

**Richland-Chambers Watershed Protection Planning
& USDA-NRCS Incentive Program
Meeting**

**Wednesday, November 14, 2018
Cowboy Church of Ennis**

9:00 Registration w/ coffee & snacks provided by TRWD

9:30 Richland-Chambers Watershed Protection Planning (WPP).

- *Review of Project Status*
- *Review and Input on Existing Programs*
- *Review and Input on Education & Outreach Plan*
- *Review and Input on Technical & Financial Assistance Needs*
- *New project website*

11:30 Lunch provided by TRWD

12:00 City of Ennis Master Planning and Green Stormwater Project
Mr. R. Scott Dixon, MPA, City Manager

12:30 NRCS Rainfall Simulator & TRWD Stream Trailer demonstrations

1:30 National Water Quality Initiative (NWQI)

- *What is NWQI and what are its benefits to agriculture producers and the public*
- *Discussion panel of agriculture producers about their experience participating in NWQI*
- *How to apply for the NWQI program*

3:30 Adjourn

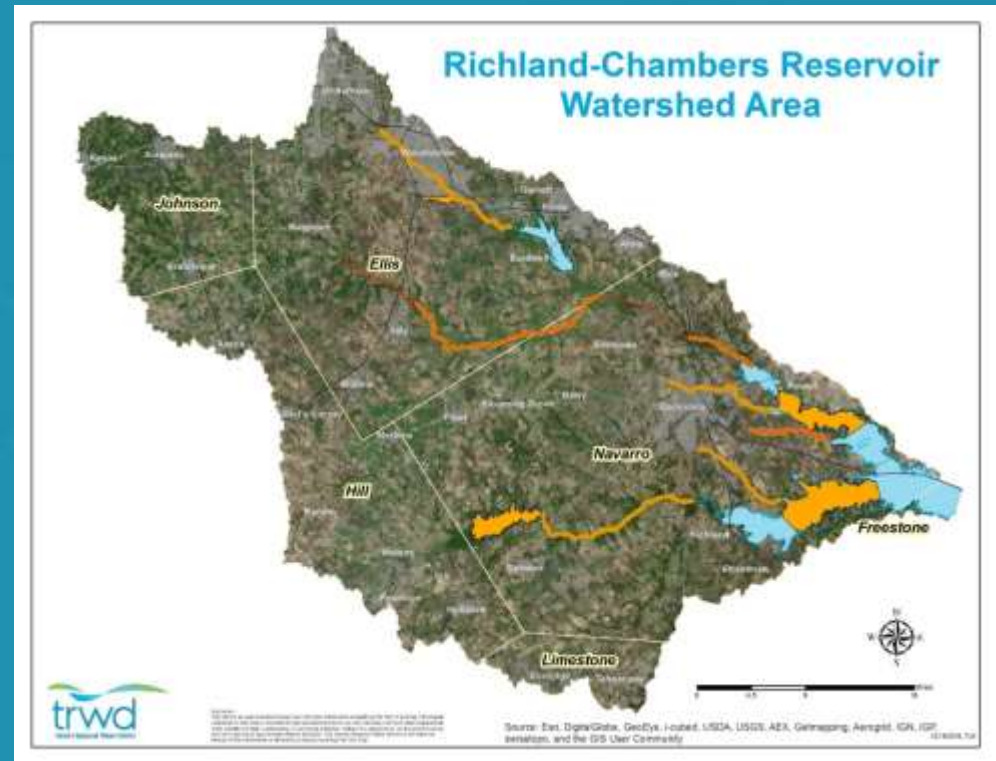


Richland-Chambers Watershed Partnership

STAKEHOLDER MEETING
NOVEMBER 14, 2018

Why We're Here

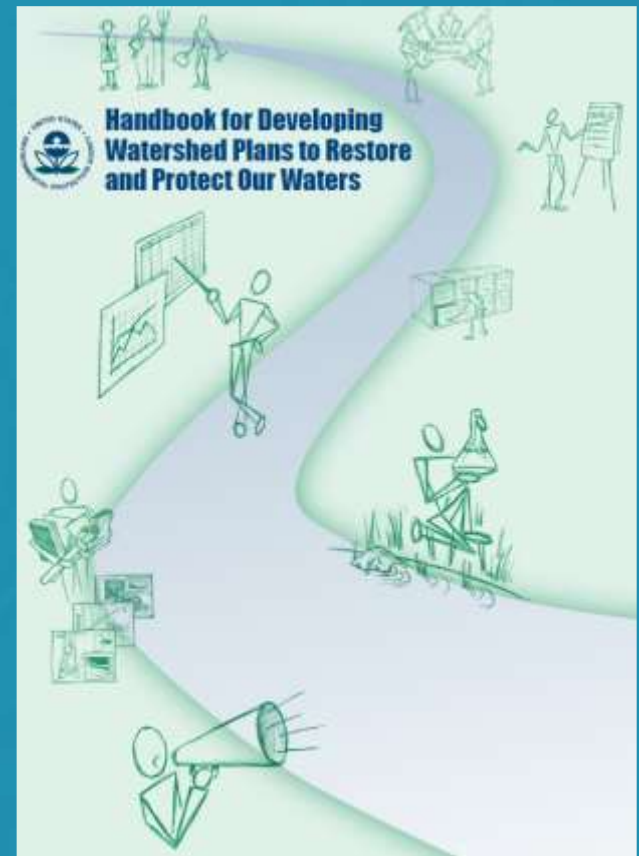
- TCEQ identified problems in streams & lakes
- Grass-roots approach to addressing local problems
- Local input is necessary to ensure investments are put where they're needed.



Watershed Protection Plans

A Locally-Led Approach

- A. Identify problem & sources
- B. Reductions needed to reach goals
- C. Identify measures needed to achieve reductions
- D. Assistance needed
- E. Education & outreach plan
- F. Schedule
- G. Milestones
- H. Criteria for measuring progress
- I. Monitoring Plan



Point Sources

32 Permittees

Permitted Flow
21.48 mgd

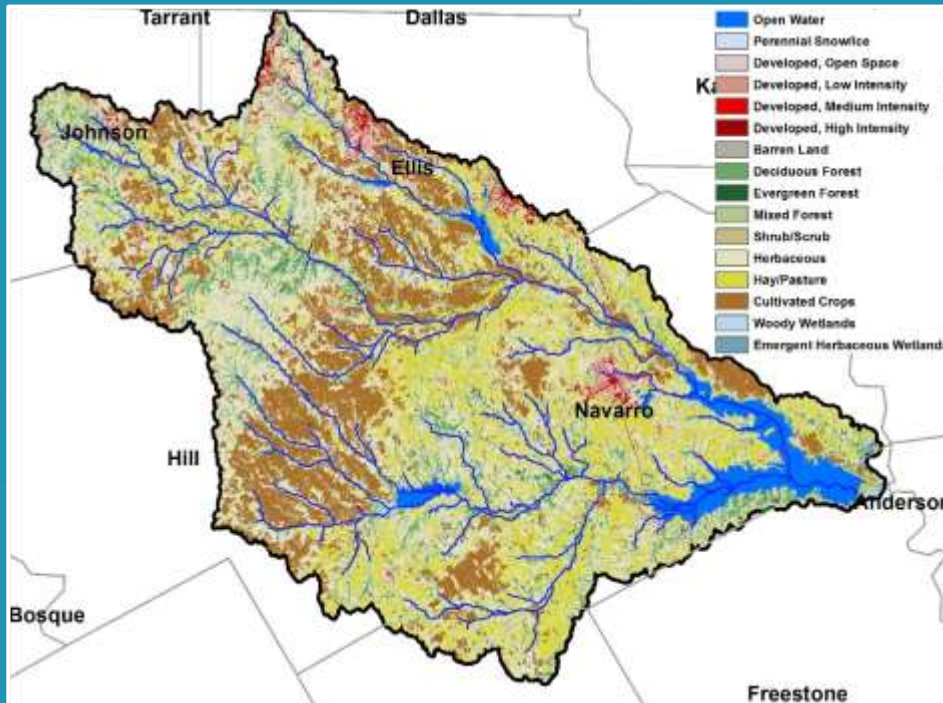
Reported Flow
11.33 mgd



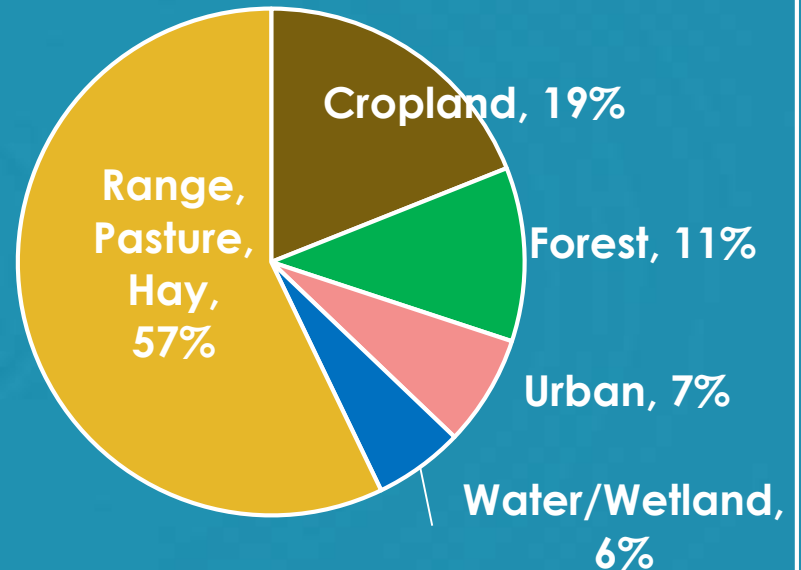
Permittee	Flow (mgd)		Daily Average Discharge Limits (mg/L)			
	Permitted	Reported	BOD	TSS	Ammonia	DO
City of Waxahachie*	8.0	4.79	7/10	15	2	5/4
City of Corsicana, Outfall 1	4.84	2.98	7	15	2	6
City of Corsicana, Outfall 2	1.0	0.3	10	15	3	4
City of Ennis	4.0	1.79	5	12	2	6
City of Keene	0.83	0.4	10	15	3	4
City of Italy	0.65	0.35	7	12	2	4
City of Grandview	0.3	0.07	10	15	2	4
City of Ennis	0.25	0.098	--	9	--	--
City of Hubbard	0.25	0.088	10	15	3	4
City of Maypearl	0.175	0.1	10	15	3	5
City of Dawson	0.13	0.066	20	20	10	2
City of Blooming Grove	0.1	0.04	20	20	--	2
City of Coolidge	0.1	0.03	30	90	--	4
N Tx Dist Cncl Assemblies of God	0.1	0.04	20	20	--	3
Rice Water Supply & SSC	0.086	0.03	30	90	--	4
City of Bardwell	0.08	0.02	10	15	3	4
City of Milford, Outfall 1	0.06	0.03	30	90	--	4
City of Milford, Outfall 2	0.06	0.02	10	15	3	4
Pelican Isle (Bosque Utilities Corp)	0.06	0.007	10	15	2	4
City of Frost	0.05	0.02	10	15	3	4
City of Malone	0.05	n/a	20	20	--	2
The Salvation Army	0.05	0.006	10	15	3	4
City of Bynum	0.04	0.02	20	20	--	2
Forreston Sewer Service & WSC	0.04	0	30	90	--	2
Matheson Tri-Gas Inc	0.04	0	--	--	--	--
Blue Water Oaks POA	0.03	0.007	10	15	report***	4
Avalon Water Supply & Sewer	0.025	0.01	20	20	report***	4
City of Mertens	0.025	0	30	90	--	4
White Rock Homeowners	0.025	0	10	15	3	4
TxDOT	0.014	0.007	10	15	3	4
City of Angus	0.012	0.008	20	20	--	3
Town of Mustang	0.01	0.002	10	15	--	4
Holcim (Texas) LP	Interm**	0.004	--	25	--	--
Owens Corning	Interm**	0	--	--	--	--

Nonpoint Sources

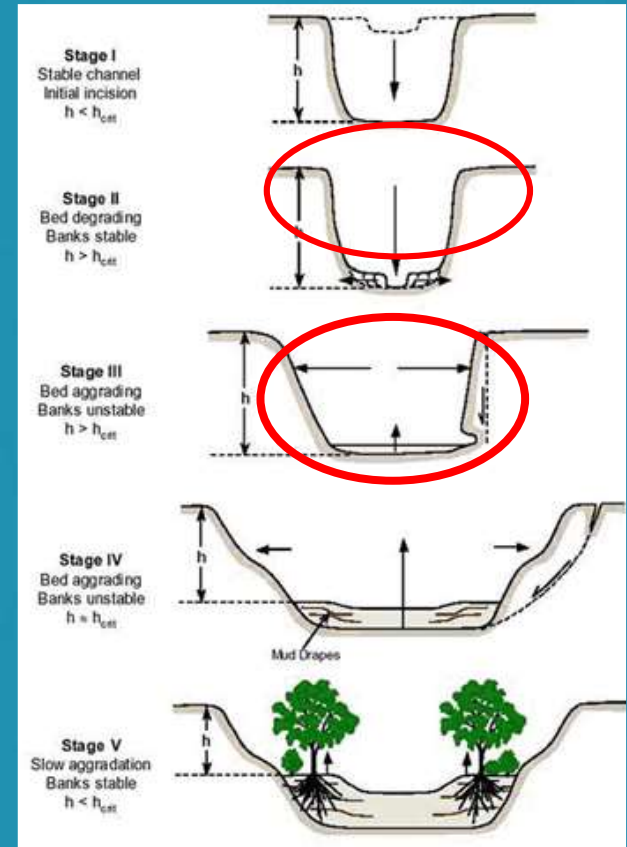
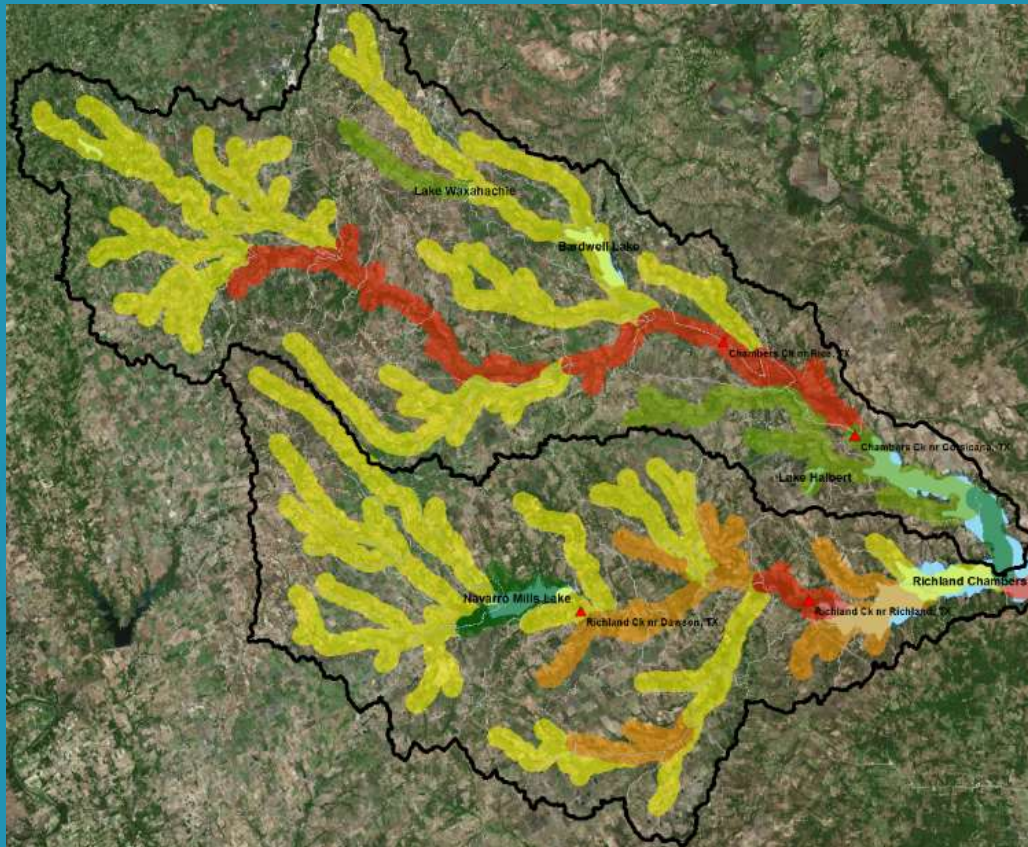
Land Uses and Coverage



Land Use Percentages



Channel Erosion



Watershed Goals

- ▶ **Goal Statement** (Restoration)

... streams and reservoirs in the Richland-Chambers reservoir meet appropriate water quality standards.

- ▶ **Goal Statement** (Protection)

... capacity of water supply reservoirs be protected by reducing erosion in the Richland-Chambers watershed.

Questions?



Existing Programs & Initiatives

Wastewater

➤ **Sanitary Sewer Overflow Initiative (SSOI)**

- *Goal: Prevent or reduce sanitary sewer overflows*
- Waxahachie, Ennis, Corsicana
- Infrastructure surveys, monitoring, maintenance & public education

Agricultural & Rural

- **State & Federal Programs (NRCS, TSSWCB & SWCDs)**
 - *Goal: Conserve soil & water resources in agricultural areas*
 - Financial Assistance (EQIP, CSP, WQMPs), Easements (ACEP)
 - National Water Quality Initiative (NWQI)
 - Regional Conservation Partnership Program (RCPP)
- **Small Watershed Dam Program (NRCS, TSSWCB, SWCDs)**
 - *Goal: Protect downstream areas from flooding & excess erosion*
 - Operation & Maintenance, Repairs, Rehabilitation
- **Grazing Group (landowner-led)**
 - *Goal: Provide support & encouragement within the grazing community.*
 - Expert and Peer-to-peer information on practices & methods

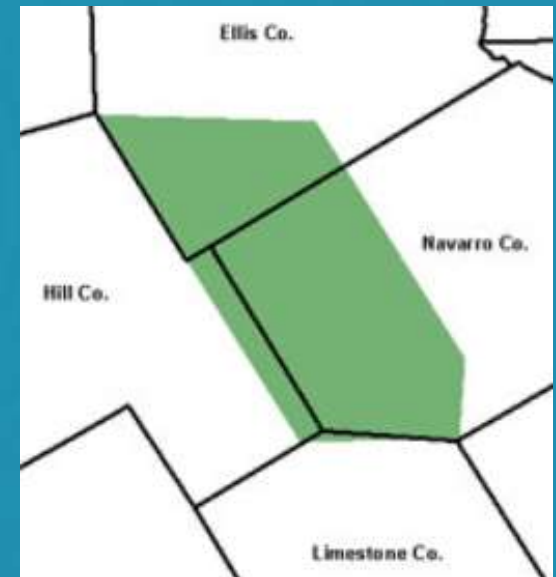
Agricultural & Rural

➤ MillerCoors

- *Goal: Support practices that protect water quality*
- Financial assistance to ag producers for conservation planning & practices that protect water quality

➤ Western Navarro Bobwhite Restoration Initiative (WNBRI)

- *Goal: Increase habitat for bobwhite and grassland birds*
- Provide planning and assistance to deliver conservation to local landowners
- Eases landowner financial burdens through free or no-cost materials & equipment



Urban & Developed Areas

➤ **Municipal Separate Storm Sewer System (MS4)**

- *Goal: Reduce pollutants from urban areas*
- Midlothian, Waxahachie, Ellis County, Johnson County
- Ordinances, floodplain design manuals, construction standards, public education

➤ **Other, non-MS4 Measures**

- Stream bank stabilization projects (Waxahachie, Corsicana, others?)
- Flood protection/erosion planning studies & plans (Corsicana)

Urban & Developed Area

North Central Texas Council of Governments (NCTCOG)

➤ Stormwater Management Program

- *Goal: Provide regional strategy to address stormwater issues*
- Supports regional stewardship of urbanized surface waters
- Hosts Regional Stormwater Management Coordinating Council and task forces
- Interlocal agreements , workplans, cost-share arrangements
- Identifies external funding sources

Other

➤ **Tarrant Regional Water District (TRWD)**

- *Goal: Reduce nutrients and sediment entering water supplies*
- Supports wastewater limits on discharges close to lakes
- Issues permits for construction activities within 2,000 ft of lake
- Issues permits & inspects septic systems in 2,000 ft buffer
- Samples lakes & major tributaries for water quality conditions
- Provides watershed planning & project assistance to stakeholder groups
- Funds technical studies to support watershed planning
- Financial assistance for conservation planning & practices that protect water quality & reduce erosion

Additional thoughts?

Education & Outreach

Goal of Education & Outreach

To provide the information and knowledge necessary for successful implementation of desired land management strategies and practices.

Pollutant Source	Target Audiences
All	General Public
Agricultural & Rural Lands (cropland, rangeland, pastures, forests)	Farmers, Ranchers, Landowners, Industry Reps, Agency personnel
Urban & Developed Areas (wastewater, stormwater runoff)	Decision makers, permittees, residents, business owners
Stream Channel Erosion	Streamside landowners, Agency personnel

Events & activities facilitated & tracked by Watershed Coordinator

Pollutant Source	Target Audiences
All	General Public

To provide youth and adults with an understanding of how natural resources function and impact people, and how their actions impact natural resources.

General Natural Resource Management	Lead Entities	How Often?
Multimedia information campaign (web site, social media, articles, press releases, flyers, email updates, etc)	TRWD/Texas A&M AgriLife Research	continuous
Texas Watershed Stewards (statewide workshops)	Texas A&M AgriLife Extension	every 3 yrs
Public/Private School Education (curriculum & hands-on events)	TRWD/Texas A&M AgriLife Research	every 1 yr
Community Outreach Events (information handouts & interactive demonstrations)	TRWD/Texas A&M AgriLife Res & Ext	every 1 yr

Pollutant Source	Target Audiences
Agricultural & Rural Lands (cropland, rangeland, pastures, forests)	Farmers, Ranchers, Landowners, Industry Reps, Agency personnel

To provide rural landowners and agricultural producers with information on land management programs, systems and practices that reduce erosion and nutrient loss.

Programs	Lead Entities	How Often?
Agricultural Program Workshops (resources for planning & financial assistance)	NRCS, SWCD, TRWD, Texas A&M AgriLife Ext	every 3 yrs
Conservation Practices Workshops/Field Days (e.g. soil health; nutrient, grazing management)	NRCS, SWCD, Texas A&M AgriLife Ext	every 1 yr
Small Acreage Producer Workshops/Field Days (land management, stocking rates, tax valuation)	Texas A&M AgriLife Ext, SWCD, NRCS, TRWD	every 3 yrs
Land Management Demonstration Sites (demonstration of methods/practices)	Landowner/Producers, NRCS, SWCD, TRWD, Texas A&M AgriLife Ext	every 5 yrs

Pollutant Source	Target Audiences
Urban & Developed Areas (wastewater, stormwater runoff)	Decision makers, permittees, residents, developers, business owners

To provide stakeholders with information on practices and programs that reduce urban stormwater runoff and protect water quality.

Programs	Lead Entities	How Often?
Urban Stormwater & Floodplain Workshops (resources & tools for policies in managing urban stormwater)	NCTCOG, Texas A&M AgriLife Rsch & Ext, Regulated entities	every 3 yrs
Urban Stormwater Management Practices & Green Stormwater Infrastructure Workshops (practices for addressing urban stormwater)	NCTCOG, TRWD, Texas A&M AgriLife Rsch & Ext, Regulated entities	Every 3 yrs
Homeowner Education Events (Healthy Lawns/Healthy Waters, rainwater harvesting, landscape mgmt, nutrient mgmt)	Texas A&M AgriLife Rsch & Ext, Regulated entities	every 1 yr

Pollutant Source	Target Audiences
Stream Channel Erosion	Streamside landowners, Local government staff, Agency personnel

To provide stakeholders with information on stream channel and riparian functions, and practices and programs that address channel and riparian erosion.

Programs	Lead Entities	How Often?
Texas Riparian Ecosystem Workshops (stream ecosystem functions, values, & mgmt)	TRWD, Texas A&M AgriLife Rsch & Ext	every 3 yrs
Urban Riparian Workshops (stream functions & mgmt in urban settings)	TRWD, Texas A&M AgriLife Rsch & Ext	every 3 yrs
Stream Restoration Workshops (opportunities, limitations, design approaches)	NCTCOG, Texas A&M AgriLife Rsch & Ext	every 3 yrs

Additional thoughts?

Technical & Financial Assistance Needs

Target Source	Implementation Categories
Agricultural & Rural Areas (cropland, rangeland, pastures, forests)	<ul style="list-style-type: none">• Conservation Planning• Structural & Non-structural practices
Urban & Developed Areas (wastewater, stormwater runoff)	<ul style="list-style-type: none">• Policies/ordinances• Structural BMPs• Land management practices
Stream Channel Erosion	<ul style="list-style-type: none">• Riparian zone management• Structural BMPs & channel restoration

Agricultural & Rural Areas

Conservation Planning and Practices

Technical Assistance Needs & Sources	Financial Assistance Sources
<ul style="list-style-type: none">➤ Technician to develop plans<ul style="list-style-type: none">➤ NRCS➤ SWCD➤ TPWD ➤ Engineering assistance for structural practices	<ul style="list-style-type: none">➤ <u>NRCS</u> Farm Bill Programs (EQIP, CSP, CRP)➤ <u>TSSWCB</u> WQMP Program➤ <u>SWCD</u> Partnerships➤ <u>TPWD</u><ul style="list-style-type: none">➤ Landowner Incentive Program➤ Tx Farm & Ranch Lands Conservation Program➤ <u>TWDB</u> Economically Distressed Area Program➤ <u>TDA</u> Texas Capital Fund➤ <u>USDA</u> Rural Development Water & Environmental Programs➤ <u>EPA</u> Section 319(h) Clean Water Act Program

Urban & Developed Areas

Policies/ordinances, wastewater, Structural BMPs, Land management

Technical Assistance Needs & Sources	Financial Assistance Sources
<ul style="list-style-type: none">➤ Technical information to support effective policies.<ul style="list-style-type: none">➤ NCTCOG➤ Texas A&M AgriLife Research➤ Administrative support for stormwater management programs<ul style="list-style-type: none">➤ NCTCOG➤ Engineering assistance for wastewater & structural BMPs	<ul style="list-style-type: none">➤ <u>NCTCOG</u> Stormwater Management Program➤ <u>TWDB</u><ul style="list-style-type: none">➤ Regional Water Supply & Wastewater Planning Program,➤ Economically Distressed Area Program,➤ State Revolving Fund➤ <u>TCEQ</u><ul style="list-style-type: none">➤ 106 State Water Pollution Control Program,➤ Supplemental Environmental Program➤ <u>National Fish and Wildlife Foundation Grants</u>➤ <u>EPA</u><ul style="list-style-type: none">➤ Section 319(h) Clean Water Act Program➤ Five Star & Urban Waters Grant

Stream Channel Erosion

Riparian zone management, Structural BMPs, Stream Restoration

Technical Assistance Needs & Sources	Financial Assistance Sources
<ul style="list-style-type: none">➤ Technician to develop management plans<ul style="list-style-type: none">➤ NRCS➤ SWCD➤ TPWD➤ Engineering assistance for structural projects	<ul style="list-style-type: none">➤ <u>NRCS</u> Farm Bill Programs, (EQIP, CSP, CRP)➤ <u>TSSWCB</u> WQMP Program➤ <u>TPWD</u> Landowner Incentive Program➤ <u>WNBRI</u> Landowner Assistance Grant➤ <u>EPA</u><ul style="list-style-type: none">➤ Section 319(h) Clean Water Act Program,➤ Environmental Education Grants➤ <u>TCEQ</u> Supplemental Environmental Program

All Areas

General Watershed Planning, Monitoring, Implementation

Technical Assistance Needs & Sources

- Water quality data & landscape information collection
 - NRCS
 - TPWD
 - TRWD
 - MS4s & local entities

- Watershed planning

Financial Assistance Sources

- TCEQ Texas Clean Rivers Program

- EPA
 - Targeted Watersheds Grants
 - Section 319(h) Clean Water Act Program,
 - Environmental Education Grants

Additional thoughts?



Three ways to access our new webpage!

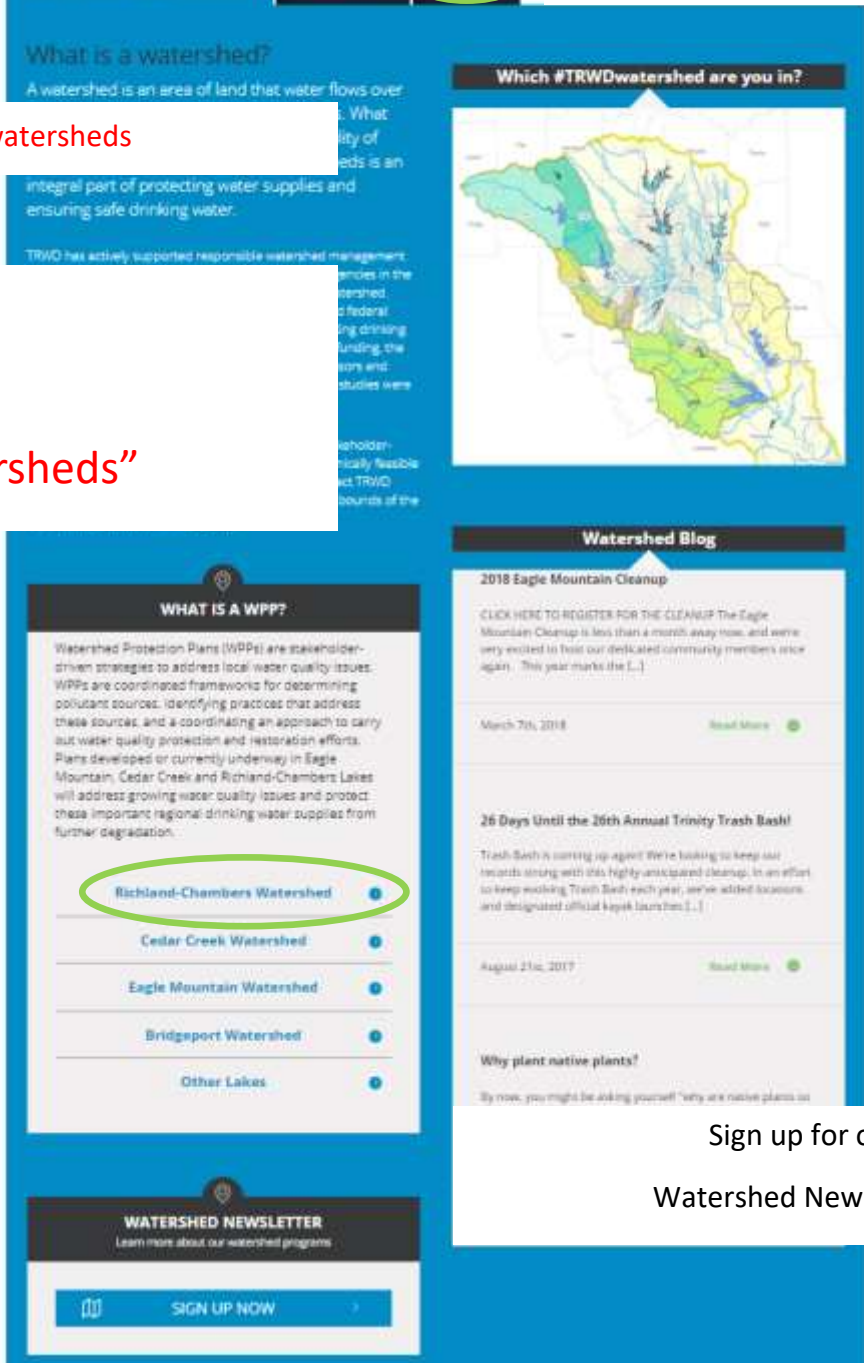
#1
www.trwd.com:



#2
http://bit.ly/TRWDwatersheds



#3
Google:
"TRWD watersheds"



Sign up for our
Watershed Newsletter!

Richland-Chambers Project Page

<http://www.trwd.com/water-supply/environmental/environmental-stewardship/watershed-protection/richland-chambers/>

Find info on watershed projects and other local resources!

Water supply LAKES ENVIRONMENTAL CONSERVATION WETLANDS RW SERVICE AREA

Richland-Chambers Watershed

Richland-Chambers Cedar Creek Eagle Mountain Bridgeport Other Lakes

Richland-Chambers Lake is located southeast of Dallas and is the third largest inland reservoir by surface to lie entirely within the state. Constructed in the late 1980's, it's vast watershed drains almost 2,000 square miles of mostly rural area and provides a significant percent of the total TRWD water supply.

RICHLAND-CHAMBERS WPP

Today, TRWD and others continue to assist local agencies, such as the Ellis-Barkley and Navarro County Soil & Water Conservation Districts in helping agricultural producers implement conservation practices that will hold soil on fields and reduce stormwater runoff.

Similar to many reservoirs in the state, water quality in Richland-Chambers is affected by nutrient and sediment runoff from the watershed which boost algae growth and decrease holding capacity. Currently, TRWD is working with Texas A&M AgriLife Research to conduct studies that will provide the scientific foundation for a stakeholder-driven WPP. Stakeholder meetings are anticipated to begin in 2016.

- Reports
- Stakeholder Meetings

HISTORY

Agriculture was the predominant land use in the region beginning in the late 1800's, and by the early 1940's the area suffered from soil depletion and erosion due to non-conservation farming practices and climatic events of the 1930's. The efforts of local farmers to control soil loss and flooding of land along the creeks was echoed by the USDA in the 1960's with major channelization and re-routing of Chambers and Mill Creeks, major tributaries to Richland-Chambers lake. Shortly after the lake was constructed, TRWD joined with local, state, and federal entities to identify cost-effective and efficient agricultural practices and best management practices to address sediment and nutrient contributions from the watershed.

SHANNON WETLANDS PROJECT

TRWD's George W. Shannon Wetlands Water Reuse Project was the first of its kind in the United States and serves as a functional water supply alternative for the district's rapidly growing service area.

[Learn More](#)

RESOURCES

- National Water Quality Initiative
- Partnerships

WATERSHED PROTECTION

Return to the Watershed Protection main page.

[Go Back](#)

NEWSLETTER

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CALENDAR

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Scan this QR code with your device to go directly to RC watershed's new page!



- ⇒ Maps
- ⇒ Reports
- ⇒ Past meeting agendas
- ⇒ NWQI
- ⇒ Partnerships

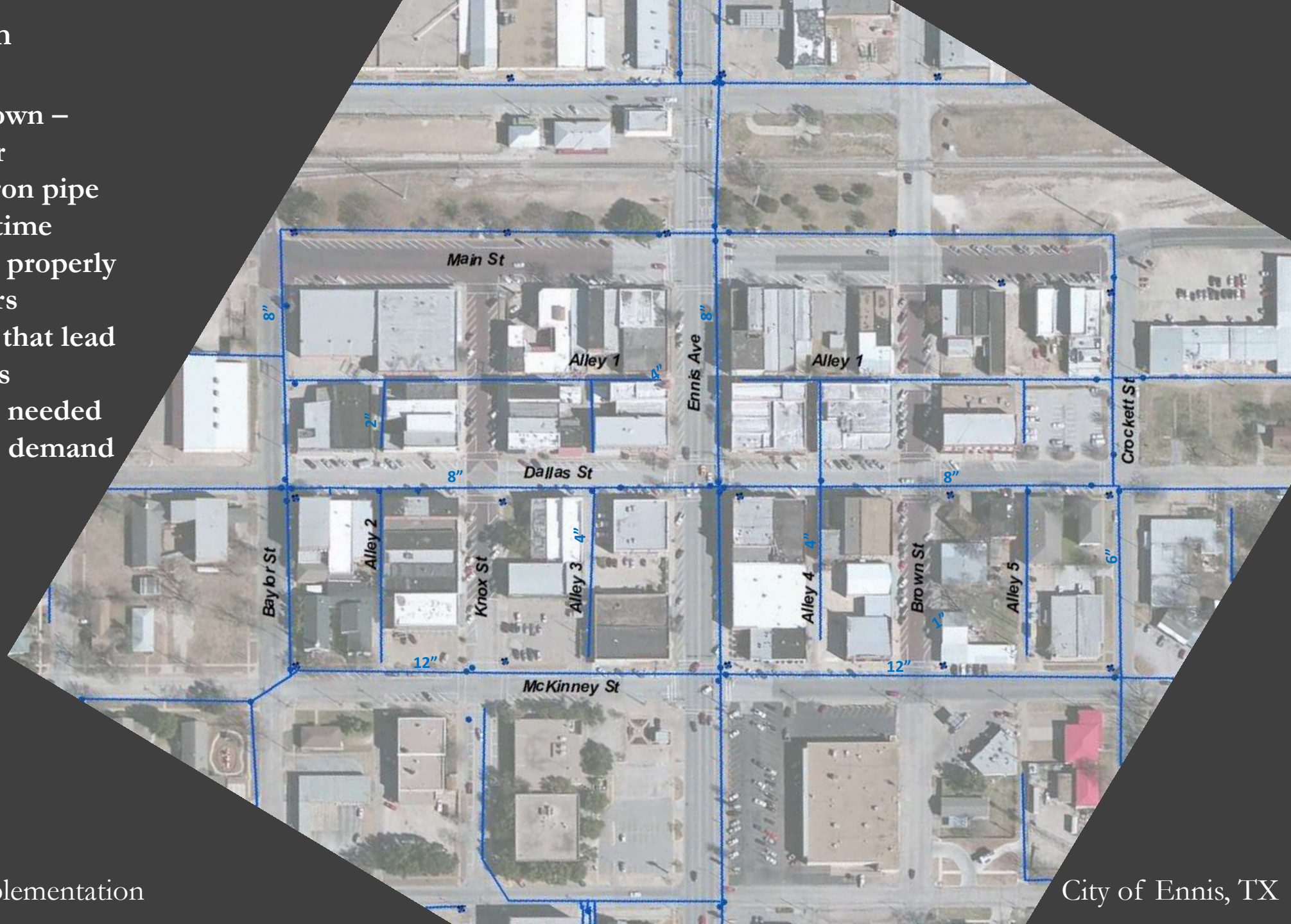


RESPECT THE PAST - ANTICIPATE THE FUTURE

THRIVE IN THE PRESENT

Existing Water System

- Date Installed Unknown – Likely 1950s or earlier
- Predominately cast iron pipe which corrodes over time
- Not enough valves to properly isolate lines for repairs
- Dead ends in system that lead to water quality issues
- Additionally capacity needed for anticipated future demand



Existing Sanitary Sewer System

- Date Installed Unknown – Likely 1950s or earlier
- Predominately 6” diameter vitrified clay pipe which is subject to leaks and damage over time
- Alignment issues that inhibit flow
- Additional manholes needed to facilitate maintenance
- Additional capacity needed for anticipated future demand



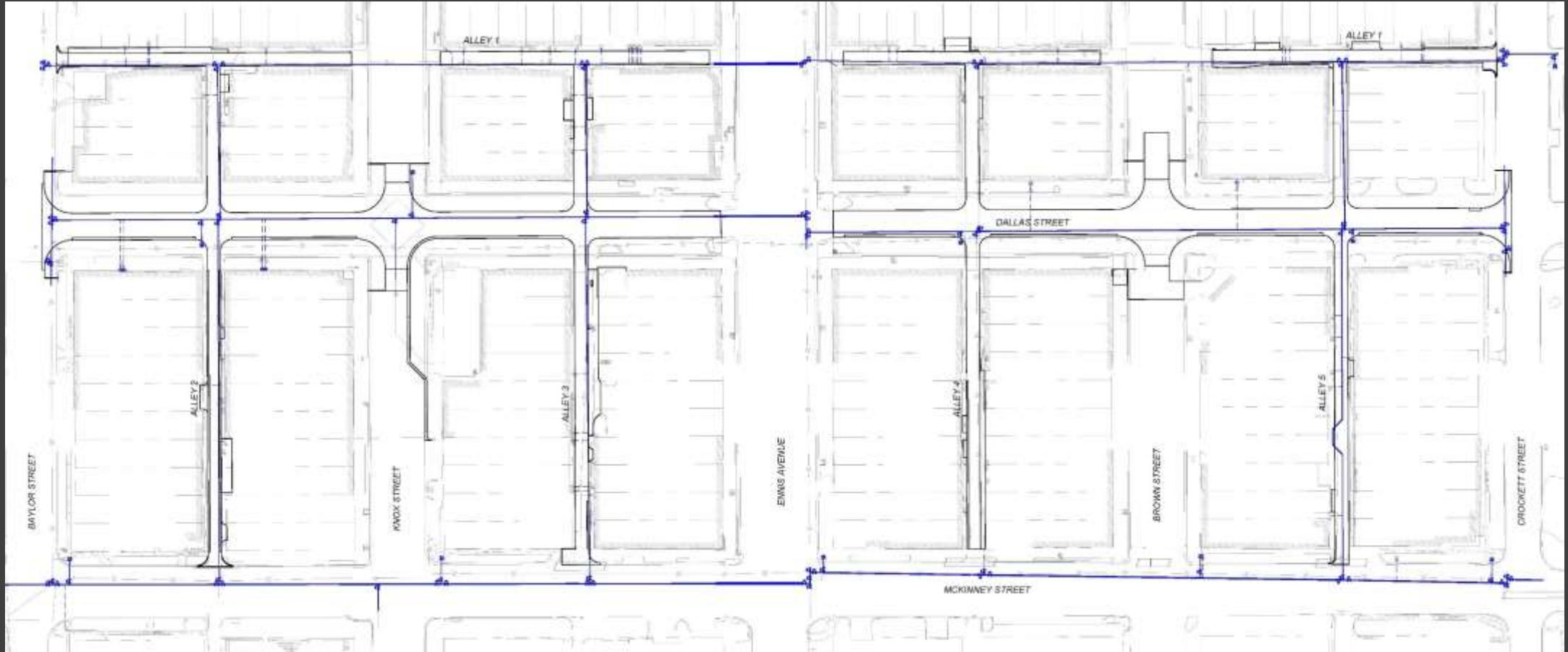
Existing Storm Sewer System

- Date Installed Unknown – Likely 1950s or earlier
- Predominately clay tile pipe which is subject to leaks and root damage over time
- Pipes under sized for current impervious drainage area
- Localized water ponding occurs in flat areas
- Improvements to streetscape require drainage system reconfiguration



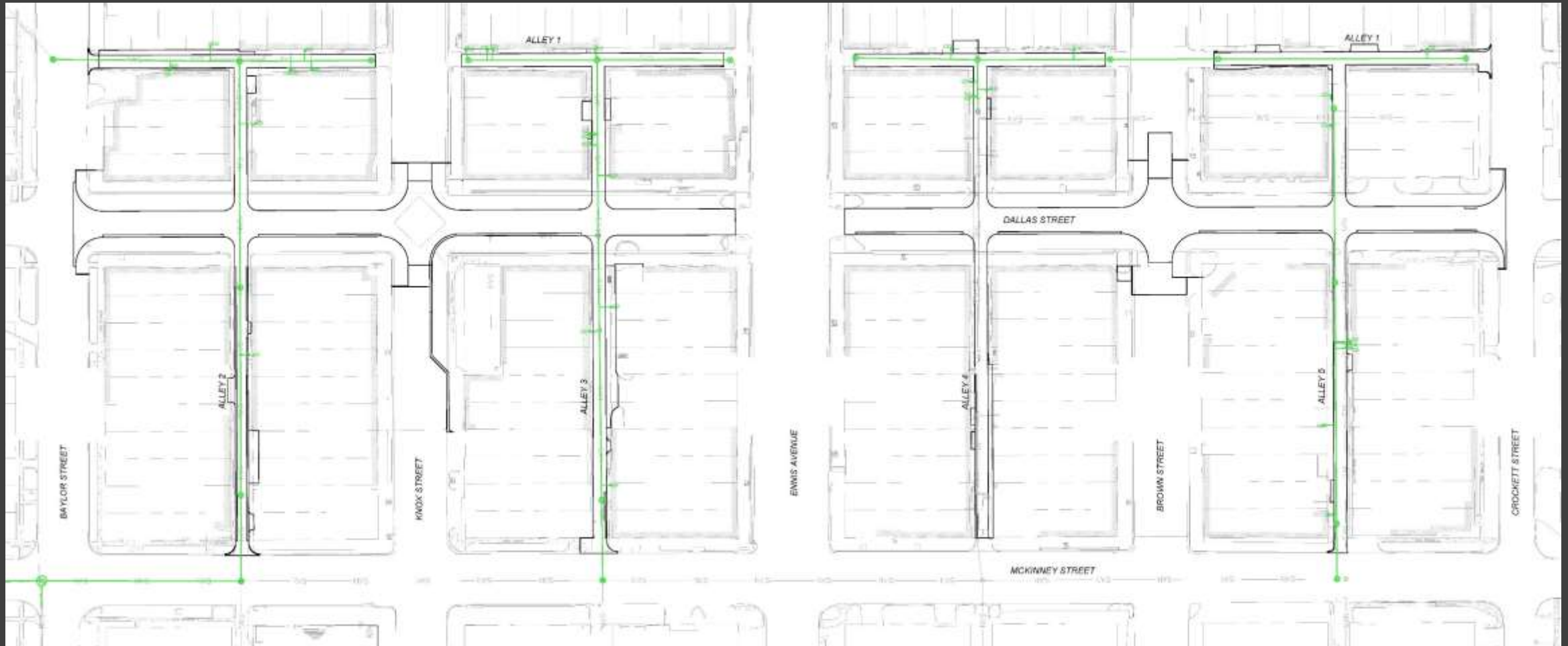
Water System Improvements

- Replaced existing pipes with 8" and 12" PVC C-900 Pipe
- Service lines replaced up to meters
- Valves added to enable isolation
- All dead ends eliminated
- Engineer worked closely with City Public Works to ensure all needs addressed



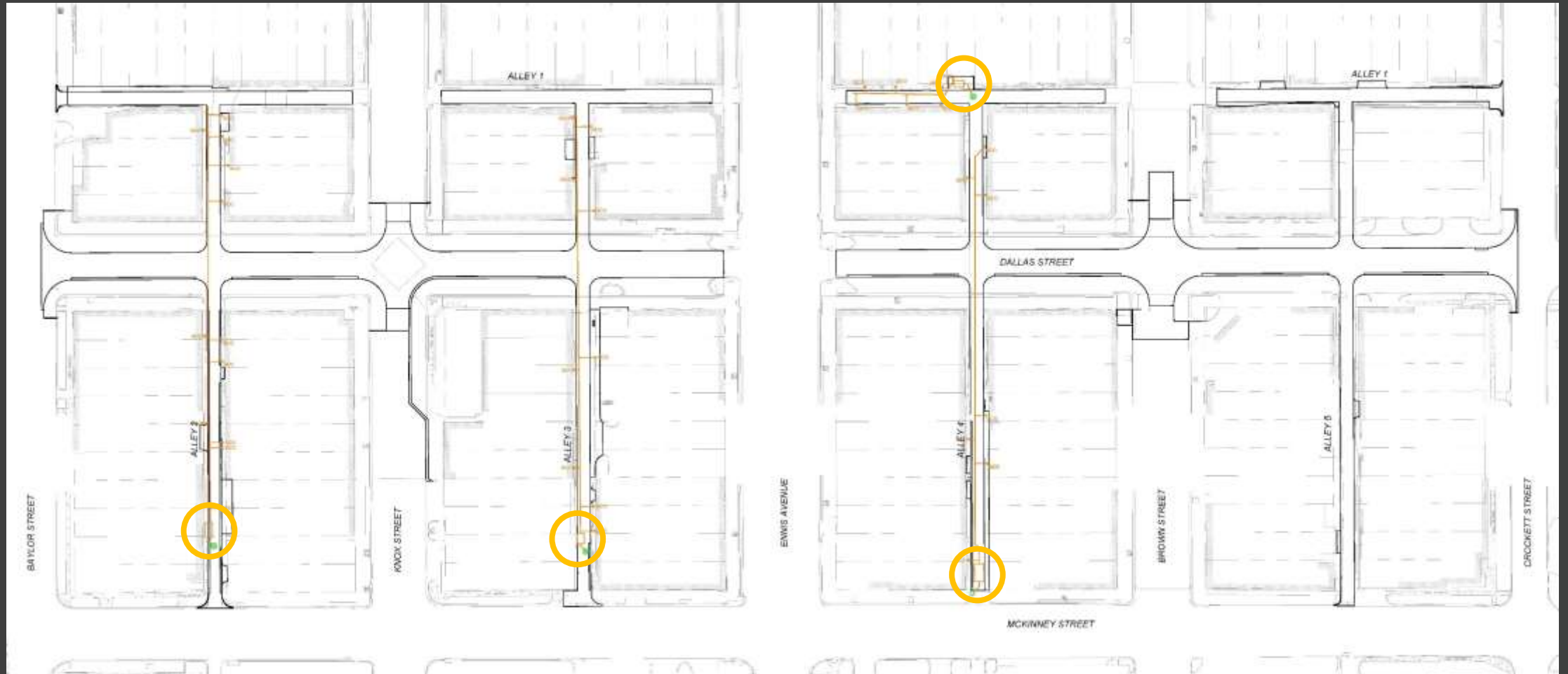
Sanitary Sewer System Improvements

- Replaced existing pipes with 8" PVC SDR-26 Pipe
- Service laterals and cleanouts replaced
- Additional manholes installed to facilitate maintenance
- Addressed alignment issues



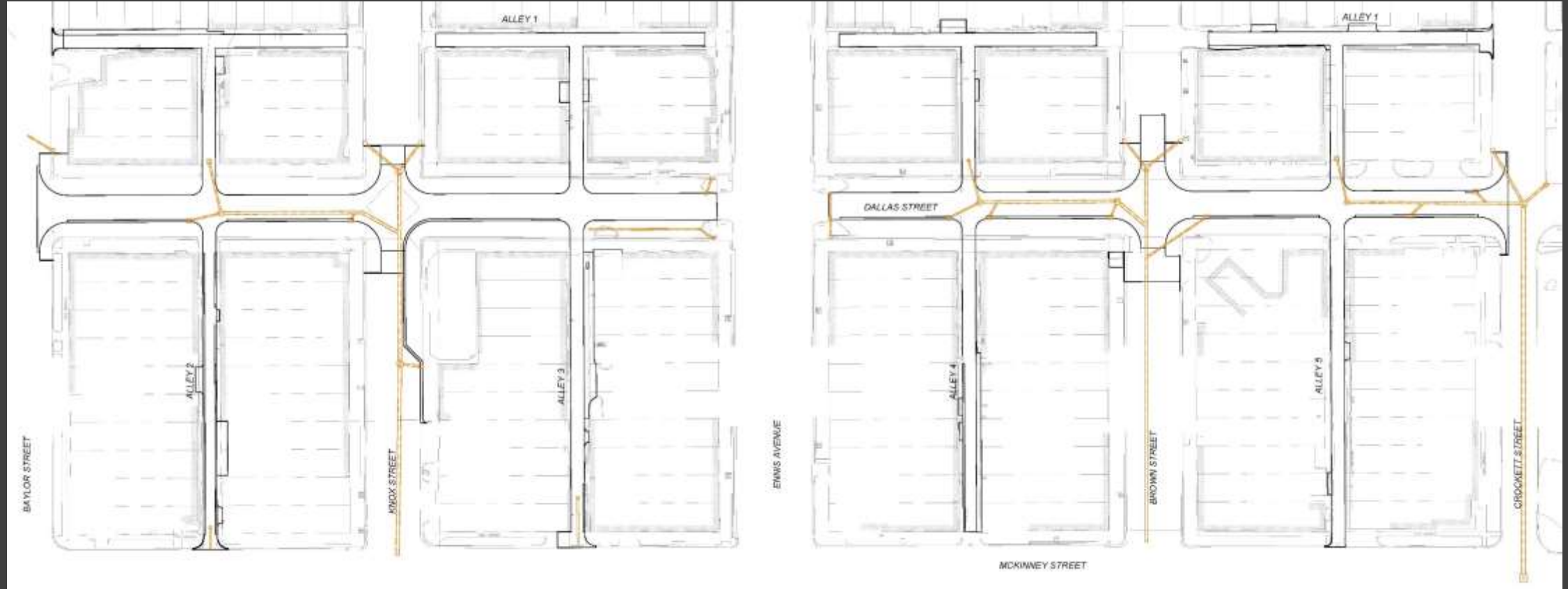
Grease Collection System

- Installed four 'community' grease traps and grease laterals for existing and future restaurants
- Restaurants to be responsible for maintenance
- Provides incentive for restaurants to locate to Downtown Ennis



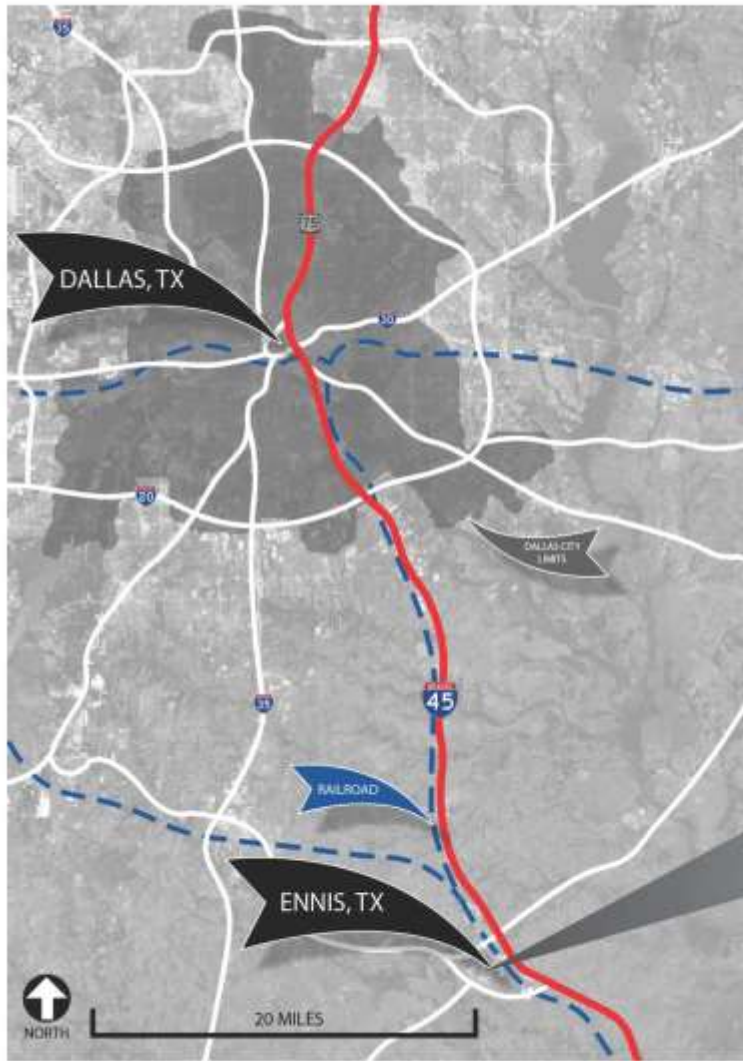
Storm Sewer System Improvements

- Pipe and inlets designed to contain the 25-year storm
- Drainage design incorporated into curb-less pedestrian friendly streetscape
- Overflow drainage directed to alleys which are capable of conveying 100-year storm

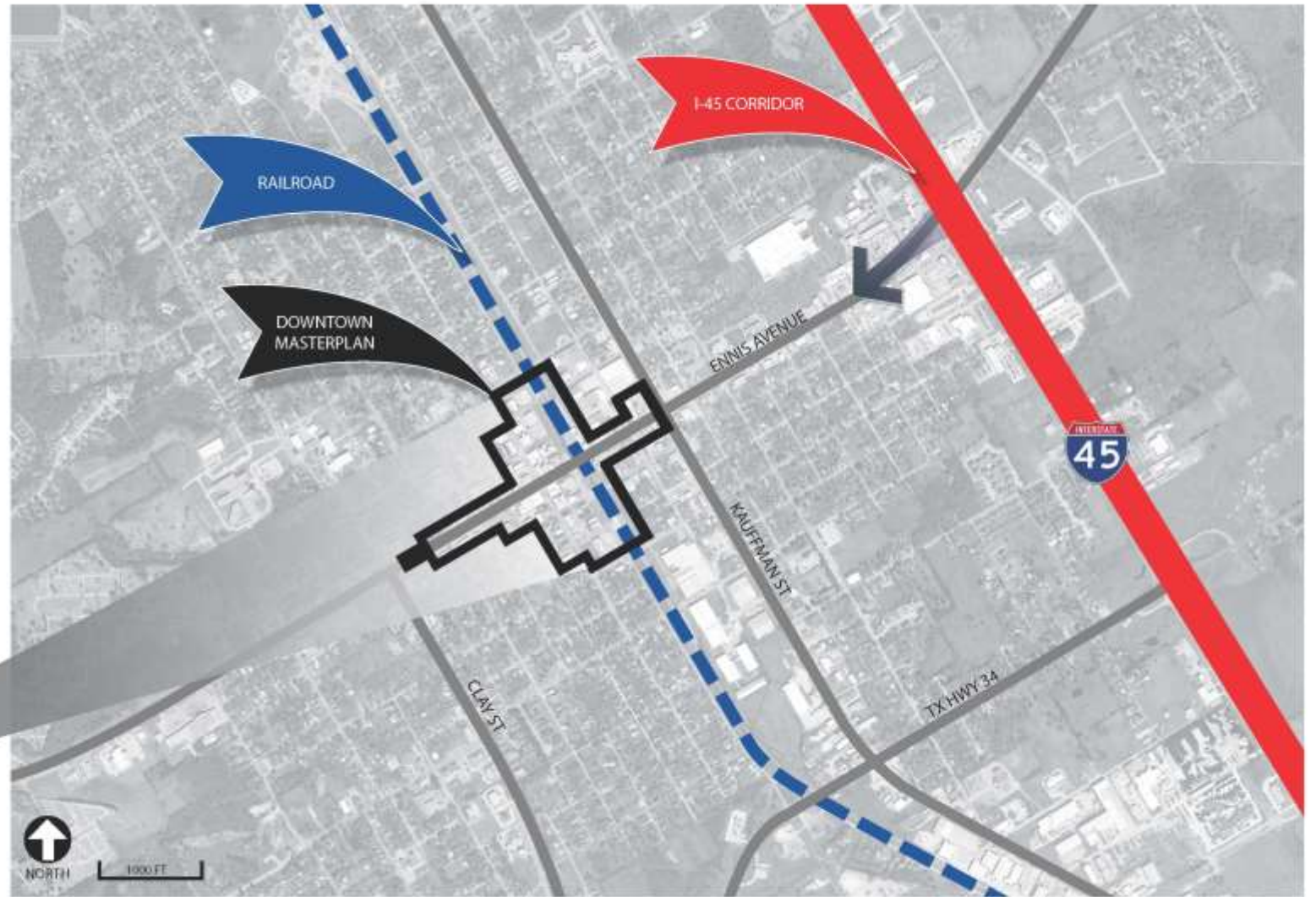


Historic Downtown Ennis Streetscape

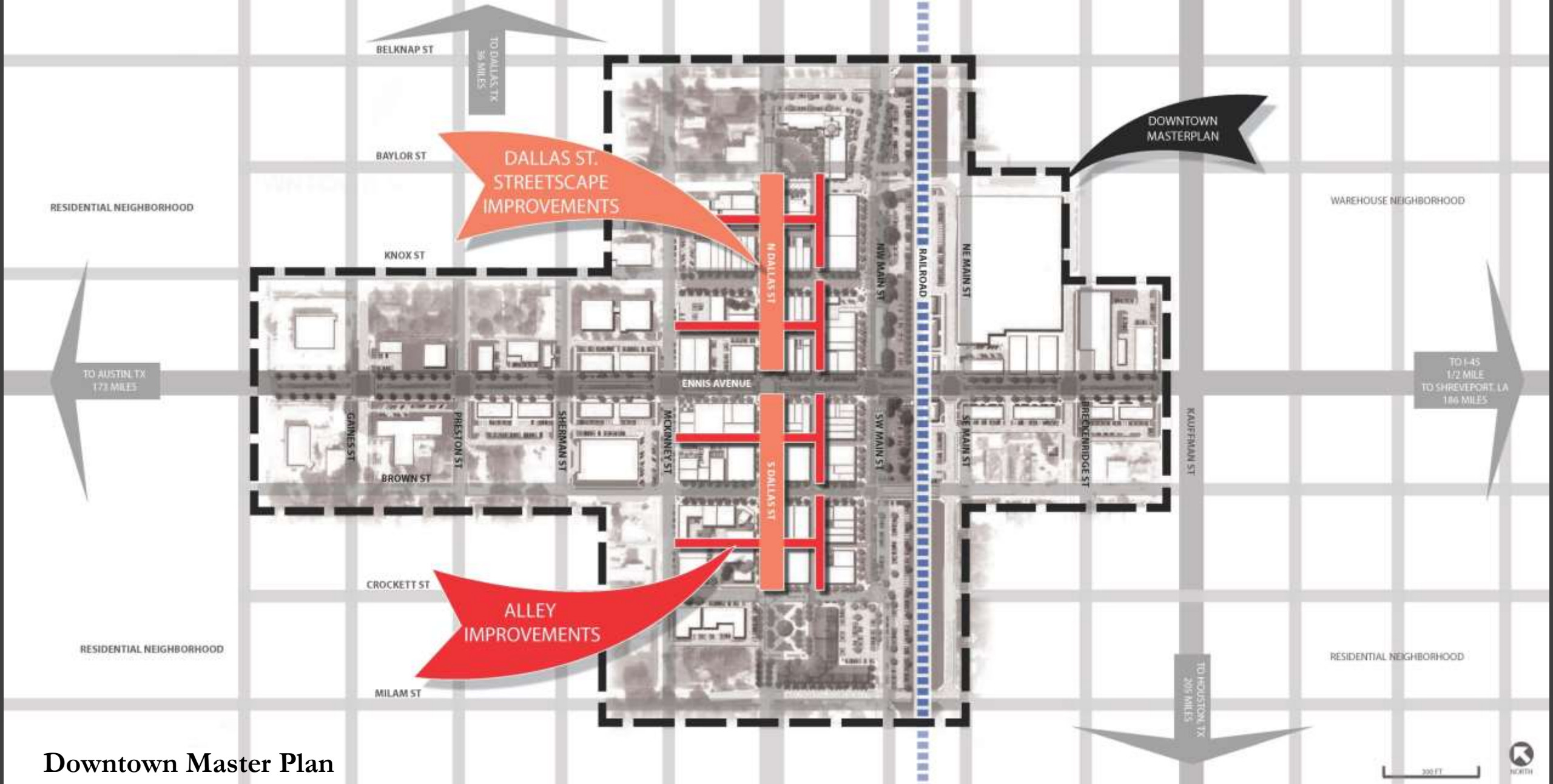
2.C.7



Regional Context



Local Context



Downtown Master Plan

MATERIALS AND AMENITIES

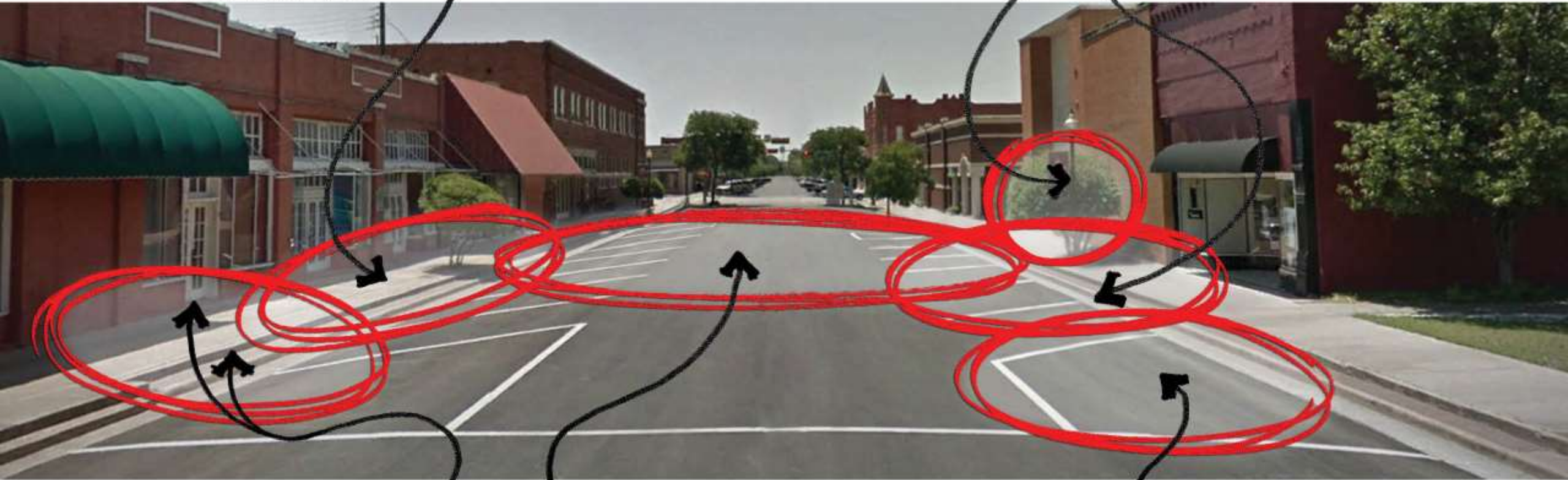
IMPERMEABLE CONCRETE AND ASPHALT SURFACES NEGATIVELY CONTRAST WITH HISTORIC BRICK BUILDINGS AND PREVENT NATURAL DRAINAGE. LACK OF AMENITIES AND SEATING DISCOURAGES PEOPLE FROM PAUSING AND OCCUPYING THE SPACE.

SHADE AND PLANTING

SPARSE LANDSCAPE AND LACK OF SHADE CREATE A HARSH AND UNINVITING PEDESTRIAN EXPERIENCE.

AUTOMOBILE DOMINATED STREET

MORE THAN 75% OF THE STREET IS DEDICATED TO THE AUTOMOBILE, LEAVING LITTLE ROOM FOR PEDESTRIAN ACTIVITY OR INTERACTION WITH BUILDINGS.



BARRIERS AND ACCESSIBILITY

CURBS AND HIGH THRESHOLDS FORM BARRIERS, DISRUPTING PEDESTRIAN MOVEMENT AND SEGREGATING THE EAST AND WEST SIDE.

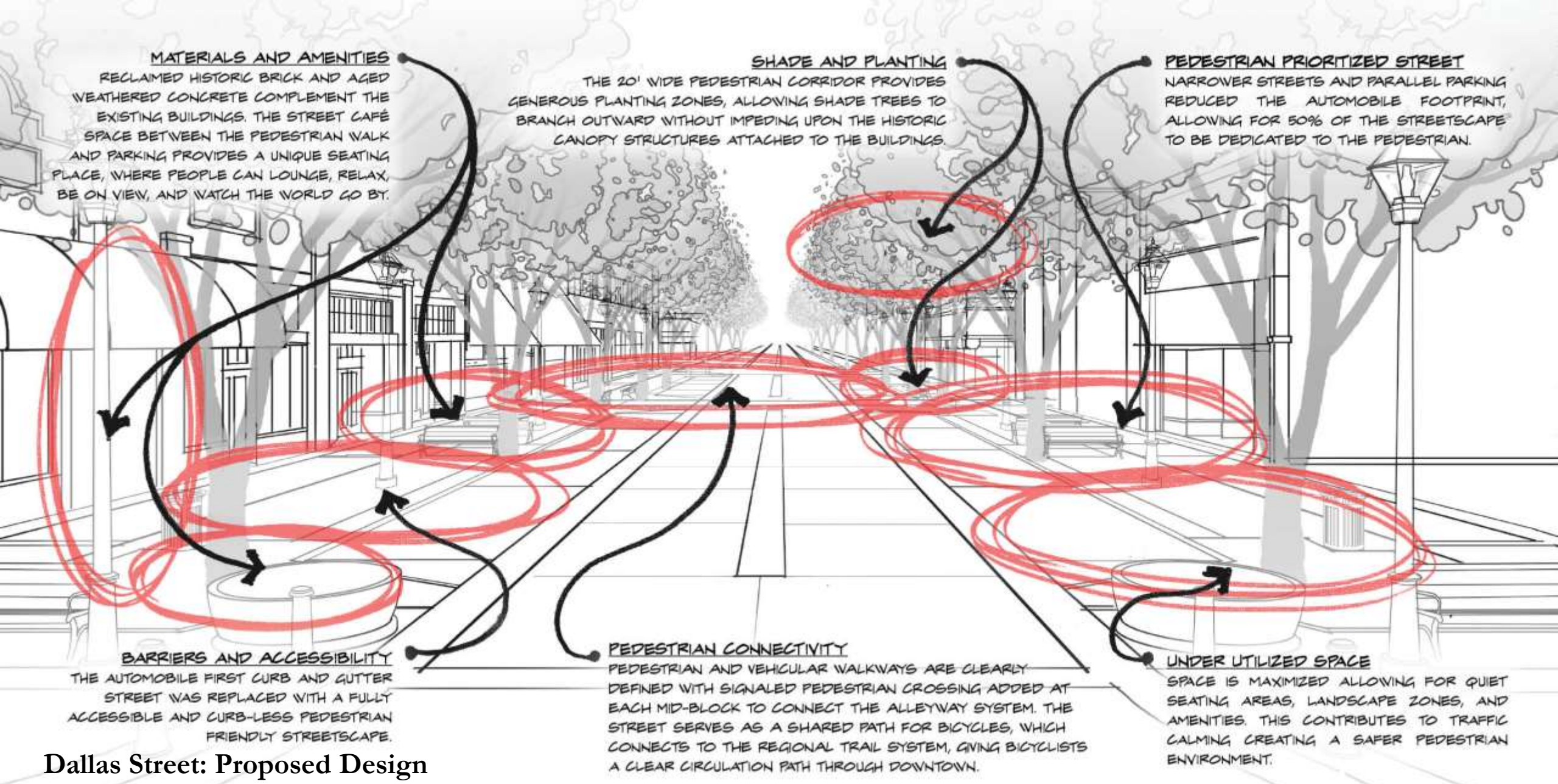
PEDESTRIAN CONNECTIVITY

PEDESTRIAN PATHWAYS ARE UNDEFINED AND LIMITED TO ONLY MAJOR INTERSECTIONS, ENHANCING THE AUTOMOBILE DOMINANCE OF THE STREET.

UNDER UTILIZED SPACE

PAINTED ISLANDS ARE A VOID "NO MAN'S LAND" AND BECOME PART OF THE VEHICULAR CORRIDOR RATHER THAN SLOWING TRAFFIC OR DEFINING USABLE SPACE.

Dallas Street: Existing Conditions



MATERIALS AND AMENITIES

RECLAIMED HISTORIC BRICK AND AGED WEATHERED CONCRETE COMPLEMENT THE EXISTING BUILDINGS. THE STREET CAFÉ SPACE BETWEEN THE PEDESTRIAN WALK AND PARKING PROVIDES A UNIQUE SEATING PLACE, WHERE PEOPLE CAN LOUNGE, RELAX, BE ON VIEW, AND WATCH THE WORLD GO BY.

SHADE AND PLANTING

THE 20' WIDE PEDESTRIAN CORRIDOR PROVIDES GENEROUS PLANTING ZONES, ALLOWING SHADE TREES TO BRANCH OUTWARD WITHOUT IMPEDING UPON THE HISTORIC CANOPY STRUCTURES ATTACHED TO THE BUILDINGS.

PEDESTRIAN PRIORITIZED STREET

NARROWER STREETS AND PARALLEL PARKING REDUCED THE AUTOMOBILE FOOTPRINT, ALLOWING FOR 50% OF THE STREETScape TO BE DEDICATED TO THE PEDESTRIAN.

BARRIERS AND ACCESSIBILITY

THE AUTOMOBILE FIRST CURB AND GUTTER STREET WAS REPLACED WITH A FULLY ACCESSIBLE AND CURB-LESS PEDESTRIAN FRIENDLY STREETScape.

PEDESTRIAN CONNECTIVITY

PEDESTRIAN AND VEHICULAR WALKWAYS ARE CLEARLY DEFINED WITH SIGNALLED PEDESTRIAN CROSSING ADDED AT EACH MID-BLOCK TO CONNECT THE ALLEYWAY SYSTEM. THE STREET SERVES AS A SHARED PATH FOR BICYCLES, WHICH CONNECTS TO THE REGIONAL TRAIL SYSTEM, GIVING BICYCLISTS A CLEAR CIRCULATION PATH THROUGH DOWNTOWN.

UNDER UTILIZED SPACE

SPACE IS MAXIMIZED ALLOWING FOR QUIET SEATING AREAS, LANDSCAPE ZONES, AND AMENITIES. THIS CONTRIBUTES TO TRAFFIC CALMING CREATING A SAFER PEDESTRIAN ENVIRONMENT.

Dallas Street: Proposed Design

PHYSICAL AND VISUAL CLUTTER
ALLEY CLUTTER IS VISUALLY OFFENSIVE AND CREATES MANY DIFFERENT HEALTH AND SAFETY ISSUES. TRASH CANS, AC UNITS, UTILITIES, ABANDONED DOCKS, AND RUSTY AND BROKEN STAIR CASES LITTER THE ALLEYS. OLD ELECTRICAL POLES AND WIRING DOMINATE THE SKYLINE.

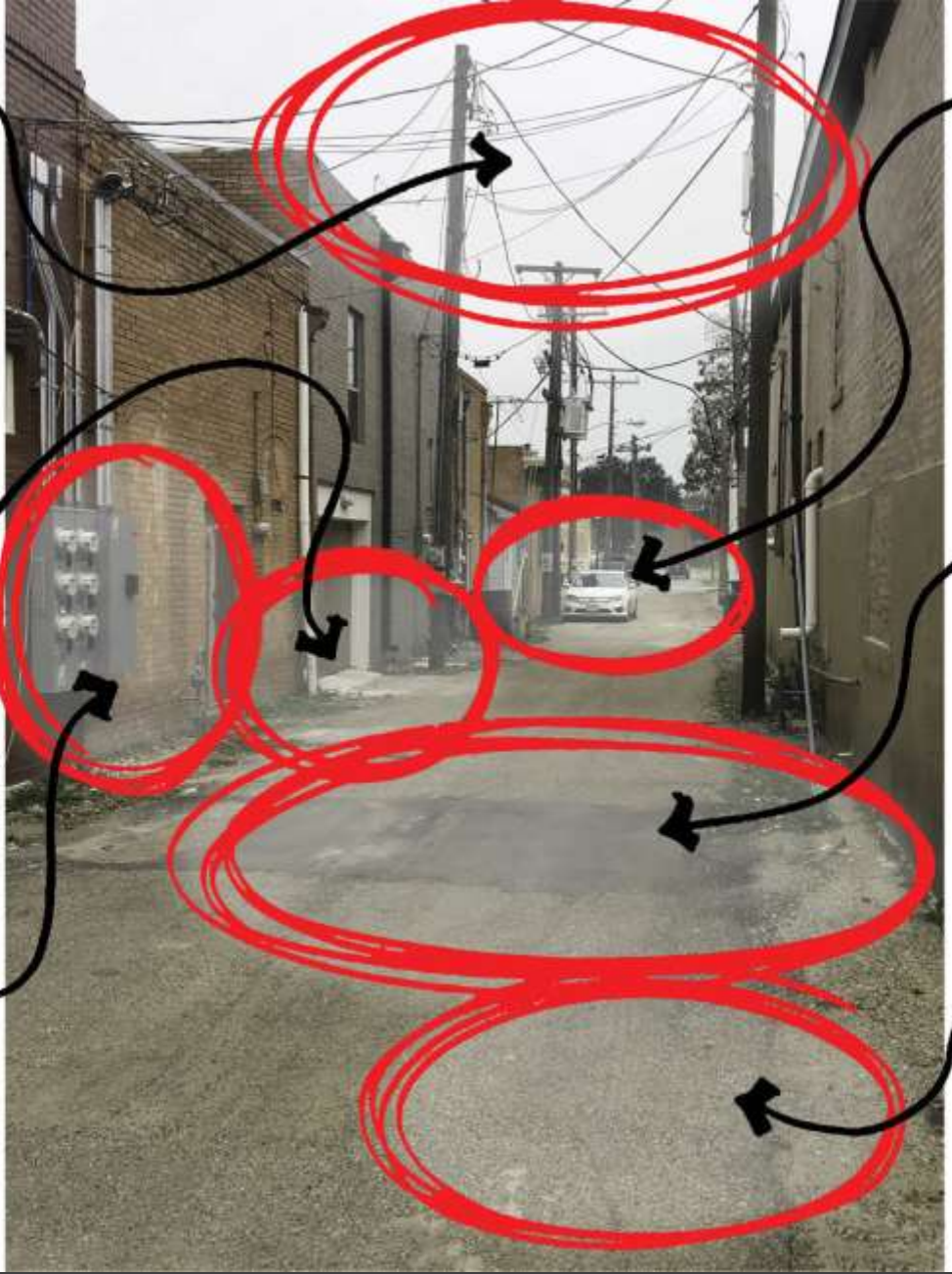
SHADE AND PLANTING
HARDSCAPE DOMINATES THE ALLEY AND PLANTING IS NON-EXISTENT CREATING A VERY RIGID, COLD, BLEAK AND UNATTRACTIVE SPACE.

BARRIERS AND ACCESSIBILITY
MOST OF THE ALLEYS ARE INACCESSIBLE DUE TO BROKEN OR INAPPROPRIATE GROUND PLANE MATERIALS AND HIGH BUILDING THRESHOLDS.

CONNECTIVITY
ALLEYS ARE UNMARKED AND UNCELEBRATED, WITH NO MEANINGFUL CONNECTION TO THE SURROUNDING STREETS.

UNDERUTILIZED SPACE
THE ALLEYS CURRENTLY EXIST TO SERVE THE AUTOMOBILE, SERVING AS OFFLOADING, STORAGE AND TRASH PICK-UP. THIS PROGRAM DETERS PEDESTRIAN ACTIVITY. THE ALLEYS ARE SELDOMLY USED EXCEPT FOR TRASH PICK-UP AND OCCASIONAL OFFLOADING OF SUPPLIES.

MATERIALS AND AMENITIES
LACK OF AMENITIES AND SEATING OPPORTUNITIES DISCOURAGES PEOPLE FROM PAUSING AND OCCUPYING THE SPACE. IMPERMEABLE CONCRETE AND ASPHALT SURFACES NEGATIVELY CONTRAST THE HISTORIC BRICK BUILDINGS, AND PREVENT NATURAL DRAINAGE.

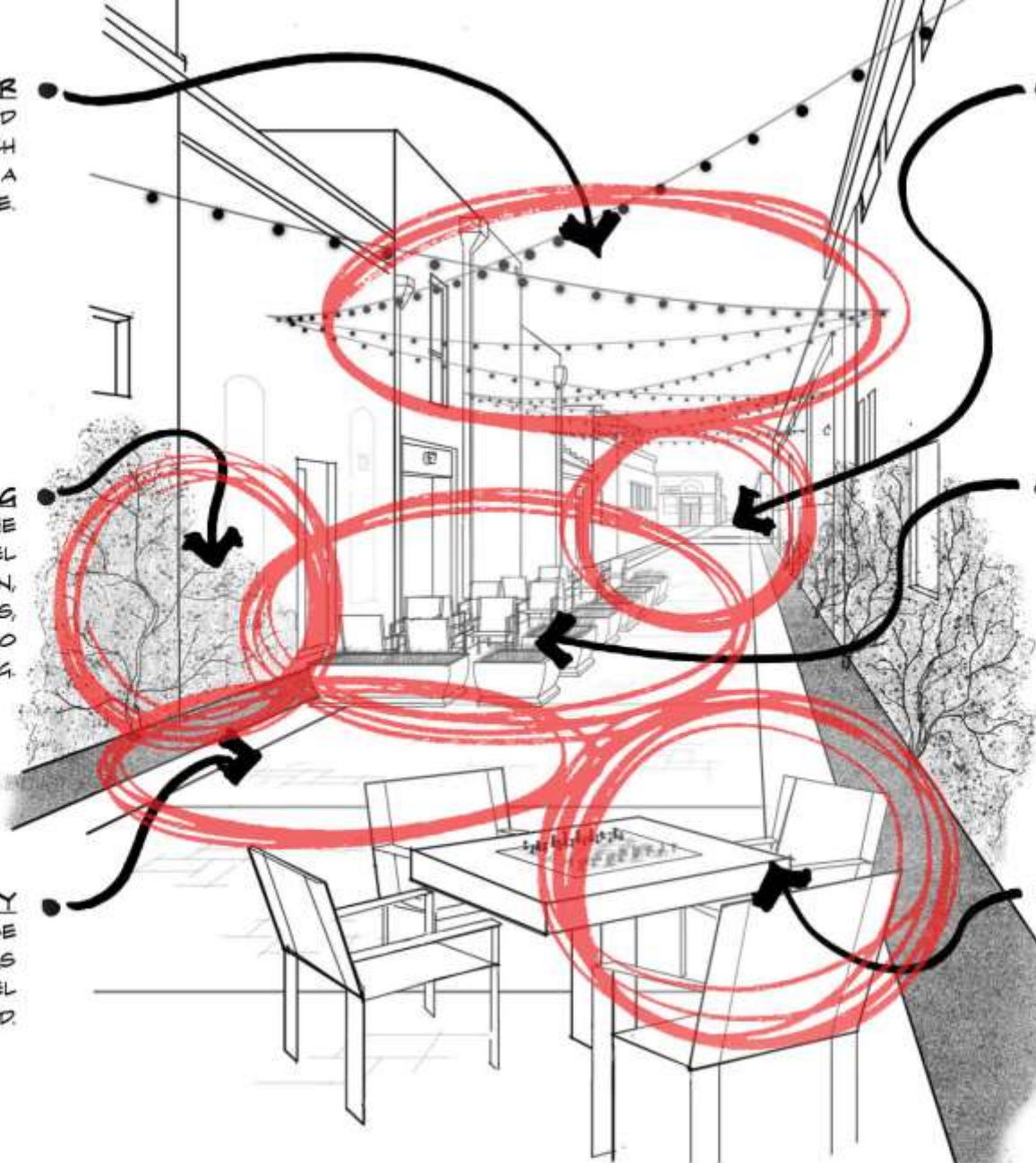


Alleyway: Existing Conditions

PHYSICAL AND VISUAL CLUTTER
THE OVERHEAD ELECTRICAL POWERLINES AND POLES WERE REMOVED AND RELOCATED. EACH ALLEY HAS ITS OWN LIGHTING THEME CREATING A UNIQUE AND DYNAMIC NIGHTLIFE EXPERIENCE.

SHADE AND PLANTING
A 4' WIDE GRAVEL BAND CONNECTS THE BRICK WALK TO THE BUILDINGS. THE GRAVEL BANDS PROVIDE A FLEXIBLE CONNECTION, ACCOMMODATING EXISTING UTILITIES, RAMPS, STAIRS AND MERCHANT APPURTENANCES, ALSO ALLOWING FOR SPONTANEOUS PLANTING.

BARRIERS AND ACCESSIBILITY
THE ENTIRE ALLEY WAS REGRADED TO BE ACCESSIBLE, WITH SMALL RAMPS AND LANDINGS STRATEGICALLY LOCATED WITHIN THE GRAVEL BANDS WHERE NEEDED.

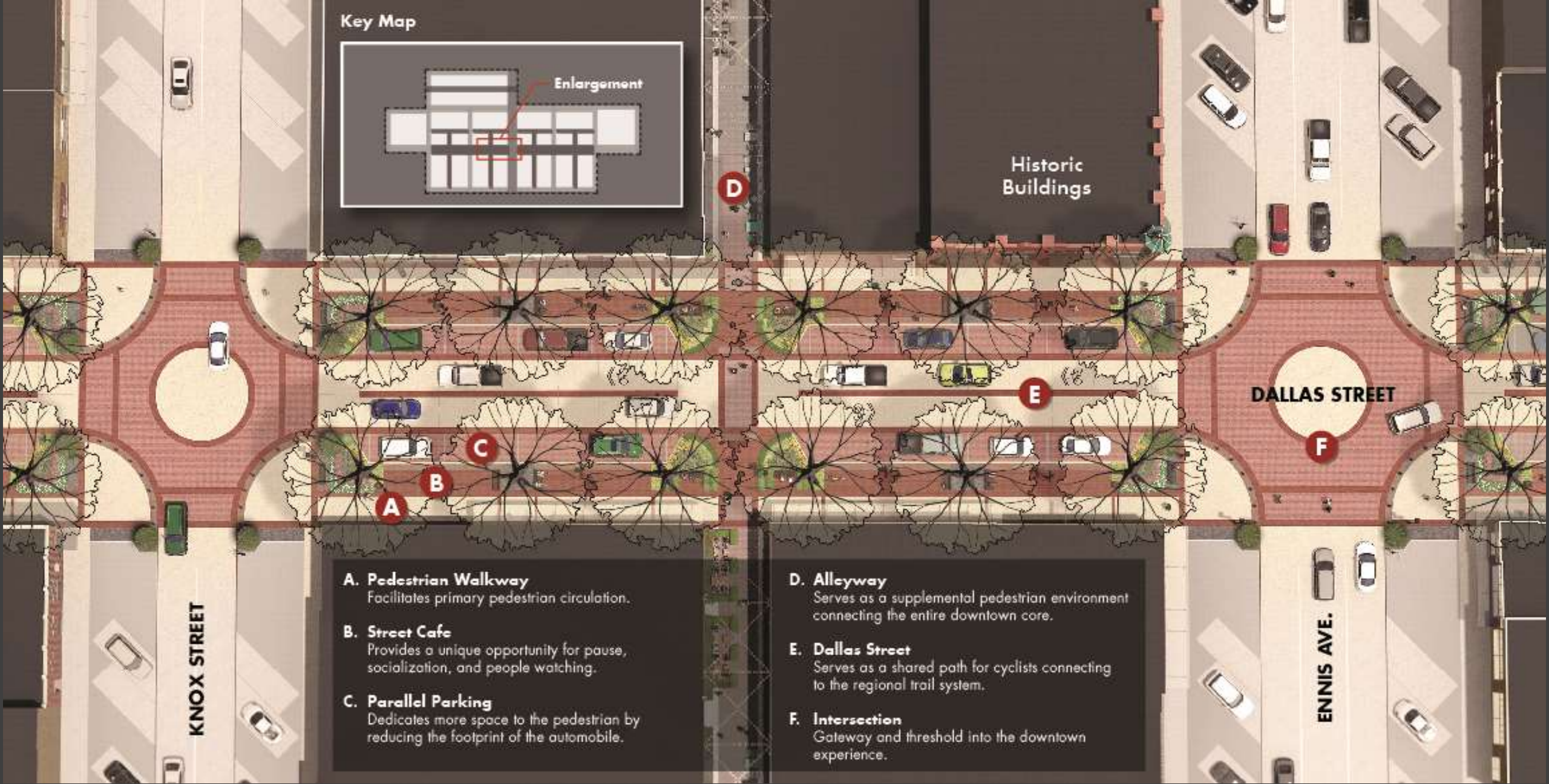


CONNECTIVITY
A 12' WIDE RECLAIMED BRICK WALK EXTENDS THE ENTIRE LENGTH OF THE ALLEY, CONNECTING TO THE FABRIC OF THE ADJACENT STREETS. SERVING PRIMARILY AS A PEDESTRIAN CORRIDOR, THE WALK IS VEHICULAR RATED, ALLOWING FOR OCCASIONAL VEHICULAR ACCESS.

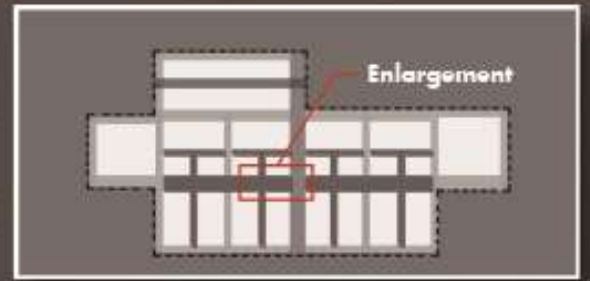
UNDERUTILIZED SPACE
THE ALLEYWAYS PROVIDE A SPECIAL RETAIL/ ENTERTAINMENT INVESTMENT OPPORTUNITY AND CAN BE ACTIVATED TO PROMOTE USE OF BUILDINGS THEY SERVE.

MATERIALS AND AMENITIES
ALLEYWAYS, IF PROGRAMMED AND ENHANCED WITH PEDESTRIAN AMENITIES CAN SERVE AS A SUPPLEMENTAL PEDESTRIAN ENVIRONMENT CONNECTING THE ENTIRE DOWNTOWN CORE. RECLAIMED HISTORIC BRICK PAVING COMPLIMENTS THE BUILDINGS AND SERVES AS A WARM WELCOMING PATH INTO THE ALLEYS.

Alleyway: Proposed Design



Key Map



Historic Buildings

DALLAS STREET

KNOX STREET

ENNIS AVE.

- A. Pedestrian Walkway**
Facilitates primary pedestrian circulation.
- B. Street Cafe**
Provides a unique opportunity for pause, socialization, and people watching.
- C. Parallel Parking**
Dedicates more space to the pedestrian by reducing the footprint of the automobile.

- D. Alleyway**
Serves as a supplemental pedestrian environment connecting the entire downtown core.
- E. Dallas Street**
Serves as a shared path for cyclists connecting to the regional trail system.
- F. Intersection**
Gateway and threshold into the downtown experience.

Perforated Storm Drainage Pipe

- Collects excess water not absorbed by detention system

Dimmable LED Street Lighting System

- Energy efficient, highly programmable and low maintenance

Permeable Surface With Subsurface Detention Reservoir

Permeable Surface Runoff

Impermeable Surface Runoff

Suspended Paving System

- Provides infiltration, storage, detention, conveyance, and void space for tree roots, aeration and utilities

Pave Drain Permeable Paving System

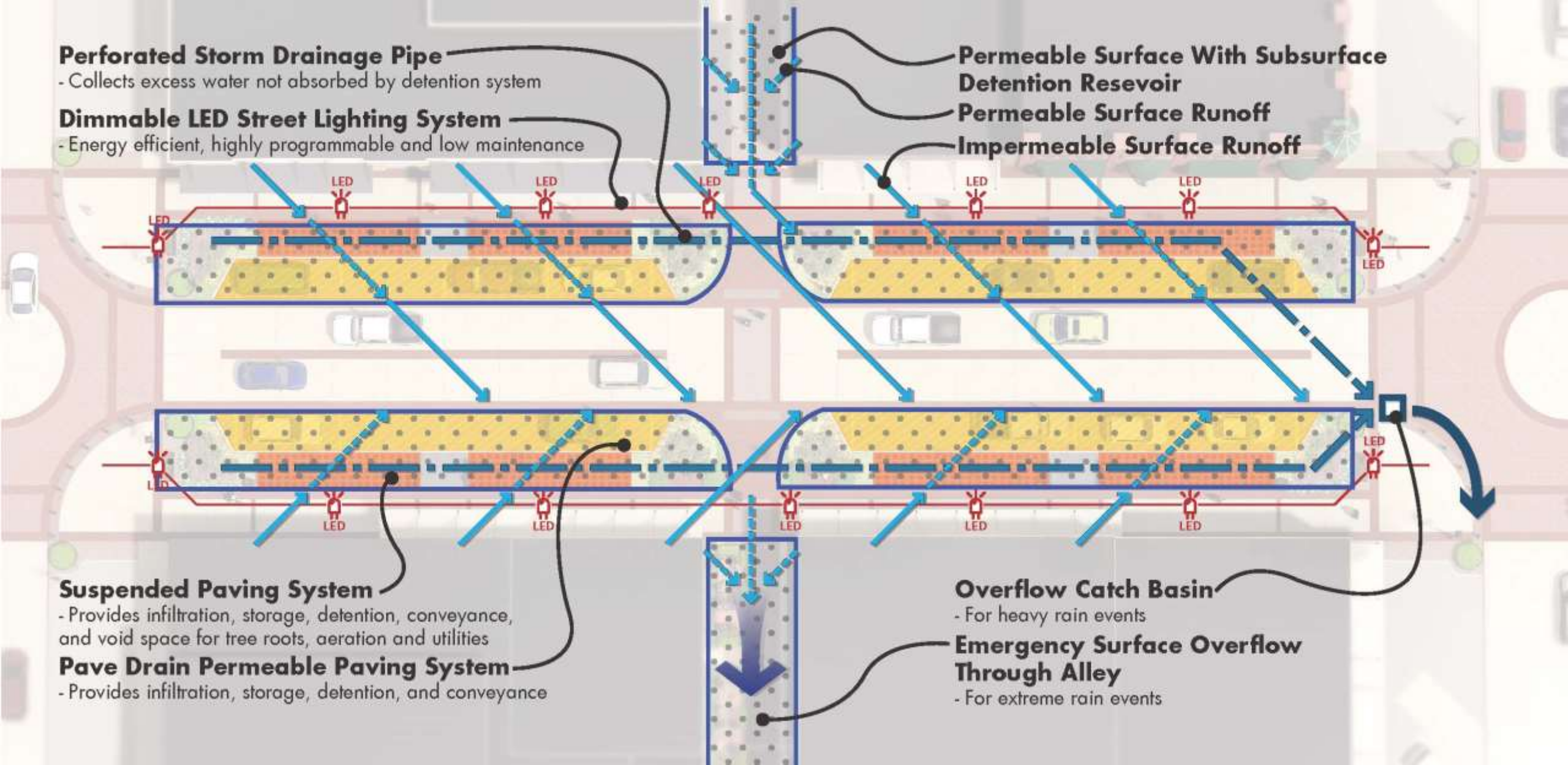
- Provides infiltration, storage, detention, and conveyance

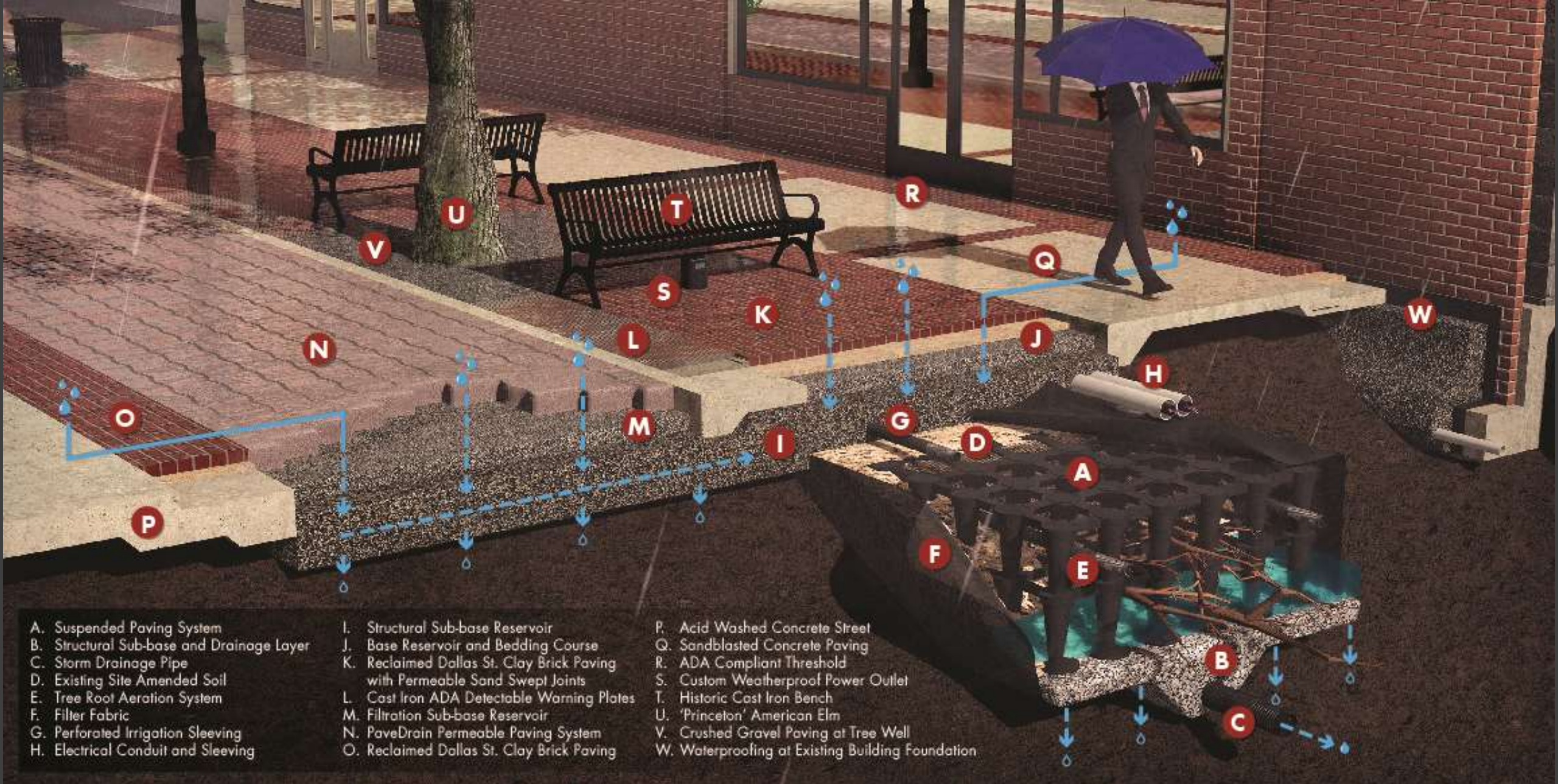
Overflow Catch Basin

- For heavy rain events

Emergency Surface Overflow Through Alley

- For extreme rain events

















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TEXAS
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NRCS Local Work Group Meeting For Navarro and Ellis Counties

11/14/2018 | Brandon Steinberg

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Locally Led Conservation



Locally led conservation is based on the principle that community stakeholders are best suited to identify and resolve local natural resource problems.

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Soil and Water Conservation District (SWCD)

- Ellis-Prairie SWCD
- Navarro SWCD



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Texas State Soil and Water Conservation Board (TSSWCB)



TEXAS STATE Soil & Water CONSERVATION BOARD

Our Partners at the State Level since 1940.



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Local Work Group (LWG)



Convened by local SWCD and NRCS, the Local Work Group responsibilities include:

- Identifying the biggest conservation needs in our counties;
- Prioritizing those conservation needs that can be addressed by USDA programs;
- Recommending USDA conservation program application and funding criteria and focus of NRCS funding efforts;
- Assisting NRCS with public outreach and information efforts; and,
- Providing recommendations to the NRCS State Technical Advisory Committee based on resource data.



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Public Involvement

- Anyone can participate
- Local, state and federal agencies
- Agricultural organizations
- Local agri-businesses
- Impacted stakeholders



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What is a “Resource Concern?”

Every piece of property is unique with opportunities to improve natural resources and address any areas of concern. Human activities contribute to the condition of natural resources on the land -- they can help improve them or contribute to their decline, which can result in what we refer to as a “resource concern.”



Conservation Practices



Through the use of Conservation Planning, practices are implemented to address identified resource concerns, in order to meet client objectives.

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Ranking Applications to Award EQIP Funding

Four evaluation categories contribute to the overall score:

- Local issues (the most points are awarded here)
- State issues (second most points in this category)
- National issues (least amount of points awarded)
- Cost effectiveness

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Local Resource Concerns

County Based

- Funding Percentage
- Prioritize Resource Concerns



THANK YOU!

These are the priorities we will use for ranking funding for our FY20 EQIP applications.

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Questions?

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Water Stewardship

MillerCoors Fort Worth Brewery





*It Takes Great Water to Make
Great Beer*

*To Make Great Water Takes
Great Responsibility*



SUSTAINABILITY AT MILLERCOORS DEFINED:

**MAKE A POSITIVE AND MEANINGFUL IMPACT
ON THE SOCIAL, ENVIRONMENTAL AND
ECONOMIC ISSUES THAT AFFECT OUR BUSINESS,
EMPLOYEES AND OTHER STAKEHOLDERS**

Corporate Goals - 2020

- Establish Local Water Conservation Programs that return more water annually back to the Environment than the brewery will use during the year. (RESTORE 100%)
- Drive water use numbers to 3.1 barrels of water to produce 1.0 barrel of beer at All Large Breweries (8)
- All Large Breweries (8) become third party certified "Landfill Free"



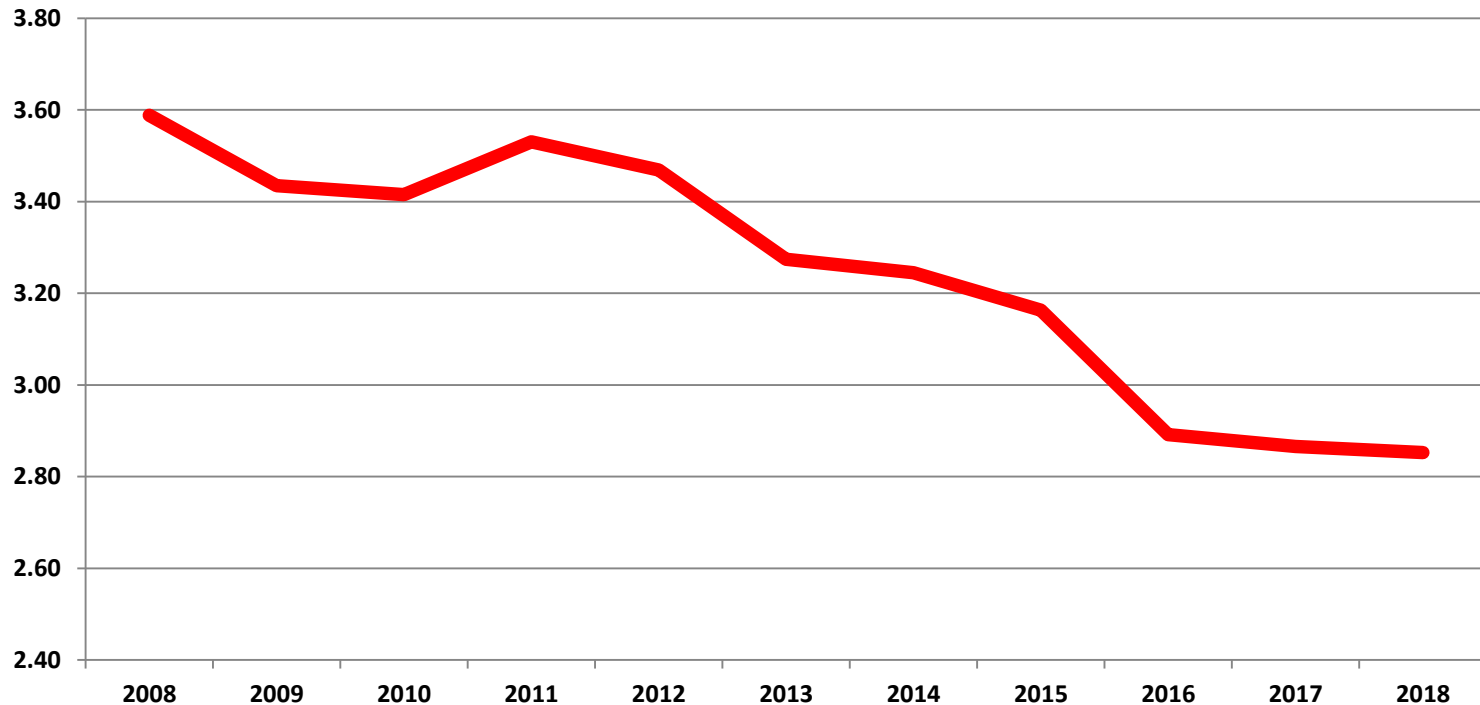
- In our world the program is about water volume and water quality
- It makes up roughly 96% of our product
- In addition, of all the water used by MillerCoors – 96% is for growing the Barley and Hops



Brewery Numbers

- Approximately 24% Reduction in Water Purchased since 2008

WATER USAGE - BBLs/BBL BY YEAR



How does the Fort Worth Brewery Compare?

- For the Domestic Brewing Industry as a whole: **6 barrels of water**
- The European Beer Industry: **Between 8 -10 barrels of water**
- The Fort Worth brewery: **Currently at 2.67 barrels of water (Oct 2018)**

- **NOTE:** 2018 Plant KPI is **2.86 barrels** of water to produce a barrel of beer.



Our External Sustainability Project

- It starts with targets of
- Improving Water Quality
- Increasing Water Quality
- It really all starts with Soil Health

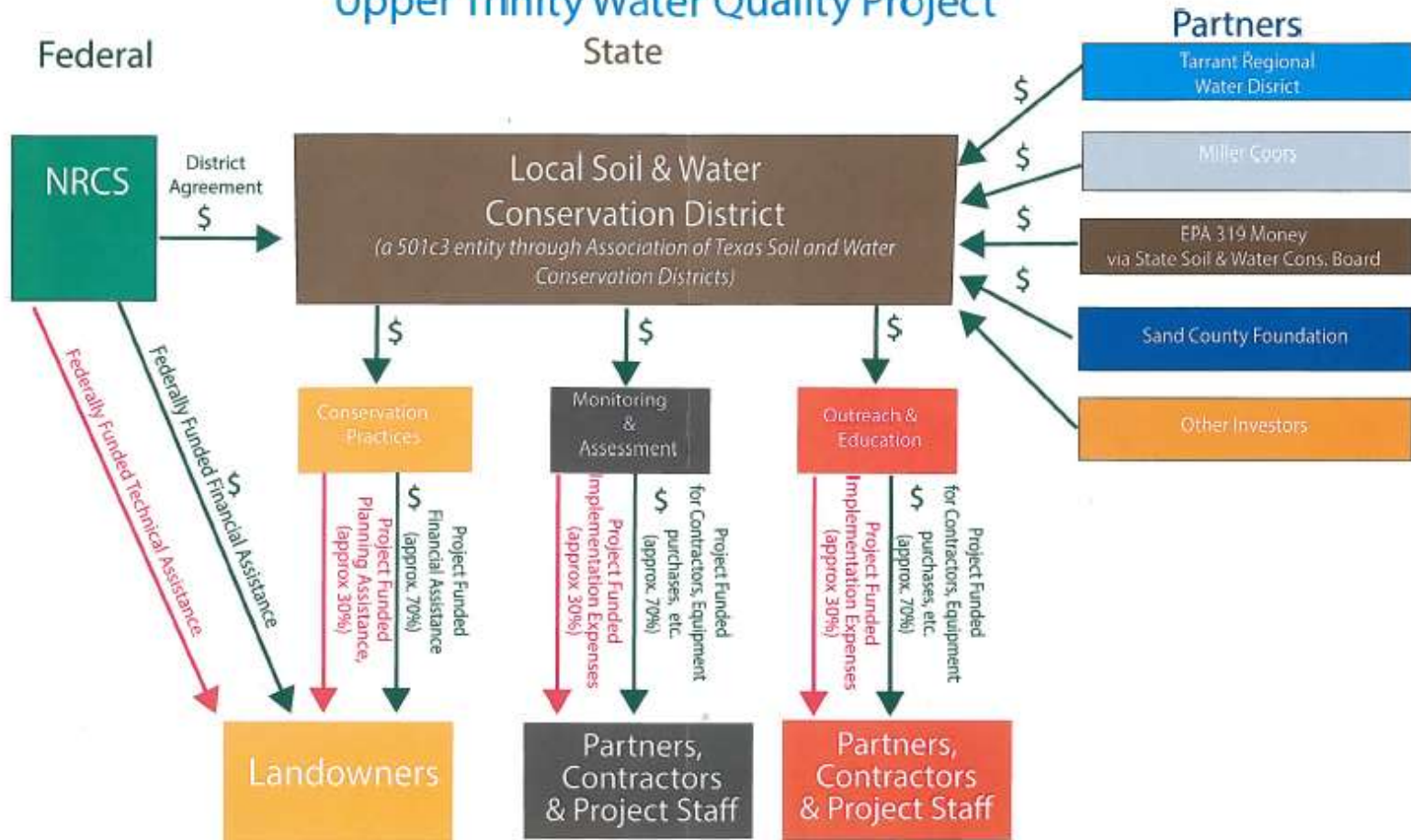


Richland-Chambers Watershed Partnership

- TRWD, TXAgrilife and NRCS
- Issues of Concern
 - Excess Nutrients (Phosphorus, Nitrogen)
 - Sedimentation
 - Run-off
 - Program is focused on reducing the sources of the issues of concern
 - Group is currently developing a Watershed Protection Plan.



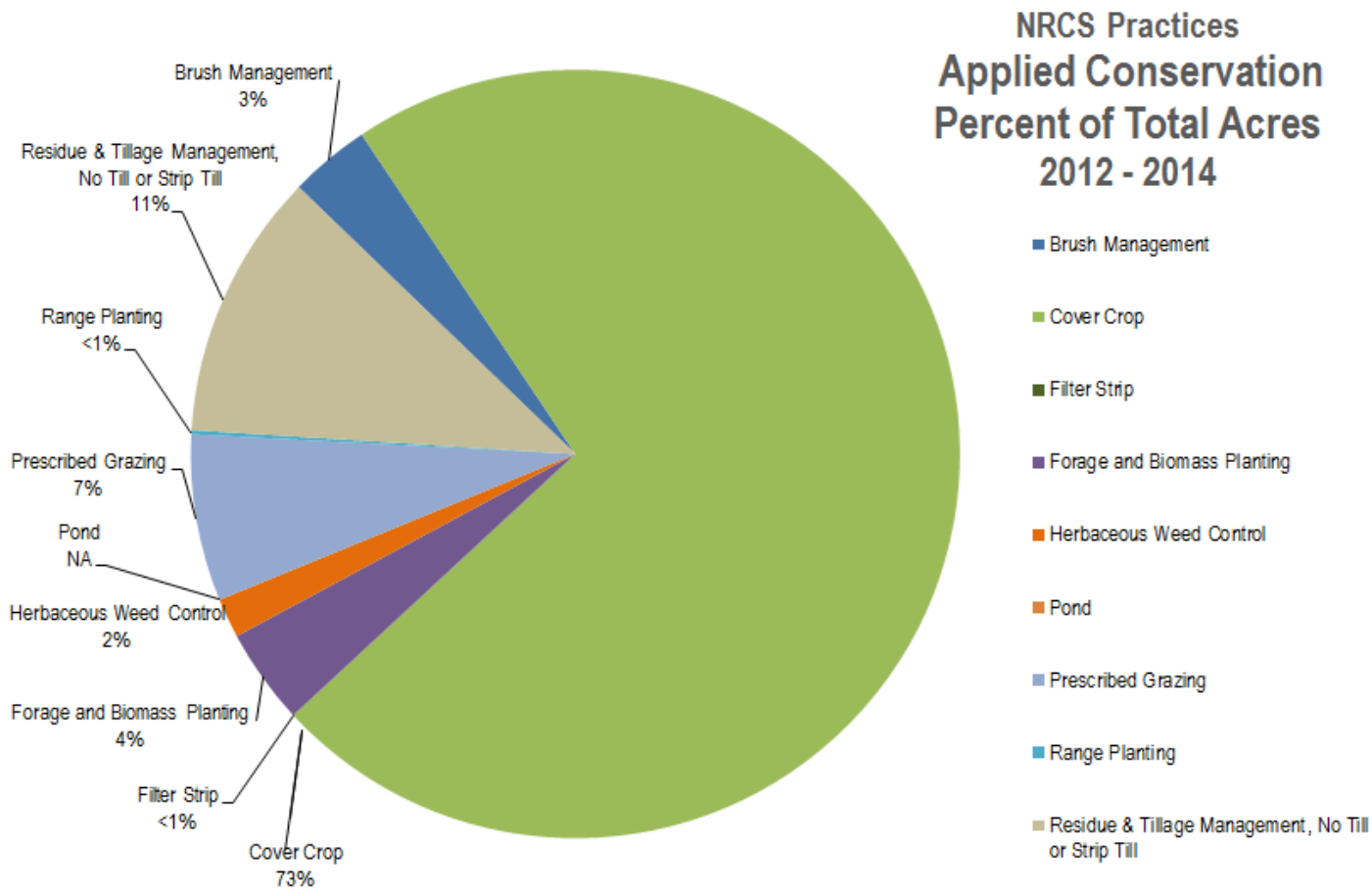
Upper Trinity Water Quality Project



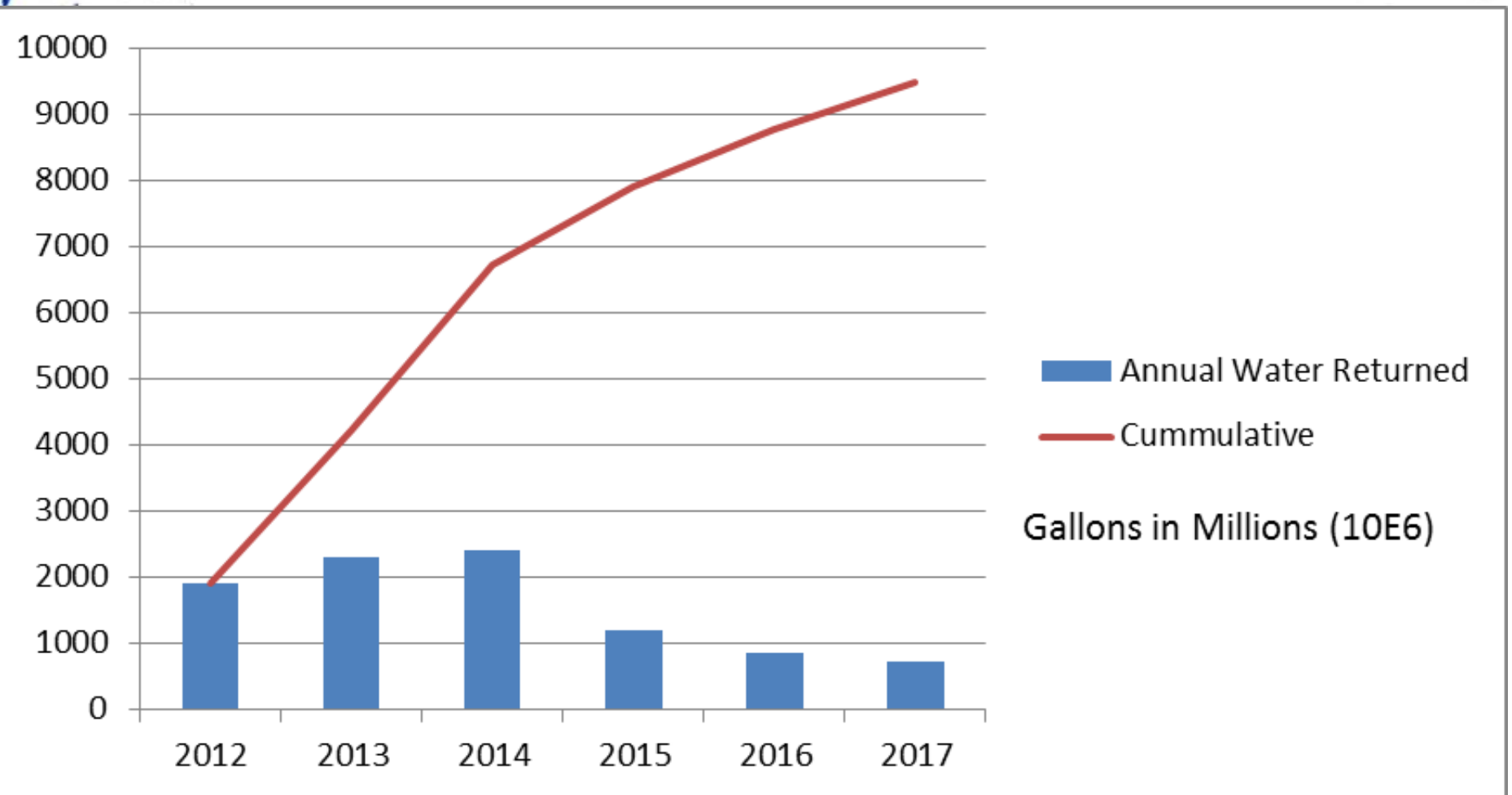
A person wearing a cowboy hat and a dark shirt stands in a field of blue lupine flowers. The person is silhouetted against a bright, cloudy sky. The foreground is filled with green lupine plants and blue flowers. The text is overlaid in the center of the image.

131 LANDOWNERS
35,000 ACRES
>9.0 BILLION
GALLONS
Since 2012

NWQI - Applied Conservation Practices



National Water Quality Initiative Annual Water Quantity Benefit (Mgal/yr)





United States Department of Agriculture

National Water Quality Initiative

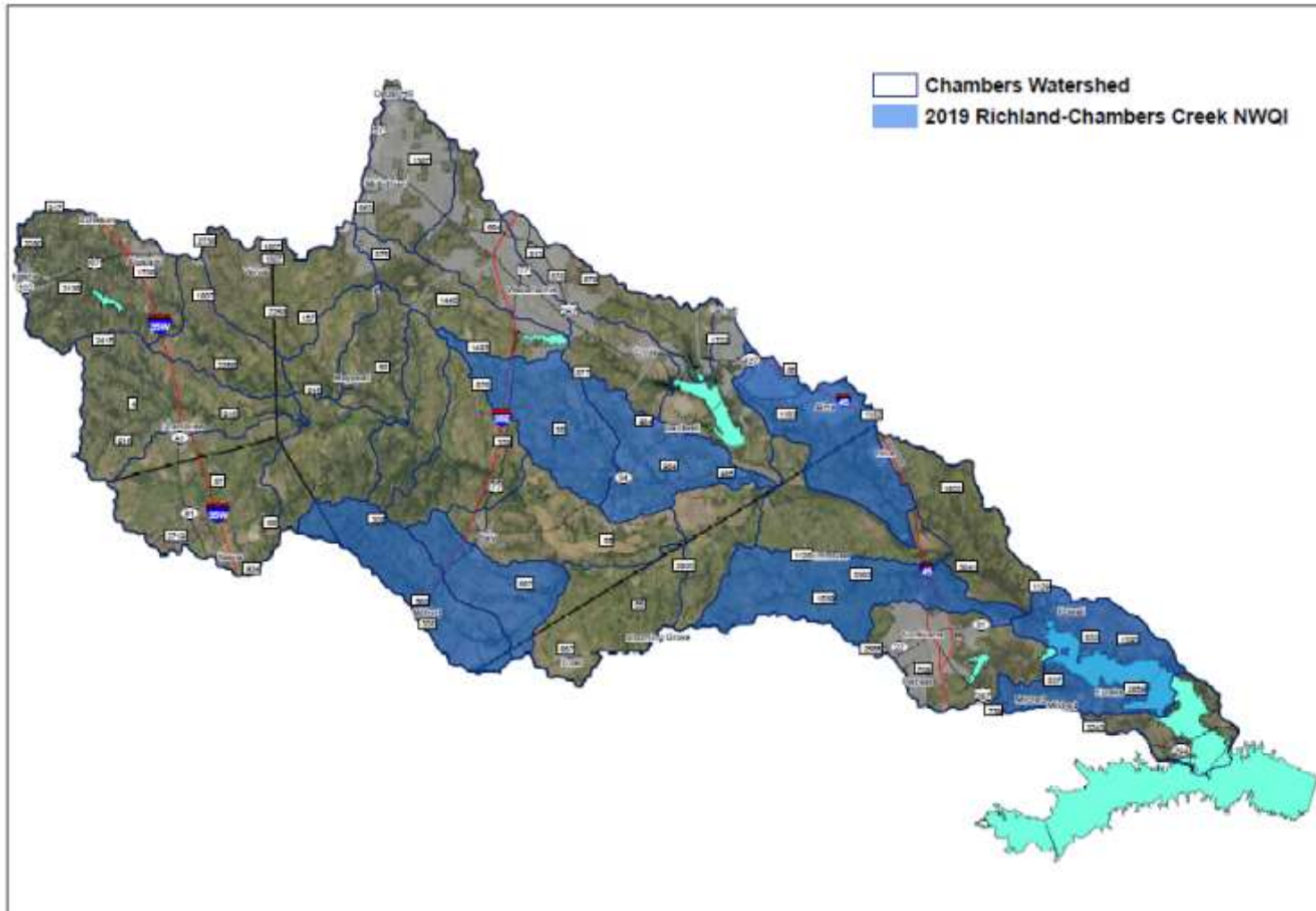
Beau Brooks

NRCS District Conservationist

Waxahachie, Texas



FY2019 EQIP – National Water Quality Initiative Richland-Chambers Creek



United States
Department of
Agriculture

Natural Resources Conservation Service

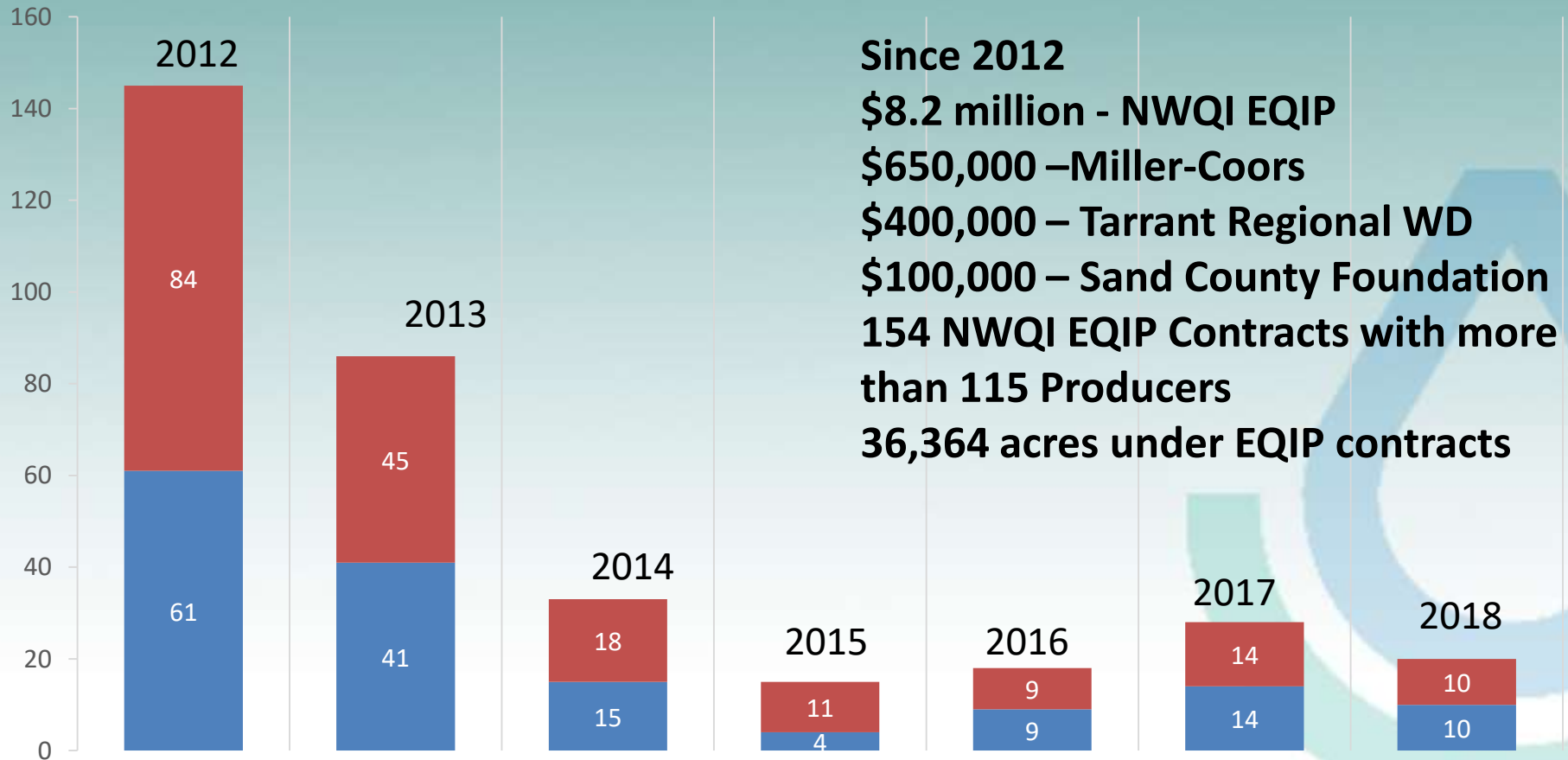




National Water Quality Initiative

CONTRACT APPLICATIONS VS. CONTRACTS FUNDED

■ Contracts Funded ■ Contracts Applied for Funding

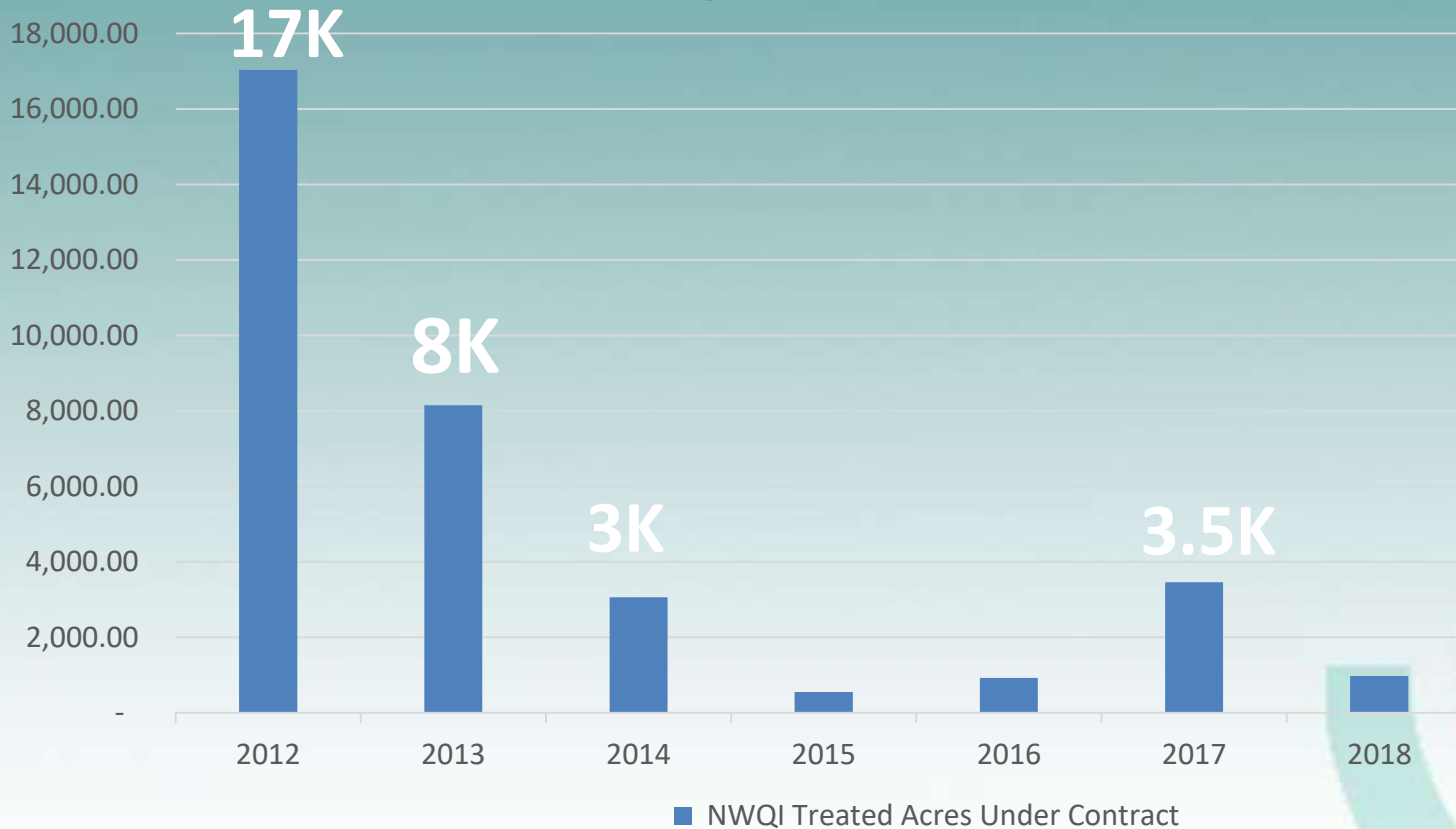


Since 2012
\$8.2 million - NWQI EQIP
\$650,000 – Miller-Coors
\$400,000 – Tarrant Regional WD
\$100,000 – Sand County Foundation
154 NWQI EQIP Contracts with more than 115 Producers
36,364 acres under EQIP contracts

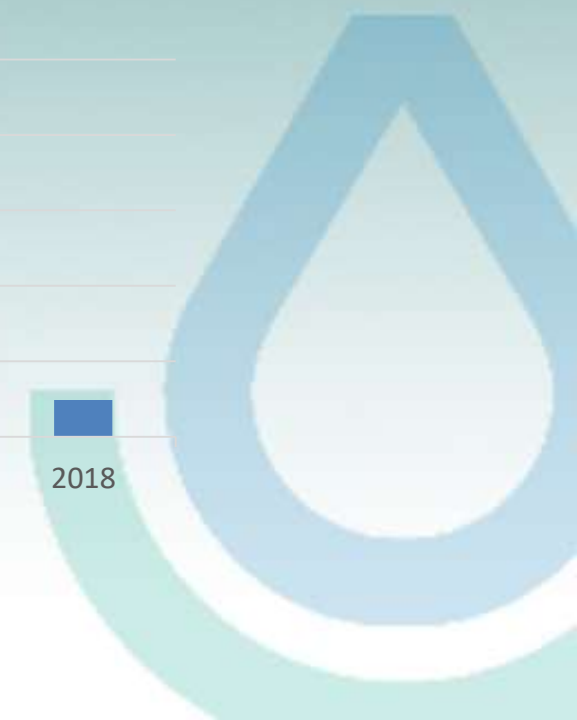


Conservation Planning Assistance at Work

Acres Managed Under a Conservation Contract



2012-2018



Chambers Creek NWQI (2018)

At-a-Glance

- Contracts – 10
- \$340,000 in EQIP funding
- Acres - 977

Typical Conservation Practices:

- Prescribed Grazing
- Residue & Tillage Management
- Cover Crop
- Forage & Biomass Planting
- Livestock Pipeline
- Herbaceous Weed Control
- Range Planting
- Cross Fencing
- Ponds
- Forage Harvest Management



5

Steps to Assistance

How to Get Assistance from NRCS
for Farms, Ranches and Forests

1

PLANNING

Visit your local NRCS field office to discuss your goals and work with staff on a conservation plan.

2

APPLICATION

With the help of NRCS, complete an application for financial assistance programs.

3

ELIGIBILITY

Find out if you're eligible for NRCS' variety of financial assistance programs.

4

RANKING

NRCS ranks applications according to local resource concerns.

5

IMPLEMENTING

Put conservation to work by signing a contract and implementing conservation practices.

Challenges for Implementing Successful Projects in the Future

- The soil in the Blackland Prairie
- Staff to Monitor/Evaluate Projects
- Education for Land Owners
- Time to Build Relationships with Producers





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Questions ?

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LEMON COOKIES

Soft bakery style lemon cookies with a lemon zest glaze

- **Prep Time:** 10 minutes
- **Cook Time:** 14 minutes
- **Total Time:** 24 minutes
- **Yield:** 24

INGREDIENTS

- 1 and 3/4 cups flour
- 1/2 teaspoon baking soda
- 1/2 teaspoon salt
- 1 tablespoon lemon zest (~1 small lemon)
- 1/2 cup unsalted butter (room temperature)
- 1 cup sugar
- 1 egg
- 1 teaspoon vanilla
- 2 tablespoons lemon juice

Glaze

- 2 cups powdered sugar
- 2 tablespoons lemon zest
- 1/3 cup lemon juice

INSTRUCTIONS

1. Preheat oven to 350 degrees
2. Prepare a [cookie sheet](#) with a non-stick spray, or parchment paper, set aside
3. In a medium bowl whisk the flour, baking soda, salt, and lemon zest.
4. In large mixing bowl beat the butter for a few seconds, add the sugar and mix until light and fluffy. Add in the egg, vanilla, and lemon juice. Mix until fully combined.
5. Continue mixing while you add in the dry ingredients. Mix until fully combined.
6. Drop cookie dough by the spoonful onto the prepared cookie sheet. Bake until light golden on edges, approximately 12- 14 minutes. Remove from oven, let cool on the cookie sheet about 5 minutes and then remove to continue cooling on a wire rack.
7. Once cooled prepare the glaze by whisking the powdered sugar, lemon juice, and lemon zest together until well combined. Spoon onto the top of the cookies. Allow to sit and dry, glaze will harden.
8. Store cookies in airtight container at room temperature. Enjoy!

