EXECUTIVE SUMMARY

The City of Edmond has a long tradition of preparing the community for growth, balancing economic growth with the quality of life and the environment. Documents such as Tomorrow's Edmond, the Edmond Greenprint, and the Edmond Plan IV give us the foundation for the kind of community we have become, and strive to be. Studies such as the Sensitive Area Studies and 50 Year Water Supply Plan provide us with alternatives and the information we need to preserve our way of life and the cultural heritage that makes people want to live in Edmond. Citizen surveys verify that a vast majority of people in Edmond want our City to be engaged in pursuing enhancements that will make our City a better place to live, improving our health, and increasing our options for mobility. A conceptual green infrastructure network has been created to reflect these values.

INTRODUCTION

The Green Infrastructure Initiative began in the Fall of 2008 with a grant secured through the Oklahoma Department of Agriculture, Forestry Services. It began, and continues today, as an informal partnership between the City of Edmond and the Edmond Land Conservancy – a nonprofit land trust organization committed to preserving, creating, and improving Edmond's natural, scenic and outdoor recreational environment. A committee has been formed among local stakeholders and City staff to analyze and mitigate the impacts of development across Edmond in regard to its ecological systems – recognizing that these systems need our protection for future generations, and that a balanced approach to growth may be accomplished with enhanced results for the developer, the land owner, and local residents.

VISION

To promote environmental stewardship and a healthier community by creating a plan and process that commits Edmond to preserving, protecting, and restoring its interconnected natural resources for the future development of the community.

DEFINITION OF GREEN INFRASTRUCTURE

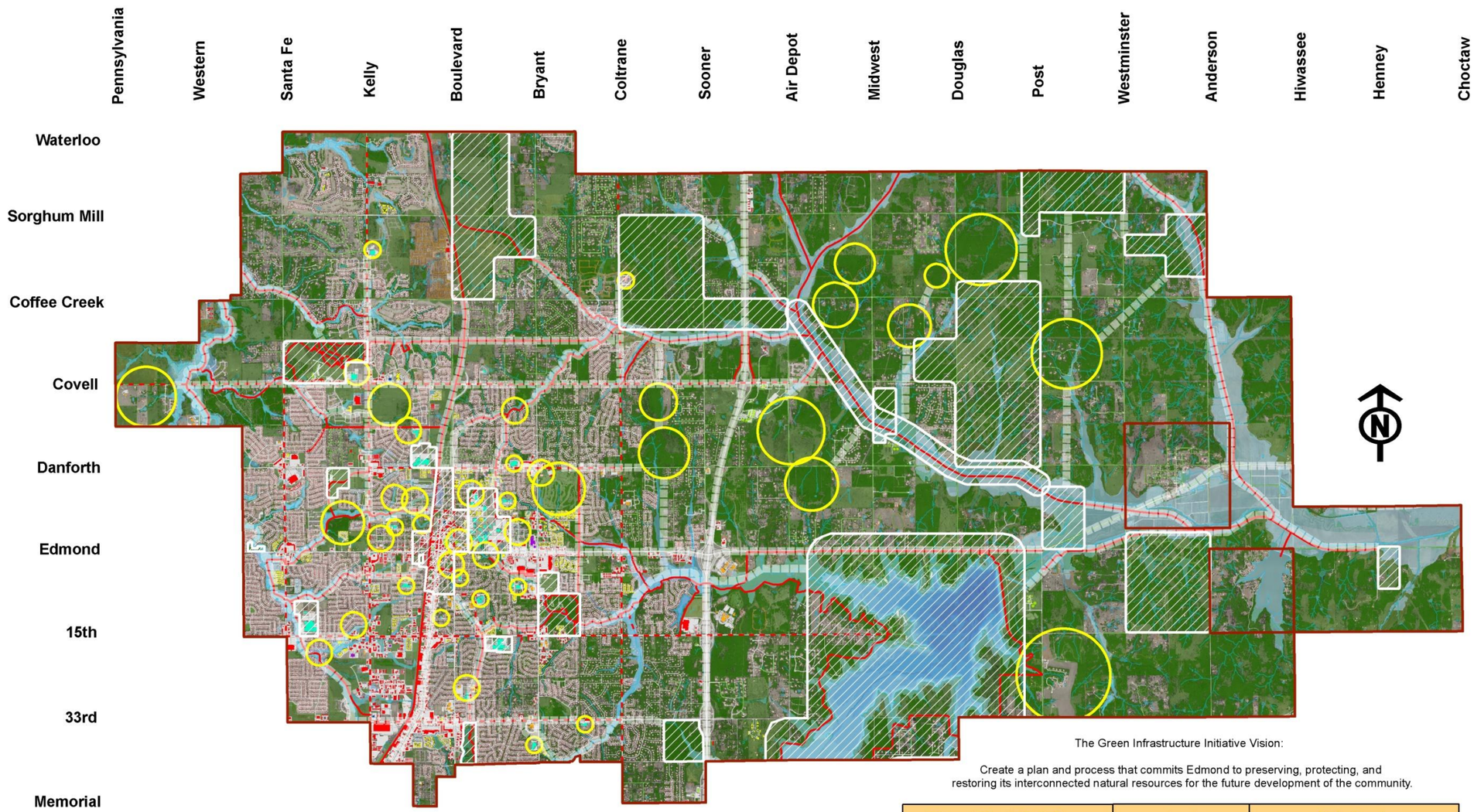
Green Infrastructure (GI) is defined as a strategically planned and managed network of natural lands, working landscapes, and other open spaces that conserve ecosystem values and functions and provide associated benefits to the people who live there. It is not meant to inhibit development, but to provide a framework for developers in the community and a strategic balance for long term growth. A green infrastructure network consists of hubs, sites, and linkages:

Hubs anchor the network and are the highest quality, the largest, and the least fragmented areas for potential conservation. Examples of the most popular hubs within the City of Edmond include Hafer Park, Mitch Park, and Arcadia Lake.

Sites are smaller areas of land that may not be attached to the network, but provide a place for native species and/or human activities. They serve as a point of origin or destination. Examples for these sites are the many neighborhood parks and conservation areas that have been arranged through negotiations with landowners.

Landscape linkages connect existing parks, preserves, or natural areas and provide sufficient space for native plants and animals to flourish while serving as corridors connecting ecosystems and landscapes. They also provide space for the protection of historic sites, and opportunities for recreational use. The Edmond Plan IV discloses a city-wide network of trails, which contributes to this notion. Also, the many floodplains which traverse the City, where the potential for flooding becomes a hazard, are opportunities for linkages and natural corridors.

EDMOND GREEN INFRASTRUCTURE WORKSHOP EXERCISE
EXISTING AND POTENTIAL AREAS FOR CONSERVATION



The Green Infrastructure Initiative Vision:

Create a plan and process that commits Edmond to preserving, protecting, and restoring its interconnected natural resources for the future development of the community.

Green Infrastructure is defined as a "strategically planned and managed network of natural lands, working landscapes, and other open spaces that conserves ecosystem values and functions and provides associated benefits to human populations."

This map consists of **Hubs, Sites, and Linkages,** as conceptualized from citizen stakeholder input at two public meetings. Hubs anchor the network and are the highest quality, the largest, and the least fragmented. Landscape linkages connect existing parks, preserves, or natural areas and provide sufficient space for native plants and animals to flourish while serving as corridors connecting ecosystems and landscapes. They also provide space for the protection of historic sites and opportunities for recreational use. Sites are smaller areas that may not be attached, but provide a place for native species and/or human activities. They serve as a point of origin or destination.

Edmond Plan IV Trail Plan
- Linkage
- Trail

Stakeholder Meetings Input
- Hub
- Site
- Links

Land Classification
- Tree Line
- Undeveloped
- Flood Plain

Main Structure Classifications
- Residential
- Multi-Family
- Church
- Commercial
- School
- Paved

EDMOND GREEN INFRASTRUCTURE MAP

Green Infrastructure design objectives, landscape and ecological features, network elements, priorities, and other data layers were used to inform the process of creating a map that identifies hubs, sites, and landscape linkages, as well as existing trails and linkages. Two public stakeholder meetings were held in March 2009 and March 2010. Independently, groups identified potential hubs, sites, and linkages across the City. Draft networks were drawn in consideration of those areas that were deemed strategically important, and/or critical.

Working maps contained a 2009 aerial underlay, potential remnant forests, the master trail plan, City parks, schools, and flood zones. Other reference maps included were Zoning, the Plan IV Ordinance map, prime farmland, watershed basins, population density, and drainage basin flood plain studies.

The resulting map is an illustration, or "birds-eye" view, reflecting potential areas and linkages for preservation.

THE VALUE

Many communities have come to realize the benefits of focusing strategically on land use, where the effects of urbanization are showing to have lasting impacts. Some consider GI just as much a part of development as other utility infrastructure. The value of GI is that it supports the landscape and ecological balance. It supports our culture and quality of life, improving public health and air quality. It promotes bicycle and pedestrian connections, and creates an integrated network of complimentary systems. It can be built into routine architectural practices, and in some cases, significantly reduce construction costs. It protects our watersheds, and makes beautiful places, adding to the value of property.

The population for the City of Edmond has grown from 68,315 to 81,405 from the year 2000 to 2010. This reflects a 19.2% increase from the year 2000. If expansion of the human network is inevitable, how will we manage its impact? The first step is to understand how the natural system functions, and then we must understand the human network. Edmond wants to continue to encourage the kinds of balanced growth that are most beneficial to the community, whether they are transportation options, utility infrastructure, parks and recreational opportunities, or mindful practices to help protect the environment.

Green infrastructure (GI) involves foresight, political will, and a persistent effort on the part of the City, although it should be said that Green Infrastructure is not a government program. While the City can lead, this concept relies on all sectors of the community, including private landowners. This is an organizational strategy that provides a framework for planning conservation and development. Like any planning effort, green infrastructure calls for cooperation among priorities and interests.

THE OPPORTUNITY

At the largest scale, the preservation or restoration of natural landscape features (such as forests and floodplains) are critical components of green infrastructure. The hubs, sites and linkages, or green infrastructure network, derived from sensitive areas in the main report, will undergo refinement as new opportunities become available, and as others are found to plainly not work. With the exception of some recreational uses, the City of Edmond does not allow development within the 100 year flood plain, and this provides an opportunity to use that space for a natural benefit.

Outside of the 100 year flood plain, however, there are still unprotected watersheds. A total of 134.5 miles of stream corridors have been found in undeveloped parts of the City. With more comprehensive planning there is the opportunity to reduce stream bank erosion issues and further impairment to our water systems. Through the use of conservation easements and riparian buffers there is also an opportunity for landowners and the community at-large to benefit. Conservation easements can provide landowners with tax benefits, and at the same time improve water quality, provide a wildlife habitat, and potential opportunities for outdoor recreation. The next page provides a map representing the **current green areas** contrasted with the more urbanized areas of town.

The Edmond Plan IV was adopted by Ordinance 3094, April 23, 2007. The Plan conforms with land use policies that were adopted by the Planning Commission and elected officials to the City of Edmond. It is used as the comprehensive land use plan for the City, and from time-to-time portions of the plan are amended or modified according to the Plan Map Implementation and Amendment Procedures. It is based on the Goals and Policies Statements, the Ordinance Plan, the General Plan and Edmond Transportation Plan.

The main purpose of the Edmond Plan is to direct the community's physical development by providing specific land use strategies, and articulating goals and objectives. The Plan Map, created with GIS, is a current graphical representation of those goals and objectives. Common threads that were in the Tomorrow's Edmond and the Edmond Greenprint are also present in the Edmond Plan IV. Guidelines have been documented to provide for a Sensitive Area Conservation Assessment. There is an opportunity here for Green Infrastructure to present new guidelines for the Plan IV assessment.

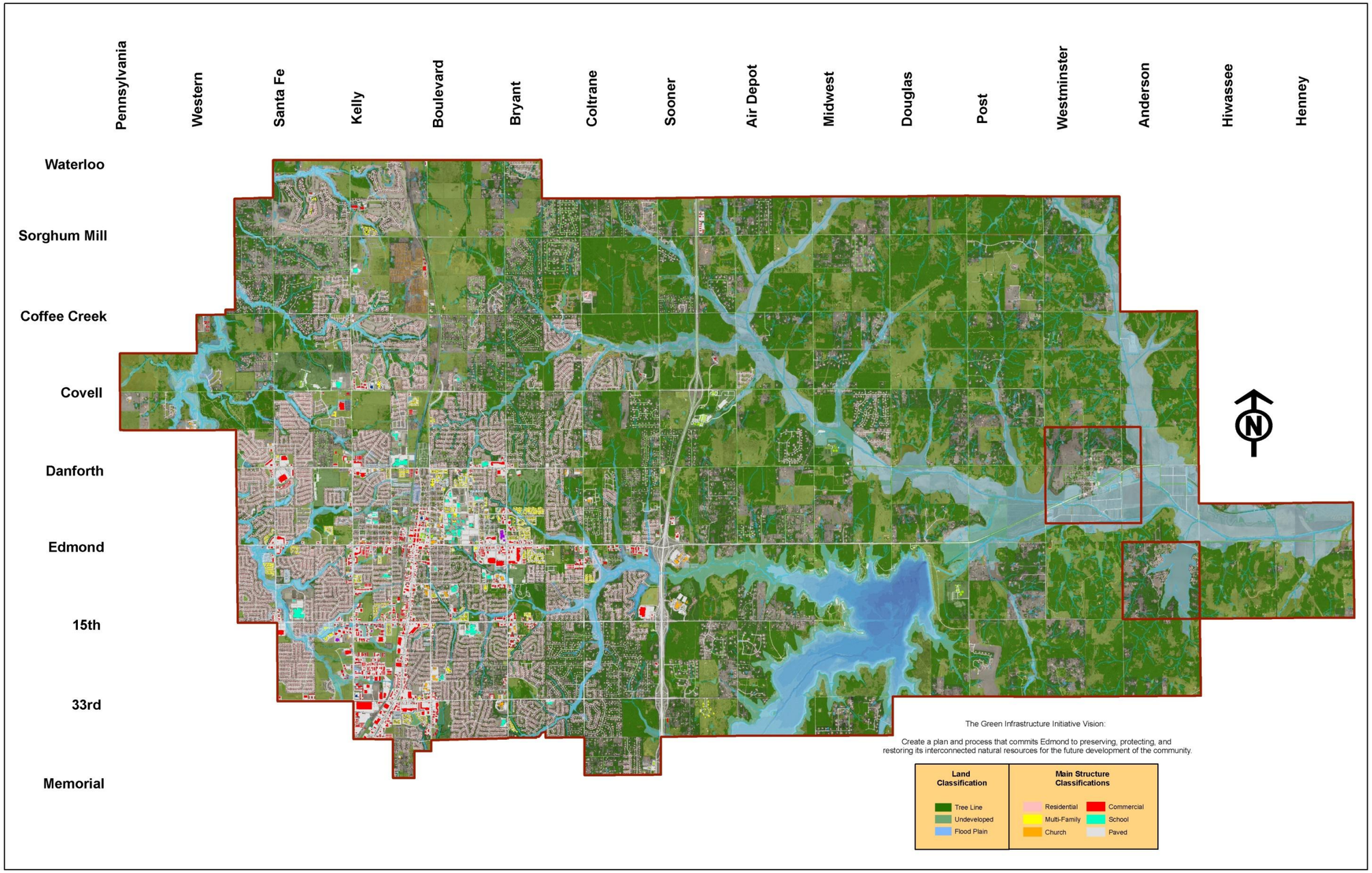
At the neighborhood scale, green infrastructure planning can include topography and native vegetation, street and road designs, thinking strategically about parking supply, all stormwater options, and consideration of urban tree goals. At the site scale, green infrastructure practices include rain gardens and bioretention cells, porous pavements, green roofs, and rainwater harvesting for non-potable uses such as toilet flushing and landscape irrigation.

In 2011 the EPA launched a new strategy to promote the use of green infrastructure by cities and towns to reduce stormwater runoff that pollutes streams, creeks, rivers, lakes and coastal waters.

"In addition to protecting American's health by decreasing water pollution, green infrastructure provides many community benefits including increased economic activity and neighborhood revitalization, job creation, energy savings and increased recreational and green space." – EPA spokesperson

For better stewardship of our natural resources, a review of local ordinances is necessary to remove barriers and ensure coordination across all development codes. Edmond's development codes (Titles 21, 22, and 23) already provide a framework, and with some focus can be improved to better balance the grey infrastructure we need, and the green infrastructure we want.

CITY OF EDMOND
GREEN AREAS CONTRASTED WITH MORE URBANIZED AREAS



EXISTING GREEN INFRASTRUCTURE

The last map (next page), highlights in bright green and blue the areas that are currently **committed to remain 'Green'** within the City of Edmond. Some are community parks and neighborhood parks, while the area around Arcadia Lake belongs to the Corps of Engineers. Other components of the network are within the 100 year flood plain where most development is not allowed to occur, and others are a mixture of platted easements for trails, trees, or walking and biking paths. Considering the amount of undeveloped green space that the City has available, and the value that it holds for Edmond residents, recommendations in the full report strive to find ways of encouraging environmentally friendly practices, and ways to use the natural topography and native vegetation, while searching for other opportunities where both the public and private sectors can make further contributions.

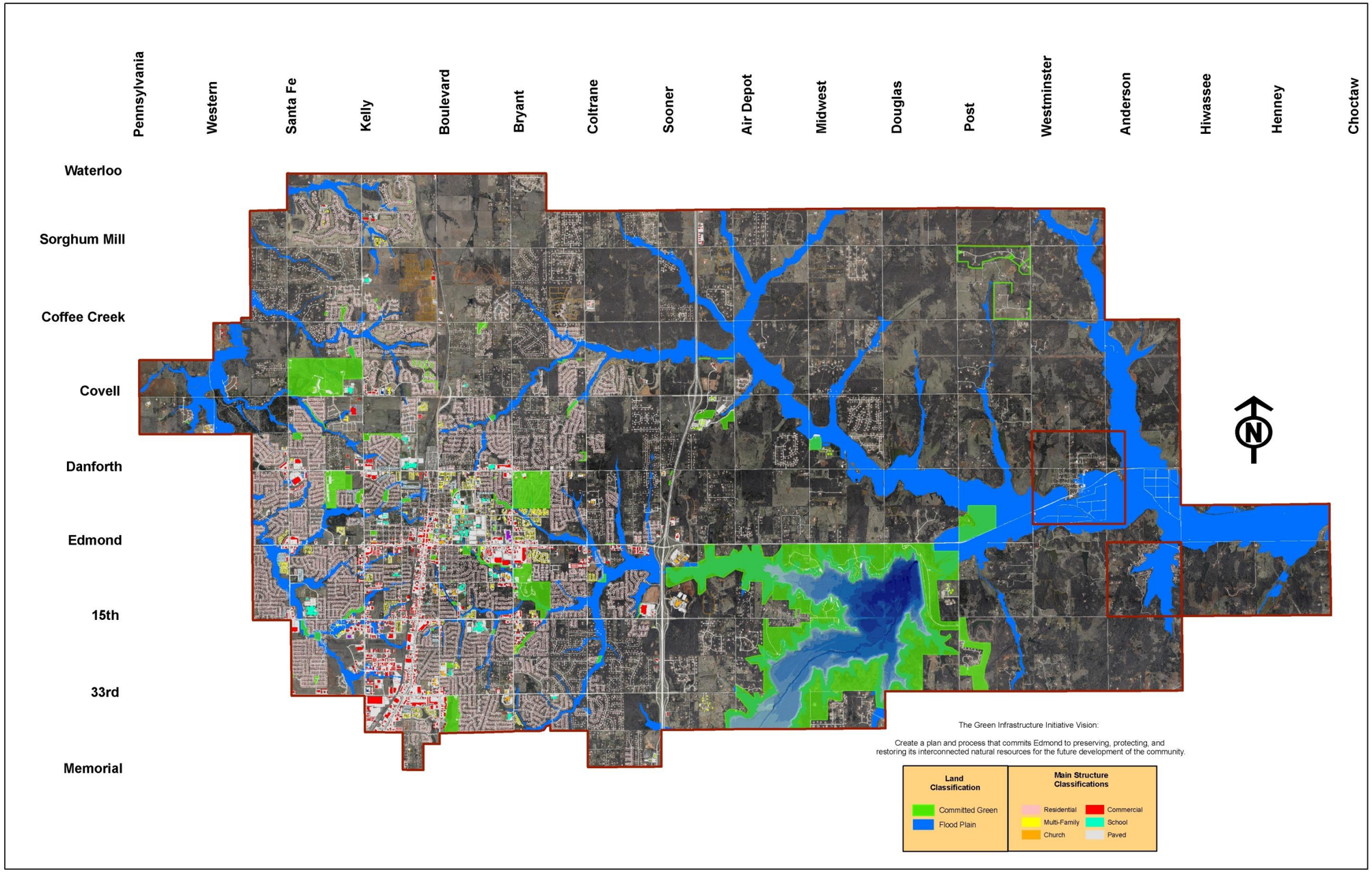
RECOMMENDATIONS

A number of actual recommendations are made in the full report. The primary recommendation is that the Green Infrastructure Plan be incorporated into the Edmond Plan IV Assessment criteria. Other recommendations involve the use of low impact development, and finding ways to encourage those practices. Finally, software tools that the City is currently using can be utilized to assist in Plan Amendment reviews and to provide a basis for determining how we are doing in the 5 year plan update process.

Among those tools are:

1) GIS Spatial Analysis techniques, which were used to evaluate sensitive areas and put them into context with other areas in the City, and

2) I-Tree software, which is a suite of tools developed by the USDA Forest Service. It will help quantify the benefit of community trees and their associated environmental services.

The full report has numerous suggestions and recommendations for further action. These challenges will involve a multi disciplined coordination effort for maximum benefit.

CITY OF EDMOND
COMMITTED CONSERVATION OR RECREATION AREAS