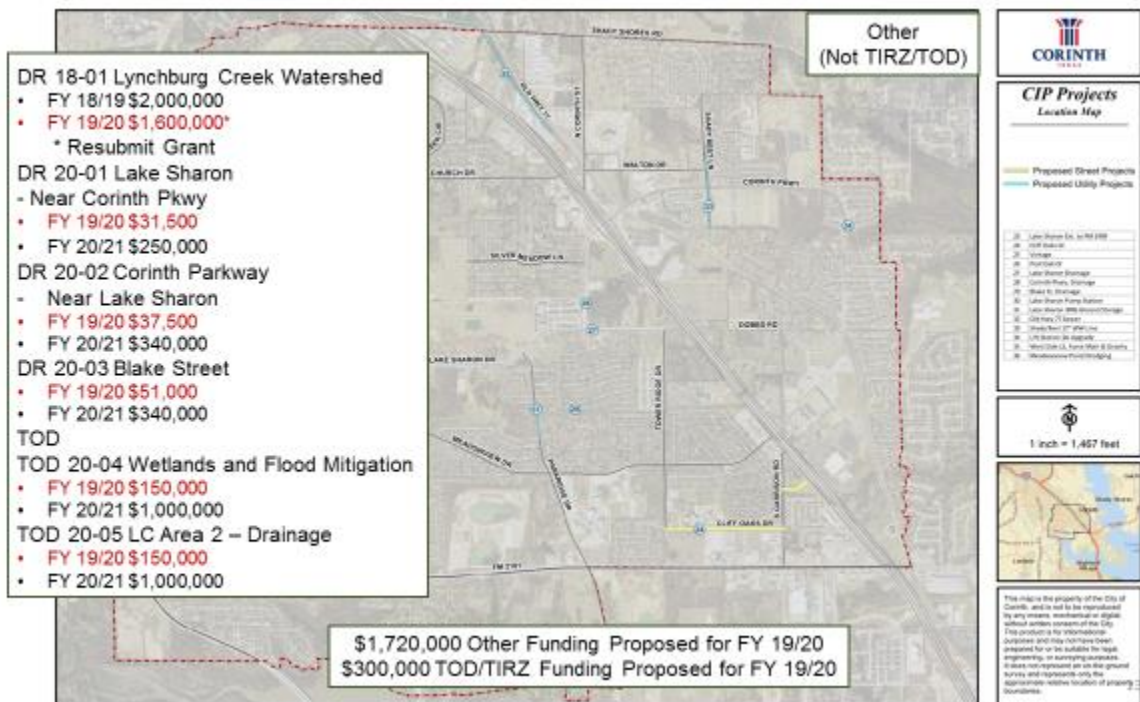
Storm Drainage

CAPITAL IMPROVEMENT PROGRAM DRAINAGE IMPROVEMENTS										
PROJECT NO.	CAPITAL COSTS	DESCRIPTION	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	Over 5 Years	Total
DR 18-01	Lynchburg Creek Watershed Lake Sharon Ext. to FM 2499 (MCM/Wildstone)	Amity Village & Red Oak FM 2499 to Oakmont	\$ 2,000,000	\$ 1,600,000	\$ -	\$ -	\$ -	\$ -	\$ -	\$ 1,600,000
DR 25-01	Meadowview Pond Dredging	Dredging of the pond is required to remove approximately two feet of silt which has accumulated, reducing the storage capacity of the retention function of this storm water control structure.	-	-	-	-	-	-	-	-
DR 20-01	Lake Sharon - Near Corinth Pkwy	Remove Road from Floodplain overtapping	-	31,500	250,000	-	-	-	75,000	500,000
DR 20-02	Corinth Parkway - Near Lake Sharon	Remove Road from Floodplain overtapping	-	37,500	340,000	-	-	-	-	377,500
DR 20-03	Blake Street	Alleviate years of drainage concerns to the south	-	51,000	340,000	-	-	-	-	391,000
TRANSIT ORIENTED DEVELOPMENT (TOD)										
TOD 20-04	Wetlands and Flood Mitigation	Wetlands and Flood Mitigation	-	150,000	1,000,000	-	-	-	-	1,150,000
TOD 20-05	LC Area 2 - Drainage	Wetlands and Flood Mitigation	-	150,000	1,000,000	-	-	-	-	1,150,000
Total			\$ 2,000,000	\$ 2,020,000	\$ 2,930,000	\$ -	\$ -	\$ 75,000	\$ 500,000	\$ 5,525,000

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George Marshall, City Engineer – This is the map of all the sites, we went over this in the last council meeting.

Bob Hart, City Manager – This is public utilities and CIP. All straightforward and pretty consistent.



Council Member Garber – Is there a better chance now with a bond election potentially looming that we could get more of this paid for through the county? This is a well laid out plan, it just seems like it

would be not a whole lot of money in the grand scheme of things.

Bob Hart, City Manager – There is going to be some conversations in the next few weeks but I think having some things on the bond election will be important and the TIF will be important. We have to figure out how to leverage the two to maximize the dollars. I think there is a lot of logic and that there will be some good buy in. John Polster is impressed with it. We have to get our head around it and between now and September 5th we will talk a lot about the TIF and that is when you will want to talk about some of the strategy. We are meeting with David Pettit next week to help us think through a lot of this and between the 5th and the middle of November is when we want to have visits with the judge and Hugh Coleman and that is when you will start to layout all of the strategy.

Council Member Johnson – On Garrison Street we have some developer money that we have had for a while. Is it included in this number, 20-21, 22?

Lee Ann Bunselmeyer - Director of Finance, Communication & Strategic Services – We have about \$153,000. We will include it in here.

2. Discuss Regular Meeting Items on Regular Session Agenda, including the consideration of closed session items as set forth in the Closed Session agenda items below.

Council Member Burke – On the legislative, what are we doing to address those?

Bob Hart, City Manager – I would like to go to executive session now. We can do that prior to the meeting.

Mayor Heidemann – We will go into executive session and cover Section 551.071, Texas House Bill 2439, 2497, 3317 and 3167 and MCM Contract at 6:33pm.

CLOSED SESSION

The City Council will convene in such executive or (closed session) to consider any matters regarding any of the above agenda items as well as the following matters pursuant to Chapter 551 of the Texas

Section 551.071. (1) Private consultation with its attorney to seek advice about pending or contemplated litigation; and/or settlement offer; and/or (2) a matter in which the duty of the attorney to the government body under the Texas Disciplinary Rules of Professional Conduct of the State Bar of Texas clearly conflicts with the Texas Open Meetings Act.

Council met in executive session from 6:33pm – 6:54pm.

- a. Texas House Bills 2439, 2497, 3314 and 3167, and new laws.**
- b. MCM Contract for Lake Sharon Roadway Extension.**

Section 551.072. To deliberate the purchase, exchange, lease or value of real property if deliberation in an open meeting would have a detrimental effect on the position of the governmental body in negotiations with a third person.

A. Potential acquisition of real property along Corinth Parkway for infrastructure, open space and transit related facilities.

Section 551.074. To deliberate the appointment, employment, evaluation, reassignment, duties,

discipline, or dismissal of a public officer or employee; or to hear a complaint or charge against an officer or employee.

Section 551.087. To deliberate or discuss regarding commercial or financial information that the governmental body has received from a business prospect that the governmental body seeks to have locate, stay, or expand in or near the territory of the governmental body and with which the governmental body is conducting economic development negotiations; or to deliberate the offer of a financial or other incentive to a business prospect.

RECONVENE IN OPEN SESSION TO TAKE ACTION, IF NECESSARY, ON CLOSED SESSION ITEMS.

ADJOURN:

Mayor Heidemann adjourned the meeting at 6:54 p.m.

AYES: All

Meeting adjourned.

Approved by Council on the _____ day of _____, 2019.

Kimberly Pence, City Secretary
City of Corinth, Texas

CONSENT ITEM 2.

City Council Regular and Workshop Session

Meeting Date: 10/17/2019

Title: August 22, 2019 Regular Session

Submitted For: Kim Pence, City Secretary

Submitted By: Kim Pence, City Secretary

City Manager Review: Approval: Bob Hart, City Manager

Strategic Goals: Citizen Engagement & Proactive
Government

AGENDA ITEM

Consider and act on minutes from the August 22, 2019 Regular Session.

AGENDA ITEM SUMMARY/BACKGROUND

Attached are the minutes from the August 22, 2019 Regular Session. The minutes are in draft form and are not considered official until formally approved by the City Council.

RECOMMENDATION

Staff recommends approval of the August 22, 2019 Regular Session minutes.

Attachments

Minutes

**STATE OF TEXAS
COUNTY OF DENTON
CITY OF CORINTH**

On this the 22nd day of August 2019 the City Council of the City of Corinth, Texas met in Special Session at the Corinth City Hall at 7:00 P.M., located at 3300 Corinth Parkway, Corinth, Texas. The meeting date, time, place and purpose as required by Title 5, Subtitle A, Chapter 551, Subchapter C, Section 551.041, Government Code, with the following members to wit:

Members Present:

Bill Heidemann, Mayor
Sam Burke, Mayor Pro-Tem
Scott Garber, Council Member
Lowell Johnson, Council Member
Tina Henderson, Council Member
Kelly Pickens, Council Member

Members Absent:

None

Staff Members Present

Bob Hart, City Manager
Jerry Garner, Chief of Police
Michael Ross, Fire Chief
Brenton Copeland, Technology Services Asst. Manager
Helen-Eve Liebman, Planning and Development Director
George Marshall, City Engineer
Ben Rodriguez, Planning and Development Manager
Brett Cast, Engineering Services Coordinator
Garrett Skrehart, GIS Manager
Cody Collier, Public Works Director
Lee Ann Bunselmeyer, Director of Finance, Communication & Strategic Services
Chris Rodriguez, Asst. Finance Director
Jason Alexander, Economic Development Corporation Director
Patricia Adams, Messer, Rockefeller, & Fort
Kim Pence, City Secretary

CALL TO ORDER, INVOCATION, PLEDGE OF ALLEGIANCE & TEXAS PLEDGE:

"Honor the Texas Flag: I pledge allegiance to thee, Texas, one state under God, one and indivisible".

Mayor Heidemann called the meeting to order at 7:00 p.m., Councilmember Garber delivered the invocation and led in the Pledge of Allegiance.

PRESENTATION:

Sue Tejml, Board Member, Denco Area 9-1-1 will give an update to City Council on the Denco Area 9-1-1 District.

In the last year 13 Counties around us have lost their 9-1-1, Tarrant County for five hours, Collin County for one hour among other counties. Denco 9-1-1 answers every day 900 to 1,000 calls. Within the first minute in a half to two in a half minutes they have reached their first responder to dispatch. Can you imagine calling 9-1-1- and getting a busy signal or calling back desperately and getting no answer at all. Denco Area 9-1-1 gets

their fees from the state. They charge 50 cents a month on your cell phone and about 85% of our income comes from those 50 cent cell phone calls. If you have a land line we know where you are but we have to keep up with GIS because everybody calls from their cell phone these days.

We recently completed an annex, there are only about 3 in the State of Texas for 9-1-1. What that means if you have a tornado come in it will survive. If you have a freeze that takes out your electricity, it will survive and could probably survive a terrorist attack but as you well know a tornado does not observe city boundary lines and we all live side by side. With the annex, your call takers can come to our annex start receiving emergency calls from your area and dispatching right away and that is huge.

I would like to ask you on your next agenda to put a vote for the board member for Denco Area 9-1-1. This is not a plea for my election, I have 20 votes but it is a way for you to say to the 9-1-1 organization in Denton County that you appreciate them and respect them.

CONSENT AGENDA:

All matters listed under the Consent Agenda are considered to be routine and will be enacted in one motion. Should the Mayor, a Councilmember, or any citizen desire discussion of any Item that Item will be removed from the Consent Agenda and will be considered separately.

1. Consider and act on the fiscal year 2019-2020 Proposed Budget for the City of Corinth Crime Control and Prevention District.
2. Consider and act on an ordinance reviewing and amending the Master Fee Schedule to incorporate changes to the City's Credit Card Processing Fees effective October 1, 2019.
3. Consider approval of authorizing the payment to Upper Trinity Regional Water District for materials purchased per the Inter local Agreement Amendment No. 1 for the construction of the Lake Sharon Waterline in the amount of \$62,118.47 and authorizing the City Manager to execute any necessary documents.

MOTION made by Councilmember Garber to approve the Consent Agenda as presented. Seconded by Councilmember Henderson.

AYES: Burke, Garber, Johnson, Henderson, Pickens
NOES: None
ABSENT: None

MOTION CARRIED

CITIZEN'S COMMENTS:

In accordance with the Open Meetings Act, Council is prohibited from acting on or discussing (other than factual responses to specific questions) any items brought before them at this time. Citizen's comments will be limited to 3 minutes. Comments about any of the Council agenda items are appreciated by the Council and may be taken into consideration at this time or during that agenda item. Please complete a Public Input form if you desire to address the City Council. All remarks and questions addressed to the Council shall be addressed to the Council as a whole and not to any individual member thereof. Section 30.041B Code of Ordinance of the City of Corinth.

No one spoke during Citizens Comments.

PUBLIC HEARING:

4. Hold a public hearing on a proposal to consider a tax rate, which will exceed the lower of the rollback rate or the effective tax rate and will increase total tax revenues from properties on the tax roll in the preceding tax year by 13.17 percent.

Bob Hart, City Manager - According to Property Tax Code Section 26.05(d), the City is required to hold two public hearings on the proposed tax increase if the City Council is proposing a rate that exceeds the lower of the rollback rate or the effective rate. Additional requirements include publishing a quarter-page notice informing the public of the proposed tax rate, preceding year tax rate, effective & rollback tax rate, formula for estimated tax amount, and the date, time, and location of the two required public hearings. The Notice of 2019 Tax Year Proposed Property Tax Rate for the City of Corinth was published in the Denton Record Chronicle on Tuesday, August 13, 2019, as required by the Texas Property Tax Code timetables.

The publication notices were calculated based on the highest possible rate the City Council may consider. The City Council may adopt any rate below the published tax rate.

On August 8, 2019, the City Council voted to publish a FY2019-2020 tax rate of \$.54500 that they will consider approving on September 19, 2019.

Mayor Heidemann opened the Public Hearing at 7:35 p.m. No one spoke during the Public Hearing. Mayor Heidemann closed the Public Hearing at 7:35 p.m.

5. The Corinth City Council will conduct a Public Hearing to consider testimony and act upon an ordinance amending the City's Unified Development Code, Section 3: Subdivision Regulations, subsection 3.02: "Subdivision submittal and processing procedures."

Helen-Eve Liebman, Planning and Development Director - H.B. 3167 was signed by Governor Abbot on June 14, 2019. H.B. 3167 places statutory time requirements for plat approvals effective on September 1, 2019.

The new time requirements state that plats must be approved within 30 days of receiving an application. While this 30 day rule has been in state law for a number of years, typically developers and residents would submit a waiver of their right to a 30 day review to allow additional time for communication with staff and to allow their consultants time to make any necessary changes to the documents following the City's review.

The changes to state law remove the ability for applicants to waive their right to a 30 day review and requires that any extensions be granted by the Planning and Zoning Commission and are limited to one 30 day extension.

The ordinance under consideration will ensure that the City is in compliance with the state law changes which will go into effect on September 1, 2019.

The Planning and Zoning Commission unanimously recommended approval and staff recommends approval as well.

Mayor Heidemann opened the Public Hearing at 7:38 p.m. No one spoke during the Public Hearing. Mayor Heidemann closed the Public Hearing at 7:38 p.m.

MOTION made by Councilmember Garber to approve as presented. Seconded by Councilmember Burke.

AYES: Burke, Garber, Johnson, Henderson, Pickens
NOES: None

ABSENT: None

MOTION CARRIED

6. The Corinth City Council will conduct a Public Hearing to consider testimony and act upon an ordinance amending the City's Unified Development Code, Section 2: Zoning Regulations, subsection 2.09: Zoning Development Standards, 2.09.04 Building Façade & Material Standards.

Helen-Eve Liebman, Planning and Development Director - On June 14, 2019 Governor Abbot signed HB 2439 which places limits on municipal regulation of building materials used for both residential and non-residential structures.

Beginning on September 1, 2019, any material listed as approved for use in a National Model Code, including the International Building Code within the last three code cycles are allowed.

The effect of this means that municipalities may no longer specify required masonry percentages, or the materials, that the structure is built with provided it is allowed in a National Model Code.

Additionally, H.B. 2497 which will also be in effect on September 1, 2019 amends municipal zoning board of adjustment procedures to allow anyone within 200 feet of a property to appeal a decision made by an administrative official to the Board of Adjustment. Previously only property owners or those with direct interest in a property affected by a decision made by an administrative official could appeal the decision.

The proposed ordinance ensures that the City will be in compliance with the changes in state law effective on September 1, 2019.

Mayor Heidemann opened the Public Hearing at 7:40 p.m. No one spoke during the Public Hearing. Mayor Heidemann closed the Public Hearing at 7:40 p.m.

MOTION made by Councilmember Henderson to approve as presented. Seconded by Councilmember Burke.

AYES: Burke, Garber, Johnson, Henderson, Pickens
NOES: None
ABSENT: None

MOTION CARRIED

BUSINESS AGENDA:

7. Consider and act on an Ordinance amending Chapter 33 "Boards, Commissions, and Departments" of Title III "Administration" of the Code of Ordinances by adding subsections 33.10 through 33.15 to create a Parks and Recreation Board for the City of Corinth.

Bob Hart, City Manager - This Ordinance is being brought to you based on some of the discussions with the budget and strategic plan in terms of resident engagement. The proposed ordinance creates a five member parks and recreation board with a focus on the following elements:

1. Act in an advisory capacity to the City Council and the Director of Public Works pertaining to parks and recreation, and cooperate with other governmental agencies, civic groups and all citizens of the City in the advancement of sound parks and recreation planning and programming;

2. Recommend policies related to parks and recreation for approval by the City Council;
3. Recommend the adoption of standards for parks, playgrounds, and trails and their financial support;
4. Make or cause to be made an annual review of existing recreation services and a survey of services, including existing services provided and services needed. The Board shall interpret the findings of such review and survey to discern the needs of the public and shall relate that interpretation to the City Council and to the Director of Public Works along with recommendations on planning and implementation;
5. Aid in coordinating trail connections with the programs of other governmental agencies and interested groups;
6. Review the effectiveness of the parks and recreation program with the Director of Public Works and the City Manager; and
7. Serve as an advocate for parks and recreation services to the public.

Creation of the board will be beneficial in the future if the city seeks grant funding for park and trail improvements.

MOTION made by Councilmember Johnson to approve as presented. Seconded by Councilmember Pickens.

AYES: Burke, Garber, Johnson, Henderson, Pickens
NOES: None
ABSENT: None

MOTION CARRIED

8. Consider and act on an Ordinance amending Chapter 33 "Boards, Commissions and Departments of the Code of Ordinances adopting amendments to the membership, procedure, purpose, and related provisions applicable to the Keep Corinth Beautiful Commission.

Bob Hart, City Manager - The proposed ordinance expands the KCB board from five members to seven. It also extends the length of service to four terms rather than three terms. Further, the ordinance focuses the efforts to the following:

1. Actively promote community beautification efforts, litter prevention, and waste reduction.
2. Determine and recommend to the City Council management and program priorities on a citywide basis;
3. Recommend enforcement and additional program alternatives;
4. Monitor City performance from data collected and examined under the Keep Texas Beautiful, Inc. Affiliate System guidelines and make an annual report to the City Council;
5. Maintain membership in Keep Texas Beautiful as an affiliate.

MOTION made by Councilmember Johnson to approve as presented. Seconded by Councilmember Garber.

AYES: Burke, Garber, Johnson, Henderson, Pickens

NOES: None
ABSENT: None

MOTION CARRIED

COUNCIL COMMENTS & FUTURE AGENDA ITEMS

The purpose of this section is to allow each councilmember the opportunity to provide general updates and/or comments to fellow councilmembers, the public, and/or staff on any issues or future events. Also, in accordance with Section 30.085 of the Code of Ordinances, at this time, any Councilmember may direct that an item be added as a business item to any future agenda.

Councilmember Henderson - reminded the Mayor, Council and staff of the ribbon cutting and grand opening tomorrow at 11:30 a.m. at the Millennium Place Apartments.

Bob Hart, City Manager - the North Texas Commission luncheon will be on Monday, September 16th and would like over the next couple of days who would like to attend.

Mayor Heidemann - I was at COG most of the day and it was really an eye opener for me. I see so much benefit in this organization where they can help us because we are not a big city and we don't have excess staff and they have a lot of expertise that reside there and can be very beneficial to us in terms of future projects that the city will have to undertake.

There was no Closed Session during the Regular Schedule meeting.

CLOSED SESSION

The City Council will convene in such executive or (closed session) to consider any matters regarding any of the above agenda items as well as the following matters pursuant to Chapter 551 of the Texas Government Code. **Closed Session may happen at any time during the Workshop Session and before the start of a City Council Regular Session.**

Section 551.071. (1) Private consultation with its attorney to seek advice about pending or contemplated litigation; and/or settlement offer; and/or (2) a matter in which the duty of the attorney to the government body under the Texas Disciplinary Rules of Professional Conduct of the State of Texas clearly conflicts with Chapter 551.

- a. Texas House Bills 2439, 2497, 3314 and 3167, and new laws.
- b. MCM Contract for Lake Sharon Roadway Extension.

Section 551.072. To deliberate the purchase, exchange, lease or value of real property if deliberation in an open meeting would have a detrimental effect on the position of the government body in negotiations with a third person

Section 551.074. To deliberate the appointment, employment, evaluation, reassignment, duties, discipline, or dismissal of a public officer or employee; or to hear a complaint or charge against an officer or employee.

Section 551.087 To deliberate or discuss regarding commercial or financial information that the governmental body has received from a business prospect that the governmental body seeks to have locate, stay, or expand in or near the territory of the governmental body and with which the governmental body is conducting economic development negotiations; or to deliberate the offer of a financial or other incentive to a business prospect.

After discussion of any matters in closed session, any final action or vote taken will be in public by the City Council. City Council shall have the right at any time to seek legal advice in Closed Session from its Attorney on any agenda item, whether posted for Closed Session or not. Closed Session may happen at any time during the Workshop Session and before the start of a City Council Regular Session.

RECONVENE IN OPEN SESSION - In accordance with Texas Government Code, Chapter 551 the City Council will reconvene into Regular Session to consider action, if any, on matters discussed in Executive Session.

9. Consider and act on the Termination and Settlement Agreement for Paving, Drainage and Water Improvements for Lake Sharon Drive, by and between the City, Magnum Construction Management, LLC f/k/a Munilla Construction Management, LLC, and Berkshire, Hathaway Specialty Insurance Company; and authorizing the City Manager or his designee to execute necessary documents.

MOTION made by Councilmember Burke to approve the termination and settlement agreement for Paving, Drainage and Water Improvements for the Lake Sharon Drive project between the City of Corinth and Munilla Construction Management, L.L.C and Berkshire, Hathaway Specialty Insurance Company; and authorize any necessary minor modifications that do not increase total expenditures by the city and to authorize the City Manager to execute the agreement with finalized exhibits. Seconded by Councilmember Johnson.

AYES: Burke, Garber, Johnson, Henderson, Pickens
NOES: None
ABSENT: None

MOTION CARRIED

10. Consider and act on the Tender Agreement for Completion of the Lake Sharon Drive Project, by and between the City, Berkshire Hathaway Specialty Insurance Company, and Wildstone Construction, LLC; and authorizing the City Manager or his designee to execute necessary documents.

MOTION made by Councilmember Burke to approve the Tender Agreement for Completion of the Lake Sharon Drive Project, by and between the City, Berkshire Hathaway Specialty Insurance Company, and Wildstone Construction, LLC; and authorize any necessary minor modifications that do not increase total expenditures by the City and to authorize the City Manager to execute the agreement with finalized exhibits. Seconded by Councilmember Henderson.

AYES: Burke, Garber, Johnson, Henderson, Pickens
NOES: None
ABSENT: None

MOTION CARRIED

ADJOURN:

Mayor Heidemann adjourned the meeting at 7:45 P.M.

AYES: All

Meeting adjourned.

Approved by Council on the _____ day of _____, 2019.

Kimberly Pence, City Secretary
City of Corinth, Texas

City Council Regular and Workshop Session

Meeting Date: 10/17/2019
Title: Twisted Cycles Planned Development
Submitted For: Helen-Eve Liebman, Director **Submitted By:** Ben Rodriguez, Manager
Finance Review: N/A **Legal Review:** Yes
City Manager Review: **Approval:** Bob Hart, City Manager
Strategic Goals: Land Development

AGENDA ITEM

The Corinth City Council will hold a public hearing, consider testimony, and act upon a request for a zoning change from C-2, Commercial to Planned Development (PD) with a base zoning district of C-2, Commercial in order to operate a motorcycle dealership with light repairs on a 1.13 acre tract of land legally described as Kensington Park Addition, Block A, Lot 3 in the City of Corinth, Denton County, Texas, and is more commonly known as 7700 South I-35E. This property is located north of FM 2181, south of Riverview Drive, east of S. Garrison Rd. and west of IH35. (Twisted Cycles Planned Development)

1. Staff Presentation
2. Applicant Presentation
3. Public Hearing
4. Staff Response
5. Take Action

AGENDA ITEM SUMMARY/BACKGROUND

The applicant is requesting a planned development district to facilitate the use of a motorcycle dealership within the structure most recently occupied by Discount Tire.

The City’s code of ordinances states that automobile sales are allowed via a Specific Use Permit, however the code is unclear as to whether or not motorcycles are included as an automobile use. Staff reviewed other motorcycle uses currently within the city such as the existing Harley Davidson dealership and discovered that these have historically been permitted via a planned development district to add motorcycle related sales and uses to the properties.

The applicant intends to display a select number of motorcycles in front of the building during operating hours which will be stored indoors after hours. The applicant also intends to provide repair services to customers, including items such as oil changes, tire changes, and accessory installation. The applicant would be allowed to perform major repairs for motorcycles in the future if desired.

Finally, the applicant is proposing the addition of shade structures within a portion of the parking area to provide covered parking spaces for customers during summer months and rainy days similar to the canopies installed by other motorcycle dealerships within the City. All outdoor display and shade structures shall not be permitted in the fire lane at any time.

RECOMMENDATION

The Planning and Zoning Commission will act on this item at a special called meeting on October 16, 2019. Staff will inform the City Council of their decision at the October 17, 2019 City Council meeting.

Staff recommends approval as presented.

Attachments

Twisted Cycles PD Ordinance

**ORDINANCE NO. 19-10-17-
TWISTED CYCLES PLANNED DEVELOPMENT DISTRICT #52**

AN ORDINANCE AMENDING THE COMPREHENSIVE ZONING ORDINANCE AND ZONING MAP OF THE CITY OF CORINTH, EACH BEING A PART OF THE UNIFIED DEVELOPMENT CODE OF THE CITY, BY AMENDING THE ZONING CLASSIFICATION FROM C-2, COMMERCIAL TO PD-PLANNED DEVELOPMENT ZONING DISTRICT WITH A BASE ZONING DESIGNATION OF C-2, COMMERCIAL ON AN APPROXIMATE 1.13 ACRE TRACT OF LAND LEGALLY DESCRIBED AS LOT 3, BLOCK A OF THE KENSINGTON PARK ADDITION SITUATED IN THE H.H. SWISHER SURVEY, ABSTRACT NUMBER 1220, CITY OF CORINTH, DENTON COUNTY, TEXAS; PROVING FOR THE INCORPORATION OF PREMISES; PROVIDING A LEGAL PROPERTY DESCRIPTION; APPROVING A PLANNED DEVELOPMENT CONCEPT PLAN; APPROVING PLANNED DEVELOPMENT LAND USE REGULATIONS; PROVIDING FOR A PENALTY NOT TO EXCEED \$2,000 A DAY FOR EACH VIOLATION OF THE ORDINANCE; PROVIDING A CUMULATIVE REPEALER CLAUSE; PROVIDING A SAVINGS CLAUSE; PROVIDING FOR PUBLICATION; PROVIDING A SEVERABILITY CLAUSE; AND PROVIDING FOR AN EFFECTIVE DATE.

WHEREAS, the City of Corinth, Texas has adopted Ordinance 13-05-02-08, which adopts a Unified Development Code of the City, which includes the Comprehensive Zoning Ordinance and which, in accordance with the City's Comprehensive Plan, establishes zoning districts and adopts a Zoning Map; and

WHEREAS, the Property (described below in Exhibit "A") is zoned as PD-Planned Development zoning district more specifically identified as Twisted Cycles Planned Development District No. 52 ("PD-52") with a base zoning designation of C-2, Commercial under the City's Unified Development Code and designated on the City's Zoning Map, and an authorized person having a proprietary interest in the Property has requested a change in the zoning classification of said Property; and

WHEREAS, the Planning and Zoning Commission of the City of Corinth and the City Council of the City of Corinth, having given the requisite notices by publication and otherwise, and after holding due hearings and affording a full and fair hearing to all the property owners generally, and to the persons interested and situated in the affected area and in the vicinity thereof, the City of Corinth City Council is of the opinion that said change in zoning should be made; and

WHEREAS, the City Council considered the following factors in making a determination as to whether the requested change should be granted or denied: safety of the motoring public and pedestrians using the facilities in the area immediately surrounding the sites; safety from fire hazards and damages; noise producing elements and glare of the vehicular and stationary lights and effect of such lights on established character of neighborhoods; location, and types of signs and relation of signs to traffic control and adjacent property; street size and adequacy of width for traffic reasonably expected to be generated by the proposed use around the site and in the immediate neighborhood; adequacy of parking as determined by requirements of this ordinance for off-street parking facilities; location of ingress and egress points for parking and off-street loading spaces, and protection of public health by surfacing on all parking areas to control dust; effect on the promotion of health and the general welfare; effect on light and air; effect on the over-crowding of the land; effect on the

concentration of population, and effect on transportation, water, sewerage, schools, parks and other public facilities; and

WHEREAS, the City Council further considered among other things the character of the proposed district and its peculiar suitability for particular use requested and the view to conserve the value of the buildings, and encourage the most appropriate use of the land throughout this City; and

WHEREAS, the City Council finds that the change in zoning for the Property promotes the health and the general welfare, provides adequate light and air, prevents the over-crowding of land, avoids undue concentration of population, and facilitates the adequate provision of transportation, water, sewerage, schools, parks and other public requirements; and the general health, safety and welfare of the community;

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF CORINTH, TEXAS:

**SECTION 1.
INCORPORATION OF PREMISES**

The above and foregoing recitals are found to be true and correct and are incorporated into the body of this Ordinance for all purposes.

**SECTION 2
LEGAL PROPERTY DESCRIPTION; AMENDMENT**

That Ordinance 13-05-02-08, adopting the Unified Development Code of the City of Corinth (“UDC”), which UDC includes the Comprehensive Zoning Ordinance that establishes zoning districts in accordance with the City’s Comprehensive Plan, and adopts the Zoning Map of the City of Corinth, is hereby amended to change the zoning classification on an approximate 1.13 acre tract of land described in "Exhibit A" attached hereto and incorporated herein (the “Property”), from C-2, Commercial to a PD-Planned Development zoning district with a base zoning designation of C-2, Commercial and identified as Twisted Cycles Planned Development District No. 52 (“PD-52”), and the Zoning Map of the City is also hereby amended to reflect the new zoning classification for the Property.

**SECTION 3.
PLANNED DEVELOPMENT CONCEPT PLAN**

The Planned Development Concept Plan for the Property as set forth in “Exhibit B”, a copy of which is attached hereto and incorporated herein, is hereby approved.

**SECTION 4.
LAND USE REGULATIONS**

- A. The Zoning and Land Use Regulations set forth in “Exhibit C” attached hereto and made a part hereof for all purposes shall be adhered to in their entirety for the purposes of this PD-Planned Development zoning district with a base zoning designation of C-2, Commercial. In the event of conflict between the provisions of “Exhibit C” and provisions of any other City zoning regulations, including without limitation the regulations governing C-2, Commercial zoning district, the provisions of “Exhibit C” shall control.

- B. That the zoning regulations and district herein established have been adopted in accordance with the Comprehensive Plan for the purpose of promoting the health, safety, morals and the general welfare of the community. They have been designed, with respect to both present conditions and the conditions reasonably anticipated to exist in the foreseeable future; to lessen congestion in the streets; to provide adequate light and air; to prevent over-crowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, drainage and surface water, parks and other commercial needs and development of the community. They have been made after a full and complete hearing with reasonable consideration among other things of the character of the district and its peculiar suitability for the particular uses and with a view of conserving the value of buildings and encouraging the most appropriate use of land throughout the community
- C. The Planned Development Concept Plan (Exhibit “B”) and the Land Use Regulations (Exhibit “C”) shall control the use and development of the Property, and all building permits and development requests shall be in accordance with applicable City ordinances, the PD Concept Plan and Land Use Regulations. The PD Concept Plan and Land Use Regulations shall remain in effect as set forth herein unless amended by the City Council.
- D. If a change to the Concept Plan, if any, is requested, the request shall be processed in accordance with the development standards in effect at the time the change is requested for the proposed development and shall be subject to City Council approval.

**SECTION 5.
PENALTY FOR VIOLATIONS**

Any person, firm, or corporation who intentionally, knowingly or recklessly violates any provision of this Ordinance or the Code of Ordinances, as amended hereby, shall be subject to a fine not to exceed the sum of five hundred dollars (\$500.00) for each offense, and each and every day any such offense shall continue shall be deemed to constitute a separate offense, provided, however, that in all cases involving violation of any provision of this Ordinance or Code of Ordinances, as amended hereby, governing the fire safety, zoning, or public health and sanitation shall be subject to a fine not to exceed the sum of two thousand dollars (\$2,000.00) for each offense.

**SECTION 6.
SEVERABILITY**

The provisions of the Ordinance are severable. However, in the event this Ordinance or any procedure provided in this Ordinance becomes unlawful, or is declared or determined by a judicial, administrative or legislative authority exercising its jurisdiction to be excessive, unenforceable, void, illegal or otherwise inapplicable, in whole or in part, the remaining and lawful provisions shall be of full force and effect and the City shall promptly promulgate new revised provisions in compliance with the authority’s decisions or enactment.

**SECTION 7.
CUMULATIVE REPEALER**

This Ordinance shall be cumulative of all other Ordinances and shall not repeal any of the provisions of such Ordinances except for those instances where there are direct conflicts with the provisions of this Ordinance. Ordinances, or parts thereof, in force at the time this Ordinance shall take effect and that are inconsistent with this Ordinance are hereby repealed to the extent that they are inconsistent with this Ordinance. Provided however, that any complaint, action, claim or lawsuit

which has been initiated or has arisen under or pursuant to such other Ordinances on this date of adoption of this Ordinance shall continue to be governed by the provisions of such Ordinance and for that purpose the Ordinance shall remain in full force and effect.

**SECTION 8.
SAVINGS**

All rights and remedies of the City of Corinth, Texas are expressly saved as to any and all violations of the provisions of any other ordinance affecting zoning for the Property which have secured at the time of the effective date of this ordinance; and, as to such accrued violations and all pending litigation, both civil and criminal, whether pending in court or not, under such ordinances same shall not be affected by this Ordinance but may be prosecuted until final disposition by the court.

**SECTION 9.
EFFECTIVE DATE**

This ordinance shall become effective after approval and publication as provided by law. The City Secretary is directed to publish the caption and penalty of this ordinance two times.

PASSED AND APPROVED THIS 17th DAY OF OCTOBER, 2019.

APPROVED:

Bill Heidemann, Mayor

ATTEST:

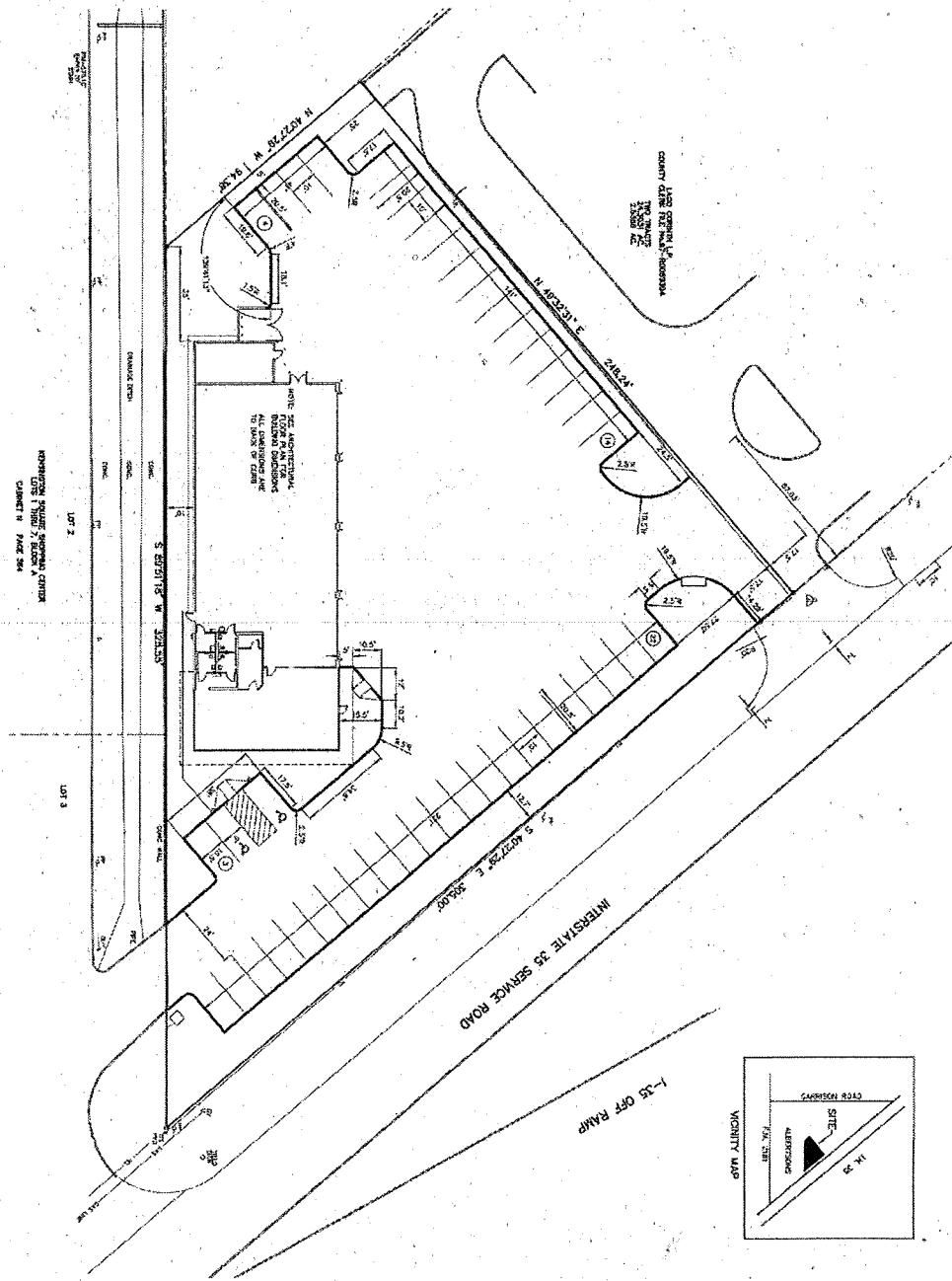
Kimberly Pence, City Secretary

APPROVED AS TO FORM:

Patricia Adams, City Attorney

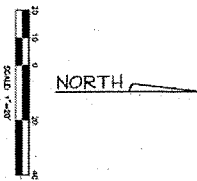
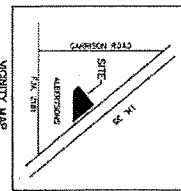
EXHIBIT "A"
LEGAL DESCRIPTION

A 1.13 acre tract of and known as Lot 3, Block A within the Kensington Park Addition, situated in the H.H. Swisher Survey, Abstract No. 1220. Recorded in Cabinet R, Page 63 of the Plat Records of Denton, County, Texas.



COUNTY CLERK, DEPT. OF COUNTY CLERK, 20000 W. 15TH ST., SUITE 200, FORT WORTH, TEXAS 76102

INTERSECTION SQUARE SIGNAGE CRITERIA
 CURBET 11' MAX 24"
 CURBET 11' MAX 24"



RECORD DRAWING
 DIMENSIONS SHOWN ON THIS PLAN WERE MADE IN THE FIELD BY THE ENGINEER AND ARE NOT TO BE CONSIDERED AS A BASIS FOR CONSTRUCTION. THE ENGINEER HAS NOT CONDUCTED A SURVEY OF THE PROPERTY AND HAS NOT BEEN ADVISED OF ANY CHANGES TO THE PROPERTY SINCE THE DATE OF THE SURVEY.
 DATE: OCTOBER 7, 2002

BENTLEY ENGINEERING, INC.
 CIVIL ENGINEERING • PLANNING • CONSTRUCTION MANAGEMENT

DATE:	7/16/03	BY:	MARK WRIGHT
DESIGNED BY:	WJZ/200	CHECKED BY:	MARK WRIGHT
PROJECT:	INTERSECTION SQUARE	DATE:	7/16/03
PROJECT NO.:	02-0000	SCALE:	AS SHOWN

C1
 DIMENSION CONTROL

EXHIBIT "B"
CONCEPT PLAN

EXHIBIT “C”
Development Standards

- **Base Zoning District**
C-2, Commercial District

- **Allowed Land Uses**
 - (a) Sales and the major or minor repair of motorcycles
 - (b) Shade structures within the parking areas.
 - (c) The outdoor display of motorcycles and items specifically related to motorcycle sales shall be permitted during business hours.
 - (d) All uses allowed within the C-2 zoning district as it currently exists or may be amended in the future.

- **Restrictions**
 - (a) No required parking spaces may be used for the outdoor display of items
 - (b) Parking and outdoor display shall not be permitted within the fire lane.

City Council Regular and Workshop Session

Meeting Date: 10/17/2019
Title: Interlocal Agreement with Denton County Transportation Authority (Phase II of the Transit Stop Study)
Submitted By: Jason Alexander, Director
Finance Review: N/A **Legal Review:** N/A
City Manager Review: Approval: Bob Hart, City Manager
Strategic Goals: Infrastructure Development
Economic Development
Citizen Engagement & Proactive Government
Regional Cooperation

AGENDA ITEM

Consider authorizing the City Manager to complete the second phase (Phase II) of a Transit Stop Study being conducted with the Denton County Transportation Authority (DCTA) for a transit stop concept plan and a cost estimate for the City of Corinth.

AGENDA ITEM SUMMARY/BACKGROUND

One of the key components for achieving the community's aspirations for an energetic urban core and making Corinth more attractive to investment is a transit stop. The Strategic Plan, the present work on the Comprehensive Plan, the ordinance creating the Tax Increment Reinvestment Zone and other visioning exercises support this aspiration and vision of the community.

Accordingly, the City Council authorized the City Manager to execute an interlocal agreement with DCTA to procure the services of Lockwood, Andrews & Newnam, Inc. (LAN), to conduct a study to determine the feasibility of a train stop in Corinth, explore potential locations for the train stop and provide preliminary cost estimates on June 6, 2019. LAN completed this work as Phase I of the feasibility study and presented and discussed their findings with City Council on October 3, 2019. Their findings concluded that a transit stop is feasible in Corinth.

With these affirmative findings --- a copy of which is attached --- Phase II of the study will need to be conducted and completed in order to initiate conversations with DCTA for securing a transit stop in Corinth. The second phase of the study, if the City Council authorizes the City Manager to move forward, will focus primarily on solidifying the estimated costs for the train stop as per the deliverables in Exhibit "A" of the ILA.

RECOMMENDATION

Approve authorizing the City Manager, pursuant to the ILA with DCTA, to procure the services of LAN for Phase II of the Transit Stop Study.

Fiscal Impact

Source of Funding: Corinth Economic Development Corporation

FINANCIAL SUMMARY:

Should the City Council authorize the City Manager to execute the second phase of the feasibility study in collaboration with DCTA and LAN, the source of funding for the study will be provided by the Corinth Economic Development Corporation in an amount not to exceed \$75,000.00, as adopted for Fiscal Year 2019-2020.

Attachments



City of Corinth/DCTA Station Concept

October 2019



View of Corinth Village



Master Planning
VILLAGE SQUARE AT CORINTH



Study Team



Lockwood, Andrews & Newnam, Inc.
A LEO A DALY COMPANY



LTK ENGINEERING SERVICES



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City of Corinth/DCTA Station Concept

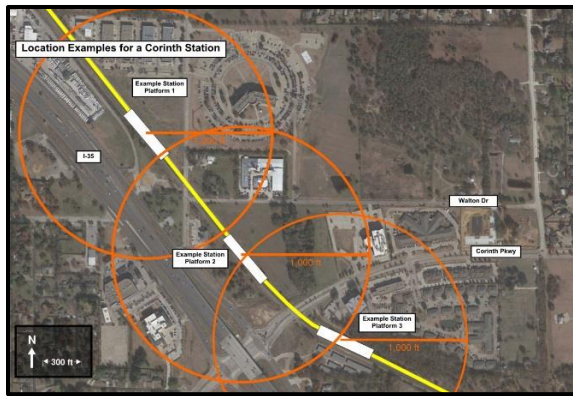
DCTA On-Call A&E Railroad Services

1.0 Executive Summary

This report documents the process and results which led to a recommended new station location and platform configuration for the DCTA A-Train in the City of Corinth. Key process steps described include planning, concept design and operations.

Initial planning included the identification and evaluation of different station area options as depicted in **Figure 1-1**. Each option was evaluated based on proximity to existing and future development, current

Figure 1-1: Potential Corinth Station Areas

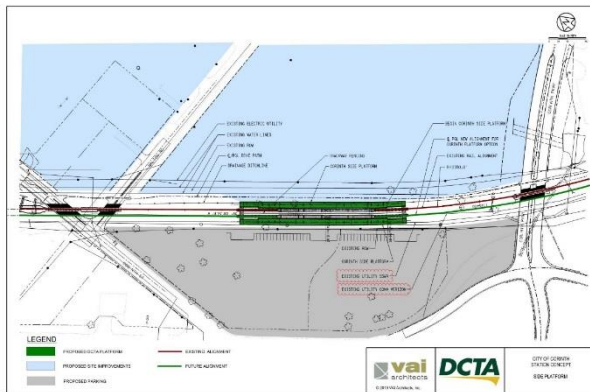


track geometry, ease of access and impact on existing infrastructure. Three station areas showed the most promise. From north to south, the first station area focuses on the NCTC campus. The second station area is mostly surrounded by vacant land and is 1000 ft from the Atrium Medical Hospital. The vacant land is also the focus of a proposed 250-acre mixed-use development. The third station area is close to Corinth City Hall, the Atrium Hospital and a residential neighborhood. The proposed development was the most deciding factor guiding the station area decision, so the middle station

area was recommended for further study.

Track geometry challenges still exist in the selected station area. The presence of vertical curves and the availability of sufficient tangent track required a further examination of the area between Walton Rd. and Corinth Parkway. After review of various options, the configuration in **Figure 1-2** was chosen.

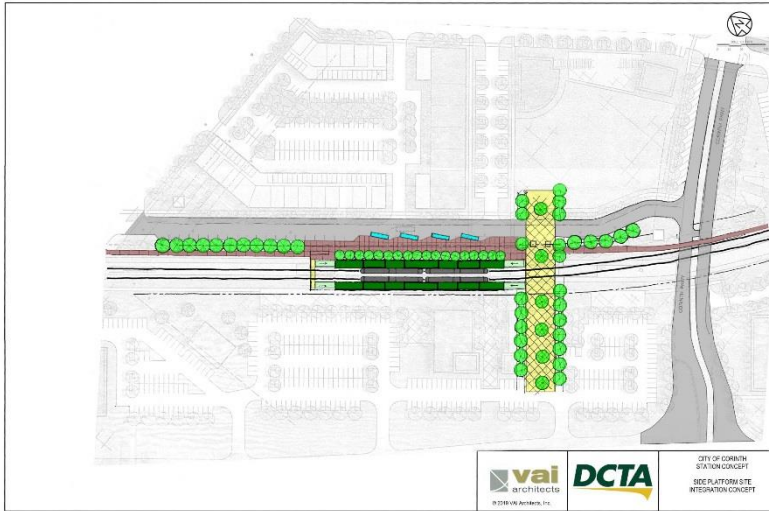
Figure 1-2: Recommended Side Platform Station Configuration



This configuration was selected even though the platform is not on a complete tangent section or on a completely flat vertical curve, items essential to safe operations and satisfying Federal ADA requirements. That said, based on concept design, the platform is within acceptable tolerances for station design and the ADA. The location is as far as the platform can move towards Corinth Parkway to maintain acceptable tolerances. It also minimizes the amount of second track to be built compared to other options examined.

The study team recognized the importance of station placement and integration with the proposed 250-acre mixed use transit-oriented development. **Figure 1-3** illustrates in concept that integration.

Figure 1-3: Station Integration with Development Concept



Key to the station integration is alignment with a proposed pedestrian sidewalk bordering the north side of the special event space. Ideally it would line up with a similar but wider pedestrian crossing of the station and track alignment shown in green and yellow. The pedestrian sidewalk and the station crossing are interrupted by an access roadway for buses and cars to reach the station platform. Design elements of the station and the

development are still in the early stages with improvements still possible as design advances, however this is a workable location.

Another important part of the station evaluation is the impact a new station has on existing train operations. A network simulation was conducted to evaluate whether operating plans developed for positive train control travel times remain viable with the addition of Corinth Station without adjusting signals, infrastructure or the operating plan. A test was run with the new Corinth station as configured. The current 30-minute headway operating plan remains feasible with the new station. The additional station adds approximately 1.5 minutes of travel time to northbound trips. No travel time is added southbound trips.

Additional network simulation analysis is still required given further sections of double track needed to maintain and improve operating efficiencies in the long term. This analysis will be conducted during the second phase of this study once authorized. The second phase will also include detailing of capital and operating costs given the new station. The primary conclusion of this first phase remains that a viable location integrated with the proposed development as shown is quite viable.

2.0 Background and Introduction

DCTA, in cooperation with the City of Corinth, is considering adding a station between Corinth Parkway and Walton Road. This action is in response to interest by the City to have DCTA commuter rail service and a major mixed-use development with good transit-oriented development potential proposed adjacent to the DCTA rail right of way. This report describes an examination of various station area locations and platform types. After some screening, a recommended location and platform configuration is described in more detail supported by input from City and DCTA staff. Infrastructure modifications needed to support the recommended station/platform location are discussed and DCTA operations impacts are summarized given the addition of the new station.

Once authorized a second phase study will be conducted to estimate the cost of adding the new station. Costs will include capital expenditures for the station platform, new trackwork, design, construction management and operating costs. Further travel time simulations are needed to verify operating efficiency with a new station in the long term.

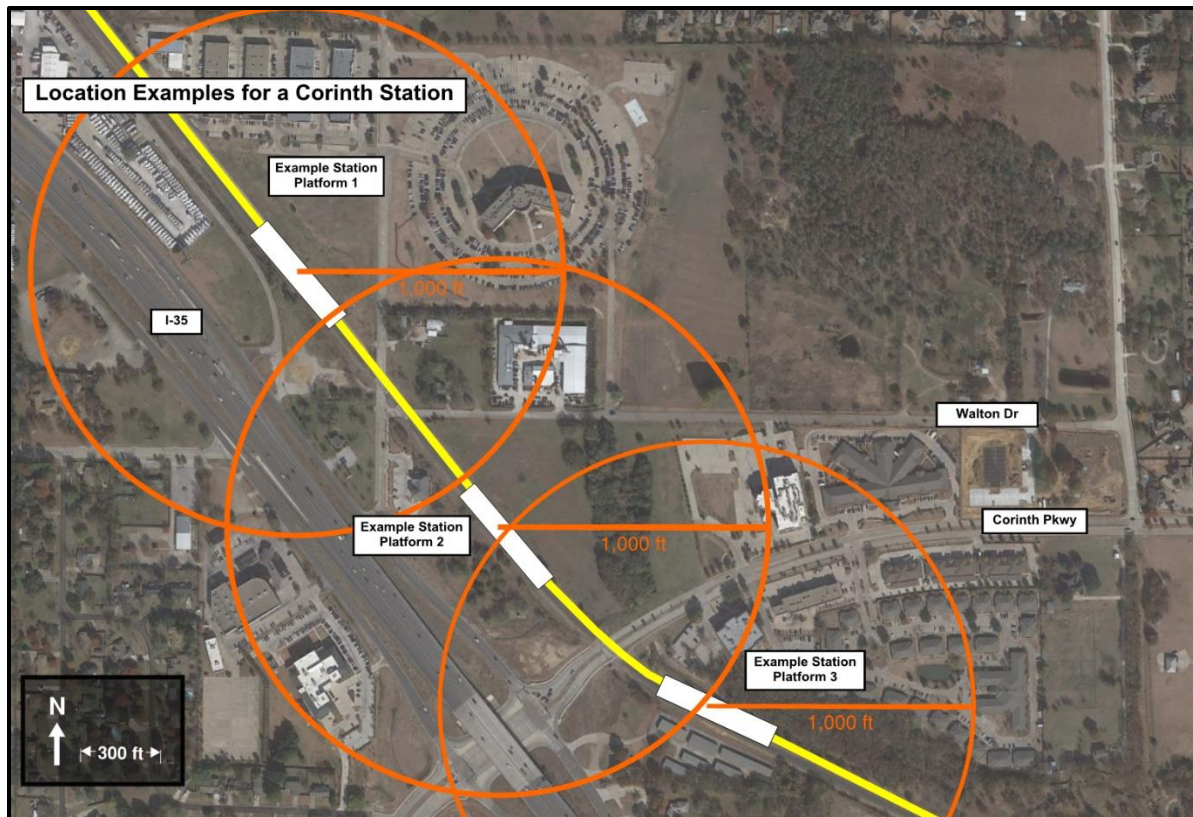
3.0 Station Location Options

Various station location options were identified for a potential new station in the City of Corinth. Each option has strengths and weaknesses especially considering a proposed major mixed-use development that has recently been proposed. For a given location, platform placement along the current DCTA A-Train alignment is key to minimize additional infrastructure cost. Platform configuration (center vs. side platform) also plays a role in the location decision. All of these location elements are discussed further in the following sections.

3.1 Potential Station Areas

At the outset, it was possible to establish a focused geographic area for a station location investigation. The focus area is illustrated in **Figure 3-1** and spans an approximate 2,000 ft. long distance along the DCTA alignment from just north of Walton Rd. to just south of Corinth Parkway. Three station areas were included accompanied by 1000 ft. radius circles showing what uses are captured within close proximity. The first station area is centered north of the T intersection at Corinth St. and Walton Rd. It's location advantage is the adjacency to the North Central Texas College (NCTC) campus with its circular parking. The second station area is centered generally halfway between Walton Rd. and Corinth Parkway. This area is mostly surrounded by vacant land; however, these vacant parcels encompass a proposed 250-acre mixed-use development. The Atrium Medical Hospital is 1,000 ft from the station area center, as is the NCTC campus and Corinth City Hall. The third station area is centered south of Corinth Parkway and is closer in distance to Corinth City Hall, the Atrium Medical Hospital and a small residential neighborhood due east of City Hall than the previous station area.

Figure 3-1 Potential Corinth Station Areas



3.2 Station Area Screening

The study objective is to narrow the alternative station areas to one preferred area and then identify the best platform location and configuration for that area. This section summarizes the rationale for and results of screening the station areas. The rationale includes alignment and infrastructure considerations and interface with the planned mixed-use development.

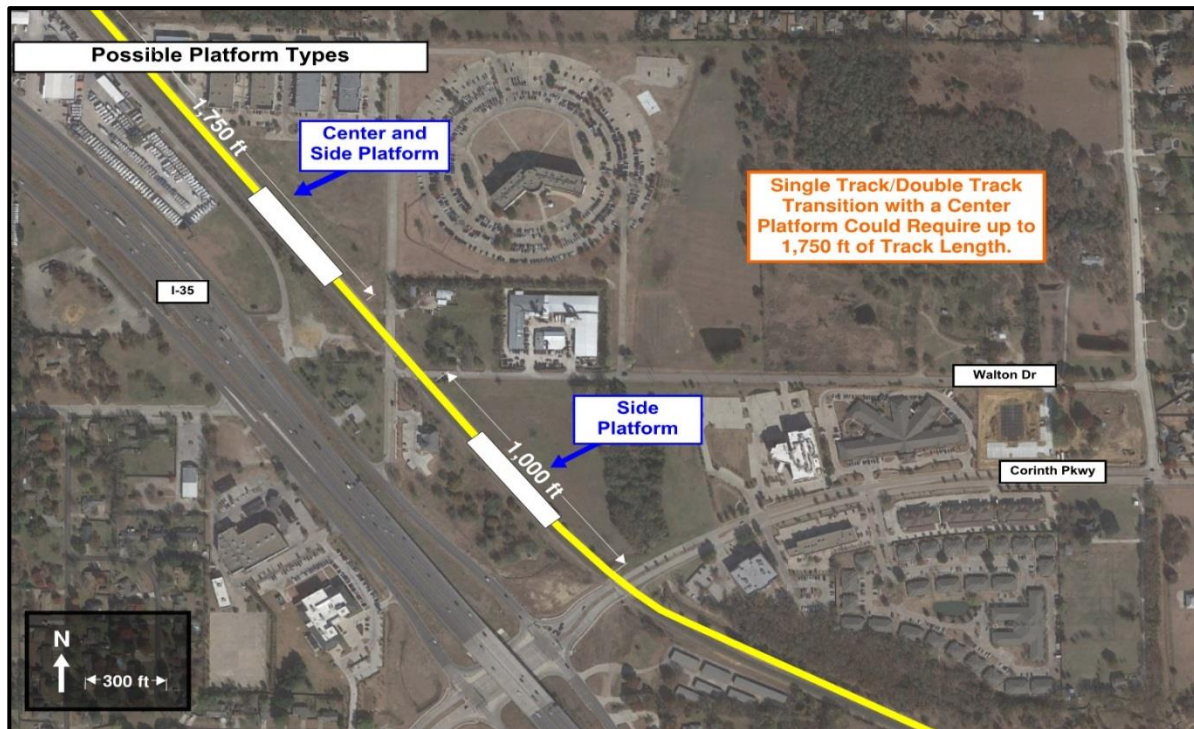
3.2.1 Station Area Short List

Based on the three areas previously described, two stand out as having the most merit. The two are shown in **Figure 3-2**. Station area three is eliminated because although the station platform is near Corinth City Hall and a small nearby residential neighborhood, direct access to those destinations is very limited and a major storage facility immediately south and west of the station area platform is not conducive to existing or future A-Train ridership or development that could improve ridership.

The two station areas shown on **Figure 3-2** allow more access to current development and future developable land. There is an alignment issue that impacts final platform placement. The current alignment consists of one track. Two tracks are essential for the station platform, so passengers can efficiently access the train either from a center platform or two side platforms for northbound and southbound travel. Two tracks also allow for better on-time performance. The standard station platform length is 450 ft. Because of the degree of vertical curve present along the alignment in this area, the existing track would need to be modified and a second parallel track added for a center or side platform to be inserted. An approximate linear distance of 1,750 ft. on both sides of the platform center is needed (subject to further design) to add the platform, new track, re-construct the existing track and transition

the new track north and south to merge again with the existing single track. There is sufficient unencumbered space within the DCTA right-of-way north of Walton Rd. to provide such a transition for the second track. This is not the case for the station area between Walton Rd. and Corinth Parkway. The track transition can still be accomplished but it will require rebuilding both railroad crossings at some expense. A single-track operation with one side platform might still work in this second station area to avoid that cost but it may not be the optimal solution in the long term. Other possible solutions for providing sufficient transition space along the alignment follows given opportunities presented by the proposed mixed-use development and a closer examination of the vertical and horizontal alignment characteristics in this area.

Figure 3-2 Station Area Short List



3.2.2 Mixed-Use Development

A 250-acre mixed-use development with a transit-oriented development focus is proposed with a geographic nexus between City Hall to the south, the NCTC campus to the north, IH-35 frontage to the west and Shady Rest Lane to the east. Development concepts include a large open area event space, 2-3 story retail space, commercial space and new residential development. Integrated into the development plan is a core 45 acres of the development which also includes an open area event space just north of Corinth Parkway including shared parking with surrounding retail space to the west of the station platform. Development implementation is estimated to start within 3 years and the City may implement a tax increment reinvestment zone for the project as a mechanism to make public sector infrastructure improvements. A concept vision for the planned development is shown as **Figure 3-3**.



Figure 3-3 Corinth Village Mixed-Use Development Concept



View of Corinth Village

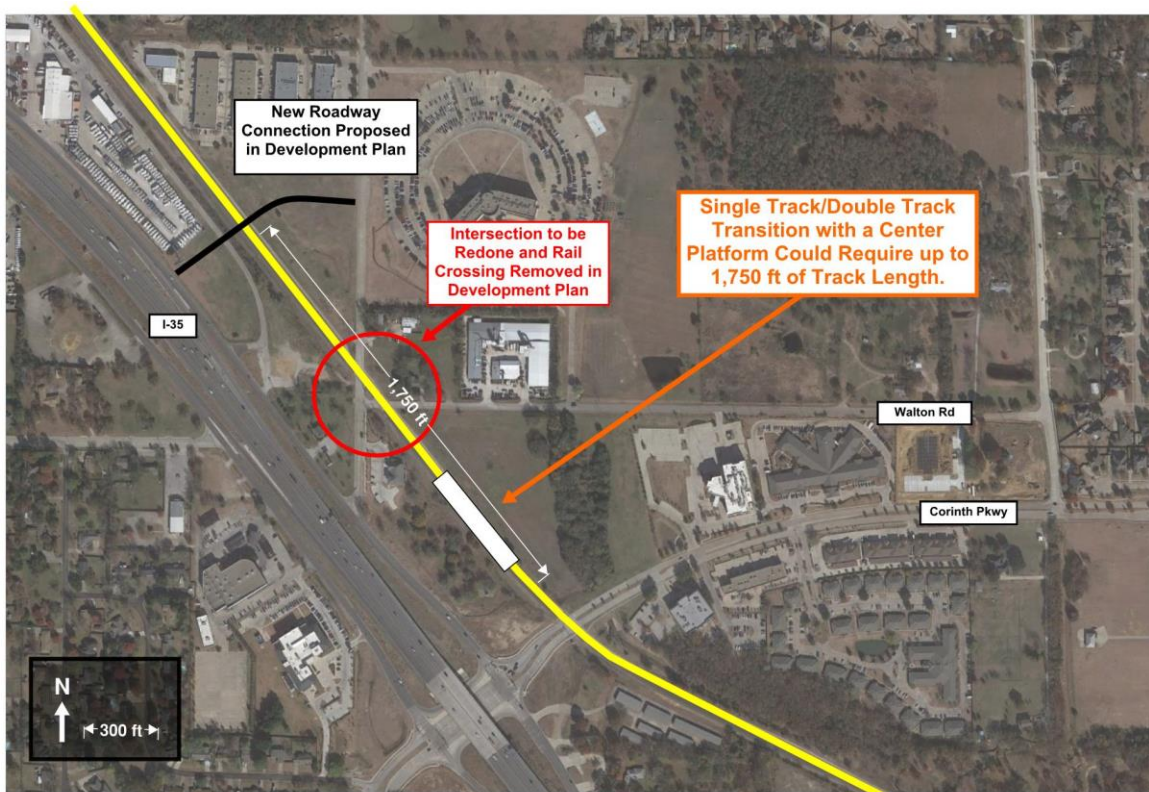


3.2.3 Recommended Station Area

A meeting was held August 6, 2019 to discuss the new Corinth station. Representatives from the City of Corinth, DCTA, the Developer and LAN discussed the station area options and ways for the station to be integrated into the proposed development. There was a preference by DCTA for a center platform station configuration and a preference by the City for the station to be between Corinth Parkway and Walton Rd. In addition, there was a desire expressed to place the platform as close to Corinth Parkway as possible with the belief that such a location will integrate with the development the best. Given the limited distance between Corinth Parkway and Walton Rd. which only allowed the necessary second track alignment transition to be implemented with the addition of new rail crossing construction, the City agreed to reconfigure the Corinth St. and Walton Rd. intersection, so no crossing would occur at that location. Because the proposed development still requires additional access to/from the IH-35 frontage rd., a new crossing will be added further north so the second track transition required distance can be accomplished before the new crossing location, thus requiring a single track at the new crossing until DCTA desires to double track the entire A-Train alignment. All agreed that if after engineering review of the revised crossing for the second track transition was still needed at Corinth Parkway south of the platform, that revision would be acceptable. With that understanding, it was agreed to proceed with establishing the center platform station location in station area 2 just north of Corinth Parkway. The recommended station area with highlighted roadway infrastructure changes is shown as **Figure 3-4**.

Next, the various platform configuration requirements and their impact on location within the recommended station area are presented.

Figure 3-4: Recommended Station Area



3.3 Potential Configuration Alternatives for the Selected Station Area

The recommended positioning of the station platform is directly impacted by engineering parameters and good land development access. From an engineering point of view, platform positioning is dependent on 1) the availability of existing tangent track in the station area and 2) the ability to place a new platform along a non-tangent track section but do it so that design parameters are still within tolerable limits. The reason station platforms are on tangent and level sections of track is, so the train is always parallel to the platform edge for ease of passenger access and ADA requirements and the operator has excellent visibility of the entire platform as the train enters and leaves the station. From a land development perspective, the platform should be located to facilitate easy access to as much retail, event and residential space as possible. At the same time there are some concerns with the type of platform to be used and its location as represented on the master plan. Any center platform must be 23" above the track to allow passengers level entry and egress of the train. It cannot be lowered in part to allow for pedestrian crossing through the center of the platform. The platform can only be accessible via the ramps at either end of the station.

Various platform types were evaluated for station design, location and concept preserving the integration with the future development. The station for the City of Corinth will need to meet safety requirements

and commuter rail guidelines at the same time provide accessibility to and integration with the surrounding master plan.

For all platform types, the vehicle being utilized for platform size, orientation and configuration evaluations is the Stadler GTW DMU-2 2/6 for DCTA. The proposed site location for the platform is north of Corinth Parkway and south of Walton Dr. The proposed platform should follow the orientation of the existing track alignment. The platform should be a length of 350'-0" to allow berthing of a two (2) vehicle concept. Exit ramps should be provided at each end at the minimum length of 40'-0" with adequate width per NFPA 130. Track crossings are to be provided at end of ramp at a minimum width of 10'-0". The overall platform length will be 450'-0".

The platform types are illustrated below with information dealing with alignment and platform access issues.

3.3.1 Standard Center Platform & Location

A center platform concept allows for berthing of vehicles on both sides of a single platform between two tracks. The platform would have a width of 23'-8". This platform will cause the new rail alignment to get wider to accommodate the platform. Both sides of the platform will require a pedestrian barriers for safety purposes. This can be in the form of concrete planter with landscape barrier or fencing. This will be needed to protect riders as the train enters and exits the station. **Figure 3-5** illustrates the platform placement along the alignment to maintain a consistent platform width.

Figure 3-6 illustrates the cross-section of the platform with pedestrian crossings at both ends and no middle crossing of the platform due to the elevation required of the platform relative to the tracks.

At this location although the platform is on a tangent section, the existing track is also on a vertical curve and that curve will need to be eliminated. The elimination requires an approximate re-construction of 1300 ft. of the existing track at this location. The elimination of the vertical curve will allow the platform to meet ADA requirements for access and boarding purposes. **Figure 3-5** shows new track on the west side of the platform. Approximately 3500 ft of new track is required (1750 ft north and 1750 south of the center of the platform) to transition to the original single-track alignment to accommodate the station. Although the City intends to move the Walton Rd./Corinth St. intersection to eliminate the crossing shown in **Figure 3-5**, it remains for reference purposes only.

Station Length	Platform Width	Canopy	Direct Drop-off
450'-0"	23'-8"	Yes	No

Figure 3-5: Corinth Station Platform Concept 1-A Conventional Center Platform

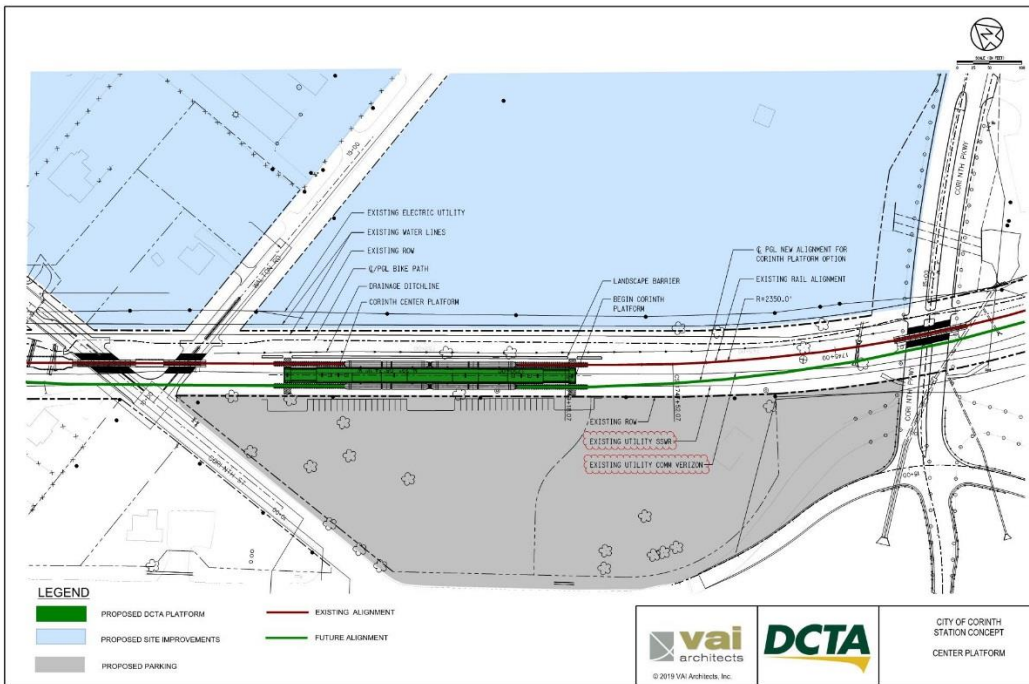
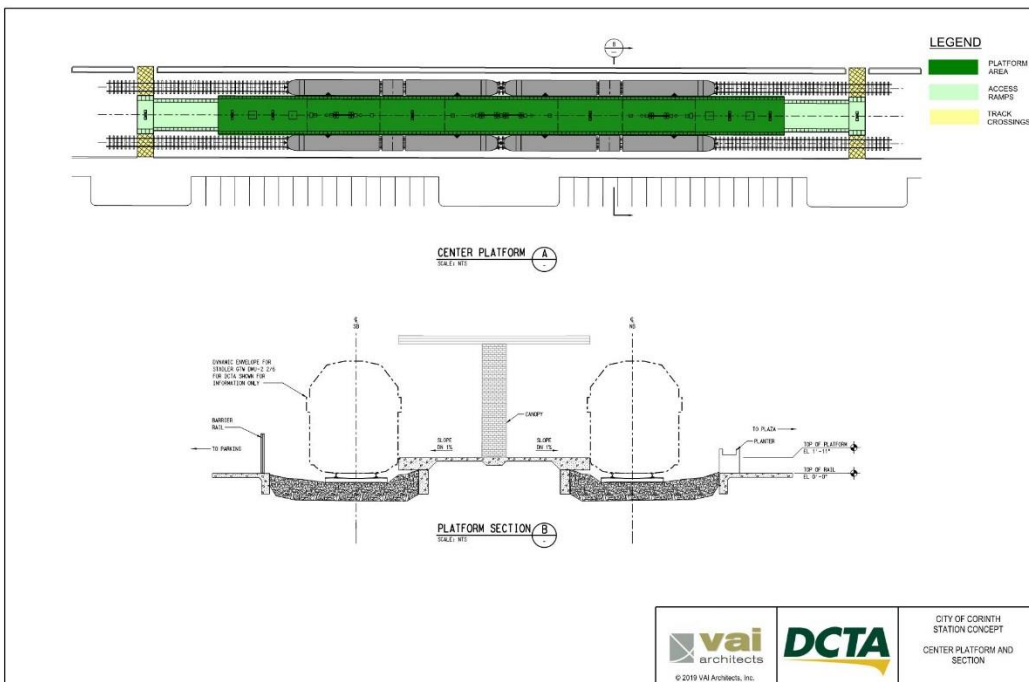


Figure 3-6: Corinth Station Concept 1-A Conventional Center Platform Access Details



3.3.2 Curved Center Platform & Location

A center curved platform concept like the concept described above that can be closer to a horizontal track curve can be provided closer to Corinth Parkway. The curved portion of the station refers only

to the section of the platform that can be modified and placed inside the horizontal track curve. This is only recommended for the part of the station that does not provide boarding space, in this case the crossing and accessible ramps.

The platform egress will be narrower at the south end following the horizontal curve track profile. This platform will cause the new rail alignment to get wider on one end and narrower on the other to accommodate the platform. There are concerns that the horizontal alignment for the new track will exceed maximum clearance allowed by code between the platform and car floor from an ADA perspective. A more detailed track evaluation and reconfiguration will be required to evaluate the final location of station. Only minimal changes are required for the existing track to reduce a short section of vertical curve. Approximately 3400 ft. of new track alignment on the west side of the platform will be required (1700 ft. north and 1700 ft. south from the platform center) to transition to single track on the existing alignment beyond the station.

Figure 3-7 illustrates the platform placement along the alignment closer to Corinth Parkway but with a narrowing platform making the platform shift possible. **Figure 3-8** illustrates the cross-section of the narrowing platform with pedestrian crossings at both ends and no middle crossing of the platform as before.

Station Length	Nominal Platform Width (varies)	Canopy	Direct Drop-off
450'-0"	23'-8"	Yes	No

Figure 3-7: Corinth Station Concept 1-B Curved Center Platform

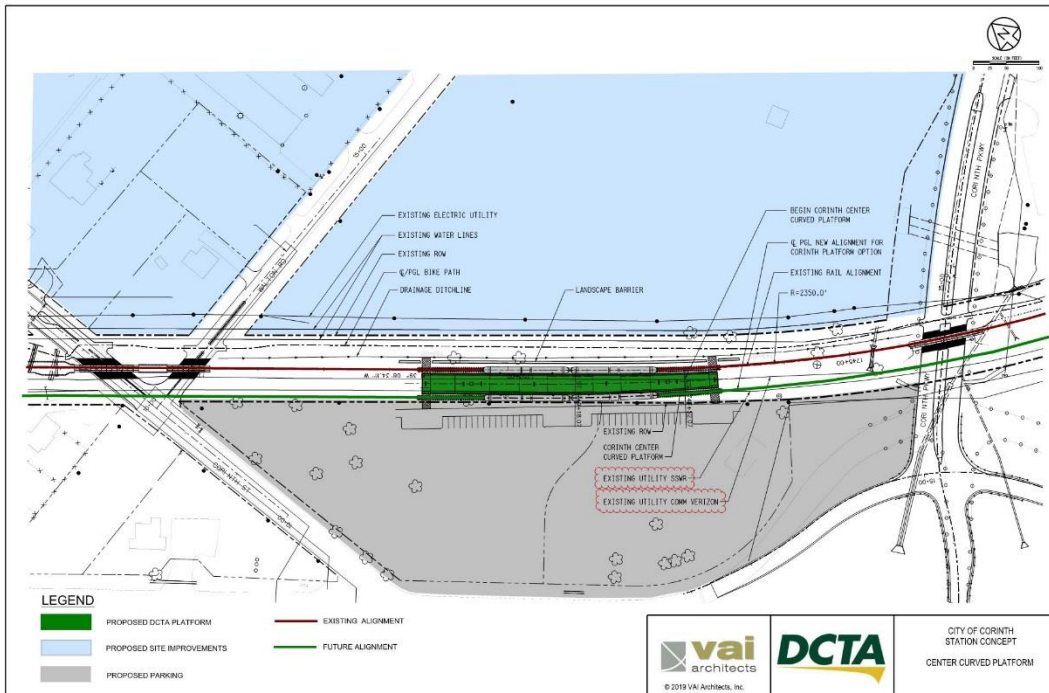
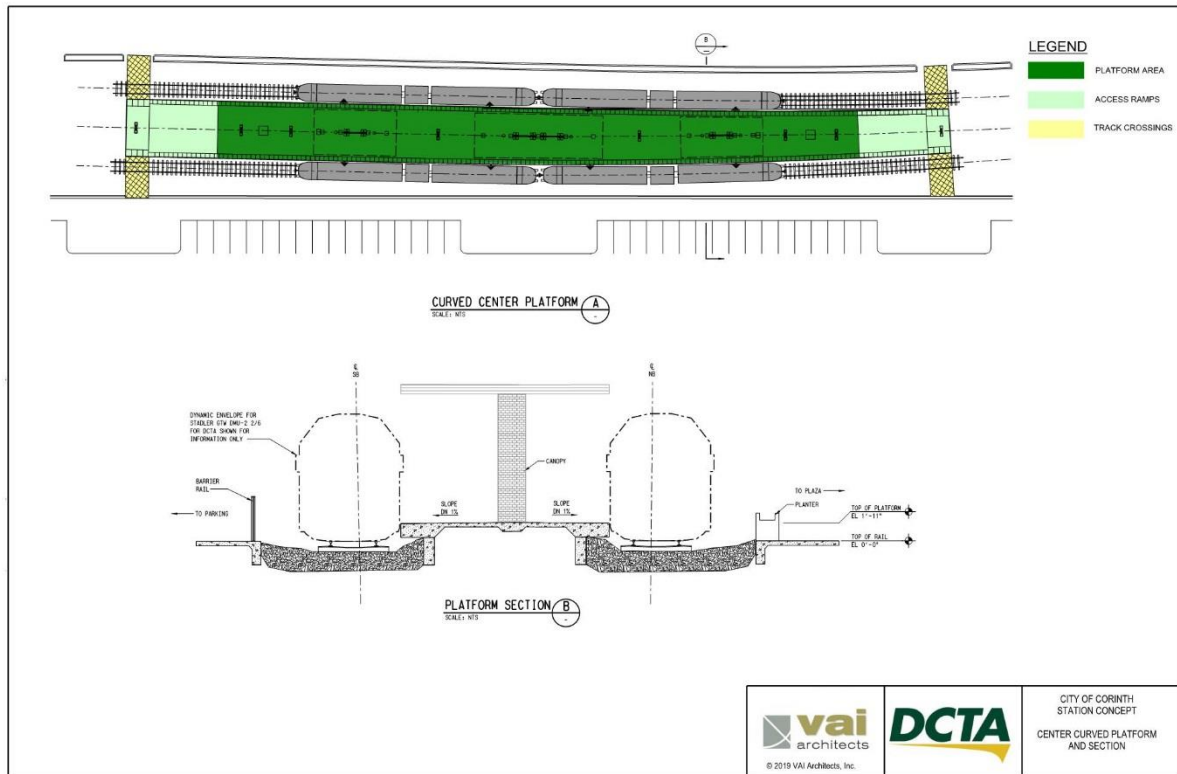


Figure 3-8: Corinth Station Concept 1-B Curved Center Platform Access Details



3.3.3 Side Platform & Location

A side platform concept allows for berthing of vehicles at each platform with two tracks in between the platforms. Each platform width will be 17'-10" wide. The east platform will cause the station to move farther south within the existing site. The platform can begin at the minimum distance of a 150'-0" from the tangent point of the existing curve, without affecting the platform width.

The side platform can be better integrated into the City of Corinth master plan. Instead of landscape barriers or rail barriers being required to separate riders from the tracks. Pedestrian plazas on both sides of the platform can be used to transition riders to the platform. This would create a sense of openness and allow easier access to the platform. The City of Corinth station would be integrated as part of the design rather than being its own portion.

With a Side Platform Station, it is possible to better accomplish the original intent shown in The City of Corinth's master plan to integrate the station with the development, plus provide connectivity and accessibility to the development. The side platform concept also allows for a platform construction phasing plan in concert with the development of the site, if desired. A second track will be needed before any construction of either platform commences so existing train operations are not affected during platform construction. The side platform concept will satisfy ADA requirements even with the platform access ramps on a slight horizontal curve at this location. A very short vertical curve adjustment is needed for the existing track on the east side as for the curved center platform concept at this location. Because of narrower track centers, approximately 3000 ft of new track on the west is needed to transition to the original single-track alignment.



Figure 3-9 illustrates the platform placement along the alignment closer to Corinth Parkway and still on a curve. **Figure 3-10** illustrates the cross-section of the side platform with pedestrian crossings at both ends and no middle crossing of the platform as before.

Station Length	Platform Width	Canopy	Direct Drop-off
450'-0"	17'-10"	Yes	Yes *
*Platform can be integrated into pedestrian plazas at each side, all development will need to coordinate final elevations from top of tracks			

Figure 3-9: Corinth Station Concept 1-C Side Platforms

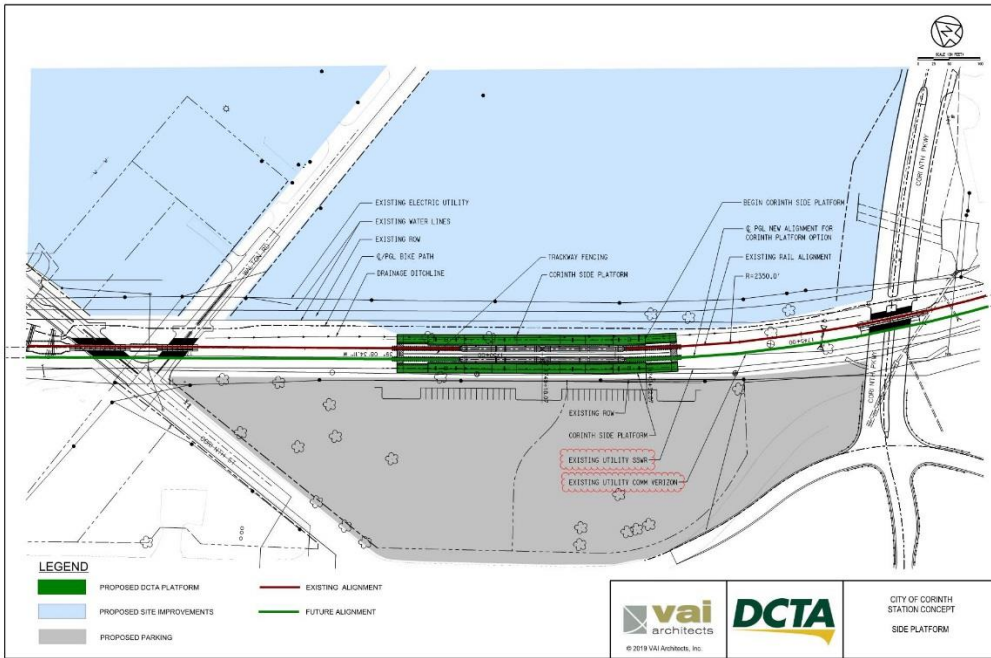
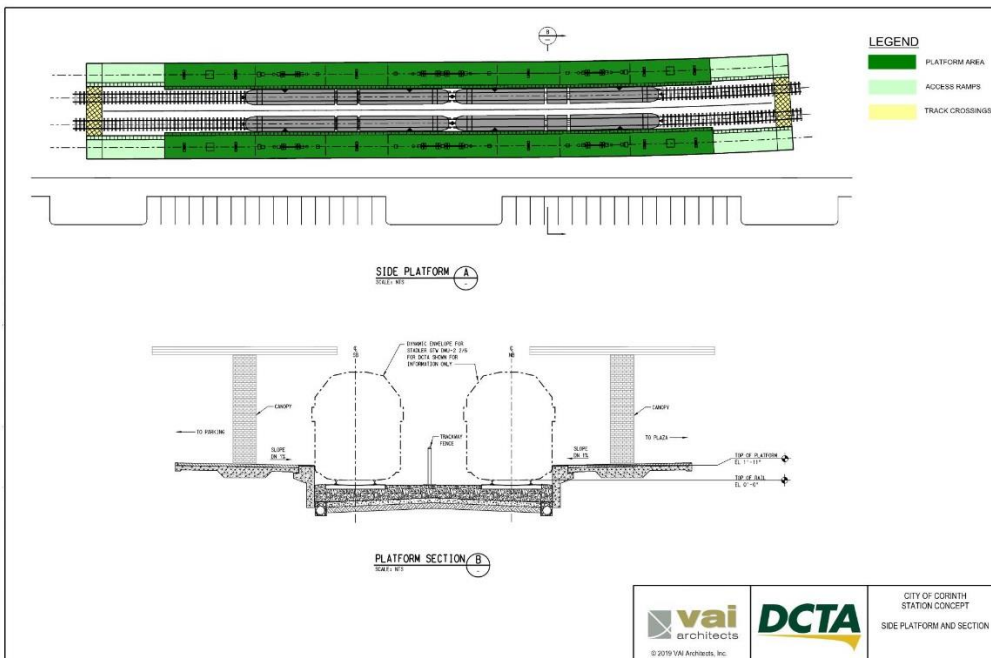


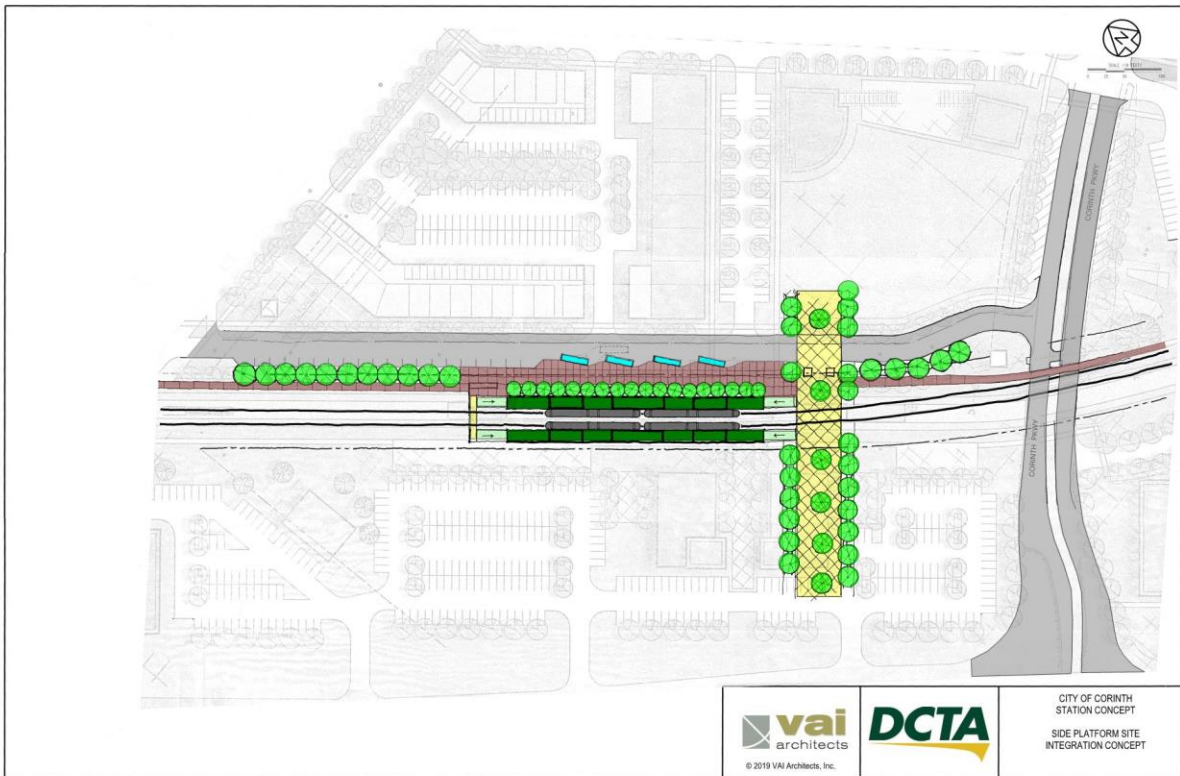
Figure 3-10: Corinth Station Concept 1-C Side Platforms Access Details



4.0 Recommended Platform Configuration & Location

Based on input from the City and DCTA during a meeting September 3, 2019, plus concept engineering considerations, implementation flexibility and better integration with the future development concept, a side platform configuration as shown in **Figure's 3-9 and 3-10** is recommended. This side platform configuration is further illustrated in **Figure 4-1** integrated with the proposed development.

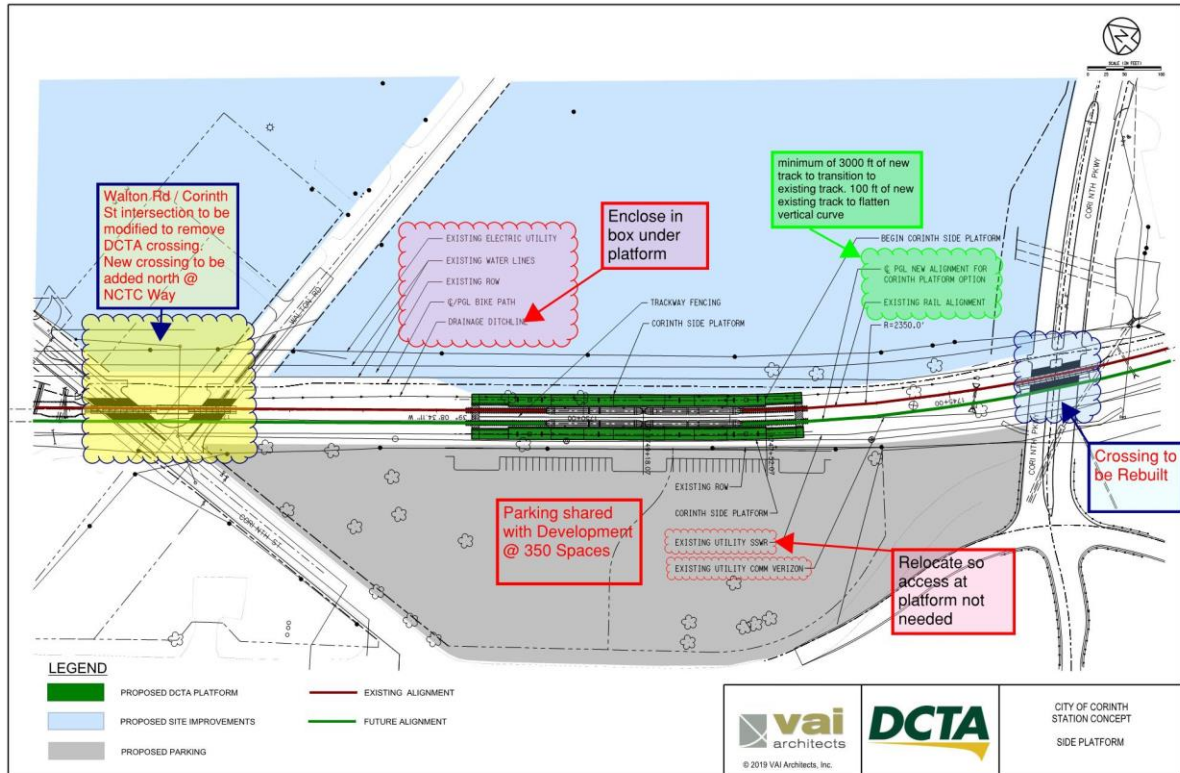
Figure 4-1: Recommended Station Configuration Integration with Development Concept



4.1 Infrastructure Modifications

A few additional civil related infrastructure improvements and changes will be needed to support the Corinth station location as recommended. These improvements and changes are discussed below and summarized in **Figure 4-2**, except for the new roadway and bus bays serving the station which is shown in **Figure 4-1**.

Figure 4-2: Proposed Civil Infrastructure Modifications



4.1.1 Track Changes

As mentioned previously the side platform concept will satisfy ADA requirements even with the platform access ramps on a slight horizontal curve at this location. A very short vertical curve adjustment (approximately 100 ft.) is needed for the existing track on the east side. Because of narrower track centers, approximately 3000 ft of new track on the west is needed to transition to the original single-track alignment. This is a reduction compared to the center platform concepts.

4.1.2 Roadway Changes

Three roadway changes are needed. The first is the removal and relocation of the existing intersection at Walton Rd. and Corinth St. just north of the station area. A new crossing will be constructed as part of the master development plan further north at the point where the double track section needed for the station transitions back to single track, approximately 1600 ft. from the center of the new platform. The second roadway is the addition of an access roadway on the western edge of the development just east of the existing track. This roadway is needed to facilitate local access to the station and allow bus bays for passenger pick-up and drop-off as shown in **Figure 4-1**. The addition of this roadway requires the current hike and bike trail on the east side of the existing rail alignment to be relocated on the east side of the

new road. A third roadway change is the reconstruction of the railroad crossing at Corinth Parkway for the second track required for the new station.

4.1.3 Parking

The Corinth Station will have parking which will be located west of the station. The parking is to be shared with new development as it comes on line. The parking estimate for the station is 350 spaces.

4.1.4 Pedestrian Connections

Once at the station, pedestrians will enter, exit and cross between platforms at each end of the station. A pedestrian plaza is shown in **Figure 4-1** to funnel access to each side of the station from the development interior. The final length and width of the pedestrian plaza will be determined in later design phases of the project.

4.1.5 Utilities

Major utilities were identified through existing plans and files available from the City and DCTA. On the east side of the station, an existing drainage area will need to be placed in a box culvert under the station platform. On the west side of the station an existing sanitary sewer line is under the West platform. This line will need to be relocated so access to the line is not impeded for maintenance purposes. As design progresses, other changes in existing utilities or requirements for new utilities because of the development may need to be evaluated.

4.2 Operations Analysis

New run time simulations to test the impact on A-Train operations were performed given a proposed new station in Corinth. Two simulations were originally to be conducted, the first with the added station and sufficient double track in the immediate vicinity of the new station, and the second with the added station and even more double track north of Lewisville Lake to improve operational efficiency. The second analysis will take more time and will be included during the second phase of the analysis.

The purpose of the network simulation is to evaluate whether operating plans developed for positive train control travel times remain viable with the addition of Corinth Station. In each case two operating plan concepts were tested: 25-minute headways and 30-minute headways.

4.2.1 Adding the Corinth Station

The first run time simulation reflects the presence of an additional station just north of Corinth Parkway and approximately 3000 ft. of new double track alignment to accommodate a new center or double side platform configuration. The 25-minute headway operating plan scenario is not feasible with the Corinth station because cascading delays in the system occur causing instability in the run times. The 30-minute headway operating plan scenario is feasible with the new station. The additional station adds approximately 1.5 minutes of travel time to northbound trips. No travel time is added for southbound trips. Both the northbound and southbound trip partly make up the additional stop time for the Corinth station by reducing the time spent delayed on sidings. The southbound trip spends less time delayed at Hebron, while the northbound trip spends less time delayed at Med Park siding. However, with the southbound trip making the Corinth stop, the northbound trip is also delayed for longer at Lewisville Lake, waiting for the southbound trip to arrive. This accounts for added time northbound and no additional time for southbound



5.0 Summary and Recommendations

This analysis of a new DCTA station in the City of Corinth is a direct result of interest to add a station because of a proposed major new 250-acre development plan directly adjacent to DCTA right-of-way between Corinth Parkway and Walton Rd. Initially three broad station areas were investigated, one south of Corinth Parkway, one north of Walton Rd. near the NCTC campus and one between Corinth Parkway and Walton rd. Based on the availability of tangent track plus proximity to the proposed development, the station area between Corinth Parkway and Walton Rd. was selected. From there the challenge was to optimize the platform location and platform type to minimize existing and new track construction, given the presence of horizontal and vertical curves, minimize new crossing construction, satisfy ADA requirements at the platform and facilitate development access to/from the platform. The analysis of platform configurations resulted in the recommended side platform location shown in **Figure 3-9** and shown integrated with the planned development in **Figure 4-1**.

Often the addition of a new station, particularly on single-track railroad-based systems, can cause operational problems depending on where passing sidings already exist because the new station will alter train travel times causing 'train meet' locations to change. This can cause instability in run time performance. Fortunately, through an existing run time simulation model, impacts on run time performance and schedule stability can be tested. The run time analysis revealed that for the current A-Train 30-minute headways a stable operating plan can be maintained with the addition of the Corinth station.

Answers to a broader question concerning the amount of double track needed to operate the A-Train most efficiently given a new Corinth station remain to be addressed. A series of simulations to determine the appropriate amount of additional double track needed will be completed and reported as part of the next phase of this study.

APPENDICES

A - Proposed Mixed-Use Development

B - Operational Simulation Results

B-1 Adding Corinth Station



View of Corinth Village

Appendix A
Mixed Use Development

1. NCTC Expansion Area

- Expands southward along central green with architectural student services building in the center
- Campus expansion makes direct connection into the mixed-use Village Square
- Potential joint venture office (light purple) face the I-35
- Flex office and small retail along I-35 frontage and N. Corinth Street

2. Village Square Area

- Drainage property reclaimed to become central square with performance pavilion and restaurant pavilion
- Village square defined by mixed-use buildings on north and east side designed to transition from residential to commercial space on ground floor as market grows
- New rail station north of Corinth Parkway feeds the Village Square, with shared parking to its west
- Restaurant grouping with outdoor patios defines rail station to direct west, and allows for food truck parking



3. Village Community Area

- Blend of single family, townhomes and loft apartments
- Defined by street grid and pocket park system with wide sidewalks, street trees, benches, bike racks, trash containers and pleasant planting
- All garages and project parking within internal parking courts and alleys

4. Health Science Area

- New roadway provides access from Corinth Parkway to Walton Street
- Parking and open area west of new roadway converted into new development site
- Shared parking garage as public/private partnership between developer and City provides H/S parking at base
- New parking on Corinth Pkwy

5. Mixed-Use I-35 Frontage

- Hotel, office and restaurant area on both sides of I-35, having strong highway presence and connected by pedestrian promenade to rail platform and Village Square





NCTC Expansion along a College Green



Performance Pavilion activating the Green



Mixed-Use Buildings around the Green



Apartments, townhomes and home offices



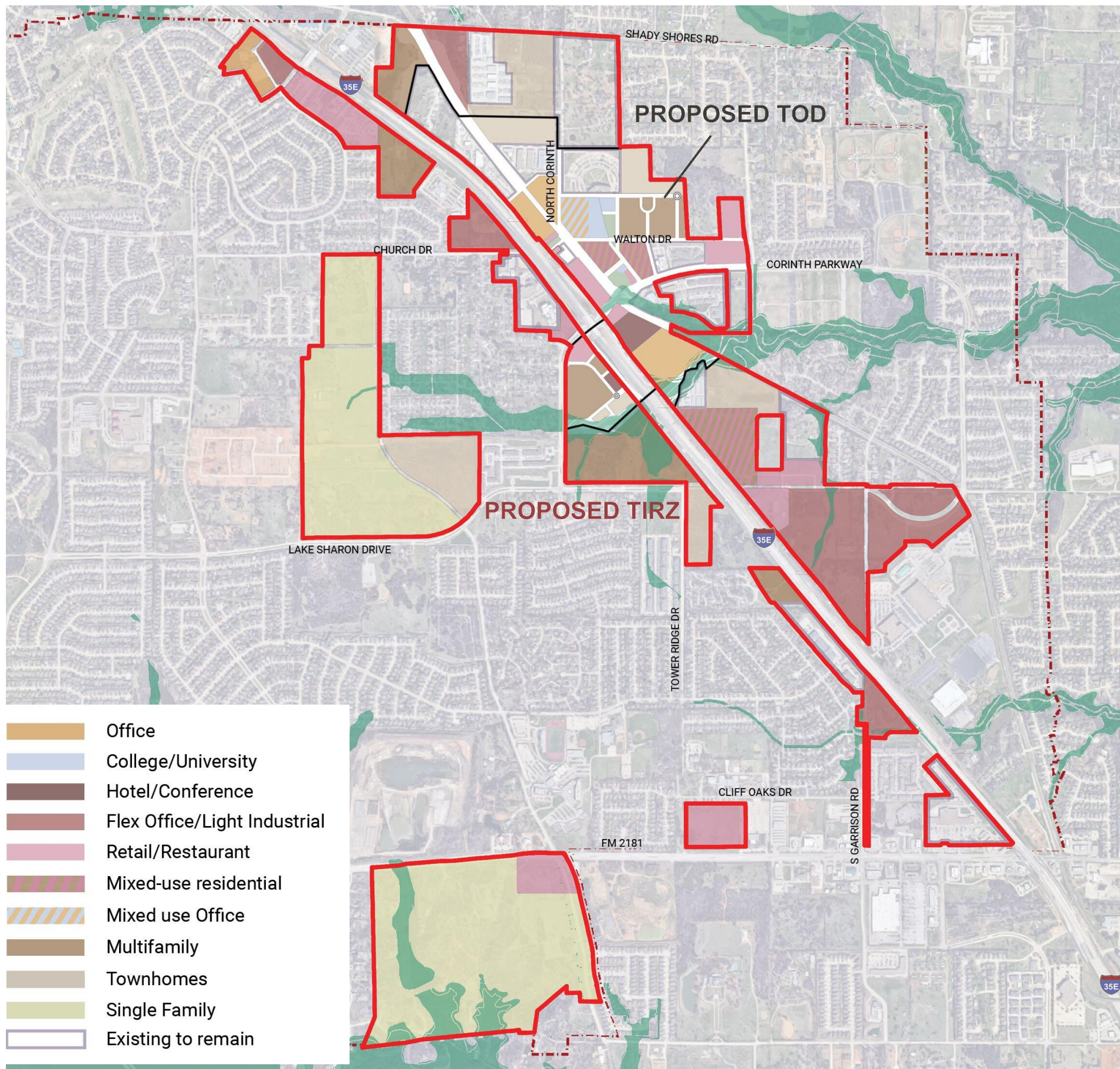
Main Street from City Hall to NCTC with pkg



Hotel and Low-Rise Office along I-35 with walk



View of Corinth Main Street



Single family detached



Single family attached



Multi family



Retail / Restaurants



Commercial / Office



Commercial / Hotel



Light Industrial / Flex Office



Mixed-Use

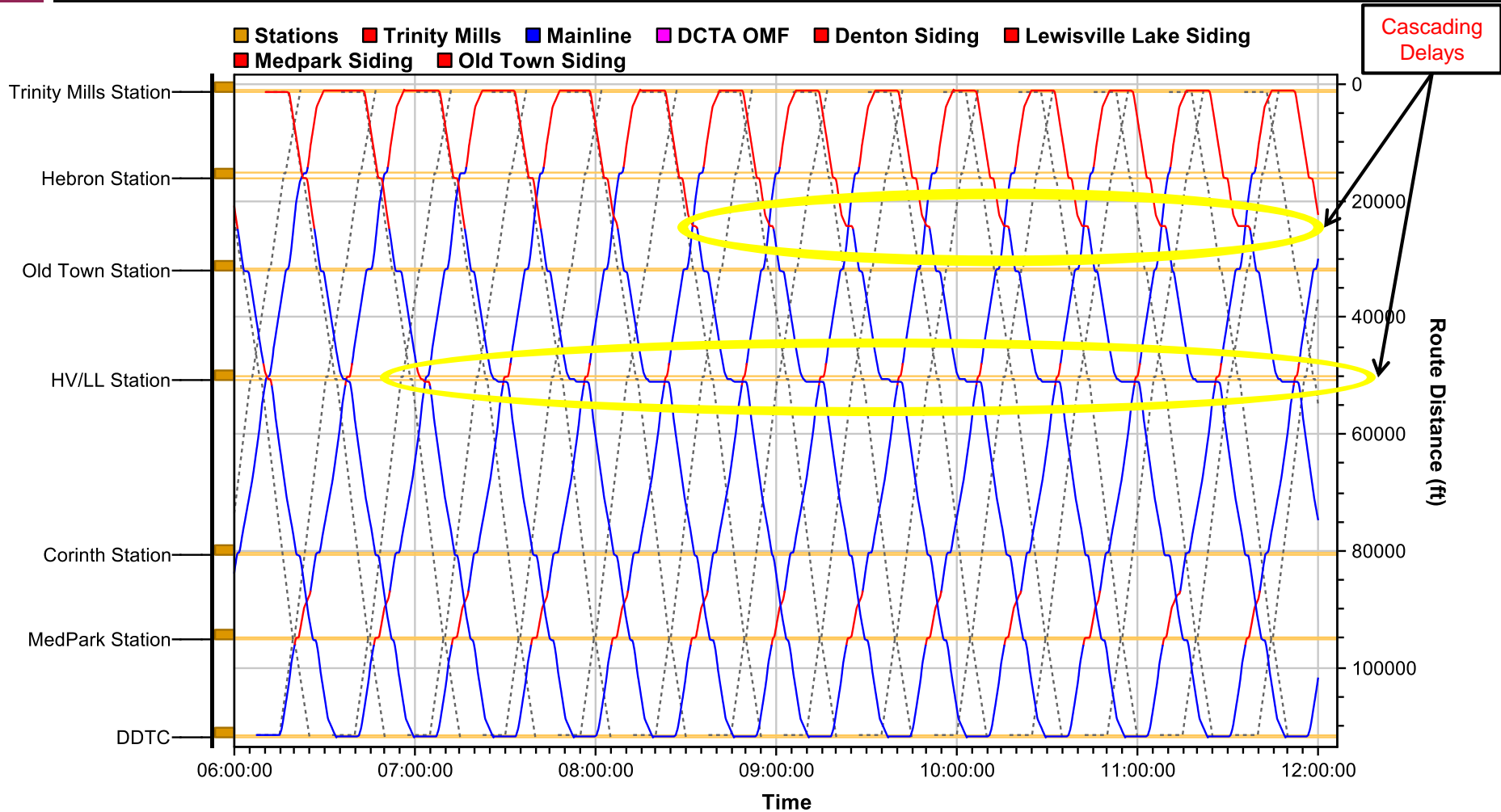
DCTA A-train Corinth Station Operations Analysis



Description

- New infill station proposed in Corinth on single-track section between Lewisville Lake Station and Med Park Station
- Stopping at Corinth Station will increase travel time on the single track, affecting timing of meets on passing sidings
- Network simulation performed to evaluate whether operating plans developed for PTC travel times remain viable with the addition of Corinth Station without adjusting signals or infrastructure
- Two PTC operating plan concepts tested:
 - 25-minute headways
 - 30-minute headways

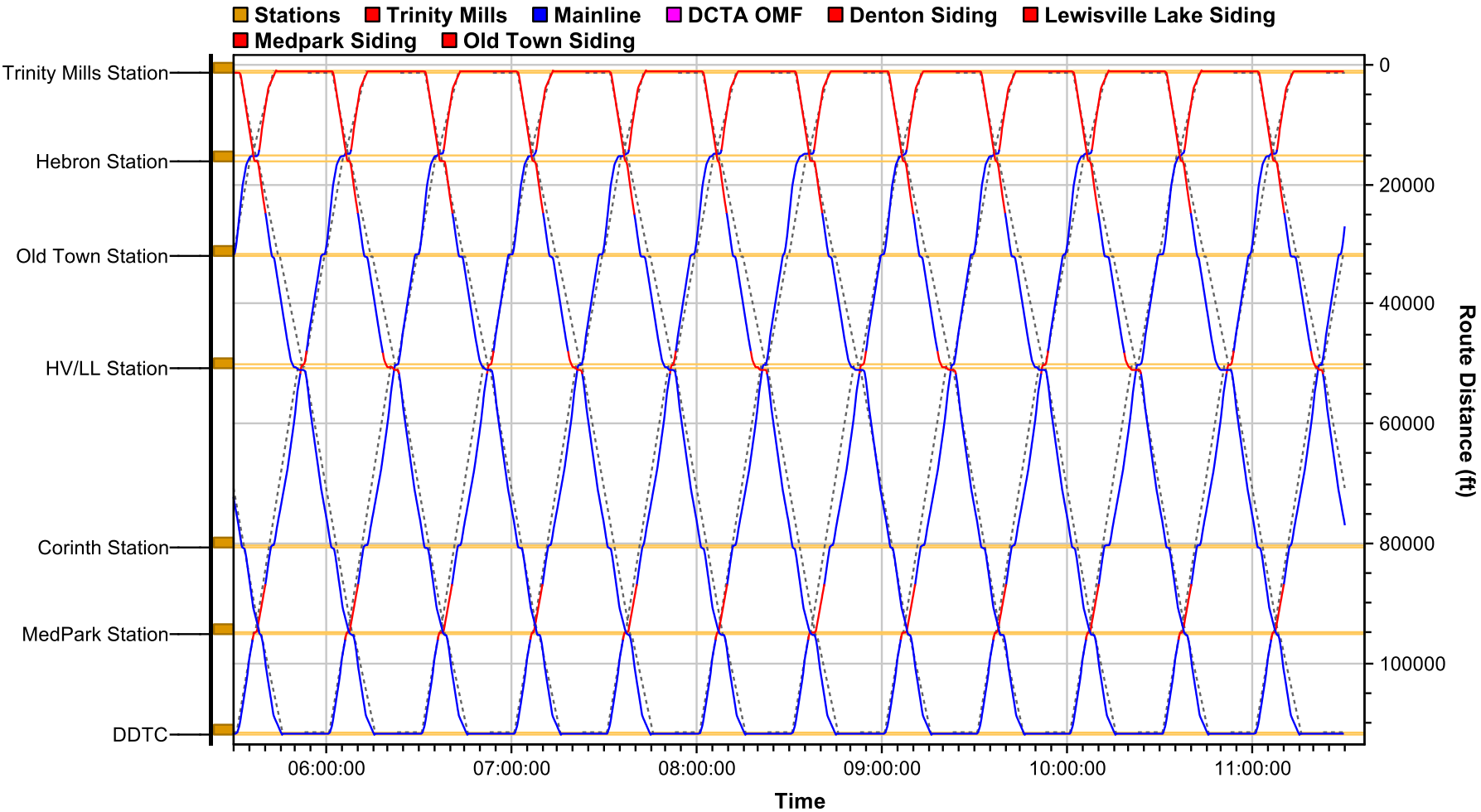
25m Operating Plan, 5:30AM-11:30AM



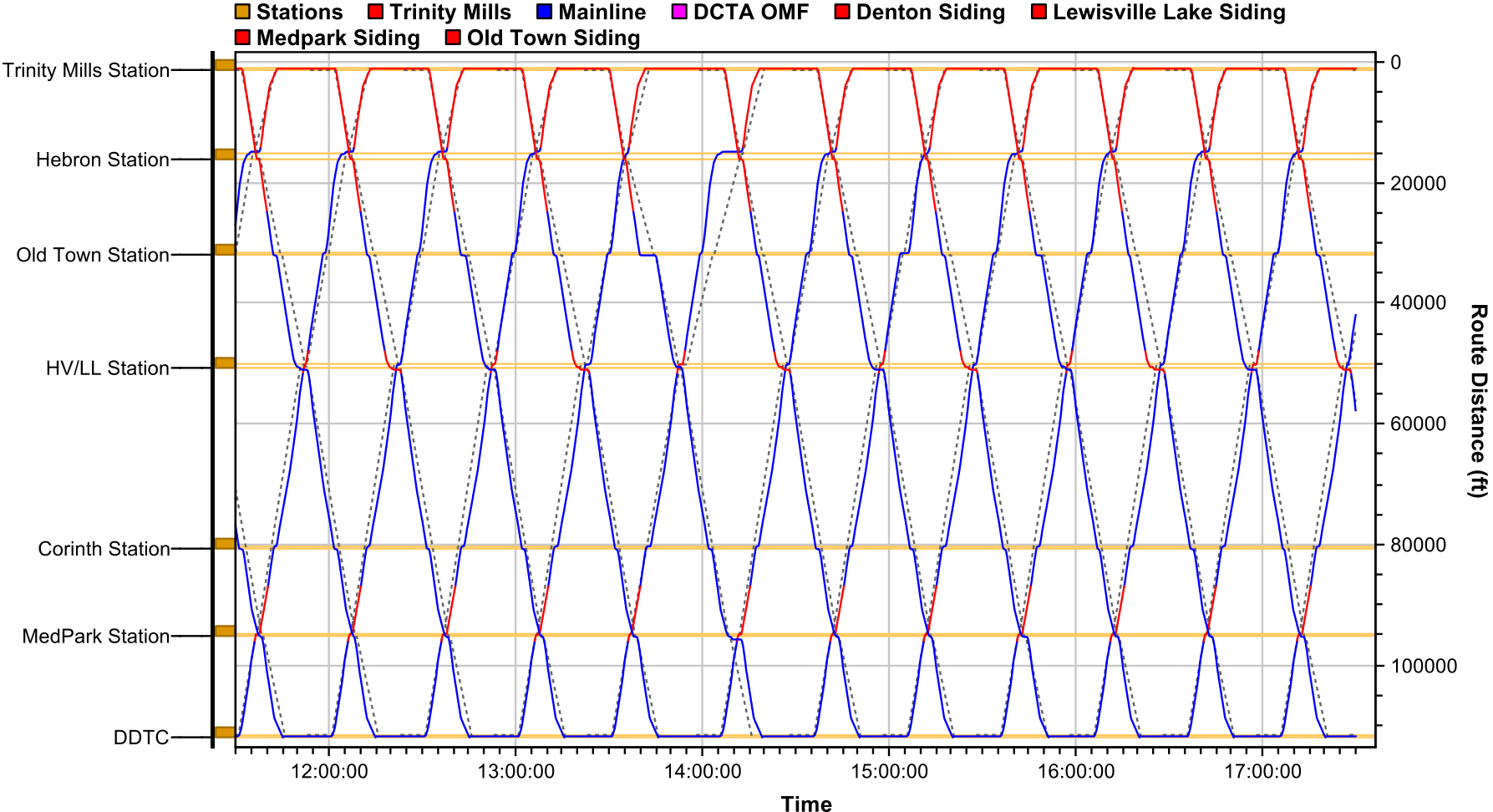
25m Headway Conclusions

- 25-minute headway plan is not feasible with Corinth Station, due to cascading delays
- Minimum stable headway to support Corinth Station stop and 7-minute terminal turns is 26 minutes

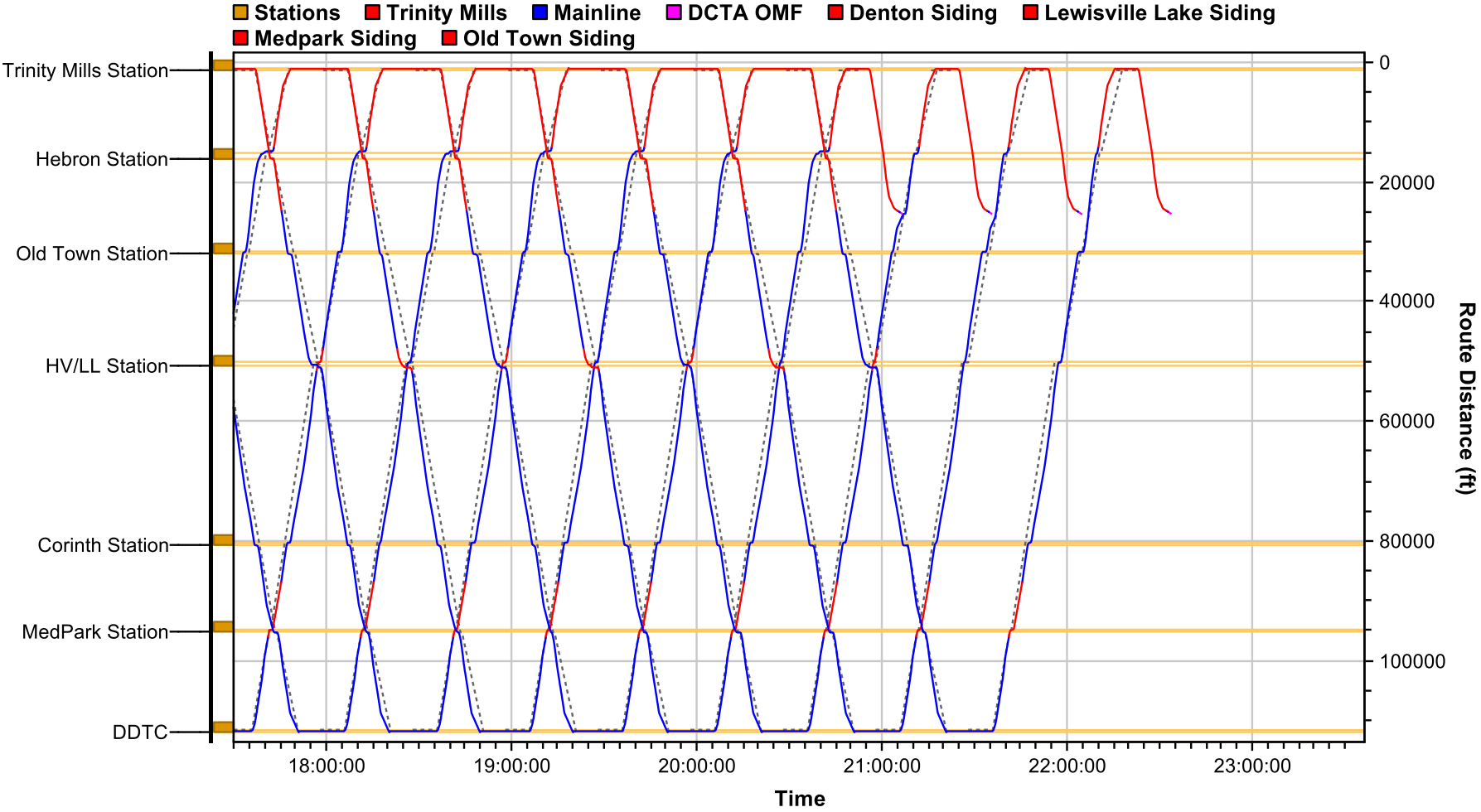
30m Operating Plan, 5:30AM-11:30AM



30m Operating Plan, 11:30AM-5:30PM



30m Operating Plan, 5:30PM-11:30PM



Average Travel Times, Delay-Free (TPC)

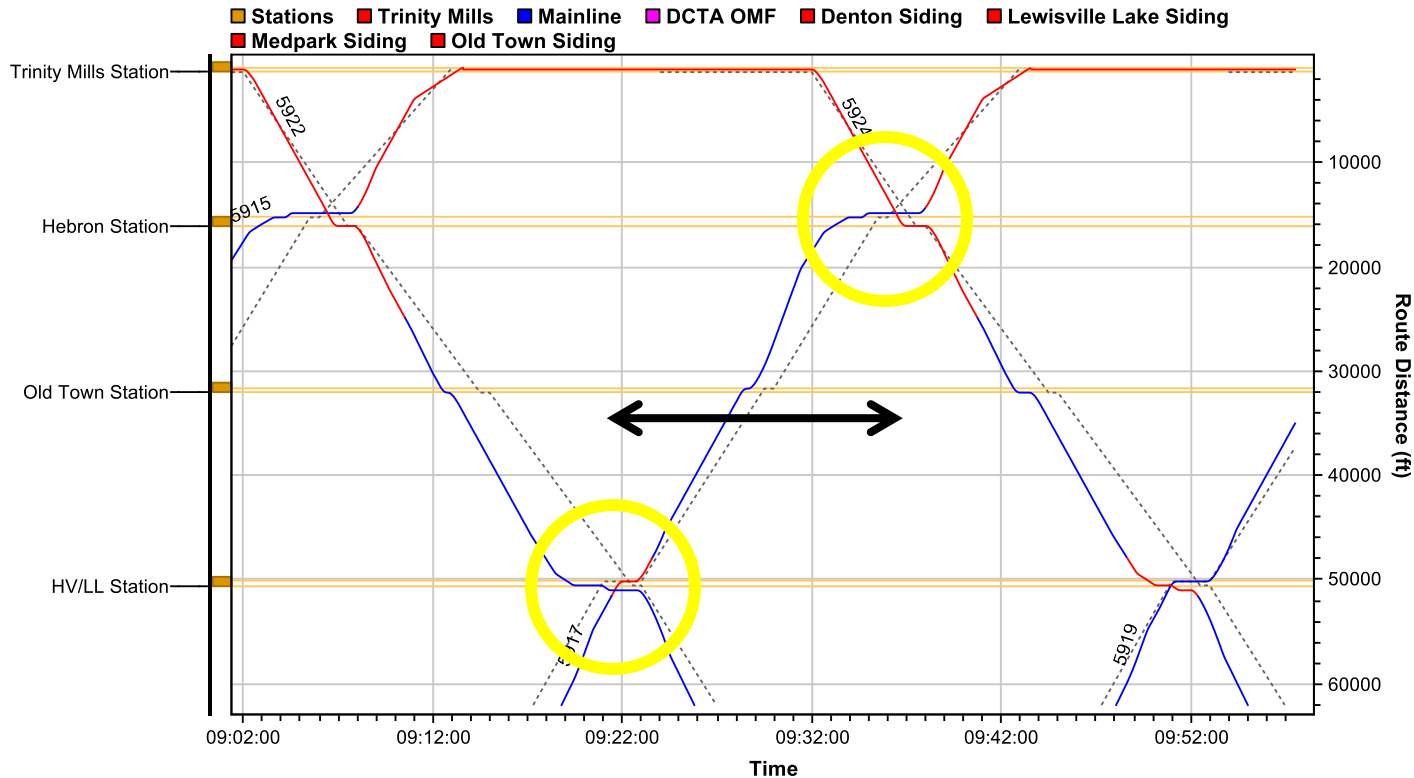
	Northbound	Southbound
Existing Infrastructure	0:39:02	0:38:23
Add Corinth Station Stop	0:39:57	0:39:19
Difference	0:00:55	0:00:56

Average Travel Times, Network Simulation (Regular Service, 30m Headways)

	Northbound	Southbound
Existing Infrastructure	0:42:21	0:42:32
Add Corinth Station Stop	0:43:39	0:42:32
Difference	0:01:18	0:00:00

- Additional travel time between Med Park Siding and Lewisville Lake Siding due to adding a stop at Corinth Station has no effect on total southbound travel time

Constraining Travel Time



- Travel time on single track between Hebron and Lewisville Lake causes delays on existing infrastructure
- All the additional southbound travel time due to the Corinth stop replaces delay at Hebron
- Some additional northbound travel time replaces delay at Med Park Station