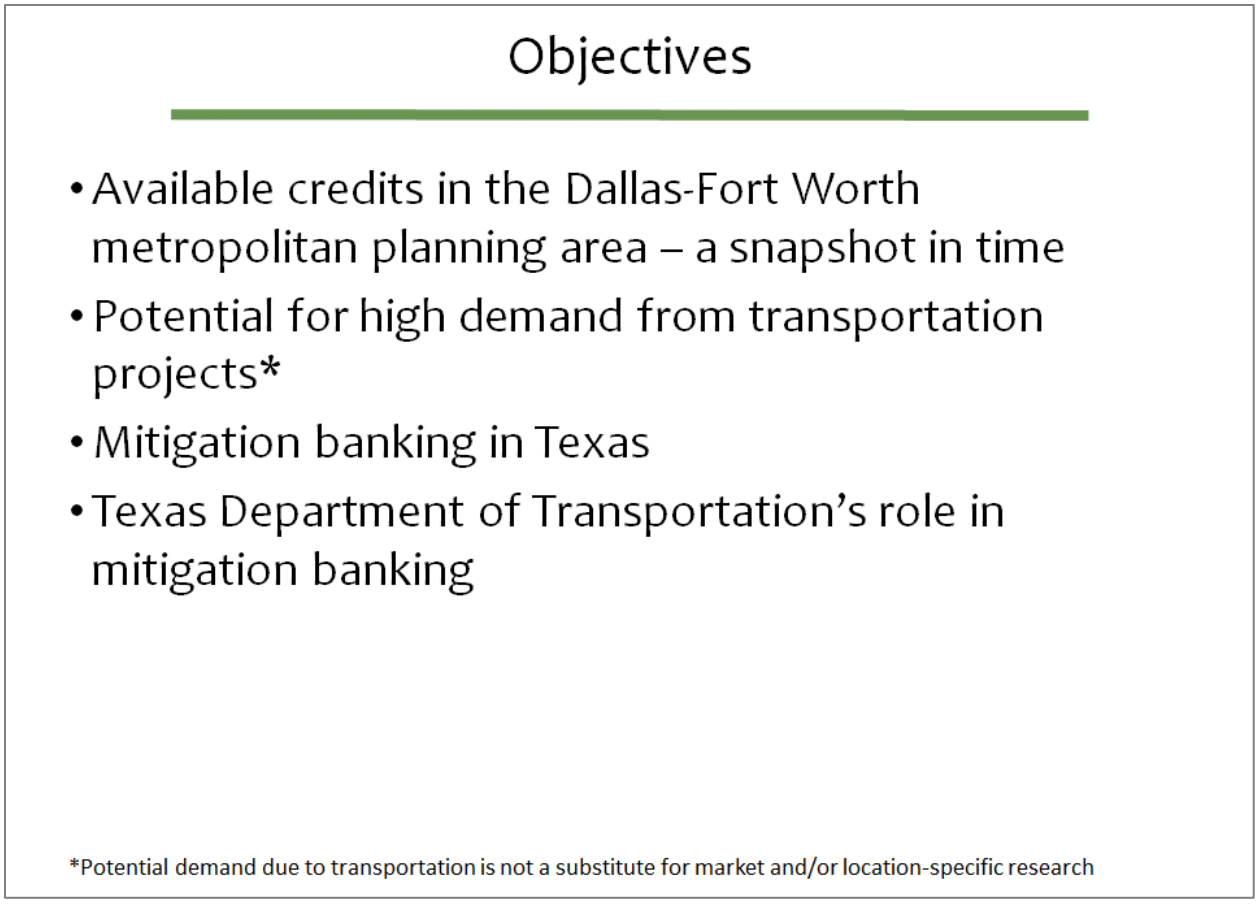
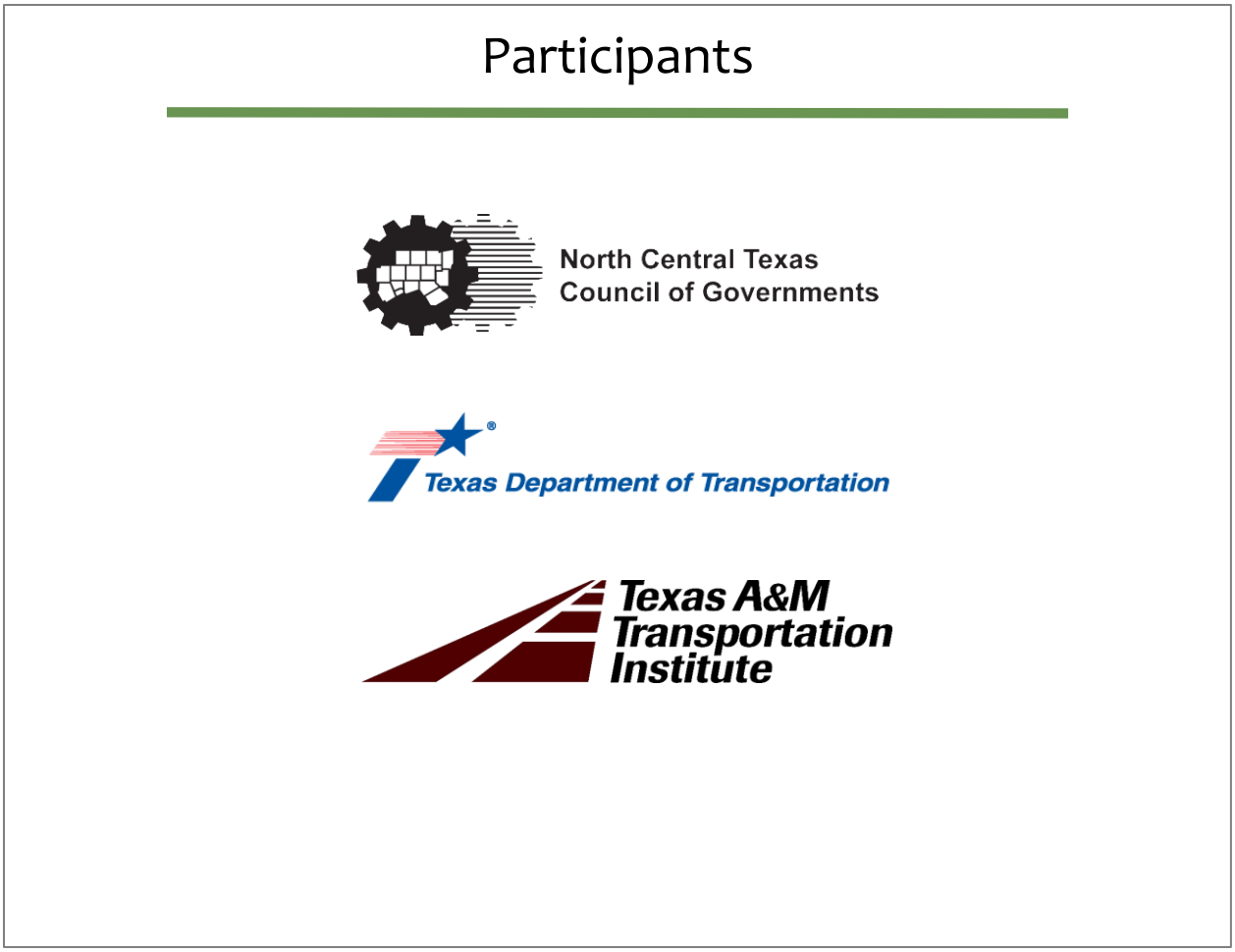

Transportation-Sector Demand for Mitigation Credits:
A Webinar for Wetland and Stream Mitigation Bankers and Consultants
North Central Texas Council of Governments
March 26, 2018



At the end of this webinar you should have a greater understanding of the locations of available and potential credits in the Dallas-Fort Worth Metropolitan Planning Area (MPA), the potential for high demand from transportation projects in the region, the role of Texas Department of Transportation in mitigation banking, and information about mitigation banking in Texas.



Participants of the webinar included:

1. North Central Texas Council of Governments (NCTCOG): a voluntary association of local governments and provides planning for common needs and mutually beneficial regional development. The transportation department serves as the Metropolitan Planning Organization (MPO) for the Dallas Fort Worth Metropolitan Area.
2. Texas A&M Transportation Institute (TTI): A member of the Texas A&M University System. TTI conducts transportation research across all modes and involves numerous disciplines including engineering, planning, economics, policy, public engagement, environmental sciences, computer sciences, and social sciences.
3. Texas Department of Transportation (TxDOT): TxDOT is responsible for maintaining, constructing, and supporting roads, aviation, rail, and public transportation across the state of Texas. TxDOT works to provide safe and reliable transportation solutions in Texas by addressing congestion, safety, and connecting of communities.
4. Representatives from the United States Army Corps of Engineers (USACE) were also available during the webinar to answer questions

Introductory Remarks

Carlos Swonke

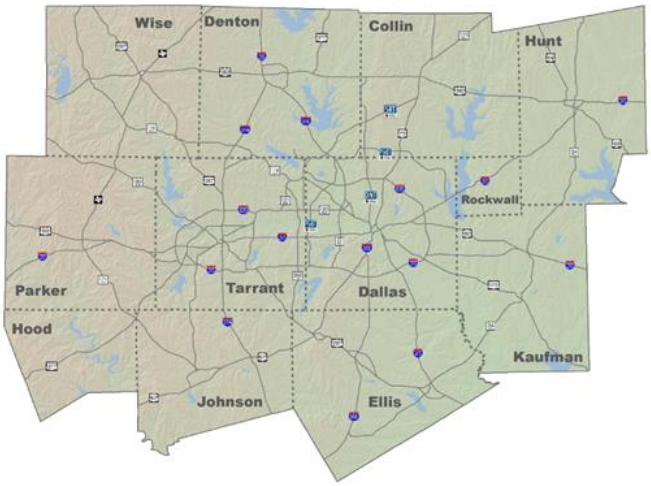
Environmental Affairs Division Director

Texas Department of Transportation

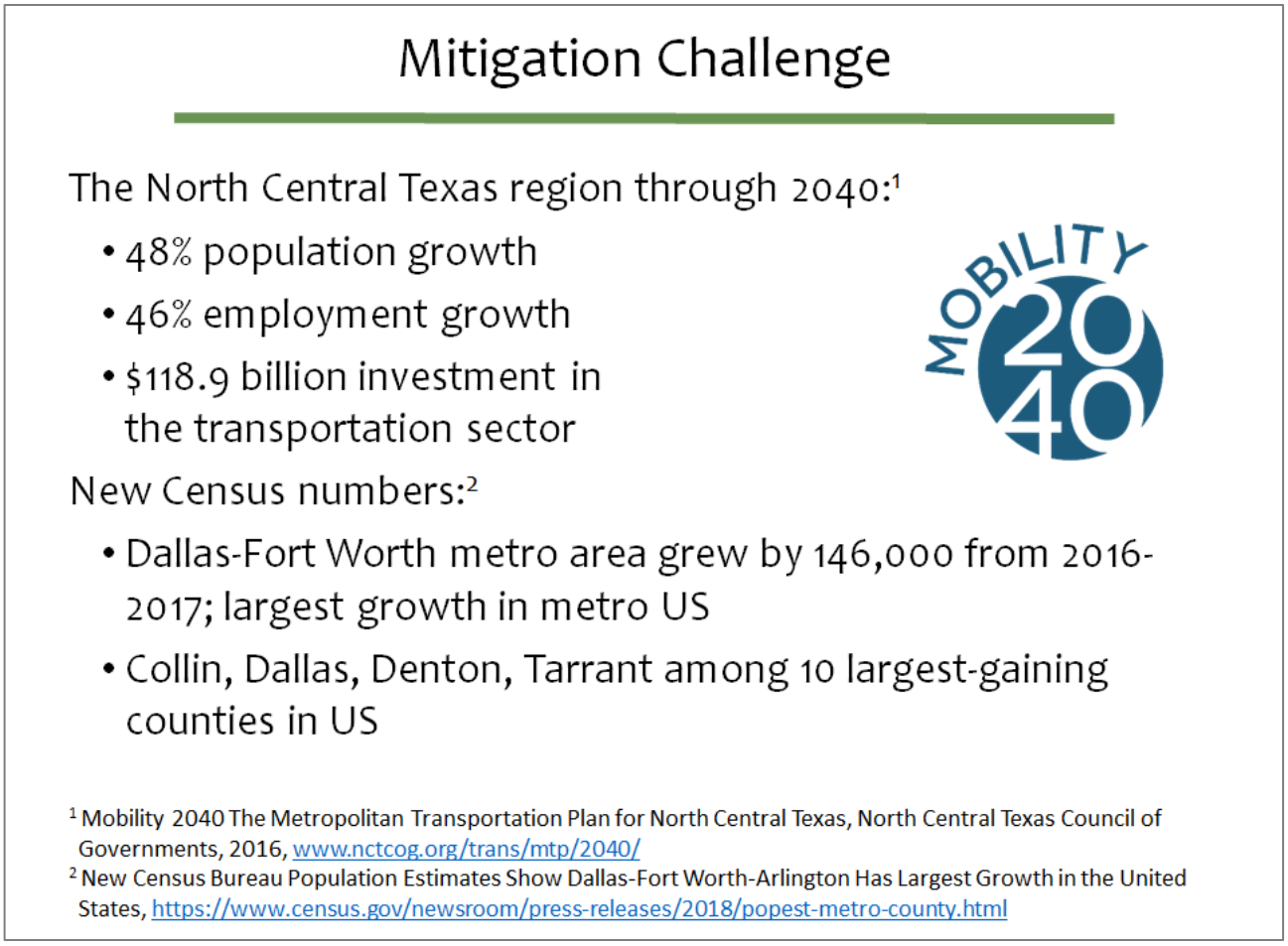
Carlos Swonke provided a statewide perspective on the demand for mitigation credits and TxDOT's role. He mentioned that TxDOT is facing great pressure to deliver transportation projects. Last year over 2,000 projects received NEPA approval. In terms of mitigation banks, in 2017 TxDOT was involved in 10 mitigation projects, costing approximately $8 million. Of these projects, 7 were mitigation banks and 3 were Permittee Responsible Mitigation.

North Central Texas Council of Governments

The **North Central Texas Council of Governments** (NCTCOG) is the metropolitan planning organization for the 12-county Dallas-Fort Worth region. NCTCOG's Transportation Department conducts long-range transportation planning for this region.



NCTCOG is the Metropolitan Planning Organization (MPO) for the Dallas-Fort worth region. An MPO is a federally required association for urban areas with a population over 50,000 people and is designated to carry out the metropolitan planning process. As the MPO, the Transportation Department conducts long-range transportation planning for the 12-county region shown here.

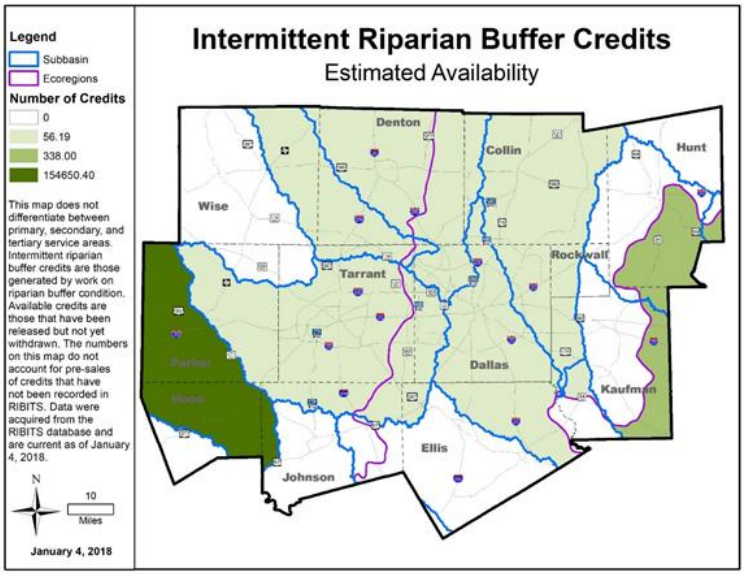


Mobility 2040 is the current long-range transportation plan through the year 2040 for The Dallas-Fort Worth region. Forecasted demographics developed by NCTCOG for this plan show a 48% population growth, 46% employment growth and an expected $118.9 billion investment in the transportation sector. Data released last week by the Census Bureau identifies Dallas-Fort Worth as the fastest-growing metro area in the US, with 146,000 new residents from 2016-2017. Four of NCTCOG counties are among the top 10 counties in terms of population growth.

[1] www.nctcog.org/trans/mtp/2040/
[2] https://www.census.gov/newsroom/press-releases/2018/popest-metro-county.html

Mitigation Challenge

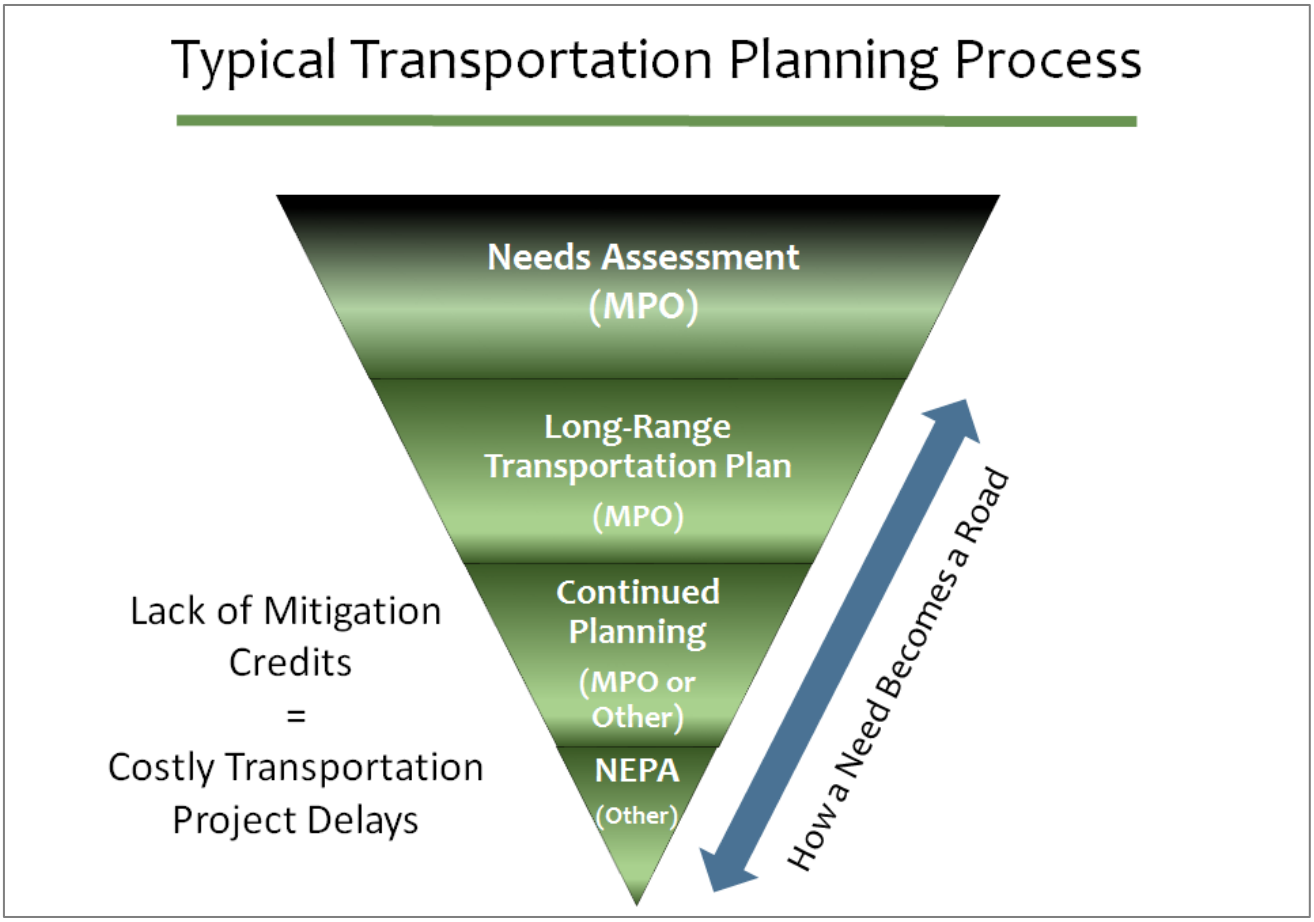
Currently limited supply of available ephemeral, intermittent, and perennial credits in parts of the North Central Texas 12-county metropolitan planning area.



With this increased growth, NCTCOG research shows that there may be a limited supply of available ephemeral, intermittent, and perennial credits in parts of the North Central Texas 12-County Metropolitan Planning Area (MPA). This limited supply may not be sufficient for the transportation projects that are planned for the region.

In 2016, NCTCOG completed a mitigation assessment using the US Army Corps of Engineers Regulatory In-Lieu Fee and Banking Information Tracking system (RIBITS). Staff identified the amount of available and potential credits in the services areas serving the Dallas-Fort Worth MPA. Because data used in the mitigation assessment was a snapshot in time, the information presented in this webinar will represent updated data as of January 4, 2018. However, this is a snapshot in time, and has changed since the date it was downloaded.

As an example, this map shows a possible lack of intermittent riparian buffer credits in much of the Dallas-Fort Worth Metropolitan Planning Area.



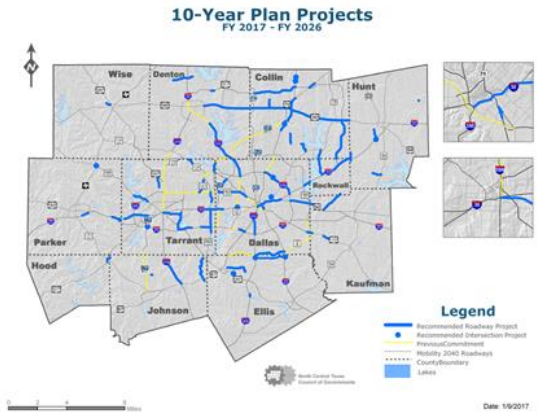
Staff at NCTCOG plan, but do not build, transportation infrastructure. The planning process begins with a needs assessment. From there, if a transportation need is identified, in coordination with NCTCOG partners, the project may be included in the long-range plan, which will be discussed in the next slide. From the project's inclusion, there is still continued planning and coordination, including the NEPA process, before the needs assessment can become a road. This means that throughout this planning process, the project location that is identified in the needs assessment and the long-range plan could easily be modified. In rare cases, it may not be built at all. This is important to because it means the demand that is identified today is not set in stone.

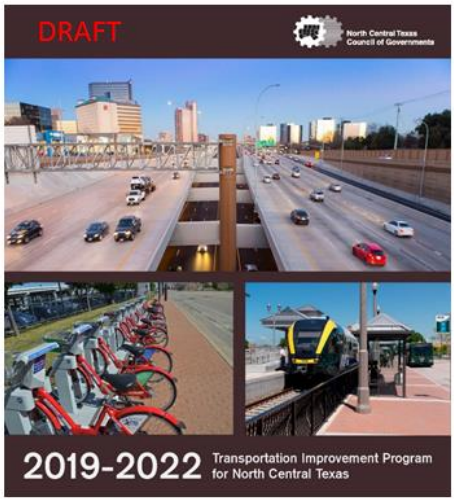
A shortage of mitigation credits could lead to project delays that are costly. A lack of credits available through banks could result in the need for permittee responsible mitigation. This form of mitigation is time consuming as it requires acquisition of a conservation easement, water rights, a conservation about mineral rights access, and a steward to maintain the land. These requirements are costly and cause delays to the implementation of transportation projects. Permittee responsible mitigation historically has had a greater likelihood of failing to provide the ecological benefits that compensate for the impact.

NCTCOG – Transportation Improvement Program and 10-Year Plan

10-Year Plan

- Required by House Bill 20
- Allocates projects for the Dallas-Fort Worth region using funds from the Texas Transportation Commission





Transportation Improvement Program (TIP)

- Staged, multi-year program of projects approved for funding by federal, state, and local sources
- Developed every 2 years

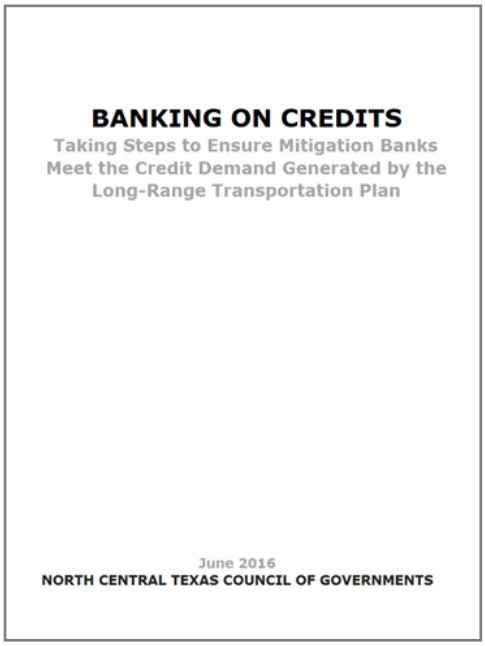
NCTCOG also produces two documents on a shorter time horizon that may be a better resource for mitigation bankers than the long-range plan. State legislation requires the MPO to develop a 10-Year Plan based on a subset of the funds. Transportation Improvement Program (TIP) identifies transportation projects that have been approved for funding by federal, state, and/or local sources. This document is developed every 2 years. The current draft plan is for the years 2019, 2020, 2021, and 2022.


2016 NCTCOG
Mitigation Assessment

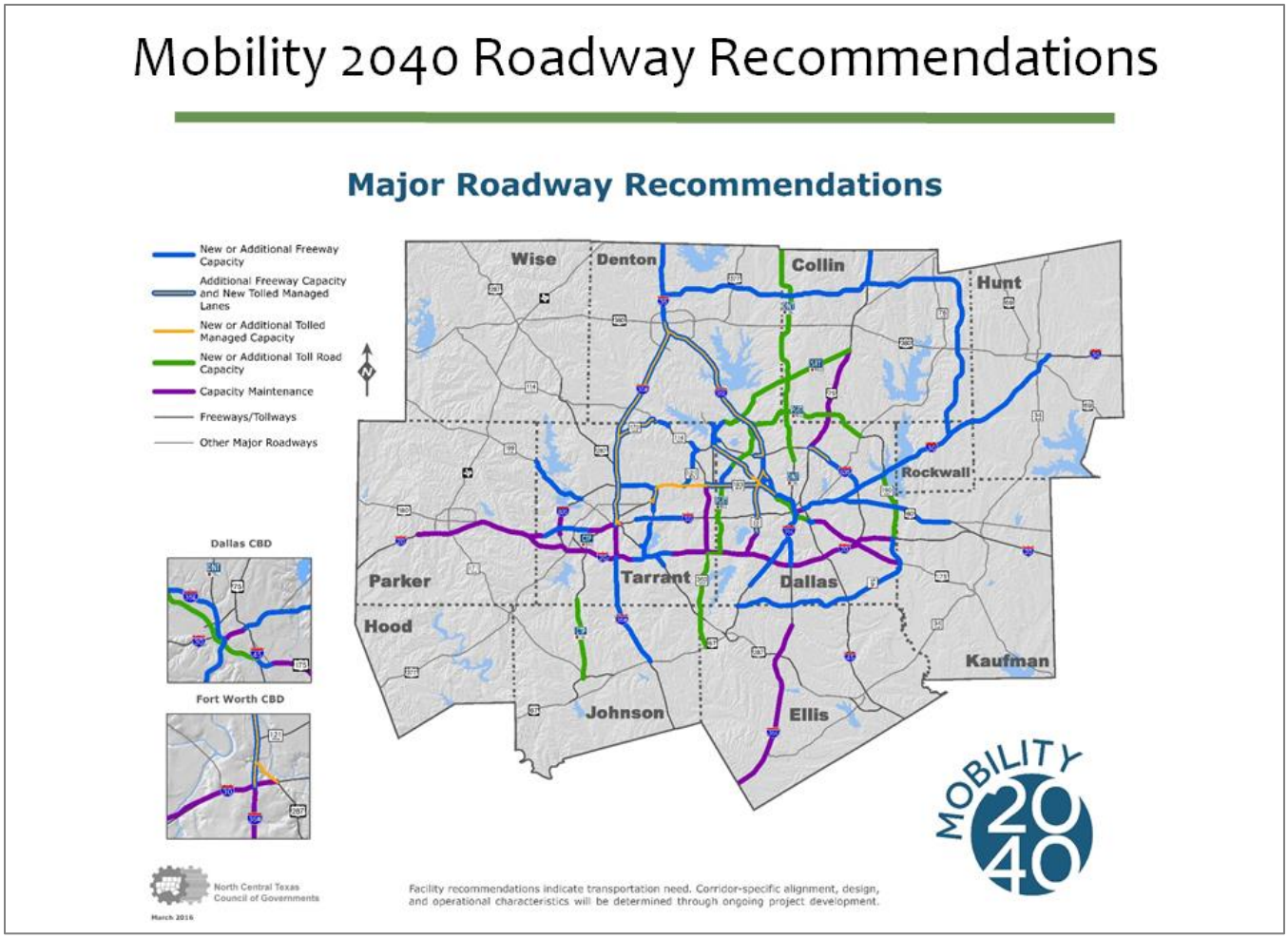
NCTCOG Mitigation Assessment, 2016

2016 White Paper:

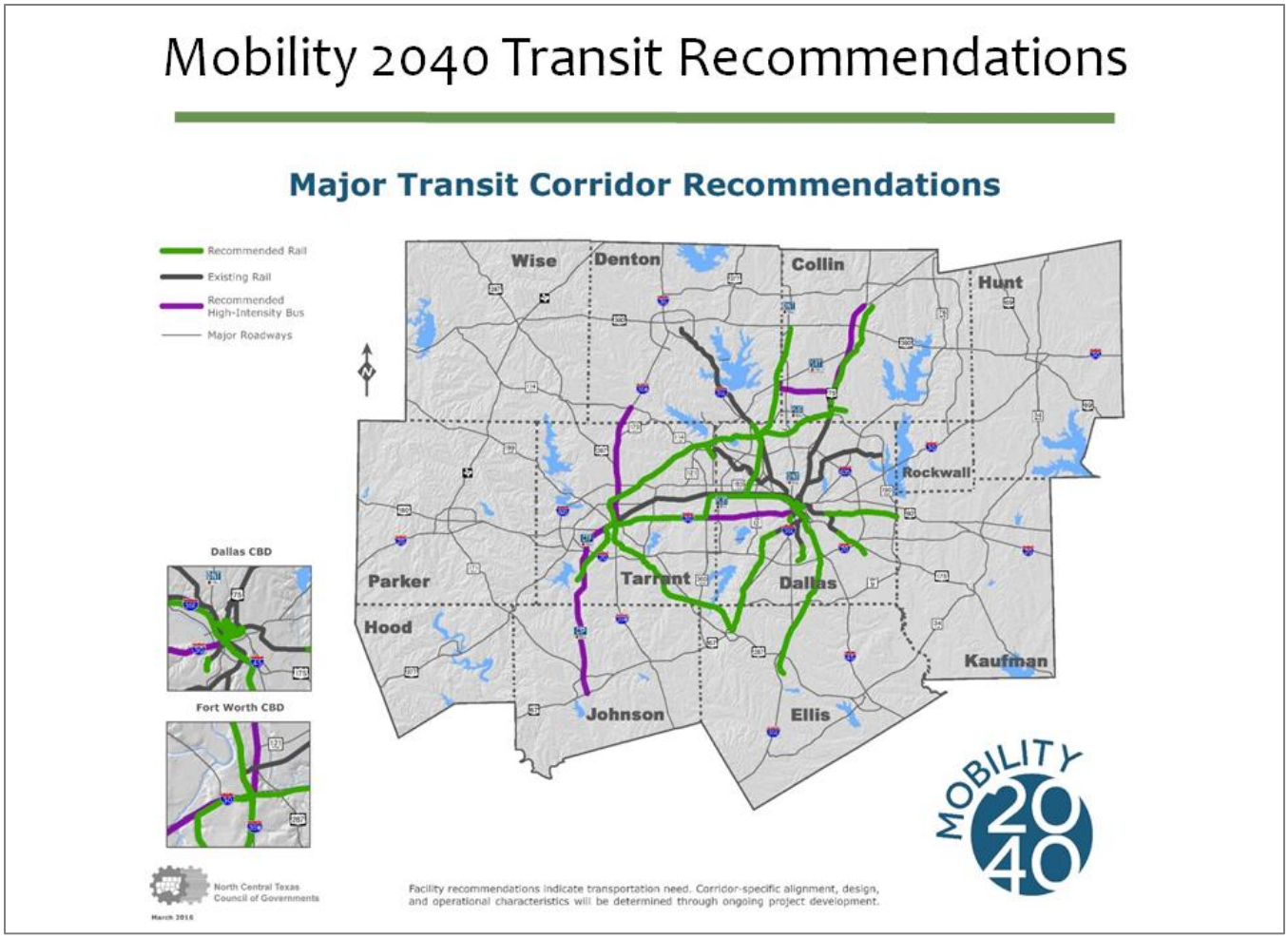
http://www.nctcog.org/pel/documents/WhitePaper.pdf



NCTCOG completed a mitigation assessment in 2016 with funding received from the Federal Highway Administration. For this study, NCTCOG was interested in whether there would be sufficient credits associated with Section 404 of the Clean Water Act for the estimated demand resulting from transportation projects planned for the Dallas-Fort Worth region. The analysis was done for projects through the years 2027 and 2040. This was essentially a supply and demand analysis.



Mobility 2040 is the current NCTCOG long-range plan. This plan includes major roadway recommendations through the year 2040. This map identifies transportation needs, though not finalized locations for transportation infrastructure. The Mitigation Assessment does not include smaller roadways that may also require mitigation, meaning there is potential for a greater amount of demand from transportation projects than was included in the study.



Mobility 2040 also includes the major transit corridors recommended. Transit needs were not included in the Mitigation Assessment. This means again that there is potential for a greater amount of demand from transportation projects than was included in the study.

Mobility 2040 Population Growth Trends

Forecasted Population Growth by County, 2017 to 2040

MPA County	2017 Population	2040 Population	Growth	Percent Growth
Collin	951,795	1,560,421	608,626	64%
Dallas	2,600,408	3,357,469	757,061	29%
Denton	804,396	1,241,681	437,285	54%
Ellis	163,695	283,898	120,203	73%
Hood	55,034	81,578	26,544	48%
Hunt	87,279	131,022	43,743	50%
Johnson	158,683	252,521	93,838	59%
Kaufman	114,741	210,097	95,356	83%
Parker	123,181	195,286	72,105	59%
Rockwall	93,430	166,357	72,927	78%
Tarrant	2,020,278	3,094,649	1,074,371	53%
Wise	62,588	101,865	39,277	63%
Totals	7,235,508	10,676,844	3,441,336	48%

Source: NCTCOG 2040 Demographic Forecasts

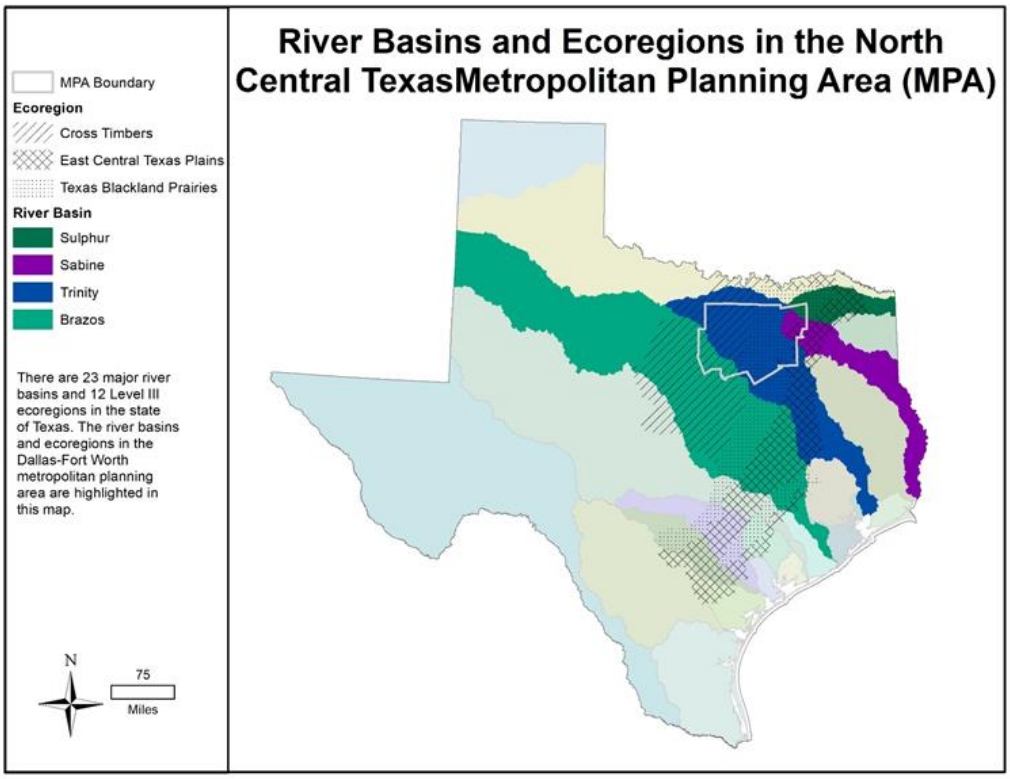
Along with roadway and transit recommendations, the region is also expected to see considerable amount of growth in population. Through 2040, the region is expected to see 48% growth in population, with a large amount of that growth in Denton and Collin counties. Mobility 2045, the long-range plan currently under development by NCTCOG updated population forecasts predicts an even greater amount of growth in the region.

Using the USACE RIBITS, NCTCOG mapped the available wetland, ephemeral, intermittent, perennial, and legacy stream credits in the region. They also mapped the banks' potential credits, minus those that have already been released. This information has been updated for the purposes of this webinar, as the mitigation assessment was completed in 2016.

When looking at these maps, a few things should be considered.

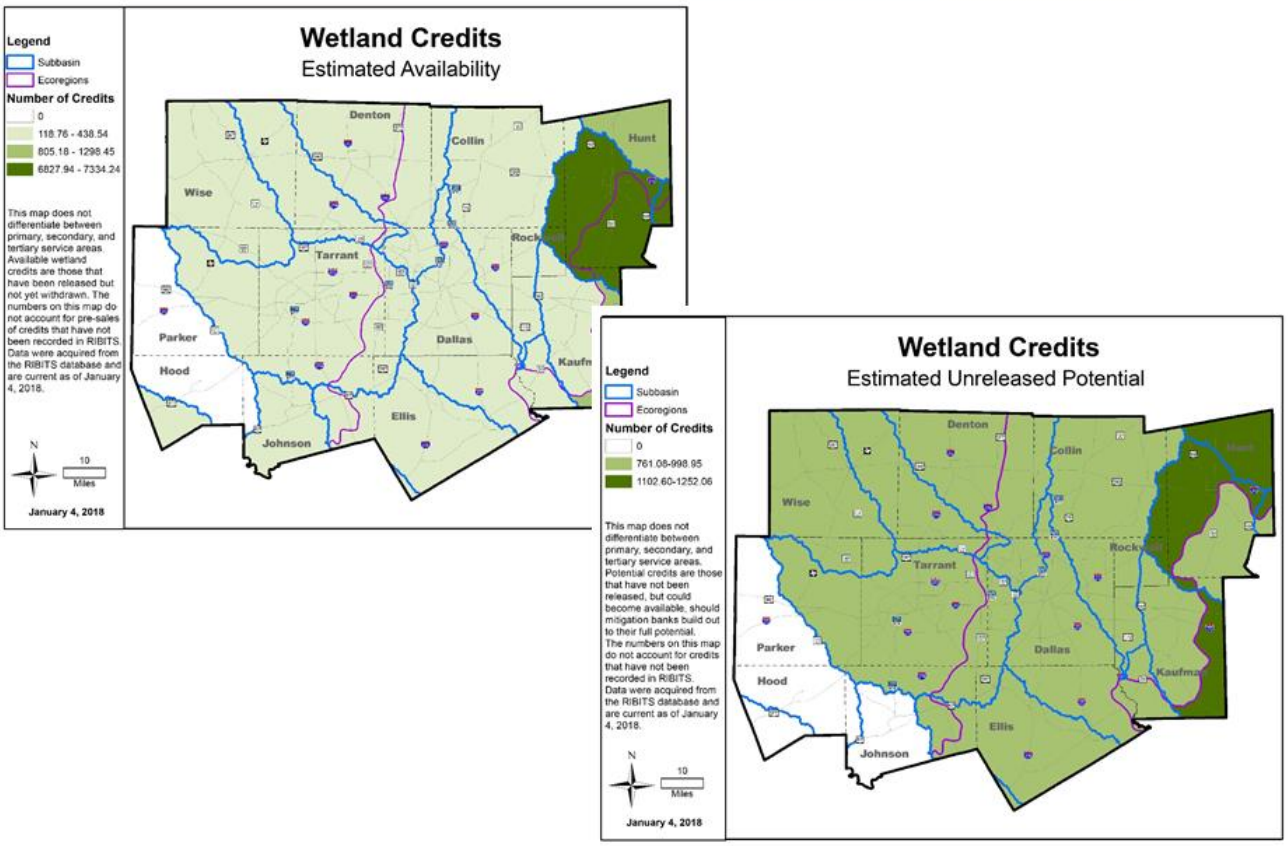
1. RIBITS does not reflect credits that have been pre-sold, but are not yet associated with a permit. So the number of credits actually available for sale may be lower than shown in RIBITS.
2. The information from RIBITS only provides a snapshot in time. Credits can be withdrawn or banks can meet milestones and release credits, changing the information shown in this webinar.
3. Information on if, when, and in what quantity potential credits are released is not available.
4. As there are a lot of credits types, NCTCOG only commented on some of the maps. However, all of the maps will be available in an appendix of this presentation.

Service Areas in Region



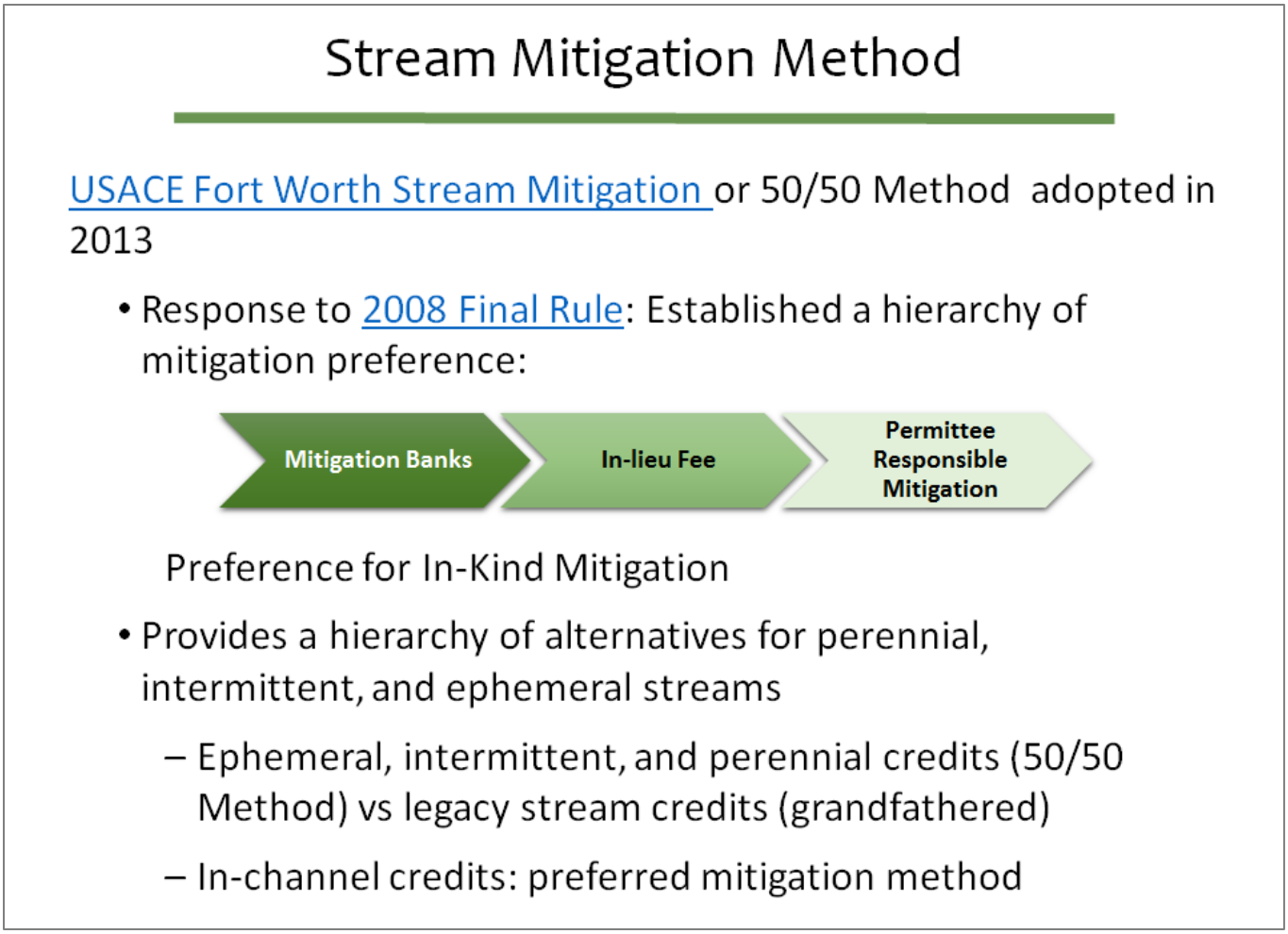
In the USACE Fort Worth District, impacts to wetlands and streams must be mitigated in the major river basin in which they occur. The Dallas-Forth Worth MPA includes 4 major river basins. Ecoregions also affect the service areas of mitigation banks, and the NCTCOG counties lie in 3 ecoregions. These boundaries, along with those of the 8-digit hydrologic unit code watersheds, must be considered while planning the location of a mitigation bank. However, some mitigation banks in the region have customized service areas. The service-area data found on RIBITS were used for the Mitigation Assessment.

Wetland Credits



These maps show the estimated available and potential but unreleased wetland credits. On these and the following maps, a darker green indicates a higher number of credits and white indicates no credits are available.

Except for in the southwestern portion of the region, available and potential wetland credits seem to be sufficient, given that the average wetland purchase per permit across industries is 17.5. There could be opportunity in the white region on both maps which shows there are no wetland credits. The National Wetlands Inventory and the National Land Cover Database both show wetlands present in this area.

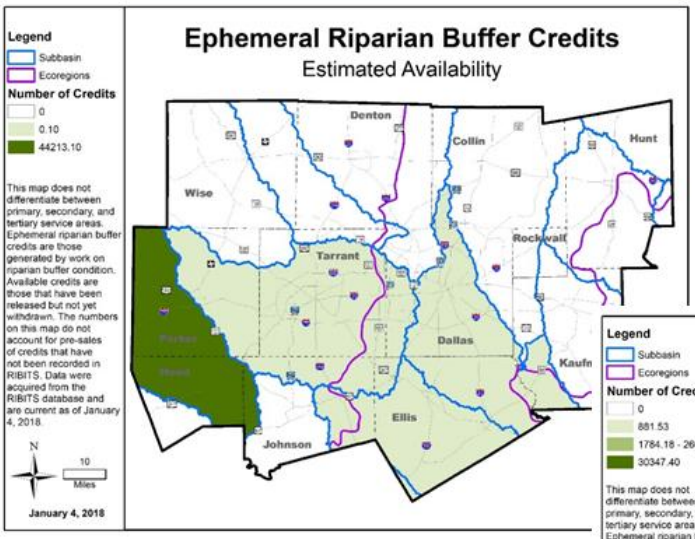


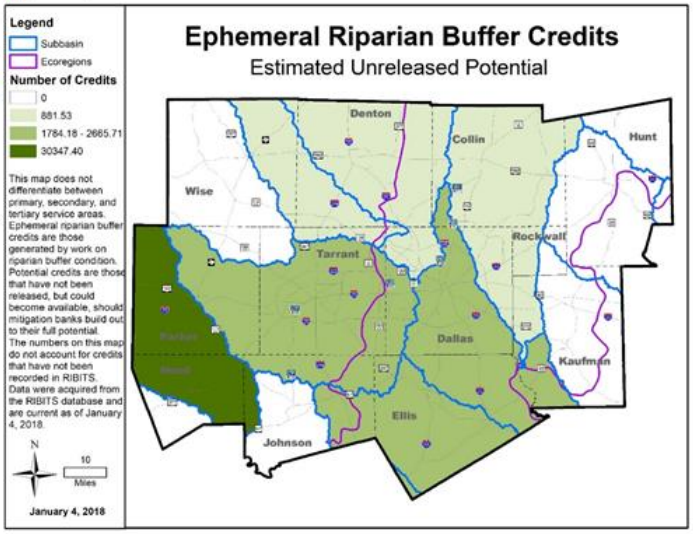
This slide provides information on terminology that will be used describe the credit maps for stream impacts. In 2013, the USACE Fort Worth District adopted the Stream Mitigation Method or "50/50" method. This method was a response to the 2008 EPA and USACE Final Rule which established a hierarchy of mitigation preference and called for in-kind mitigation. The in-kind requirement meant that wetlands should mitigate for wetlands and streams should mitigate for streams.

Prior to the stream mitigation method, the Fort Worth district allowed compensatory mitigation for stream impacts through improvements to wetlands or the upland buffers of streams or wetlands.

The 50/50 method established a hierarchy of alternatives for ephemeral, intermittent, perennial, and legacy stream credits. This hierarchy identifies in-channel, riparian buffer, and legacy stream credits. It identifies what percentage of credits may be purchased from each of these types.

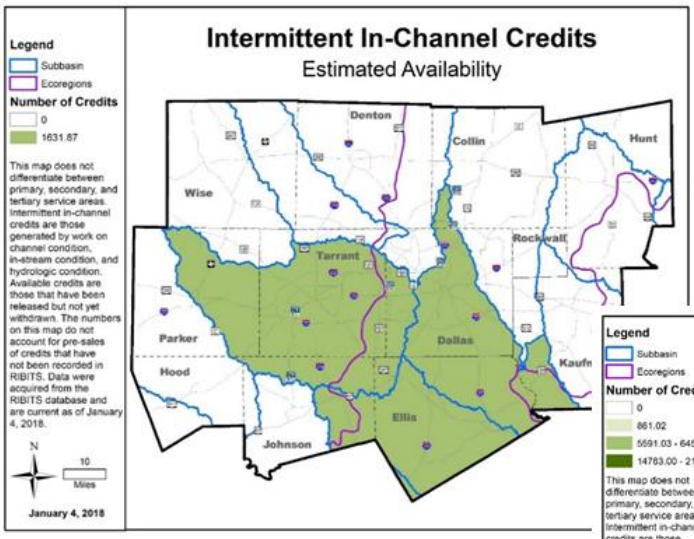
Ephemeral Credits

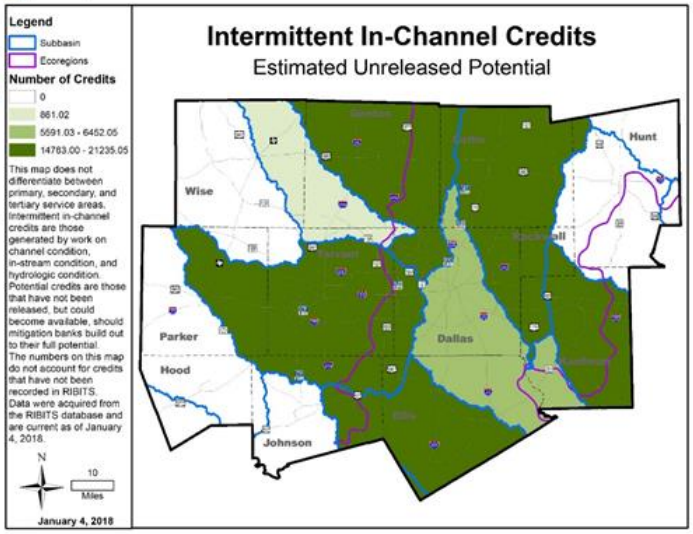




These maps show the available and potential ephemeral riparian credits. Much of the region only has either 0 or only 0.10 credits available. When potential credits are considered, more of the region is covered; however, several of the same regions still remain unaccounted for. With past purchases per permit as high as 6,107.8, even with consideration of potential credits, a shortage could still be a concern.

Intermittent Credits

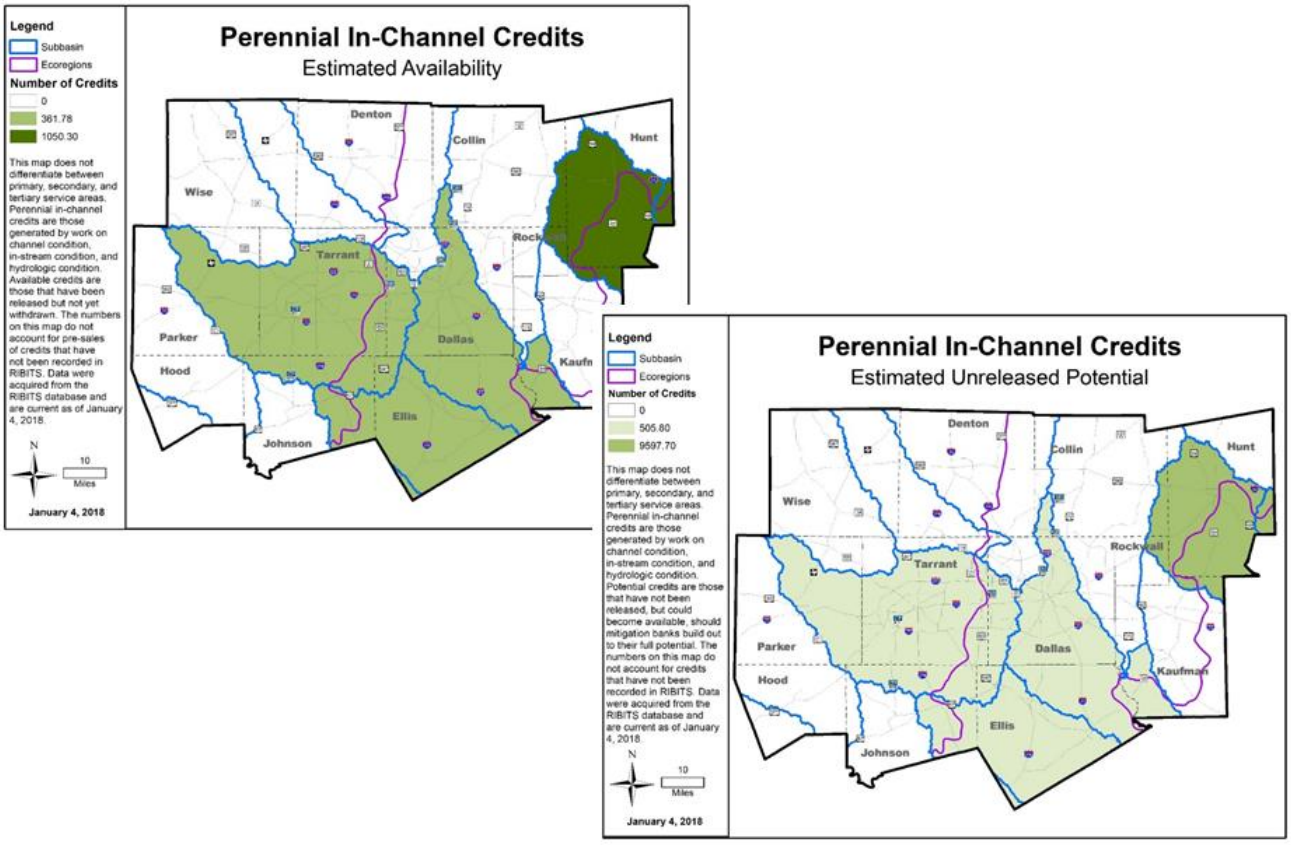




These maps show the available and potential intermittent in-channel credits. Much of the region does not have any available credits. The unreleased potential credits could add many credits to the region. However, information on when, if, and in what quantity these credits may be released is not available.

This issue extends to riparian buffer and legacy credits, maps of which are available in the appendix of this presentation.

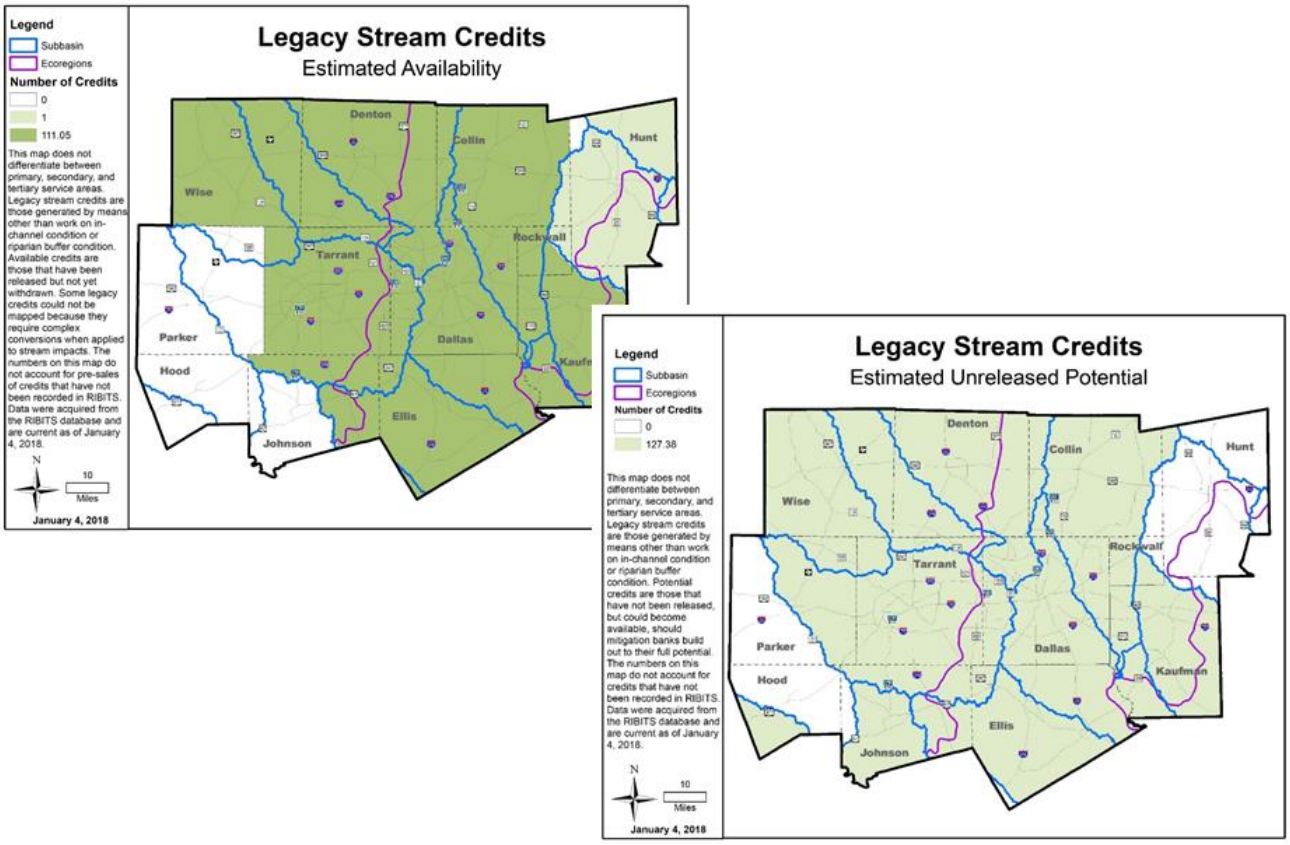
Perennial Credits



There are large portions of the region that do not have available or potential perennial in-channel credits. In particular, credits, potential or available, are lacking in the northern counties of the region where high growth is expected.

A lack of available and potential credits is also an issue for perennial riparian buffer and legacy credits. In fact, there are no potential legacy credits.

General Legacy Stream Credits

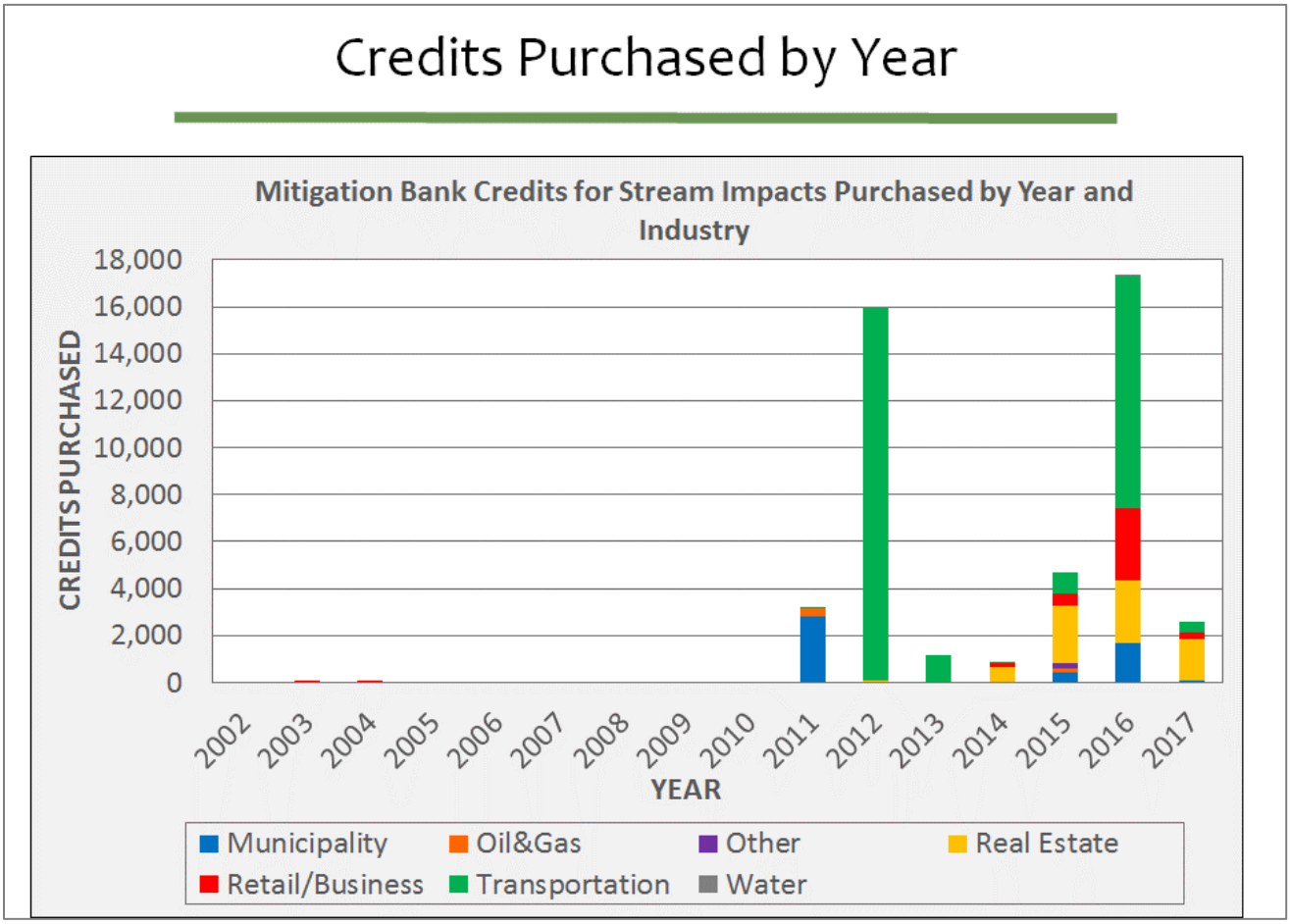


More than half the region has some, but not many available and potential legacy stream credits, according to RIBITS. Using the Stream Mitigation Method, up to 50% of credits purchased per permit may be legacy credits. However, as with all types of credits, the numbers in RIBITS do not reflect credits that have been pre-sold but are not yet associated with a permit.

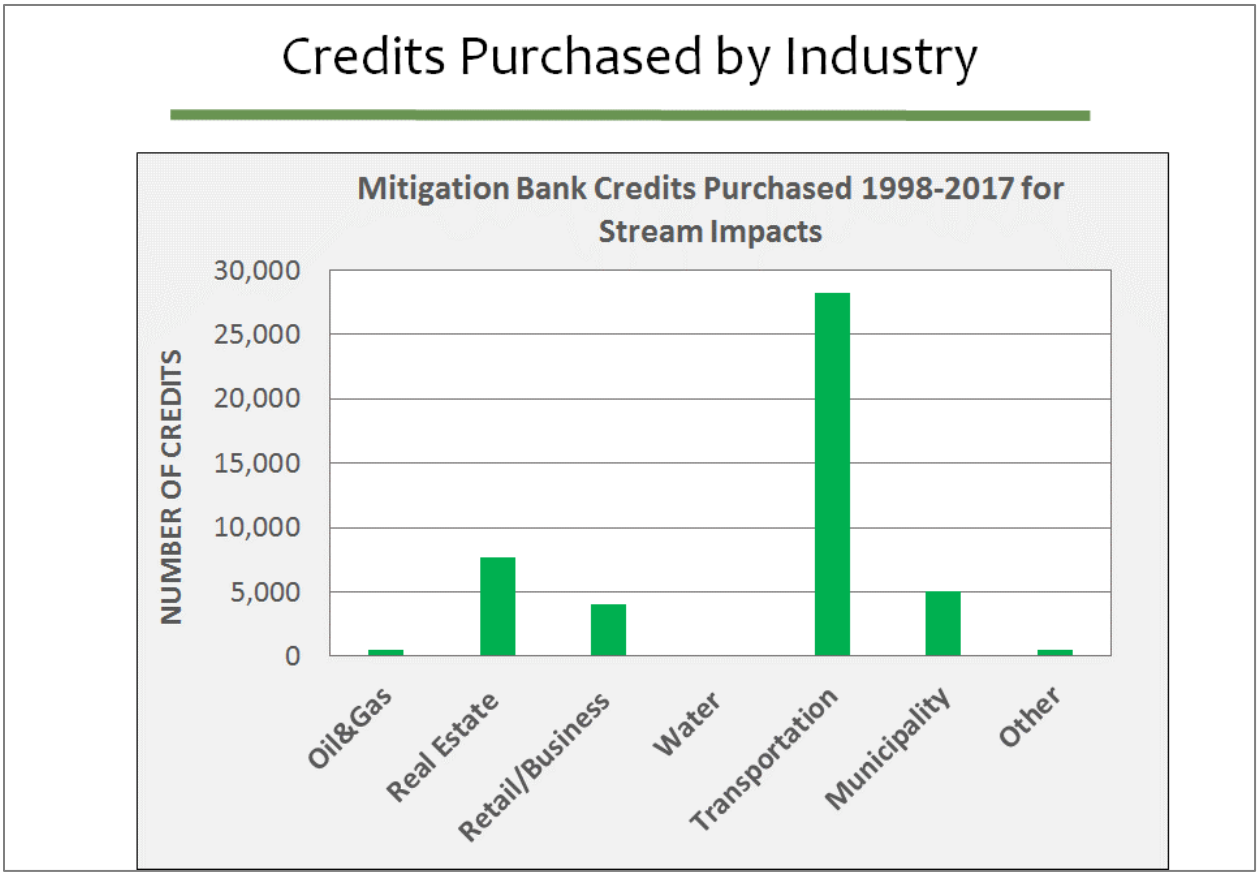
NCTCOG provided a multi-million dollar example of just how high the credit demand from the transportation sector may be. In the Fort Worth District of the USACE, legacy credits can no longer cover 100% of credits purchased for a permit. New banks providing riparian buffer and in-channel credits use a newer method to calculate the number of credits needed to compensate for impacts. This method is called the Texas Rapid Assessment Method, or TXRAM. For potential mitigation, calculations in TXRAM usually results in higher credit needs and, therefore, higher mitigation cost.

NCTCOG has investigated permitting one intermittent stream crossing on a county-funded roadway project. Although engineering plans called for the stream to be heavily impacted by riprap and other flood and scour protection, the estimated credits and cost were much greater if NCTCOG were to purchase 100% of credits from a TXRAM bank versus using a combination of TXRAM and legacy credits under the 50/50 rule. The estimated credits for this one stream under TXRAM was approximately 1300 credits, costing 1.8 million dollars in a primary service area. This purchase for one stream impact would require all credits from one entire bank. Using this project as an example, the calculated estimated credit demand and subsequent cost could be much greater than was originally predicted once legacy credits serving the DFW region are completely sold out. This further emphasizes a potential demand for credits the Dallas-Fort Worth Region.

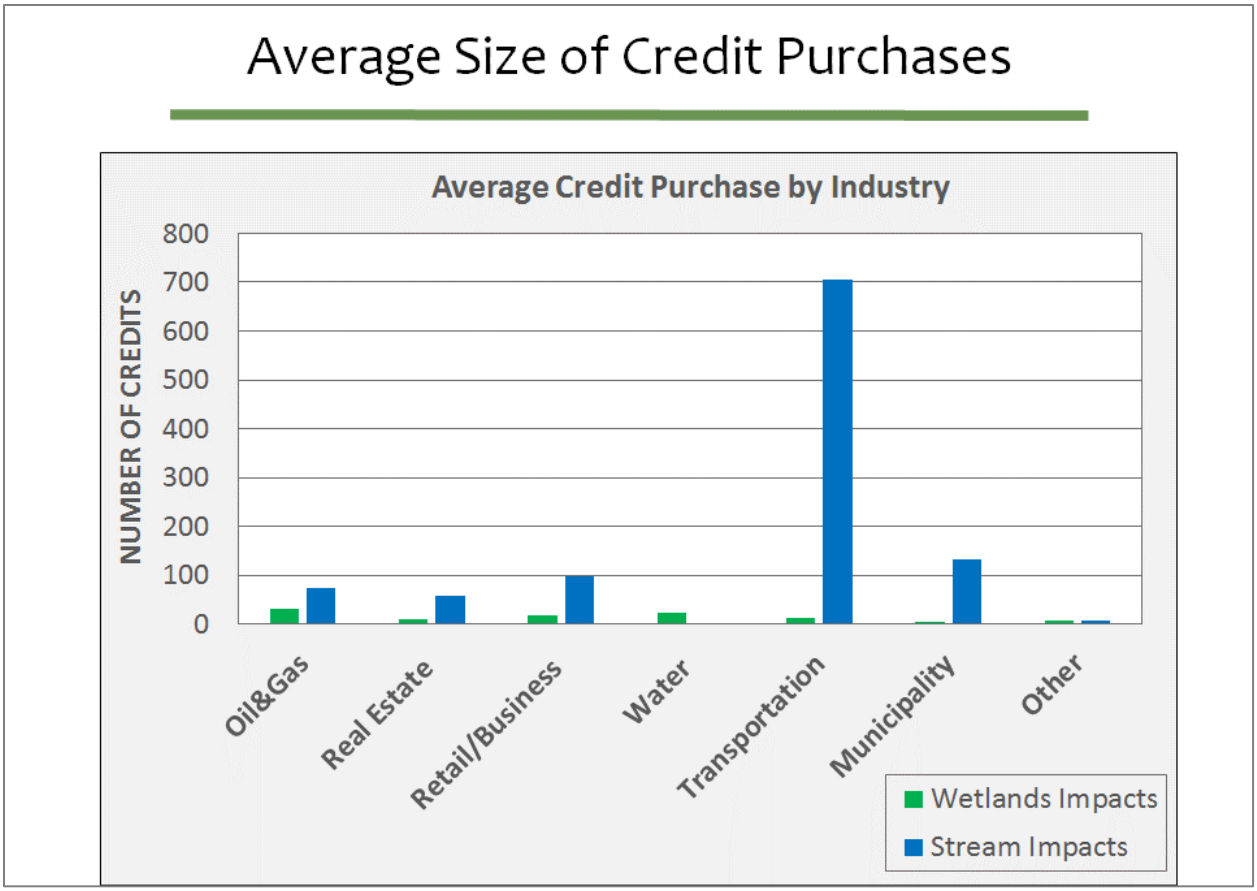
In the mitigation assessment, NCTCOG also looked at who the major purchasers of credits for wetland impacts were.



The data in these graphs come from the RIBITS credit ledgers of all banks that have service areas in NCTCOG's 12-county region. The credits withdrawn were divided into year and industry. This graph shows the transportation sector has purchased the largest amount of credits, with considerable withdrawals made in both 2012 and 2016. Other major purchasers of credits for stream impacts in the region are Retail/Business and Real Estate, or largely development-related industries.

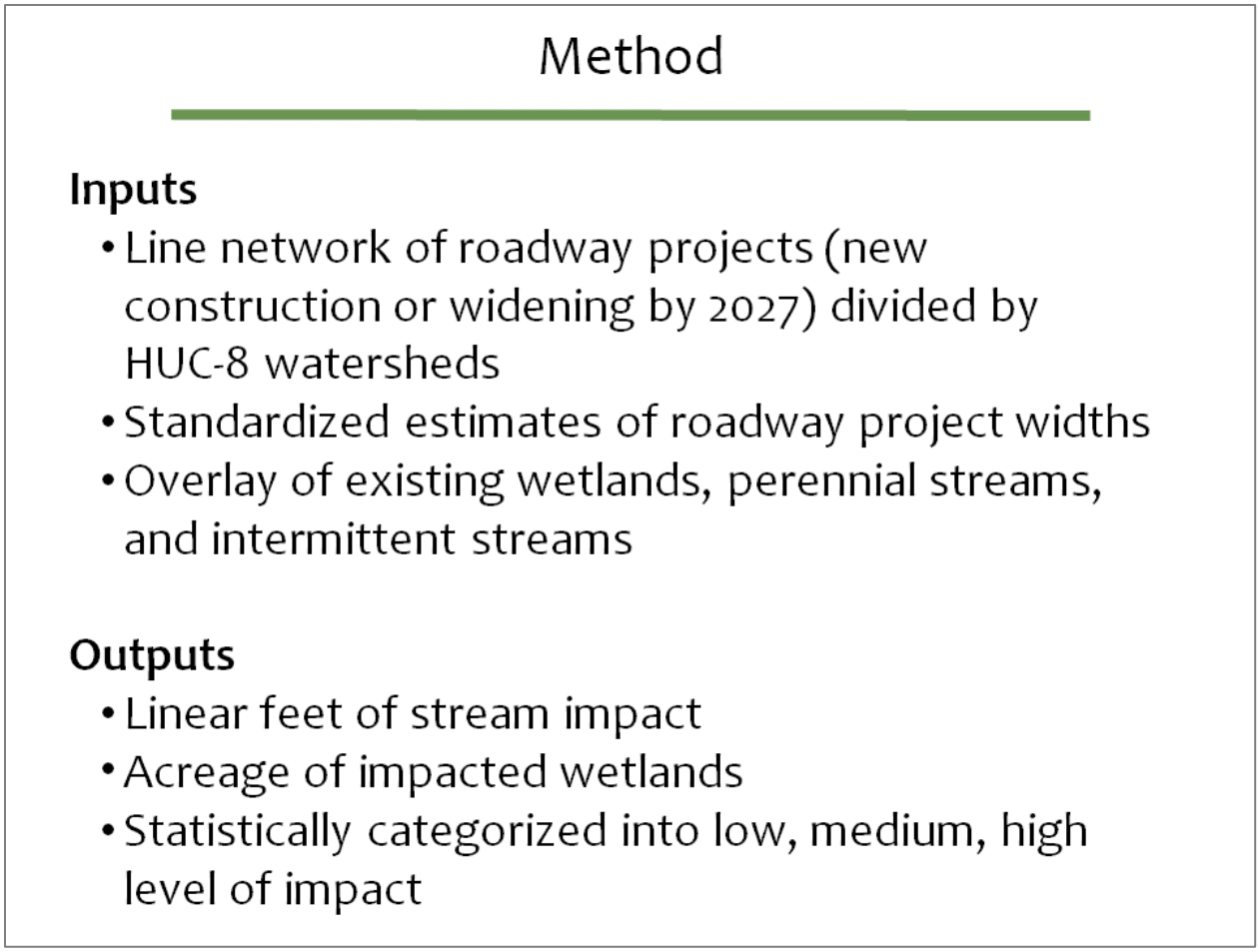


This graph gave another perspective on the total credits withdrawn up to the end of 2017 for stream impacts by industry. Again, it is clear that transportation projects made up a large portion of the credits withdrawn.



This graph shows the average number of mitigation credits withdrawn per permit for wetlands and streams. The average credit withdrawal per permit is quite small for wetlands compared to credits for stream impacts. The oil and gas sector has the largest average withdrawal of wetland credits at 31.6 credits per permit. For stream impacts, transportation by far has the largest average withdraw per permit at just over 700 credits.

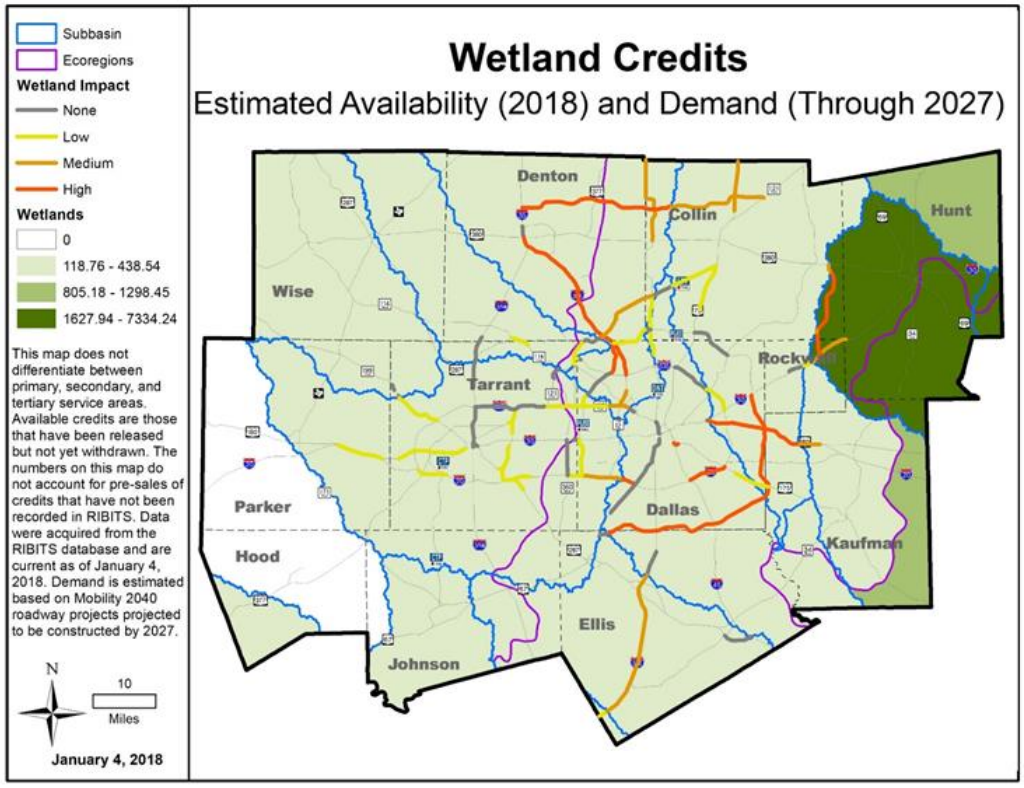
In the next section, NCTCOG staff described the potential for credit demand from the region's proposed transportation projects through the year 2027.



In order to estimate potential credit demand from transportation projects, the Mitigation Assessment divided roadway projects into segments that would be applicable to bank service areas. NCTCOG used roadway projects that are expected to be newly constructed or widened by 2027, an interim year in the long-range planning process. This interim year was chosen because it is more relevant for mitigation bankers' planning efforts than 2040. Each roadway feature was given a standardized width estimate. For example, a median was given an impact area width of 30 feet. Spatial data on wetlands and intermittent and perennial streams was then laid over the roadway segments. Data on ephemeral streams was not available.

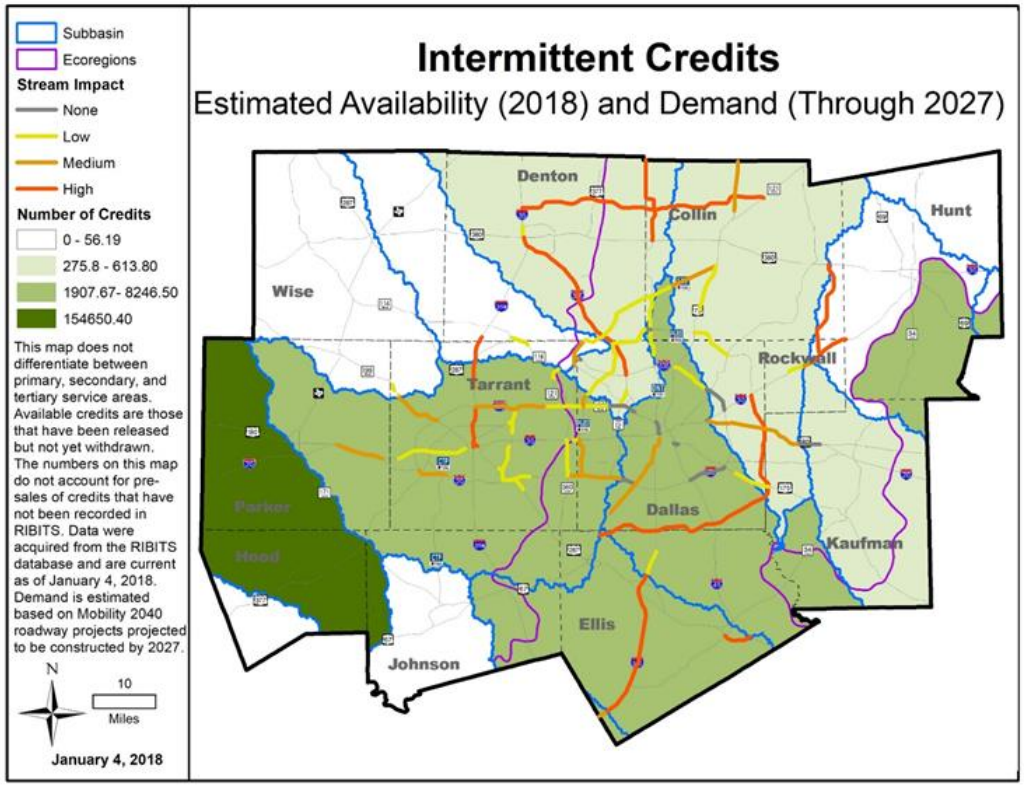
Credit demand to streams were estimated in linear feet, while those to wetlands were measured in acres. The estimated demands were then statistically categorized into a low, medium, or high level of demand. A map of available credits was then overlaid. For this map, a combination of all types of available credits in each category of wetlands, perennial and intermittent were used.

Mobility 2040: Potential Wetland Demand

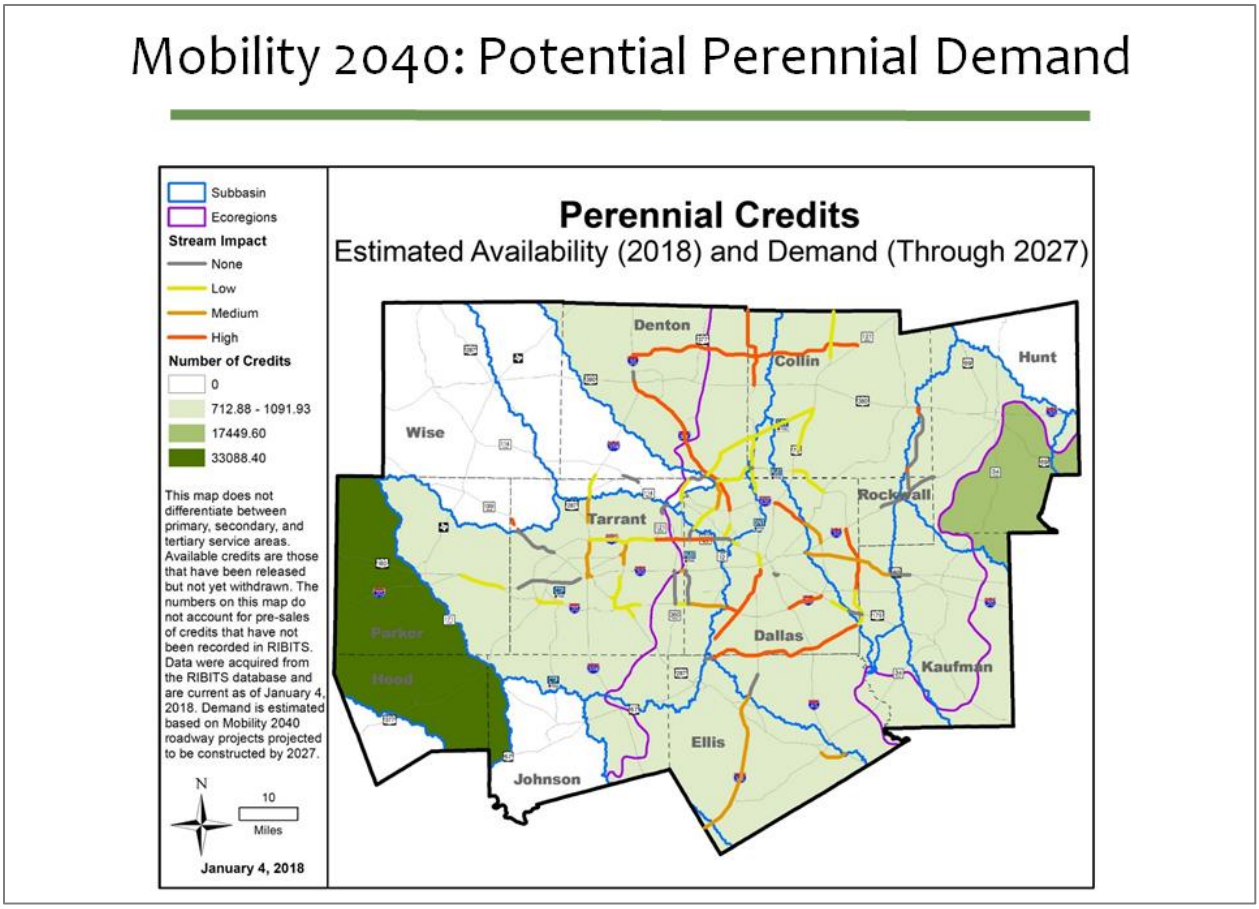


Considering the size of average wetland purchase, the amount of available wetland credits seems to be sufficient compared to the expected demand. There are no major roadways planned for the part of the region with no wetland credits. However, smaller infrastructure projects or development could generate demand in this area.

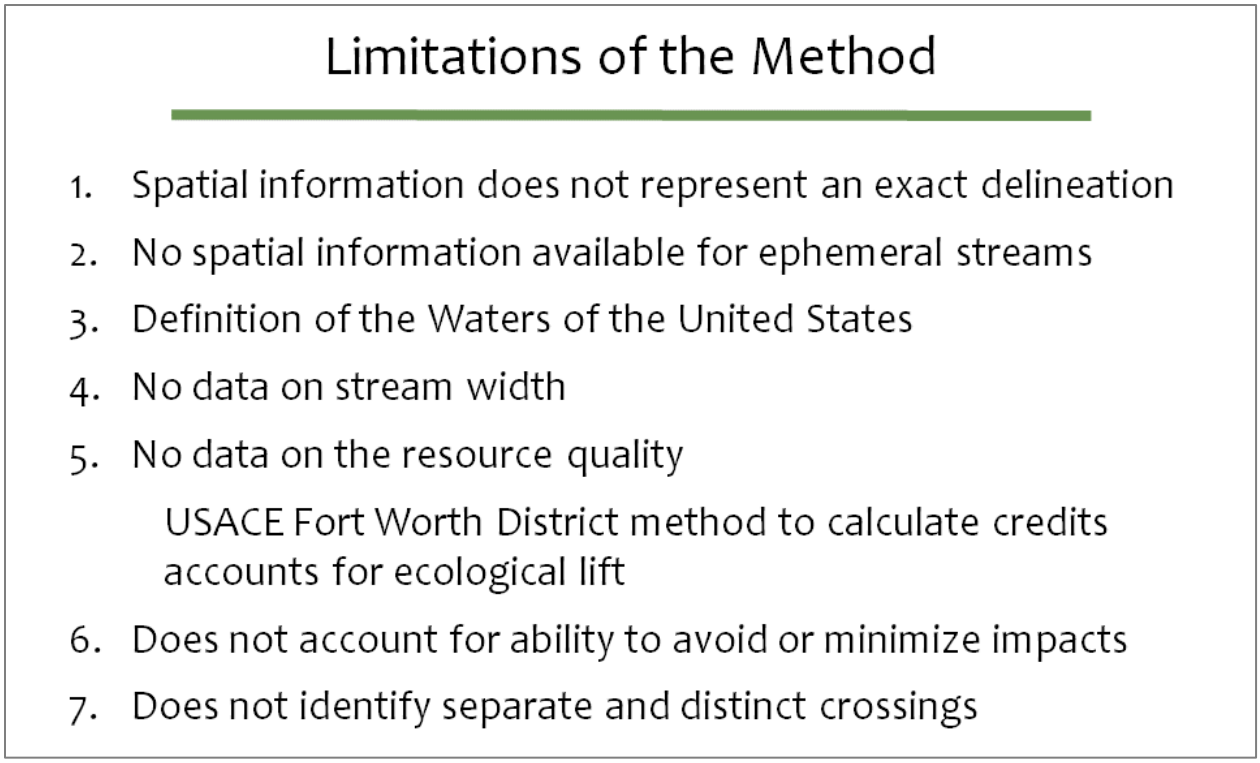
Mobility 2040: Potential Intermittent Demand



For intermittent demand, there may be some concern in northeastern Rockwall County and southeastern Collin County, as well as in northern Tarrant County. Northern Tarrant County is also a region of high population and employment growth.

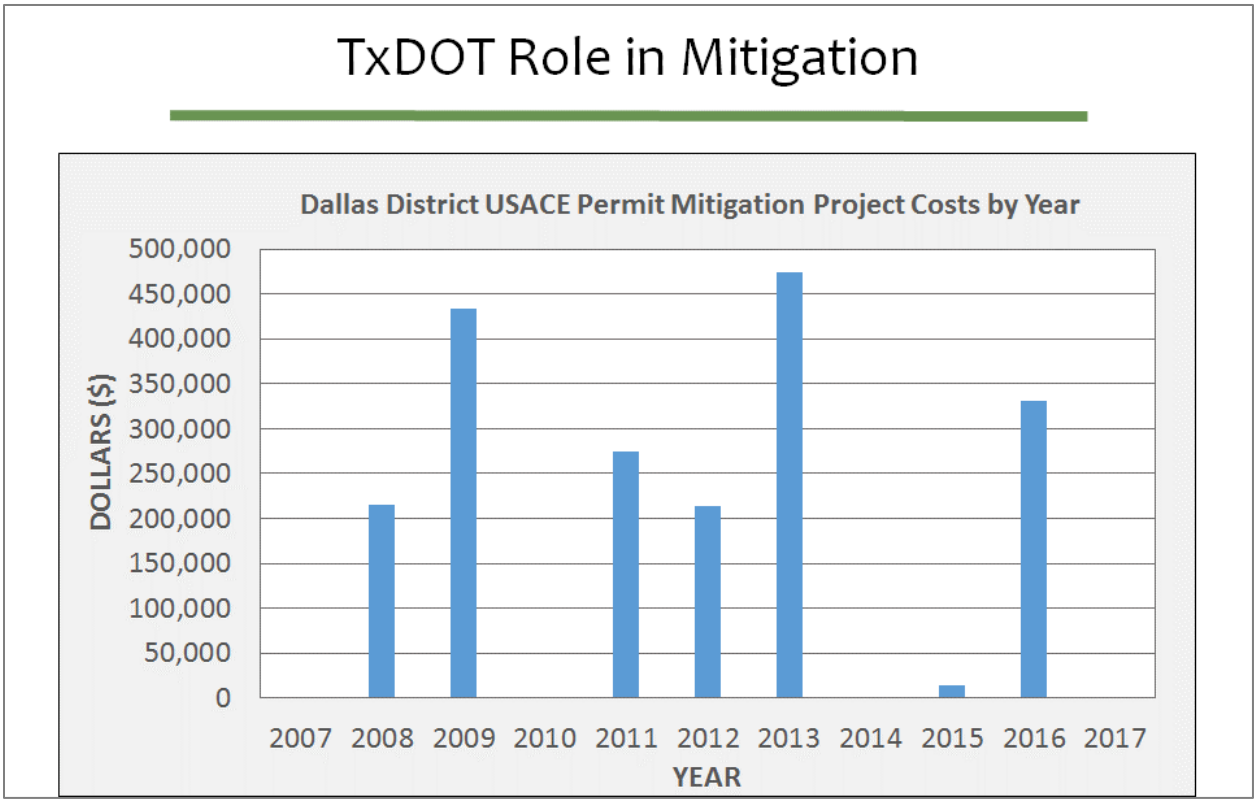


There are credits available where there may be impacts to perennial streams. However, many of the roadways estimated to create greater demand lie in areas where there are only 700 to 1000 credits. Depending of on the size of purchase, there may be a concern for lack of credits.



There are some limitations to this method used.

1. The spatial information does not represent an actual delineation of wetlands or streams, or final location for roadways.
2. Spatial information for ephemeral streams was not available.
3. Spatial data do not identify whether the water body is Waters of the United States, and the very definition of Waters of the US is being revisited. This means that some of the wetlands and streams identified may not require compensatory mitigation.
4. Data on stream width could not be incorporated. Some of the impacts shown on the previous potential demand maps may be small enough that they don't trigger compensatory mitigation.
5. Data on resource quality was not included. This is a shortcoming because TXRAM accounts for ecological lift when calculating credits
6. The method also does not account for ability to avoid or minimize impacts. It is likely that some of the potential impacts to streams and wetlands will be avoided or minimized during the design phase of the project. This is what is occurring in the county example that NCTCOG gave earlier in the webinar.
7. The method also does not identify separate and distinct crossings.

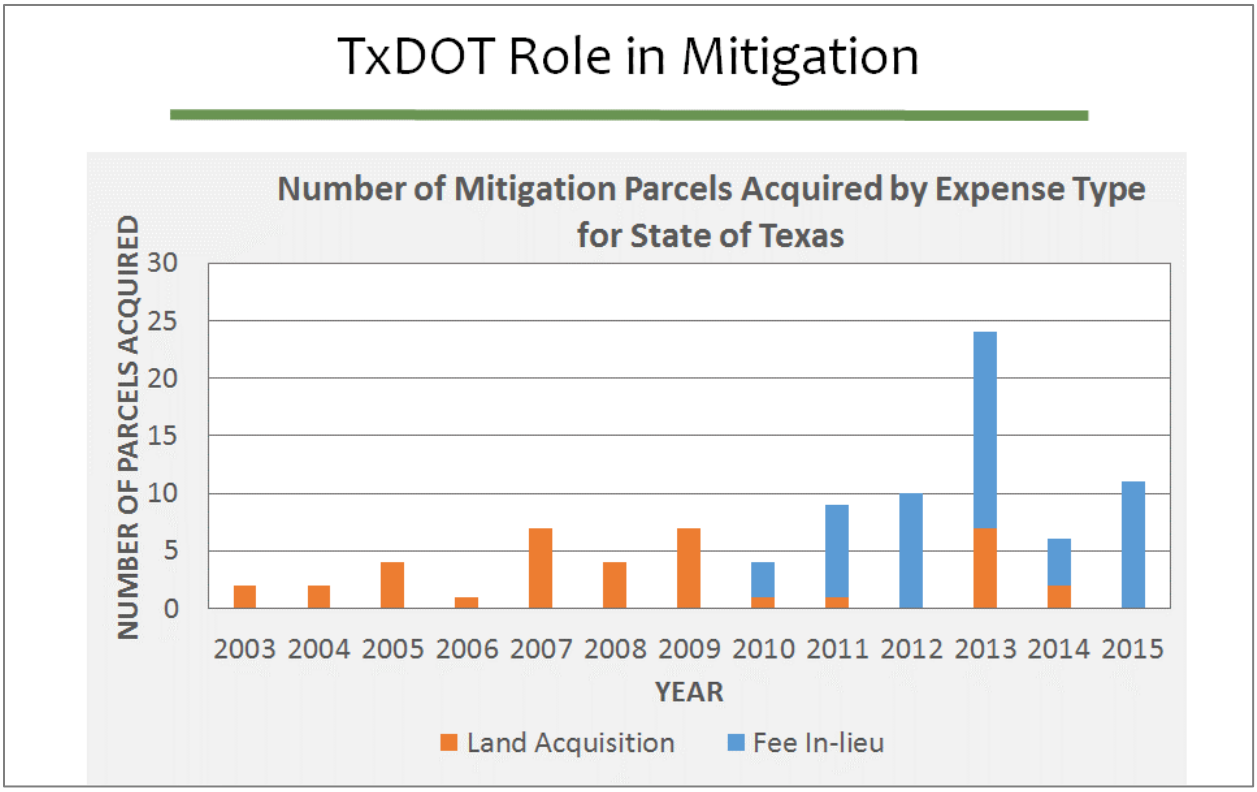


The TxDOT Dallas District covers 7 counties; 6 of those counties are within NCTCOG area of responsibility.

A significant number of the previous year's projects were located in different more urban geographic regions of the district that had already been developed, reducing the need for mitigation credit purchases. While the majority of future roadway projects are located in undeveloped portions of the more rural counties and include several new corridors. Therefore, it is not necessarily easy to compare this chart to future needs.

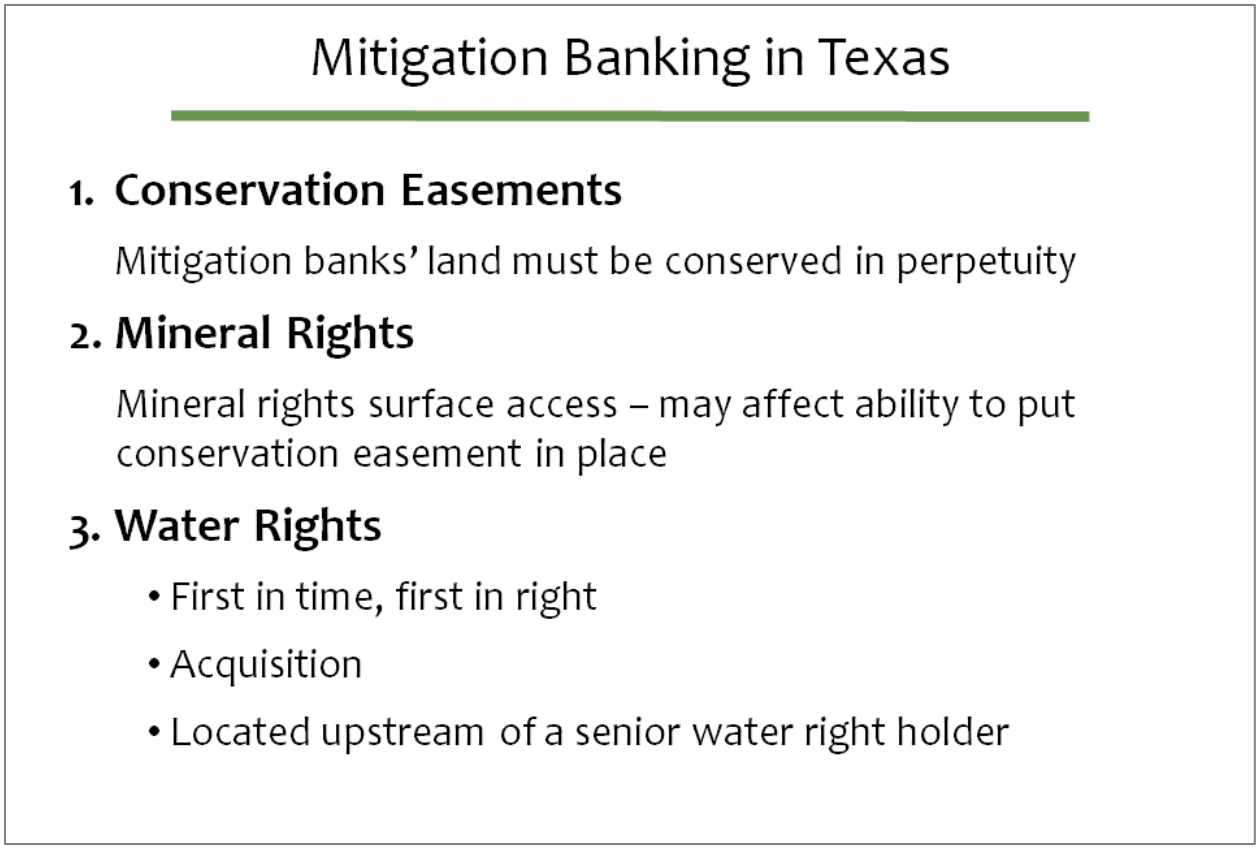
It is important to keep in mind that the permitting and mitigation credit purchases usually do not occur until a project approaches its let date. The let date can be a few years after schematic design, but within a few months of the completion of plan, specification, and estimate (PS&E) approval.

TxDOT Dallas District's future needs in the northern counties will be hard to meet, as large portions of those counties are outside the service area of the existing banks. The portions that are within the existing banks service area are within the tertiary service area. TxDOT Dallas would like more mitigation banks become available to serve the District needs, as well as other entity's needs in the region. At a minimum, they hope to pique the interest of service banks that also offer Permittee Responsible Mitigation services to work with them in areas where there is no bank coverage.



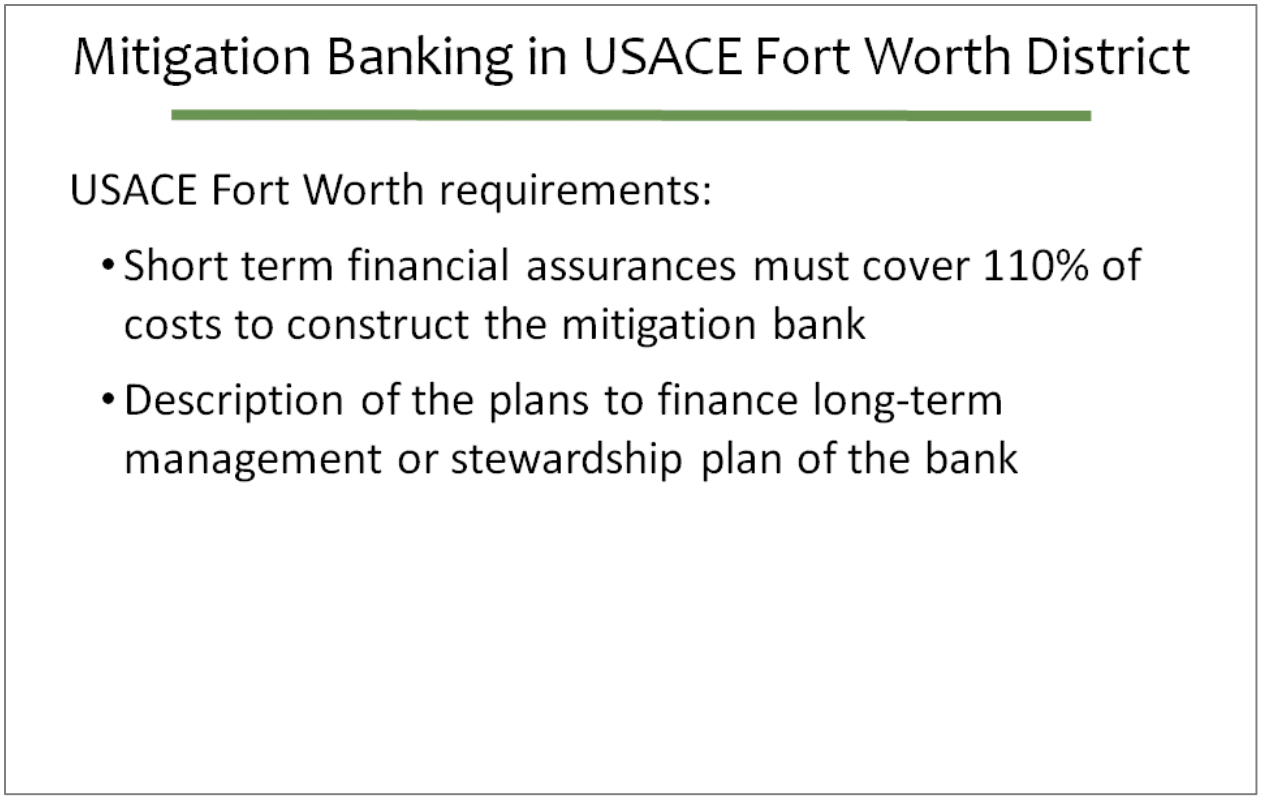
This slide shows a statewide perspective on the number of mitigation parcels purchased in Texas. As Texas' population has grown and demands on the transportation system have grown over time, so has the need for mitigation.

TxDOT needs with regard to mitigation credits and parcels is just one part of the overall demand. This webinar is focused on the North Central Texas region, which includes several transit agencies, including Dallas Area Rapid Transit, Fort Worth Transit Authority (now Trinity Metro), and Denton County Transportation Authority. Additionally, North Texas Tollway Authority has an extensive network of toll roads in the region. There are many cities and local governments that are experiencing growth that place demands on TxDOT resources. The Dallas- Fort Worth MPO serves as a cooperative decision-making forum with many regional representatives. The intent of this webinar is to serve this region with more information about mitigation options that leads to more informed decision making in North Central Texas.



In Texas, mitigation banking require sponsors to fulfill certain requirements.

1. The bank's land must be conserved in perpetuity. Because of Texas state code, this must be done through a conservation easement that must be held by a nonprofit organization such as a land trust or by a resource agency.
2. Documents that specify issues that may impact the site's ecological suitability, such as right of ways or mineral rights, must also be documented. Mineral rights may provide the mineral owner rights to access the surface; this may prevent the land from being placed in a conservation easement.
3. Texas uses a prior appropriation doctrine for surface water rights. Water rights are based on the date which water rights are acquired, or first in time, first in right. This means the water needs of senior water rights holders are met before junior water rights holders. Mitigation bankers must acquire water rights. Alternatively, mitigation banks could locate upstream of a senior water rights holder and downstream of a junior water rights holder. Acquiring water rights takes time and could delay bank construction.



The USACE Fort Worth District currently has several financial requirements of mitigation banks, although they have recently proposed changes. Currently, short-term financial assurances must cover 110% of costs to construct the mitigation bank. These costs include purchase of land, permits, building and plant materials, construction work, monitoring of the site, legal, and administrative cost. This assurance protects USACE in case of project failure. Financial assurances are held by 3rd party designee (NGO, resource agency) and are released as a bank meets milestones. If milestones are not met, financial assurances are drawn upon.

The district also requires a description of the plans to finance long-term management or stewardship of the bank. Bankers must estimate the annual cost of long-term management.

Mitigation banking can be a risky business. Risks include finding suitable properties for banks and the gap between initial capital investing and return.

The contents of this webinar do not substitute for due diligence and market research on the part of mitigation bankers. Transportation plans can be modified over time. Stream crossings identified by NCTCOG's desktop analysis may not warrant compensatory mitigation.

The intention for this webinar was to educate mitigation bankers on how they can consider transportation plans to help inform their decision-making process.

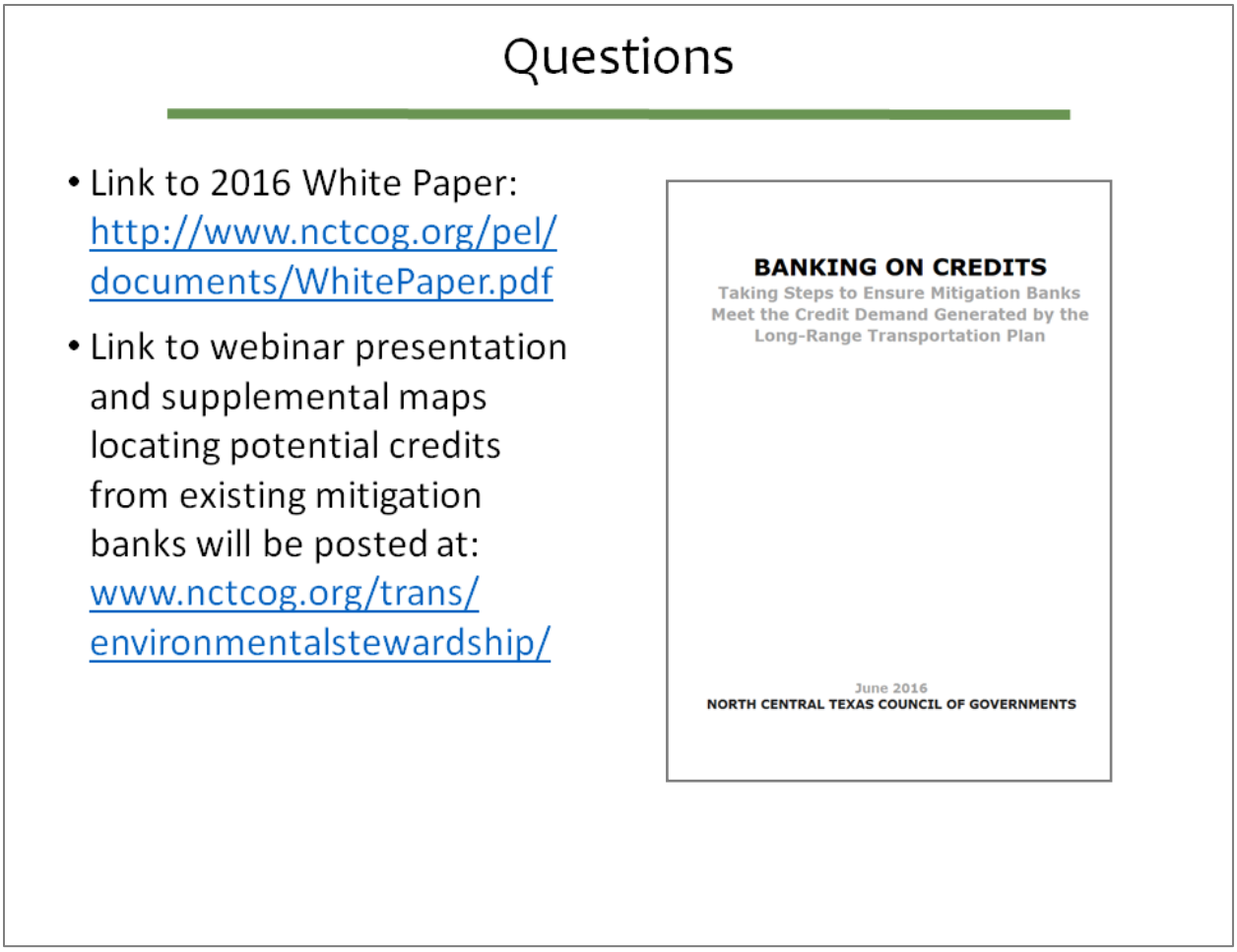
Contacts

Kate Zielke
Senior Transportation Planner
North Central Texas Council Of Governments
817-608-2395
kzielke@nctcog.org

John Overman, A.I.C.P.
Research Scientist
Texas A&M Transportation Institute
817-462-0516
j-overman@tti.tamu.edu

Amanda Long-Rodriguez
Transportation Planner
North Central Texas Council Of Governments
817-608-2367
along@nctcog.org

Mark Hull, Ph.D.
Environmental Specialist
Water Resources
Texas Department of Transportation
214-320-6123
mark.hull@txdot.gov



The following questions were asked and answered during the webinar:

1. What assumption was made regarding each roadway project's ability to avoid impacts? In other words, was the demand for credits just ROW width times number of stream crossings or some factor of that? Most roadway crossings can avoid impacts with bridge design or piers, etc.

   A: Avoidance was not considered.

2. What are the USACE Districts doing to accelerate the establishment of new banks?

   A: USACE has been expediting process of evaluating decisions on banks. Guidelines have been released including clarifying service areas, credit release schedules, and metrics for monitoring, financial assurance, and conservation easement templates. These guidelines, although not rules, help to streamline the process by leaving less up to interpretation.

   The USACE Fort Worth District participates in a monthly Interagency Review Team where they met in Waco to have discussions about comments that have been received. New prospective bankers can be placed on the agenda for this meeting.

3. How many new banks are in the review/approval pipeline right now?

    A: There are approximately 11 to 12 banks being proposed. Of those that that would serve the North Texas region, 1 is in mid-stage review, 1 is in early review, and 1 is in a reapplication phase.

4. What is the approximate credit yield from the new emerging banks?

    A: It is difficult to give a percentage or general number as this depends on the bank itself. Factors to consider include the potential ecological lift and whether the bank is planning for in-channel credits or riparian buffer credits.

5. Could someone speak to whether RIBITS data is a perfect source for studying the available credits and future potential credits for existing mitigation banks? Are existing mitigation bankers required to submit their sales to RIBITS and does that ensure the data is up-to-date?

    A: The information in RIBITS is not a perfect source as bankers must upload the information. Presales and credit releases could happen and not be immediately recorded. In order to receive the most up to date and accurate information, USACE recommends contacting the banker directly.

6. Is there available information on the trend of credit release from performance based credit releases; are the banks hitting their schedules?

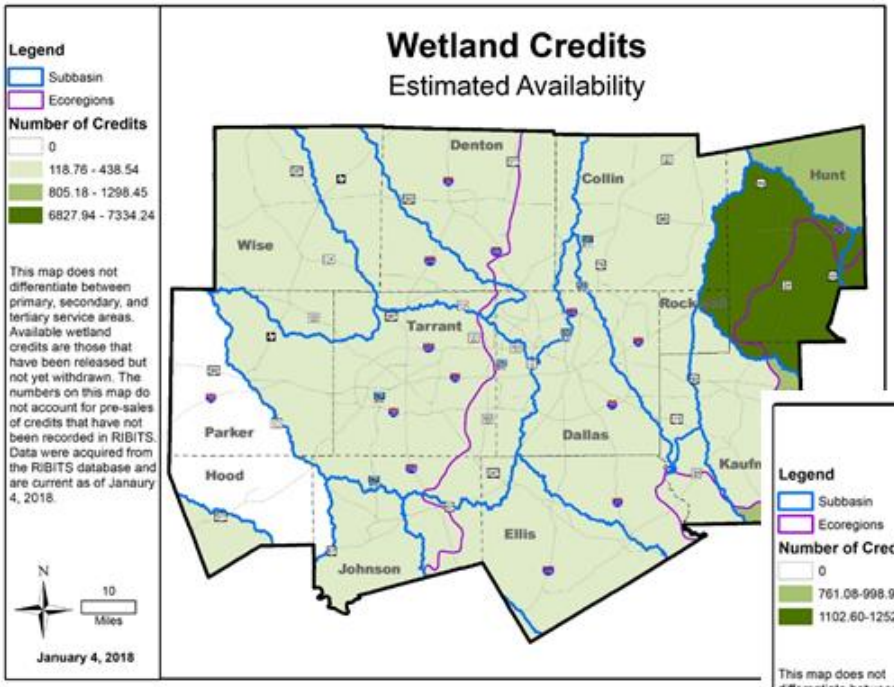
    A: Some banks are hitting their performance milestones, while others are experiencing technical challenges. Banks at both ends of the spectrum exist. Wetland trends are for the most part good, with consistent release of performance-based credits. The quality of banks also seems to be improving.

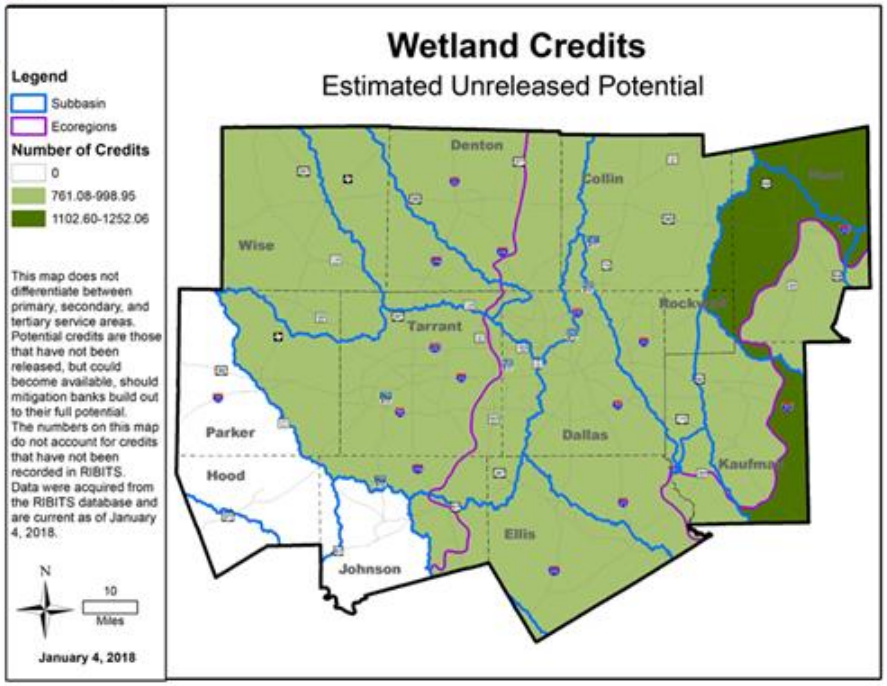
7. Given the extensive need captured here and need in other regions (like the Houston MPO), has TXDOT or other MPOs considered a programmatic approach to mitigation modeled after what is done in other states?

    A: This initiative in North Texas is a first step in finding a programmatic approach. Texas has been working through this idea for a while, trying to determine what it might look like and how to move through the regulatory process.

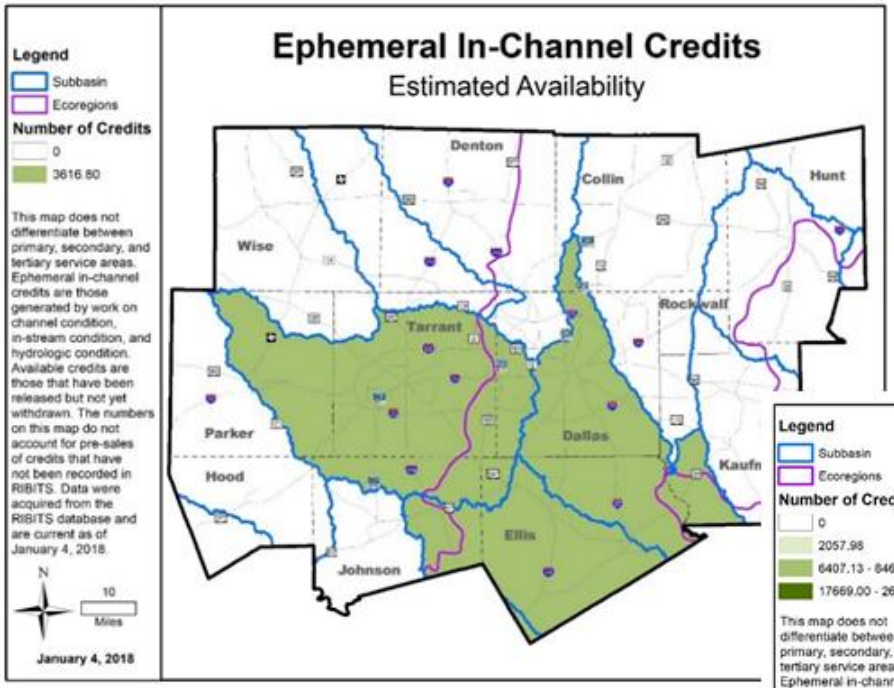

Mitigation Assessment Update:
Appendix

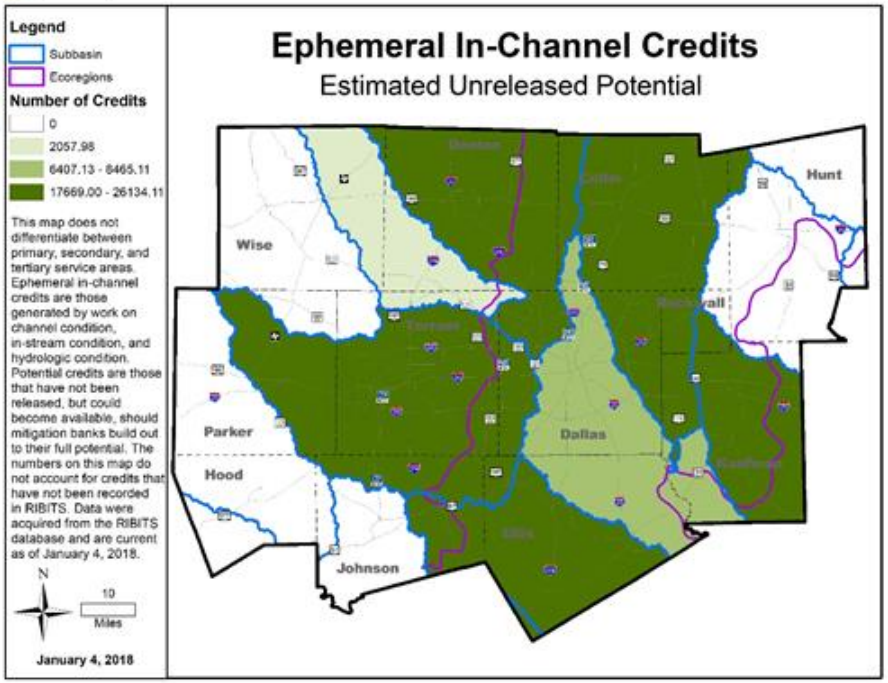
Wetland Credits



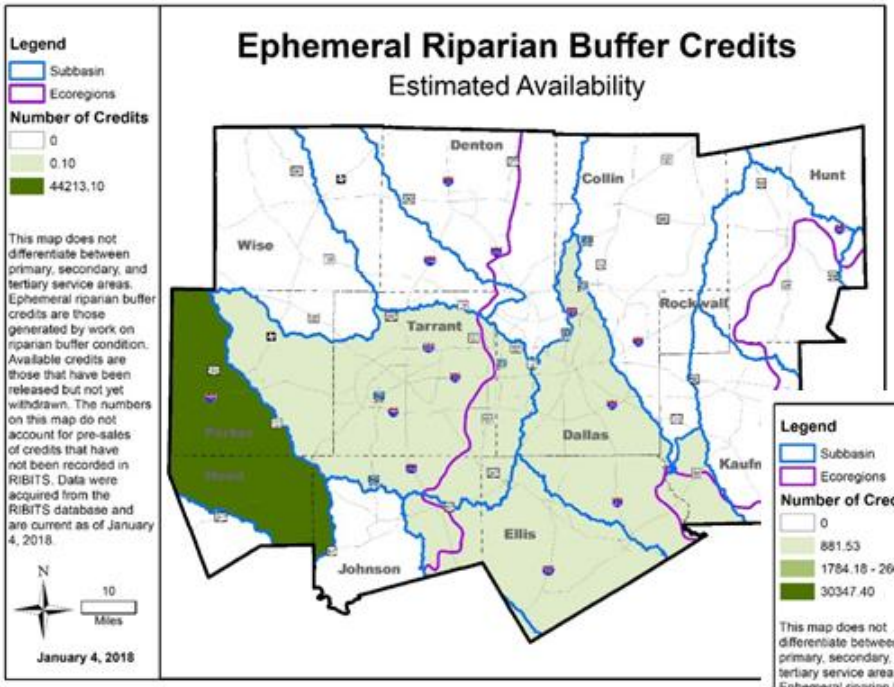


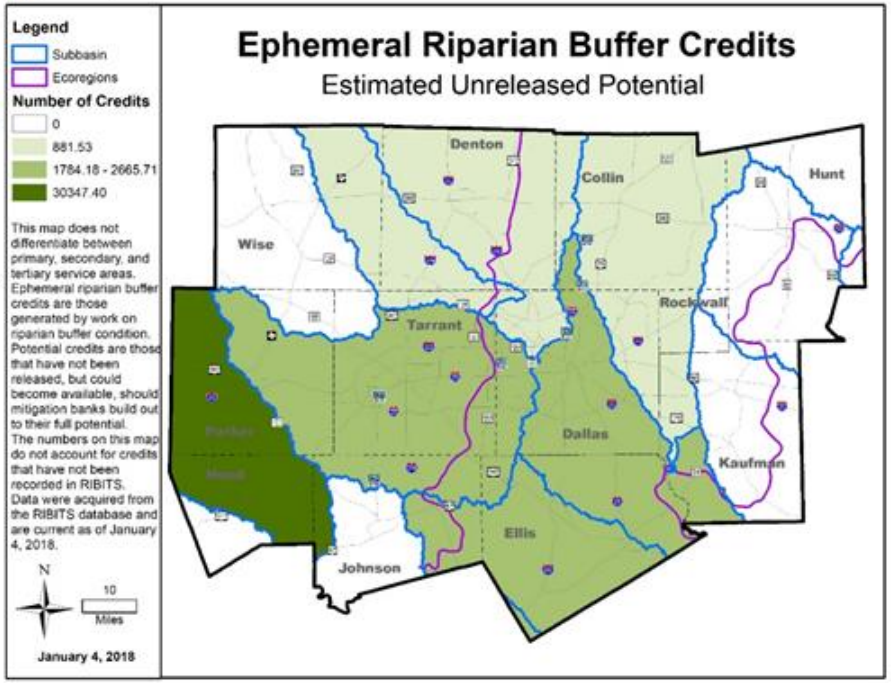
Ephemeral In-Channel Credits



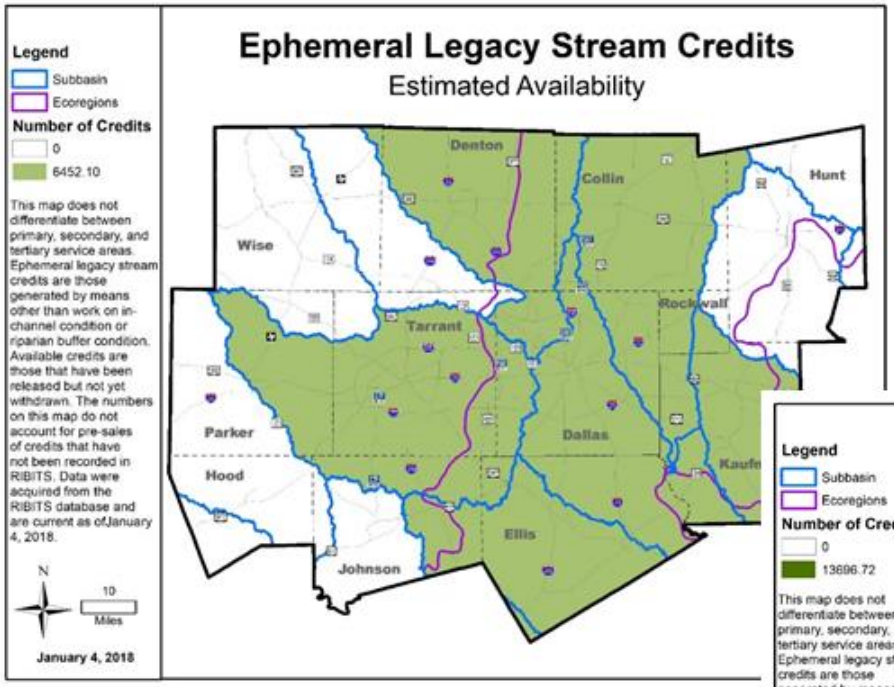


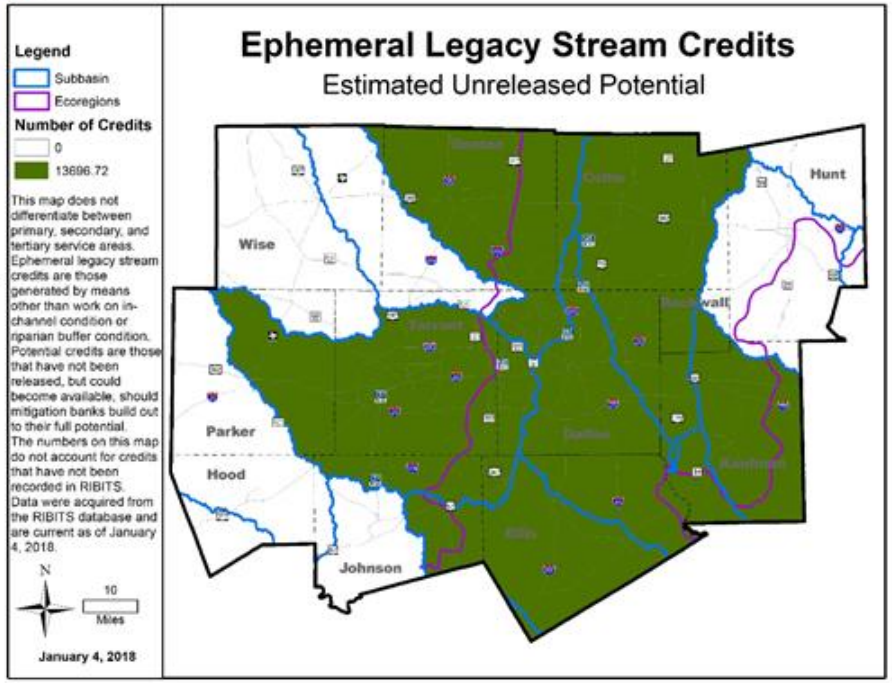
Ephemeral Riparian Buffer Credits



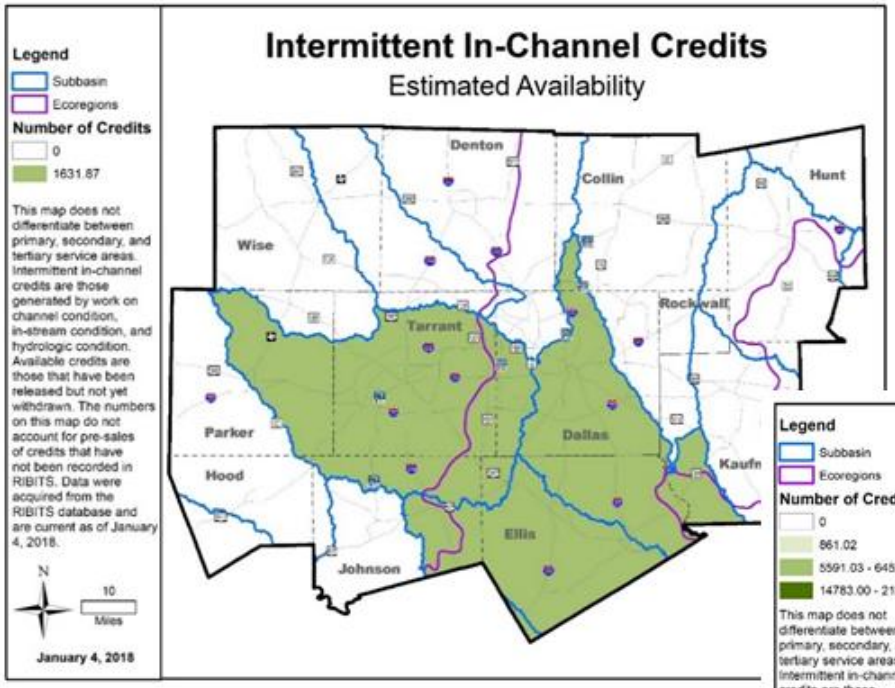


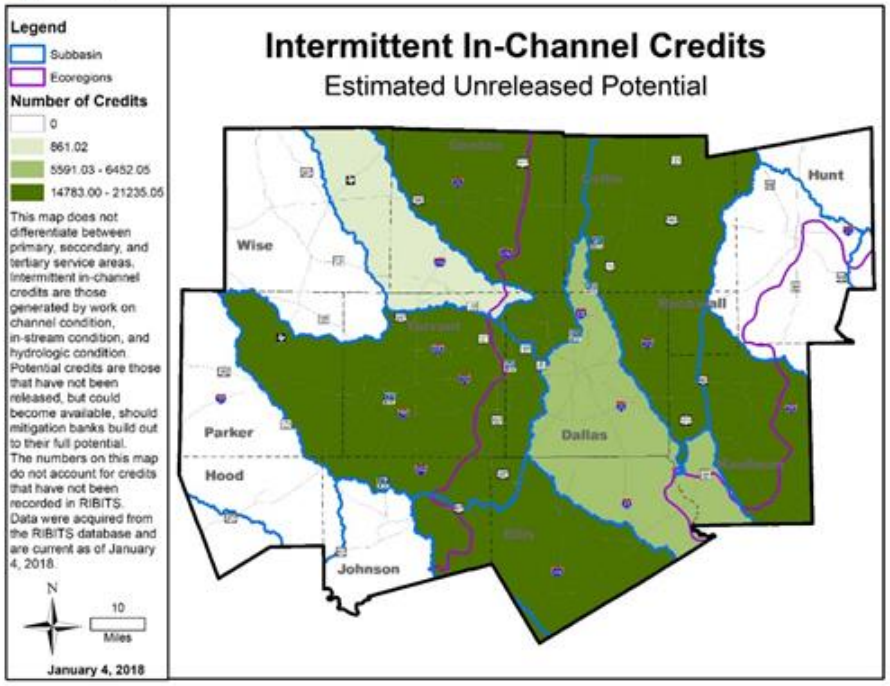
Ephemeral Legacy Stream Credits





Intermittent In-Channel Credits





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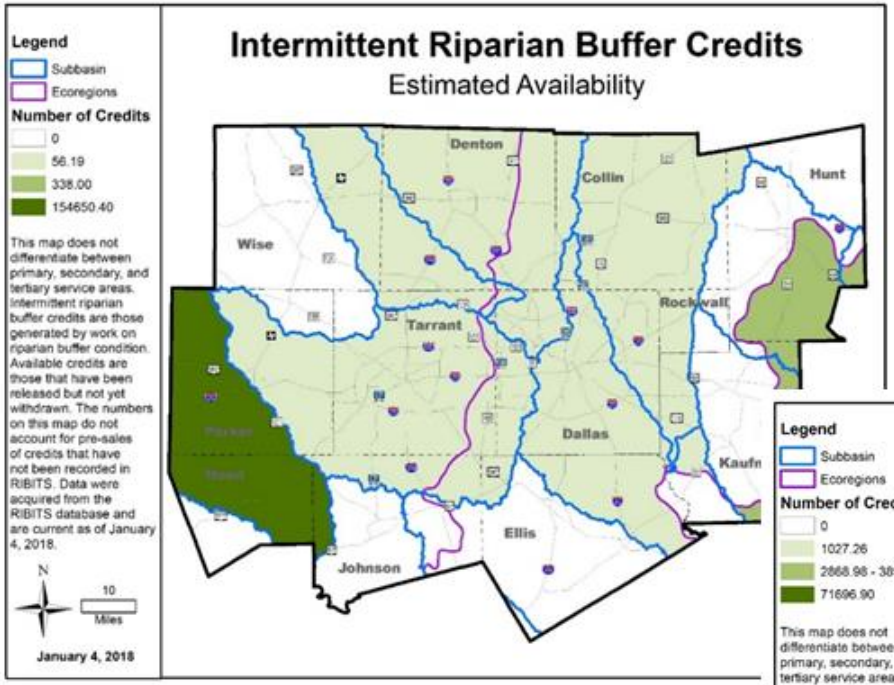

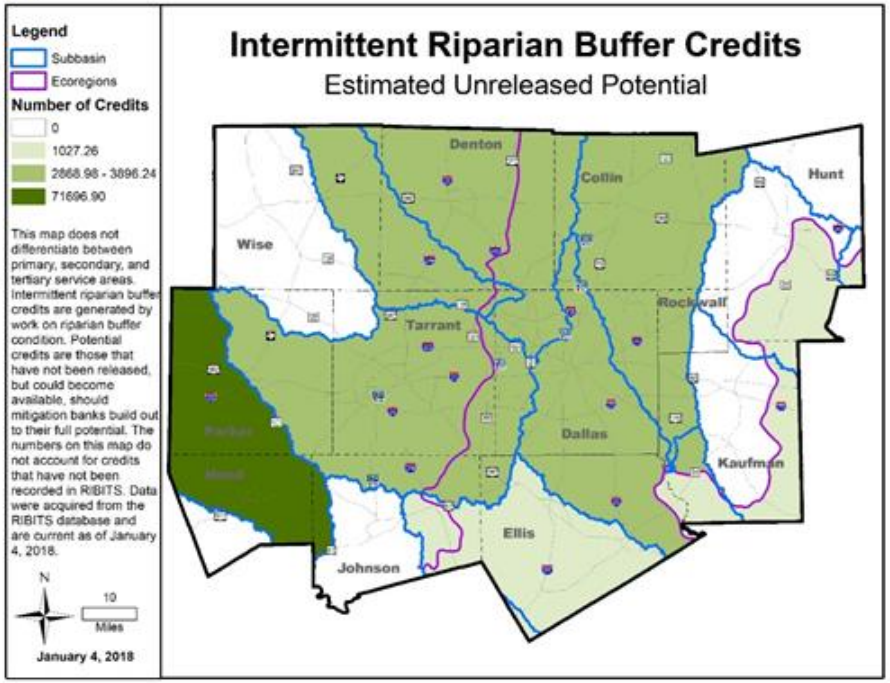

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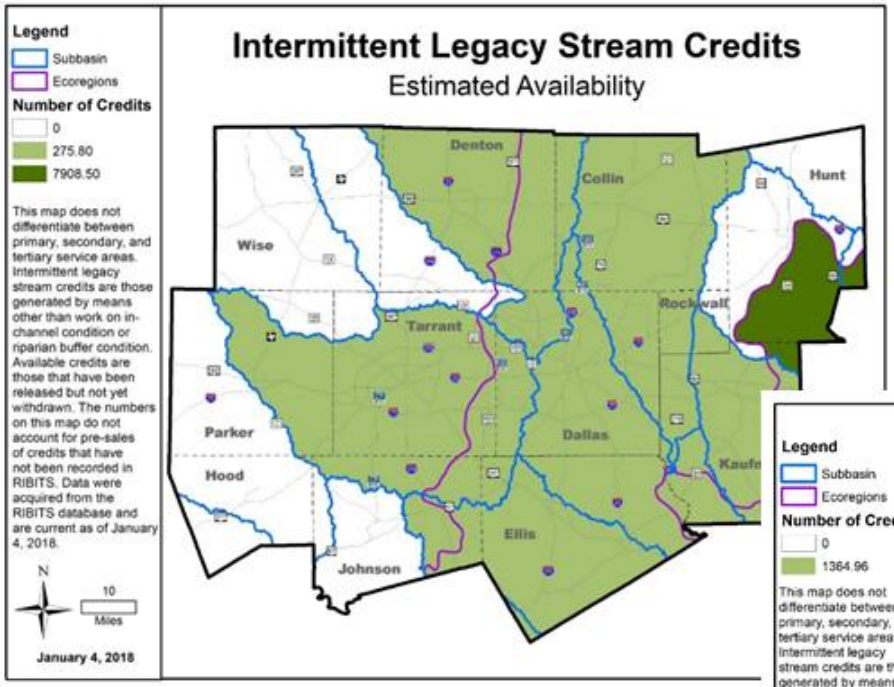
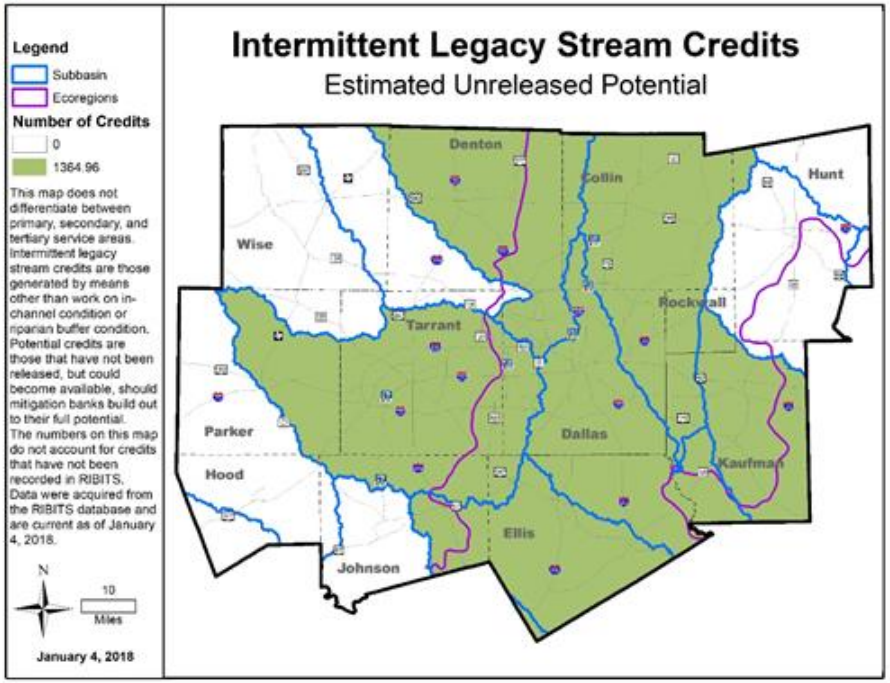
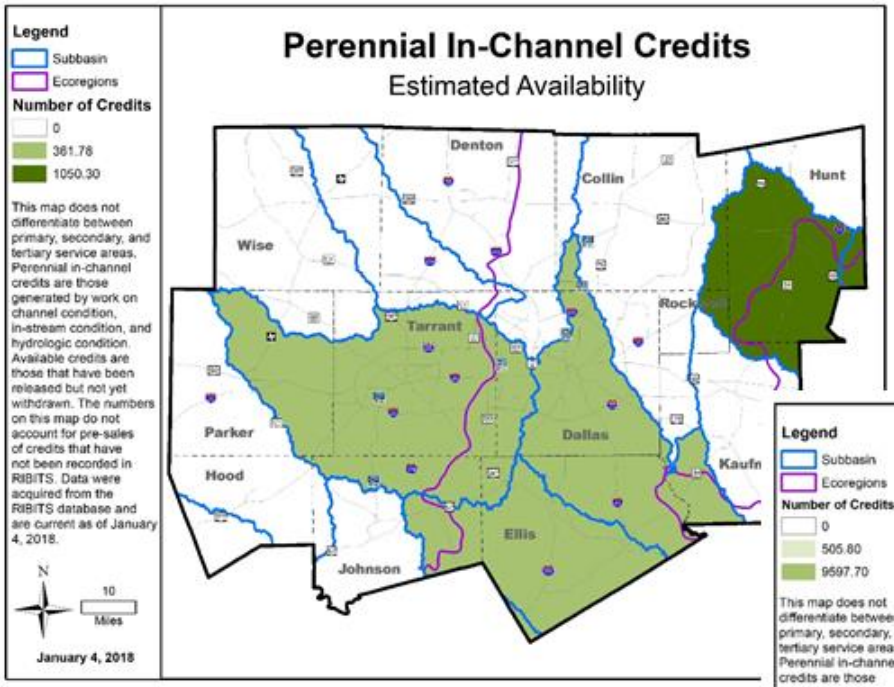
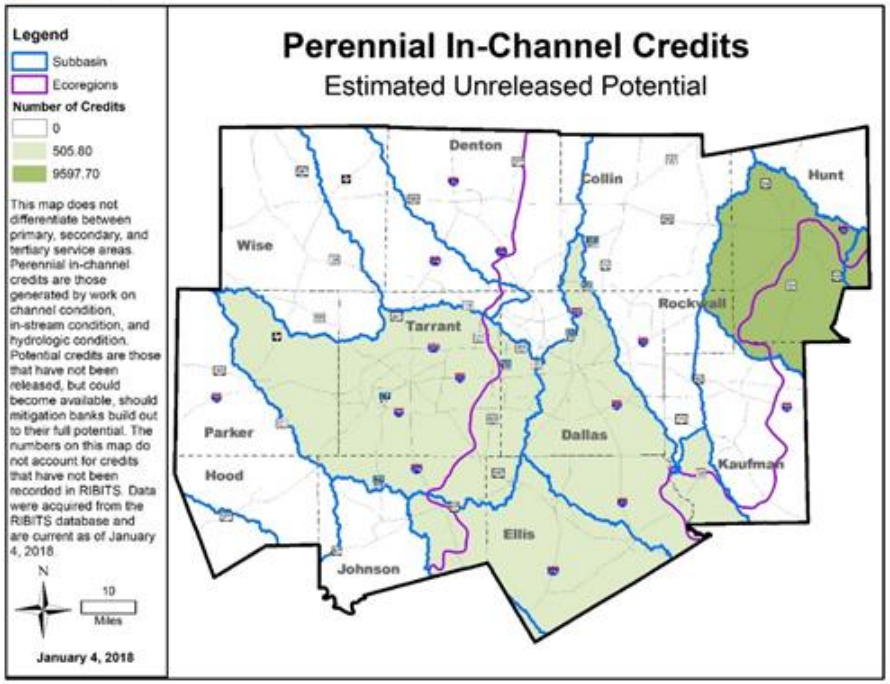




Perennial In-Channel Credits





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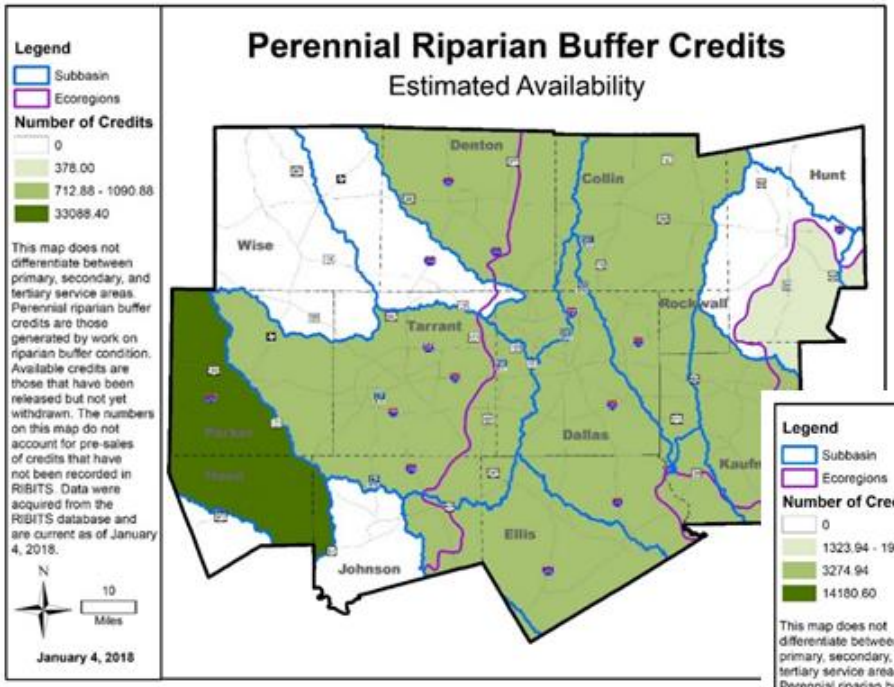
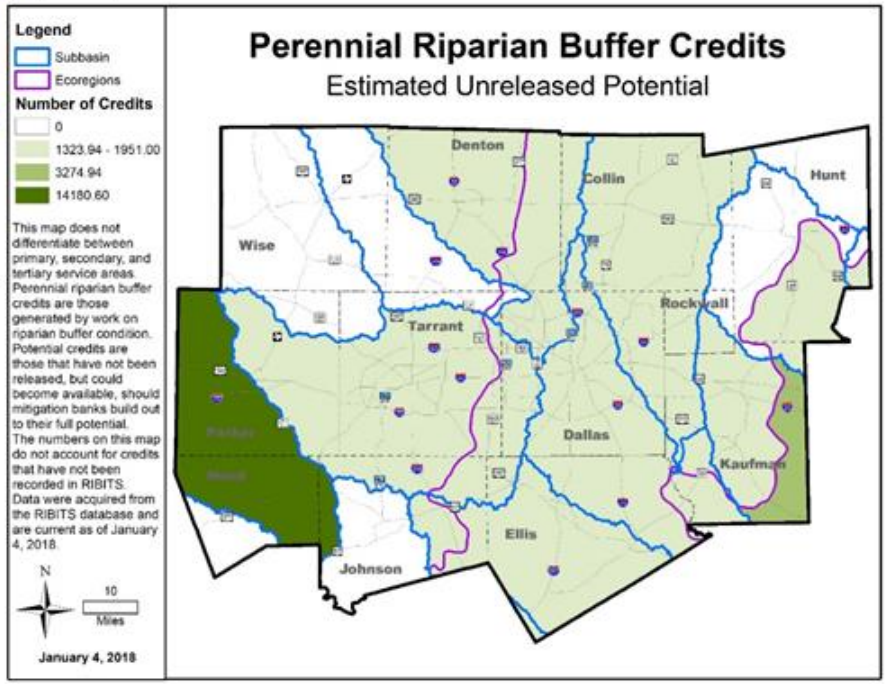
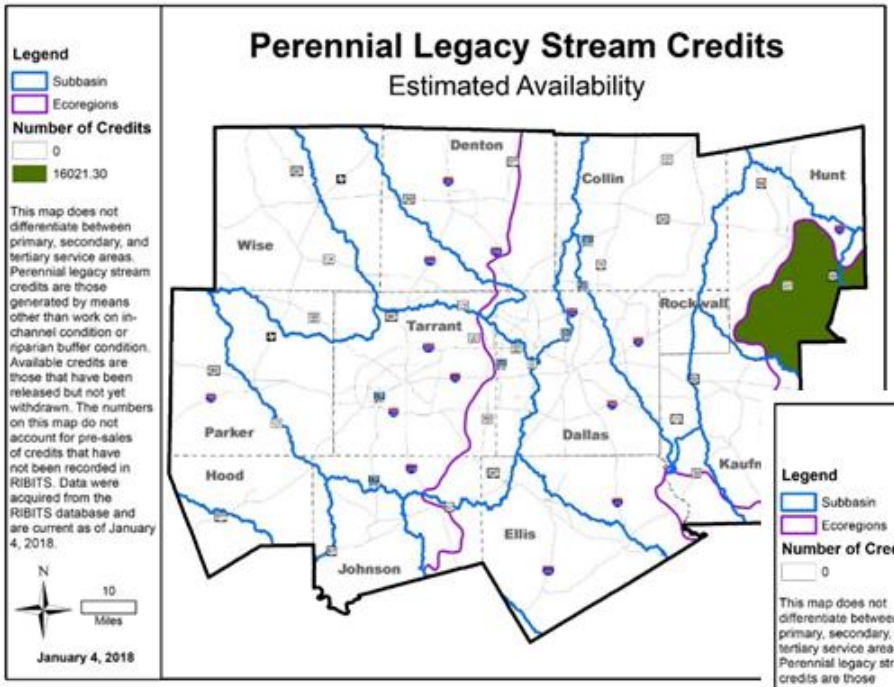
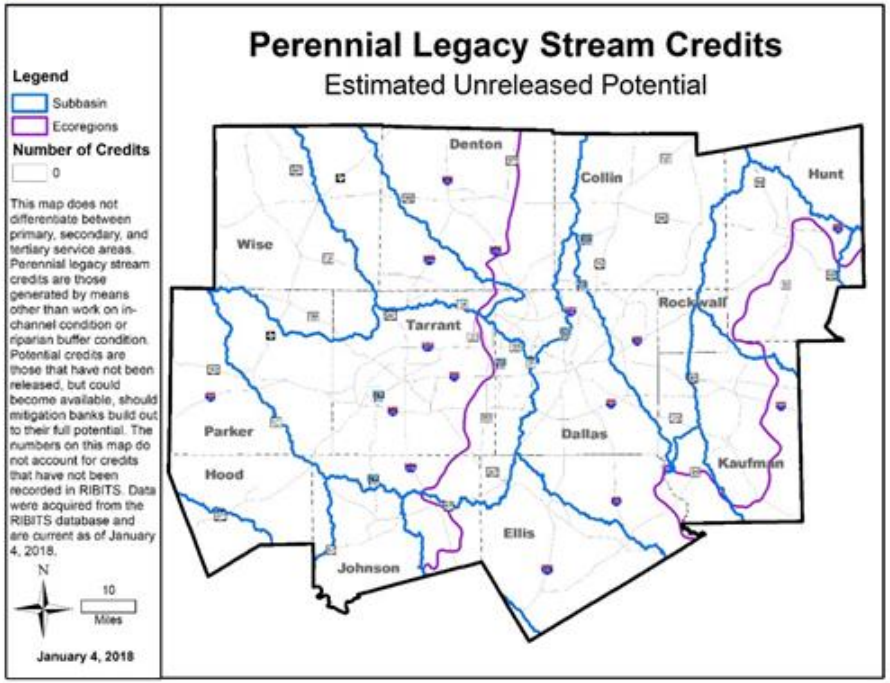




Perennial Legacy Stream Credits





General Legacy Stream Credits