



WEEKLY REPORT

SEPTEMBER 4, 2020

TO: MAYOR SHETTER AND COUNCIL MEMBERS
FROM: BRYAN LANGLEY, CITY MANAGER

THE CITY OF
BURLESON
TEXAS

MARKETING & COMMUNICATIONS
141 W RENFRO, BURLESON, TX 76028 | (817)426-9622

Weekly Report | September 4, 2020

I. Council Schedule

Meetings

Tuesday, September 8: City Council Meeting, City Hall Council Chambers. 141 W. Renfro St., 5:00 p.m. The meeting will be conducted via Zoom. The meeting will also be available via live stream, <https://www.burlesontx.com/watchlive>

Speaker Protocol: A member of the public who would like to submit a question on any item listed on the agenda may do so via the following options:

- By phone: Please call **888-475-4499** Meeting ID **6114974473**, and provide your name, address, and question. Your question will be read by the Mayor or City Secretary during the meeting in the order they are received.
- Online: An online speaker card may be found on the city's website (www.burlesontx.com) at either the home page or the agenda/notices page. Speaker cards received prior to the meeting will be read during the meeting in the order received by the Mayor or City Secretary

Work Session Items/Report & Discussion Items

September 8

- Receive a report, hold a discussion, and give staff direction regarding preliminary design of the splash pad project. (Staff Presenter: Robert Ranc, Deputy City Manager)
- Receive a report, hold a discussion, and give staff direction regarding the fiscal year 2020-2021 proposed budget. (Staff Presenter: Martin Avila, Finance Director)

II. General Information and Status Updates

A. Current Case Statistics

As of September 3, the current COVID-19 case statistics for the City of Burleson are as follows:

- Total Accumulative Cases: 581
- Active: 26
- Recovered: 552
- Deaths: 3

A link to view the COVID-19 statistics page is being posted weekly to social media to encourage people to stay up to date on Burleson’s s data. To view the current case statistics for Burleson, visit <https://city-of-burleson-covid19-statistics-bur.hub.arcgis.com/>.

B. Comprehensive Plan public engagement continues

Community Services held the second Facebook Live Town Hall event to discuss the neighborhood core value of the comprehensive plan on Wednesday, September 2. Staff presented a quick presentation, took questions and encouraged participants to go online to www.burlesontx.com/imagineburleson and complete this week’s survey.

The upcoming Facebook Live schedule is as follows:

Core Value	Facebook Live Date & Time
Parks	5:30 p.m. Wednesday, September 9
Places	5:30 p.m. Wednesday, September 16
Economic Development	5:30 p.m. Wednesday, September 23
Resiliency	5:30 p.m. Wednesday, September 30
Future Land Use Plan	5:30 p.m. Wednesday, October 7

C. Johnson County Proposed Reappraisal Plan

The Johnson County Central Appraisal District Board of Directors will conduct a public hearing to consider their proposed reappraisal plan for 2021-2022 on Thursday, September 10, 2020, at 4:30 p.m. at 109 N. Main Street, Cleburne, Texas.

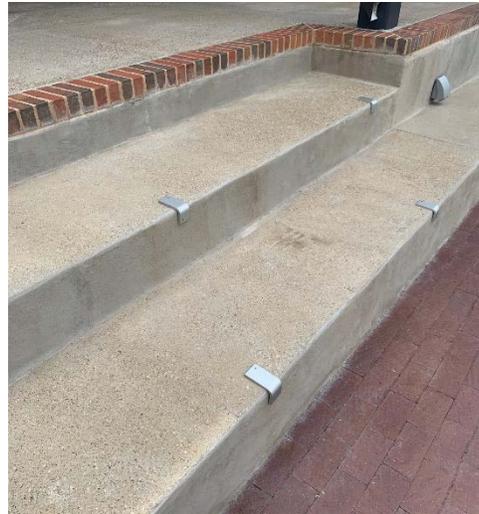
The plan consists of the reappraisal of all properties that shall include real estate, personal property, utility companies, gas wells and pipelines, not expressly exempt by law. A copy of the Reappraisal Plan has been included in the attachments on page 45.

D. Mayor Vera Calvin Plaza “Skatestopper” Installation

Staff has noticed the emergence of damage to hard surfaces in the Plaza due to skateboard “grinding”. These damaged areas are on concrete and cast stone low edges on the stage and large planter between the trollies.



The skate-deterrent device chosen was recommend by TBG Partners, original design team of the Plaza. The devices are a complimentary color to the natural colors of the stone and will be installed approximately three feet apart. Facilities is scheduled to install on Thursday, September 10.



E. BTX BestFest

BTX BestFest started September 1 and is open for citizens to vote on their favorite fair food, created by a local Burleson restaurant. 20 local Burleson businesses have come up with fair-inspired dishes for patrons to try during the month of September, since the State Fair was canceled. Staff has created a passport for visitors to get stamped at each location after trying their dish. People who have visited all 20 participating locations and

have a completely stamped passport will be entered into a drawing to win a grand prize package made up of assorted donated goodies from the participating businesses.

Economic Development staff and a Chamber of Commerce representative have been featuring different restaurants and dishes via Facebook Live on the City's Facebook page.

BTX
BEST FEST

VOTE
for your favorite dish once daily
BURLESONTX.COM/BESTFEST

Pick up your BTX Foodie passport at City Hall or from any participating restaurant and get all the entries stamped for your chance to **WIN A PRIZE PACKAGE** from participating businesses.

Visit participating restaurants from Sept. 1 - 30 to try their State Fair inspired creations!

 AMERICAN REVELRY Fried Cheesecake Bites	 BURLESON BAKERY 1836 "Texas Size" Pavlova	 FRESCO'S Churros with Strawberry Sauce	 GRUMP'S BURGERS All Beef Corn Dog
 HARD 8 BBQ Brisket Nachos	 JAVA JOHNS 1881 Renfro Roast	 LIZZI'S LUNCHBOX Fried PB&J Sandwich on a Croissant	 LONE STAR BAR & GRILL Porkskin Palooza
 MOJO'S TEX MEX Brisket Frito Pie	 MOONTOWER PIZZA Fried Cannoli Bites	 MORETTI'S Caramel Cheddar Popcorn	 MURRY BAKERY Bacon Pecan Brittle
 OLD TEXAS BREWING CO. Jalapeño Brisket Bites	 OSCAR'S BAR & GRILL Bacon Stuffed Jalapeños & Jalapeño Sausage Corndogs	 OUR PLACE Queso Fried Steak	 PANDAN THAI Mango Cream Cheese Rolls
 RIO MAMBO Fried Ice Cream Drizzled with Chocolate Sauce	 SPICE RACK BAR & GRILL Fried Oreo Bites	 STONE SOUP CAFE Triple Decker Grilled Cheese with Bacon	 THE RIM Mini Chicken & Waffles

THE CITY OF BURLESON TEXAS

F. FY 20-21 Budget video

To continue to inform and educate the public on the city's budget process, staff has created a quick video that highlights the general fund, including where revenue comes from and how it is spent. The budget video also highlights this year's budget process. You can view the video on the city's Facebook page, www.facebook.com/burlesontx

G. Progress North Texas 2020 Report

North Central Texas Council of Governments has released Progress North Texas 2020, an annual report, summarizing transportation system performance, recent accomplishments and next steps for transportation plans, projects and policies. You can view the report on page 9.

III. Upcoming Road Construction/Closures

UPCOMING ROAD CONSTRUCTION / CLOSURES			
Projects & Limits	Current Status	Traffic Affected	Estimated Completion
Renfro Street Medians in Old Town: Johnson to IH35W	Substantially complete. Crosswalk signals installed.	None anticipated	Final Closeout pending
Old Town Quiet Zones: RR xings at Commerce, Renfro, Ellison, Eldred	Punchlist items being corrected. UPRR final approval pending.	None anticipated	Punchlist items to be completed next week, Quiet Zone anticipated to be effective in Oct
Turkey Peak Ground Storage Tank Construction & Brushy Mound Tank Demolition at existing City Facilities	Demolition underway.	Intermittent construction traffic to and from both sites. Anticipated Routes include: NW Renfro, SW Brushy Mound Rd, SW Alsbury Blvd, NW Summercrest Blvd, Nicole Dr & NW Jayellen Ave.	Fall 2021
Renfro Street Pedestrian Crossings at Wilson Street	Contractor to begin work on new curb ramps and sidewalk at the intersection	The outside lane will be temporarily closed on the east-bound traffic for work on the ramps.	Oct 2020
Fire Station #2	Drive approaches on Hidden Creek Parkway Complete	None anticipated	

IV. Upcoming Community Events

- **September 5, Trash Bash**, 9 – 11 a.m. city-wide, drive-thru materials pick-up 8 a.m. at Warren Park
- **September 9, Comprehensive Plan Update Town Hall: Parks**, 5:30 p.m. via Facebook Live on the city’s official Facebook page, www.facebook.com/BurlesonTX
- **September 16, Comprehensive Plan Update Town Hall: Places**, 5:30 p.m. via Facebook Live on the city’s official Facebook page, www.facebook.com/BurlesonTX

V. Attachments

- A. Burleson PD’s Monthly Most Wanted.....page 8
- B. North Central Texas Council of Governments Progress North Texas 2020.....page 9
- C. JCCAD 2021-2022 Reappraisal Plan.....page 45



BURLESON POLICE DEPARTMENT

1161 SW Wilshire Blvd, Burleson TX, 76028
Call Burleson PD 817-426-9903 or Crime Stoppers 817-469-8477



TOP 10 MOST WANTED

AS OF SEPTEMBER 1, 2020

The Burleson Police Department is seeking the community's help in locating these wanted subjects. If you have any information on their location, please contact BPD at **817-426-9903** or top10@burlesontx.com. If you would like to remain anonymous, you can call **Crime Stoppers** anytime 24 hours a day at **817-469-TIPS (8477)**. These subjects may be armed and dangerous. **DO NOT** attempt to apprehend these individuals yourself.



Justin ANTHONY
Aband/Endanger Child

Madeleine AWTRY
THEFT

Kelvin GONZALEZ
AGG. ROBBERY

Bernard JACKSON
THEFT

Michael RICHARDSON
AGG. ROBBERY



Eric SCHNELL
AGG ASSAULT

Caleb SMITH
POSS CS

Chrislyn SMITHART
POSS CS

Shannon SORDINI
HARASS. PUBLIC SREVANT

Michael WRIGHT
STALKING

The Burleson Police Department Top 10 Most Wanted is updated on the 1st of every month and available online at www.burlesontx.com/bpdmotwanted

North Central Texas Council of Governments

2020 Progress North Texas



Connecting the Dots of Regional Transportation

From the Chair



Dear Neighbors,

Thank you for reading Progress North Texas 2020. This year's theme is Connecting the Dots of Regional Transportation. In a metropolitan area as fast-paced as Dallas-Fort Worth, it is important to provide residents with many choices of how to move from Point A to Point B.

Roads. Rails. Trails. Each has its role in making the region's transportation system reliable for its users. And many times, they complement one another to help people get where they need to go. If you Ride the A-train from Denton to Lewisville, for instance, you will likely either drive or ride your bicycle to the station. When you get off the train, you may walk or take a bus to your destination. If you rode your bike and brought it on the train, you could try the new A-train Rail Trail, the 19-mile facility that parallels the commuter rail service.

These are just a few examples of how we use the region's system. What about when we need to travel outside the Dallas-Fort Worth area? You can add aviation to the mix as a mode that connects us to other regions. Our general and commercial aviation assets are strong and growing to meet our business and leisure demands.

Connecting the dots can have many different meanings. Just ask the students who participated in this year's art contest. We asked the children of NCTCOG Transportation Department staff to show us how they travel to some of their favorite places and received some terrific answers that show their creativity. Congratulations to Louisa Hathcock whose creation is on this year's cover.

Whether driving alone, carpooling, taking transit or opting for a more active mode of transportation, North Texans can choose what works best for them because of our continued investment in the transportation system.

I invite you to help us shape our transportation system for the future by becoming part of the planning process. There are many ways you can get involved, from attending or watching public meetings to visiting our staff when we are out at community events. And feel free to reach us on social media with your questions and comments.

Whatever method you choose, we want you to become and remain an integral part of the transportation planning process. But first, I want to thank you personally for your commitment to learn about the transportation planning process by reading Progress North Texas.

Andy Eads

County Judge, Denton County
Chair, Regional Transportation Council

Progress North Texas 2020:

Connecting the Dots of Regional Transportation

June 2020

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NCTCOG.org/OurRegion

Definitions of terms used in this report

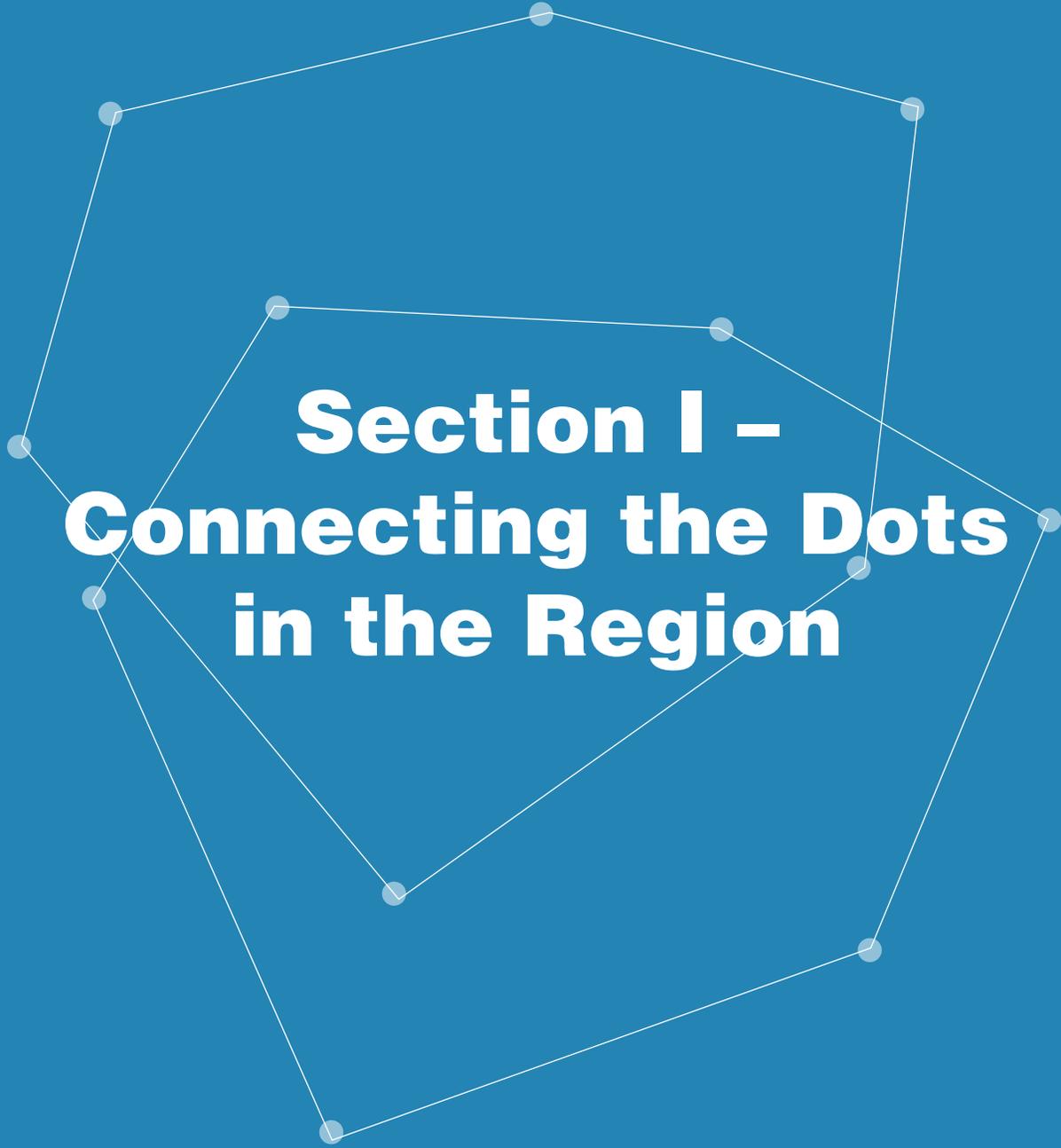
12-county metropolitan planning area (MPA):

Collin, Dallas, Denton, Ellis,
Hood, Hunt, Johnson, Kaufman,
Parker, Rockwall, Tarrant, Wise

16-county NCTCOG region:

Collin, Dallas, Denton, Ellis,
Erath, Hood, Hunt, Johnson,
Kaufman, Navarro, Palo Pinto,
Parker, Rockwall, Somervell,
Tarrant, Wise





**Section I -
Connecting the Dots
in the Region**

Growth and Mobility

Population and job growth have become the norm in Dallas-Fort Worth over the years. In 2018, according to the US Census Bureau, the metropolitan area added 131,000 people, more people than any other region across the country. The region now has more than 7.5 million people and is expected to eclipse 11 million by 2045. In 2018, employment grew by 3% to 5 million jobs. With these changes and the investments being made in the transportation system, mobility across North Texas remains reliable.

One way to measure mobility is the length of commutes. According to the American Community Survey, 55% of the commuters in the area have a travel time from home to work of 30 minutes or less. The average commute time considering all residents of the 12 counties is 30 minutes. The distribution of commuters by travel time can be seen below.

Approximately 81% drove alone to work and 10% carpoled. The

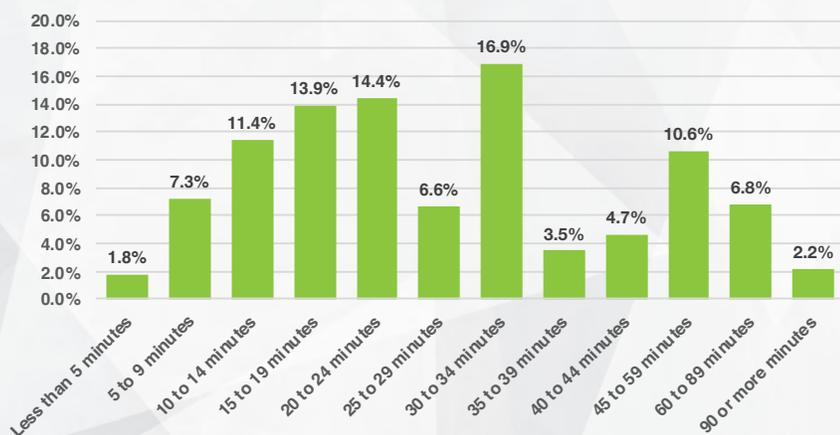
development of the Dallas Fort Worth Tolled Managed Lane System is one way for planners and policymakers to help mobility in an environment where needs outpace available funding. Since 2014, more than 250 miles of TEXpress Lanes have opened on select corridors across the region. These lanes have been built adjacent to the tax-supported general-purpose lanes and allow drivers to pay for a more reliable commute. The tax-supported lanes, which can be used for no additional charge, have also been improved in these corridors.

The region has experienced robust population growth for decades. Since 2010, the 12-county area has added 1 million people, with Collin, Denton and Rockwall counties experiencing the highest percentage growth, adding approximately 30% more residents. The population of the MPA grew 15.5% in the same period. Collin County is now home to more than 1 million people; Tarrant County has grown to over

2 million residents. An examination of roadway congestion in Dallas-Fort Worth and other regions across the country shows congestion remains relatively constant in DFW despite the growth. Other regions' experiences have been different in recent years.

According to TomTom, North Texas is the 35th-most-congested region in the US, a significant accomplishment for the fourth-largest region. Its overall rate was up slightly in 2019, but the region remains lower than many cities, including Austin, 15th; and Atlanta, 22nd. Dallas-Fort Worth motorists spend an average of 19% more time traveling because of congestion. By comparison, congestion costs Houston drivers 24% more time. The graphic on the next page shows that while the region's population grew substantially last decade, congestion remained relatively constant, even decreasing at times. This can be attributed in part to the continued investment in transportation

Distribution of Commute Time



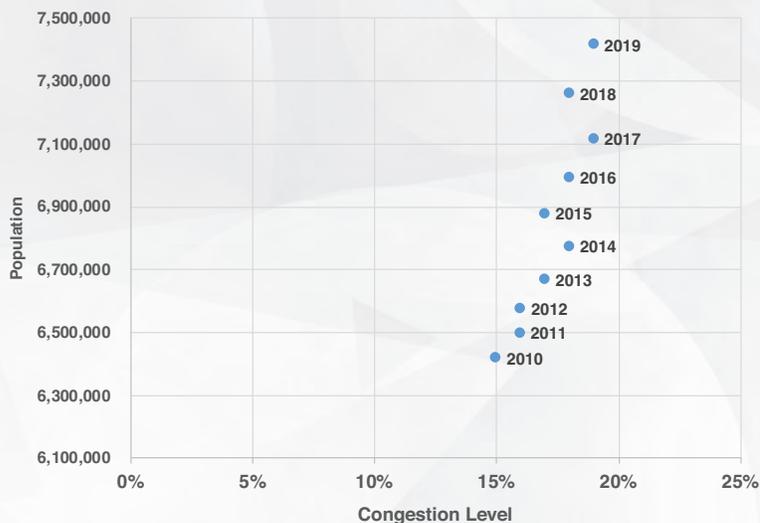
Source: Census Bureau

Most commuters can get to work within 30 minutes using the region's roads. According to the American Community Survey, 55% of commuters could drive from home to the office in 30 minutes or less. This chart shows the distribution of commute times across the region.

projects. Since 2000, more than \$20 billion has been spent on roadway projects.

By another measure, the Inrix Global Scorecard, DFW is 20th nationwide in congestion, with drivers losing 93 hours to traffic in 2019. The number of registered vehicles continues to grow, with more vehicles on the roads, average daily traffic also continues to climb, as measured at permanent stations across the region. The North Central Texas Council of Governments has set targets to measure peak-hour excessive delay and will continue monitoring this measure. While automobiles continue to be the most popular way to travel in Dallas-Fort Worth, investments are being made in transit and active transportation that will help connect people to one another.

Dallas-Fort Worth Congestion Levels and Population



Source: Inrix

Dallas-Fort Worth has welcomed more than 1 million new residents since 2010. As the population has risen, traffic congestion has remained relatively constant, thanks in part to the investment in significant transportation projects over the past 20 years. Drivers spent 19% more time on the road last year due to traffic congestion, making DFW the 35th-most congested region in the nation.



131,000

The population increase experienced in Dallas-Fort Worth in 2018, making North Texas the fastest-growing region in the US

Roadways

An efficient roadway system is one of the most important ways to connect the dots for the region's residents and businesses. Whether adding new capacity or managing the existing infrastructure, NCTCOG and its transportation partners are working to maintain an effective roadway network providing adequate transportation choices to North Texans. The roads can be used exclusively for travel and goods movement from one part of the busy region to the other. Or they can facilitate first- and last-mile connections for residents opting for the region's growing rail and bicycle-pedestrian networks. All elements of the transportation network work together to ensure a prosperous, vibrant region.

The backbone of a successful transportation system is reliability. Dallas-Fort Worth continued to invest in additional roadway

capacity in 2019, adding approximately 50 centerline miles of capacity improvements. Many other projects scheduled or underway will be finished in the coming years. This includes LBJ East, the planned reconstruction of 11 miles of Interstate Highway 635 improving access to parts of Dallas, Garland and Mesquite. This project will enhance capacity along an important stretch of the Dallas area and lead to the development of more-efficient connections to the rest of the region.

On the west side, the final segment of 35W Express, is also moving forward. The \$910 million project to rebuild 6.7 miles of IH 35W from just north of US 81/287 to Eagle Parkway reached financial close over the summer.

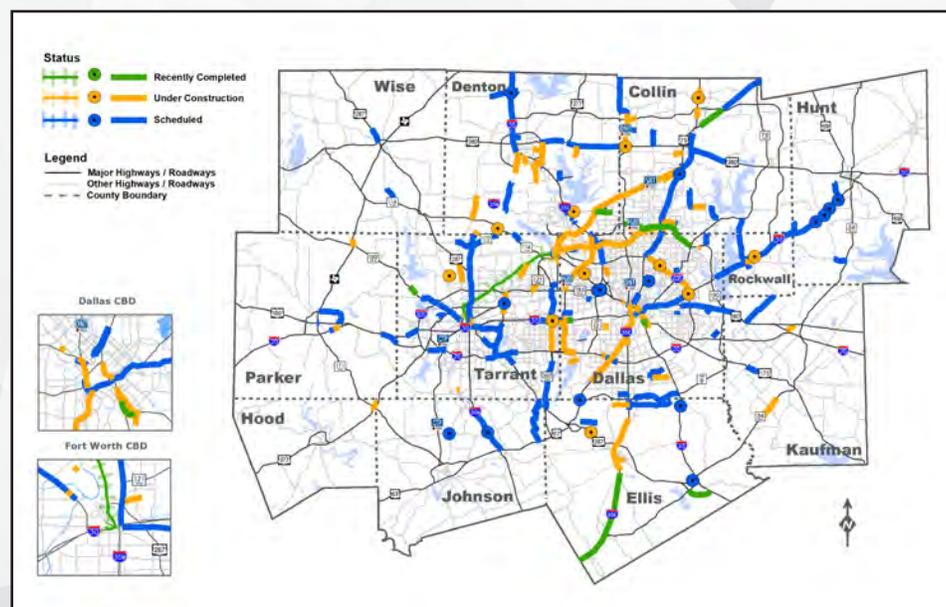
NCTCOG and its partners project spending \$136 billion through 2045

to meet the region's transportation needs. While capacity improvements are essential, the existing infrastructure must also be maintained to provide people the reliability they expect. Approximately \$37 billion has been reserved for infrastructure maintenance over the next 25 years.

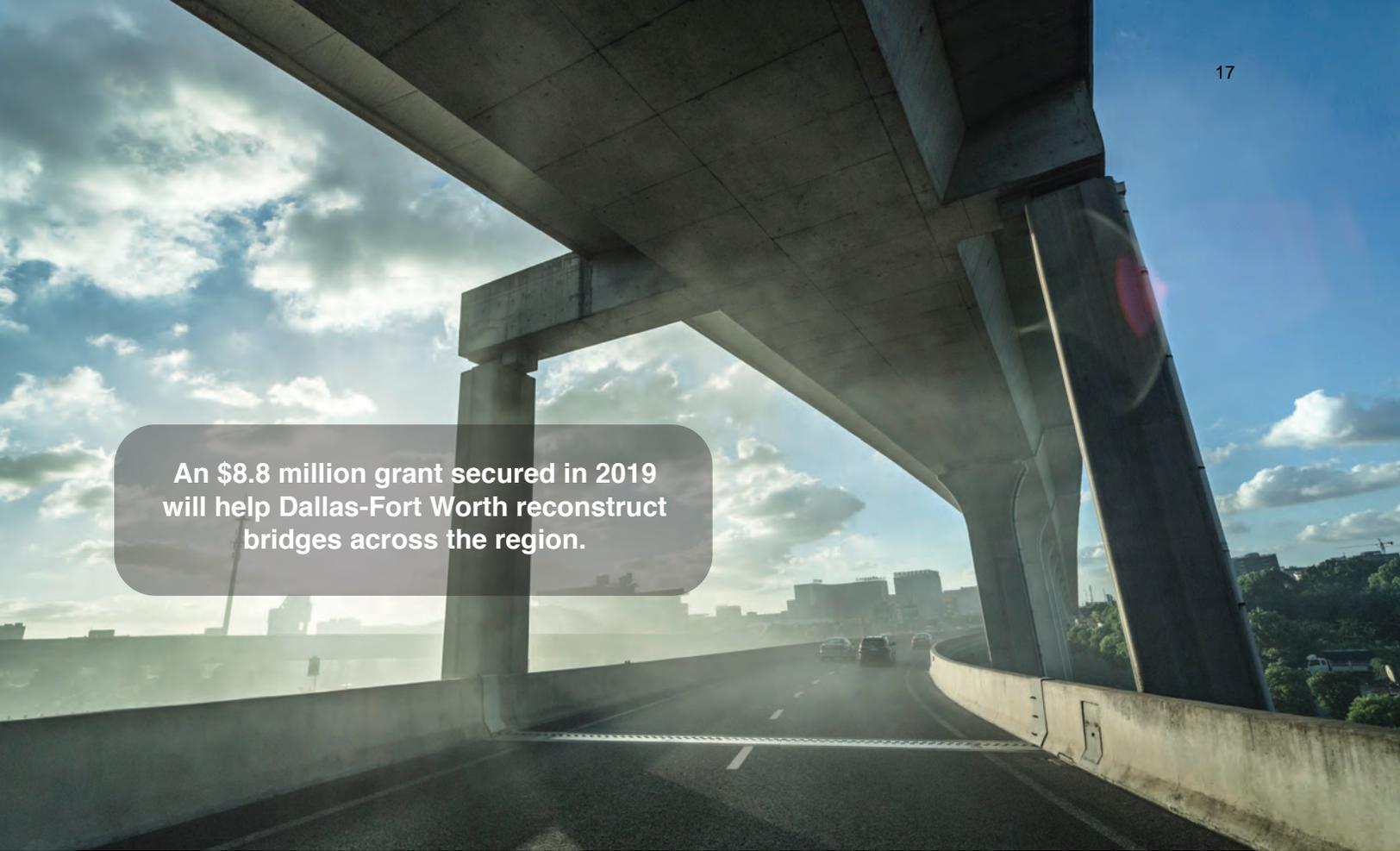
Federal Performance Measures

One way to determine the state of the transportation system is the adoption and reporting of federal performance measures. NCTCOG must establish targets or support those set by the Texas Department of Transportation for the condition of pavement and bridges along its 12,000 miles of the national highway system, which includes 3,600 bridges. NCTCOG is supporting the targets set by TxDOT.

2019 DFW Major Capital Improvements



North Texas continued to make significant mobility enhancements in 2019, adding approximately 50 centerline miles of capacity improvements.



An \$8.8 million grant secured in 2019 will help Dallas-Fort Worth reconstruct bridges across the region.

NCTCOG has also set targets for the reliability of interstate and non-interstate facilities and will continue monitoring them. NCTCOG will track and, in the future, report the condition of the region's pavement and bridges. The Regional Transportation Council also approved a policy statement to work with local governments to focus on the improvement of NHS local off-system arterials in "poor" condition. For more on the federal measures being collected, visit www.nctcog.org/pm/fed.

INFRA Grant

To address poor bridge conditions in the DFW region, NCTCOG partnered with TxDOT to secure an \$8.8 million grant award from the Infrastructure for Rebuilding America, or INFRA, for the North

Texas Strategic National Highway System Bridge Program. The program involves seven bridges in five counties in the Dallas-Fort Worth area. This includes bridge replacements and reconstruction, and the removal of one bridge. The seven bridge projects are:

- **Loop 12 northbound over IH 35E southbound – Dallas County**
- **IH 35W northbound over IH 35W southbound Alvarado exit – Johnson County**
- **US 80 eastbound over the East Fork Trinity River – Kaufman County**
- **FM 460 over US 80 – Kaufman County**
- **US 180 over Dry Creek – Parker County**

- **US 287 southbound over Lancaster Avenue – Tarrant County**
- **US 287 northbound over Carey Street – Tarrant County**

In addition to addressing the condition of these seven bridges, the projects will result in the implementation of dynamic signal progression and other Intelligent Transportation Systems strategies to reduce congestion. The reduction of congestion will also have a positive impact on air quality by reducing emissions from idling vehicles. With the assistance of continued investments such as the INFRA grants, planners and policy-makers will have the resources necessary to improve the condition of the roadway system to meet the federal government's expectations.

Technology

Improvements to the current transportation system will help keep people connected. How people and goods move around on that system could see significant changes over the next few years. North Texas has pioneered the testing of automated vehicle technology, with Arlington and Frisco hosting separate deployments through 2019. And there is more happening with many potential transportation solutions that could be folded into the system of the future.

AV Freight

The region welcomed automated freight activity in earnest last year, with five AV freight companies beginning work in North Texas. Among them was Kodiak



Starship Photo

The University of Texas at Dallas has partnered with Starship Robotics to introduce robots to deliver food to students. This concept is also being tested elsewhere in the region to make “last mile” connections.

Robotics, which announced in summer 2019 that it had started making commercial deliveries along the IH 45 corridor between Dallas and Houston. Kodiak, which began by using a safety driver, also opened a new facility in North Texas to support its expanding operations.

While AV trucks navigate the roads of the region, an innovative way to complete last-mile deliveries is also underway.

Sidewalk delivery robots are appearing in Frisco, Plano and now in Richardson with UT-Dallas’ deployment of Starship Robotics delivery bots. UTD has partnered with Starship to introduce 30 robots to deliver food, drinks and snacks from participating vendors across campus. Students use an app on their phones to unlock the robots. Earlier in the year, FedEx introduced a similar device allowing retailers to deliver goods to nearby customers the same day they are ordered. The technology was tested in markets across the US, including Dallas-Fort Worth.

Innovative Partnerships

AllianceTexas teamed up with public- and private-sector partners to launch the Mobility Innovation Zone, which will help move many transportation innovations and technologies from testing to market viability. Two examples of technologies that could benefit from this partnership are unmanned aircraft systems and automated trucking.

Transportation Data Sharing

During 2019 more cities began connecting their transportation management centers to the 511DFW and Waze for Cities platforms. These platforms allow transportation management centers to access crowd-sourced data and other transportation information to improve their roadway operations. Additionally, NCTCOG and a group of regional partners are working to get this same data into 9-1-1 call centers across the region to help improve the situational awareness for first responders.

Environmental Justice

Technology can be used to ensure investments are being made equitably. The Environmental Justice Index maps low-income and minority populations in the Dallas-Fort Worth area.

Transportation planners can use the EJI to implement federal environmental justice principles in planning, analysis and outreach, such as:

- Estimating the equity of a project’s impacts by overlaying the project on the EJI
- Analyzing the equity of project selection and prioritization
- Informing outreach strategies to engage all members of the community



Transportation Data Sharing Program

These cities are part of NCTCOG's transportation data sharing program:

- City of Allen
- City of Arlington
- City of Burleson
- City of Cedar Hill
- City of Denton
- City of Frisco
- City of Lewisville
- City of McKinney
- City of Plano

Several cities across the region are sharing data with NCTCOG as part of the transportation data sharing program. This leads to improved mobility throughout the area.

The Transit Accessibility Improvement Tool (TAIT) provides data on demographic groups who may require public transit to meet their daily needs. These groups include people who are below poverty, age 65 and older or who have disabilities. Analysis and outreach conducted based on the TAIT may identify a need to expand public transit options. Additional data provided in the TAIT helps transit providers comply with federal civil rights requirements.

The data for the EJ and the TAIT is provided through the US Census Bureau's American Community Survey. Users can view both tools online and can download the data. Environmental Justice Index: www.nctcog.org/trans/involve/ej.

Transit Accessibility Improvement Tool:
www.nctcog.org/transitresources.

High-Speed Transportation

Work to select a high-speed technology to transport passengers across the region continues. In December, NCTCOG received six proposals from consultant teams interested in studying the Fort Worth-Arlington-Dallas corridor. Hyperloop, high-speed rail and magnetic levitation are among the possible technologies the region could add to its multimodal transportation system. The NCTCOG Executive Board selected a consultant in spring 2020 that will partner with NCTCOG to study high-speed technologies and

potential routes for the region. The consultant will also analyze the environmental impacts of potential modes through a federal process aimed at ensuring projects can be completed without disproportionately affecting specific groups.

A separate effort to examine high-speed options from Fort Worth to Laredo is underway. Planners in Dallas-Fort Worth, Waco, Killeen-Temple, Austin, San Antonio and Laredo are looking at different technologies, including high-speed rail and hyperloop. Additionally, NCTCOG is pursuing a facility that would serve as a certification center for Virgin Hyperloop One's technology to be used in US markets.

Safety

When connecting the dots across the region, it is essential to keep a sharp eye on safety. In a metropolitan area as large as Dallas-Fort Worth, traffic crashes will occur. What is important is the response. NCTCOG works to improve the safety of the transportation system through the development and implementation of programs and projects that reduce the number of crashes, serious injuries and fatalities on area roadways.

12-County Crash Totals

In 2019, the 12-county Dallas-Fort Worth area experienced 127,823 crashes, including 658 fatal crashes.

These numbers reflect the importance of training for agencies and responders who manage and clear traffic incidents, as their lives and the lives of all motorists are in danger the longer they are exposed on the roadways. Policymakers are also taking a close look at safety, with the Regional Transportation Council approving a policy saying, “Even one death on the transportation system is unacceptable.” NCTCOG is working to improve roadway safety through Traffic Incident Management training to local police, fire, wreckers, EMTs and courtesy patrol agencies. These agencies coordinate to respond to crashes to enhance safety for public and emergency personnel;

the result is crashes can be cleared more quickly which also helps reduce upstream traffic collisions. More than 3,200 emergency responders from 127 cities and counties throughout the region have completed the TIM training offered by NCTCOG.

**More than
152,000**

**the number of motorists
helped by mobility
assistance patrols in 2019.**



2019 Regional Crashes

County	Total Crashes	Fatal Crashes
Collin	13,936	47
Dallas	55,258	257
Denton	12,191	47
Ellis	2,794	22
Hood	798	10
Hunt	1,363	23
Johnson	2,395	34
Kaufman	2,018	27
Parker	2,199	26
Rockwall	1,583	2
Tarrant	32,358	149
Wise	930	14
Total	127,823	658

Source: TxDOT

Safety Targets

NCTCOG continues to work with TxDOT to reduce fatalities and serious injuries across the region, making the roads safer for drivers and first responders handling incidents. The goal is to improve mobility and safety by attaining a 2% drop in serious injuries and fatalities by 2022.

Planners will be aided in their efforts to reduce crashes by regional safety-related projects such as Mobility Assistance Patrols, the Wrong Way Driving Mitigation Program and the Intersection Safety Implementation Plan, in addition to the ongoing Traffic Incident Management efforts.

Mobility Assistance

Mobility assistance patrols also provide help to stalled or stranded motorists along interstate corridors in Dallas and Tarrant counties and portions of Collin and Denton counties, along with roads managed by the North Texas Tollway Authority and private operators on LBJ and North Tarrant Express. In 2019, mobility

assistance patrols helped over 152,000 motorists get their vehicles moving again or provided protection to motorists and first responders. To help ensure the safety of first responders, remember the Texas law to move over or slow down if you see an emergency vehicle on the side of the road.

Wrong-Way Drivers

Wrong-way driving crashes do not occur with great frequency on North Texas highways; however, they tend to be among the most harmful crashes. Over the past five years, there have been an average of 700 wrong-way crashes in the 12-county region, with 100 of these crashes resulting in at least one fatality or serious injury. Due to the severity of these crashes, NCTCOG continues to work with the Dallas and Fort Worth TxDOT districts to execute the Wrong Way Driving Mitigation Program. This leads to the implementation of intersection, highway and technology improvements that assist in preventing wrong-way driving crashes and incidents. Among the ways wrong-way driving

is being addressed on the region's roads is through strategies to replace conflicting lane and arrow markings, make signal enhancements and other intersection-related improvements in Dallas County and cities across the region. Almost 400 intersections on the eastern side of the region have either been finished or are near completion.

Additionally, seven miles of freeway corridors in Tarrant County were addressed as part of the program. Some of the improvements made to help reduce wrong-way driving were radar, high-definition cameras and additional signage.

NTTA has begun using thermal imaging to detect wrong-way driving on the main lanes of its tolled facilities. Additionally, sensors in the pavement on entrance ramps are used to determine if a vehicle is traveling in the wrong direction. When this happens, automatic alerts are sent to NTTA staff who notify law enforcement. NTTA also continues to add prevention measures like flashing signs to correct a wrong-way driver's travel before they enter the highway.

2020 Safety Performance Targets

	TxDOT	NCTCOG
Fatalities	4,068	589
Fatality Rate	1.48	0.803
Serious Injuries	18,602	3,515
Serious Injury Rate	6.56	4.768
Non-motorized Fatalities and Serious Injuries	2,477	595

NCTCOG has embraced a series of federal targets in an effort to reduce fatalities and serious injuries.

Public Involvement

Completing projects that allow people to move more efficiently is important in a region growing as quickly as Dallas-Fort Worth. A continual dialogue with people who live, work, play and go to school in the region about the importance of transportation planning and air quality will help them connect the dots. NCTCOG uses a comprehensive Public Participation Plan to outline strategies for how to communicate with residents about transportation and air quality.

Whether visiting with residents at community events, engaging with them on social media, presenting information at public meetings or offering virtual public input opportunities, NCTCOG planners are committed to helping people understand how the transportation system is working for them.

Interacting with the Public

In 2019, Transportation Department staff appeared at 16

community events attended by approximately 200,000 people. These events, both large and small, allowed staff to interact with the public to promote a better understanding of how different elements of the transportation system work together to improve

200,000

People who attended 16 events where staff interacted with the community.

mobility. Additionally, there were seven public meetings and four online input opportunities scheduled throughout the year to provide residents the chance to hear about plans and share their thoughts about transportation and air quality. The meetings are also streamed live online, allowing people to watch presentations where they are, without having to drive across town.

Monthly meetings of the Regional Transportation Council, NCTCOG's transportation policymaking body, are also streamed live on the internet. Last year, there were approximately 500 views per month of Transportation Department meetings online. The department also archives these meetings, allowing people to watch specific portions of sessions, or entire meetings, when it is convenient for them. The busiest month was October, when the RTC discussed high-speed transportation and the potential of a hyperloop certification center in the Dallas-Fort Worth area.

Social Media Growth

Personal interactions with people are valuable in the broadening of their understanding of what NCTCOG does. The department also relies on publications and a social media presence to help spread the word to a broader audience.

Most Engaging Social Media Topics

Topic	Posts	Engagement	Reach	Share of Reach
Transit	85	4.2%	69,168	10.9%
Innovative Vehicles/Technology	27	3.8%	33,600	5.3%
Bike/Pedestrian	90	3.0%	87,671	13.8%
About Us	8	3.0%	3,567	0.6%
Aviation	28	2.0%	39,818	6.3%

These are the five most engaging topics covered on the department's Facebook and Twitter pages in 2019.



NCTCOG uses a variety of techniques to encourage the public to remain actively engaged in the transportation planning process. From public meetings and community events to the live streaming of meetings and an active social media presence, the goal is to meet people where they are and make it easier for them to have an impact on the decisions that are made to improve mobility.

The department's social media reach continues to grow, and publications are distributed in print and online. The @NCTCOGtrans Facebook and Twitter accounts saw followers increase by approximately 10% in 2019. The most popular topics were public meetings and outreach (22%) and air quality and sustainability (18%). Posts related to transit (4.2%) and innovative vehicles and technology (3.8%) were the most engaging messages.

Media Relations

NCTCOG can reach thousands of people through social media. Additionally, it can communicate

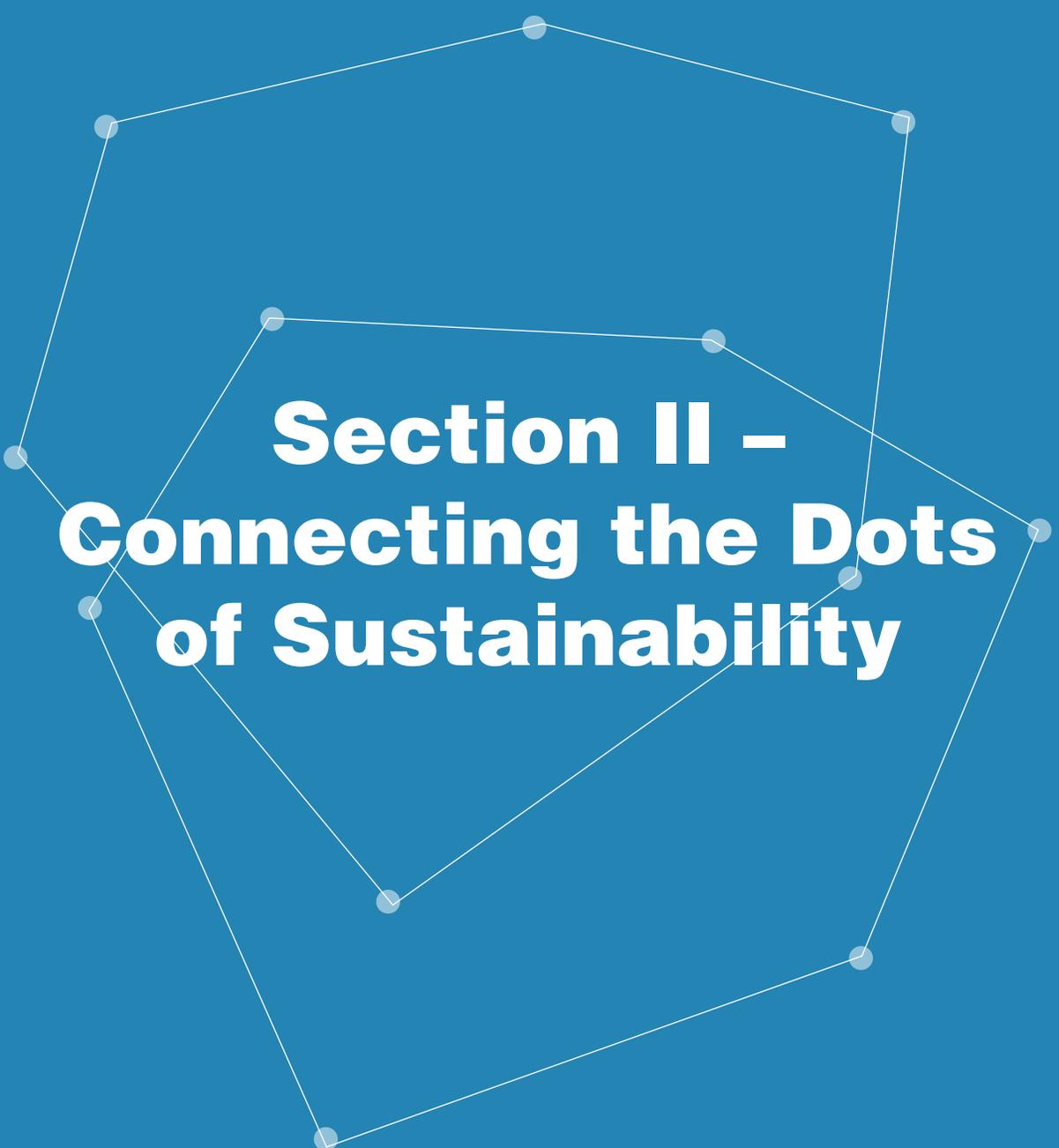
with more people through media relations. In 2019, the department distributed 26 press releases to the media to highlight many of its projects and programs and how they affected the lives of North Texans.

Additionally, approximately 100 interview requests were received from a variety of media outlets covering transportation and air quality in Dallas-Fort Worth and other regions. The department was mentioned in the media approximately 200 times, with stories about hyperloop and bicycle-pedestrian facilities drawing significant coverage.

Evolving Approach

The Transportation Department will continue to rely on a mix of these tactics while keeping an eye out for new ways to reach the region as technology advances. Examples of how staff has used technology to reach different audiences are video, virtual engagement and podcasts. The department began a Trail of the Month video series over the summer to highlight many of the region's significant bicycle-pedestrian facilities. And participation in a variety of podcasts has allowed NCTCOG to reach more specialized audiences.





**Section II –
Connecting the Dots
of Sustainability**

Air Quality

North Texas meets the Environmental Protection Agency’s standard for all pollutants except ozone. The region is trying to meet two standards for ozone concentration, one established in 2008 (75 parts per billion), for which 10 counties are designated “nonattainment,” and one from 2015 (70 ppb), affecting nine counties.

The region remains engaged in efforts to reduce emissions levels, protect health and comply with federal air quality requirements as it seeks to meet the 2021 deadline for these standards. The focus on air quality in transportation planning is producing results. Ozone concentration levels have declined from 102 ppb in 1998 to 77 ppb in 2019.

An Important Focus

Mobile sources, such as cars and trucks, aircraft, locomotives and construction equipment, account for a significant percentage of the region’s nitrogen oxide emissions. Therefore, efforts in the region are focused on reducing emissions from these mobile sources. Over half of the on-road NOx emissions are a product of light- and medium-duty vehicles. In 2019, light-duty vehicles alone (cars and small trucks) accounted for over 40% of on-road NOx emissions.

NCTCOG monitors NOx and Volatile Organic Compounds closely as part of its commitment to track federal performance measures. With the help of new projects implemented throughout the region, such as bicycle-pedestrian trails, intersection improvements, scrapping older vehicles with high-emitting

engines and multi-city efforts to improve traffic signal timing, there has been a decline in NOx and VOCs. NCTCOG is working with partners to identify more projects that could allow this progress to continue.

Electric vehicles and other alternatives to gasoline can help make the region’s air healthier to breathe.

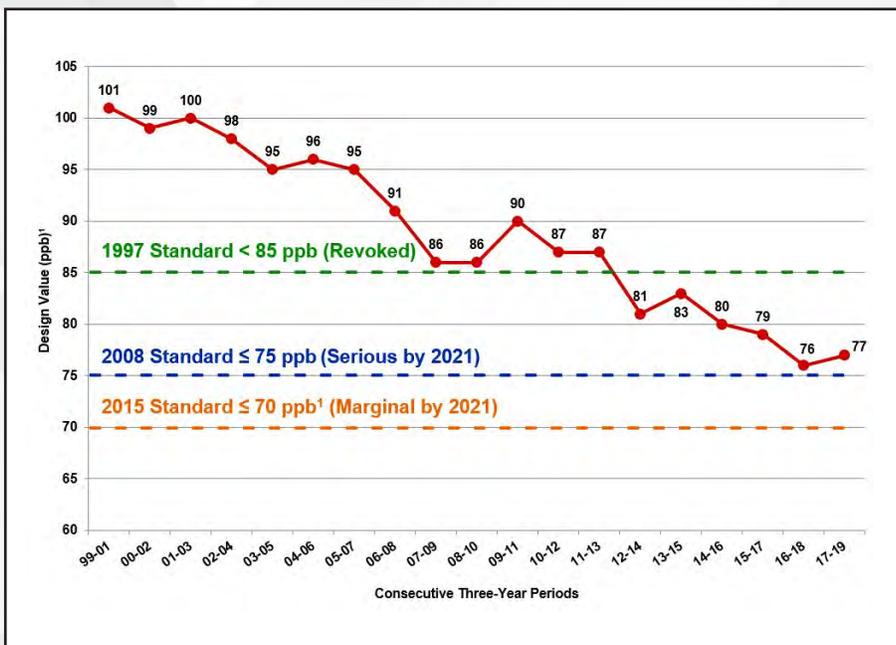
Electric vehicles represent a growing sector in transportation and offer benefits to both owners and the region. They are quiet, safe and fun to drive. They also are important in a region still working to meet the federal government’s ozone standards.

EVs have grown substantially in recent years, from fewer than 300 in 2011 to 13,000 in January 2020.

Entities across North Texas have worked to build charging stations to allow EVs to get around reliably. There are over 400 such stations in North Texas, according to the latest estimates. The US Department of Energy’s Alternative Fueling Station Locator

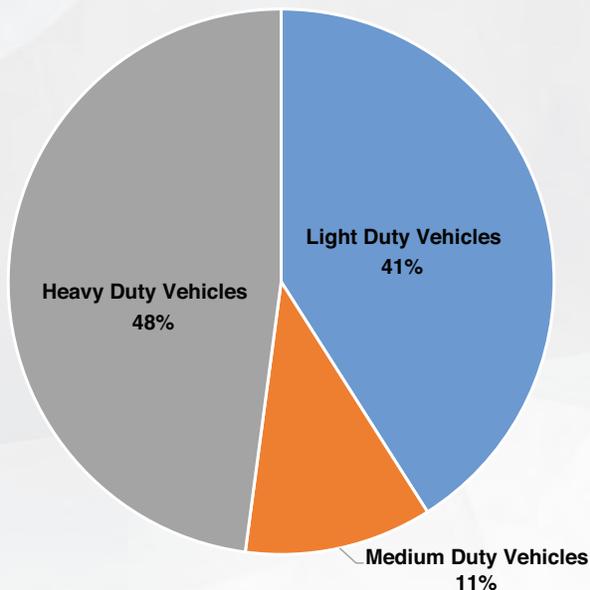
Ideas to recharge electric vehicles through induction loops are being reviewed.

2019 Ozone Season 8-hour Ozone NAAQS Historical Trends



According to the EPA, ozone attainment is reached when, at each monitor, the Design Value (the three-year average of the annual fourth-highest daily maximum eight-hour average ozone concentration) is less than or equal to 75 ppb for the standard established in 2008 and 70 ppb for the standard established in 2015.

2020 On-road NO_x Emissions by Vehicle Class



NO_x Contributions from mobile sources in North Texas

allows the public to search an interactive map for those locations. For access to the AFDC Station Locator and other EV information, visit www.dfwcleancities.org/evnt.

Alternative Fuel Corridors

To ensure people who adopt these emerging technologies can travel reliably, the Federal Highway Administration has designated a national network of Alternative Fuel Corridors. As of the third round of designations, 100 interstate and 76 US highway corridors have been nominated. Overall, the corridors make up 135,000 miles of the National Highway System in 46 states. Texas contains more than 13,000 miles of the alternative fuel network, roughly 10% of the national total.

Dallas-Fort Worth has several highways designated as either

“corridor-ready” or “corridor-pending” for all alternative fuels. The diverse fuels help emergency fleets prepare and respond to the region in recovery from natural disasters or fuel shortages. Corridors also help alleviate range anxiety.

By providing people with more options, these corridors could lead to greater adoption of alternative fuel vehicles.

Ultimately, the use of alternative fuels lowers VOCs and NO_x, which results in lower ozone readings at air quality monitoring stations.

Zero-Emission Vehicle Deployment Plan

NCTCOG has received funding for a plan to develop a network of electric vehicle charging and hydrogen refueling infrastructure along Interstate Highway 45. This is a critical step in the transition of this

highway into a Zero-Emission Vehicle Corridor and will enable emissions-free travel, with a focus on the freight sector.

NCTCOG is working with the Houston-Galveston Area Council and a stakeholder group that includes fleet users, hydrogen and electric vehicle industry representatives, research groups and utilities. This initiative is part of a longer-term, broad view of IH 45 as a strategic corridor for sustainable initiatives, which could include items such as autonomous vehicle technologies, truck platooning and other emerging transportation elements.

Air Quality Initiatives

NCTCOG administers air quality programs and initiatives to support emissions reductions across the region. Programs predominantly focus on light- and heavy-duty vehicles and equipment since they represent most ozone forming emissions.

DFW Clean Cities Coalition

The Dallas-Fort Worth Clean Cities Coalition, designated in 1995, works to advance energy security, protect environmental and public health, and stimulate economic development by promoting strategies to reduce transportation energy impacts and improve air quality. Its primary focus is in the transportation sector, collaborating with public and private vehicle fleets to increase the use of alternative fuel vehicles, reduce vehicle idling and implement other fleet efficiency practices. Efforts by DFW Clean Cities stakeholders displace over 23 million gallons of gasoline each year. To get involved and stay informed, visit www.dfwcleancities.org.

Emissions Reduction Strategies

Engine Off North Texas (EONT) encourages the public, truck drivers and local governments to reduce their idling. EONT connects the public with resources from local governments to better serve the people. EONT also manages a heavy-duty vehicle idling complaint hotline that allows North Texans to report to NCTCOG. Spread awareness of EONT by learning more at www.engineoffnorthtexas.org.

With grants from funding programs, such as the Clean Fleets North Texas program, fleets are assisted in replacing older, heavy-duty diesel vehicles with newer, less-polluting vehicles. By replacing these vehicles, fewer emissions are emitted while they fulfill their vital roles in service to communities. Since applications began to be accepted for Clean Fleets North Texas in March 2018, vehicles and equipment awarded include: school buses, fire trucks, refuse haulers, dump trucks and construction equipment.

Car Care Clinics

Car Care Clinics bring vehicle maintenance awareness to drivers in North Texas. Owners take their vehicle to partnering repair facilities where they have an opportunity to talk to a certified technician at no charge. The facility also performs a free multipoint inspection. More information can be found at www.ntxcarcare.org.

Regional Smoking Vehicle Program

Since 2007, the Regional Smoking Vehicle Program has allowed North Texans to help improve air quality by anonymously reporting vehicles emitting visible tailpipe smoke. Reporting can be completed online or by phone. To date, more than 31,000 vehicle owners have been notified of their smoking vehicles. More information can be found at www.smokingvehicle.net.

For information on these and other air quality programs, read the *2020 Air Quality Handbook*, at www.nctcog.org/trans/quality/air.



Dallas-Fort Worth
CLEAN CITIES



ENGINE OFF
NORTH TX



Sustainable Development

Active transportation in the Dallas-Fort Worth area is supported by an extensive system of shared-use paths called the Regional Veloweb. This network of trails boasts nearly 1,000 miles of existing or funded facilities, with an additional 3,800 miles of planned trails identified in Mobility 2045 for future development. These trails help expand the economies of local communities and offer North Texans sustainable transportation options for connecting to schools, jobs, retail centers and other significant destinations.

NCTCOG is working with stakeholders to implement projects that will unite several existing regional trail corridors that provide significant connectivity between cities and counties throughout North Texas. These corridors provide travel options to numerous downtowns and employment centers including Dallas, Denton, Fort Worth, McKinney, and many historic downtowns and destinations in between. These regional trail corridors also provide direct connections to many light-rail and commuter-rail stations operated by DART, DCTA and Trinity Metro, thus giving transit

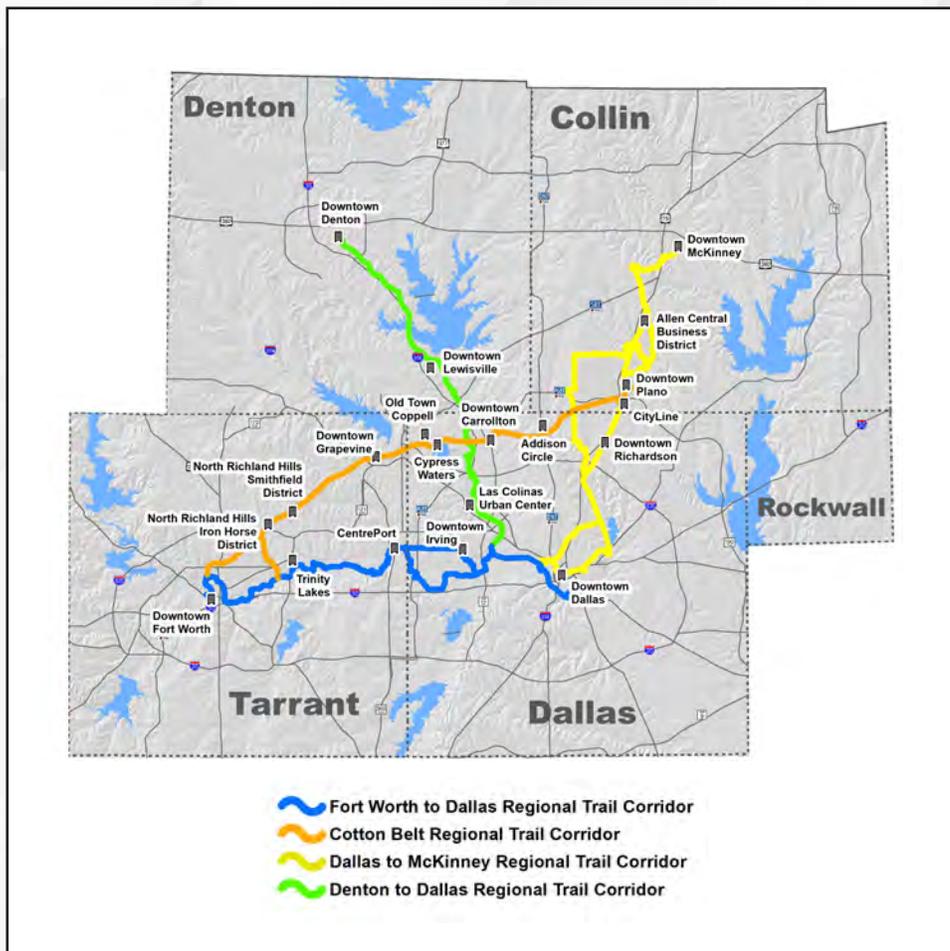
riders walking and bicycle access to nearby destinations.

Several sections of these Regional Veloweb trails are in various stages of alignment studies, preliminary engineering, construction design and/or construction. These efforts are being led by and implemented through partnerships involving many local governments including cities, counties, transportation agencies, NCTCOG and TxDOT.

More information about these highlighted regional trail corridors is available at www.nctcog.org/Veloweb.

Active Transportation Connections

DCTA completed the 19-mile A-Train Rail Trail in 2019. Work continues on several other bicycle-pedestrian trails that will link multiple cities across the region, offering North Texans sustainable transportation options for connecting to schools, jobs, retail centers and other significant destinations.



Walk to School Day

It is also important to provide connections to the region's schools. NCTCOG promoted national Walk to School Day in 2019 by giving away banners, flyers, stickers and prizes to participating campuses. Held annually on the first Wednesday in October, Walk to School Day brings together students, their parents, schools and public officials to celebrate walking, promote healthy behaviors and galvanize support for safety improvements. In 2019, 98 schools in the Dallas-Fort Worth region participated. Frisco ISD led with involvement from 23 campuses. Almost 25 area school districts took part last year. NCTCOG plans to expand promotion in the future and encourage more schools to participate. For more on regional coordination please visit www.nctcog.org/schools.



\$80 million

Estimated cost developers spent to build 4,500 spaces that were unused during a recent parking study around 16 DART transit stations.

Parking Management

Parking requirements and management practices have a significant impact on North Texas' development and transportation system. NCTCOG supports local plans and policies that create efficient and customer service-oriented parking while consuming less land and meeting flexible demand. To advance better policy, a study of parking use was conducted at 16 private developments around DART rail stations. Recommendations and best practices for more sustainable parking have been published at www.parkingtoolboxntx.org.

NCTCOG has also supported consultant-led parking studies in downtown areas not served by transit. For example, Decatur and Wylie both identified potential parking shortages and supply

needs around their historic walkable downtowns. Recommendations for these areas include increasing wayfinding to inform drivers of nearby on-street parking and partnering with large private landowners, such as churches, to share their spaces during off-peak times.

In downtown Arlington, a shared parking model was applied to demonstrate the financial benefit of implementing increased mobility options. The study also provided recommendations for policies to reduce reserved parking in favor of more shared and public parking. These and other examples of similar local parking studies can be found at www.nctcog.org/parking.

Gentrification Study

NCTCOG continues to connect the dots of improving transportation

with equitable neighborhood revitalization. Rapid regional growth and renewed interest in urban neighborhoods have led many to question what can be done to mitigate the negative effects of gentrification, the process of higher-income residents displacing lower-income residents of a neighborhood. The definition, causes (including the role of infrastructure) and indicators of gentrification are explored in a report by NCTCOG. The report includes 20 public policy tools that local and State governments could implement to assist with revitalizing disadvantaged communities. The full report is available at www.nctcog.org/housing.

Transit

Transit options continued to expand with the January 2019 opening of Trinity Metro’s TEXRail line from Fort Worth to DFW Airport. TEXRail extended passenger rail to more western suburbs and will provide new opportunities for transit-oriented neighborhoods. Dallas Area Rapid Transit is also developing the Cotton Belt Silver Line and a second downtown line.

Trinity Metro, DART and Denton County Transportation Authority are the major providers of public transportation in the region. The three provided approximately 74.4 million passenger trips in Fiscal Year 2019, an increase of more than 3 million trips over the previous year.

In a metropolitan area as large as Dallas-Fort Worth, all transit partners play a role in connecting people to their destinations. Smaller transit agencies serving the region

combined for more than 450,000 trips in Fiscal Year 2019.

My Ride North Texas 2.0

Mobility management emphasizes the coordination of transportation services and non-traditional partnerships to meet the transportation needs of customers. Among the beneficiaries are older adults, people with disabilities, and individuals with lower incomes. NCTCOG uses mobility management as a framework to identify transportation gaps in service, coordinate regional resources and promote effective partnerships to assess and address the needs of the region.

In 2019, NCTCOG was awarded a \$511,000 grant from the Federal Transit Administration to implement a regional mobility management program that will improve the coordination of transportation and medical services

for populations that currently lack transportation to wellness resources. This grant will be used to fund My Ride North Texas 2.0, which will bridge the gap between the transportation and healthcare providers, thereby improving opportunities for those with limited transportation options.

NCTCOG is working with local partners to establish a regionwide call center to provide timely, accurate transportation information that spans public transit options. The project will leverage partnerships in an effort to build bridges between transit providers, healthcare providers, and community service agencies to position providers and local stakeholders to take the next step to provide needed transportation.

FY2019 Passenger Trips for Smaller Providers

Transportation Provider	Passenger Trips in FY 2019
City/County Transportation	37,263
Community Transportation Services	61,292
Public Transit Services	69,958
Span, Inc.	56,335
STAR Transit	227,542
Total	452,390

Although the major transit providers are the region’s most visible, smaller providers also play a big role in connecting people.

Vanpool Performance

The Regional Vanpool Program helps reduce traffic congestion, improve air quality and lessen commute stress. In 2019 (calendar year), the program, which is operated by DART, Trinity Metro and DCTA, combined to save nearly 34.5 million miles. There are almost 290 active vanpools. NCTCOG is monitoring the percentage of high-occupancy vehicles and has set targets for future performance.

New Services

Several new transportation services and initiatives debuted in 2019, including:

1. A coalition of public transit providers, employers, developers and local governments formed the Southern Dallas County Inland Port Transportation Management Association. Their goal is to connect workers in the inland port area to transportation solutions such as DART’s Golink, STAR Transit’s routes and carsharing programs.

2. Through coordination with community members and local partners, Trinity Metro introduced The Dash, its first electric bus route in Fort Worth. The Dash provides passengers with easy access to downtown Fort Worth, the Seventh Street corridor and the Cultural District.

3. DCTA introduced a shuttle route between Monsignor King Outreach Center and Our Daily Bread to connect Denton’s emergency homeless shelter to local resources and rail services.

4. Collin County Transit now offers an on-demand taxi program for senior citizens, individuals with disabilities and low-income residents who live in Prosper. This partnership between the McKinney Urban Transit District and DCTA provides around-the-clock access to transportation.

Transit Asset Management

NCTCOG is required to set annual performance targets for the region’s transit assets, coordinating with

transit providers to ensure consistency. Transit Asset Management is designed to prioritize funding based on the condition of transit assets in a state of good repair, asset reliability, safety and performance. Performance is measured across four asset categories: Rolling Stock, Infrastructure, Equipment and Facilities. The goal is for all assets to be in a state of good repair.

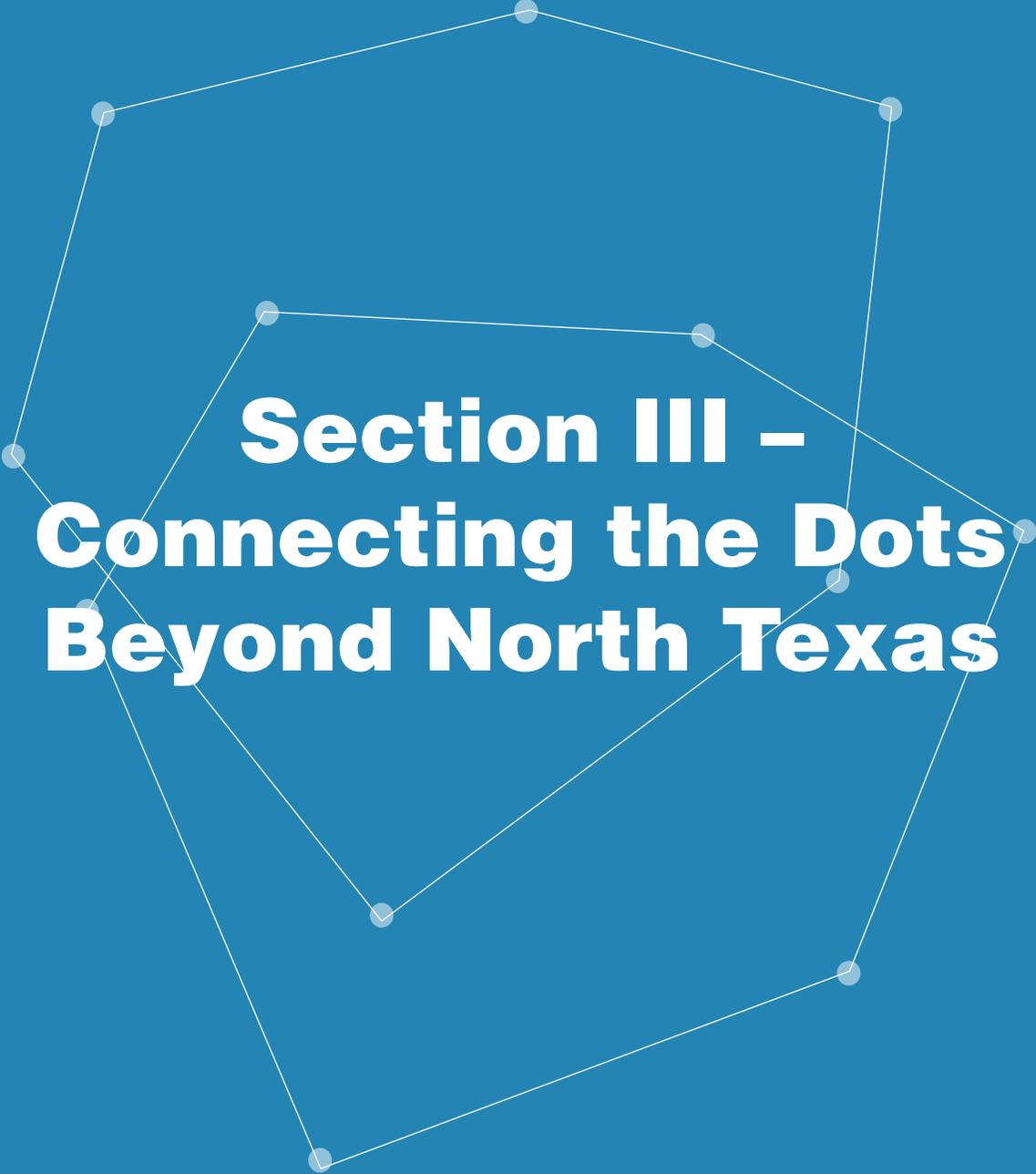
Overall, regional targets are being met for many of the asset categories specifically as it relates to types of assets within each category, based on Fiscal Year 2018 data. However, some assets do fall short, such as buses, commuter rail passenger coach, transit-support vehicles, and rail infrastructure. Efforts are underway to improve these assets. For more information about Transit Asset Management, please visit www.nctcog.org/pm/fed.

2019 Regional Vanpool Program Performance Update

Regional Vanpool Program	DART	Trinity Metro	DCTA	Combined
Total Number of Vans (at year end)	174	73	42	289
Average Participants Per Month	1,324	491	312	2,127
Total Van Trips Traveled (annual)	2,824,625	1,667,529	772,221	5,264,375
Total Vehicle Miles of Travel Reduced (annual)	19,211,438	10,238,270	5,048,814	34,498,522
Total Vehicle Trips Removed (annual)	585,122	211,148	141,464	937,734
NOx Emissions Reduced (pounds)	11,425	6,089	3,003	20,517
VOC Emissions Reduced (pounds)	3,808	2,030	1,001	6,839

The Dallas-Fort Worth area’s 290 active vanpool combined to save almost 34.5 million miles in 2019. The program remains an important component of the region’s strategy to improve mobility and air quality.





**Section III –
Connecting the Dots
Beyond North Texas**

Freight

Dallas-Fort Worth is the largest metropolitan area without direct access to a sea port, making the surface transportation system essential for the movement of freight. Several initiatives are underway that could help companies move goods to market more efficiently. One way to make sure freight can be delivered where it is needed is to address areas where bottlenecks exist.

Freight Land Use Analysis

Goods movement is the lifeblood of the economy, and due to the region's unique geographic position as a nationwide logistical hub, the facilities that house and support the trucking fleets, railroads, pipelines and freight aircraft are critical regional and national assets. As such, distribution centers and warehouses are a common sight in the Dallas-Fort Worth area.

An important question must be asked: "What is the impact of these facilities on the surrounding communities?" The Freight Land Use Compatibility Analysis seeks to answer this.

The study is underway and assesses the current state of freight-intensive real estate in the region. Some areas being examined include freight sprawl, the presence of land-use conflicts and/or mitigation strategies, amenities, accessibility, commercial vehicle routing, as well as facility age and condition. The goal of the study is to improve the quality of freight land uses throughout the region by providing tools and strategies for cities, counties and decision-makers to use when planning for freight infrastructure.

Truck Lane Restrictions

Throughout the past year, NCTCOG planners coordinated

with TxDOT on the placement and designation of truck lane restrictions. These restrictions represented an expansion of rules that have been in place along some corridors for more than 10 years. They prohibit trucks with three or more axles from using the inside lane on highly traveled corridors in the region.

Research from the Texas A&M Transportation Institute indicates that separating truck traffic can improve roadway safety by reducing the severity of truck-involved crashes.

The implementation of these additional truck lane restrictions will help ease congestion for passenger vehicles and improve safety in the proposed corridors. The expanded restrictions were approved by the Texas Transportation Commission in October and are being implemented.



Truck Lane Restrictions

- US 75 – SH 121 South to Collin/Grayson County line
- IH 45 – Navarro/Ellis County line to Navarro/Freestone County line
- IH 35E – US 77N to Ellis/Hill County line
- IH 35E – Spur 366 to Corinth Parkway
- SH 183 – IH 35E to Dallas/Tarrant County line
- US 67 – IH 35E to FM 1382
- IH 635 – US 75 to Dallas/Tarrant County line
- IH 30 – SH 205 to Rockwall/Hunt County line

Crossing Analysis

Railroad operators move extraordinarily heavy cargo in large volumes through and throughout the region. Railroad tracks and their high tolerance for weight are the infrastructure that allows this. The railroad facilities in the region that make it an attractive location for industrial development also interact with the surrounding roadways in the form of railroad crossings.

While many of the busiest rail lines and roadways are grade-separated (by a bridge or tunnel), most railroad crossings occur at-grade, or at the same level of elevation. At these crossings, motorists must drive over railroad tracks, and if a crossing is poorly designed or in need of repair, safety and traffic flow issues could result. Therefore, an evaluation is currently underway to determine the condition of at-grade railroad crossings in the region. Aspects of crossings to be

examined include motorist visibility, the presence of safety measures, deckplate condition, roadway condition, alignment and the surrounding roadway features such as geometry and the presence of signals or signs. Ultimately, the information from this study will be used to inform the prioritization of grade-separation projects and the removal or reconstruction of existing at-grade crossings.

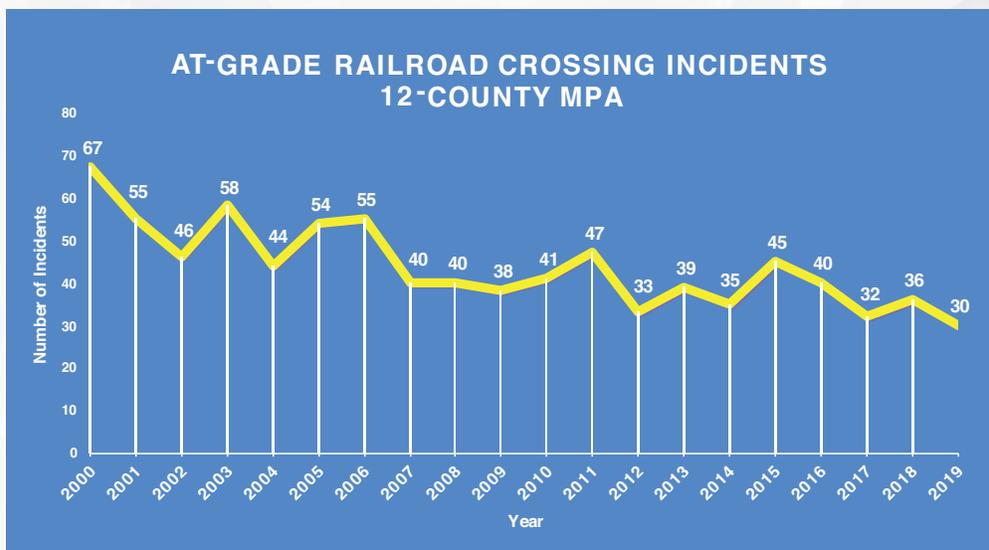
Crossing Incidents

Crashes at rail crossings have fallen dramatically since 2000, when there were 67. In 2019, there were 30, fewer than any other year during this period. Although influenced primarily by traffic levels (both train and car), the location and severity of incidents is helpful in determining which crossings present the highest safety risk to motorists, and therefore require additional safety measures or other types of remediation. An example of how

North Texas' at-grade crossings have been upgraded is the realignment of intersections to improve sight lines from both directions. NCTCOG will continue working with its partners to enhance the safety and efficiency of the entire freight network.

Reliability

NCTCOG tracks truck travel time reliability, a federal performance measure that will help planners understand the efficiency of the transportation system. The baseline is 1.74, meaning a trip that should take 10 minutes will likely take 17.4 minutes. The goal is to reduce this to 17.1 minutes by 2020 and 16.6 minutes by 2022.



At-grade rail crossing incidents fell in 2019 to their lowest level, according to data collected by NCTCOG.

Aviation

Aviation is another way to connect to regions throughout Texas and the nation. The industry consists of many different components, some of which are more visible than others. A few examples are commercial aviation, air cargo and general aviation. All are valuable to the continued development of the economy in North Texas.

Air Cargo

When valuable, lightweight cargo needs to be moved quickly, businesses often turn to aviation. Dallas Fort Worth International Airport and Alliance Airport lead the region in transportation of cargo. DFW Airport saw a 7.3% increase in Cargo transported, while Alliance Airport showed a slight decline.

However, the airport will likely experience significant future growth with the opening of Amazon's new regional hub, which began operating at the airport in fall 2019.

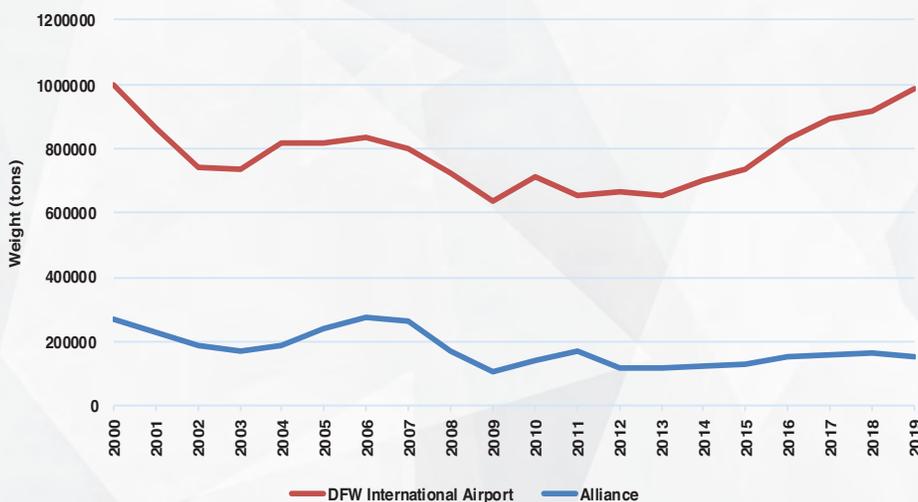
Although a significant part of the economy, air cargo attracts less attention at the region's major airports than air travel. DFW Airport continues to lead the way in commercial aviation, as it transported more than 75 million passengers in 2019, an 8.6% increase over 2018. Flights at DFW soared by nearly 8% in 2019, to almost 2,000. At Love Field, operations increased slightly to 635 a day, while 3% more passengers flew in and out of the airport.

Daily Flights
DFW Airport
1,973
Love Field
635

Sources: DFW Airport, Dallas Love Field

Daily traffic at DFW Airport and Love Field continued to increase in 2019. Despite this growth, the region still has adequate airspace capacity. Together, the airports have the ability to operate more than 5,100 daily flights.

DFW International Airport and Alliance Air Cargo Tonnage



Air cargo shipped through DFW Airport increased by 7.3% in 2019. Alliance Airport remains the region's No. 2 air cargo facility.

Sources: DFW Airport, Alliance Airport

Another component of the aviation industry is general aviation. While general aviation typically takes place at smaller airports, it occupies a significant place economically. General aviation remains an important part of the North Texas economy. Regional airport funding increased from \$24 million to \$31 million, with McKinney National Airport receiving the largest share, \$17 million, which included \$15 million from a TxDOT grant to extend the runway 1,500 feet. The project is anticipated to help the airport continue to serve as a general aviation reliever for DFW Airport and Love Field.

Unmanned Aircraft Systems

Unmanned aircraft systems, commonly called drones, represent another growing sector of the aviation industry, increasing by approximately 42% in 2019. Currently there are nearly 27,000 drones registered in North Texas. Almost 20,000 are used by hobbyists and 7,000 by non-hobbyists. NCTCOG is working with regional partners to ensure this growing technology can be effectively integrated by users and solutions to problems can be developed. A series of workshops are being held throughout the

region to provide information to drone operators on safe flying and rules and regulations they must follow. For more information, visit www.northtexasuas.com.

One of the issues being confronted by drone operators is where to safely fly their aircraft. NCTCOG is working with regional partners to identify the best places to do so. The list includes a number of parks and lakes and will continue to expand, with the assistance of partners.

42%

Increase in drone registrations in the Dallas-Fort Worth area in 2019. There are now 27,000.







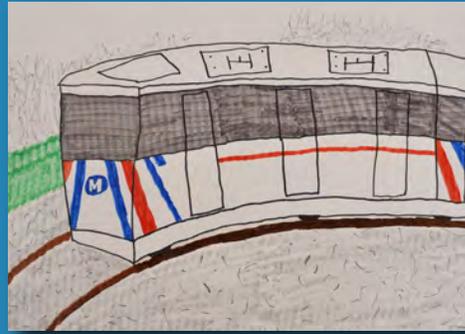
Section IV – Connecting the Dots: Cover Art Entries

2020 Art Contest Participants

Congratulations to **Louisa Hathcock**, the winner of this year's competition. We asked children of our staff to illustrate what this year's theme of Connecting the Dots of Regional Transportation, means to them. Louisa's artwork is on the cover of Progress North Texas 2020.



First Place
Louisa Hathcock
 Age 9



Second Place
Andrew Wilson
 Age 9



Third Place
Ethan Brown
 Age 12

To see the entries, visit [NCTCOG.org/ourregion](https://www.nctcog.org/ourregion).

Editor's Note



The remainder of 2020 will be complicated by COVID-19 and our response to the virus, both collectively and individually. The pandemic took us all by surprise and made it difficult to focus entirely on the successes of the past year when putting this report together. Dallas-Fort Worth has enjoyed a long stretch of economic growth going back to the financial crisis over 10 years ago. In the ensuing years, with the assistance of our dedicated transportation partners, NCTCOG and the RTC have worked to meet the demands placed on the system by the influx of more than 1 million new residents.

Although we have not been through a challenge quite like this, we know things will get better. We face a new reality because of this virus, but the same focus that led to the successes of the past can help us emerge stronger.

The RTC is focused on how we use information and data to influence policy. Additionally, infrastructure investments can be used to return us to the success of the past, just as they did after the financial crisis of 2008-2009. Decisions may have to be more strategic for a while, but a problem-solving spirit has driven North Texas' transportation partners to work together to develop an infrastructure system that provides residents choices for how to move from Point A to Point B. This same focus on results and innovation will make our region a trailblazer in the post-COVID world.

Brian Wilson

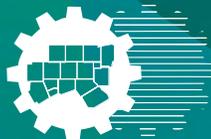
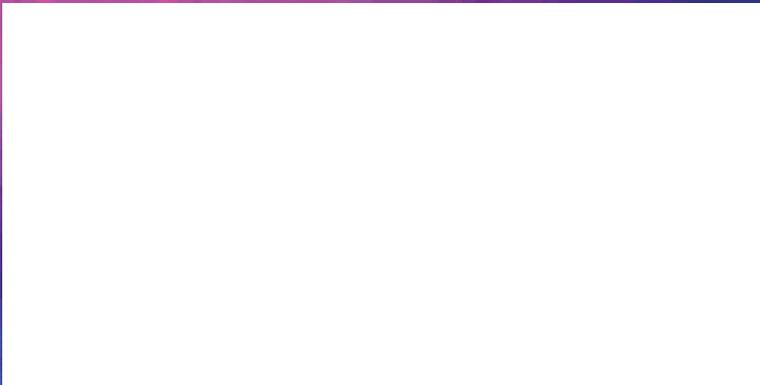
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Progress North Texas 2020

Connecting the Dots of Regional Transportation



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Central Appraisal District of Johnson County 2021-2022 Reappraisal Plan

INTRODUCTION

Scope of Responsibility

The Central Appraisal District of Johnson County has prepared and published this reappraisal plan and appraisal report to provide our Board of Directors, citizens and taxpayers with a better understanding of the district's responsibilities and activities. This report has several parts: a general introduction and then, several sections describing the appraisal effort by the appraisal district.

The Central Appraisal District of Johnson County (CAD) is a political subdivision of the State of Texas created effective January 1, 1980. The provisions of the Texas Property Tax Code govern the legal, statutory, and administrative requirements of the appraisal district. A member Board of Directors, elected by the taxing units within the boundaries of Johnson County, constitutes the district's governing body. The chief appraiser, appointed by the Board of Directors, is the chief administrator and chief executive officer of the appraisal district.

The appraisal district is responsible for local property tax appraisal and exemption administration for 34 jurisdictions or taxing units in the county. Each taxing unit, such as the county, a city, school district, junior college, etc., sets its own tax rate to generate revenue to pay for such things as police and fire protection, public schools, road and street maintenance, courts, water and sewer systems, and other public services. Property appraisals and estimated values by the appraisal district allocate the year's tax burden on the basis of each taxable property's market value. We also determine eligibility for various types of property tax exemptions such as those for homeowners, the elderly, disabled veterans, charitable or religious organizations and agricultural productivity valuation.

Except as otherwise provided by the Property Tax Code, all taxable property is appraised at its "market value" as of January 1st. Under the tax code, "market value" means the price at which a property would transfer for cash or its equivalent under prevailing market conditions if:

- exposed for sale in the open market with a reasonable time for the seller to find a purchaser;
- both the seller and the buyer know of all the uses and purposes to which the property is adapted and for which it is capable of being used and of the enforceable restrictions on its use, and;

- both the seller and buyer seek to maximize their gains and neither is in a position to take advantage of the exigencies of the other.

The Property Tax Code defines special appraisal provisions for the valuation of residential homestead property (Sec. 23.01(c) and Sec. 23.23), productivity (Sec. 23.41 et al), real property inventory (Sec. 23.12), dealer inventory (Sec. 23.121, 23.124, 23.1241, 23.1242 and 23.127), nominal (Sec. 23.18) or restricted use properties (Sec. 23.83) and allocation of interstate property (Sec. 21.03 et al). The owner of real property inventory or BPP inventory may elect to have the inventory appraised at its market value as of September 1st of the year preceding the tax year to which the appraisal applies by filing an application with the chief appraiser requesting that the inventory be appraised as of September 1st.

The Texas Property Tax Code, under Sec. 25.18, requires each appraisal office to implement a plan to update appraised values for real property at least once every three years. The district's current policy is to conduct a general reappraisal of taxable property every year. Appraised values are reviewed annually and are subject to change. Business personal properties, minerals and utility properties are appraised every year.

The appraised value of real estate is calculated using specific information about each property. Using computer-assisted mass appraisal programs, and recognized appraisal methods and techniques, we compare that information with the data for similar properties, and with recent cost and market data. The district follows the standards of the International Association of Assessing Officers (IAAO) regarding its appraisal practices and procedures, and subscribes to the standards promulgated by the Appraisal Foundation known as the Uniform Standards of Professional Appraisal Practice (USPAP) to the extent they are applicable.

Personnel Resources

The office of the Chief Appraiser is primarily responsible for overall planning, organizing, staffing, coordinating, and controlling of district operations. The administration department's function is to plan, organize, direct and control the business support functions related to human resources, budget, finance, records management, purchasing, fixed assets, facilities and postal services. The appraisal department is responsible for the valuation of all real and personal property accounts. The property types appraised include commercial, residential, business personal property, mineral, utilities, and industrial. The district's appraisers are subject to the provisions of the Property Taxation Professional Certification Act and must be duly registered with the Texas Department of Licensing and Regulation. Support functions including records maintenance, information and assistance to property owners, and hearings are coordinated by personnel in support services.

The appraisal district staff consists of 39 employees with the following classifications:

- 1 - Official/Administrator (executive level administration)
- 5 - Professional (supervisory and management)
- 11 - Appraisers
- 22 - Administrative Support (data entry, customer service, clerical, mapping and other)

Staff Education and Training

All personnel that are performing appraisal work are registered with the Texas Department of Licensing and Regulation and are required to take appraisal courses to achieve the status of Registered Professional Appraiser within five years of employment as an appraiser. After they are awarded their license, they must receive additional training of a minimum of 30 hours of continuing education units every two years, including law updates, USPAP, and ethics. Failure to meet these minimum standards results in the termination of the employee.

Additionally, all appraisal personnel receive extensive training in data gathering processes including statistical analyses of all types of property to ensure equality and uniformity of appraisal of all types of property. On-the-job training is delivered by department directors for new appraisers and managers meet regularly with staff to introduce new procedures and regularly monitor appraisal activity to ensure that standardized appraisal procedures are being followed by all personnel.

Data

The district is responsible for establishing and maintaining approximately 360,565 real and personal property accounts covering 734 square miles within Johnson County. This data includes property characteristics, ownership, and exemption information. Property characteristic data on new construction is updated through an annual field effort; existing property data is maintained through a field review. Sales are routinely validated during a separate field effort; however, numerous sales are validated as part of the new construction and field inspections. General trends in employment, interest rates, new construction trends, cost and market data are acquired through various sources, including internally generated questionnaires to buyer and sellers, university research centers, and market data centers and vendors.

The district has a geographic information system (GIS) that maintains cadastral maps and various layers of data and aerial photography. The district's website makes a broad range of information available for public access, including information on the appraisal process, property characteristics data, certified values, protests and appeal procedures. Downloadable files of

related tax information and district forms, including exemption applications and business personal property renditions are also available.

Information Systems

- 1 PC Windows based Client Server System
- 2 Server utilizes Windows 7, 8 and 10 OS
- 3 Client (desktop) support from Windows 7 and Windows 10
- 4 Microsoft SQL Relations DBMS SQL 2017
- 5 Local area network consisting of 5 Servers and 49 workstations
- 6 Appraisal Software
- 7 ArcGIS (ESRI)

APPRAISAL DISTRICT BOUNDARIES

Under Section 6.02, Texas Property Tax Code, the appraisal district's boundaries are the same as the county's boundaries. However, the district routinely exchanges ownership and property data information with adjacent appraisal districts for those properties that are split by county boundaries. Appraisers from adjacent appraisal districts discuss data collection and valuation issues to minimize the possibility of differences in property characteristics, legal descriptions, and other administrative data.

INDEPENDENT PERFORMANCE TEST

According to Chapter 5 of the Texas Property Tax Code and Section 403.302 of the Texas Government Code, the State Comptroller's Property Tax Assistance Division (PTD) conducts a semi-annual property value study (PVS) of each Texas school district and each appraisal district. As part of this semi-annual study, the code requires the Comptroller to: use sales and recognized auditing and sampling techniques; review each appraisal district's appraisal methods, standards and procedures to determine whether the district used recognized standards and practices (MSP review); test the validity of school district taxable values in each appraisal district and presume the appraisal roll values are correct when values are valid; and, determine the level and uniformity of property tax appraisal in each appraisal district. The methodology used in the property value study includes stratified samples to improve sample representativeness and techniques or procedures of measuring uniformity. This study utilizes

statistical analyses of sold properties (sale ratio studies) and appraisals of unsold properties (appraisal ratio studies) as a basis for assessment ratio reporting. For appraisal districts, the reported measures include median level of appraisal, coefficient of dispersion (COD), the percentage of properties within 10% of the median, the percentage of properties within 25% of the median, and price-related differential (PRD) for properties overall and by state category.

There are 12 independent school districts in Johnson CAD for which appraisal rolls are annually developed. The preliminary results of this study are released January 30 in the year following the year of appraisal. The final results of this study are certified to the Education Commissioner of the Texas Education Agency (TEA) the following July of each year. This outside (third party) ratio study provides additional assistance to the CAD in determining areas of market activity or changing market conditions.

According to Section 5.102 of the Texas Property Tax Code, on those years when the Comptroller does not conduct a Property Value Study, the comptroller conducts a review of the governance of the district, taxpayer assistance provided, and the operating and appraisal standards, procedures, and methodology used by the district (MAP Review).

Appraisal Activities

INTRODUCTION

Appraisal Responsibilities

The field appraisal staff is responsible for collecting and maintaining property characteristic data for classification, valuation, and other purposes. Accurate valuation of real and personal property by any method requires a comprehensive physical description of personal property, and land and building characteristics. This appraisal activity is responsible for administering, planning and coordinating all activities involving data collection and maintenance of all commercial, residential and personal property types located within the boundaries of Johnson County and the jurisdictions of this appraisal district. The data collection effort involves the field inspection of real and personal property accounts, as well as data entry of all data collected into the existing information system. The goal is to field inspect residential, commercial, and personal properties in the district every year. The appraisal opinion of value for all property located in the district is reviewed and evaluated each year.

Appraisal Resources

- **Personnel** - The appraisal activities are conducted by 9 appraisers.
- **Data** - The data used by field appraisers includes the existing property characteristic information contained in CAMA (Computer Assisted Mass Appraisal System) from the district's computer system. The data is printed on a property record card (PRD), or personal property data sheets. Other data used includes maps, sales data, fire and damage reports, building permits, photos and actual cost and market information. Sources of information are gathered using excellent reciprocal relationships with other participants in the real estate market place. The district cultivates sources and gathers information from both buyers and sellers participating in the real estate market.

Appraisal Frequency and Method Summary

1. **Residential Property-** Residential property is physically examined every year with appraisers noting condition of the improvements and looking for changes that might have occurred to the property since the last on-site check. Every subdivision is statistically analyzed annually to ensure that sales that have occurred in the subdivision during the past 12 months are within a +/-5% range of appraised value. If the sales do not indicate that range, adjustments are made to the subdivision using a process outlined in detail in the Residential Appraisal section of this report.

2. **Commercial Property-** Commercial real estate is observed annually to verify class and condition. The inspection occurs as Business Personal Property appraisers are checking BPP accounts. Real estate accounts are analyzed against sales of similar properties in Johnson CAD as well as similar communities in Central Texas that have similar economies. The income approach to value is also utilized to appraise larger valued commercial properties such as shopping centers, apartment complexes, office buildings, restaurants, motels and hotels, and other types of property that typically sell based on net operating income.
3. **Business Personal Property-** Business personal property is observed annually with appraisers actually going into businesses to develop quality and density observations. A rendition is left for new businesses to complete. Similar businesses to a subject are analyzed annually to determine consistency of appraisal per square foot. Businesses are categorized using SIC codes. Renditions, required by law, provide additional information on which to base values of all BPP accounts.
4. **Industrial Property-** Industrial properties are appraised annually by the outside Contract Appraisal firm – Capitol Appraisal Group (CAGL).
5. **Minerals-** Working and royalty interests of producing oil and gas wells are appraised annually by the outside Contract Appraisal firm – Capitol Appraisal Group (CAGL).
6. **Utilities and Pipelines-** Utility companies and pipelines are appraised annually by the outside Contract Appraisal firm – Capitol Appraisal Group (CAGL).

PRELIMINARY ANALYSIS

Data Collection/Validation

Data collection of real property involves maintaining data characteristics of the property on CAMA (Computer Assisted Mass Appraisal). The information contained in CAMA includes site characteristics, such as land size and topography, and improvement data, such as square foot of living area, year built, quality of construction, and condition. Field appraisers are required to use a property classification system that establishes uniform procedures for the correct listing of real property. All properties are coded according to a classification system. The approaches to value are structured and calibrated based on this coding system and property description and characteristics. The field appraisers use property classification references during their initial training and as a guide in the field inspection of properties. Data collection for personal property involves maintaining information on software designed to record and appraise business personal property. The type of information contained in the BPP file includes personal property

such as business inventory, furniture and fixtures, machinery and equipment, with details such as cost and location. The field appraisers conducting on-site inspections use a personal property classification system during their initial training and as a guide to correctly list all personal property that is taxable.

The listing procedure utilized by the field appraisers is available in the district offices. Appraisers periodically update the classification system with input from the valuation group.

Sources of Data

The sources of data collection are through property inspection, new construction field effort, data review, data mailer questionnaires, hearings, sales validation field effort, commercial sales verification and field effort, newspapers and publications, and property owner correspondence by mail or via the Internet. A principal source of data comes from building permits received from taxing jurisdictions that require property owners to take out a building permit. Permits are received and matched with the property's account number. The North Texas Real Estate Information Systems, Inc (MLS) is a reliable source of data, for both property description and market sales data. Area and regional real estate brokers and managers are also sources of market and property information. Sale surveys of new property owners requesting market information and property description information is also valuable data. Soil surveys and agricultural surveys of farming and ranching property owners and industry professionals are helpful for productivity value calibration. Improvement cost information is gathered from local building contractors and Marshall and Swift Valuation Service. Various income and rental surveys are performed by interviewing property managers and operators to determine operating income and expenses for investment and income producing real property.

The sales validation effort in real property pertains to the collection of market data for properties that have sold. In residential, the sales validation effort involves on-site inspection by field appraisers to verify the accuracy of the property characteristics and confirmation of the sales price. In commercial, the commercial appraisers are responsible for contacting sales participants to confirm sales prices and to verify pertinent data.

Property owners are one of the best sources for identifying incorrect data that generates a field check. Frequently, the property owner provides reliable data to allow correction of records without having to send an appraiser on-site. As the district has increased the amount of information available on the Internet, property owners have the opportunity to review information on their property and forward corrections via e-mail. For the property owner without access to the Internet, letters are sometimes submitted notifying the district of inaccurate data. Properties identified in this manner are added to a work file and inspected at the earliest opportunity. Accuracy and validity in property descriptions and characteristics data is the highest goal and is

stressed throughout the appraisal process from year to year. Appraisal opinion quality and validity relies on data accuracy as its foundation.

Data Collection Procedures

The appraisers are assigned specific areas throughout the district to conduct field inspections. These geographic areas of assignment are maintained for several years to enable the appraiser assigned to that area to become knowledgeable of all the factors that drive values for that specific area. Appraisers of real estate and business personal property conduct field inspections and collect information pertaining to the market value of the property.

The quality of the data used is extremely important in estimating market values of taxable property. While work performance standards are established and upheld for the various field activities, quality of data is emphasized as the goal and responsibility of each appraiser. New appraisers are trained in the specifics of data collection and the classification system set forth and recognized as "rules" to follow. Experienced appraisers are routinely re-trained in listing procedures prior to major field projects such as new construction, sales validation or data review. A quality assurance process exists through supervisory review of the work being performed by the field appraisers. Quality assurance supervision is charged with the responsibility of ensuring that appraisers follow listing procedures, identify training issues and provide uniform training throughout the field appraisal staff.

INDIVIDUAL VALUE REVIEW PROCEDURES

Field Review

The date of last inspection and the CAD appraiser responsible are listed on the CAMA record or property card. If a property owner or a jurisdiction dispute the district's records concerning this data during a hearing, via a telephone call or other correspondence, the record may be corrected based on the evidence provided or an on-site inspection may be conducted. Typically, a field inspection is requested to verify this information for the current year's valuation or for the next year's valuation. Every year a field review of real property is conducted. A field review is performed on all personal property accounts, with available situs, each year.

Office Review

Office reviews are completed on properties where updated information has been received from the owner of the property and is considered accurate and correct. Data mailers, sent in masse, or at the request of the property owner, frequently verify some property characteristics or current condition of the property. When the property data is verified in this manner, and considered

accurate and correct, field inspections may not be required. The personal property department mails property rendition forms in December of each year to assist in the annual review of the property.

PERFORMANCE TEST

Ratio studies are conducted on property located within certain neighborhoods or districts by appraisal staff. The sale ratio and comparative analysis of sale property to appraised property forms the basis for determining the level of appraisal and market influences and factors for the neighborhood. This information is the basis for updating property valuation for the entire area of property to be evaluated. Field appraisers, in many cases, may conduct field inspections to insure the accuracy of the property descriptions at the time of sale for this study. This inspection is to insure that the ratios produced are accurate for the property sold and that appraised values utilized in the study are based on accurate property data characteristics observed at the time of sale. Also, property inspections are performed to discover if property characteristics have changed as of the sale date or subsequent to the sale date. Sale ratios should be based on the value of the property as of the date of sale not after a subsequent or substantial change was made to the property after the negotiation and agreement in price was concluded. Properly performed ratio studies are a good reflection of the level of appraisal for the district.

Residential Valuation Process

INTRODUCTION

Scope of Responsibility

The residential appraisers are responsible for estimating equal and uniform market values for residential improved and vacant property. There are approximately 52,000 residential improved single and multiple family parcels and 8,000 vacant residential properties in Johnson County.

Appraisal Resources

- **Personnel** - The residential appraisal staff consists of 1 supervisor and 11 appraisers. The following appraisers are responsible for estimating the market value of residential property:

Janice Lee, RPA,CTA (Director of Appraisal Operations)
 Brittany Vereen, RPA (Assistant Director of Appraisal Operations)
 Debbie Caddell, RPA, CTA
 Brenda Russell, RPA
 Michelle Gill, RPA
 Stephanie Ownbey, RPA
 Romelia Robles, Appraiser III
 Mesha West, Appraiser III
 Aleeja Bone, Appraiser Trainee
 Chelce Montgomery, Appraiser Trainee
 Samantha Bendfeldt, Appraiser Trainee

- **Data** - An individualized set of data characteristics for each residential dwelling and multiple family units in this district are collected in the field and data is entered to the computer. The property characteristic data drives the application of computer-assisted mass appraisal (CAMA) under the Cost, Market, and Income Approaches to property valuation.

VALUATION APPROACH

Land Analysis

Residential land valuation analysis is conducted prior to neighborhood sales analysis. The value of the land component to the property is estimated based on available market sales for comparable and competing land under similar usage. A comparison and analysis of comparable land sales is conducted based on a comparison of land characteristics found to influence the market price of land located in the neighborhood. Specific land influences are considered, where necessary, and depending on neighborhood and individual lot or tract characteristics, to adjust parcels outside the neighborhood norm for such factors as access,

view, shape, size, and topography. The appraisers use abstraction and allocation methods to insure that estimated land values best reflect the contributory market value of the land to the overall property value.

Neighborhood and Market Analysis

Neighborhood analysis involves the examination of how physical, economic, governmental and social forces and other influences affect property values. The effects of these forces are also used to identify, classify, and stratify comparable properties into smaller, manageable subsets of the universe of properties known as neighborhoods. Residential valuation and neighborhood analysis is conducted on various market areas within each of the political entities known as Independent School Districts (ISD). Analysis of comparable market sales forms the basis of estimating market activity and the level of supply and demand affecting market prices for any given market area, neighborhood or district. Market sales indicate the effects of these market forces and are interpreted by the appraiser into an indication of market price ranges and indications of property component change considering a given time period relative to the date of appraisal. Cost and Market Approaches to value are the basic techniques utilized to interpret these sales. For multiple family properties the Income Approach to value is also utilized to estimate an opinion of value for investment level residential property.

The first step in neighborhood analysis is the identification of a group of properties that share certain common traits. A "neighborhood" for analysis purposes is defined as the largest geographic grouping of properties where the property's physical, economic, governmental and social forces are generally similar and uniform. Geographic stratification accommodates the local supply and demand factors that vary across a jurisdiction. Once a neighborhood with similar characteristics has been identified, the next step is to define its boundaries. This process is known as "delineation". Some factors used in neighborhood delineation include location, sales price range, lot size, age of dwelling, quality of construction and condition of dwellings, square footage of living area, and story height. Delineation can involve the physical drawing of neighborhood boundary lines on a map, but it can also involve statistical separation or stratification based on attribute analysis. Part of neighborhood analysis is the consideration of discernible patterns of growth that influence a neighborhood's individual market. Few neighborhoods are fixed in character. Each neighborhood may be characterized as being in a stage of growth, stability or decline. The growth period is a time of development and construction. As new neighborhoods in a community are developed, they compete with existing neighborhoods. An added supply of new homes tends to induce population shift from older homes to newer homes. In the period of stability, or equilibrium, the forces of supply and demand are about equal. Generally, in the stage of equilibrium, older neighborhoods can be more desirable due to their stability of residential character and proximity to the workplace and other community facilities. The period of decline reflects diminishing demand or desirability.

During decline, general property use may change from residential to a mix of residential and commercial uses. Declining neighborhoods may also experience renewal, reorganization, rebuilding, or restoration, which promotes increased demand and economic desirability.

Neighborhood identification and delineation is the cornerstone of the residential valuation system at the district. All the residential analysis work done in association with the residential valuation process is neighborhood specific. Neighborhoods are field inspected and delineated based on observable aspects of homogeneity. Neighborhood delineation is periodically reviewed to determine if further neighborhood delineation is warranted. Whereas neighborhoods involve similar properties in the same location, a neighborhood group is simply defined as similar neighborhoods in similar locations. Neighborhood grouping is highly beneficial in cost-derived areas of limited or no sales, or use in direct sales comparison analysis. Neighborhood groups, or clustered neighborhoods, increase the available market data by linking comparable properties outside a given neighborhood. Sales ratio analysis, discussed below, is performed on a neighborhood basis, and in soft sale areas on a neighborhood group basis.

In Johnson County, neighborhood analysis defines the following areas as 'market areas':

1. Burleson, Northern Joshua, Northern Alvarado, Mansfield, and Crowley ISD's.
2. South and eastern Joshua, urban Cleburne, and Keene ISD's.
3. Godley, Granbury, rural Cleburne, southwest Joshua, and western Rio Vista ISD's.
4. Grandview, southern Alvarado, eastern Rio Vista, and Venus ISD's.

In addition to these market areas, market analysis indicates that within these areas, smaller subsets known as 'neighborhoods' are the norm. For example, within Burleson ISD lies the City of Burleson. This city has several neighborhoods within its city limits. Typically these are platted subdivisions where residential structures are comparable in quality, age, and amenities. Market forces typically affect the properties within these subdivisions in a uniform pattern. Market analysis indicates that these smaller subsets would be located in (but not limited to) the following:

1. City of Burleson
2. City of Cleburne
3. City of Joshua (northern part)
4. City of Alvarado

Finally, any market area may contain smaller neighborhoods within its boundaries that will require a separate sales ratio analysis from the market area.

Highest and Best Use Analysis

The highest and best use of property is the reasonable and probable use that supports the highest present value as of the date of the appraisal. The highest and best use must be physically possible, legal, financially feasible, and productive to its maximum. The highest and best use of residential property is normally its current use. This is due in part to the fact that residential development, in many areas, through use of deed restrictions and zoning, precludes other land uses. Residential valuation undertakes reassessment of highest and best use in transition areas and areas of mixed residential and commercial use. In transition areas with ongoing gentrification, the appraiser reviews the existing residential property use and makes a determination regarding highest and best use. Once the conclusion is made that the highest and best use remains residential, further highest and best use analysis is done to decide the type of residential use on a neighborhood basis. As an example, it may be determined in a transition area that older, non-remodeled homes are economic burdens to the property, and the highest and best use of such property is the construction of new dwellings. In areas of mixed residential and commercial use, the appraiser reviews properties in these areas on a periodic basis to determine if changes in the real estate market require reassessment of the highest and best use of a select population of properties. Under Sec. 23.01(d) of the Texas Property Tax Code, the market value of a residence homestead is determined solely on the basis of the property's value as a residence homestead, regardless of whether the residential use of the property by the owner is considered to be the highest and best use of the property.

VALUATION AND STATISTICAL ANALYSIS (Model Calibration)

Cost Schedules

All residential parcels in the district are valued with a replacement cost estimated from identical cost schedules based on the improvement classification system using a comparative unit method. The district's residential cost schedules are estimated from Marshall and Swift, a nationally recognized cost estimator service. These cost estimates are compared with sales of new improvements and evaluated from year to year and indexed to reflect the local residential building and labor market. Costs may also be indexed for neighborhood factors and influences that affect the total replacement cost of the improvements in a smaller market area based on evidence taken from a sample of market sales.

A review of the residential cost schedule is performed annually. As part of this review and evaluation process of the estimated replacement cost, newly constructed sold properties representing various levels of quality of construction in district are considered. The property data characteristics of these properties are verified. CAD replacement costs are compared against Marshall & Swift, a nationally recognized cost estimator, and the indicated replacement cost abstracted from these market sales of comparably improved structures. The results of this comparison are analyzed using statistical measures, including stratification by quality and reviewing of estimated building costs plus land to sales prices. As a result of this analysis, a new regional multiplier or economic index factor and indications of neighborhood economic factors are developed for use in the district's cost process. This new economic index is used to adjust the district's cost schedule to be in compliance with local building costs as reflected by the local market.

Sales Information

A sales file for the storage of "snapshot" sales data at the time of sale is maintained for real property. Residential vacant land sales, along with commercial improved and vacant land sales are maintained in a sales information system. Residential improved and vacant sales are collected from a variety of sources, including: district questionnaires sent to buyer, field discovery, protest hearings, MLS, various sale vendors, builders, and realtors. A system of type, source, validity and verification codes has been established to define salient facts related to a property's purchase or transfer and to help determine relevant market sale prices. Neighborhood sales reports are generated as an analysis tool for the appraiser in the development and estimation of market price ranges and property component value estimates. Abstraction and allocation of property components based on sales of similar property is an important analysis tool to interpret market sales under the cost and market approaches to value. These analysis tools help determine and estimate the effects of change, with regard to price, as indicated by sale prices for similar property within the current market.

Statistical Analysis

The residential valuation appraisers perform statistical analysis annually to evaluate whether estimated values are equitable and consistent with the market. Ratio studies are conducted on each of the residential valuation neighborhoods in the district to judge the two primary aspects of mass appraisal accuracy—level and uniformity of value. Appraisal statistics of central tendency generated from sales ratios are evaluated and analyzed for each neighborhood. The level of appraised values is determined by the weighted mean ratio for sales of individual properties within a neighborhood, and a comparison of neighborhood weighted means reflect the general level of appraised value between comparable neighborhoods.

The appraiser, through the sales ratio analysis process, reviews every neighborhood annually. The first phase involves neighborhood ratio studies that compare the recent sales prices of neighborhood properties to the appraised values of these sold properties. This set of ratio studies affords the appraiser an excellent means of judging the present level of appraised value and uniformity of the sales. The appraiser, based on the sales ratio statistics and designated parameters for valuation update, makes a preliminary decision as to whether the value level in a neighborhood needs to be updated or whether the level of market value in a neighborhood is at an acceptable level.

MARKET AND COST RECONCILIATION AND VALUATION

Neighborhood analysis of market sales to achieve an acceptable sale ratio or level of appraisal is also the reconciliation of the market and cost approaches to valuation. Market factors are developed from appraisal statistics provided from market analyses and ratio studies and are used to ensure that estimated values are consistent with the market and to reconcile cost indicators. The district's primary approach to the valuation of residential properties uses a hybrid cost-sales comparison approach. This type of approach accounts for neighborhood market influences not particularly specified in a purely cost model.

The following equation denotes the hybrid model used:

$$MV = LV + (RCN - AD)$$

Whereas, in accordance with the cost approach, the estimated market value (MV) of the property equals the land value (LV) plus the replacement cost new of property improvements (RCN) less accrued depreciation (AD). As the cost approach separately estimates both land and building contributory values and uses depreciated replacement costs, which reflect only the supply side of the market, it is expected that adjustments to the cost values may be needed to bring the level of appraisal to an acceptable standard as indicated by market sales. Thus, demand side economic factors and influences may be observed and considered. These market, or location adjustments, may be abstracted and applied uniformly within neighborhoods to account for locational variances between market areas or across a jurisdiction. Whereas, in accordance with the Market Approach, the estimated market value (MV) of the property equals the basic unit of property, under comparison, times the market price range per unit for sales of comparable property. For residential property, the unit of comparison is typically the price per square foot of living area or the price indicated for the improvement contribution. This analysis for the hybrid model is based on both the cost and market approaches as a correlation of indications of property valuation. A significant unknown for these two indications of value is determined to be the rate of change for the improvement contribution to total property value. The measure of change for this property component can best be reflected and based in the

annualized accrued depreciation rate. This cost related factor is most appropriately measured by sales of similar property. The market approach, when improvements are abstracted from the sale price, indicates the depreciated value of the improvement component, in effect, measuring changes in accrued depreciation, a cost factor. The level of improvement contribution to the property is measured by abstraction of comparable market sales, which is the property sale price less land value. The primary unknown for the cost approach is to accurately measure accrued depreciation affecting the amount of loss attributed to the improvements as age increases and condition changes. This evaluation of cost results in the depreciated value of the improvement component based on age and condition. The evaluation of this market and cost information is the basis of reconciliation and indication of property valuation under this hybrid model.

When the appraiser reviews a neighborhood, the appraiser reviews and evaluates a ratio study that compares recent sales prices of properties, within a delineated neighborhood, with the value of the properties' based on the estimated depreciated replacement cost of improvements plus land value. The calculated ratio derived from the sum of the sold properties' estimated value divided by the sum of the sales prices indicates the neighborhood level of appraisal based on sold properties. This ratio is compared to the acceptable appraisal ratio, 95% to 105%, to determine the level of appraisal for each neighborhood. If the level of appraisal for the neighborhood is outside the acceptable range of ratios, adjustments to the neighborhood are made.

If reappraisal of the neighborhood is indicated, the appraiser analyzes available market sales, by market abstraction of property components. This abstraction of property components allows the appraiser to focus on the rate of change for the improvement contribution to the property by providing a basis for calculating accrued depreciation attributed to the improvement component. This impact on value is usually the most significant factor affecting property value and the most important unknown to determine by market analysis. Abstraction of the improvement component from the adjusted sale price for a property indicates the effect of overall market suggested influences and factors on the price of improvements that were a part of this property. Comparing this indicated price or value allocation for the improvement with the estimated replacement cost new of the improvement indicates any loss in value due to accrued forms of physical, functional, or economic obsolescence. This is a market driven measure of accrued depreciation and results in a true and relevant measure of improvement marketability, particularly when based on multiple sales that indicate the trending of this rate of change over certain classes of improvements within certain neighborhoods. Based on this market analysis, the appraiser estimates the annual rate of depreciation for given improvement descriptions considering age and observed condition. Once estimated, the appraiser recalculates the improvement value of all property within the sale sample to consider and review the effects on the neighborhood sale ratio. After an acceptable level of appraisal is achieved within the sale

sample, the entire neighborhood of property is recalculated utilizing the indicated depreciation rates taken from market sales. This depreciation factor is the basis for trending all improvement values and when combined with any other site improvements and land value, brings the estimated property value through the cost approach closer to actual market prices as evidenced by recent sale prices available within a given neighborhood. Therefore, based on analysis of recent sales located within a given neighborhood, estimated property values will reflect the market influences and conditions only for the specified neighborhood, thus producing more representative and supportable values. The estimated property values calculated for each updated neighborhood are based on market indicated factors applied uniformly to all properties within a neighborhood. Finally, with all the market-trend factors applied, a final ratio study is generated that compares recent sale prices with the proposed appraised values for these sold properties. From this set of ratio studies, the appraiser judges the appraisal level and uniformity in both update and non-update neighborhoods and verifies appraised values against overall trends as exhibited by the local market, and finally, for the school district as a whole.

TREATMENT OF RESIDENCE HOMESTEADS

Beginning in 1998, the State of Texas implemented a constitutional classification scheme concerning the appraisal of residential property that receives a residence homestead exemption. Under that law, beginning in the second year a property receives a homestead exemption; increases in the assessed value of that property are "capped." The value for tax purposes (assessed value) of a qualified residence homestead will be the LESSER of:

1. the market value; or
2. the preceding year's appraised value;
 - PLUS 10 percent;
 - PLUS the value of any improvements added since the last re-appraisal.

Assessed values of capped properties must be recomputed annually. If a capped property sells, the cap automatically expires as of January 1st of the year following the sale of the property and the property is appraised at its market value. An analogous provision applies to new homes. While a developer owns them, unoccupied residences may be complete and appraised as part of an inventory. This valuation is estimated using the district's land value and the percentage of completion for the improvement contribution that usually is similar to the developer's construction costs as a basis of completion on the valuation date. However, in the year following changes in completion, occupancy, or sale, they are appraised at market value.

Under Section 23.01(d), Texas Property Tax Code, the market value of a residence homestead is determined solely on the basis of the property's value as a residence homestead, regardless of whether the residential use of the property by the owner is considered to be the highest and best use of the property.

INDIVIDUAL VALUE REVIEW PROCEDURES

Field Review

The appraiser identifies individual properties in critical need of field review through sales ratio analysis. Sold properties are field reviewed on a monthly and periodic basis to check for accuracy of data characteristics.

As the district's parcel count has increased through new home construction, and the homes constructed in the boom years of the late 70's and early 80's experience remodeling, the appraisers are required to perform the field activity associated with transitioning and high demand neighborhoods. Increased sales activity has also resulted in a more substantial field effort on the part of the appraisers to review and resolve sales outliers. Additionally, the appraiser frequently field reviews subjective data items such as quality of construction, condition, and physical, functional and economic obsolescence, factors contributing significantly to the market value of the property. After preliminary estimates of value have been determined in targeted areas, the appraiser takes valuation documents to the field to test the computer-assisted values against his own appraisal judgment. During this review, the appraiser is able to physically inspect both sold properties and unsold properties for comparability and consistency of values.

Office Review

Once field review is completed, the appraiser conducts a routine valuation review of all properties as outlined in the discussion of ratio studies and market analysis. Valuation reports comparing previous values against proposed and final values are generated for all residential improved and vacant properties. The percentage of value difference are noted for each property within a delineated neighborhood allowing the appraiser to identify, research and resolve value anomalies before final appraised values are released. Previous values resulting from a hearing protest are individually reviewed to determine if the value remains appropriate for the current year (Sec 23.01(c) Texas Property Tax Code)

Once the appraiser is satisfied with the level and uniformity of value for each neighborhood within his area of responsibility, the estimates of value go to noticing.

PERFORMANCE TESTS

Sales Ratio Studies

The primary analytical tool used by the appraisers to measure and improve performance is the ratio study. The district ensures that the appraised values that it produces meet the standards of accuracy in several ways. Overall sales ratios are generated for each neighborhood to allow the appraiser to review general market trends within their area of responsibility, and provide an indication of market appreciation over a specified period of time. The PC-based ratio studies are designed to emulate the findings of the state comptroller's annual property value study for category A property.

Management Review Process

Once the proposed value estimates are finalized, the appraiser reviews the sales ratios by neighborhood and presents pertinent valuation data, such as weighted sales ratio and pricing trends, to the appraisal supervisors and the Chief Appraiser for final review and approval. This review includes comparison of level of value between related neighborhoods within and across jurisdiction lines. The primary objective of this review is to ensure that the proposed values have met preset appraisal guidelines appropriate for the tax year in question.

Commercial and Industrial Property Valuation Process

INTRODUCTION

Appraisal Responsibility

This mass appraisal assignment includes all of the commercially described real property which falls within the responsibility of the commercial valuation appraisers of the Central Appraisal District of Johnson County and located within the boundaries of this taxing jurisdiction. Commercial appraisers appraise the fee simple interest of properties according to statute and court decisions. However, the effect of easements, restrictions, encumbrances, leases, contracts or special assessments are considered on an individual basis, as is the appraisal of any non-exempt taxable fractional interests in real property (i.e. certain multi-family housing projects). Fractional interests or partial holdings of real property are appraised in fee simple for the whole property and divided programmatically based on their prorated interests.

Appraisal Resources

- **Personnel** - The improved real property appraisal responsibilities are categorized according to major property types of multi-family or apartment, office, retail, warehouse and special use (i.e. hotels, hospitals and, nursing homes). The following appraisers are responsible for estimating the market value of commercial and industrial property:
 - Janice Lee, RPA (Director of Appraisal Operations)
 - Brenda Russell, RPA
 - Capitol Appraisal Group, LLC (Industrial)
- **Data** - The data used by the commercial appraisers includes verified sales of vacant land and improved properties and the pertinent data obtained from each (sales price levels, capitalization rates, income multipliers, equity dividend rates, marketing period, etc.). Other data used by the appraisers includes actual income and expense data (typically obtained through the hearings process), actual contract rental data, leasing information (commissions, tenant finish, length of terms, etc.), and actual construction cost data. In addition to the actual data obtained from specific properties, market data publications are also reviewed to provide additional support for market trends.

PRELIMINARY ANALYSIS

Market Study

Market studies are utilized to test new or existing procedures or valuation modifications in a limited sample of properties located in the district and are also considered and become the basis of updating whenever substantial changes in valuation are made. These studies target certain types of improved property to evaluate current market prices for rents and for sales of commercial and industrial real property. These comparable sale studies and ratio studies reveal whether the valuation system is producing accurate and reliable value estimates or whether procedural and economic modifications are required. The appraiser implements this methodology when developing cost approach, market approach, and income approach models.

Johnson CAD coordinates its discovery and valuation activities with adjoining appraisal districts. Numerous field trips, interviews and data exchanges with adjacent appraisal districts have been conducted to ensure compliance with state statutes. In addition, Johnson CAD administration and personnel interact with other assessment officials through professional trade organizations including the International Association of Assessing Officers, Texas Association of Appraisal Districts and its subchapter Texas Metropolitan Association of Appraisal Districts and the Texas Association of Assessing Officers. District staff strives to maintain appraisal skills and professionalism by continuing education in the form of courses that are offered by several professional associations such as International Association of Assessing Officers (IAAO), Texas Association of Assessing Officers (TAAO), Texas Association of Appraisal Districts (TAAD) and Texas Department of Licensing and Regulation courses.

VALUATION APPROACH

Land Value

Commercial land is analyzed annually to compare appraised values with recent sales of land in the market area. If appraised values differ from sales prices being paid, adjustments are made to all land in that region. Generally, commercial property is appraised on a price per square foot basis. Factors are placed on individual properties based on corner influence, depth of site, shape of site, easements across site, and other factors that may influence value. The land is valued as though vacant at the highest and best use.

Area Analysis

Area data on regional economic forces such as demographic patterns, regional locational factors, employment and income patterns, general trends in real property prices and rents,

interest rate trends, availability of vacant land, and construction trends and costs are collected from private vendors and public sources.

Neighborhood Analysis

The neighborhood and market areas are comprised of the land area and commercially classed properties located within the boundaries of this appraisal jurisdiction. These areas consist of a wide variety of property types including multiple-family residential, commercial and industrial. Neighborhood and area analysis involves the examination of how physical, economic, governmental and social forces and other influences may affect property values within subgroups of property locations. The effects of these forces are also used to identify, classify, and organize comparable properties into smaller, manageable subsets of the universe of properties known as neighborhoods. In the mass appraisal of commercial and industrial properties these subsets of a universe of properties are generally referred to as market areas, neighborhoods, or economic areas.

Economic areas are defined by each of the improved property use types (apartment, office, retail, warehouse and special use) based upon an analysis of similar economic or market forces. These include but are not limited to similarities of rental rates, classification of projects (known as building class by area commercial market experts), date of construction, overall market activity or other pertinent influences. Economic area identification and delineation by each major property use type is the benchmark of the commercial valuation system. All income model valuation (income approach to value estimates) is economic area specific. Economic areas are periodically reviewed to determine if delineation is required. The geographic boundaries as well as income, occupancy and expense levels and capitalization rates by age within each economic area for all commercial use types and its corresponding income model have been estimated for these properties.

In Johnson County, these neighborhoods will follow the residential market areas for smaller commercial properties – for example, beauty shops, convenience stores, dollar stores, etc. For complex commercial and industrial properties, the entire county and possibly adjoining counties are defined as the market area. For very complex industrial properties (natural gas processing plants and electric generation plants for example) this could mean state wide or even out of state due to the complex nature and scarcity of these properties.

Highest and Best Use Analysis

The highest and best use is the most reasonable and probable use that generates the highest net to land and present value of the real estate as of the date of valuation. The highest and best use of any given property must be physically possible, legally permissible, financially feasible,

and maximally productive. For improved properties, highest and best use is evaluated as improved and as if the site were still vacant. This perspective assists in determining if the existing improvements have a transitional use, interim use, nonconforming use, multiple uses, speculative use, is excess land, or a different optimum use if the site were vacant. For vacant tracts of land within this jurisdiction, the highest and best use is considered speculative based on the surrounding land uses. Improved properties reflect a wide variety of highest and best uses which include, but are not limited to: office, retail, apartment, warehouse, light industrial, special purpose, or interim uses. In many instances, the property's current use is the same as its highest and best use. This analysis insures that an accurate estimate of market value (sometimes referred to as value in exchange) is derived.

On the other hand, value in use represents the value of a property to a specific user for a specific purpose. This perspective for value may be significantly different than market value, which approximates market price under the following assumptions: (i) no coercion of undue influence over the buyer or seller in an attempt to force the purchase or sale, (ii) well-informed buyers and sellers acting in their own best interests, (iii) a reasonable time for the transaction to take place, and (iv) payment in cash or its equivalent.

Market Analysis

A market analysis relates directly to examining market forces affecting supply and demand. This study involves the relationships between social, economic, environmental, governmental, and site conditions. Current market activity including sales of commercial properties, new construction, new leases, lease rates, absorption rates, vacancies, allowable expenses (inclusive of replacement reserves), expense ratio trends, capitalization rate studies are analyzed to determine market ranges in price, operating costs and investment return expectations.

DATA COLLECTION / VALIDATION

Data Collection Manuals

Data collection and documentation for Commercial/Industrial property is continually updated, providing a uniform system of itemizing the multitude of components comprising improved properties. All properties located in Johnson CAD's inventory are coded according to a specific classification system and the approaches to value are structured and calibrated based on this coding system.

Annually, after the sales of property have been researched, verified, keyed into the database, and quality control has been completed, the sales data is summarized and produced into list

form. The confirmed sales reports, known as the Commercial Improved and Vacant Land sales listings categorize the sales by property and use type, and sort the data by location and chronological order. Many of these sales are available to the public for use during protest hearings, and are also used by the Johnson CAD appraisers during the hearings process.

Sources of Data

In terms of commercial sales data, Johnson CAD receives a copy of the deeds recorded in Johnson County and adjoining counties that convey commercially classed properties. These deeds involving a change in commercial ownership are entered into the sales information system and researched in an attempt to obtain the pertinent sale information. Other sources of sale data include the protest hearings process and local, regional and national real estate and financial publications.

For those properties involved in a transfer of commercial ownership, a sale file is produced which begins the research and verification process. The initial step in sales verification involves a computer-generated questionnaire, which is mailed to both parties in the transaction (Grantor and Grantee). If a questionnaire is answered and returned, the documented responses are recorded into the computerized sales database system. If no information is provided, verification of many transactions is then attempted via phone calls to parties thought to be knowledgeable of the specifics of the sale. Other sources contacted are the brokers involved in the sale, property managers or commercial vendors. In other instances, sales verification is obtained from local appraisers or others that may have the desired information. Finally, closing statements are often provided during the hearings process. The actual closing statement is the most reliable and preferred method of sales verification.

VALUATION ANALYSIS

Model calibration involves the process of periodically adjusting the mass appraisal formulae, tables and schedules to reflect current local market conditions. Once the models have undergone the specification process, adjustments can be made to reflect new construction procedures, materials and/or costs, which can vary from year to year. The basic structure of a mass appraisal model can be valid over an extended period of time, with trending factors utilized for updating the data to the current market conditions. However, at some point, if the adjustment process becomes too involved, the model calibration technique can mandate new model specifications or a revised model structure.

Cost Schedules

The cost approach to value is applied to improved real property utilizing the comparative unit method. This methodology involves the utilization of national cost data reporting services as well as actual cost information on local comparable properties whenever possible. Cost models are typically developed based on the Marshall & Swift Valuation Service which indicate estimated hard or direct costs of various improvement types. Cost models include the derivation of replacement cost new (RCN) of all improvements represented within the district. These include comparative base rates, per unit adjustments and lump sum adjustments for variations in property description, design, and types of improvement construction. This approach and analysis also employs the sales comparison approach in the evaluation of soft or indirect costs of construction. Evaluating market sales of newly developed improved property is an important part of understanding total replacement cost of improvements. What total costs may be involved in the development of the property, as well as any portion of cost attributed to entrepreneurial profit can only be revealed by market analysis of pricing acceptance levels. In addition, market related land valuation for the underlying land value is important in understanding and analyzing improved sales for all development costs and for the abstraction of improvement costs for construction and development. Time and location modifiers are necessary to adjust cost data to reflect conditions in a specific market and changes in costs over a period of time. Because a national cost service is used as a basis for the cost models, locational modifiers and estimates of soft cost factors are necessary to adjust these base costs specifically for various types of improvements located in Johnson County. Thusly, local modifiers are additional cost factors applied to replacement cost estimated by the national cost service. Estimated replacement cost new will reflect all costs of construction and development for various improvements located in Johnson CAD as of the date of appraisal.

Accrued depreciation is the sum of all forms of loss affecting the contributory value of the improvements. It is the measured loss against replacement cost new taken from all forms of physical deterioration, functional and economic obsolescence. Accrued depreciation is estimated and developed based on losses typical for each property type at that specific age. Depreciation estimates have been implemented for what is typical of each major class of commercial property by economic life categories. Estimates of accrued depreciation have been calculated for improvements with a range of variable years expected life based on observed condition considering actual age. These estimates are continually tested to ensure they are reflective of current market conditions. The actual and effective ages of improvements are noted in CAMA. Effective age estimates are based on the utility of the improvements relative to where the improvement lies on the scale of its total economic life and its competitive position in the marketplace.

Additional forms of depreciation such as external and/or functional obsolescence can be applied if observed. A depreciation calculation override can be used if the condition or effective age of a property varies from the norm by appropriately noting the physical condition and functional utility ratings on the property data characteristics. These adjustments are typically applied to a specific condition adequacy or deficiency, property type or location and can be developed via ratio studies or other market analyses.

The result of estimating accrued depreciation and deducting that from the estimated replacement cost new of improvements indicates the estimated contributory value of the improvements. Adding the estimated land value, as if vacant, to the contributory value of the improvements indicates a property value by the cost approach. Given relevant cost estimates and market related measures of accrued depreciation, the indicated value of the property by the cost approach becomes a very reliable valuation technique.

Income Models

The income approach to value is applied to those real properties which are typically viewed by market participants as "income producing", and for which the income methodology is considered a leading value indicator. The first step in the income approach pertains to the estimation of market rent on a per unit basis. This is derived primarily from actual rent data furnished by property owners. This per unit rental rate multiplied by the number of units results in the estimate of potential gross rent.

A vacancy and collection loss allowance is the next item to consider in the income approach. The projected vacancy and collection loss allowance is established from actual data furnished by property owners and local market trends. This allowance accounts for periodic fluctuations in occupancy, both above and below an estimated stabilized level. This feature may also provide for a reasonable lease-up period for multi-tenant properties, where applicable. The market derived stabilized vacancy and collection loss allowance is subtracted from the potential gross rent estimate to yield an indication of estimated annual effective gross rent to the property.

Next, a secondary income or service income is considered and, if applicable, calculated as a percentage of stabilized effective gross rent. Secondary income represents parking income, escalations, reimbursements, and other miscellaneous income generated by the operations of real property. The secondary income estimate is derived from actual data collected and available market information. The secondary income estimate is then added to effective gross rent to arrive at an effective gross income, when applicable.

Allowable expenses and expense ratio estimates are based on a study of the local market, with the assumption of prudent management. An allowance for non-recoverable expenses such as leasing costs and tenant improvements may be included in the expenses. A non-recoverable

expense represents costs that the owner pays to lease rental space. Relevant expense ratios are developed for different types of commercial property based on use and market experience. For instance, retail properties are most frequently leased on a triple-net basis, whereby the tenant is responsible for all operating expenses, such as ad valorem taxes, insurance, and common area and property maintenance. In comparison, a general office building is most often leased on a base year expense stop. This lease type stipulates that the owner is responsible for all expenses incurred during the first year of the lease. As a result, expense ratios are implemented and estimated based on observed market experience in operating various types of commercial property.

Another form of allowable expense is the replacement of short-lived items (such as roof or floor coverings, air conditioning or major mechanical equipment or appliances) requiring expenditures of lump sum costs. When these capital expenditures are analyzed for consistency and adjusted, they may be applied on an annualized basis as stabilized expenses. When performed according to local market practices by commercial property type, these expenses when annualized are known as replacement reserves. For some types of property, typical management does not reflect expensing reserves and is dependent on local and industry practices.

Subtracting the allowable expenses (inclusive of non-recoverable expenses and replacement reserves when applicable) from the annual effective gross income yields an estimate of annual net operating income to the property.

Return rates and income multipliers are used to convert operating income expectations into an estimate of market value for the property under the income approach. These include income multipliers, overall capitalization rates, and discount rates. Each of these multipliers or return rates are considered and used in specific applications. Rates and multipliers may vary between property types, as well as by location, quality, condition, design, age, and other factors. Therefore, application of the various rates and multipliers must be based on a thorough analysis of the market for individual income property types and uses. These procedures are supported and documented based on analysis of market sales for these property types.

Capitalization analysis is used in the income approach models to form an indication of value. This methodology involves the direct capitalization of net operating income as an indication of market value for a specific property. Capitalization rates applicable for direct capitalization method and yield rates for estimating terminal cap rates for discounted cash flow analysis are derived from the market. Sales of improved properties from which actual income and expense data are obtained provide a very good indication of property return expectations a specific market participant is requiring from an investment at a specific point in time. In addition, overall capitalization rates can be derived and estimated from the built-up method (band-of-investment). This method relates to satisfying estimated market return requirements of both the

debt and equity positions in a real estate investment. This information is obtained from available sales of property, local lending sources, and from real estate and financial publications.

Rent loss concessions are estimated for specific properties with vacancy problems. A rent loss concession accounts for the impact of lost rental income while the building is moving toward stabilized occupancy. The rent loss is calculated by multiplying the rental rate by the percent difference of the property's stabilized occupancy and its actual occupancy. Build out allowances (for first generation space or retrofit/second generation space as appropriate) and leasing expenses are added to the rent loss estimate. The total adjusted loss from these real property operations is discounted using an acceptable risk rate. The discounted value (inclusive of rent loss due to extraordinary vacancy, build out allowances and leasing commissions) becomes the rent loss concession and is deducted from the value indication of the property at stabilized occupancy. A variation of this technique allows a rent loss deduction to be estimated for every year that the property's actual occupancy is less than stabilized occupancy.

Sales Comparison (Market) Approach

Although all three of the approaches to value are based on market data, the Sales Comparison Approach is most frequently referred to as the Market Approach. This approach is utilized not only for estimating land value but also in comparing sales of similarly improved properties to parcels on the appraisal roll. As previously discussed in the Data Collection / Validation section of this report, pertinent data from actual sales of properties, both vacant and improved, is pursued throughout the year in order to obtain relevant information which can be used in all aspects of valuation. Sales of similarly improved properties can provide a basis for the depreciation schedules in the Cost Approach, rates and multipliers used in the Income Approach, and as a direct comparison in the Sales Comparison Approach. Improved sales are also used in ratio studies, which afford the appraiser an excellent means of judging the present level and uniformity of the appraised values.

Final Valuation Schedules

Based on the market data analysis and review discussed previously in the cost, income and sales approaches, the cost and income models are calibrated and finalized. The calibration results are keyed to the schedules and models in the CAMA system for utilization on all commercial properties in the district. Market factors reflected within the cost and income approaches are evaluated and confirmed based on market sales of commercial and industrial properties. The appraisers review the cost, income, and sales comparison approaches to value for each of the types of properties with available sales information. The final valuation of a

property is estimated based on reconciling these indications of value considering the weight of the market information available for evaluation and analysis in these approaches to value.

Statistical and Capitalization Analysis

Statistical analysis of final values is an essential component of quality control. This methodology represents a comparison of the final value against the standard and provides a concise measurement of the appraisal performance. Statistical comparisons of many different standards are used including sales of similar properties, the previous year's appraised value, audit trails, value change analysis and sales ratio analysis.

Appraisal statistics of central tendency and dispersion generated from sales ratios are calculated for each property type with available sales data. These summary statistics including, but not limited to, the weighted mean, provide the appraisers an analytical tool by which to determine both the level and uniformity of appraised value of a particular property type. The level of appraised values can be determined by the weighted mean for individual properties within a specific type, and a comparison of weighted means can reflect the general level of appraised value.

The appraisers review every commercial property type annually through the sales ratio analysis process. The first phase involves ratio studies that compare the recent sales prices of properties to the appraised values of the sold properties. This set of ratio studies affords the appraiser an excellent means of judging the present level of appraised value and uniformity of the appraised values. The appraiser, based on the sales ratio statistics and designated parameters for valuation update, makes a preliminary decision as to whether the value level of a particular property type needs to be updated in an upcoming reappraisal, or whether the level of market value is at an acceptable level.

Potential gross rent estimates, occupancy levels, secondary income, allowable expenses (inclusive of non-recoverables and replacement reserves), net operating income and capitalization rate and multipliers are continuously reviewed. Income model estimates and conclusions are compared to actual information obtained on individual commercial and industrial income properties during the protest hearings process, as well as with information from published sources and area property managers and owners.

INDIVIDUAL VALUE REVIEW PROCEDURES

Field Review

The date of last inspection, extent of that inspection, and the Johnson CAD appraiser responsible are listed in the CAMA system. If a property owner disputes the District's records

concerning this data in a protest hearing, CAMA may be altered based on the credibility of the evidence provided. A new field check may then be requested to verify this information for the current year's valuation or for the next year's valuation. In addition, if a building permit is filed for a particular property indicating a change in characteristics, that property is added to a work file for review.

Commercial appraisers are somewhat limited in the time available to field review all commercial properties of a specific use type. However, a major effort is made by appraisers to field review as many properties as possible or economic areas experiencing large numbers of remodels, renovations, or retrofits, changes in occupancy levels or rental rates, new leasing activity, new construction, or wide variations in sale prices. Field review of real property accounts is accomplished while business personal property is reviewed and inspected in the field. Additionally, the appraisers frequently field review subjective data items such as building class, quality of construction (known as cost modifiers), condition, and physical, functional and economic obsolescence factors contributing significantly to the market value of the property. In some cases field reviews are warranted when sharp changes in occupancy or rental rate levels occur between building classes or between economic areas. With preliminary estimates of value in these targeted areas, the appraisers test computer assisted values against their own appraisal judgment. While in the field, the appraisers physically inspect sold and unsold properties for comparability and consistency of values.

Office Review

Office reviews are completed on properties subject to field inspections and are performed in compliance with the guidelines required by the existing classification system. Office reviews are typically limited by the available market data presented for final value analysis. These reviews summarize the pertinent data of each property as well as comparing the previous value to the proposed value conclusions of the various approaches to value. These evaluations and reviews show proposed value changes, income model attributes or overrides, economic factor (cost overrides) and special factors affecting the property valuation such as new construction status, and a three years sales history (USPAP property history requirement for non residential property). The appraiser may review methodology for appropriateness to ascertain that it was completed in accordance with USPAP or more stringent statutory and district policies. This review is performed after preliminary ratio statistics have been applied. If the ratio statistics are generally acceptable overall the review process is focused primarily on locating skewed results on an individual basis. Previous values resulting from protest hearings are individually reviewed to determine if the value remains appropriate for the current year based on market conditions. Each appraiser's review is limited to properties in their area of responsibility by property type (improved) or geographic area (commercial vacant land).

Once the appraiser is satisfied with the level and uniformity of value for each commercial property within their area of responsibility, the estimates of value go to noticing. Each parcel is subjected to the value parameters appropriate for its use type.

PERFORMANCE TESTS

The primary tool used to measure mass appraisal performance is the ratio study. A ratio study compares appraised values to market prices. In a ratio study, market values (value in exchange) are typically represented with the range of sale prices, i.e. a sales ratio study. Independent, expert appraisals may also be used to represent market values in a ratio study, i.e. an appraisal ratio study. If there are not enough examples of market price to provide necessary representativeness, independent appraisals can be used as indicators for market value. This can be particularly useful for commercial or industrial real property for which sales are limited. In addition, appraisal ratio studies can be used for properties statutorily not appraised at market value, but reflect the use-value requirement. An example of this are multi-family housing projects subject to subsidized rent provisions or other governmental guarantees as provided by legislative statutes (affordable housing) or agricultural lands to be appraised on the basis of productivity or use value.

Johnson CAD has adopted the policies of the IAAO standards on ratio studies, Third Edition, 2010, regarding its ratio study standards and practices. Ratio studies generally have six basic steps: (1) determination of the purpose and objectives, (2) data collection and preparation, (3) comparing appraisal and market data, (4) stratification, (5) statistical analysis, and (6) evaluation and application of the results.

Sales Ratio Studies

Sales ratio studies are an integral part of estimating equitable and accurate market values, and ultimately property assessments for these taxing jurisdictions. The primary uses of sales ratio studies include the determination of a need for general reappraisal; prioritizing selected groups of property types for reappraisal; identification of potential problems with appraisal procedures; assist in market analyses; and, to calibrate models used to estimate appraised values during valuation or reappraisal cycles. However, these studies cannot be used to judge the accuracy of an individual property appraised value. The Johnson County Appraisal Review Board may make individual value adjustments based on unequal appraisal (ratio) protest evidence submitted on a case-by-case basis during the hearing process.

Overall sales ratios are generated by use type as needed to allow appraisers to review general market trends in their area of responsibility and for the Property Value Study from the Property Tax Assistance Division of the Comptroller's Office. The appraisers utilize desktop applications such as EXCEL programs to evaluate subsets of data by economic area or a specific and

unique data item. On the desktop, this may be customized and performed by building class and age basis. In many cases, field checks may be conducted to insure the ratios produced are accurate and the appraised values utilized are based on accurate property data characteristics. These ratio studies aid the appraisers by providing an indication of market activity by economic area or changing market conditions (appreciation or depreciation).

Comparative Appraisal Analysis

The commercial appraiser performs an average unit value comparison in addition to a traditional ratio study. These studies are performed on commercially classed properties by property use type (such as apartment, office, retail and warehouse usage or special use). The objective to this evaluation is to determine appraisal performance of sold and unsold properties. Appraisers average unit prices of sales and average unit appraised values of the same parcels and the comparison of average value changes of sold and unsold properties. These studies are conducted on substrata such as building class and on properties located within various economic areas. In this way, overall appraisal performance is evaluated geographically, by specific property type to discern whether sold parcels have been selectively appraised. When sold parcels and unsold parcels are appraised equally, the average unit values are similar. These sales and equity studies are performed prior to final appraisal and to annual noticing.

Business Personal Property Valuation Process

INTRODUCTION

Appraisal Responsibility

There are three different personal property types appraised by the district's personal property section: Business Personal Property accounts; leased assets; and vehicles and aircraft.

- **Personnel** - The personal property staff consists of 2 appraisers and 2 support staff.
Janice Lee, RPA (Director of Appraisal Operations)
Brenda Russell, RPA
Capitol Appraisal Group, LLC (Industrial)
- **Data** - A common set of data characteristics for each personal property account in the Central Appraisal District of Johnson County is collected in the field. The personal property appraisers collect the field data and maintain electronic property files making updates and changes gathered from field inspections, newspapers, property renditions, sales tax permit listing and interviews with property owners.

VALUATION APPROACH

SIC Code Analysis

Business personal property is classified and utilizes a four digit numeric codes, called Standard Industrial Classification (SIC) codes that were developed by the federal government to describe property. These classifications are used by Johnson CAD to classify personal property by business type

Highest and Best Use Analysis

The highest and best use of property is the reasonable and probable use that supports the greatest income and the highest present value as of the date of the appraisal. The highest and best use must be physically possible, legal, financially feasible, and productive to its maximum. The highest and best use of personal property is normally its current use.

DATA COLLECTION/VALIDATION

Data Collection Procedures

Personal property data collection procedures are published and distributed to all appraisers involved in the appraisal and valuation of personal property. The appraisal procedures are reviewed and revised to meet the changing requirements of field data collection.

Sources of Data

Business Personal Property

The district's property characteristic data was collected through a massive field data collection effort coordinated by the district over the recent past and from property owner renditions. From year to year, reevaluation activities permit district appraisers to collect new data via an annual field inspection. This project results in the discovery of new businesses, changes in ownership, relocation of businesses, and closures of businesses not revealed through other sources. Tax assessors, city and local newspapers, and the public often provide the district information regarding new personal property and other useful facts related to property valuation. Additionally, other useful resources are the internet, phone book and social media.

Vehicles

An outside vendor provides Johnson CAD with a listing of vehicles within the jurisdiction. The vendor develops this listing from the Texas Department of Transportation (TxDOT) Title and Registration Division records. Other sources of data include property owner renditions and field inspections.

Leased and Multi-Location Assets

The primary source of leased and multi-location assets is property owner renditions of property. Other sources of data include field inspections.

VALUATION AND STATISTICAL ANALYSIS (model calibration)

Cost Schedules

Cost schedules are developed based on the SIC code by the Property Tax Assistance Division of the Comptroller's Office and by district personal property valuation appraisers. The cost

schedules are developed by analyzing cost data from property owner renditions, hearings, state schedules, and published cost guides. The cost schedules are reviewed as necessary to conform to changing market conditions. The schedules are typically in a price per square foot format, but some exception SIC's are in an alternate price per unit format, such as per room for hotels.

Statistical Analysis

Summary statistics including, but not limited to, the median, weighted mean, and standard deviation provide the appraisers an analytical tool by which to determine both the level and uniformity of appraised value by SIC code. Review of the standard deviation can discern appraisal uniformity within SIC codes.

Depreciation Schedule and Trending Factors:

Business Personal Property

Johnson CAD's primary approach to the valuation of business personal property is the cost approach. The replacement cost new (RCN) is either developed from property owner reported historical cost or from CAD developed valuation models. The trending factors used by the CAD to develop RCN are based on published valuation guides. The percent good depreciation factors used by Johnson CAD are also based on published valuation guides. The index factors and percent good depreciation factors are used to develop present value factors (PVF), by year of acquisition, as follows:

$$\text{PVF} = \text{INDEX FACTOR} \times \text{PERCENT GOOD FACTOR}$$

The PVF is used as an "express" calculation in the cost approach. The PVF is applied to reported historical cost as follows:

$$\text{MARKET VALUE ESTIMATE} = \text{PVF} \times \text{HISTORICAL COST}$$

This mass appraisal PVF schedule is used to ensure that estimated values are uniform and consistent within the market and reflect current economic pressures of supply and demand.

Vehicles

Value estimates for vehicles are provided by an outside vendor and are based on Red Book published book values, and there are also considerations available for high mileage. Vehicles

that are not valued by the vendor are valued by an appraiser using PVF schedules or published guides.

Leased and Multi-Location Assets

Leased and multi-location assets are valued using the PVF schedules mentioned above. If the asset to be valued in this category is a vehicle, then Red Book published book values are used. Assets that are not valued by the vendor are valued by an appraiser using PVF schedules or published guides.

INDIVIDUAL VALUE REVIEW PROCEDURES

Office Review

Business Personal Property

The district reviews those accounts that have been identified as in need of review based on a variety of conditions. Property owner renditions, accounts with field or other data changes, accounts with prior hearings, new accounts, and SIC cost table changes, and properties identified during field inspections are all considered. The appraisers review accounts that fail the tolerance parameters.

PERFORMANCE TESTS

Ratio Studies

The Property Tax Assistance Division of the state comptroller's office conducts a semi-annual property value study (PVS). The PVS is a ratio study used to gauge appraisal district performance. Results from the PVS play a part in school funding. Rather than a sales ratio study, the personal property PVS is a ratio study using state cost and depreciation schedules to develop comparative personal property values. These values are then compared to Johnson CAD's personal property values and ratios are indicated.

JCAD CALENDAR OF EVENTS

Timeline

RESIDENTIAL CALENDAR OF EVENTS												
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Land Analysis												
Neighborhood Delineation												
Re-inspection/Sales Validation												
Sales Ratio Analysis/Valuation												
New Construction/Discovery												
New Construction Value Review												
Review Appeal of Property Value Study												
New Subdivisions												
Split-Outs/Combinations												
Jurisdiction Estimates												
Prior Year Correction Hearings												
Prior Year Corrections												
Field Checks												
Current Year Hearings												

COMMERCIAL CALENDAR OF EVENTS												
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Land Analysis												
Re-inspection												
Income & Expense Data												
Valuation												
Sales Analysis												
Permit Research												
New Construction/Discovery												
New Construction Value Review												
Appeal Of Property Value Study												
Split-outs/Combinations												
Sales Verification												
Prior Year Correction Hearings												
Prior Year Corrections												
Current Year Hearings												

PERSONAL PROPERTY CALENDAR OF EVENTS												
	Aug	Sept	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Assign Accounts												
Deliver estimates												
Re-inspection/Discovery												
Rendition review/finalize values												
Prior Year Correction Hearings												
Prio Year Corrections												
Current Year Hearings												

Calendar

DATE	
August 1, 2020	Update Cost Schedules and Depreciation Schedules
8/1/2020 or asap	Mail 10% Penalty Letters for Late Ag Applications
8/1/2020 or asap	Send Income Producing Questionnaire
August 3, 2020	Field work begins for 2021 appraisal year
August 7, 2020	Chief Appraiser sends Truth in Taxation notices
August 31, 2020	Field work begins for 2021 appraisal year
Aug - Oct	Prepare to receive email on "Alternate" test if applicable
September 1, 2020	Appraisal date for Sec 23.12(f) properties
September 1, 2020	Mail Ag Lease Questionnaire
December 31, 2020	Appraiser field work completed
Mid December	Review BPP renditions - check for correct return address
December 31, 2020	Mail BPP Renditions (WITH BARCODES) & Exempt Property applications - Freeport/Abatements/Special Inventory
January 1, 2021	Appraisal Date (except for properties appraised under Sec 23.12(f))
Mid-January	Run Query for New Owner Ag properties & send application
Mid-January	Calculate Ag values
Mid-January	Calculate Cap Rates
February 1, 2021	Sales Submission due
March 15, 2021	Deadline for appraisers to turn work in to Data Entry
March 29, 2021	Process Real Property notices
April 15, 2021	Rendition deadline (without extension request)
April 15, 2021	Mail Real Property notices
April 30, 2021	Ag application deadline (must be postmarked by April 30)
April 30, 2021	Send certified letters for New Owner Ag properties with no application on file
April 30, 2021	Ag Denial and Removal certified letters mailed
April 30, 2021	Estimates of taxable value sent to entities
April 30, 2021	Deadline for exemption applications including Freeport and Pollution Control. Also for exemptions and special appraisal properties including Ag
May 17, 2021	BPP Rendition deadline (with extension)
May 17, 2021	Real property notice deadline
May 24, 2021	ARB begins
May 25, 2021	Process BPP notices
June 1, 2021	Mail BPP notices
June 1, 2021	Send 10% BPP letters
Mid-June	Run X12 properties & match up with previous year to make sure annual exemption has been received
June 30, 2021	BPP notice deadline
July 16 2021	ARB approves records
July 16, 2021	Send BPP 10% penalty list to tax office
July 25, 2021	2021 Certification

July 30, 2021	Sales Submission and EARS due
August 2, 2021	Update Cost Schedules and Depreciation Schedules
8/2/2021 or asap	Mail 10% Penalty Letters for Late Ag Applications
8/2/2021 or asap	Send Income Producing Questionnaire
August 2, 2021	Field work begins for 2022 appraisal year
August 7, 2021	Chief Appraiser sends Truth in Taxation notices
Aug - Oct	Prepare to receive email on "Alternate" test if applicable
September 1, 2021	Appraisal date for Sec 23.12(f) properties
September 1, 2021	Mail Ag Lease Questionnaire
December 31, 2021	Appraiser field work completed
Mid December	Review BPP renditions - check for correct return address
December 31, 2021	Mail BPP Renditions (WITH BARCODES) & Exempt Property applications - Freeport/Abatements/Special Inventory
January 1, 2022	Appraisal Date (except for properties appraised under Sec 23.12(f))
Mid-January	Run Query for New Owner Ag properties & send application
Mid-January	Calculate Ag values
Mid-January	Calculate Cap Rates
February 1, 2022	Sales Submission due
March 15, 2022	Deadline for appraisers to turn work in to Data Entry
March 29, 2022	Process Real Property notices
April 15, 2022	Rendition deadline (without extension request)
April 15, 2022	Mail Real Property notices
April 30, 2022	Estimates of taxable value sent to entities
April 30, 2022	Deadline for exemption applications including Freeport and Pollution Control. Also for exemptions and special appraisal properties including Ag
May 2, 2022	Ag application deadline (must be postmarked by April 30)
May 2, 2022	Send certified letters for New Owner Ag properties with no application on file
May 2, 2022	Ag Denial and removal certified letters mailed
May 2, 2022	Deadline for exemption applications including Freeport and Pollution Control. Also, for special appraisal properties including Ag
May 16, 2022	BPP Rendition deadline (with Extension)
May 16, 2022	Real property notice deadline
May 24, 2022	ARB begins
May 25, 2022	Process BPP notices
June 1, 2022	Mail BPP notices
June 1, 2022	Send 10% BPP letters
Mid-June	Run X12 properties & match up with previous year to make sure annual exemption has been received
June 30, 2022	BPP notice deadline
July 14, 2022	ARB approves records
July 15, 2022	Send BPP 10% penalty list to tax office
July 25, 2022	2022 Certification
July 29, 2022	Sales Submission and EARS due

Minerals (Oil and Gas Reserves) Valuation Process

INTRODUCTION

Appraisal Responsibility

Minerals-in-place (oil and gas reserves) are real property. Appraisal of minerals, oil and gas reserves, is based on estimating the present value of the economically recoverable reserves of oil and gas. Mineral rights are property rights and may be separable property interests from the land surface property rights. Minerals being produced are a tangible asset and are appraised for ad valorem taxation. The valuation of minerals-in-place is based on estimating the discounted net present value of the oil and gas production over the economic life of the well(s). Basically, this method of valuation is an income approach using discounted cash flow analysis methodology. Oil and Gas Properties are also marketed based on proven reserves and the unit of comparison in this market is considered in barrels of oil or in cubic feet of natural gas. The market approach is based on sales of property based on barrels of proven reserves.

Mineral interests are commonly divided into property interests known as working interests and royalty interests. The valuation of this property begins with the valuation of the mineral lease and is divided into the property interests according to division orders for each lease. It is the goal and purpose of the CAD to identify every producing mineral property interest within the district and estimate the market value of each property interest listed on the roll.

Appraisal Resources

- **Personnel** - The mineral roll is appraised annually by the outside contract firm - Capitol Appraisal Group, LLC (CAGL).

VALUATION APPROACH

Subsections (a) and (b), Section 25.18, Tax Code:

(a) CAD shall implement the plan for periodic reappraisal of property approved by the board of directors under Section 6.05 (l).

(b) The plan provides for annual reappraisal of all oil and gas property appraised by the CAD. The CAD has a professional services contract with Capitol Appraisal Group, LLC (CAGL) to appraise these properties for the CAD.

Identification of new property and its situs: As subsurface mineral properties lie within the earth, they cannot be physically identified by inspection like other real property. However, the inability

to directly inspect does not appreciably affect the ability to identify and appraise these properties. To identify new properties, CAGL obtains monthly oil and gas lease information from the Railroad Commission of Texas (RRC) to compare against oil and gas properties already identified. The situs of new properties is determined using plats and W-2/G-1 records from the RRC, as well as CAGL's in-house map resources and the CAD's mapping department.

Identifying and updating relevant characteristics of all oil and gas properties to be appraised:

Relevant characteristics necessary to estimate value of remaining oil or gas reserves are production volume and pattern, product prices, expenses borne by the operator of the property, and the rate at which the anticipated future income should be discounted to incorporate future risk. CAGL obtains information to update these characteristics annually from regulatory agencies such as the RRC, the Comptroller of Public Accounts, submissions from property owners and operators, as well as from published investment reports, licensed data services, service for fee organizations and through comparable properties, when available.

Defining market areas in the district and identifying property characteristics that affect property

value in each market area: Oil and gas markets are regional, national and international.

Therefore they respond to market forces beyond defined market boundaries as observed among more typical real properties.

Developing an appraisal approach that best reflects the relationship among property characteristics affecting value and best determines the contribution of individual property characteristics: Among the three approaches to value (cost, income and market), the income approach to value is most commonly used in the oil and gas industry. Through use of the discounted cash flow technique in particular, the appraiser is able to bring together relevant characteristics of production volume and pattern, product prices, operating expenses and discount rate to determine an estimate of appraised value of an oil or gas property.

Comparison and Review: Use of the income approach is the first step in determining an estimate of market value. After that the appraiser reviews the estimated market value compared to its previous certified value and also compares it to industry expected payouts and income indicators. The appraiser examines the model's value with its previous year's actual income, expecting value to typically vary within in a range of 2-5 times actual annual income, provided all appropriate income factors have been correctly identified. Finally, periodic reassignment of properties among appraisers and review of appraisals by a more experienced appraiser further expand the review process.

MASS APPRAISAL PROCEDURES AND TIMELINE

Capitol Appraisal Group, LLC (CAGL) contracts with Appraisal Districts and other governmental entities to appraise all oil and gas subsurface, producing, mineral interests within the purview of the law.

October-December

SEC 10(k) data gathered for use in discount rate study.

A base discount rate is developed using the Securities and Exchange Commission (SEC) 10k Standard Measure of Value, before Federal Income Tax (BFIT), for a grouping of Exploration and Production (E&P) companies, and then matching their 10k Standard Measure of Value (BFIT), reserves and costs, through a discounted cash flow (DCF) technique. This reserve and cost match is used with Section 23.175 pricing directives to determine a discount rate necessary to equal the stock and debt value of the companies, as of January 1 for a given tax year. This analysis is calibrated with a WACC for the same companies that are used in the stock and debt analysis. Management determines an appropriate base discount rate to be used.

January

Discount rate study finalized

November-March

The appraiser commences the annual appraisal cycle with identification of new property and determination of situs.

"Minerals in place" and an estate or interest in the same, are classified by the state of Texas as real property. They cannot be physically identified by inspection like other real property. However, the inability to directly inspect does not appreciably affect the ability to identify and appraise these minerals in place and estates or interests in the same. CAGL obtains monthly oil and gas lease production information from the Railroad Commission of Texas [RRC] and compares it to existing oil and gas properties already identified and appraised. New properties are identified in this process by comparing existing data to new information obtained from the RRC.

The appraiser determines the validity of new properties and then determines the situs of these new properties by obtaining plats, W-2/G-1 records obtained from the RRC, and using in-house mapping resources.

January-March

Appraisers begin entering detailed new property information.

Along with RRC lease specific information, the appraiser enters the lease's legal description, its situs, and detailed lease information obtained from the RRC. This process of discovery and entry into the appraisal system continues year round to identify assessable properties that are obtained because of delays in the RRC reporting system.

February

Comptroller's 23.175 pricing data and market condition factors are obtained and incorporated into the appraisal system.

February-April

Properties are appraised and values are posted on the CAG web site for clients, operators and agents to review and submit information.

Appraiser(s) access production declines for leases to be appraised. Based on the appraiser's decline rate analysis and review of previous year's appraisal parameters and current Comptroller pricing data, the estimated value for the current appraisal year is determined.

Preliminary appraised values are available from the CAG web site www.CAGL.com following appraiser and supervisor review.

April-May

Preliminary appraisals reviewed.

Appraisers review operating expenses, product prices, new or revised information about production submitted by operators and agents before Notifications of Value are mailed to taxpayers.

May-July

Notified values formally & informally reviewed.

Appraisers work with taxpayers following Notification of Value and continue to review information submitted by royalty owners, operators and agents. The ARB process is part of this review.

Industrial Valuation Process

INTRODUCTION

Appraisal Responsibility

These properties will be valued each year by outside appraisal firms under contract. Industrial properties will typically be valued on a cost approach basis since these properties have a low frequency of being bought and sold in the open market compared to commercial and residential properties.

Appraisal Resources

- **Personnel** – Industrial property is appraised annually by the outside contract firm - Capitol Appraisal Group, LLC (CAGL).

INDUSTRIAL PERSONAL PROPERTY

Subsections (a) and (b), Section 25.18, Tax Code:

(a) CAD shall implement the plan for periodic reappraisal of property approved by the board of directors under Section 6.05 (l).

(b) The plan provides for annual reappraisal of all industrial personal property appraised by the CAD. The CAD has a professional services contract with Capitol Appraisal Group, LLC (CAGL) to appraise these properties for the CAD.

Identifying properties to be appraised: Appraisal of properties is limited to those indicated in the contract with the appraisal district, unless additionally requested by the appraisal district. Newly discovered properties will be discussed with the appraisal district to confirm they are to be appraised by Capitol Appraisal. Through inspection the appraiser identifies personal property to be appraised. The appraiser begins with properties from the previous tax year and identifies new properties from visual identification and/or publications, newspaper articles, or information obtained through the interview of property owners. The appraiser may also refer to other documents, both public and also confidential, to assist in identification of these properties. Such documents might include but are not limited to the previous year's appraisal roll, vehicle listing services and private directories.

Identifying and updating relevant characteristics of each property in the appraisal records: Data identifying and updating relevant characteristics of the subject properties are collected as part of

the inspection process through directories and listing services as well as through later submissions by the property owner, sometimes including confidential rendition. These data are verified through previously existing records and through public reports.

Defining market areas in the district: Market areas for industrial personal property are generally either regional or national in scope. Published price sources are used to help define market areas.

Developing an appraisal approach that reflects the relationship among property characteristics affecting value and determines the contribution of individual property characteristics: Personal property is appraised using replacement/reproduction cost new less depreciation models. Income approach models are used when economic and/or subject property income is available, and a market data model is used when appropriate market sales information is available.

Comparison and Review: The appraiser reconciles multiple models by considering the model that best addresses the individual characteristics of the subject property. Year-to year property value changes for the subject property are examined using computer-assisted statistical review. Periodic reassignment of properties among appraisers or the review of appraisals by a more experienced appraiser also contributes to the review process.

MASS APPRAISAL PROCEDURES AND TIMELINE

Although valuation is set for either January 1 of the tax year or September 1 of the previous calendar year prior to the current tax year, the appraisal process begins in September of the previous year and continues through August of the tax year.

September 1 of previous year to March 31 of the current tax year

Discovery and listing.

This includes physical inspection of existing properties to appraise and discovery of potential new properties to appraise. New potential properties are reported to the appraisal district to determine if Capitol Appraisal will value the property for the current tax year.

April 1 until complete

Appraisal of properties both market value and taxable value.

Deadlines for completion of appraisals and sending out value notices are based upon individual deadlines set by the appropriate appraisal district. Every effort is made to appraise every

property timely so that values can be included in certification. Properties not included in certification are reported to the appraisal district and the appraisal process continues until final value is reached. Supplementing the tax roll with those properties is based upon the timeline established by the appraisal district.

July 25

Appraisal roll is certified.

Every effort is made to ensure all properties have a final valuation by this date. Exceptions may include properties with late renditions, extensions, or other allowable justifications which preclude final valuation by July 25.

July 26 to August 31

Review current tax year methods and procedures, and begin general property classification research for the next tax year. Special reports for the appraisal districts are created at this time as requested.

INDUSTRIAL REAL PROPERTY

Subsections (a) and (b), Section 25.18, Tax Code:

(a) CAD shall implement the plan for periodic reappraisal of property approved by the board of directors under Section 6.05 (l).

(b) The plan provides for annual reappraisal of all industrial personal property appraised by the CAD. The CAD has a professional services contract with Capitol Appraisal Group, LLC (CAGL) to appraise these properties for the CAD.

Identifying properties to be appraised: Appraisal of properties is limited to those indicated in the contract with the appraisal district, unless additionally requested by the appraisal district. Newly discovered properties will be discussed with the appraisal district to confirm they are to be appraised by Capitol Appraisal. Industrial properties are identified as part of the appraiser's physical inspection process each year and through submitted data by the property owner. The appraiser may also refer to legal documents, photography and other descriptive items.

Identifying and updating relevant characteristics of each property in the appraisal records: The appraiser identifies and updates relevant characteristics through the inspection process. Confidential rendition, assets lists and other confidential data also provide additional

information. Subject property data is verified through previously existing records and through published reports.

Defining market areas in the district: Market areas for industrial properties tend to be regional, national and sometimes international. Published information such as prices, financial analysis and investor services reports are used to help define market area.

Developing an appraisal approach that reflects the relationship among property characteristics affecting value and determines the contribution of individual property characteristics: Among the three approaches to value (cost, income and market), industrial properties are most commonly appraised using replacement/reproduction cost new less depreciation models because of readily available cost information. If sufficient income or market data are available, those appraisal models may also be used.

Comparison and Review: The appraiser considers results that best address the individual characteristics of the subject property and that are based on the most reliable data when multiple models are used. Year-to-year property value changes for the subject property are examined using computer-assisted statistical review. Periodic reassignment of properties among appraisers or the review of appraisals by a more experienced appraiser also contributes to the review process.

MASS APPRAISAL PROCEDURES AND TIMELINE

Although valuation is set for either January 1 of the tax year or September 1 of the previous calendar year prior to the current tax year, the appraisal process begins in September of the previous year and continues through August of the tax year.

September 1 of previous year to March 31 of the current tax year

Discovery and listing.

This includes physical inspection of existing properties to appraise and discovery of potential new properties to appraise. New potential properties are reported to the appraisal district to determine if Capitol Appraisal will value the property for the current tax year.

April 1 until complete

Appraisal of properties both market value and taxable value.

Deadlines for completion of appraisals and sending out value notices are based upon individual deadlines set by the appropriate appraisal district. Every effort is made to appraise every property timely so that values can be included in certification. Properties not included in certification are reported to the appraisal district and the appraisal process continues until final value is reached. Supplementing the tax roll with those properties is based upon the timeline established by the appraisal district.

July 25

Appraisal roll is certified.

Every effort is made to ensure all properties have a final valuation by this date. Exceptions may include properties with late renditions, extensions, or other allowable justifications which preclude final valuation by July 25.

July 26 to August 31

Review current tax year methods and procedures, and begin general property classification research for the next tax year. Special reports for the appraisal districts are created at this time as requested.

Utility, Railroad & Pipeline Property Valuation Process

INTRODUCTION

Appraisal Responsibility

Utility properties are the tangible assets of various businesses including electric production, transmission, and distribution companies, railroads, petroleum product gathering and delivery pipelines, telephone and communication providers and others. The valuation of these properties is considered to be complex due to the involvement of both tangible and intangible property elements that comprise these businesses and due to the size of some of the utilities that are regional and national companies. The appraisal of these companies becomes complex when considering the valuation of the property as a unit in place, evaluating the property by the approaches to value at the company level. Once the estimated value of the unit is estimated, the estimated market value is allocated based on the tangible property assets that are located within the Central Appraisal District of Johnson County.

Appraisal Resources

- **Personnel** - The utility roll is appraised annually by the outside contract firm - Capitol Appraisal Group, LLC (CAGL).

VALUATION APPROACH

Subsections (a) and (b), Section 25.18, Tax Code:

(a) CAD shall implement the plan for periodic reappraisal of property approved by the board of directors under Section 6.05 (i).

(b) The plan provides for annual reappraisal of all industrial personal property appraised by the CAD. The CAD has a professional services contract with Capitol Appraisal Group, LLC (CAGL) to appraise these properties for the CAD.

Identifying properties to be appraised: Appraisal of properties is limited to those indicated in the contract with the appraisal district, unless additionally requested by the appraisal district. Newly discovered properties will be discussed with the appraisal district to confirm they are to be appraised by Capitol Appraisal. Utility, railroad and pipeline properties that are susceptible to inspection are identified by inspection. The appraiser may also refer to other documents, both public and also confidential to assist in identification of these properties. Due to the varied nature of utility, railroad, and pipeline properties there is no standard data collection form or manual. New permitting documents on record with the Railroad Commission of Texas provide a source to identify potential new pipeline projects but does not provide indication if the project

was actually started, completed, or a distinct location of the proposed project. Every effort is made to discover new utility, railroad, and pipeline properties through personal observation combined with permitting documents.

Identifying and updating relevant characteristics of each property in the appraisal records: The appraiser identifies and updates relevant characteristics through data collected as part of the inspection process and through later submissions by the property owner, sometimes including confidential rendition. Additional data are obtained through public sources, regulatory reports and through analysis of comparable properties.

Defining market areas in the district: Market areas for utility, railroad and pipeline property tend to be regional or national in scope. Financial analyst and investor services reports are used to help define market areas.

Developing an appraisal approach that reflects the relationship among property characteristics affecting value and determines the contribution of individual property characteristics: For all three types of property, the appraiser must first form an opinion of highest and best use. Among the three approaches to value (cost, income and market), pipeline value is calculated using a replacement/reproduction cost new less depreciation model [RCNLD]. In addition to the RCNLD indicator, a unit value model may also be used if appropriate data are available. Utility and railroad property are appraised in a manner similar to pipeline except that the RCNLD model is not used.

Comparison and Review: The appraiser considers results that best address the individual characteristics of the subject property when multiple models are used. Year-to-year property value changes for the subject property are examined using computer-assisted statistical review. Periodic reassignment of properties among appraisers or the review of appraisals by a more experienced appraiser also contributes to the review process. These types of property are also subject to review by the Property Tax Division of the Texas Comptroller's Office through their annual Property Value Study.

MASS APPRAISAL PROCEDURES AND TIMELINE

Although valuation is set for either January 1 of the tax year or September 1 of the previous calendar year prior to the current tax year, the appraisal process begins in September of the previous year and continues through August of the tax year.

September 1 of previous year to March 31 of the current tax year

Research and capitalization rate development.

For properties valued via the income approach data is obtained and analyzed for calculation of a capitalization rate appropriate to a specific property type.

October to December

Submission of appraisals to the Property Tax Assistance Division (PTAD) of the Comptroller's office and preparation of value defense for any properties included in their ratio study. Defense documentation and appraisal analysis of the PTAD appraisal is prepared and submitted to the appraisal district or the representative of the taxing jurisdictions whichever is appropriate.

April 1 until complete

Appraisal of properties both market value and taxable value.

Deadlines for completion of appraisals and sending out notice of value are based upon individual deadlines set by the appropriate appraisal district. Every effort is made to appraise every property timely so that values can be included in certification. Properties not included in certification are reported to the appraisal district and the appraisal process continues until final value is reached. Supplementing the tax roll with those properties is based upon the timeline established by the appraisal district.

July 25

Appraisal roll is certified.

Every effort is made to ensure all properties have a final valuation by this date. Exceptions may include properties with late renditions, extensions, or other allowable justifications which preclude final valuation by July 25.

July 26 to August 31

Review current tax year methods and procedures, and begin general property classification research for the next tax year. Special reports for the appraisal districts are created at this time as requested.

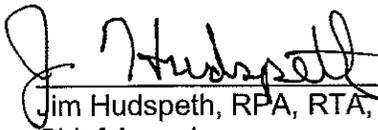
LIMITING CONDITIONS

The appraised value estimates provided by the district are subject to the following conditions:

1. The appraisals were prepared exclusively for ad valorem tax purposes.
2. The property characteristic data upon which the appraisals are based is assumed to be correct. Exterior inspections of the property appraised were performed as staff resources and time allowed. Some interior inspections of property appraised were performed at the request of the property owner and required by the district for clarification purposes and to correct property descriptions.
3. Validation of sales transactions was attempted through questionnaires to buyer and seller, telephone survey and field review. In the absence of such confirmation, residential sales data obtained from vendors was considered reliable.
4. I have attached a list of staff providing significant mass appraisal assistance to the person signing this certification.

Certification Statement:

"I, Jim Hudspeth, Chief Appraiser for the Central Appraisal District of Johnson County, solemnly swear that I have made or caused to be made a diligent inquiry to ascertain all property in the district subject to appraisal by me, and that I have included in the records all property that I am aware of at an appraised value which, to the best of my knowledge and belief, was determined as required by law."



Jim Hudspeth, RPA, RTA, CTA, CST, CCA
Chief Appraiser

STAFF PROVIDING SIGNIFICANT MASS APPRAISAL ASSISTANCE

<u>NAME</u>	<u>TITLE</u>	<u>TDLR NUMBER</u>	<u>TYPE OF ASSISTANCE</u>
Janice Lee, RPA	Director of Appraisal Operations	68281	Data Collection and Valuation Correlation