



# *West Haymarket*

**INTEGRATED DEVELOPMENT PLAN**

July 30, 2009







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# West Haymarket Redevelopment

The City of Lincoln is a truly wonderful and unique community valued for its culture, history, education and family-oriented atmosphere. Lincoln boasts a balance of traditional industry and a new influx of technical and financial jobs that are bringing more diversity to the community. The goal of continued “smart growth” of the community will benefit generations to come.

Lincoln’s downtown is a thriving mixed-use district with approximately 27,000 employees and two million annual visitors. In addition to the State Capitol building and the University of Nebraska–Lincoln campus, downtown is home to the Lied Center for Performing Arts, Memorial Stadium, and many other entertainment venues.

Along the western edge of downtown lies the



“Haymarket Landmark District”. This area saw its first development in the 1870’s with the arrival of the Burlington and Missouri River Railroad. Its earliest development involved industrial and warehousing uses to serve the adjacent railroad facilities. Nearly one hundred years later in the 1980’s the Haymarket District

began a transformation which has continued to this day. Art and antique galleries, coffee houses, restaurants, performance spaces, offices, and residences now comprise the bulk of the district tenants.

The West Haymarket Redevelopment envisions developing over 400 acres of blighted and underutilized property on the western edge of Lincoln’s downtown and traditional Haymarket district. The proposed redevelopment

project involves several new elements including: civic arena, hotels, community space, retail and office space, and residential units.

# West Haymarket Integrated Development Plan (IDP)

## Background and Overview

The purpose of this effort is to develop an integrated and inclusive conceptual design for the West Haymarket site. This design—i.e. Integrated Development Plan (IDP)—is meant to create a coherent development program that addresses the entire area and adjacent locations as appropriate. The IDP is intended to serve as the basis for further community dialogue regarding the West Haymarket redevelopment.

The overall goals and general outcomes from this phase of the West Haymarket redevelopment process are documented in this Integrated Development Plan and include such elements as the following:

- Identification of the primary functions (e.g., civic arena, recreational facilities, and environmentally sensitive areas) anticipated to occur within the 400 plus acre West Haymarket site.
- Establishment of a 'Future Design Framework' which identifies critical Values, Goals and Best Practices for new development activities relative to their scale, conceptual design, and relationship to the site and surrounding area. This framework also outlines best practices on how to respect the existing Haymarket Landmark District's urban context and historical character.
- A schematic layout of the primary functions (e.g. civic arena, Breslow Ice Center, and private development parcels) including conceptual images illustrating the form and character of the overall development approach.
- Other supporting West Haymarket studies including railroad track relocation, parking and traffic analysis, environmental conservation and remediation issues, and recreational development opportunities.
- Overall guidance on sustainability goals ("green" practices) for the redevelopment area.



# *West Haymarket*

HISTORICAL CONTEXT



In progress



# Historical Context



Most Lincolmites are familiar with the architectural and historical significance of structures in the Historic Haymarket Landmark District. But an additional layer of Lincoln's history exists within and beneath the rail yard immediately west of 7th Street and Lincoln Station.

One of the earliest photos still in existence for this area shows a view looking northwest from what would today be the Harris Overpass. In this image, dominated by the stark, treeless landscape of early Lincoln, a wooden boardwalk is seen connecting "O" Street to four wooden buildings and a masonry roundhouse that were owned by the Burlington Missouri Railroad (BMR). One of the wooden structures was known at that time as the Emigrant House, an early version of what we might today call a hotel/motel. This building was used by the railroad as the "gathering point" from which potential homesteaders were given lodging prior to being taken out to potential homestead sites which the BMR was marketing as part of the westward expansion of the United States. In essence, this photo reflects Lincoln's role as the "Ellis Island" of southern Nebraska in the middle to late 1800's.



By the early 1900's, the Burlington had constructed an impressive three story masonry passenger depot, located at approximately the same location as the current BNSF depot. Photos and postcards from this period show an incredibly busy railroad passenger operation of four to five 'mainlines' accommodating the arrival and departure of hundreds of visitors and Lincoln citizens.

This area of Lincoln continued to be a major hub of activity through World War I. In 1926, the original depot was demolished and replaced with a lower scale structure that stands today as "Lincoln Station." Portions of the original depot's canopy structure were salvaged and reused on the north end of the current west development.

Significant passenger rail activity continued through the Depression era of the 1930's and into the Post-World War II period. As the railroads looked for ways to compete with the broadening appeal of the automobile in American society, Burlington Railroad developed high speed passenger trains – know as "Zephyrs" – which regularly connected through the Lincoln Depot. One of these was fondly called the "Pioneer Zephyr." Much of Burlington's promotional material at the time featured the capital city of Lincoln and the Lincoln Depot structure.

The celebration of the streamliner's tenth anniversary was held at the Lincoln Depot in 1944. The Zephyr's forward movement triggered a mechanism that released the knife. The ceremonies were broadcast nationwide over the Blue Radio Network originating from radio station KFOR in Lincoln.

But with the advent of expanded postwar automobile transportation, a once bustling hub of civic activity gradually fell into disrepair and general public activity abandonment. A recent remodeling and renovation of the depot into "Lincoln Station" included an updating of the Amtrak facility with regular service to points east and west. Now, with the proposed West Haymarket Development, an opportunity exists again to rejuvenate this most unique component of Lincoln's history.

# Archeological Analysis

Believed to be one of the first structures erected on the West Haymarket site was the “B&M Emigrant Hotel.” The hotel was constructed in the early 1870’s near Lincoln’s Burlington and Missouri depot. The building was designed to serve newly arriving travelers and homesteaders to the then Nebraska Territory. As the first stop for many Nebraskan families, the hotel represents an important contribution of the State’s history. While the precise location of the hotel is uncertain, photographic and mapping evidence suggests the foundational remains lie in the BNSF railyard to the west of the present Lincoln Station.

Because the most promising site for locating the hotel’s remains resides under existing track, the decision was made to prepare a test excavation pit to assess the “stratigraphy” in the general vicinity. In this context, “stratigraphy” applies to the layering of the soils to determine how stable the surrounding ground may be. If little soil disturbance were found then there might be a higher probability of locating the foundation and other artifacts from the Emigrant Hotel.

The test excavation work was conducted on April 15, 2008, by a field crew from the University of Nebraska-Lincoln’s Department of Anthropology.

The final report from the archaeological testing concluded this initial investigation “must be counted a success.” The report goes on to note that the test excavation “strongly suggests that surviving archeological traces of the Emigrant Hotel should be present...” and should be easily recoverable. Assuming the West Haymarket project moves forward, the site could be access and further research completed during the initial track relocation and environmental mitigation phases. This additional work could, according to the final archeological report, “contribute substantial insights into the history of Lincoln and Nebraska.”







# *West Haymarket*

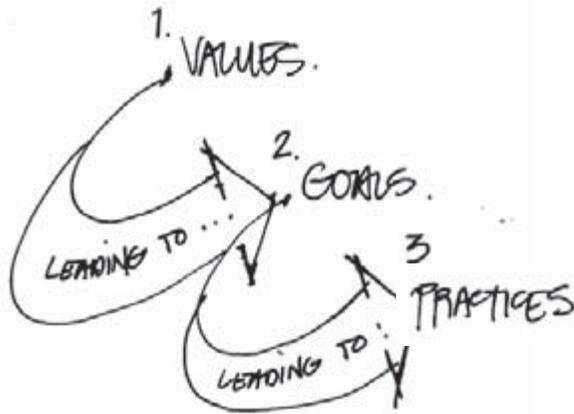
FUTURE DESIGN FRAMEWORK



In progress



# Future Design Framework



The West Haymarket project area presents Lincoln with both a unique opportunity & a unique challenge.

The unique opportunity comes in the form of under-utilized land lying right in the urban core. Moreover, this land sits immediately adjacent to a thriving downtown area, an animated historic district, and the State's largest university campus – all noteworthy assets for any community.

The unique challenge is to insure that the new development in West Haymarket respects and builds upon these assets, and that the redevelopment of this area achieves a quality in design commensurate with the vicinity's existing uses.

To reach these goals, the Integrated Development Plan has crafted an approach to evaluate and guide current and future development proposals for the West Haymarket. This approach is called the “**Future Design Framework.**” Founded upon a descriptive set of “**Best Practices**”, this ‘Framework’ provides builders, developers, designers, and the community with a series of practical benchmarks against which to judge

redevelopment plans and concepts. These ‘Best Practices’ are logical extensions from a core set of “**Values**” and “**Goals**” established for the West Haymarket through many community input sessions.

The process began with an itemization & presentation of various community values to civic stakeholders (the Historic Preservation Commission, the Urban Design Committee, current Haymarket business owners, etc.) to test their worthiness for consideration in the future development of West Haymarket. The initial list included Safety, Authentic Character, Civic Art, Respect For History, Diversity, Human Comfort, Unique Quality, Urban Experience, Community Ownership, Environmental Stewardship, and Economic Vitality. These were gradually narrowed to the five values of Human Comfort, Urban Experience, Respect for History, Environmental Stewardship, and Community Ownership.



A public input 'open house' was held on the evening of Thursday, April 17, 2008 in the Ridnour Building in the Haymarket District. 'Stations' were set up for each of the six values to test & evaluate citizen consensus/input. Comment sheets were also distributed to solicit additional feedback from the community.

Following the community open house, there was significant feedback concerning economic issues to justify expanding the community values to reintroduce the value of 'Economic Vitality'.

Presentations were again made during the subsequent months to the Urban Design Committee and the Historic Preservation Committee to solicit further input relative to refining the goals and best practices enumerated for each of the six community values.



For reference purposes, the Future Design Framework is organized into three layers. Each layer builds depth, beginning with broad, subjective "values" and ending with objective "best practices".

**Values:** "elements of essential importance to the community".

*Each value statement establishes an essential belief that acts as a filter for future redevelopment decisions. These values lead to the definition of critical Goals.*

**Goals: "specific concepts that support the essence of each value".**

*Several goals are identified for each value and are crafted to facilitate their respective value. Each goal is then embellished with "Best Practices".*

BEST PRACTICE:

**"prescriptive actions to achieve each goal".**

*Best practices are physical objects or items that should be implemented in the redevelopment to successfully achieve each respective goal.*

# Community Values



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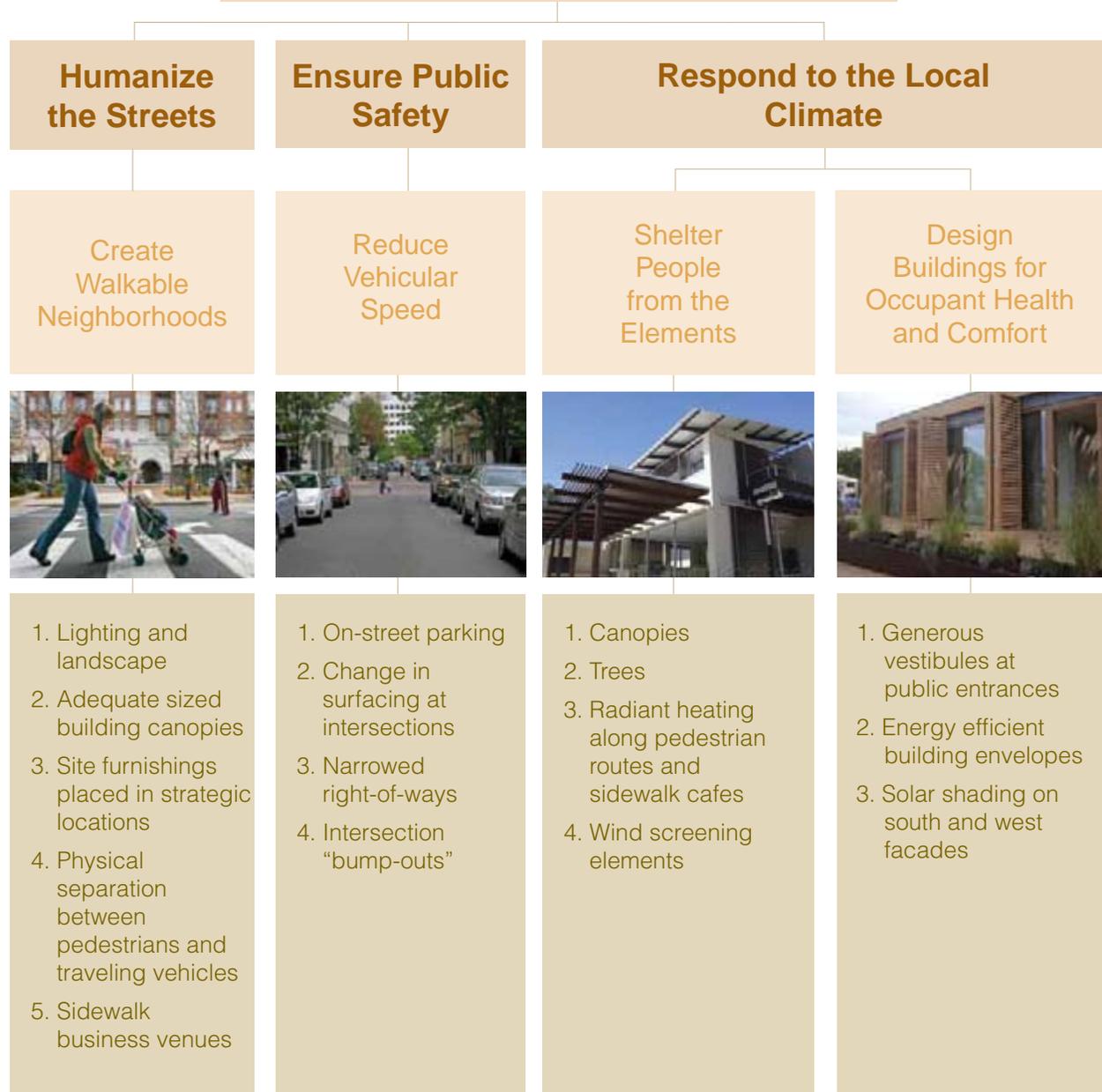
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# Human Comfort



Development within the West Haymarket must nurture places for people and foster a sense of physical and psychological comfort. Appropriate use of materials, scale, and landscaping can impart a sense of comfort by creating welcoming environments within areas of thriving human activity. Through thoughtful design, human comfort can successfully be integrated into streets, sidewalks and public spaces.

# Human Comfort



## GOAL: Humanize the Streets

### BEST PRACTICE:

#### Create walkable neighborhoods

City sidewalks should be wide enough to accommodate pedestrian movement as well as seating, landscaping, bus shelters, and other appropriate amenities supporting social activities. The essential elements of this best practice are:

1. Lighting and landscape
2. Adequately-sized building canopies
3. Site furnishings placed in strategic locations
4. Physical separation between pedestrians and traveling vehicles
5. Sidewalk business venues



### BEST PRACTICE:

#### Create Walkable Neighborhoods

Walkable neighborhoods encourage pedestrian activity, thus expanding transportation options, and creating a streetscape that better serves a range of users. The essential elements for this best practice are:

1. City blocks that are publicly connected
2. Provide comfortable & convenient sidewalk connectivity
3. Safe pedestrian street crossings



## GOAL: Ensure Public Safety

### BEST PRACTICE:

#### Reduce Vehicular Speed

Vehicular speed-reducing elements should be installed where vehicles and pedestrian paths overlap. These elements may include speed tables, round-abouts, and narrowing of the roadway. The essential elements throughout this best practice are:

1. On-street parking
2. Change in surfacing at intersections
3. Narrowed right of ways
4. Intersection “bump-outs”



## GOAL: Respond to the Local Climate

### BEST PRACTICE:

#### Shelter People from the Elements

Shelter should be provided along pedestrian pathways to ensure that human comfort is a priority throughout the development. The essential elements for this are:

1. Canopies (shelter from rain, snow, sun and wind)
2. Trees throughout a balanced right-of-way
3. Radiant heating along pedestrian routes and within sidewalk cafe boundaries
4. Wind screening elements at building entries or public waiting points



## GOAL: Respond to the Local Climate (*cont.*)

### BEST PRACTICE:

#### Design Buildings for Occupant Health and Comfort

Comfortable indoor environments should be provided through “thoughtful” building design efforts. The essential elements for this best practice are:

1. Generous vestibules at public entrances
2. Energy efficient building envelopes
3. Solar shading on south and west facades





# *West Haymarket*

INTEGRATED DEVELOPMENT PLAN

# Urban Experience



People value the qualities of an urban experience because it promotes vitality, diversity, and social interaction. An urban environment offers an exciting experience for people that is distinct and different from one that is by its nature suburban. Diversity and vitality should apply to use, culture, style, demographics and affordability. Developing a range of diverse but complementary uses will result in a West Haymarket that is not only vibrant, but also sustains long-term economic vitality. Redevelopment must serve as a magnet for activity and fuel the prospect of further investment.



## GOAL: Establish a Vibrant Pedestrian Environment

### BEST PRACTICE:

#### Integrate Active Outdoor Spaces

Outdoor spaces should accommodate many different types of uses and people. Successful spaces provide comfort and a place where their users feel connected to the city and fellow citizens. The essential elements for this best practice are:

1. Multiple areas of activity (seating, play, walking, etc.)
2. Shade via landscape and/or structures
3. Physical proximity to buildings and other high use areas



### BEST PRACTICE:

#### Create Transparency in the Building Facade

Street level retail and office with glazing provides an active connection between the indoor and outdoor environment. The essential elements of this best practice are:

1. Organize active public uses near the street
2. Allocate generous portions of first floor facades to glazing



## GOAL: Integrate a Variety of Transportation Choices

### BEST PRACTICE:

#### Encourage a “Park Once” Concept

Coordination between transportation modes creates an integrated development. The essential elements of this best practice are:

1. Bike racks and/or lockers in convenient locations
2. Strong sidewalk connections to all parking areas
3. Well designed, clean, public transit waiting stations



## GOAL: Promote Diversity of Uses

### BEST PRACTICE:

#### Encourage Mixed-Use Development

Development which integrates multiple uses will result in a rich and vibrant place. The essential elements for this best practice are:

1. Encourage diverse residential opportunities
2. Create accessible locations for businesses
3. Establish multiple restaurant and retail venue locations
4. Encourage cafes, street cart vendors, etc.



## GOAL: Promote the Use of On-Street Parking

### BEST PRACTICE:

#### Provide On-Street Parking

Well-designed on-street parking can slow traffic and provide a safety barrier for pedestrians. The essential elements of this best practice are:

1. Bump-outs at pedestrian crossings
2. Narrow streets
3. Parallel or diagonal parking

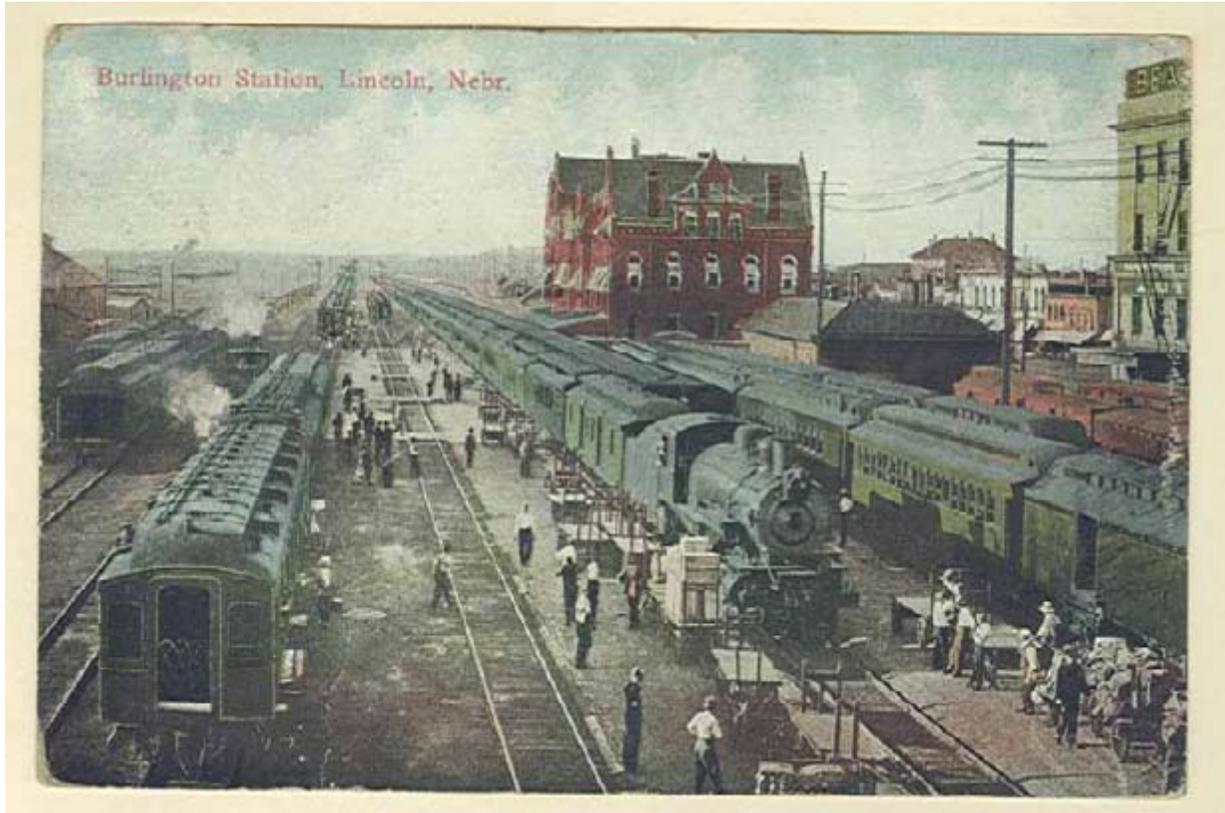




# *West Haymarket*

INTEGRATED DEVELOPMENT PLAN

# Respect for History



Redevelopment of the West Haymarket area should have a distinct character that both acknowledges and respects the current Haymarket Landmark District. To accomplish this, West Haymarket should have an authentic image that clearly reflects the time in which it was built. The new buildings and spaces created within the development area should be respectful of the Haymarket historic context, yet seek to find their own appropriate expressions. Architecture created through the use of false historical construction or artificial devices should be discouraged.

# Respect for History



## GOAL: Protect the Character of the Haymarket District

### BEST PRACTICE:

#### Enforce Existing Guidelines

Enforce the existing Haymarket District Preservation Guidelines (June, 1982) where new development directly borders or overlaps the Haymarket Landmark District. The essential elements for this best practice are:

1. Require development teams to present schematic proposals to appropriate City review entities
2. Require development teams to submit a written document defining the historical impacts (if any) of their project on the Haymarket Landmark District



### BEST PRACTICE:

#### Enforce the Values and Goals Defined

Enforce the Values and Goals defined within this Design Framework by conducting a rigorous review of all proposed new development.

The essential element of this best practice is:

1. A strict design review should be conducted by the City to determine if future design proposals are consistent with the Framework Values



## GOAL: Connect People to History

### BEST PRACTICE:

#### Develop a West Haymarket Historical Interpretive Plan

A historical interpretive plan should be developed to establish an outline that promotes a consistent thematic depiction within the development. The essential elements of this best practice are:

1. Identify important historical events relevant to Lincoln's history in this area as well the Haymarket District
2. Preserve significant artifacts associated with events relevant to Lincoln's history in this area as well as the Haymarket District
3. Create interpretive areas focused around significant historic artifacts
4. Introduce new physical elements (such as public art) that reinforce the historical themes identified in the interpretive plan



In progress

## GOAL: Encourage New Construction to be “Authentic”

### BEST PRACTICE:

#### Encourage Quality Construction Expressive of Its Function

The new development should not be a mirror of the existing Haymarket District but expressive of its own time, place and function. The essential elements of this best practice are:

1. Construction style should be complementary with the existing historic context
2. Design and construct buildings that are appropriate in scale with the existing historic context



West Haymarket | Integrated Development Plan 33

## GOAL: Encourage New Construction to be “Authentic” (cont.)

### BEST PRACTICE:

#### Give Preference to Genuine Materials and Finishes

The material palette should be carefully evaluated to ensure that the new development complements the existing Haymarket District. The essential elements to achieve these design steps are:

1. Provide a material palette as part of the review process
2. Use materials that provide a compatible transition/ relationship with existing materials in the Haymarket District





# *West Haymarket*

INTEGRATED DEVELOPMENT PLAN

# Environmental Stewardship



Environmental stewardship is built upon a commitment to sustaining human activity and preserving the integrity of the natural environment. As a value for the West Haymarket, this sensitivity should acknowledge the environmental heritage of the area and plan for the conservation of natural resources long into the future. A sustainable approach addresses more than the effort to minimize energy consumption, emphasize “green” construction practices, or promote recycling programs. It also encourages the reuse of existing buildings, the creation of energy efficient buildings with long life spans, and the design of flexible facilities capable of adapting to new uses over time.



## GOAL: Use the LEED Standards for Neighborhood Development (LEED-ND) as a Benchmark

### BEST PRACTICE:

#### Link and Connect New Areas to the Existing Urban Fabric

Make strong connections between the Haymarket and all newly developed areas. The essential elements of this best practice are:

1. Designate new streets and sidewalks for public use
2. Connect/extend existing street patterns/grids
3. Connect trails to recreational uses



### BEST PRACTICE:

#### Plan for Neighborhood Patterns that Integrate Diverse Uses

The preferred development pattern for the West Haymarket should be one that promotes mixed-use strategies and discourages singular land uses. The essential elements of this best practice are:

1. Provide multi-story buildings with retail/restaurants on the main level and office/residential uses above
2. Integrate parks and open spaces into building entry areas
3. Encourage a walkable community that is easily served by public transit systems



## GOAL: Protect Environmental Resources

### BEST PRACTICE:

#### Promote Compact Development

Density in urban environments places people closer to needed goods and service. The essential elements of this best practice are:

1. Promote development of buildings greater than one story in height
2. Encourage residential and office uses above street level commercial space



### BEST PRACTICE:

#### Install Sustainable Landscapes

Water-wise landscapes use native plants that impact water quality and complement the local landscape. The essential elements of this best practice are:

1. Review plant palette for all new development submittals
2. All irrigation systems installed must be low output systems



## GOAL: Protect Environmental Resources (*cont.*)

### BEST PRACTICE:

#### Enhance the Wetlands and Flood Prone Areas

The West Haymarket area includes natural features and habitat that must be preserved. The essential elements of this best practice are:

1. Balance the area's flood prone nature through innovative and environmentally sensitive techniques
2. Increase public awareness of the natural environment through use of plaques and interpretive areas



## GOAL: Promote “Green” Building Practices

### BEST PRACTICE:

#### Reuse Existing Buildings Where Possible

Where feasible, incorporate existing structures into new development proposals. The essential elements of this best practice are:

1. Incorporate existing site features, such as railroad tracks and platform canopies, into the design of the new development



## BEST PRACTICE:

**Reduce and Manage the use of Water Resources**

Water conservation practices must be implemented throughout the new development. The essential elements of this best practice are:

1. Install waterwise landscaping
2. Harvest rainwater to use on landscape and lawn areas
3. Install low water use amenities in buildings and throughout all public areas



## BEST PRACTICE:

**Optimize Energy Performance**

It is imperative to reduce energy use, increase efficiency, and utilize renewable energy sources. The essential elements of this best practice are:

1. Reduce heating, cooling and lighting loads through climate responsive design
2. Utilize techniques such as daylighting, passive solar, heating, and photo voltaics
3. Specify efficient HVAC and lighting systems



## GOAL: Promote “Green” Building Practices (*cont.*)

### BEST PRACTICES:

#### Select Materials, Finishes and Furnishings that Demonstrate Low Environmental Impact

All materials should be considered with respect to their impact on the environment. Some materials have more of an impact on the environment than others. When selecting materials and furnishings the following must be considered:

1. Use as much material that is not “virgin” as possible
2. Give preference to building materials available within the region



### BEST PRACTICES:

#### Establish and Monitor High Quality Indoor Environments

It is imperative to achieve quality indoor environments through sensitive design, and on-going maintenance practices. The essential elements must include:

1. Provide thermal comfort with a high degree of personal control
2. Assure acoustic privacy and comfort through the use of sound absorbing materials and equipment isolation





# *West Haymarket*

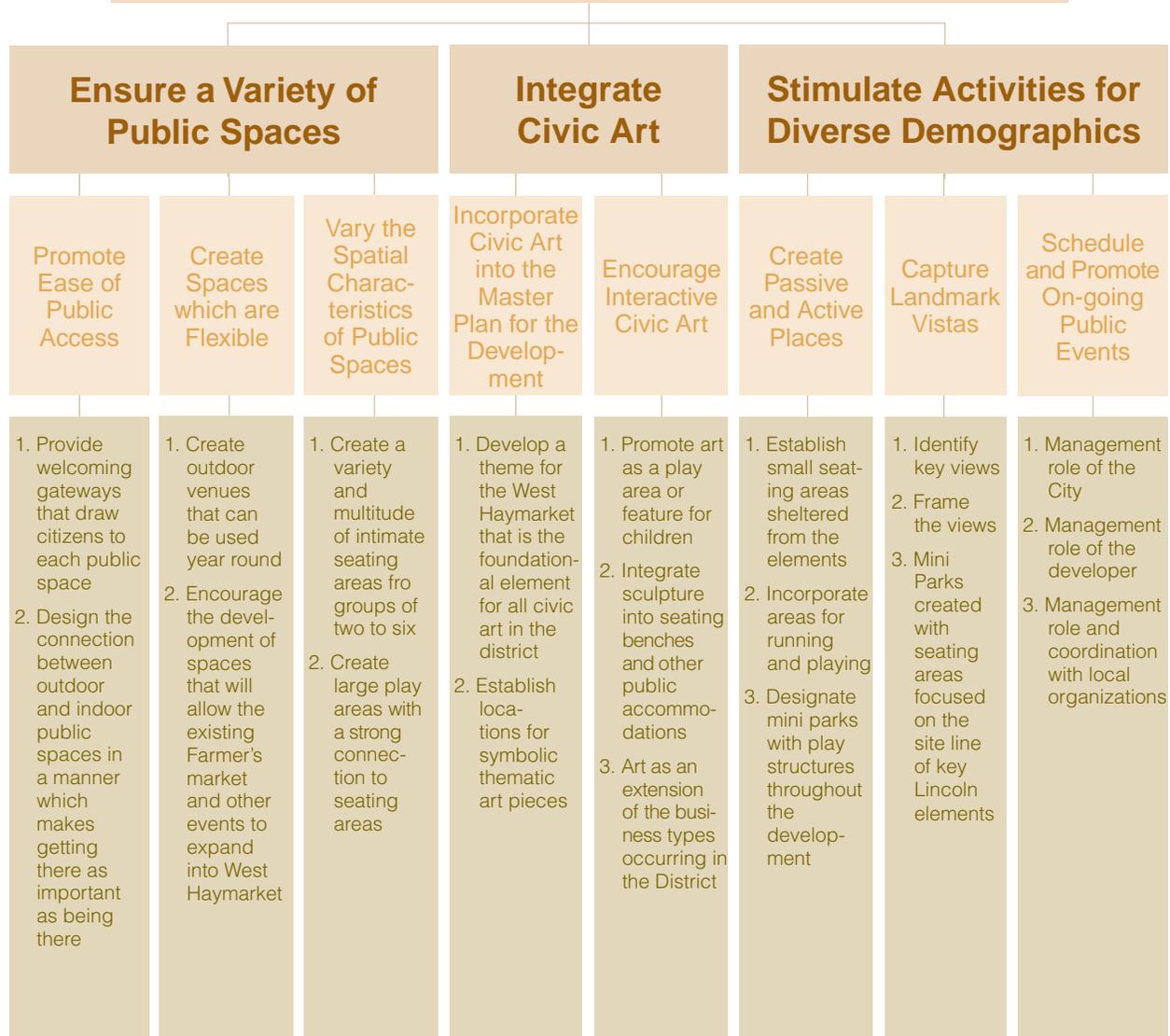
**INTEGRATED DEVELOPMENT PLAN**

# Community Ownership



The West Haymarket should become a place that embraces all generations, a neighborhood of diverse interests and activities, a home to families, and a place for memories. Essential to achieving this vision will be the creation of attractive and functional public venues that offer a diversity of choices to the community. These places should be intentionally designed to meet the broad range of lifestyles and expectations that exist within our community. Well-crafted plazas, streets and urban parks attract lively human activity. Civic art will play an essential role in achieving this value, as it possesses the unique ability to engage people and convey the spirit of a generation.

# Community Ownership



## GOAL: Ensure a Variety of Outdoor and Indoor Public Spaces

### BEST PRACTICE:

#### Promote Ease of Public Access

Outdoor spaces must be easy to access and should have a strong connection to the major indoor activity areas. The essential elements of this best practice are:

1. Provide welcoming gateways that draw citizens to each public space
2. Design the connection between outdoor and indoor public spaces in a manner which makes 'getting there' as important as 'being there'



### BEST PRACTICE:

#### Create Spaces which are Flexible

Public space must accommodate multiple activities, and should be able to flexibly different events throughout the year. The essential elements of this best practice are:

1. Create outdoor venues that can be used year round
2. Encourage the development of spaces that will allow the existing Haymarket Farmers Market and other events to expand, if desired, into West Haymarket



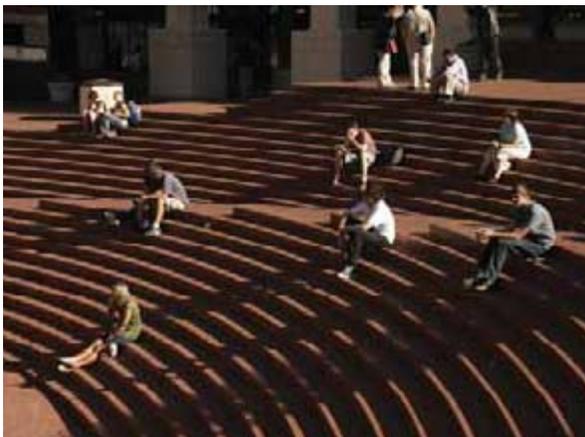
## GOAL: Integrate Civic Art

### BEST PRACTICE:

#### Vary the Spatial Characteristics of Public Spaces

Outdoor public spaces should consist of a variety of sizes and uses, while still maintaining the overall comfort of the user. The essential elements of this best practice are:

1. Create a variety and multitude of intimate seating areas for groups of two to six
2. Create large play areas with a strong connection to seating areas



### BEST PRACTICE:

#### Incorporate Civic Art into the Master Plan for the Development

Ensure that civic art is located in areas that will maximize public exposure. The essential elements of this are:

1. Develop a theme for the West Haymarket that is the foundational element for all civic art in the district
2. Establish locations for symbolic thematic art pieces



## GOAL: Integrate Civic Art (*cont.*)

### BEST PRACTICE:

#### Encourage Interactive Civic Art

Civic art should not only serve a visual purpose but also encourage functional usable features. The essential elements of this best practice are:

1. Promote art as a play area or feature for children
2. Integrate sculpture into seating benches and other public accommodations
3. Art as an extension of the business types occurring in the District



## GOAL: Stimulate Activities for Diverse Demographic Groups

### BEST PRACTICE:

#### Create Passive and Active Places

Create places which mix both dynamic and relaxing activities within public spaces. The essential elements of this best practice are:

1. Establish small seating areas sheltered from the elements
2. Incorporate areas for running and playing
3. Designate mini parks with play structures throughout the development



## BEST PRACTICE:

**Capture Landmark Vistas**

Locations throughout the development should be designed to capture the pedestrian's view toward Lincoln's great landmarks and vistas. The essential elements of this best practice are:

1. Identify key views
2. Frame the views
3. "Mini Parks" created with seating areas focused on the site lines of key Lincoln elements



## BEST PRACTICE:

**Schedule and Promote On-Going Public Events**

Active public spaces require consistent promotion to be successful. The essential elements of this best practice are:

1. Management role of the City
2. Management role of the developer
3. Management role and coordination with local organizations





# *West Haymarket*

**INTEGRATED DEVELOPMENT PLAN**



# *West Haymarket*

**INTEGRATED DEVELOPMENT PLAN**

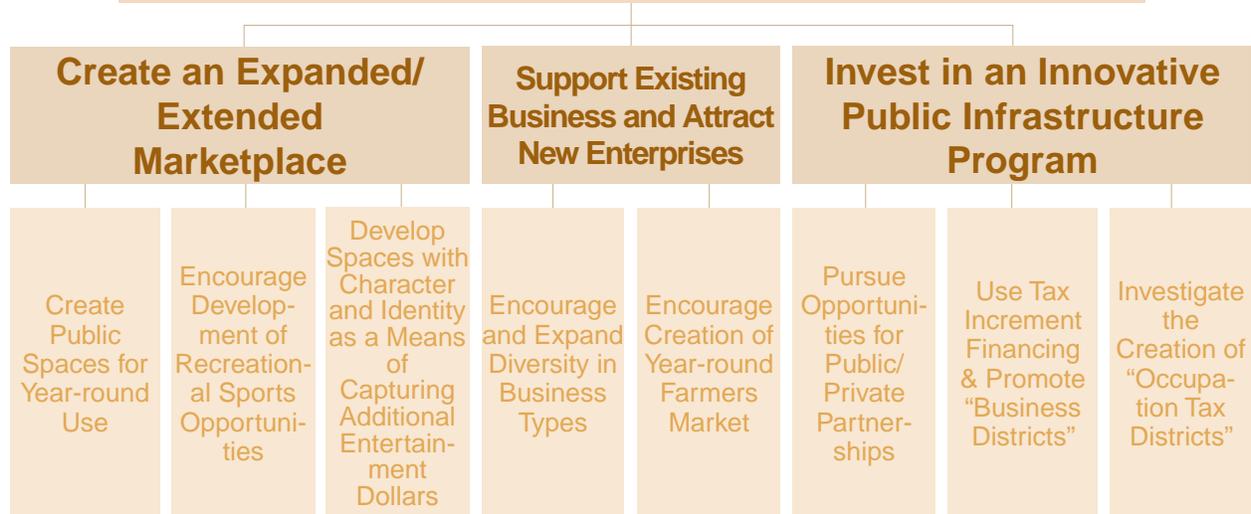
# Economic Vitality



*photo by Calamity Meg on Flickr*

Economic Vitality is the positive result of all sectors of Lincoln’s “economic engine” working in harmony for the benefit of the entire community. It represents a sustainable return on investment for all measures of urban life. Without the joint investment efforts of both the private marketplace and the public realm, the long term success of the West Haymarket District will be at risk. Successful private projects will create new jobs and increase the stability of Lincoln as a place where individuals & families can confidently commit their futures to.

# Economic Vitality



## GOAL: Create an Expanded/ Extended Marketplace

### BEST PRACTICES:

1. Create major public spaces that have year-round use capabilities.
2. Encourage the future development of a broad range of recreational sports opportunities in and around the West Haymarket District.
3. Develop spaces with 'character' and 'identity' that Lincolniters can promote as uniquely their own, thereby making the district an 'importer' of entertainment dollars for the entire community.



## GOAL: Support Existing Businesses and Attract New Enterprise

### BEST PRACTICES:

1. Encourage diversity in business types with uses that will bring additional jobs and shopping traffic to the area.
2. Encourage the creation of a year-round farmers market.



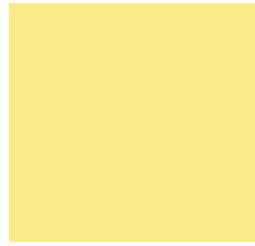
## GOAL: Invest in an Innovative Public Infrastructure Program to Grow and Enhance Private Investment in the Area

### BEST PRACTICES:

1. Pursue opportunities for public/private partnerships, such as a “District Energy Facility”
2. Continue efforts to prudently use Tax Increment Financing (TIF) and promote and foster the use and implementation of “Business Districts”.
3. Investigate the creation of “Occupation Tax Districts” via the state Community Development Law as a means of growing the economic base in the district.







# *West Haymarket*

## SITE DEVELOPMENT HISTORY



In progress



# Site Selection History



The process of finding a home for a new civic arena began with completion of an arena feasibility study in the 2004. This feasibility study looked at five potential arena sites in downtown Lincoln, including a site in the West Haymarket. Each site was assessed as a potential arena location based on a series of criteria dealing with a variety of key attributes. The study made no specific recommendation as to the favored location, but rather it listed the merits of each site for further examination and discussion by the Lincoln community.

This study's results were then carried over into the development of a new Downtown Master Plan. As part of the Master Plan's year-long effort, a community consensus began emerging more and more on West Haymarket as the preferred location for the new civic arena.

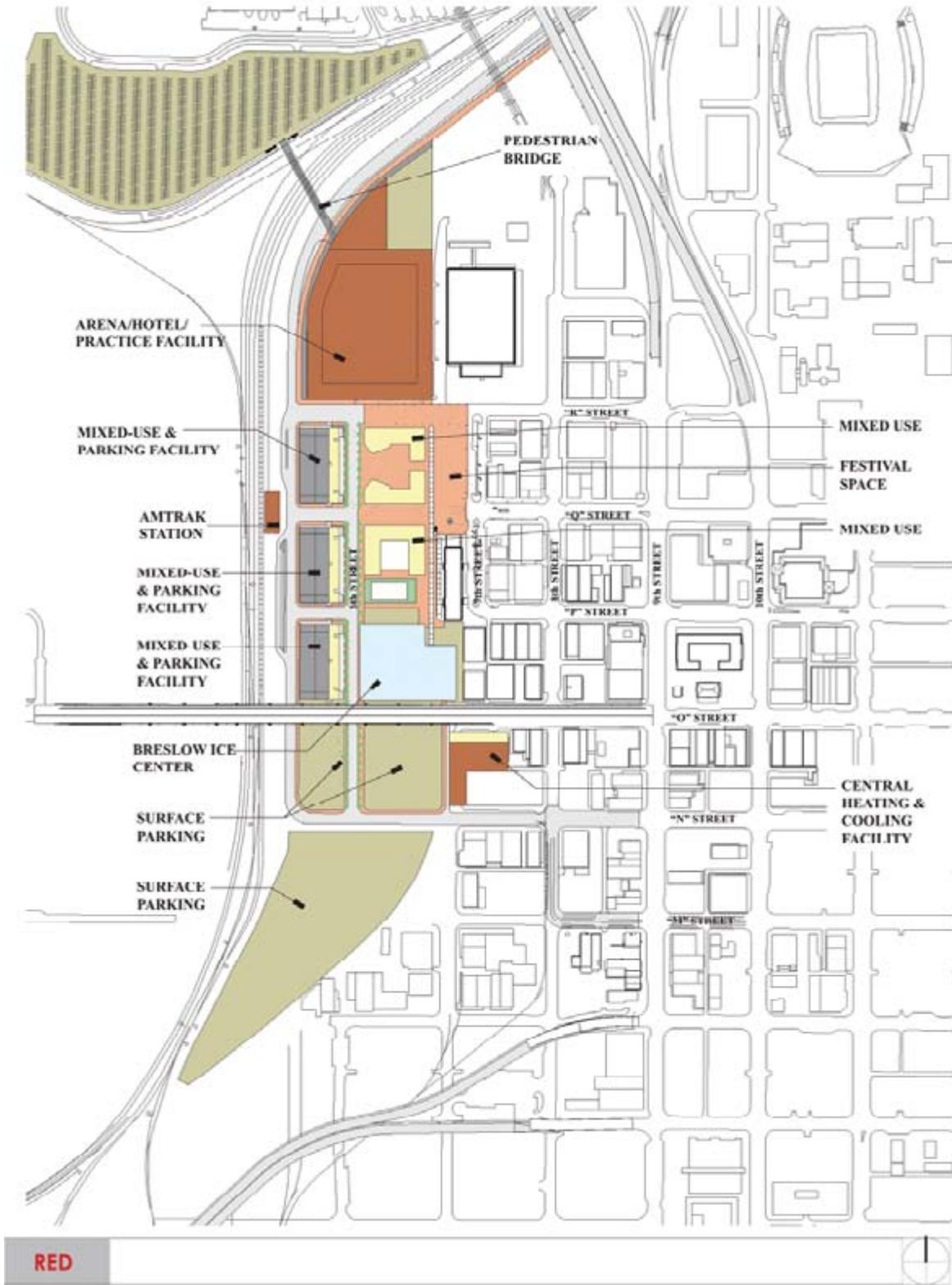
As the Downtown Master Plan was in the process of being adopted, a concern surfaced about

the perceived proliferation of event facilities in the Capital City. This resulted in creation of the "Mayor's Event Facility Task Force."

Among other responsibilities, the Mayor's Event Facility Task Force was charged with examining West Haymarket as a preferred site for a new civic arena. The task force began this task by looking again at the five proposed downtown arena sites from the 2004 arena feasibility study, as well as a number of additional suburban locations.

On the basis of 50 locational criteria and a number of alternative site designs, the task force recommended to the Mayor in a November 2006 Report that the West Haymarket was the favored arena location.

The desirability of this site was further reinforced in October of 2007 when the Lincoln City Council unanimously approved a Redevelopment Plan for the West Haymarket.



# Red, White, & Blue Site Layouts

Refinements to the West Haymarket site plan continued following the city's selection of a civic arena architect and a private development team. A "Unified Design Team" was created with representatives drawn from a host of public and private sector design disciplines. The goal of this effort was to work collaboratively to formulate a site development concept which would incorporate the best aspects of the various team solutions presented to the city as part of the Invitation For Redevelopment Proposals (IFRP).

This "Unified Design Team" effort resulted in the formulation of what came to be known as the 'Red', 'White' and 'Blue' site plans. Each of these concept plans contained a variety of site options or amenities which were presented to the public as a 'menu of possibilities' rather than schemes that were mutually exclusive. In other words, desired attributes of one option could be incorporated into another option to fashion a hybrid option.

The three layouts share several aspects in common, e.g. location of the Arena to the north of 'R' Street, location of the new Amtrak facility on axis with 'Q' Street, the Breslow Ice Center north of 'O' Street overpass, while surface parking as well as a central heating and cooling facility located south of 'O' Street. Some of the significant variations between the options are as follows:

## The Red Option

This layout (see opposite page) is organized around the development of a new '6th' Street and continuation of the current situation in which both 'R' and 'Q' Streets terminate at '7th' Street. This provides for a new pedestrian friendly 'Festival Space' between 'R', 'Q', 7th St. and the existing railroad canopy structure on the west. A new 'Arena Drive' flanks the east side of the relocated BNSF tracks, serving the new Amtrak Station as well as three major public parking structures, and eventually connecting on its south end to an extended 'N' Street.

## The White Option

This layout (see page 62) is organized around a similar '6th' Street and 'Arena Drive' layout as the 'Red' scheme, but with two major differences.

The first being the notion of 'R' Street between 7th & 6th as a 'Festival Street', in which the road profile in this area would be 'curb-less' and its paving materials decorative to the point of visually & texturally implying a priority to pedestrian movement over vehicular traffic. While vehicular traffic would be allowed during 'non-event' times, its speed would be limited, giving preference to the free movement of pedestrians across its surface. This 'Festival Street' would be closed during Arena events, thus expanding the plaza atmosphere to the south of the Arena.

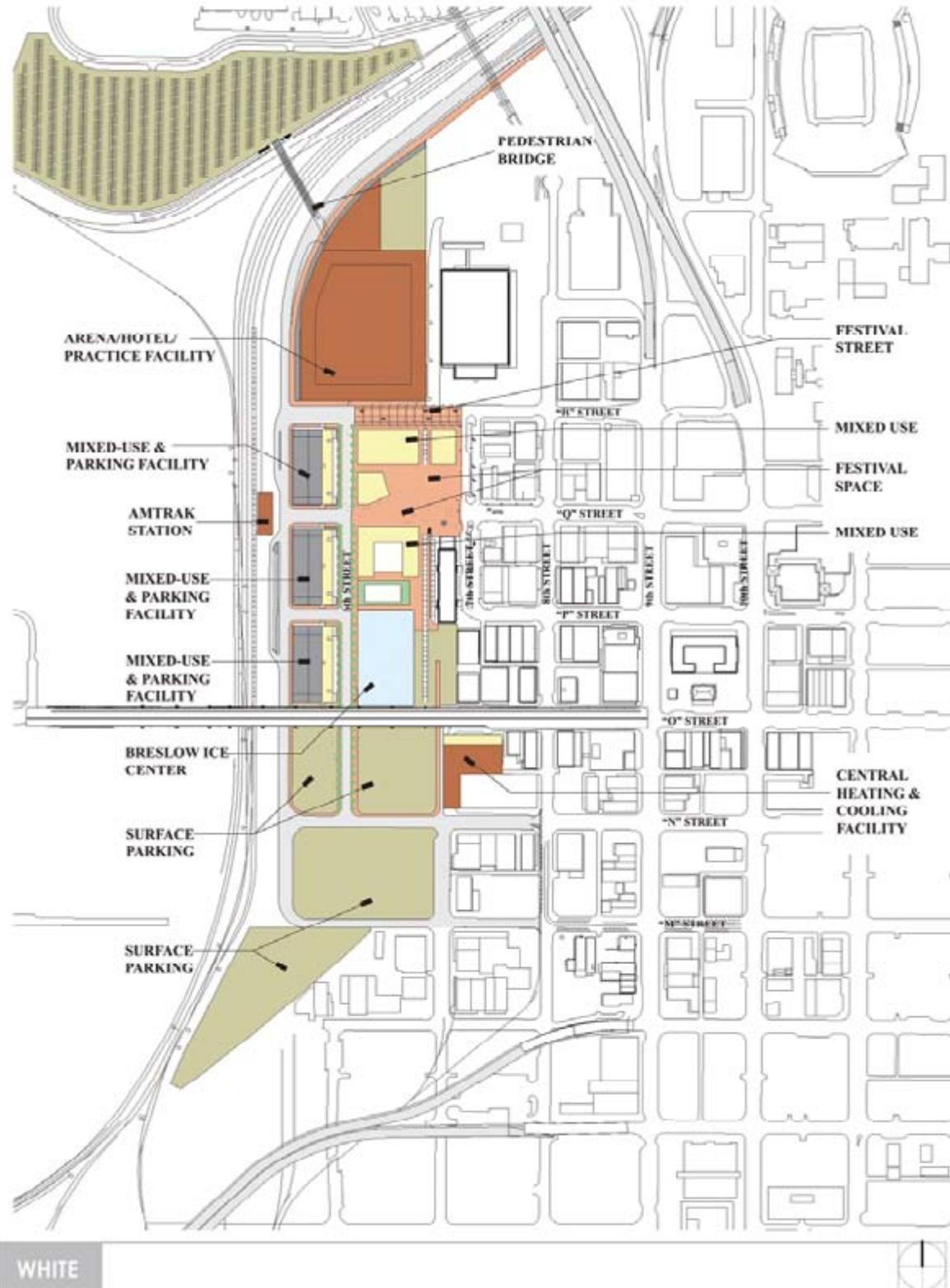
This layout also shifts the 'Festival Space' closer to the existing Burlington Depot, so that its functional interaction is related more to the depot and 7th & 'Q', than to the Arena façade on 'R' Street.

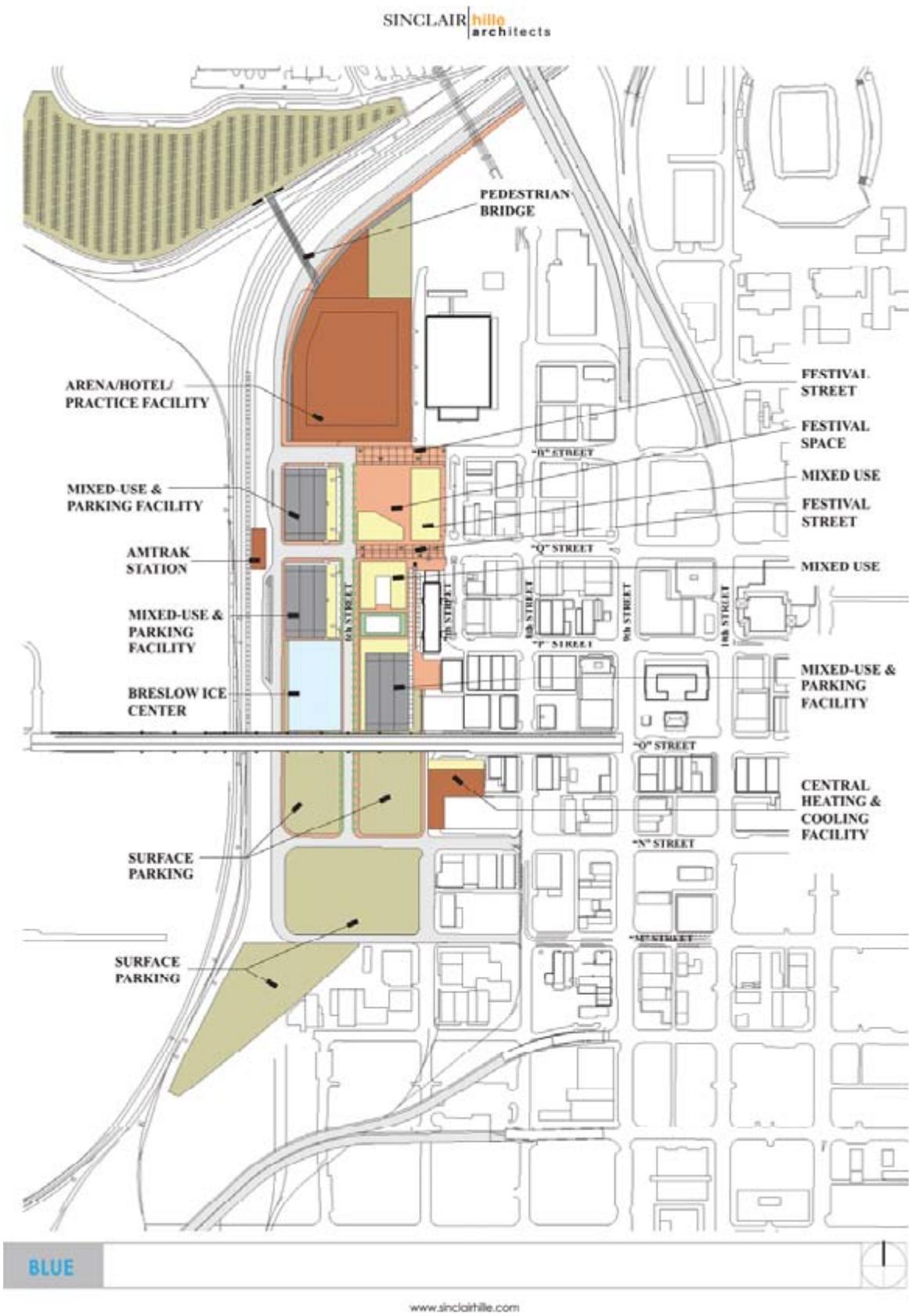
The second notable difference from the 'Red' option is the westward extension of both 'M' and 'N' Streets to Arena Road, with 'N' envisioned as one-way west and 'M' as one-way east.

## The Blue Option

The traffic network of the 'Blue' layout (see page 63) is quite similar to 'White' except that it expands the notion of incorporating the 'Festival Street' concept to include not only 'R' but also 'Q'. Another significant difference is in the location of the major 'Festival Space' which becomes an extension of Festival 'R' Street with newly constructed buildings wrapping it on all four sides.

The 'Blue' scheme also proposes shifting the Breslow Ice Center to the west so that it has a closer proximity to the 'Arena Drive'. This shift in location also results in one of the Mixed-Use / Parking footprints being located directly south of Lincoln Station.







# Yellow Site Layout

When he attended Mayor's Institute on City Design (MICD) in Charleston, South Carolina in 2007, Mayor Chris Beutler presented to the other mayors and resource staff in attendance the basic concept behind the West Haymarket development. The MICD was so taken by Mayor Beutler presentation of the project's vision that the Institute's staff asked if they could follow up with the city of Lincoln to provide additional technical design support.

This contact resulted in the Mayor's Institute bringing a team of urban development experts to Lincoln in August of 2008. As part of the recently created MICD's Alumni Technical Assistance programs, this special resource panel included:

- Ray S. "Rip" Farris, III: Principal of Tuscan Development (Charlotte, NC)
- Charnelle Hicks: Principal of CHPlanning, Ltd. (Philadelphia, PA)
- Paul Okamoto: Principal of Okamoto Saijo Architects (San Francisco, CA)
- Maurice Cox, National Endowment for the Arts, Director of Design (Washington, D.C.)

Over a two and a half day period, the panel visited the West Haymarket redevelopment site, held briefings with local partners in the process, and discussed planning and development opportunities in the city. Once this background work was completed, the MICD resource panel rolled up their sleeves and began drafting recommendations based of the "Red, White, and Blue" planning concepts.

On the final day of the program, the MICD resource panel publicly presented their recommendations for West Haymarket which included:

- Incorporating historic resources and urban grid patterns.
- Utilizing the original passenger railroad platform canopy and letting this linear feature form a central pedestrian and vehicular spine for the development.
- Creating mixed-use blocks that pay credence to the size and scale of those found in the adjacent Haymarket Historic District, realizing that these new blocks should accommodate buildings with greater density and a taller profile to differentiate the old and new.
- Use green building practices whenever possible. This recommendation followed a suggestion to provide a green roof atop the Breslow Ice Center, as pedestrians and vehicular traffic can enjoy the green elements while using the adjacent overpass.
- Utilize median planters and bulb outs as street features, to encourage pedestrian-friendly environments.
- Integrate the city's existing trail system with this new multi-acre development.
- Create a festival space that is flexible, multi-purpose and fits into the city's grid system.

Mayor Beutler and local participants were encouraged by these recommendations and lauded the MICD resource panel for their thoughtful work and concentrated efforts toward the West Haymarket development.

The resulting outcome of the multi-day work session conducted by the Mayor's Institute on City Design has come to be known as the 'Yellow' option.

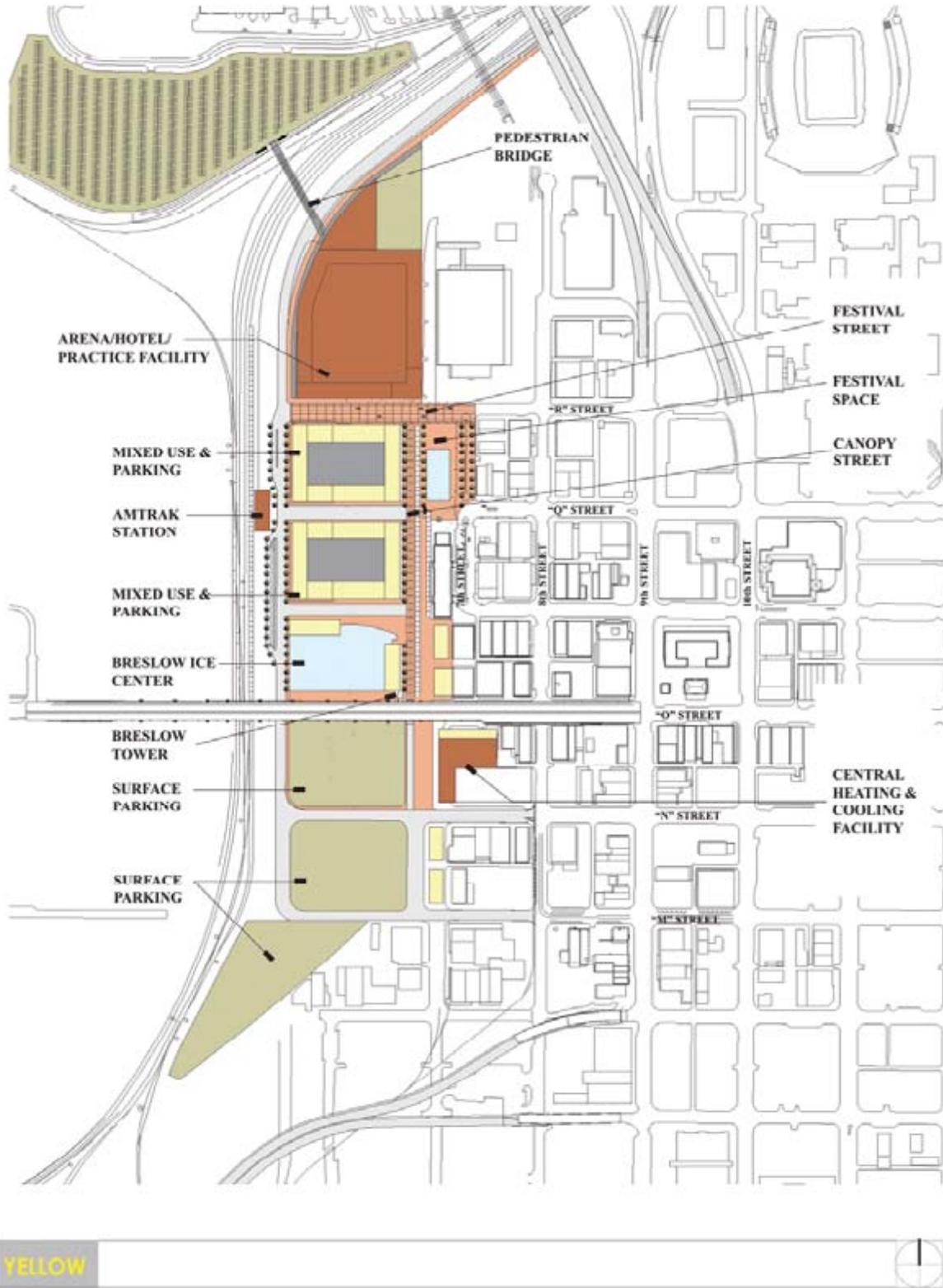


## The Yellow Option

This option (see opposite page) contrasted with the “Red, White, and Blue” options largely by its elimination of the idea of a new 6th Street, which was to be located about halfway between Lincoln Station and Arena Drive. Rather, the Yellow option creates a series of three “super blocks” situated between Arena Road and the rail canopies just west of Lincoln Station. The two northern blocks would be available for private development, while the third block to their south is proposed as the location for the Breslow Ice Center.

The most prominent feature of the MICD design was the introduction of the concept of a new north-south public-way dubbed “Canopy Street.” This new street would be pedestrian friendly while also adding to the area’s overall system of vehicular movement. The salient feature of this street is to be the reintegration of the existing railroad canopy which runs over a thousand feet along the western edge of Lincoln Station. A future festival space was also programmed for the north edge of the site between Canopy Street and 7th Street, from Q to R Streets.







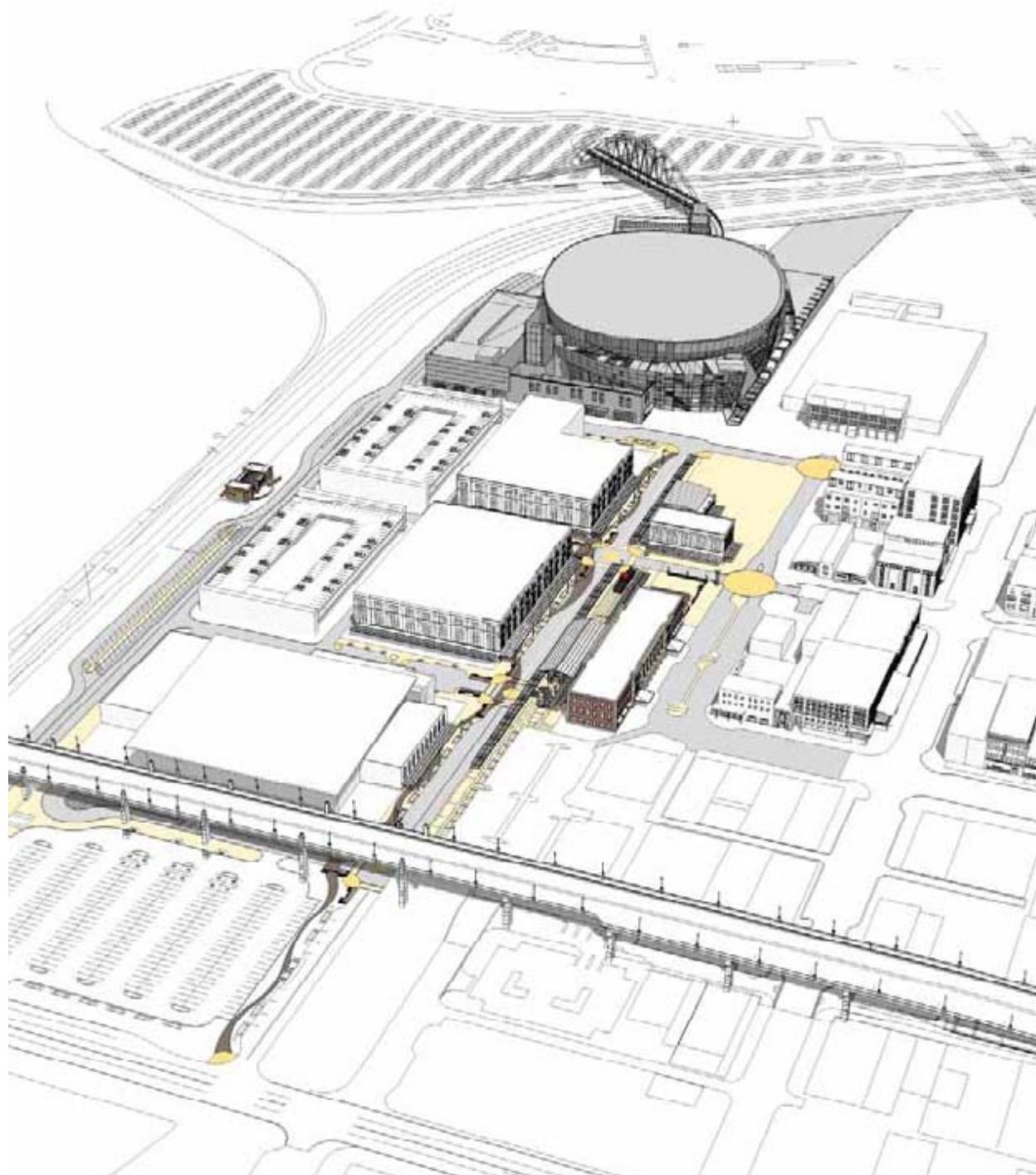


# *West Haymarket*

**SITE 'CORE' DEVELOPMENT**



In progress



*Aerial View of IDP Blueprint*

# IDP Blueprint

The overarching goal of the Integrated Development Plan (IDP) process has been to bring together the community and willing participants to craft a common vision for the redevelopment of West Haymarket. Extending for nearly a year, the IDP Process has been an inclusive endeavor generating a world of imaginative ideas, concepts, thoughts, and images. The process has drawn from a full range of urban designers, engineers, architectures, planners, developers, and most importantly the citizens of Lincoln. Opportunities for involvement have been regular and numerous for all those choosing to willingly take part in the process.

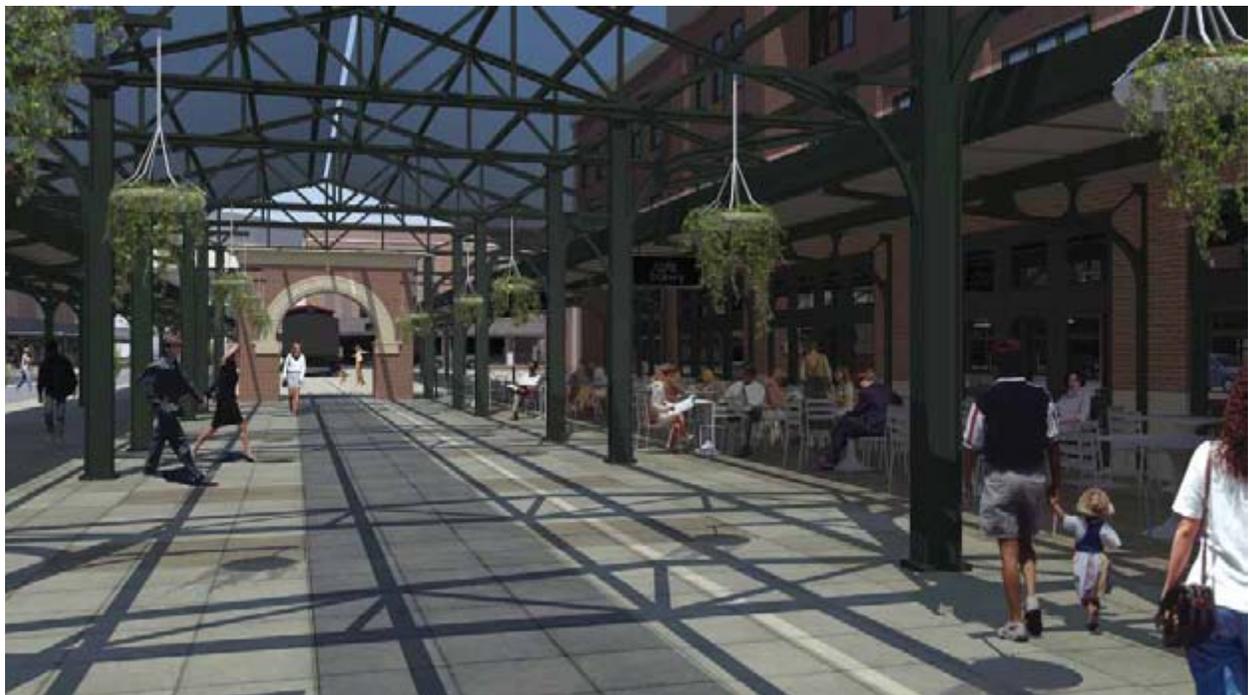
The resulting "IDP Blueprint" creatively blends together diverse elements offered by the various participants in the process. It culminates the work of so many selfless people and groups who electively invested their time and efforts to help the process move forward. It is a compliment to those who approached the task in a positive and uncomplaining manner. The IDP Blueprint is a further refinement which brings the IDP process to a logical and meaningful conclusion

Having said this, the IDP Blueprint ought NOT be assumed to be THE final design for the West Haymarket. The ultimate redevelopment of the site is an extremely complex undertaking. It is interwoven with forces which remain in flux and often offer completing outcomes. Refinements to the IDP Blueprint will continue to be made as additional development and financing decisions are made and new information becomes available.

The "IDP Blueprint" joins together the development of a host of public and private uses, including a civic arena, a community ice center, retail, lodging, office, residential, and parking. The development footprint with the "IDP Blueprint" is constructed around a system of roadway, utility, and environmental enhancements. The balance of this section examines selected aspects of the IDP Blueprint.



*Aerial View of Canopy Street looking North*



*Pavilion adjacent to Lincoln Station*

# 'Canopy Street' as Benchmark for Pedestrian & Streetscape Amenities

## Summary

With the acceptance of the "Yellow Option" (developed by the MICD resource panel), the Unified Design Team set about the task of refining the general street layout design to allow for its interface with various building elements that were in-progress, e.g., the Amtrak Station, the Breslow Ice Center, the Community Space, the Arena, and the other private development parcels that had been identified in planning that option. This refinement has come to be known as the "Canopy Street" scheme.

## 'Pedestrian & Retail' Friendly

In addition to building upon the historical and visual strength of the railroad canopies, the main goal of Canopy Street is to provide a pedestrian and retail friendly environment that is currently unequaled in Lincoln. Several key elements have been incorporated as the foundation for achieving this objective and they can be described as follows:

- **Street Parking Layout.** To allow pedestrians to move in an unthreatened manner beneath and adjacent to the two railroad canopies, curbside parking does not occur on the east (Historic Haymarket) side of Canopy Street and the number of lanes provided for vehicular traffic has been limited to two. This will provide an atmosphere akin to an outdoor pedestrian mall. Yet, it is also important for new retail shops in West Haymarket to exist in a 'shopping friendly' condition on the west side of Canopy Street, so diagonal 'short term' parking stalls have been provided for the convenience of those who might be on a 'destination' minded shopping experience.
- **Scale (vertical & horizontal).** The width to the height relationship of the street right-of-way to adjacent buildings in West Haymarket will

prove critical in establishing a pedestrian feeling that is both 'urban' and congenial. Various studies of successful urban spaces have found that a ratio of 1 to 3 in terms of building height to right-of-way width results in the most appropriate and user-friendly scale.

- **'Extended' Period of Outdoor Use.** Since the idea for a new 'Canopy Street' is the thematic 'heart' of the site organization, several dynamic opportunities present themselves as a means of embellishing the visual & functional possibilities within this new street atmosphere. The existing rail canopies are in need of a 'cosmetic update' (new roofing, new exterior lighting, and painting of exposed structural steel framing members) and because of the pedestrian emphasis of this new street, there is a strong desire to expand the year-round use of the canopies in terms of accommodating both public and private outdoor activities. To realize this goal, a new outdoor pavilion is proposed which links the two exterior canopies together, while at the same time providing new opportunities for programmatic connectivity with the interior spaces of Lincoln Station. Outdoor dining, retailing, music events, public ceremonies are but a few of the possibilities that can occur within the shelter of this new pavilion.

# Streetscape Development

## Summary and Purpose:

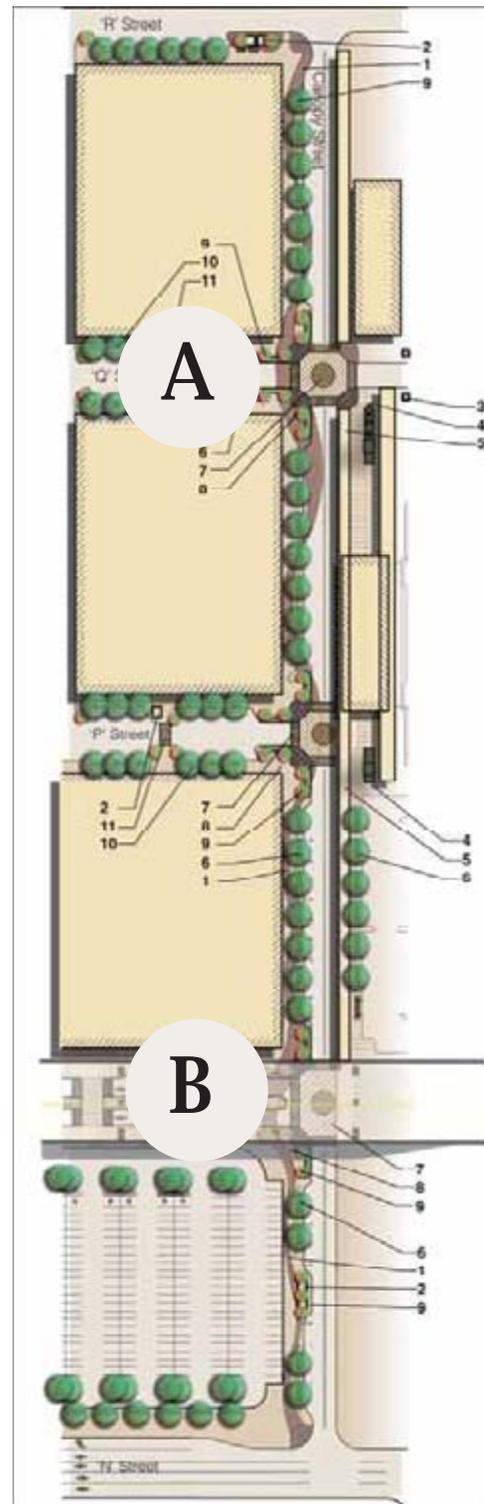
For the West Haymarket to establish a community-friendly environment, it is important to coordinate site features which make up the streetscape. The streetscape design will raise the aesthetic benchmark for downtown Lincoln and the Haymarket to a level befitting its location as a new gathering place and destination in Lincoln.

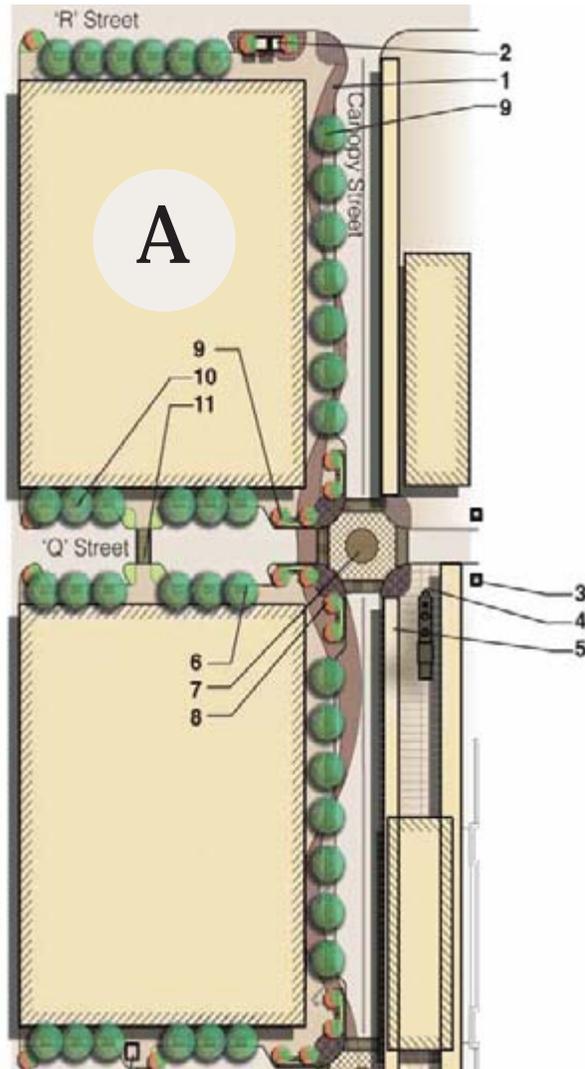
The unifying theme for the development is meant to reinforce and reestablish the aspects of railway history as the foundation for Lincoln's growth. This theme works well with the educational mission of the City and the historical influences within the existing Haymarket. The streetscape has a hierarchy that focuses on both the existing railroad canopies, and "stitching" the new development into the existing fabric of the Haymarket. Successful completion of the streetscape will establish a strong sense of place and create a firm sense of community ownership in the new development.

## Major Streetscape Features

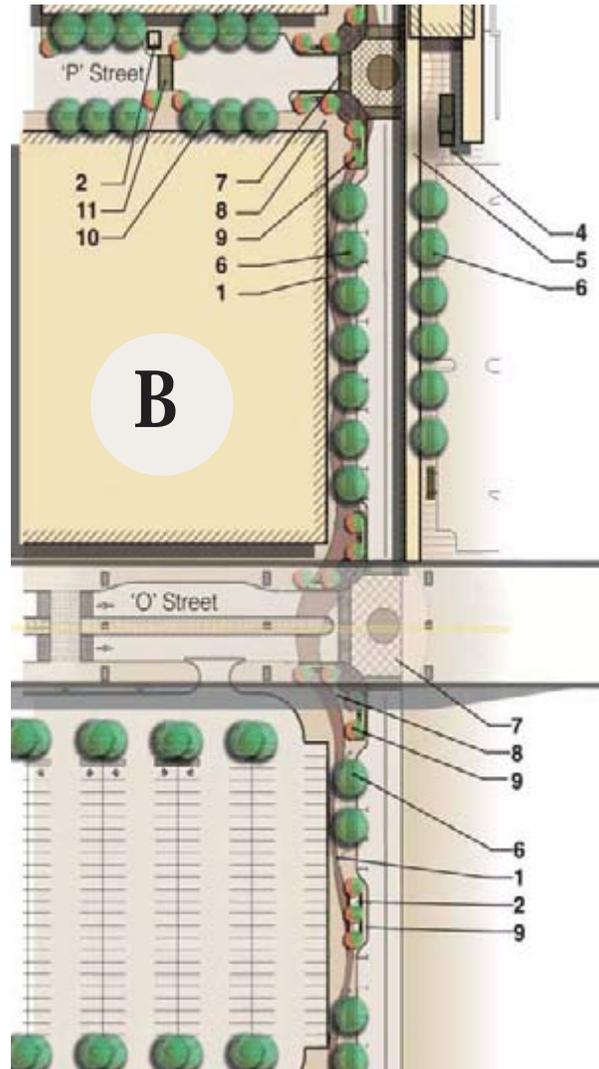
Human Comfort, Urban Experience, Respect for History, Environmental Stewardship, and Community Ownership must be strongly reinforced by the elements that make up the streetscape. Several major features have been established to play a fundamental role in the development's success. These features will provide continuity and assist in establishing a solid community theme.

*Overall Streetscape Site Plan*





Streetscape Site Plan - Area A

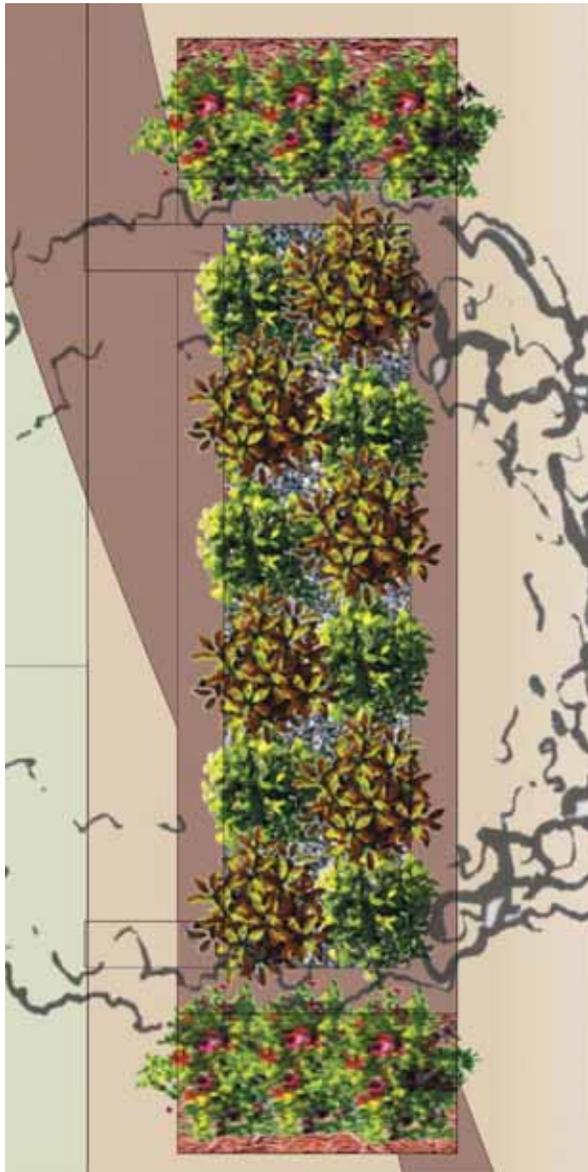


Streetscape Site Plan - Area B

1. Decorative Serpentine Paving Pattern
2. Transit Shelter
3. Welcome Towers
4. Embedded Railroad Tracks with Rail History Timeline
5. Planting Urns with Annuals
6. Urban Green Street Infiltration Basins
7. Intersection Crosswalk & Decorative Paving Scheme
8. Intersection Seating Plaza
9. Ornamental Trees within 5'x8' Grate
10. Large Shade Tree within 5'x8' Grate
11. Mid-block Crosswalk with Bump-outs

## Pedestrian Corridor

This zone is defined as the area between the streetside face of all buildings and the vehicular parking area. It consists of many elements, all of which play a fundamental role in the success of the West Haymarket. Key elements within this area include a variety of paving schemes, seating areas, site furnishings, infiltration basins, planting zones, sidewalk cafés, and public art. See illustration on following page.



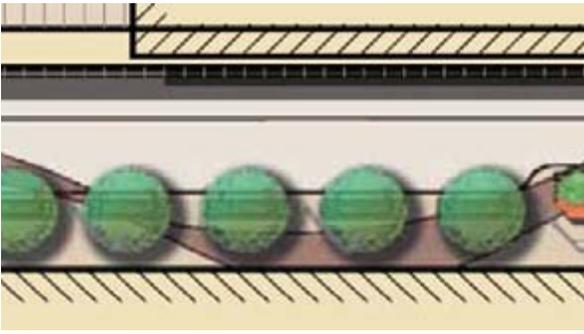
Urban Infiltration Basin



Proposed Infiltration Basin Plantings

## Urban Green Street Infiltration Basins with Plantings

To reduce the amount of water flowing into the storm sewer system, Urban Green Street Infiltration Basins are proposed to route the storm water directly into the ground. These basins are positioned between the pedestrian zones and the parking areas. The basin's soil surfaces are placed 6 inches below the sidewalk and street grades. Each basin is planted with native plantings and a large shade tree, all of which can flourish for a period of time in saturated soils. The depressions are surrounded by a 6-inch high concrete curb.



*Sample Paving Plan*



*Paving Example*

## Sidewalk Paving

The uses and organization of elements on the ground plane itself become an important aspect in completing the special definition and sense of place as well as the aesthetic content. Paving must act as a supporting element and not as a focal feature. The design pulls users through the development, allowing them to travel throughout the streetscape at ease. The proposed paving layout includes two colors that make up the pedestrian corridor and expand into the vehicular roadway. A strong serpentine pattern runs north to south along Canopy Street. This pattern carefully allows for comfortable travel along the West side of Canopy street and provides a welcoming point into the streets perpendicular to Canopy Street. The two colors of the sidewalk and street create a soft and comfortable contrast that establishes a ornate streetscape surface.



Intersection Plan

## Crosswalk and Intersection Paving

The crosswalks should be an extension of the sidewalk and reinforce the safety and dominance of this “pedestrian friendly” development. The crosswalks must be easily identified by drivers and pedestrians alike and should start in the pedestrian corridor area where a slight change in color and texture inform pedestrians of the crossing. In the street, each crosswalk will be outlined by a dark band of stamped concrete with a body color that is complementary to the pedestrian streetscape color.

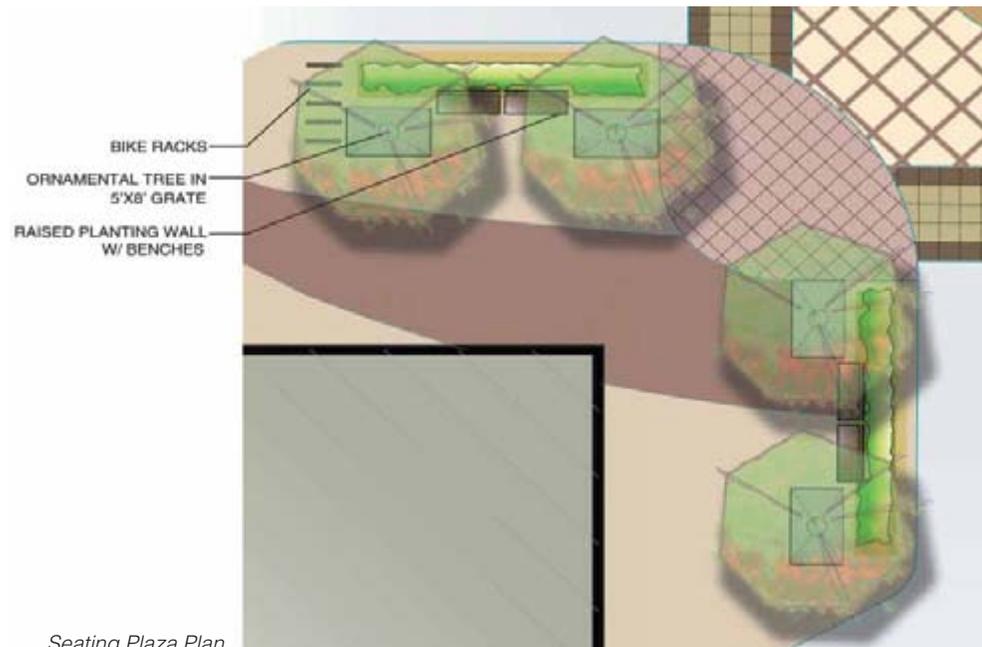
The roadway intersection patterns will signal a yield to drivers as well as caution pedestrians. The intersections also function as surface focal features for the development and provide reinforcement for the streetscape aesthetics.



Looking South on Canopy Street

## Intersection Seating Plazas

A core element at each intersection is the seating plaza that faces the building facades. Each seating plaza consists of a 24-inch cast-in-place concrete wall that separates the vehicular travel way from the pedestrian zone. A 5-foot wide raised planting bed softens the pedestrian side of the bed and adds color to each intersection. Two benches are placed in the center of each of the raised planters to create a seating plaza. The raised planter will be enhanced by two tree grates, each containing an ornamental tree, bringing color and overstory to the plazas.



Seating Plaza Plan

## Site Furnishings and Lighting

Site furnishings and lighting throughout must be uniform and fit within the context of the development's streetscape. All site furnishings directly affect the comfort and enjoyment of the exterior spaces and act as objects that aid to rest, converse, and observe, either singly or collectively. Seating and site furnishings help create a space separate from the pedestrian traffic areas. Site furnishings throughout the development include benches, recycle and trash receptacles, planting urns, and bike racks. Street lighting throughout the development will consist of similar forms that are found on the building canopies, train canopies and street signs.



*Trash receptacle examples*



*Site seating example*



*Street signage example*

## Street Signage

All street signage will comply with the Manual on Uniform Traffic Control Devices (MUTCD) standards. Street sign post design will reflect the character of the district and complement the aesthetics of the streetscape. Post form and design must indicate both street names and any traffic laws.

## Streetscape Plantings

The landscape must provide year round aesthetics as well as a community/Nebraska feel. The plant materials provide aesthetic, form, color, and texture to the development's streetscape. Native and sustainable plant material will be used through out the development.

## Parking Hubs

Pay and Display machines - or multi-space meters - are a subset of ticket machines used for regulating parking in urban areas or in car parks. Customers purchase a ticket from a machine and display the ticket on the dashboard, windscreen, or passenger window of the vehicle. Details included on a printed ticket are generally the location and operator of the machine, expiry time, fee paid and time entered.

Solar-powered Pay and Display Hubs are an efficient way to operate the machines. Direct sunlight is not needed - the meter relies only on ambient light to recharge the internal sealed lead acid (SLA) battery that powers the hub.

Multi-space meters give customers more ways to pay. Multi-space meters can accept coins, bills, credit and debit cards, smart cards, and even cell phone payments. When given several payment options, people are more apt to pay parking fees.

*Pay and Display Hub  
photo by Brian Stokle on Flickr*





*Civic Arena conceptual design*



*Conceptual interior view of Civic Arena*

# Civic Arena

The focal piece for the West Haymarket redevelopment is a new civic arena for the city of Lincoln. The proposed arena would be located on a nine-and-a-half acre tract of land immediately west of the existing United States Post Office building and north of an extended 'R' Street. The parcel is primarily used today as part of a railyard for the BNSF Railroad.

The 400,000-plus square foot facility would have permanent seating for approximately 16,000 patrons. The interior seating bowl will include private suites, loge seating, and other special amenities for all visitors attending functions in the building. The arena will be designed to host a wide variety of sporting events, concerts, family shows, ice programs, and community activities. The main floor is expected to be able to provide up to 32,000 square feet of clear space for arena events and exhibits. A center hung video board with state-of-the-art display panels would enhance the experience for patrons attending any arena event.

A mid-level concourse would provide arena users with a full 360-degree access throughout the main structure. The concourse will have multiple food and beverage options for fans attending events, with food courts, speciality restaurants, and merchandise kiosks conveniently located around the building. Special needs accommodations would be fully integrated into the building to ensure a unqualified experience for every arena-goer. A contemporary curtaining system would be installed to allow for an intimate environment to be created

for a vast variety of events. Such curtaining systems help offer each arena-goer with a more personalized experience regardless of the crowd's size.

Patron parking for the new civic arena will be accommodated by a combination of existing and to-be-built facilities. An attached parking deck is anticipated to be constructed as part of the overall arena complex. This parking garage will house between four to five hundred cars per event. Additional parking will be furnished in the form of surface lots and parking garages near the arena. A surface lot immediately to the northwest of the arena in Haymarket Park will be accessible over the relocated BNSF main rail lines via a pedestrian bridge. This bridge will bring arena patrons to the main level of the arena bowl and offer direct access into the building and seating area for the convenience of the user.



*Beslow Ice Center conceptual design*

# Breslow Ice Center

The proposed Breslow Ice Center is a joint endeavor between the City of Lincoln, the University of Nebraska-Lincoln, and the University of Nebraska Foundation. The ice center is being made possible through a generous gift by John Breslow, with additional funding coming from the center's partners and other private donations.

The Ice Center will have two full indoor ice sheets with NHL dimensions. The center will be open for public skating, as well as house the University of Nebraska's Men's and Women's Club Hockey Teams and offer recreational skating and organized games for UNL students. Limited seating will be available for spectators.

The West Haymarket site selected for construction of the ice center is just north of the Harris Overpass. This location will provide immediate access to the West Haymarket and traditional Haymarket for ice center participants and fans. Business uses are anticipated to flank a portion of the structure, offering restaurants and possibility other sports related retailing.



*Conceptual exterior views of Amtrak Station*

# Amtrak Station

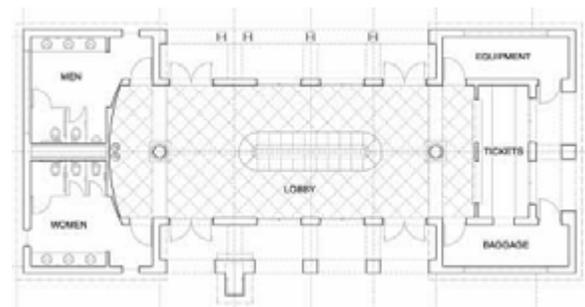
The West Haymarket development project necessitates the construction of a new Amtrak station as the current operating track next to the Lincoln Station will be removed for redevelopment purposes. The new Amtrak facility will be at the west end of an extended Q Street. This 2,500 square foot building will provide for expanded services through growth in ticketing, waiting, and support areas resulting from the current increasing demand for passenger rail services. The proposed design allows for vehicular drop-off at the main entry plaza and covered colonnade on the east side of the new station. Convenient surface parking is also provided to the south of the building just off "Arena Drive".

As visibility to vehicular drop-off, train arrival, and train departure is critical to the riding patrons, the new Amtrak station is organized around a central public lobby with views to the main entry plaza and vehicular drop, as well as the train platform on the west. In addition to providing the necessary weather protected views to the exterior, the public lobby is designed and organized for easy "way-finding" in terms of ticketing and public restrooms.

Although the overall footprint and size of the facility is small in comparison to the grand American rail stations of the past, (e.g. Union Station in Omaha, NE or Washington D.C.), the new station will incorporate a vaulted translucent glass and steel skylight above the main lobby to create the feeling, if not the volume, inherent to the great rails stations of the past. The new skylit roof structure is also meant to recall, by visual reference, the steel entry canopies of Lincoln Station, just to the east on 7th Street.

The primary materials of the facility are envisioned to be durable for the long term, and low maintenance throughout the building's useful life. The exterior will be primarily brick, glass, and exposed steel as a means of being compatible and sensitive to the adjacent Historic Haymarket District and Lincoln Station.

Since a portion of the Lincoln Station historic platform canopy will likely need to be removed due to the planned extension of Q Street to the west, as well as the placement of the new Arena adjacent to R Street, it is proposed that the removed portion be relocated and reused as a functioning "historical reference" component of the new Amtrak facility. This will provide a marvelous educational opportunity that ties the new development back to the history of Lincoln thus allowing a portion of the original canopy to regain its original intended use.



*Conceptual floor plan*



Conceptual view of Community Space from Civic Arena

# Community Space Development

## Summary

West Haymarket is about community. It is a place for people to come together to share experiences and create memories. A central feature of the proposed West Haymarket development is a community space. This space (see map on opposite page) would generally be located on a new block created between 7th Street (to the east), Canopy Street (to the west), R Street (to the north) and Q Street (to the south). This space would be designed to physically and visually connect the traditional Haymarket District (generally located east of 7th Street) and the new West Haymarket District. The proposed design anticipates this site will function not only as a “24-hour/7-day a week” urban community gathering space, but also as the primary outdoor festival location for the citizens of Lincoln and the region. In order to accomplish this goal, the core block has been designed to accommodate incremental expansion through temporary closure of adjacent public rights-of-way during festival operations.

## Previous & Existing Conditions

Numerous and diverse groups of people have traversed this site since the 1870's when the Burlington and Missouri River Railroad established access to Lincoln at this general location. The site has always accommodated and sustained the coming and going of people in Lincoln's Haymarket District.

Currently, the site is used to accommodate a public parking lot. The site is divided by a wall and a change in elevation, but neither poses a detrimental effect to a proposed reuse of the site. An historic free-standing railroad platform canopy extends along the entire western edge of the site. The basic canopy structure appears to be in good condition and could be renovated and reused in its current location as an urban design asset in any proposed redevelopment.

A view corridor to the Nebraska State Capitol building tower exists on the site from northwest to southeast. The view to the Capitol is framed by the Holiday Inn Hotel and the Fur & Hide Building. The view corridor extends across the length

of the site, but is accentuated at the northwest corner, near the north end of the historic canopy structure.

## Proposed Site Function & Use

A primary goal of the proposed West Haymarket Community Space design is to allow the site to function as both a “24-hour/7-day a week” community open space for Traditional Haymarket and the proposed West Haymarket, as well as a primary outdoor community festival space for all of Lincoln and the region. See map on page 91.

In order to accomplish this goal the site must be designed at a comfortable, pedestrian scale but also flexible enough to accommodate 10,000 persons for celebratory city-wide community events. The core block is therefore designed as a public open space for day-to-day use. The temporary closure of adjacent public rights-of-way during festival events can incrementally extend the core block size to accommodate large crowds. Following are key design components for this area:

### Regarding Daily Use:

- The core block must function as a lively pedestrian space for all age groups on a daily basis.
- The core block must be designed to be an aesthetically pleasing urban space that includes a mix of pavement and landscape, and other amenities such as water, shade, seating, etc.
- The area must be designed to reflect the uniqueness of Lincoln as a place.
- The area must be designed to represent and reflect core community values that exist in Lincoln.
- The core block must be designed to accommodate flexible programming and uses for the present and the future.
- The core block must be designed to accommodate the incremental approach and release of between 5,000 and 10,000 persons for typical Arena events.
- The area must be designed to be a "four season" space- reflecting the seasons, but also usable in all seasons.
- The core block must be designed to engage and "stitch" the existing, historic Haymarket District to the new West Haymarket District.
- The core block must be designed to integrate public art into the development of the space.

### Regarding Community Festival Events:

- The space must be designed with the capacity to assemble between 150,000 square feet and 200,000 square feet of contiguous open space in order to accommodate temporary facilities (tents, performance area(s), storage, tables, restrooms, vendor vehicle parking, etc.) for event staging. The total event space can be assembled incrementally, including adjacent public rights-of-way.
- The festival event space must be designed to provide enough pedestrian oriented area to accommodate 10,000 persons within a controlled boundary (for admission control purposes).

- Possible festival event utilities required in the area will include the following:

#### Electrical

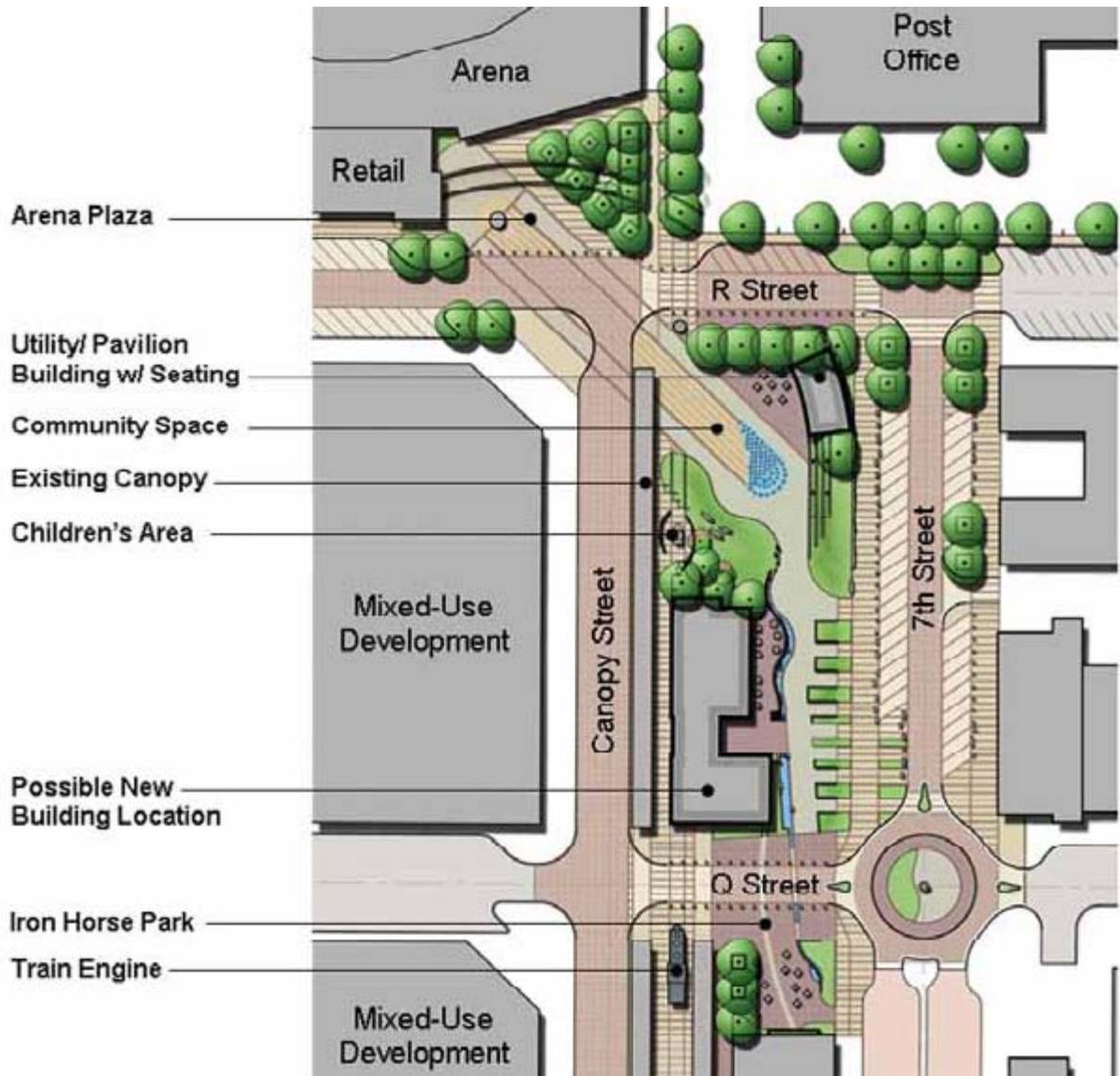
- 3 phase power, 400/600 amp supplied from the Arena south front entrance to serve possible main outdoor performance stage location.
- Two 400 amp services for use by festival event vendors.
- 100 amp service supplied from a proposed mechanical/pavilion building located on the core block for festival event tents and area lighting.
- 110 volt power supplied from historic canopies for festival event tents and lighting.
- Several 60 amp pedestals located along Arena Drive and R Street for power to festival event storage and supply trucks.
- 300 amp service supplied from a location near the proposed ice center or depot for use by festival event vendors.
- Data and phone connections for use by vendors to process credit card purchases.
- Electrical service to provide power for support of festival event area sound system (daily and special event use).

#### Mechanical

- Provide a location for a triple sink in a proposed mechanical/pavilion building located on the core block.
- Potable water connections located throughout the festival event area.
- Storm sewer connections.
- Gray water/ sanitary sewer direct connections for festival event vendor use.

#### Miscellaneous

- Temporary fencing for compliance with existing city and state alcohol ordinances as well as admission control. Proposed area light poles and other permanent site features can be utilized for fence supports (in addition to temporary fence supports).



Community Space conceptual layout



Haymarket Details



*"Watchful Citizen" sculpture by Elizabeth Stanley Wallace located in the Historic Haymarket District*

# Civic Art

The Future Design Framework chapter of the Integrated Development Plan places great importance on the premise of integrating “civic art” into the entire West Haymarket Development as a means of achieving broad community “ownership” in the project as a whole.

To accomplish this goal, there are several activities and tasks which are inherent to achieving a successful civic art component for the development.

- Implement a “Community Engagement” process which informs and educates the citizenry as to the importance of civic art to the success of the West Haymarket development.
- Design a Civic Art Masterplan framework to assure that initial art components create a solid foundation for both the ongoing process & the future execution for civic art in the West Haymarket district.
- Engage the community in a process whereby opportunities for “patron sponsorships” of the various art components in the district are actively promoted and enthusiastically secured.
- Develop a broad based endeavor to engage both local and regional artists in the design & execution significant art components in the district.

Another significant goal, which has been advanced by Mayor Beutler, is to promote the entire West Haymarket development as an opportunity for reflection and celebration by Lincoln’s citizens on the core values which have contributed to Lincoln’s history and its vision for its future. The possibilities for civic art to be one of the teaching “mediums” for this effort is almost limitless.



*“On the Trail of Discovery: Commemorating the Journey of Lewis & Clark, 1804-1806” by George Lundeen located outside the Center for Great Plains Study*



*“No Turning Back” sculpture by Veryl Goodnight outside of the Center for Great Plains Study*





# *West Haymarket*

**SITE** INFRASTRUCTURE



In progress



# Railroads

## Preliminary Investigations

Railroad operations in the core West Haymarket project site is generally referred to as the “BNSF Lincoln Yard.” The Yard is currently occupied by the operations of three railroad companies, the BNSF Railway Company, the Union Pacific Railroad, and the National Railroad Passenger Corporation (Amtrak). The heavy use of rail facilities is attributed to BNSF, as this is a major operating corridor for that railroad. Union Pacific has occasional daily traffic at this site, and Amtrak has two daily passenger trains that come into Lincoln via this route.

Early conversations with the various railroad interests indicated they welcome potential West Haymarket redevelopment but had basic principles needing to be met:

- No interruption of daily railroad operations, before, during, or after construction
- Smooth and unimpeded travel through the project area
- Safe travel of all railroad vehicles and at efficient speeds
- Maintain historical joint facility operations with each railroad
- Funding for all new, relocated, and removed track
- Fair market value for the sale of any railroad property

For the proposed West Haymarket redevelopment to take place, certain existing BNSF, UPRR and Amtrak railroad facilities would need to be relocate on the site. The process of designing a railroad facilities relocation plan

began with detailed topographic surveys of the project area. This included surveys to determine critical elevations and locations of all facilities, including existing structures, utilities, and drainage features. An inventory of existing track was performed, including ties, rails, buildings, switch gear, communication facilities, and other operating equipment.

Another preliminary investigation was accomplished to aid the relocation of rail facilities. Preliminary geotechnical studies were completed for the purpose of determining the suitability of existing subsurface materials for track subgrade support. A series of shallow test borings were made along proposed relocated track. At the same time, deep borings to bedrock were performed to aid in the evaluation of foundations for multi-story buildings.

Limited environmental studies were also conducted on the project site. There are several known areas of contamination which must be considered in the development of this property. Given the industrial nature of this ground and its use as railroad operations for more than a century, there may be other contaminants yet to discover.



## Preliminary Design

The preliminary track design function included development of operating concepts that would meet the above stated railroad principles. This phase of work is defined as a “30 percent design solution”. Sufficient work was completed to determine basic operating feasibility and preliminary cost estimates.

Various operating concepts for track and facility relocation were prepared, during the summer and fall of 2008, for review by the three railroads and the City of Lincoln. These layouts provided the basis for additional discussions that led to the final determination of feasibility by all interested parties. The figure on the opposite page shows the approved railroad layout, in conjunction with the proposed new building development.

The basic components of the new railroad facilities are:

1. The construction of a new Wye Track to the northwest area of the Lincoln Yard that will accommodate BNSF and UP traffic in all directions, in and out of the Yard. This will allow the construction of a new West Haymarket parking lot to the north of the shifted main lines of the railroad.
2. The rehabilitation of a currently abandoned UP bridge that crosses over Salt Creek to the northwest. This would allow for the removal or abandonment of the currently active BNSF bridge in the same vicinity.
3. Removal of several linear miles of existing main line and storage track in the eastern part of the Yard to accommodate development of the new civic arena, hotels, shops, and ice center.

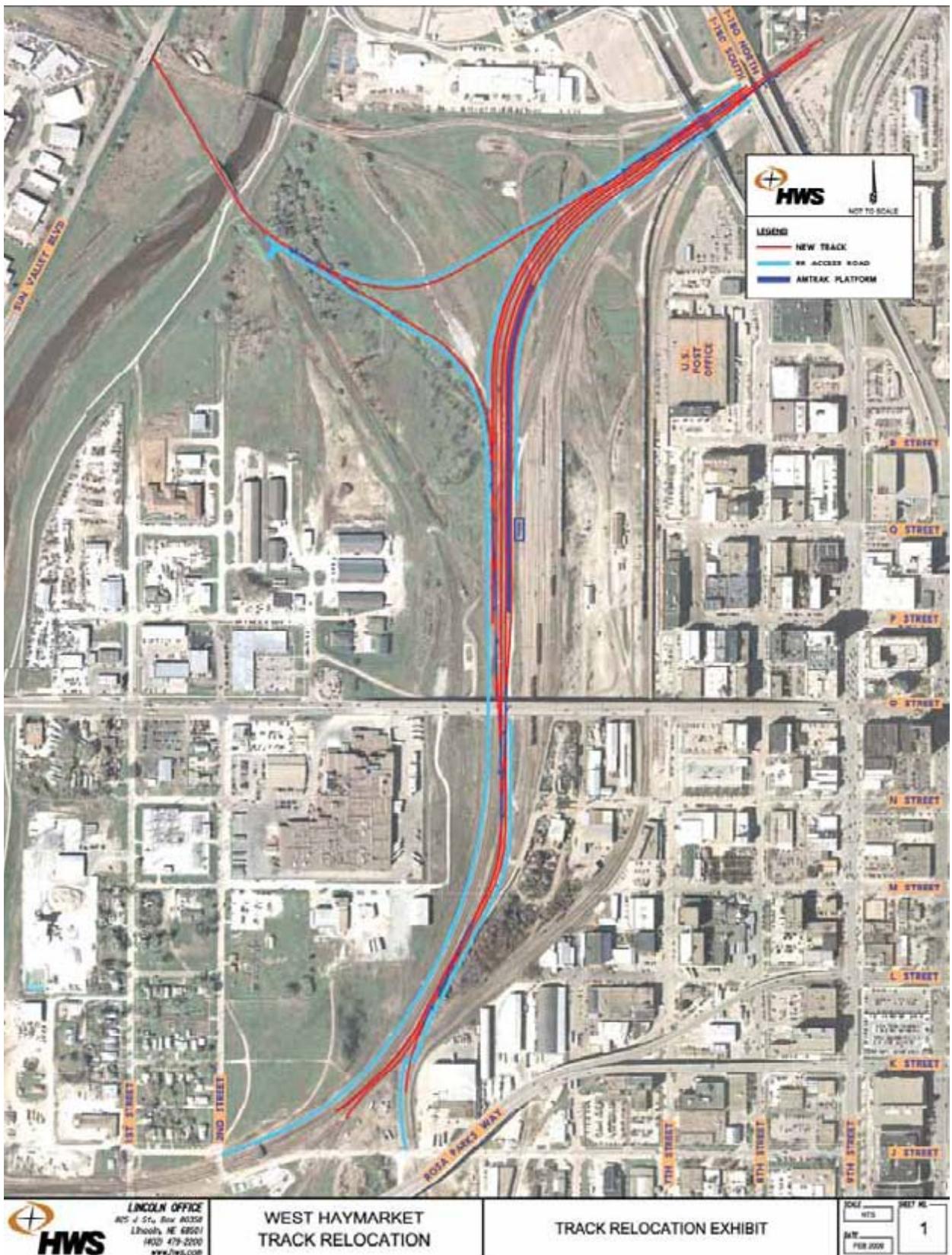
4. Construction of a new Amtrak passenger facility on the west end of the new development at what would be approximately 6th & Q Streets.

5. Relocation of maintenance buildings, communication facilities, utilities, and signal systems from the Yard to other locations either in the new alignment or outside of the project area.

6. Installation of new track on the UP line to the northwest of the bridge spanning Salt Creek. This will allow both BNSF and UP to share track facilities in the area.

7. Security fencing and other safety measures at all locations to prevent citizen vehicles and pedestrian traffic from accessing railroad property.

A Phasing Plan showing construction sequencing and area details is available at the City/County Planning Department. The BNSF Railroad estimates that approximately 18 to 24 months of construction activity will be required to completely relocate all of their facilities.





# Comprehensive Traffic Management

## Summary

This section of the Integrated Development Plan examines the management of vehicular traffic for the West Haymarket District. The section addresses how traffic needs for the District will be handled within the following subsections:

- West Haymarket Arena Events Traffic Study
- Area-Wide Traffic Management Concept

## Arena Events Traffic Study

This section summarizes the results of the “West Haymarket Arena Events Study” for the Integrated Development Plan. The Study examined the traffic impact of the proposed civic arena, as well as the redevelopment plans for adjacent blocks near the Traditional Haymarket District.

The primary objective of this Study was to examine traffic operations during the hour prior to and the hour following a “design event” at the arena. This analysis provides a basis for determining the network improvements necessary to handle the “design event” traffic. In addition to the “design event,” “capacity event” and future-year analyses are also documented in this Study. All analysis scenarios consider additional trips being made due to adjacent land-uses.

A framework for the study was established through a combination of recent data collection and historic traffic information provided by the City of Lincoln and Nebraska Department of Roads (NDOR). Once the base network characteristics were established, development scenarios were evaluated.

Several assumptions were made to determine the expected number of arena-generated trips.

Based on 80 percent attendance for the “design event,” expected vehicle occupancy, and pre-event and post-event hour entry and exit rates, 4,608 arena trips are expected to enter and exit the study area during the time periods evaluated. It was assumed all these trips were by personal vehicles – a very conservative assumption so as to provide realistic modeling output.

The civic arena is not the only land-use expected to generate trips to the new West Haymarket area. Off-peak hour trips associated with retail, office, residential, and ice rink land-uses were also included in the analysis.

The trip distribution for this study is based primarily on a 2005 study of the Harris Overpass. Also considered were the locations and size of potential parking facilities as determined from the most recent site layout concepts and ongoing discussions with the design team. The internal distribution assumes that Q Street and R Street will be closed between the Haymarket and West Haymarket during pre-event and post-event hours. It should be noted that the traffic volume scenarios resulting from the distribution rely heavily on a well-implemented plan of communicating with drivers through pre-event parking instructions, dynamic message signs, event staff parking control, and driver obedience.

To identify street network deficiencies, intersections were evaluated using combined future-year 2013 volumes and expected new West Haymarket trips. Generally speaking, most movements (or at least overall intersections) in the study area are expected to operate acceptably during the two analysis periods. It is worth noting again that these volumes correspond to an event, and are not daily occurrences. Drivers should anticipate and expect a certain amount of vehicular delay when attending an arena event. Also, a driver's perception of delay will allow them to make their own decisions concerning routes to and from the area. It is expected as delays increase at certain locations, and/or a driver gains experience attending events, they will alter their travel patterns in an attempt to reduce overall delay.

Most of the downtown intersections along the 9th and 10th Street corridors have the ability to handle expected volumes from a capacity analysis standpoint. This assumes the removal of on-street parking during analysis time periods. Queues are expected to form much like they do during the current (2008) PM peak hour. Traffic is often backed up for more than a block, causing traffic to stand still even when receiving a green signal indication.

Handling turning volumes (particularly left-turns) at 9th / 10th Street & O Street are key components to an acceptably performing downtown network. Turning vehicles on O Street must be cleared out during each cycle to avoid blocking the through lanes. Whenever possible, drivers should be directed to parking facilities that do not require left-turn movements at these two intersections.

Turn bays at 1st Street & Cornhusker Highway, 1st Street & Charleston Street, Sun Valley Boulevard & Line Drive, and Sun Valley Boulevard & West O Street will need to be lengthened. These intersections all fall in the vicinity of Haymarket Park. It should be noted the "design event"

analysis does not consider traffic volumes that may be associated with a game(s) at Haymarket Park.

Also, exact locations of access points to parking facilities and the methodologies of filling these facilities have not yet been determined; the Study is based on design assumptions. The current site plan yields high parking demands south of the arena. The most efficient methods possible must be utilized when directing users to enter and exit the parking garages.

Event management staff and/or traffic control officers will be required to be present at various locations during the entry and exiting hours of an event. These staff people will be needed to enforce restrictions, provide directions, and help to maximize utilization of the available facilities (both parking and streets). Specific locations likely include (but are not limited to):

- North entry roundabouts
- South entry at N Street
- R Street and Q Street closures
- Pedestrian crossing at 9th / 10th Streets
- Charleston Street & Sun Valley Boulevard
- Line Drive & Sun Valley Boulevard
- Arena Drive lane utilization
- Parking facilities

This study did not evaluate the full extent of the manpower needed and what entities would be responsible for providing traffic control services.

In addition to the "design event" analysis, a "capacity event" was also considered. The first variable to be identified for this scenario is finding available parking stalls for the increased demand. The demand for parking east of the railroad tracks in the immediate vicinity of the West Haymarket is expected to be full during a "design event." Additional downtown and Haymarket stalls would likely be utilized as available. However, for this scenario, all vehicles assumed

for the “design event” were routed exactly as previously assigned and all additional trips stemming from a “capacity event” were routed to Haymarket Park. This would result in a demand for additional parking not identified in the “design event” analysis. Arena patrons should expect to park greater distances from the arena, thus increasing their “walk time.”

A capacity event does present additional traffic challenges that must be addressed. The West Haymarket traffic study addresses these in more detail, but a list of potential management action items is provided below:

- Train / educate drivers from the south to use the West Bypass
- Assume greater utilization of parking east of 10th Street
- Promote carpooling
- Provide shuttles from remote locations (as is done for UNL football games)
- Promote arrivals more than one hour prior to the event
- Route more I-80 traffic to the Airport exit

In summary, a capacity event will force attendees to experience greater amounts of delay and congestion. It is not expected that every event will experience a sell-out crowd, but planners should be aware of the potential implications and public perception.

Since the proposed arena will be utilized for many years, a future-year (2030) scenario was also evaluated to determine additional impacts. Background traffic volumes were increased, and again were combined with expected West Haymarket trips. Only one major network improvement was identified based on this scenario; the inclusion of a West ‘O’ Street/Sun Valley Boulevard to Rosa Parks Way connection (this is currently in the City’s Long-Range Transportation Plan). Although no other improvements were noted, all intersections are expected to operate

with increased delay due to the higher traffic volumes. As is the case for the 2013 analysis year, most movement volumes are expected to be higher during the PM peak hour than the pre-event hour. To manage the 2030-plus event volumes, the event management plan will need to be updated on a continual basis. One location worth noting will be the anticipated need to restrict certain movements through the “North Entry” roundabouts during the 2030 pre-event hour. In order to maintain flow, some movements may need to be restricted by event staff. However, it should be noted that all movements are expected to operate acceptably during the daily peak hours.

Based on the results of the study, it is anticipated network modifications can be implemented to accommodate expected traffic volumes associated with the “design event.”

## Area-Wide Traffic Management Concept

The concept for managing vehicular traffic accessing and departing the West Haymarket utilized a “Traffic Intercept Approach.” Under this concept, drivers are “intercepted” as they approach West Haymarket and are then guided to specific parking sites encircling the District. This management concept minimizes the traffic impact on the Traditional Haymarket District as it spread out traffic across the street network. This results in a greater use of available and planned street capacity serving the area and minimizes driver delay.

As noted above, a “West Haymarket Traffic Impact Study” was completed as part of the Integrated Development Plan process. This Study identified a number of roadway network improvements necessary to accommodate the proposed development. These recommendations stem

from a capacity and circulation analysis, safety concerns, and a number of site-specific characteristics. A discussion of these improvements is included in the following paragraphs.

### **Sun Valley Boulevard**

One assumed network improvement is the full reconstruction and realignment of Sun Valley Boulevard between West 'O' Street and Cornhusker Highway. This network improvement is currently planned as a Nebraska Department of Roads (NDOR) project. The project is in the preliminary design and environmental documentation phase. The timing for reconstructing Sun Valley Boulevard has been slowed by a downturn in the State's gasoline tax receipts and a growing demand for other system enhancements. It remains, however, on the State's list of ranked projects and is projected to be pursued as soon a funding sources is established.

While the final design plans for Sun Valley Boulevard are yet to be completed, a preferred concept has been developed by NDOR. The preferred concept was utilized in conducting the West Haymarket Traffic Impact Study.

The preferred NDOR concept for the Sun Valley Boulevard project includes a four-lane divided roadway section, with major intersection reconstruction occurring at Cornhusker Highway and West 'O' Street. To accommodate vehicular volumes expected for a major arena event in the West Haymarket, turn lane extensions would be required at the Cornhusker Highway and West 'O' Street intersections as well as intersections providing access to Haymarket Park.

Also affecting potential Sun Valley Boulevard improvements are the access points to Haymarket Park. Currently, only a single access into Haymarket Park is provided off of Sun Valley Boulevard – via Line Drive. The trip generation estimates and distribution indicate a need for a

second access point to provide acceptable service for arena patrons using the Haymarket Park surface lots.

As discussed later in this Section, it is being recommended that a second access be provided via a new "Charleston Street connection." Dual entering southbound left-turn lanes will be required on Sun Valley Boulevard to accommodate this turning movement. The connection should also allow for two exiting lanes. For the proposed access, existing Charleston Street north of Salt Creek is shown to be improved to a four-lane undivided section between Sun Valley Boulevard and Haymarket Park. This will include a new four-lane bridge across Salt Creek, as well as improvements to 6th Street along the east side of Haymarket Park in order to provide a three-lane roadway section. The three-lane section will facilitate the use of a reversible center lane during events in order to provide two lanes of either entering or exiting traffic.

### **Arena Drive**

Arena Drive has been designated as the primary means of entering and exiting the western edge of the West Haymarket District. Following the development of several concepts adhering to design constraints and stakeholder input, a three-lane undivided section is proposed. The center lane will be reversible to allow for multiple entering and exiting lanes in both directions during an arena event. The outside lane in each direction will be designed for shared-use with bicyclists.

Multiple concepts were developed for the "north entry/exit" point to West Haymarket. This the intersection of Salt Creek Roadway & Stadium Drive, as well as the proposed intersection with Arena Drive. Concepts included traffic signals, stop signs, and roundabouts for control, and a number of full-movement and restricted-movement options.

Based on design constraints, access needs, operations, and feasibility, a two-roundabout option was selected as the preferred concept to be carried through for additional study and conceptual plan development. The preferred concept can be implemented without impacting the existing 10th Street bridge, and it will provide full movements between Arena Drive & Salt Creek Roadway for pre-event and post-event traffic. In addition, existing movements at Salt Creek Roadway & Stadium Drive will also be maintained.

The “south entry/exit” point will be provided via ‘M’ Street and ‘N’ Street. Projected traffic volumes indicate a need for two entering lanes on ‘N’ Street, and two exiting lanes along ‘M’ / ‘N’ Streets. Modifications to these two corridors may result in a loss or reduction of on-street parking, particularly during periods before and after an event. The initial improvements will utilize both streets for exiting movements. However, the preliminary design will allow for the future extension of ‘M’ Street to Arena Drive, as well as an extension of ‘M’ / ‘N’ Streets as a one-way pair from 9th Street west to Arena Drive.

Other network improvements include additional lanes on 10th Street and ‘N’ Street. An additional lane on the west side of 10th Street between ‘L’ Street and ‘N’ Street will allow for dual north-bound left-turns at ‘N’ Street to enter the West Haymarket area. The dual-lane configuration is only expected to be necessary during the hour before an event at the arena. Should volumes warrant, this movement could become permanent without reducing the current capacity on 10th Street. The lane addition on 10th Street would remove on-street parking from the west side of the street, which currently exists during off-peak periods. The additional lane on ‘N’ Street will reduce the quantity of on-street parking stalls. The existing diagonal stalls will be eliminated and replaced with parallel parking stalls.

## Internal West Haymarket Streets

A number of streets internal to the West Haymarket District will be to be completed as part of the overall development. The streets to be constructed include ‘P’ Street, ‘Q’ Street, ‘R’ Street, and Canopy Street. The characteristics of these street improvements are discussed elsewhere in this report.

## Street Connections to Traditional Haymarket

Vehicular access between the Traditional Haymarket and West Haymarket Districts will be provided for through the extension of ‘Q’ and ‘R’ Streets. The extension of these internal streets will allow for enhanced day-to-day circulation, as well as offering corridors for pedestrian movements related to an arena event. It is anticipated movements along portions of these streets will be managed to limit (or prohibit) vehicular access of these streets during major events in the area.

## Traffic Management Technology

A variety of variable message boards are planned as part of the overall traffic management program to support the effective operation of the network modifications discussed above. Initial estimates include approximately 12 dynamic message signs spread out through the area. These will be necessary to direct drivers to appropriate parking facilities based on their network entry point and parking availability. The location of available parking and possible traffic congestion will be factors requiring the ability to communicate with drivers and redirect them if necessary. The communication and management plan details will be further developed as the project moves forward into the preliminary and final design phases.

## Other Traffic Management and Network Improvements

Many of the improvements listed above will require traffic signal modifications in addition to the roadway improvements. This may include (but is not limited to) pole/mast arm relocation or reconstruction, changing signal heads, phasing and timing plans, and vehicle detection.

Moreover, the discussion of improvements in this section is not exhaustive. Other modifications will likely arise as other West Haymarket characteristics are studied, as well as during the transportation design phase. The following pages portray a set of conceptual drawings to illustrate the proposed transportation network improvements. The drawings feature an overall plan (Figure 1 on the opposite page) that shows the proposed new / reconstructed roadways included as part of the civic arena project, as well as adjacent roadway improvements that are being completed under other public projects. The plans also include larger-scale views of key areas (Figures 2-11) of the transportation network in order to identify the geometric configuration at intersections and other features.

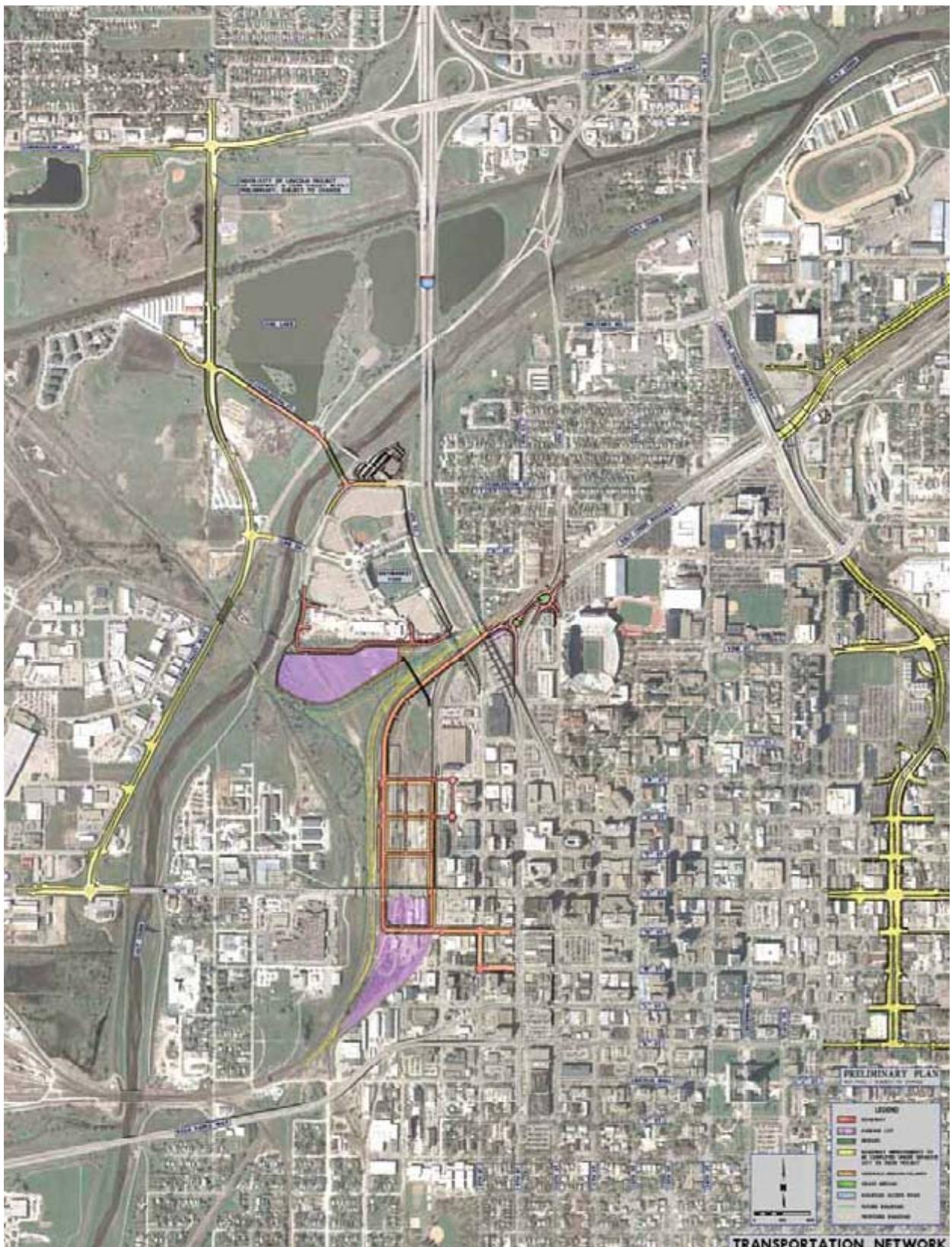


Figure 1 - Transportation Network

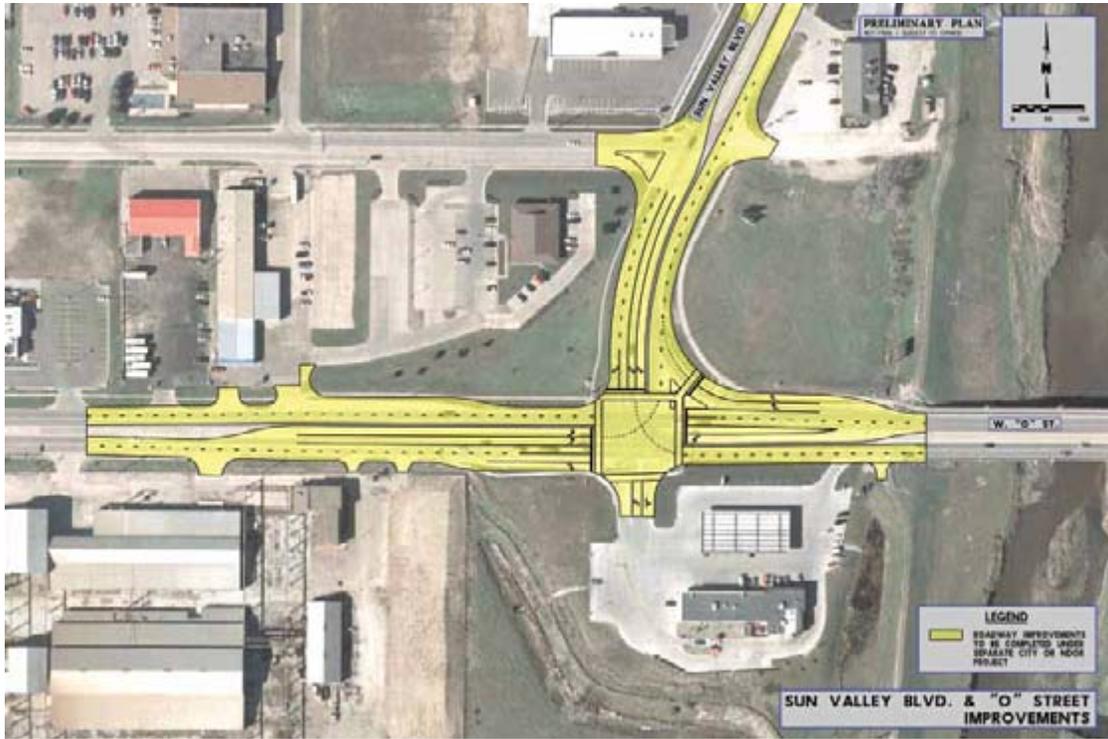


Figure 2



Figure 3



Figure 4

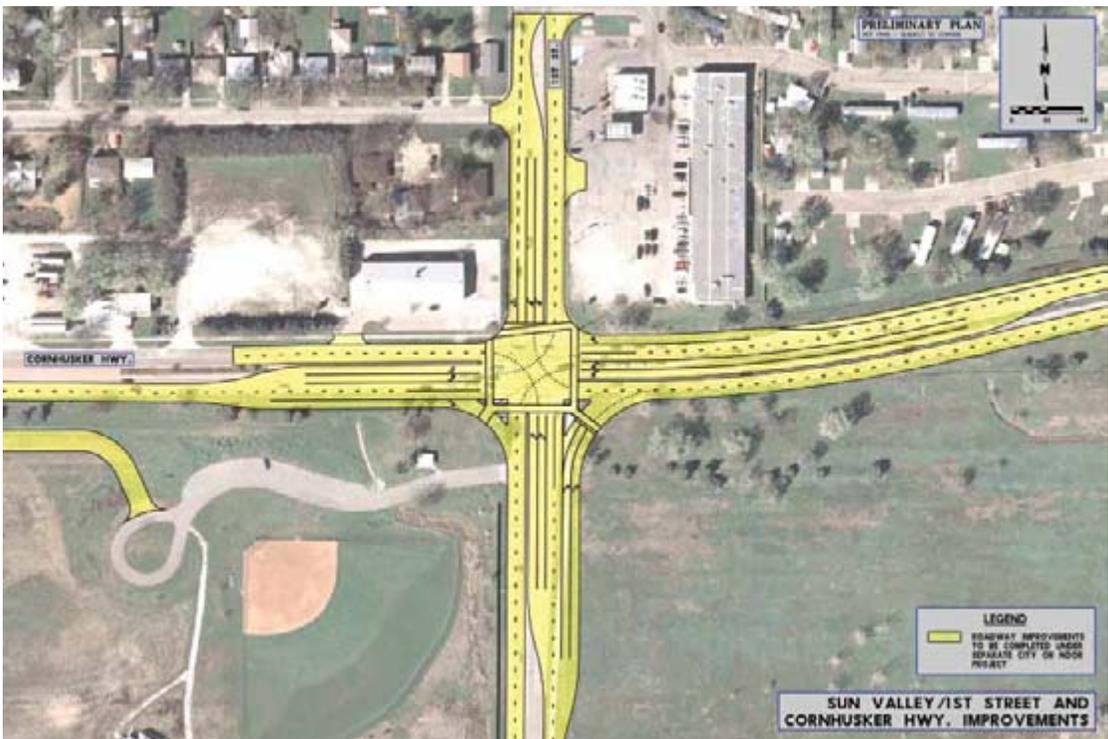


Figure 5



Figure 6



Figure 7



Figure 8

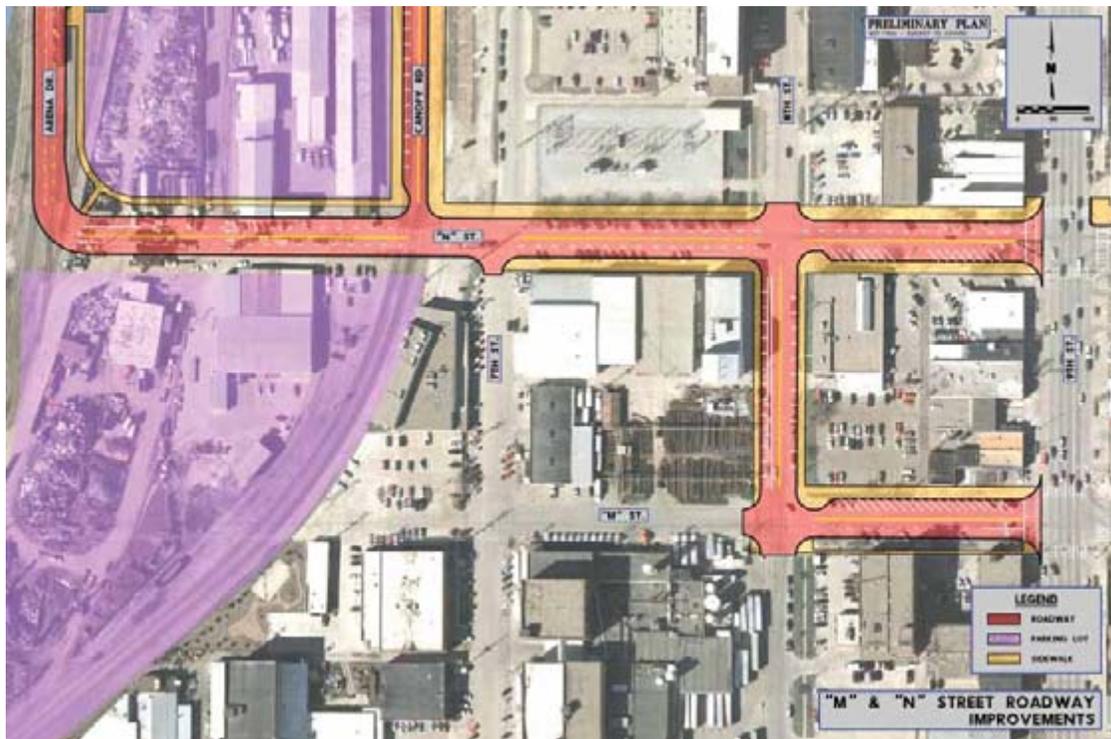


Figure 9



Figure 10

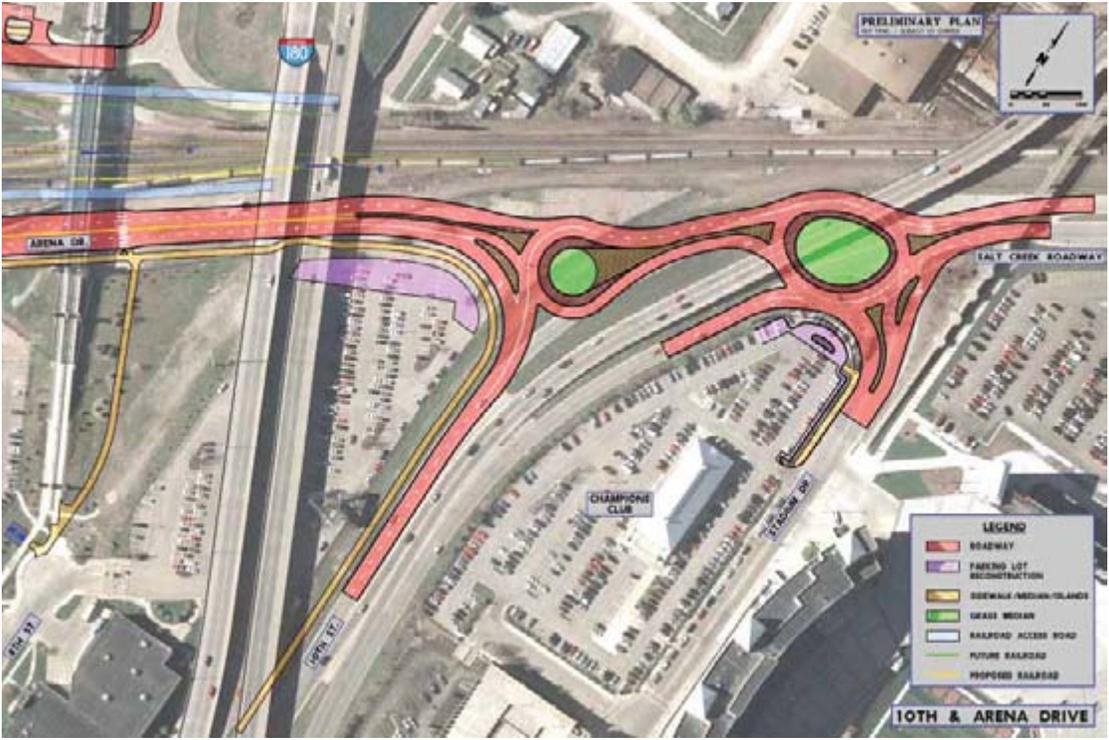
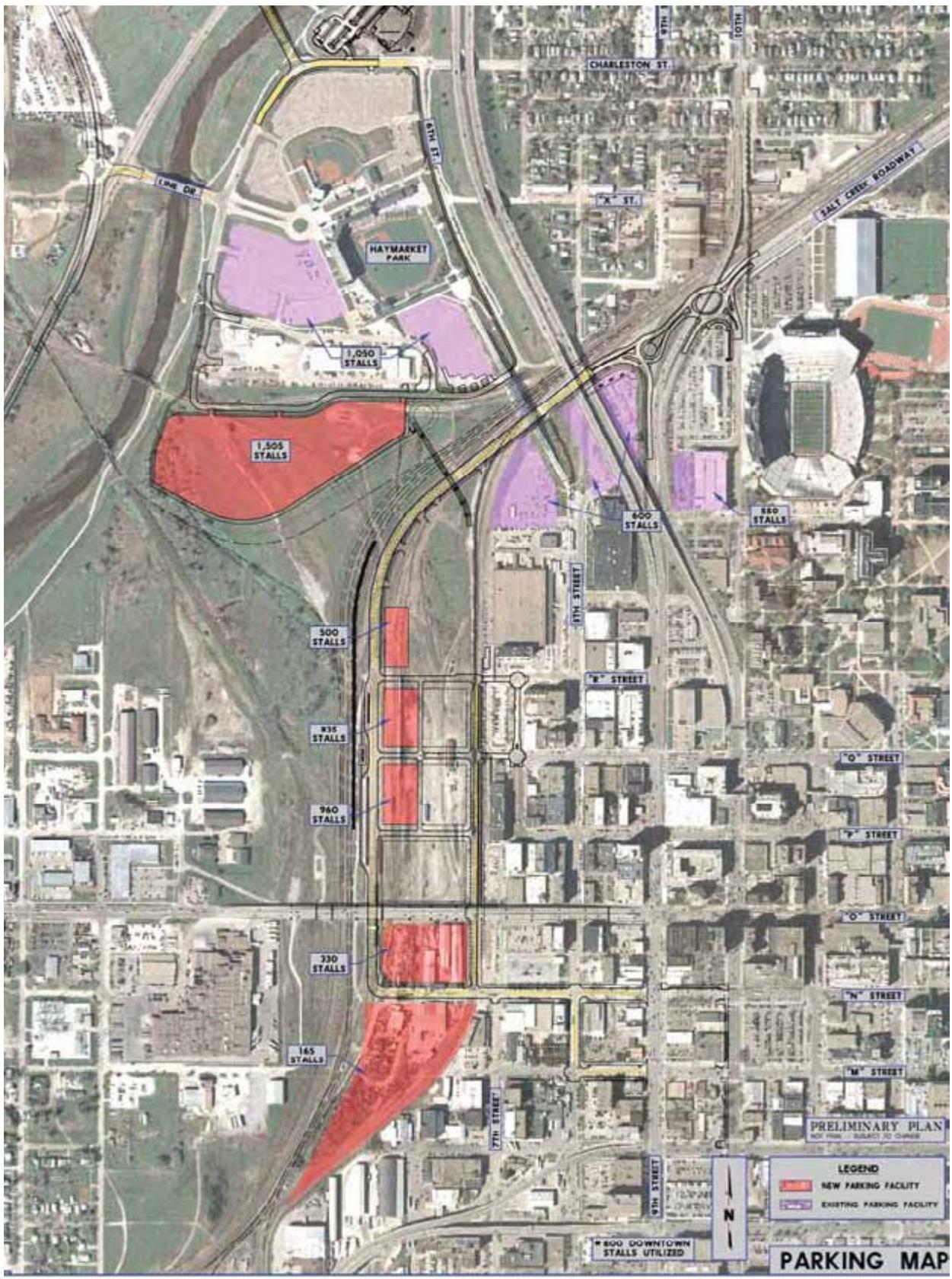


Figure 11



# *West Haymarket*

INTEGRATED DEVELOPMENT PLAN



# Parking

A comprehensive West Haymarket and Haymarket Parking Study has been conducted as part of the Integrated Development Plan (IDP) process. Based on design assumptions, the Parking Study indicates the following total stall demand by land-use to be:

- 5,120 arena stalls
- 975 mixed-use development stalls
- 300 ice rink stalls

Several key factors lead to an adjustment in planned total new stalls projected to be required for the proposed West Haymarket development. First, the arena patrons will utilize available parking stalls currently existing within the general vicinity of West Haymarket. Second, it is assumed the arena and mixed-use development will share 350 stalls. The study does not assume utilization of the new stalls by existing Haymarket patrons whom may be displaced from existing parking.

As the West Haymarket site plan has evolved, an iterative process has been used that considers the total parking demand, expected vehicular distribution, and the site plan's desired parking provision to determine parking demand by location. Based on the demand by location, the quantity of stalls at existing and potential parking facilities was subtracted to identify the size of the proposed parking garages just south of the arena site. A detailed parking demand table is included in the West Haymarket Arena Events Traffic Study, which shows parking stall demand by land-use and location. The parking facilities map on the opposite page illustrates the proposed parking utilization corresponding to this study.

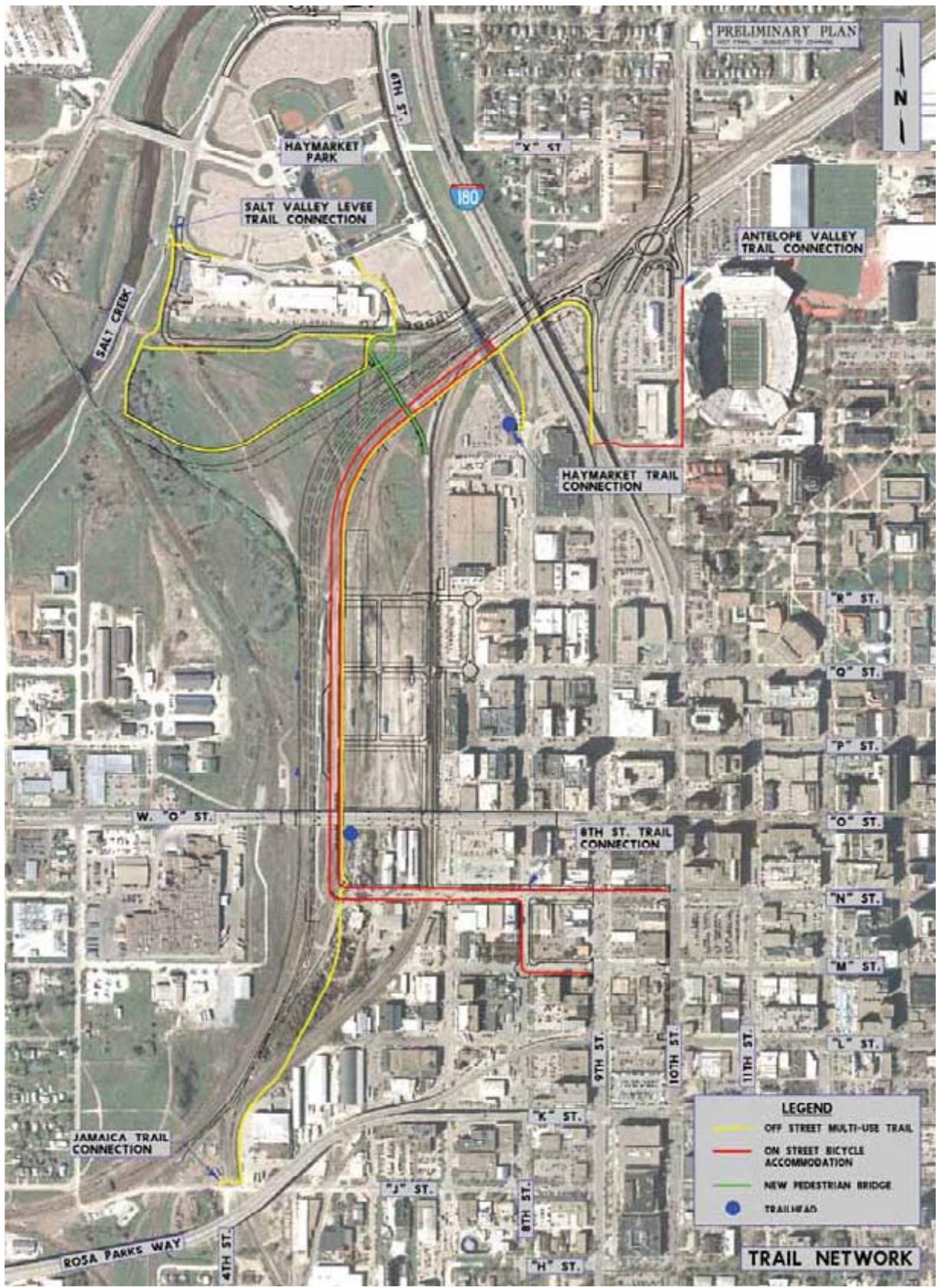
The parking map is not intended to be all-inclusive in identifying potential parking locations. Rather,

it identifies general locations and the quantity of stalls corresponding to the arena and other land-use demands. Additional parking stalls exist within the Haymarket and Downtown area but were not labeled on the map – they were not considered as readily available parking capacity within the context of the West Haymarket Parking Study analysis.

Parking demand – and supply – should be regularly monitored in the West Haymarket District. An appreciable demand south of the arena will be present and will grow with the long term development of the ice center, mixed-use projects, and other transitional land uses. The current demand assumed in the core West Haymarket area is for approximately 1,965 stalls.

Accommodating this demand primarily within two garage structures may present periodic operational challenges as parking patrons desire to enter and exit the facilities at approximately the same time. Multiple accesses to these structures are assumed with access drives onto Arena Drive, Q Street, and P Street.

Parking supply management (e.g., pricing strategies, payment methods, access control, additional capacity) will need to be addressed on a regular basis to determine the most efficient method of deploying available public parking spaces. Also, maximizing the amount and utilization of surface parking south of 'O' Street should be further researched as the addition surface parking could reduce the size of the parking garages and would spread the demand for parking within this area. To the degree parking stalls can be less centralized, it will allow for more staggered exiting flow patterns and less congestion.



# Trails and Pedestrian Activity

## Summary

The plan for West Haymarket envisions a warmly welcoming place for people of all ages who want to walk or bike to the District, as well as experiencing the District itself on foot or on a bike. West Haymarket must afford all pedestrians, bicyclists, and others not using vehicles pleasant, safe, and easily accessible surroundings. The District should be a place that is friendly at all times – not just during an event – to anyone who may want to stroll or bike through the area. This project presents a unique opportunity to increase access to the city’s existing trail network for both West Haymarket and Traditional Haymarket.

## Trail Connections

The “Jamaica Trail” is the nearest existing City trail south of West Haymarket. It currently ends at the intersection of 4th Street & ‘J’ Street. An extension of this trail north to the south end of West Haymarket is proposed. As part of this connection, a trailhead is recommended beneath Harris Overpass in the vicinity of Arena Drive. This trailhead would provide bike users the opportunity to park their bikes and walk into West Haymarket. It would also serve as a junction between the Jamaica Trail to the south, Arena Drive to the north, and ‘N’ Street to the east.

The designated trail continuing to the north of this trailhead would include both an off-street pathway (for pedestrians and bicyclists) and an on-street bike accommodation on Arena Drive. The off-street trail would be a 10-foot sidewalk located along the eastern side of Arena Drive. To also serve bicyclists wishing to ride among the vehicular traffic, the outside lanes of Arena Drive would be expanded to a width of 15 feet in each direction (i.e., north and south).

This expanded lane width would be carried to the vicinity of the existing Haymarket pedestrian bridge (i.e., Bereuter Bridge) where an off-street

trail will be provided. A trailhead would be located near the south end of the bridge to function as a north pedestrian entry point to West Haymarket. It would serve as a junction for trails on the UNL campus and across the railroad tracks to Haymarket Park.

In addition to the existing Haymarket pedestrian bridge, a second bridge is proposed to connect the civic arena to a new surface parking lot south of Haymarket Park. This bridge would make parking at Haymarket Park more attractive since it is expected to tie in to the arena on the concourse level. The bridge would also help to tie the West Haymarket to the “Salt Creek Trail.” The Salt Creek Trail is part of Lincoln’s existing trail network and runs along the east side of Salt Creek for an extended distance to both the north and south sectors of the City.

## Pedestrian Connection to UNL Campus

An improved pedestrian connection to the UNL campus is recommended. The current at-grade crossing near ‘T’ Street is heavily utilized during UNL home football games, and it may gain extensive use by UNL students for UNL events at

the arena. This crossing is also critical for large-scale events that may require utilization of UNL parking facilities east of 10th Street. Pedestrians seeking a protected movement may cross 9th / 10th Streets via the traffic signals at 'Q' Street. While extensive modifications to this at-grade crossing are not anticipated in the near term, traffic control may need to be provided for large-scale events. A grade-separated crossing may need to be investigated as a long-term solution.

## Event Management

Every attempt has been made to segregate pedestrian and vehicular traffic during the entry and exit time intervals of an arena event. The separation would most likely be accomplished by closing Canopy Street north of 'O' Street.

Access to the West Haymarket will be gained from the Traditional Haymarket at 'Q' Street and 'R' Street during the pre- and post-event hours. All vehicular traffic bound for the parking facilities south of the arena will be routed in from the west side (Arena Drive), while pedestrians will be channeled out of these facilities to the east and may proceed to the arena via Canopy Road. Also, by limiting vehicular access between West Haymarket and Traditional Haymarket during events, pedestrians will be able to walk to and from the arena with minimal vehicular interaction.

# Utilities Plan

## Summary

Having served principally as a railyard for over a century, the West Haymarket District may be considered “undeveloped” in terms of urban utility services – which actually makes it well suited for this type of redevelopment project. The existing utility network which surrounds the District is well established and can effectively serve the proposed development. The most intense utility infrastructure improvements and relocations can occur within the West Haymarket District and will not have adverse impacts on the existing utility infrastructure system.

Inevitably, unknown utility challenges will become apparent as redevelopment occurs in the West Haymarket simply due to the nature of the area. This plan utilizes the best available record information to document both the existing public and private utilities so such challenges can be minimized. The plan also recommends the array of public utility improvements necessary to serve the development currently proposed for the West Haymarket.

## City of Lincoln Sanitary Sewer

### Existing Conditions

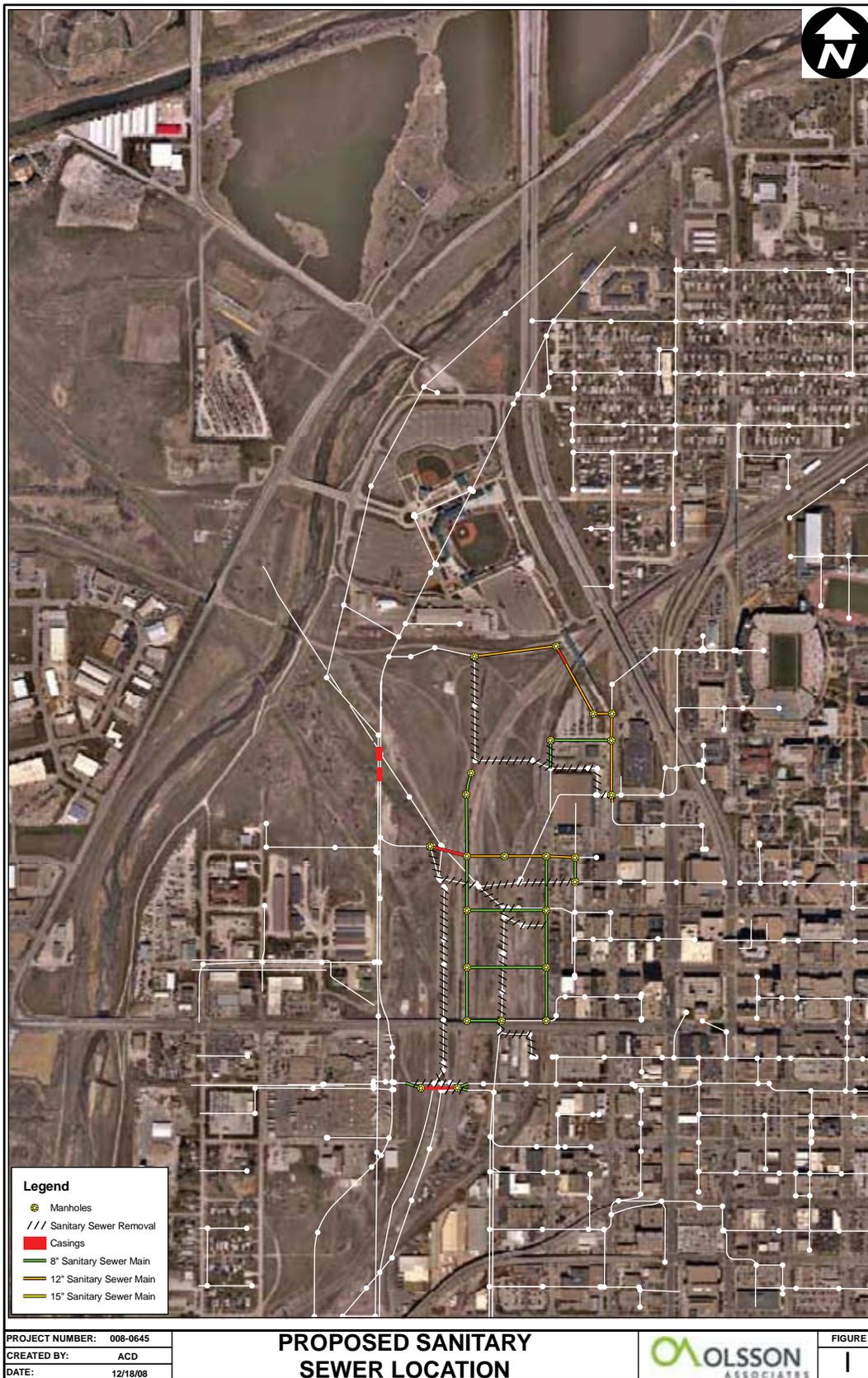
Segments of the City’s existing sanitary sewer system within the area of proposed development footprint will require relocation so building pad sites can be established and railroad track relocation accommodated. The existing wastewater collection system in the vicinity ranges in size from 8 inches up to 30 inches in diameter. Although not directly impacted, two existing trunk sewers (48 inches and 78 inches in diameter) lie along the western boundary of the proposed redevelopment. See map on page 120.

### Proposed Improvements

In the core of the West Haymarket redevelopment area, the proposed roadway network effectively establishes a corridor for relocating the sanitary sewer system. At this stage of the project’s planning, it is anticipated a network of 8-inch collector pipes will service the District. These pipes will generally slope toward the north

where they will be connected into a 12-inch pipe system in ‘R’ Street. The 12-inch ‘R’ Street segment will then sloped toward the west until it connects into the existing 21-inch segment that then connects to the existing 48-inch trunk sewer. A portion of the 12-inch pipe in the ‘R’ Street corridor will be encased through the proposed railroad track locations. Additionally, there is a block segment of 8-inch pipe in 7th Street that would be redirected from sloping south to sloping north between ‘Q’ and ‘R’ Streets. Along the west side of the Arena, an 8-inch pipe will be routed from ‘R’ Street north and end at a point where the sanitary service from the Arena will be connected. See map on page 120.

In the area of the proposed arena, pedestrian bridge crossing, and surface parking lot, it is recommended a 12-inch pipe segment be located closer to the existing pedestrian bridge (i.e., Bereuter Bridge) to potentially avoid any future improvements not planned at this time. In order to maintain the existing system in the area, there will be an 8-inch pipe segment along the



north side of the Post Office and a 12-inch pipe segment in the 8th Street corridor that will be re-directed so the flows are directed towards the north. This portion of the system will be connected into the existing 12-inch pipe along the north side of the proposed surface parking lot and ultimately is connected into the existing 48-inch trunk sewer. Refer to map on opposite page.

There will be existing sanitary sewer pipes in the proposed redevelopment area which will be abandoned. It is anticipated these will be removed in their entirety so significant voids are not left in place for potential settlement in the future. Refer to map on opposite page.

## City of Lincoln Water

### Existing Conditions

In general no existing Lincoln Water System facility within the West Haymarket area is directly impacted by the proposed redevelopment. There is a short segment of 6-inch pipe within the 5th Street corridor immediately north of 'O' Street which may no longer be needed due to the change in use within this area.

### Proposed Improvements

Within the core of West Haymarket District the proposed roadway network will establish corridors for needed water system improvements. At this stage of the project's planning it is anticipated the District can be served with a network of 8-inch distribution pipes and 12-inch pipes in 'R' Street and Arena Drive. This will provide a reliable system for the proposed redevelopment. An 8-inch pipe is planned along the west and north side of the civic arena for the provision of domestic and fire services.

## Community Space: Water and Sanitary Sewer Service

The water and sanitary sewer infrastructure for the Community Space is currently available within the vicinity of the site. It is anticipated the actual water and sanitary sewer connections to meet the needs of the Community Space will be determined as the design of the site is further detailed.

## Lincoln Electric System (LES)

### Existing Conditions

LES has both overhead and underground facilities within the overall redevelopment area. These facilities consist of 12.5 kV, 34.5 kV, and 115 kV systems. The LES system generally surrounds the redevelopment area thereby minimizing any potential service delivery problems.

Two potential relocations of LES facilities may be required. The first occurs within the parking lot south of the existing Lincoln Station and involves underground electrical service. This electrical service feeds a transformer located between the north side of the parking lot and the south side of Lincoln Station. The second occurs in the vicinity of the proposed Charleston Street Bridge crossing of Salt Creek. An overhead 12.5/34.5 kV system could conflict with the bridge and associated construction activities.

### Proposed Improvements

LES foresees the need to move the underground service and transformer south of Lincoln Station so it will not interfere with any proposed buildings on this site. LES would also look to possibly move the 12.5/34.5 kV system in the area of the proposed Charleston Street Bridge so it would not interfere with the new Bridge's location and the associated construction activities.

## Qwest Communications

### Existing Conditions

Qwest Communications has buried fiber optic lines within the current right-of-way of the BNSF mainline trackage.

### Proposed Improvements

At this stage in the planning process, it is not known exactly where Qwest will relocate their facilities. However, it is reasonable to assume the lines would be relocated within the railroad's right-of-way. This relocation task will require installing new conduit and fiber optic cable from one termination point to the other. The existing system will need to stay in operation until the new facilities are in place so service disruptions are kept to a minimum.

## Verizon Communications

### Existing Conditions

Verizon has buried fiber optics facilities within the current right-of-way of the BNSF trackage.

### Proposed Improvements

At this stage in the planning process, it is not known exactly where Verizon will relocate their facilities. However, it is reasonable to assume the lines would be located within the railroad's right-of-way. This relocation task will require the installation of new conduit and fiber optic cable from one termination point to the other. The existing system will need to stay in operation until the new facilities are in place so service disruptions are kept to a minimum.

## Oak Lake Force Main

### Existing Conditions

As man-made bodies of water, the Oak Lakes's water level is maintained by means of a pump station. Water is collected from Oak Creek and pumped into the most westerly lake.

### Proposed Improvements

It is assumed this system will be kept in place with the water level for the Lakes maintained through the existing pumping system.

## Other private utility services (Natural Gas, Cable, and Phone)

### Existing Conditions

At this stage it does not appear there are any significant impacts to other private utilities within the proposed redevelopment area.

# District Energy System Overview

## System Concept

District energy systems are effectively small-scale centralized energy plants producing steam, hot water, or chilled water at a central facility. The steam and chilled water is piped out to buildings throughout the district for space heating, domestic water heating, and air conditioning. Individual buildings thus don't need their own boilers, chillers, or air conditioners because the district energy system does the work for them.

The overriding benefit of the district energy system concept is the ability to serve many customers from one location to accomplish goals individual building systems cannot. For instance, district energy systems can use a variety of conventional fuels such as coal, oil, and natural gas – whichever fuel is most price competitive at the time. The central plant approach can also employ specialized technologies such as thermal storage to keep energy costs down. Because of a district's size, the energy generating plants can transition to renewable fuels such as biomass, geothermal, and combined heat and power much easier than individual building installations.

Building connected to district energy systems have lower capital costs for their energy equipment because they don't need conventional boilers and chillers. They save valuable up-front dollars they can invest elsewhere. In addition, building space can be reduce or assigned for other purpose since it is not needed to house heating and cooling equipment.

Building owners and managers can count on district energy systems since highly trained energy professionals operate the facilities around-the-

clock and have backup systems readily available. Most district energy systems operate at a reliability of 99.999 percent.

## District Energy Corporation

Lincoln is fortunate to already have in-place a "District Energy Corporation" (DEC) which can plan, construct, and operate a district energy system for the West Haymarket redevelopment project. The DEC is a nonprofit corporation created to meet space heating and cooling needs for specific buildings of Lincoln's City, County and State governmental jurisdictions.

The local DEC was initially conceived by the City of Lincoln and the Lincoln Electric System in 1984 and officially formed on December 15, 1989. It is governed by a Board of Directors appointed by the Mayor of Lincoln, Lincoln City Council, Lancaster County Board of Commissioners and Lincoln Electric System Administrative Board.

The DEC's first facility began providing service in 1991 to the County-City Building at 10th and 'K' Streets. Additional facilities were constructed in 1999 to serve the State Capitol, State Office Building, and the Governor's Mansion. The DEC contracts with the Lincoln Electric System to provide management, accounting, and administrative functions, as well as operate and maintain the DEC facilities.



*Conceptual District Energy Facility*

## West Haymarket DEC

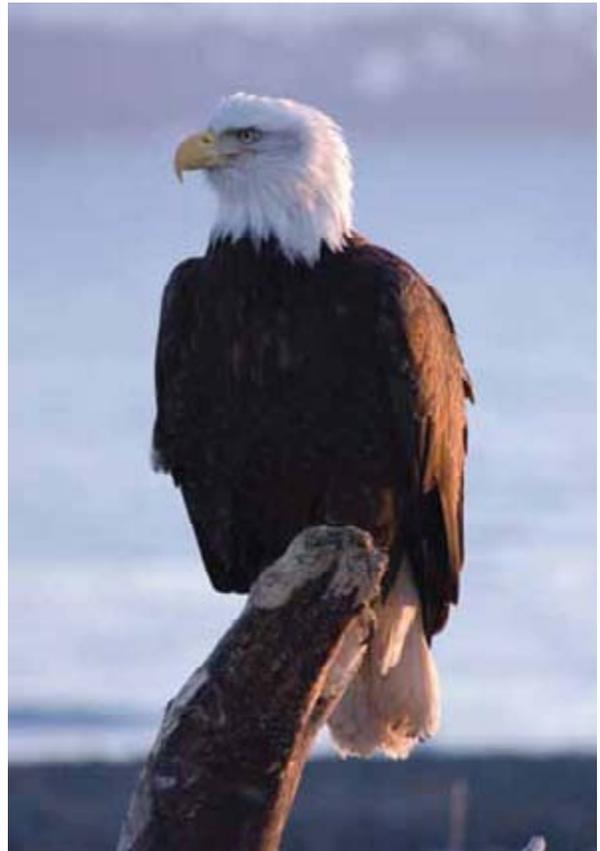
Working in tandem with DEC staff and an engineering consulting firm, a “Feasibility Study” for a possible West Haymarket thermal plant has been prepared. The Study took into consideration the energy requirements of the proposed civic arena, as well as other potential public and private uses. The Feasibility Study concluded “that a central plant is a viable project for consideration” and that a district energy plant located in the West Haymarket could provide “benefits of sustainability, efficiency, energy savings, and reduced environmental impact....”

While no commitments have been made by the DEC to construct or operate a central plant for West Haymarket, the potential for establishing such an arrangement appears very promising. Discussions between the City and the DEC for a West Haymarket facility are continuing. Recent conversations for the siting a possible energy generating facility have focused on the southern part of the West Haymarket District. The site being considered is generally south of an extended ‘N’ Street alignment and immediately east of to-be-constructed Arena Drive. This location would allow for burying the plant’s major piping system within the right-of-way of Arena Drive. If constructed, the DEC facility would likely include a chiller room, boiler room, generator room, and water treatment/pump room, as well as cooling towers. A representation of the facility’s possible exterior appearance is shown in the accompany image.



# *West Haymarket*

## ENVIRONMENTAL CONSERVATION PLAN



In progress



# Wetlands, Lakes, and Streams

## Summary

The greater West Haymarket project site includes a number of wetlands interspersed throughout the area. These include inland saline wetlands which are found in Nebraska only along several streams in Lancaster County and a small portion of Saunders County. In addition, Salt Creek and Oak Creek flow through a part of the site, and one of the Oak Lakes is on the site.

This Management Plan details existing conditions for the greater West Haymarket project site as of 2008, the anticipated conditions after development of an arena complex and other development, and recommendations for monitoring and managing wetlands and other water bodies that are present on the site.

## Background

### Existing Conditions

The Salt Creek watershed supports a regionally unique type of wetland known as Eastern saline wetlands which are the most rare and threatened type of wetland complex in Nebraska. These wetlands support salt-tolerant vegetation such as spearscale (*Atriplex subspicata*), inland saltgrass (*Distichlis spicata*), saltwort (*Salicornia rubra*), prairie bulrush (*Scirpus maritimus var. paludosus*), and seablite (*Suaeda calceoliformis*). Saltwort is a state listed endangered plant. Eastern saline wetlands are also the only habitat supporting the Salt Creek tiger beetle (*Cicindela nevadica lincolniana*), a federal and state listed endangered insect.

The area under study has been disturbed by railroad activities and other land use changes. Over many years, conditions at the site have been modified by the moving of soil and the placement of fill that have changed drainage patterns throughout the site. Drainage ditches and underground storm water piping have concentrated surface runoff and directed flows to the right-bank of Salt Creek. A levee is located along Salt Creek, above the right-bank and running along the floodplain both upstream and downstream the site. The subsurface hydrology has likely been modified by the surface

storm water drainage system and by the degrading channel of Salt Creek. Railroad infrastructure such as railroad through track and connecting short tracks required the building of sub-grade fill and ballast to support the railroad ties and tracks. The railroad infrastructure also changed the surface drainage patterns.

In 1994 the U.S. Army Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, Nebraska Game and Parks Commission, and Nebraska Department of Environmental Quality performed a study to identify saline wetlands and assign category designations resulting in the Resource Categorization of Eastern Saline Wetlands report. As of the year 2008, twenty-two wetland areas were identified on the site, including several areas of Category I saline wetlands, which are generally considered relatively high-quality saline wetlands. However, these particular wetlands appear to have been degraded somewhat by land uses on the site.

In addition, Salt Creek and Oak Creek flow through the site and one of the Oak Lakes is located on the site. All aquatic bodies have beneficial uses, such as for aquatic organisms or recreation, but some do

not meet their anticipated potential for these uses and are considered “impaired.” Salt Creek and Oak Creek are both considered impaired by Nebraska Department of Environmental Quality (NDEQ) due to high levels of some contaminants. Total Maximum Daily Loads (TMDLs) of contaminants have been completed for Oak Creek. The term TMDL refers to the calculation of the maximum amount of a pollutant that a waterbody can receive and still attain or maintain water quality standards for its designated use. The TMDL for E. coli has been completed for Salt Creek, but TMDLs have not yet been completed for other contaminants, and thus this reach of Salt Creek is on the 303(d) list of impaired waters. The Oak Lakes are situated on an old municipal landfill, and hydrology is maintained by pumping water from Oak Creek. The Oak Lakes were at one time stocked through the Nebraska Game and Parks Commission Urban Fisheries program. However, due to the shallow depth of the lakes, fish mortality was high, and the stocking program was discontinued. Oak Lake is considered impaired by NDEQ for dissolved oxygen, and is on the 303(d) list of impaired waters.

The location of the wetlands and creeks is shown in the Wetland Delineation Report for this project.

### Anticipated Conditions

The West Haymarket development includes efforts to restore and enhance the existing Category I saline wetlands on the site. These Category I saline wetlands appear to have diminished in size and quality over time; however, ground water samples taken in 2008 revealed that the ground water has salinity levels high enough to support halophytic plant species. The channelization and down-cutting of Salt Creek has likely caused the water table to fall in the West Haymarket area. Thus, restoration efforts will focus on restoring a sufficient amount of hydrology to expand and enhance the existing wetlands while maintaining the balance of fresh and saline water to enhance and expand the saline wetlands.

In addition to expanding surface acreage of saline wetlands, enhancement will include efforts to establish a more diverse community of halophytic plants through seeding and/or transplanting of target species that do not colonize the site naturally.

Any future impacts to wetlands or other waters on site would require a Section 404 permit from the U.S. Army Corps of Engineers for waters of the U.S. and potential coordination with Nebraska Department of Environmental Quality for consistency with Title 117 for waters of the State.

## Recommendations for Wetlands

**Establishment of Permanent Buffers.** As saline wetlands are restored and enhanced on the site, further development should not encroach within the wetlands or within a buffer area of upland habitat around the wetlands. Given current conditions, a buffer of 50 feet will protect the wetlands. However, if rare species are identified in the wetlands, the width of the buffer may need to be revised.

**Monitoring and Research.** It is recommended an annual investigation be conducted for the presence of the rare plants seablite and saltwort. This can be done in conjunction with any wetland monitoring that is conducted on the site.

**Management Measures.** The goal of the management plan is to maintain site conditions that encourage a diversity of wetland vegetation communities with a minimum of human intervention. To that end, management of the site will focus on three items:

- Hydrologic Manipulation
- Structural Inspection
- Vegetation Management

### For Hydrologic Manipulation:

- **Stormwater and Water Quality.** Water quality entering the wetlands should be as good as or better than water quality under current conditions, as soil contamination will be reduced. Maintenance of stormwater basins as pre-treatment for

surface runoff will keep quality high. (See storm-water section for more information).

- **Depth and Duration of Water in Wetlands.** The depth and duration of flooding will be the main management tool in controlling the diversity of the various plant communities in the wetlands. As a result, site management will primarily consist of water level manipulation with the use of the outlet control structure.

Constant water levels over multiple years within impoundments can potentially lead to a decrease in productivity and diversity due to the immobilization of nutrients within the substrate and the inability of some species to germinate and establish seedlings. Therefore, the outlet control structures that provide water to the wetlands should be adjustable, for example with a gate or stoplogs. By adding or removing the stoplogs, variable water levels can be achieved for seasonal and/or annual alterations.

### For Structural Inspection:

Management of the site will include a regularly scheduled inspection of all berms, reinforced erosion-control aprons, and water-level control structures. Thus, any potential problems can be identified and repair or maintenance activities can be conducted in a timely manner.

In addition, if berms are constructed for stormwater basins or as part of wetland restoration activities, mowing or other maintenance activities will be used to maintain the vegetation on berms or maintenance trails to discourage the growth of woody vegetation. Mowing will facilitate structural inspection of the berms, and encourage a good cover of grasses and herbaceous vegetation, resulting in reduced erosion.

Any erosion, burrows, or tunnels in berms will be promptly filled with appropriate materials. For example, if on-site saline soil with dispersive clays are used for repairs, the soil should be mixed with lime to reduce erosion, compacted, and reseeded as

needed. Leaks around water-control structures may require excavation of fill materials and replacement with impervious materials.

### For Vegetation Management:

Long-term management will involve activities to encourage the long-term success of the native saline and freshwater wetland and upland prairie communities. It is expected that several techniques will be utilized to manage vegetation on the site.

- **Mowing.** If needed, mowing would be done on the upland native grassland to control woody vegetation and the accumulation of litter. Occasional mowing of the wetland vegetation may be done as well, as a management tool to control accumulation of leaf litter and possibly encourage biological diversity. Occasional haying or hand collection of seed might be done as a source of hydrophytic species seeds for remediation of failed plantings on this site, or restoration activities at other wetlands.
- **Non-target Species Removal.** Management should include early identification and eradication of noxious weeds such as purple loosestrife (*Lythrum salicaria*), saltcedar (*Tamarix spp.*), and common reed (*Phragmites australis*). These species are extremely aggressive and can quickly dominate a wetland plant community at the expense of desirable species. These species would be controlled by hand removal, if possible. If this was not possible, then mechanical or chemical removal, or a combination of these, would be utilized. Noxious upland weeds, such as musk thistle (*Carduus nutans*) and leafy spurge (*Euphorbia esula*), would be controlled through hand removal or chemical control methods.

Runoff that may be contaminated with road salt, oil, pesticides, or other pollutants should be directed away from wetlands to retain water quality, maintain salinity levels, and aid in the establishment of desirable plant species. Invasive species often have a competitive advantage on contaminated sites.

Other plant species are not considered to be noxious in wetland surroundings, but some species such as reed canarygrass (*Phalaris arundinacea*), are considered less desirable than others, due to their ability to form large monocultures. Similarly, woody species such as cottonwood (*Populus deltoides*) or red cedar (*Juniperus virginianus*) may become established in temporarily flooded wetlands or in upland prairie areas, and these species may not be desired in those areas. In particular, cottonwood seedlings appear to proliferate in saline wetlands after flood events. If these species were becoming more extensively distributed than desired control could occur through management methods such as manipulation of water surface elevation, cutting of woody species, or other methods. A more diverse plant community would be achieved through these management methods.

Contact the Nebraska Department of Agriculture's Noxious Weed Program for more information about identification and control of noxious and/or invasive plants.

To some extent, management of saline wetland communities is still in the experimental stages. Thus, it is recommended that adaptive management techniques be adjusted as additional information is obtained. The development of detailed management plans for the saline wetland communities should be coordinated with the Army Corps of Engineers Regulatory Office, Nebraska Game and Parks Commission, and the City of Lincoln's Saline Wetland Coordinator.

## Recommendations for Stream Channels

Any future projects should be designed to have minimal impact upon the Salt and Oak Creek channels. Impacts such as additional bridges are likely to require coordination and possibly permits from several regulatory agencies, such as the Omaha District Corps of Engineers (both Regulatory and Readiness divisions). The Floodplain section has more information on projects located within floodplains.

In addition, projects should be in compliance with any TMDLs that have been established for the streams in the area, and should not contribute to water quality problems for contaminants for which TMDLs have not yet been developed. Coordination with NDEQ should be done for any project which might have an adverse impact upon surface water quality. Refer to the Stormwater section of this plan for additional information.

## Recommendations for Lakes

The Oak Lakes west of I-80 are located within an area that has received Land and Water Conservation Act funds. Therefore, under Section 6(f) of that act, the lakes and land around them are to be used only for outdoor recreational purposes. Any use of the lands for a different purpose is likely to require identification of a replacement parcel of land, preparation of a Land Conversion Environmental Assessment document, and approval of the National Park Service.

As the Oak Lakes are located on landfill and maintained by pumping from Oak Creek, their uses for recreational purposes are limited. In addition, due to their listing on the 303(d) list, coordination with NDEQ should be done for any projects which might have an adverse impact upon surface water quality. Refer to the Landfill section of this Plan for additional information.



October 2007 photo of Category I Eastern saline wetland in West Haymarket area. This wetland is vegetated predominantly by inland saltgrass and spearscale.

# Rare Species and Migratory Birds

## Summary

The greater West Haymarket project site includes a number of rare inland saline wetlands. These wetlands can be home to several rare species of plants and animals, including:

- **Salt Creek Tiger Beetle**, a federal and state endangered insect
- **Bald Eagle**, a federal and state protected bird
- **Saltwort**, a state endangered plant
- **Seablite**, a rare plant

This section details the existing conditions on the site as of 2008, the anticipated conditions after development of an arena complex and other improvements, and recommendations for monitoring and managing habitats for any of the species that may occur in the project site. In addition, recommendations for complying with the Migratory Bird Treaty Act are included.

## Background

### Existing Conditions

The core West Haymarket site has been disturbed by railroad activities and other land use changes. Over many years, conditions at the site have been modified by the moving of soil and the placement of fill that have changed drainage patterns throughout the site. Drainage ditches and underground storm water piping have concentrated surface runoff. A levee is located along Salt Creek and runs along the floodplain both upstream and downstream the site. The subsurface hydrology has likely been modified by the surface storm water drainage system and by the incised Salt Creek channel. Railroad tracks required the building of sub-grade fill and ballast to support the railroad ties and rails, further changing surface drainage patterns.

In the 1990s the U.S. Army Corps of Engineers, Environmental Protection Agency, U.S. Fish and Wildlife Service, Nebraska Game and Parks Commission, and Nebraska Department of Envi-

ronmental Quality performed a study to identify saline wetlands and assign category designations based on habitat condition and quality. In the year 2008, several areas of Category I saline wetlands – which are considered relatively high-quality saline wetlands – have been identified on the site. These wetlands, however, appear to have been degraded over the years by various human activities within the area. In addition, Salt Creek and Oak Creek flow through the site.

The site includes habitat for nesting migratory birds, including trees and grassland habitats. The Migratory Bird Treaty Act prohibits activities that adversely affect these birds during nesting season. In addition, there is the potential for rare species to occur on the site.

These areas have been examined for the presence of these rare species:



- **Salt Creek Tiger Beetle** (*Cicindela nevadica lincolniiana*), a federal and state listed endangered insect. This species is currently found only along the

banks of Little Salt Creek and Rock Creek, tributaries to Salt Creek. The West Haymarket site is not within designated critical habitat for these species, nor within proposed recovery areas.



- **Bald Eagle** (*Haliaeetus leucocephalus*). This species is increasing in numbers, and thus has been de-listed as a federally threatened species and is proposed to be de-listed as a Nebraska state threatened species. However, it is still protected by the federal Bald and Golden Eagle

Protection Act (Eagle Act) and the Migratory Bird Treaty Act. Currently, this species is not found on the site. The presence of open water habitat within Oak and Salt Creeks, with the potential of large trees located within the vicinity of the creeks, could provide roosting habitat if not nesting habitat. The U.S. Fish and Wildlife Service has developed National Bald Eagle Management Guidelines (May 2007) to advise landowners, land managers and others who share public and private lands with bald eagles about circumstances under which protection provisions of the Eagle Act may apply to their activities.

Source: <http://www.fws.gov/migratorybirds/issues/BaldEagle/NationalBaldEagleManagementGuidelines.pdf>



- **Saltwort** (*Salicornia rubra*), a state endangered plant. This species occurs in Nebraska almost exclusively in Category I saline wetlands, although there is a report of one population occurring in an alkaline wetland in central Nebraska.



- **Seablite** (*Suaeda calceoliformis*), a rare plant. This species is locally abundant in alkaline wetlands in western Nebraska, but in eastern Nebraska is only found in high-quality saline wetlands in Lancaster and Saunders County.

Although it is not a state or federally protected species, its growth requirements are very similar to that of saltwort, and the two often co-occur. Thus, the presence of seablite would be an indicator of suitable habitat for saltwort.

As of 2008, no individuals of these species were observed on the site.

#### PHOTOGRAPHY CREDIT:

##### Salt Creek Tiger Beetle

Credit: U. S. Fish and Wildlife Service  
Photo by Seth Willey/USFWS photo

##### Bald Eagle:

Credit: U. S. Fish and Wildlife Service  
Photo by Laura L. Whitehouse/USFWS photo

##### Saltwort:

Credit: Joan Darling, Olsson Associates.

##### Seablite:

Credit: Robert H. Mohlenbrock @ USDA-NRCS PLANTS Database / USDA NRCS. 1992. *Western wetland flora: Field office guide to plant species. West Region, Sacramento.*

## Anticipated Conditions

The West Haymarket development includes efforts to restore and enhance the existing saline wetlands on the site. It appears from aerial photographs that the wetlands have decreased in size over the years, while not changing their characteristics from saline to freshwater. This indicates that the hydrology of the wetlands has decreased, apparently from a reduction in both ground water contribution and surface water flows, rather than an extreme shift in the relative contribution of saline ground water to surface fresh water. The restoration and enhancement activities will thus focus on increasing the amount of hydrology overall while maintaining an appropriate balance of fresh and saline water to create enhanced habitat for rare species

- **Salt Creek Tiger Beetle.** It is not likely that suitable habitat will be restored for the Salt Creek Tiger Beetle. The population of this species is intensively monitored annually, and no beetle populations are known to occur in the vicinity of the project site, and no suitable habitat occurs along the banks of Salt Creek or Oak Creek. The West Haymarket project components are unlikely to result in creation of suitable habitat for this species.
- **Bald Eagle.** The use of this area for both active and passive recreational facilities is likely to mean that this species would not use the site for nesting. In addition, the proximity of development and associated human activities would make it unlikely that in the near future, the species would be likely to use the site for roosting. However, as the eagle increases in abundance, it is possible that eagles could make use of riparian woodland in the vicinity of the creeks. If the Bald Eagle would occur in the area, it would likely be a transient and migrating to areas along major waterways with heavier wooded areas and more suitable habitat.

- **Saltwort and Seablite.** It is possible that seablite and saltwort will re-colonize the restored saline wetlands. These species have been successfully re-established at other saline wetland restoration sites, including the nearby Pfizer saline wetland and Lincoln Saline Wetlands Nature Center. These species are both annual species, and thus must find suitable habitat in terms of salinity and hydrology each year. It also means that it might be possible to re-seed them if viable seeds are not present in the soil.

## Recommendations

**Monitoring and Research.** It is recommended that an annual investigation be conducted for the presence of seablite and saltwort. This can be done in conjunction with any wetland monitoring that is conducted on the site.

**Management Measures.** If any of these species is found to occur on the site, the following measures are recommended.

### For Bald Eagle:

- If the Bald Eagle would occur in the area, it would likely be a transient and migrating to areas along major waterways with heavier wooded areas and more suitable habitat. If the bald eagle would occur in or near the site the City would follow guidelines in the Migratory Bird Treaty Act (MBTA) and U.S. Fish and Wildlife Service National Bald Eagle Management Guidelines (May 2007).
- Nesting bald eagles will require more protection than roosting eagles. It may be necessary to keep the public away from any active eagle nests.
- Contact U.S. Fish and Wildlife Service in Grand Island and Nebraska Game and Parks Commission in Lincoln for recommendations on allowable activities and management measures.

**For Saltwort:**

- Saltwort is an annual species that will re-seed in areas that have suitable hydrology and salinity conditions. Restoration of saline wetlands on site may result in the re-appearance of this species, as seeds can remain viable in the soil for many years.
- If suitable habitat develops on the site and the plant does not re-occur, the City may desire to re-seed saltwort by collecting seeds from another location.
- If the plant re-establishes a population, management measures would consist of maintaining appropriate conditions of salinity and hydrology. Contact Nebraska Game and Parks Commission in Lincoln for recommendations on management measures.

**For Migratory Bird Treaty Act compliance:**

Any activities having the potential to impact nesting migratory birds, such as vegetation clearing, should be conducted during the non-nesting season, which in Nebraska generally extends for most birds from approximately April 1 to July 15, while eagles and other raptors may nest from mid-February through mid-August. However, these dates can change from year to year, and coordination with U.S. Fish and Wildlife Service is recommended.

If vegetation clearing must be conducted during the nesting season, field surveys for nesting birds in the project vicinity should be conducted by a qualified biologist. If active nests are observed and they can not be avoided until after the birds have left the nest, a permit will be required from USFWS.

# Industrial Land Conversion

## First Steps: Environmental Site Assessments

### Summary of Phase I/II Environmental Site Assessment (ESA) Studies

The West Haymarket redevelopment project offers a unique opportunity to blend historical aspects of the area with innovative design and construction techniques. Within the area there are previously known, suspected, and possibly yet undefined locations of petroleum and/or hazardous substance releases that must be considered in overall project planning and design. In consideration of over a century of intense industrial and commercial activity in the study area, the project team has reviewed and further assessed areas of soil and groundwater contamination and developed plausible remedial options and cost estimates to eliminate exposure threats to human health and the environment. These remedial options are being integrated into site design considerations to avoid existing impacts or mitigate unavoidable areas of concern.

In 2005, the City of Lincoln received an EPA Brownfields Assessment Grant to identify and assess known or suspected areas of contamination in the City that may be a detriment to future development. Under this grant, the City conducted environmental transaction screens in accordance with ASTM E 1528-06 of over twenty parcels in the West Haymarket area to prioritize areas of highest risk or concern to the project. Based on the conclusions of the Transaction Screens, the City next completed Phase I Environmental Site Assessments (ESA) in accordance with ASTM E 1527-05 on the following priority sites:

- BNSF Railway Company Properties
- Alter Scrap
- JayLynn (Watson Brickson Lumberyard)
- Union Pacific Railroad Properties
- Depot Area

EPA Brownfields Grant Funding was used for the initial assessments of the BNSF, Alter and Jay Lynn Properties, while TEUP funds were used for follow-up investigations of all sites.

The purpose of the Phase I ESA process is to identify, to the extent feasible, recognized environmental conditions in connection with the Property. The term recognized environmental condition means “**the presence or likely presence** of any hazardous substances or petroleum products on the Property under conditions that indicate an existing release, a past release, or a material threat of a release of any hazardous substances or petroleum products into structures on the Property or into the ground, groundwater, or surface water of the Property. The term includes hazardous substances or petroleum products even under conditions in compliance with laws. The term is not intended to include de minimis conditions that generally would not be subject to an enforcement action if brought to the attention of the appropriate governmental agencies”.

Results of the Phase I ESAs on these properties identified the following Recognized Environmental Conditions (RECs):

**BNSF Railway Company Properties:**

- Former roundhouse
- On-going cleanup of diesel fuel groundwater plume
- General historical railroad operations (fueling, servicing of locomotives, releases from tank cars, etc.)

**Alter Scrap Processing:**

- Historical releases of polychlorinated biphenyls (PCBs) lead, cadmium and petroleum

**JayLynn (Watson Brickson Lumberyard):**

- Located on former gas holding unit associated with manufactured gas plant operations

**Union Pacific Railroad Properties:**

- Former roundhouse and turntable
- Previous soil contamination discovered during City of Lincoln sewer work
- Debris piles/evidence of land-filling

**Depot Area**

- Reported petroleum impacts in soil and potentially groundwater from former underground storage tank locations.

Phase II ESA work was subsequently completed on the former BNSF roundhouse, Alter Scrap and JayLynn properties. Results of the Phase II ESAs are summarized below:

**BNSF Roundhouse:**

- Isolated concentrations of semi-volatile organic compounds and lead above residential remediation goals
- Minimal groundwater impacts

**JayLynn Property:**

- Moderate levels of semi-volatile organic compounds in soil above residential remediation goals
- Impacts to groundwater from manufactured gas plant operations
- Extent of soil and groundwater impacts not yet defined

**Alter Scrap Processing:**

- Studies have been completed on the site and additional testing is necessary to characterize the contaminants.

In addition to sites evaluated under the Brown-fields Assessment Grant, a plume of diesel-impacted groundwater northwest of the Depot has been investigated and is being cleaned up by the BNSF under the Nebraska Department of Environmental Quality (NDEQ) Title 200 Petroleum Reimbursement Fund.

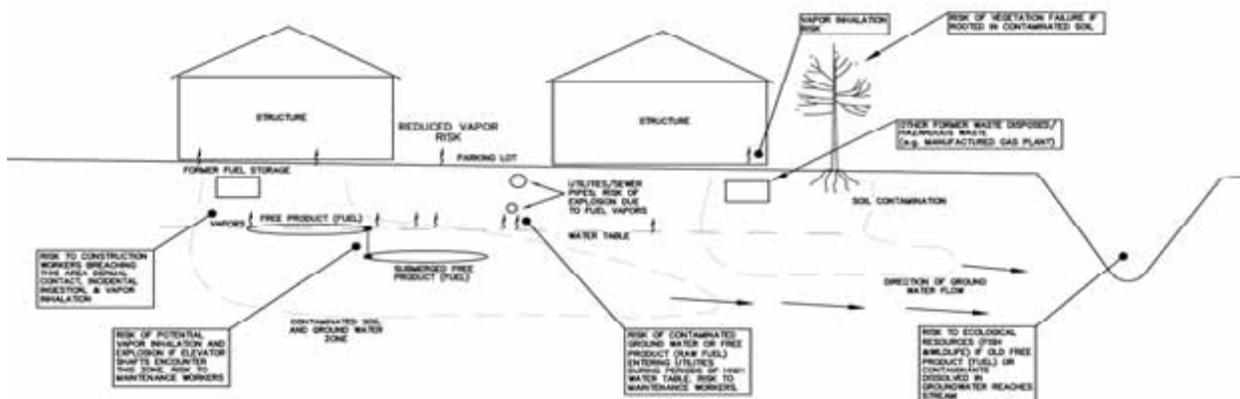


Figure 1 - Potential Exposure Scenarios

## Site Conceptual Model and Exposure Scenario

The potential for exposure to site contaminants can be displayed with a visual site conceptual model. While the current activities conducted on the parcels of concern do not present a complete exposure scenario or “pathway”, future construction activities and long-term land use may present alternative exposure scenarios that will require mitigation.

Figure 1, on the preceding page, provides a simplified graphical representation of potential exposure scenarios that will be considered in the integrated project design.

The primary exposure pathways of concern in the project study area include:

- Intrusive construction activities that encounter impacted soils
- Migration of contaminants to groundwater and subsequent migration to surface water (streams or wetlands)
- Vapor intrusion into habited structures and/or elevator shafts, basements, utilities, etc.

## Land Use Restrictions

One method of limiting exposure to known contaminated environmental media is to place land use restrictions on the parcel of concern. A land use restriction could be in the form of a recorded deed restriction or other legal control to prevent intrusive activities or development that would create exposure concerns to human health or the environment. Restrictions can be as simple as precautionary recommendations for construction workers to take while digging or possibly to restrict construction of structures with basements or elevator shafts to avoid vapor impacts

or encountering contaminated groundwater. A combination of land use restrictions with physical barriers (soil caps or parking lots over impacted soils) is often a cost-effective means of addressing contaminated sites.

## Design Considerations

The area is situated in the flood plain of Salt Creek and is underlain by a thick alluvial sequence of silty clay soils. Part of the area is filled with a mixture of silty clay and other fill materials such as rubble. Groundwater is relatively shallow (less than 20 feet below ground surface) and in general moves slowly towards the north or northwest toward and along Salt Creek. Future construction within the floodplain could also change the current floodplain management criteria – possibly affecting remedial design considerations in the project area.

Appropriate remedial solutions should be incorporated into all project designs. For instance, known areas of contaminated soils should either be called out for removal of the impacted soils and replacement with clean fill or incorporation of a soil or synthetic cap material to eliminate exposure from soils and potential vapors. Facilities with sub-structures (basements, elevator shafts, utility corridors, etc.) should not be placed on areas of impacted soils or groundwater without removal of impacted soils, and placement of vapor barriers or groundwater controls to avoid long-term exposure threats.

## Recommendations and Management Plan

A number of remedial options have been considered for known areas of contamination to accommodate a fluid planning and design process. Each area of concern and recommended course of action based on current project plans are discussed below:

### Diesel Fuel Plume Northwest of Depot

The diesel fuel plume northwest of the Depot is currently being addressed by the BNSF in cooperation with the NDEQ. The remedial system in place consists of a series of extraction wells and pipe galleries routed through a centralized waste treatment system. The BNSF estimates a five year timeframe to clean up the groundwater plume to meet NDEQ's remedial objectives for the site.

As part of the Phase II investigation a preliminary study was performed to determine if the five-year cleanup time frame for the plume could be economically addressed in an accelerated manner. An aggressive over-excavation of impacted soil, shallow groundwater and free fuel residues can be instituted for a cost most likely lower and quicker than continued operation of the existing system. Plans and specifications for removal will be developed in concert with final facility design estimates. Much of the overburden soil to be removed can be segregated and re-used as clean fill at the site, while additional fill will be required to be replaced over the footprint of the plume. Contaminated soil can be transported off-site for disposal or staged temporarily on-site for land-farming/treatment to meet safe levels for reuse as fill. De-watering operations during soil excavation and removal would include treatment of the effluent with activated carbon or similar process. This accelerated cleanup of the plume can be accomplished before the construction of the Arena or related structures.

### Former BNSF Roundhouse

While minimal amounts of contaminants were observed at this site, the bigger challenge in remediating this former roundhouse structure would include removal of massive amounts of concrete foundation material that are in place. There is also a large amount of unsuitable fill material placed within the footprint of the roundhouse that should most practically remain in place. Preliminary plans call for surface parking at and surrounding this structure which will be an adequate means of minimizing potential exposure issues and remedial costs. Care will be taken to ensure the site is thoroughly capped by impervious parking lot material. This will prevent exposure to site contaminants and leaching of precipitation and storm runoff through the materials and impacting groundwater.

### JayLynn (Watson/Brickson Lumberyard)

This site has several small areas of impacted soils at varying depths and groundwater impacted with petroleum and/or manufactured gas plant residues. The extent of groundwater impacts at the site are yet undetermined. Further assessment should be considered dependent upon future use of the property. At present, parking structures, utility corridors and/or other mixed use development is envisioned for the site. Further assessment and remedial options are being contemplated to ensure adequate characterization of the groundwater plume, soil impacts and appropriate remedial options to consider in concert with future use.

### Alter Scrap Processing

As noted earlier, additional research is necessary on the site to fully characterize the contaminants. Following the research, a mitigation management plan will be proposed.

**UPRR Roundhouse/Turntable**

A former locomotive roundhouse and turntable similar in size and nature as the former BNSF operation listed above is located on UPRR property. Phase II investigative work has not been initiated at the site. Remedial considerations at this point are primarily focused on avoiding development in or near the footprint of this structure to provide floodway areas. Preliminary flood plain concepts incorporate significant excavation near this structure which may require modification to avoid impacts. This concept may need to be modified to avoid a significant remedial effort if contamination is encountered during a Phase II investigation.

**General Project Precautions**

In addition to the known or suspected contaminated properties listed above, all construction activity should be guided by an appropriate health and safety plan and material management plan to ensure appropriate protection of construction workers and a clear understanding and process for proper detection, identification and handling of potentially contaminated soils, debris or groundwater during the course of this project. This will require careful planning, investigation, and on-site inspection.



# Soils and Geotechnical Analysis for Recreational Fields

## Summary

The soils investigations for recreation fields were divided into two separate areas. The north area is bounded by Cornhusker Highway on the north, North 1st Street on the west, Interstate 180 on the east and Oak Creek on the south. The south area is bounded by Charleston Street on the north, Sun Valley Boulevard on the east and south, UPRR railroad line to the west and south, and College Park student housing on the west. At the time of this report, the south area was limited to the portions east of North 1st Street and north of approximately Line Drive.

This plan details the existing conditions on the site of the previous disposal areas, the anticipated components of the future recreation fields, and recommendations for future development.

## Background

### Existing Conditions

Both the north and south future recreation areas were previously utilized as municipal waste disposal sites. Based upon research completed by Olsson Associates the north recreation field area was an active disposal area from the 1940's to 1952 and the south recreation area was an active disposal area from 1938 to the mid 1940's.

When the site was investigated in 2008, the majority of the north recreation area was covered with grass vegetation and the site was utilized as a dog run and a remote control car race track. Portions of the south recreation area were covered with grass vegetation and the site was utilized as a BMX bike race track, city impound lot, and city snow storage area.

Soil test borings (see boring location map on opposite page) spaced throughout both study areas encountered ground water ranging from 3.2 to 13.7 feet below the existing ground surface. A varying thickness clay cap was encountered at both the north and south areas. At some loca-



*Soil Test Boring Samples*

tions, fill and/or trash material was encountered as shallow as 6 inches below the existing ground surface. This material was encountered below the developed zone and extended to depths ranging from 3 to 16 feet below the existing ground surface. The material typically consisted of lean to fat clay soil with varying amounts of sand, gravel, glass, brick, charcoal, decomposed wood, wires, and springs. Below the old fill and trash, alluvial soils were encountered that extended to the base of the soil test borings. Dakota sandstone was encountered near the base of several soil test borings completed at the north area.

### Anticipated Conditions

The two areas studies are anticipated to be constructed as recreation fields. It is anticipated that the majority of the future development will require additional fill placement on the order of 2 to 4 feet. The recreation fields will likely include the construction of grass fields, maintenance buildings, concession stands, light poles, and bleachers.

### Recommendations

**Fill Placement.** Due to the anticipated fill placement, the underlying fill/trash soils and the alluvial soils will likely consolidate resulting in settlement at the ground surface. Four surcharge piles were placed in the north and south areas and monitored in order to estimate the settlement that may occur from the anticipated site grading operations. The monitoring operations indicated that the additional load from the surcharge piles resulted in approximately 2 to 3 inches of settlement. Based upon the results of the surcharge piles and the laboratory testing, it is anticipated that the planned 2 to 4 feet of fill placement needed for the site development will likely result in settlement ranging from 1 to 2 inches. The settlement from the fill placement will likely be completed within 60 to 90 days after the comple-

tion of grading operations. However long-term settlement may still occur due to the extreme low density fill material and the organic nature of some of the fill/trash material. Long-term maintenance should be anticipated for the recreation fields to adjust grades as areas continue to settle.



*Surcharge Pile*

Glass, brick and other debris was encountered across both sites at varying depths and at some location within 6 inches of the existing ground surface. It is recommended that a minimum of 12 inches of clean fill underlain with a geogrid (BX 1100) should be placed to provide a barrier between the ground surface and the glass, brick and other debris.

#### **Maintenance/Concession Stand Buildings.**

We have anticipated that the majority of the buildings that would be constructed as part of the recreation fields will be likely relatively lightly loaded. Typically larger amounts of settlement may be more acceptable in a maintenance building as opposed to a concession stand. For maintenance buildings a heavily reinforced raft foundation would likely provide the necessary support. The mat foundation should be designed so that any part of the slab should be able to span 10 square feet with no support below. Floor slab control joints should be used at all wall openings to reduce differential settlement concerns. For structures that have more strict

settlement requirements, the foundation will likely need to bear below the existing fill/trash material into suitable alluvial soils. Helical anchors or Geopiers are also other options for supporting the building's foundations for structures with more strict settlement requirements. At the time of this report a site layout for the recreation fields had not yet been developed. When a site layout is developed, final recommendations for the foundation support for the varying structures can be determined. Depending upon the loading conditions for the structures, additional borings may be needed.

**Bleachers.** Standard lightly loaded aluminum bleachers will not require any special foundation systems. Long term maintenance may be needed to adjust the grades below the alluvium bleachers due to the unknown amount of settlement associated with the decomposition of the fill/trash material. More heavily loaded concrete bleachers would likely require an intermediate foundation system. A helical anchor system or Geopier would likely provide a cost effective support for the more heavily loaded bleachers.

**Light Poles.** Based upon the variable nature of the fill/trash material encountered across both sites, it is not recommended that the light pole foundations bear into the fill/trash. The foundations should extend past the fill/trash into the underlying alluvial soils. The depth of the foundations will vary with location based upon the variable thickness of the fill/trash material.

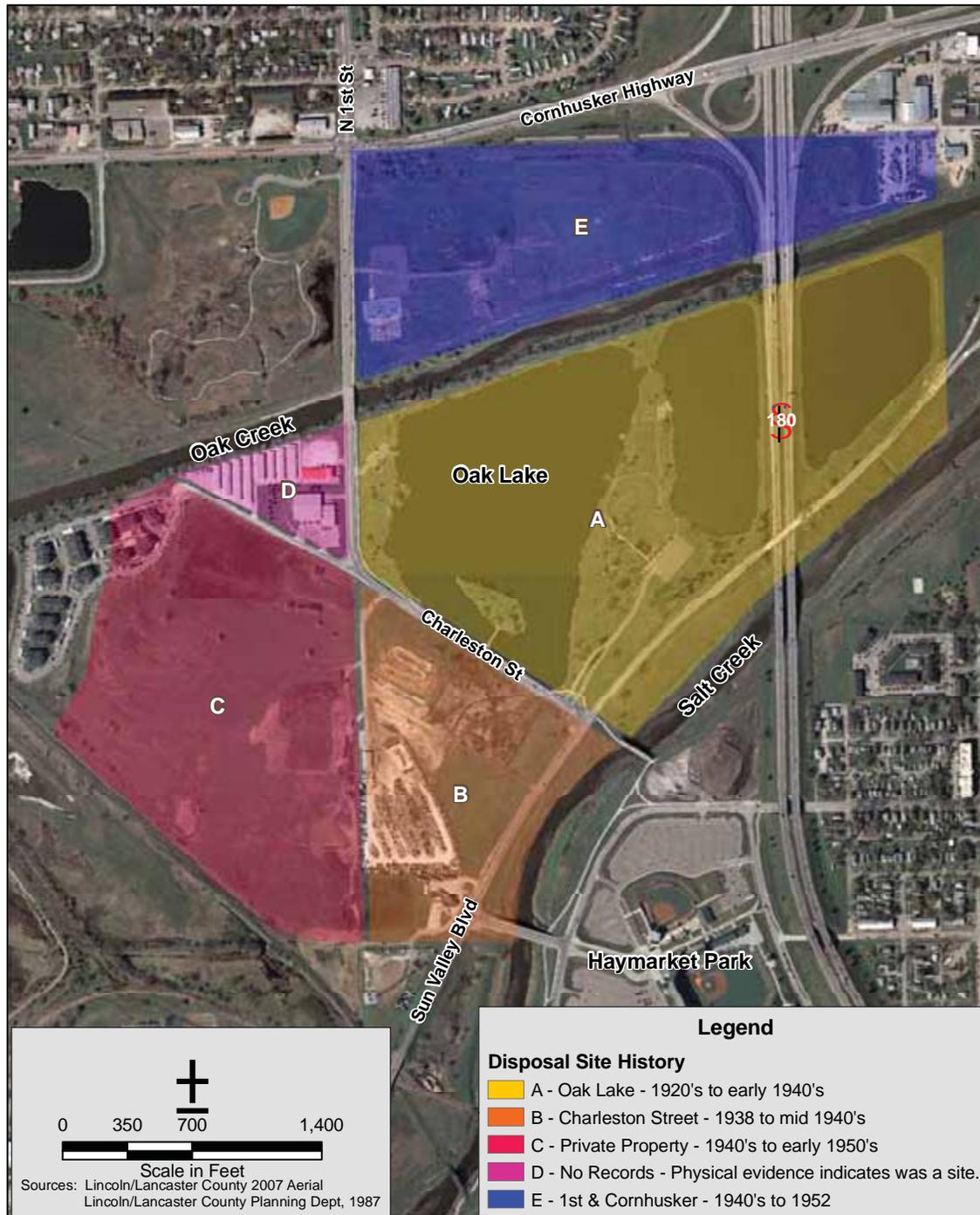


Figure 1 - Disposal Site History

# Municipal Landfills

## Summary

The West Haymarket project includes an area in and around Oak Lake that was used as the municipal landfill for the City of Lincoln from the early 1920's through the early 1950's. Figure 1, on the opposite page, illustrates the areas and the time frames when the area in and around Oak Lake were used by the City to landfill the City's refuse. This section describes the existing conditions on the site as of 2008 based on results of historic and recent field investigations. The recent investigations were implemented to fill in data gaps on the lateral extent of the landfill materials and potential for methane gas generation. Information from the investigations was used to make recommendations for redevelopment of the former municipal landfills into recreational soccer and baseball fields.

## Background

The former municipal landfills in and around Oak Lake have been investigated by both private and public organizations for various redevelopment and public works projects. As part of this project, we reviewed and summarized the previous reports and completed a field investigation to provide a comprehensive look at the existing conditions on the site. Several questions regarding the existing conditions that needed to be answered before redevelopment plans could be made included:

- Where is trash buried in the area?
- Is the landfill trash still generating methane gas?
- Is there a cap over the trash and if so, how thick is it?
- Can the trash be disturbed or removed during redevelopment?
- Is groundwater contaminated beneath the landfill?

**Landfill Trash Disposal Areas.** Before Oak Creek and Salt Creek were channelized, the site was covered in salt flats and marshes. According to the City's disposal history records, the trash was buried in the former salt flats because these were low spots in the area that were easy to fill. The outline of the former salt flats corresponds to the areas filled with trash from the 1920's through 1940's.

One exception to this fill history is the area north of Oak Lake between Oak Creek and Cornhusker Highway and between North 1st Street and Interstate 180. The area is currently called Dog Run Park and includes a dog run and radio controlled car recreation area. In this area, trenches were dug and trash was buried within discrete trenches. The surface of the Dog Run Park is relatively flat with depressions along the axis of many of the trenches. The trenches cover the entire Dog Run Park area and indicate that the entire area was used for disposal of municipal trash beginning in the 1940's through 1952.

In summary, based on the core samples of the soil and trash that were collected in 2008 to identify the extent of the old landfill and historic information, trash is distributed across the site within the former salt flats that lie between the current Oak Creek and Salt Creek channels, beneath Oak Lakes and within discrete disposal trenches across the entire Dog Run Park.

**Landfill Gas Generation.** Methane gas is generated as organic material in landfills degrades over time. Methane gas was detected in the soil during several of the former investigations across the site. In 2008, soil gas probes were installed in discrete locations across the site to identify if methane and other gases were still present. The 2008 soil gas sample results indicate that the landfill is not currently producing significant amounts of methane gas at the sample locations. This is probably due to several factors, one being the age of the landfills and a second being the shallow groundwater level that inhibits methane gas generation. Additionally, soil gas samples were analyzed for other volatile organic compounds, including petroleum products and solvents. No detections of volatile organic compounds were identified in the soil gas samples collected in 2008.

**Landfill Cap.** During landfill operations, a cap or clay soil cover is typically placed on top of the trash to keep the trash from blowing away and to provide a substrate for vegetation to grow which ultimately stabilizes the surface of the former landfill and minimizes erosion. The thickness of the cap varies across the site. In areas where the cap is thin to absent, as in the northeast portion of Dog Run Park, there is trash including old tires and broken glass on the ground surface.

**Trash Disturbance or Removal.** Lincoln Lancaster County Waste Management office and the Solid Waste Section at the Nebraska Department of Environmental Quality were asked about the possibility of trash disturbance and/or removal

during redevelopment of the former municipal landfill fill areas. According to the two departments, disturbance and/or redistribution of the trash within the site is acceptable during redevelopment plans. This would allow for re-grading of the area in order to facilitate redevelopment of the site into recreational ball fields. Additionally, should material need to be removed from the site, several samples of the trash were tested using EPA-approved testing methods to ensure that the material would be acceptable for disposal at the City's current landfill at Bluff Road. According to the test results, all but one sample of the waste material was acceptable for disposal at the City's current landfill and would not be considered a hazardous waste.

**Groundwater Contamination.** Groundwater samples were collected during the 2008 field investigations and the results indicate detections of several metals and volatile organic compounds. The laboratory analysis of groundwater samples identified seven metals above the Nebraska Maximum Contaminant levels (MCL) established in Title 118- Ground Water Quality Standards and Use Classification at one or more of the sample locations. Vinyl chloride was the only volatile organic compound that exceeded an MCL.

## Recommendations

The landfill recommendations focus on the primary concerns associated with development of the formerly landfilled areas: settlement after construction, methane migration, and exposure of contaminated materials including soil, waste, and groundwater. The significance of each of these and associated management recommendations are presented in the remainder of this section.

### For Settlement:

It is likely the waste will continue to compact and subside over time, a condition that is substanti-

ated by the settlement plate measurements (Olsson Associates Geotechnical Report, 2008). However, for the proposed use of the area as ball fields, settlement is much less of a concern than if buildings were to be constructed.

The following actions are recommended to minimize the impact of settlement:

- **Preloading with a soil surcharge.** This would consist of applying the maximum fill depth for final site grades to trench and other landfilled areas. Settlement in these areas would be monitored for up to a year until settlement slows or stabilizes before final construction.
- **Applying a biaxial geogrid fabric.** Differential settlement across filled and unfilled areas may be reduced by connecting the areas with a biaxial geogrid fabric. The grid fabric would be placed to tie areas prone to settlement, such as the trenches, to areas that did not receive any trash.
- **Maintaining uniform symmetrical slopes on the ball fields.** This would consist of maintaining a uniform slope on either side of the center line through each ball field to minimize uneven infiltration of surface water into the subsurface.
- **Using flexible structures.** To the extent feasible, use of flexible, rather than rigid structures will minimize damage associated with differential settlement. Examples include using metal rather than brick or concrete for structures, using corrugated pipe rather than concrete for culverts, and having utility conduits on the exterior of the building, as opposed to bringing them up through the floor slab.
- **Providing good foundations for poles and light standards, etc.** Proper foundations will minimize settlement and tilting.

- **Siting irrigation sprinkler heads or other water sources outside filled areas.** Increased moisture in filled areas, particularly trenches, will tend to promote additional settlement.

### For Methane Migration:

It does not appear from the methane concentrations and pressures identified in the Dog Run Park and near the City Impound lot (Areas B and E in Figure 1) that these are a concern with respect to the proposed development. The methane concentrations detected are below levels that would require construction of vents and off-gas structures. However, beneath Oak Lakes, (Area A in Figure 1), methane concentrations and pressures were not measured during the recent NDEQ investigation (Terracon, 2008). Under the current redevelopment plans, the water level in Oak Lake west may be lowered and it is likely that once the lake level is changed that methane generation will increase. For this reason, additional monitoring is advisable. The following recommendations are made with respect to methane migration and monitoring:

- **Additional methane evaluation.** Measure methane concentrations and pressures in all areas prior to additional design and construction activities. Typically methane concentrations will decrease overtime; however, this should be confirmed. Methane monitoring should be continued for some time in the Oak Lakes area to evaluate changes after dewatering.
- **Construction precautions.** Construction should take into account the potential for methane accumulation in confined spaces created during construction. Measures should be taken to prevent methane accumulation in spaces under structures, in hollow light poles, and in utility trenches and conduits, etc.

## For Contaminated Materials:

Waste fill materials are currently exposed at the surface in some areas or may be exposed as a result of future grading operations. These materials could prove a hazard, particularly on the playing fields. The following recommendations apply to exposed waste materials:

- **Exposed materials should be regraded or removed to a depth to permit placement of a soil cap over the area.** A minimum of two feet of soil is recommended over waste material in areas where heavy traffic is anticipated (i.e., where players may be sliding into a base or home plate on the baseball fields). If this is not feasible, a geotextile with a minimum of one foot of soil cover is recommended.
- **Waste should be properly disposed of as determined by the results of waste characterization testing.** Based on testing completed at Dog Run Park and near the city impound lot, the soil and buried landfill waste materials are not considered hazardous wastes and would be acceptable for disposal at the City's landfill at Bluff Road. One sample collected from the Oak Lakes area (Area A) was identified as a hazardous waste based on high lead levels. To minimize offsite disposal costs, regrading of materials onsite is suggested over removal. Regrading of onsite materials was discussed with NDEQ and is an acceptable practice based on the current regulatory requirements.
- **Construction activities that may expose workers to contaminated waste materials or groundwater should comply with applicable Occupational Health and Safety Act requirements.**

# Floodplain

## Summary

The majority of the West Haymarket project area is located within the floodplains of Salt Creek and Oak Creek. Updated modeling and flood mapping has been performed by the City of Lincoln for Salt Creek. The new modeling includes a dynamic analysis of the impacts of flood storage on Salt Creek flood flows and flood elevations. The new maps will become effective as soon as they are published by FEMA (anticipated date summer 2009). The West Haymarket project will include fill in the floodplain for the redevelopment areas, roads, and railroads. Excavation will take place in designated flood storage areas, parking lots, and ball fields in order to mitigate for lost flood storage due to fill in the redevelopment area. This plan describes floodplain conditions on the site today, floodplain regulations and policies, impacts to the floodplain from the proposed development, and recommended mitigation measures and policies for the proposed project.

## Background

The West Haymarket project area is located within the regulatory floodplain of Salt Creek. Salt Creek receives runoff from the City of Lincoln and surrounding areas. In the vicinity of the West Haymarket project area, the Salt Creek watershed (contributing drainage area) is approximately 300 square miles in size. Oak Creek, at the north end of the project receives runoff from a separate watershed that is approximately 170 square miles in area. The floodplain for Salt Creek is approximately one mile wide through the project area.

The hydraulic modeling and floodplain mapping for Salt Creek, including the mapping and modeling within the West Haymarket project area, was updated by the City of Lincoln in 2007. The updated modeling and mapping will become effective when FEMA publishes the new maps (anticipated date is summer, 2009). Until the new maps are published by FEMA, the updated delineations are referred to as the flood prone areas and the current regulatory map delineations are

referred to as the floodplains. The Flood Insurance Rate Map (FIRM) for Lincoln (Community-Panel No. 31109C 0305E and 0315E, September 21, 2001) and the updated flood prone area map for the City of Lincoln are depicted on the following pages (Figures 1 and 2). Much of the site is located within the limits of the 100-year floodplain or flood prone area.

The proposed redevelopment area, on the east side of the proposed railroad tracks, is near the east edge of the Salt Creek floodplain/flood prone area. Most of the proposed fill for the West Haymarket arena, hotel, and related facilities is located within the re-development area along the east edge of the floodplain/flood prone area. The areas shown on the west side of the proposed railroad tracks would primarily be used for flood storage mitigation areas. In the flood storage mitigation areas, the ground would be excavated and regraded to create additional flood storage volume. Potential flood storage mitigation areas include the proposed surface parking lot and the

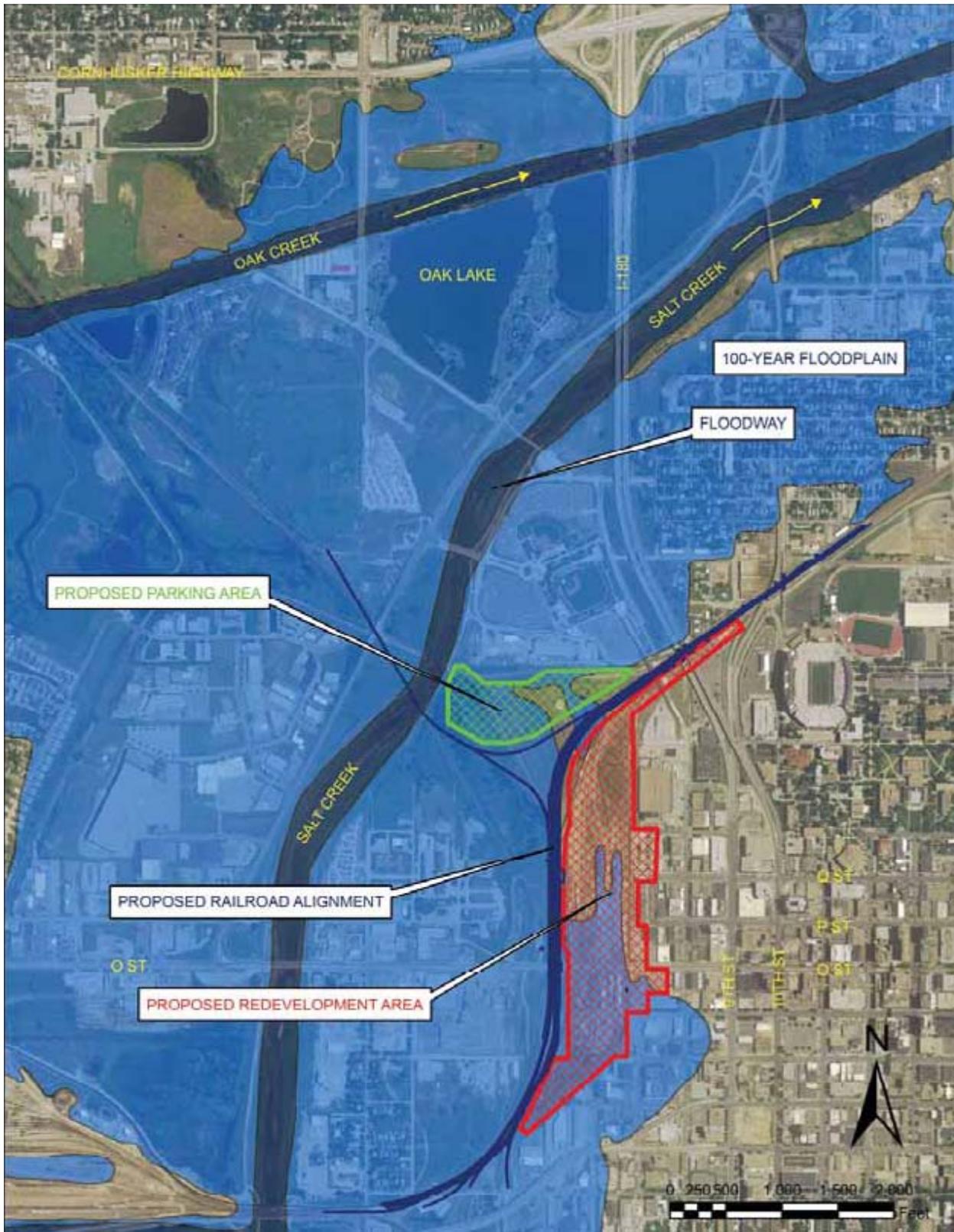


Figure 1 - Regulatory 100-year floodplain and floodway boundaries from FEMA Flood Insurance Rate Map (2001)

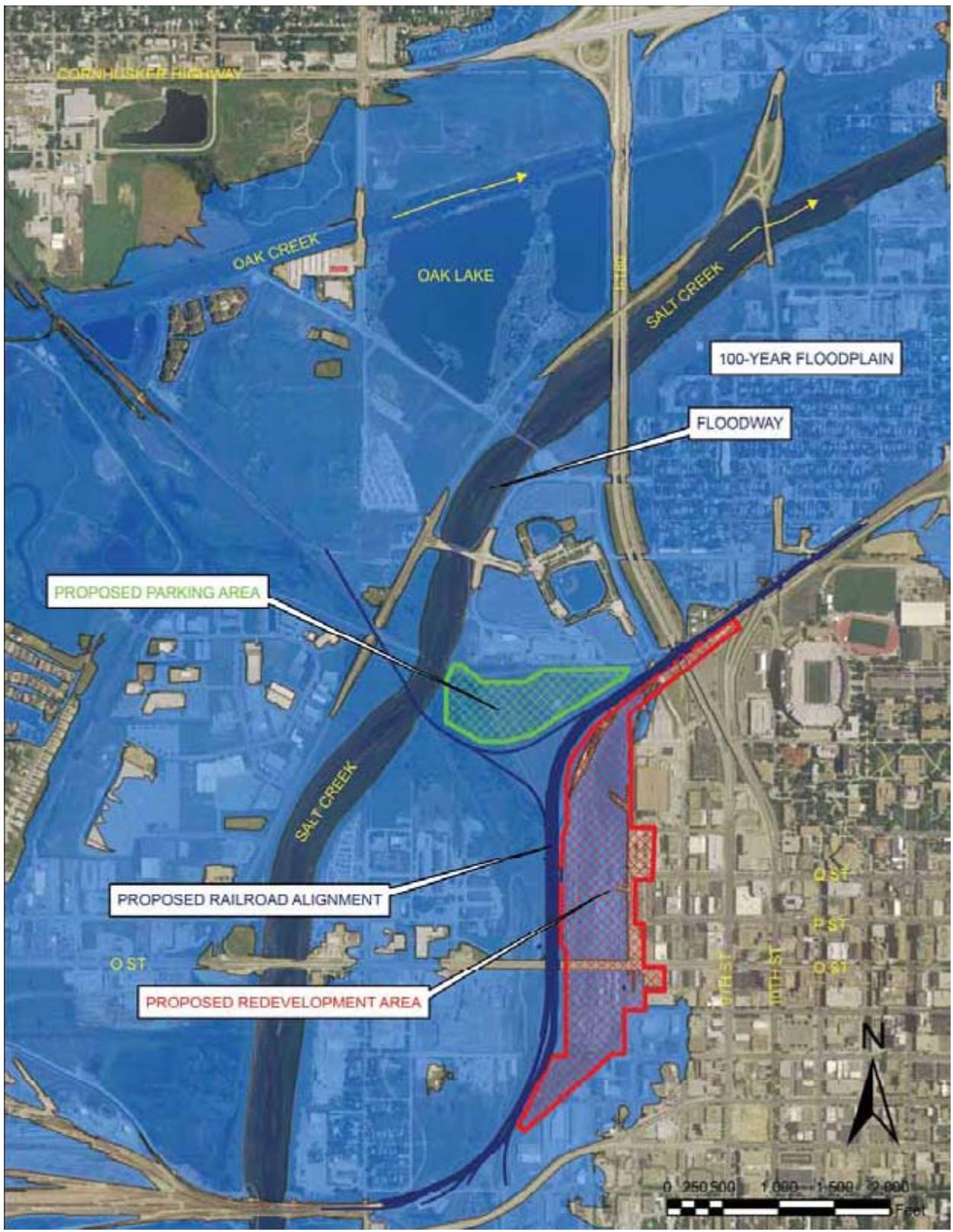


Figure 2 - Updated 100-year floodprone area and proposed floodway boundaries from City of Lincoln Study (2007)

constructed wetland areas. A map of the potential cut and fill areas is provided in Figure 3 on the opposite page.

The updated Salt Creek flood mapping included the establishment of flood storage areas in the overbanks of Salt Creek. In order to preserve the proposed floodway boundaries as shown above, floodplain fill for future development must be kept at or below the fill limits (expressed as percent of total floodplain storage) indicated for the SCFSA. Future development within SCFSA 9 can include fill of up to 40% of the floodplain volume on the site.

## Recommendations

City of Lincoln and FEMA floodplain/flood prone area regulations do allow fill in the floodplain/flood prone area. However, one of the key objectives of this project is to achieve “No Adverse Impact” (NAI) conditions with regard to the Salt Creek flood prone area. NAI conditions include the no net fill and no-rise stipulations. Therefore, future development within the project should be designed to achieve no net fill within the Salt Creek flood prone area. The proposed project should be also designed to avoid increases to flood elevations along Salt Creek.

The redevelopment area is contained within Salt Creek Flood Storage Area Nine (SCFSA 9). SCFSA 9 is where most of the anticipated floodplain fill and mitigation would occur for the proposed project. However, the entire West Haymarket project area overlaps portions of SCFSA 9, 10, and 11. Some flood storage mitigation will need to be accommodated within SCFSA 10 and 11. Development in SCFSA 10 and 11 will consist of athletic fields and public recreation facilities. These features should be designed to include no net fill within the flood prone area. In fact, the portions of the project area within SCFSA 10 and 11 should be designed to include a net increase in flood storage.

NAI philosophy includes no net fill conditions and no-rise conditions. No-rise conditions occur when the flood elevations do not increase as a result of the proposed development. The updated existing conditions flood storage models for Salt Creek will be revised to reflect construction of the proposed project features. Then the model will be rerun. The flood storage mitigation and the project components should be designed such that the computed flood elevations in the proposed conditions model are not above those from the existing conditions model. Construction of the West Haymarket development should not result in an increase to the base flood elevations on Salt Creek.

Excavation and grading within 500 ft of the Salt Creek Levees requires coordination with the Lower Platte South Natural Resources District (LPSNRD, owner) and the U.S. Army Corps of Engineers (USACE, regulatory agency). Proposed grading plans for flood storage mitigation areas (along with plans for Salt Creek bridge construction/renovation and any other work within 500 ft of the levees) should be submitted to the LPSNRD for their review and comment. The LPSNRD will coordinate with the USACE to perform the review process.

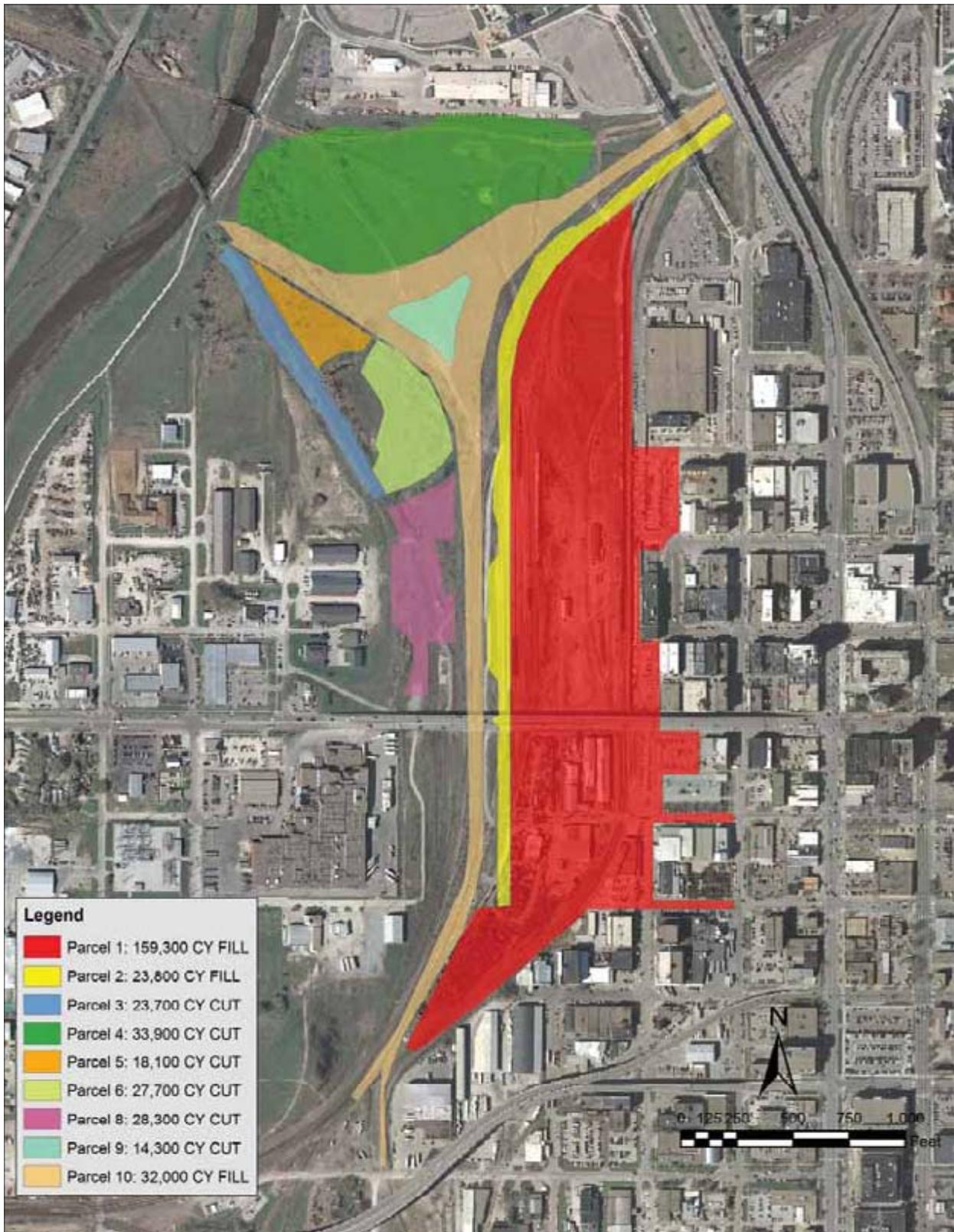


Figure 3 - Proposed grading plan and cut/fill figure for West Haymarket redevelopment area, located within SCFSA 9.

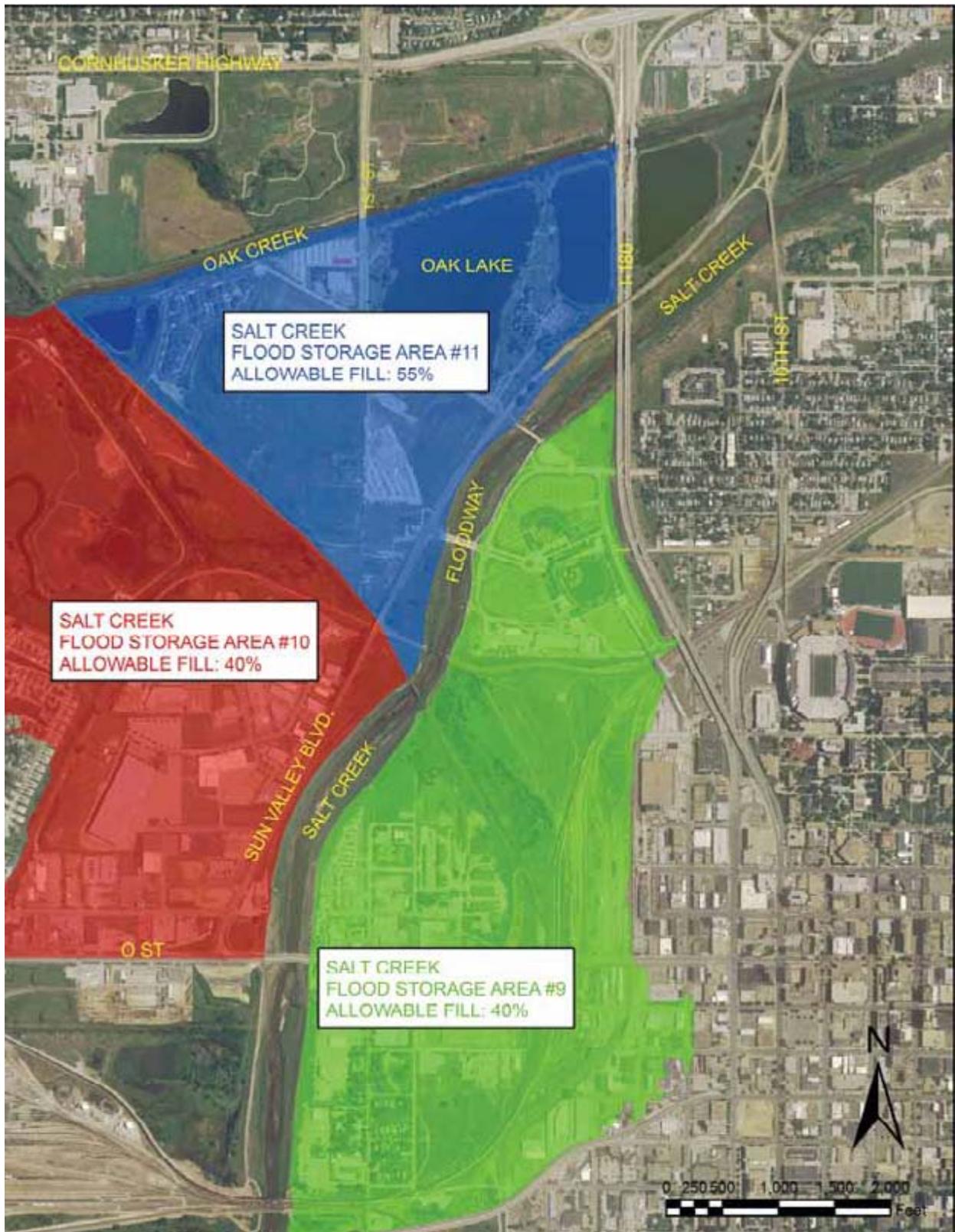


Figure 4 - Designated Flood Storage Areas for Salt Creek (SCFSA) and allowable fill limits, expressed as a percentage of total floodplain volume (City of Lincoln, 2007).

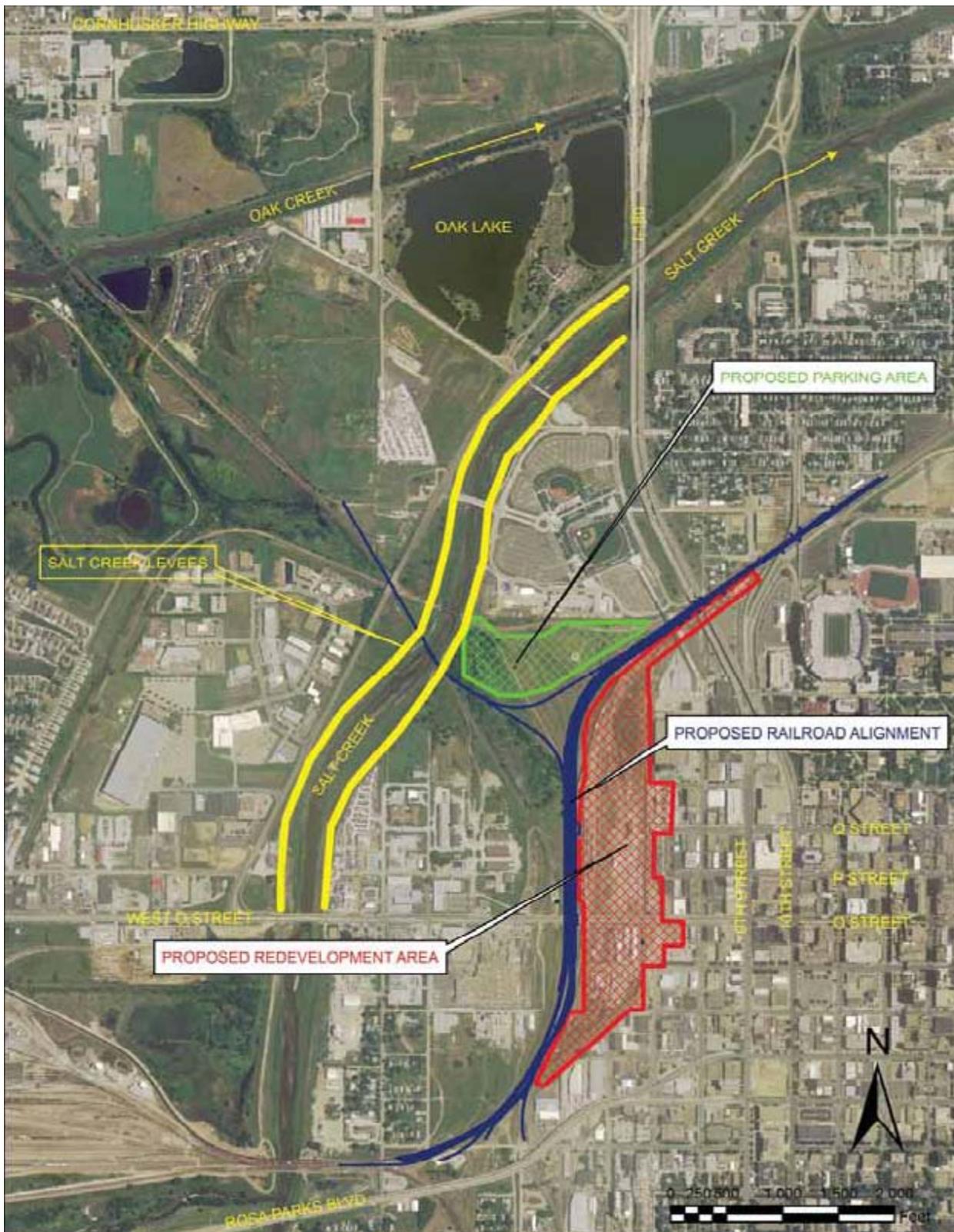


Figure 5 - Levee locations and configurations along Salt Creek

# Stormwater Management

## Summary

Potential development within the greater West Haymarket project area may include construction of new roads, railroads trackage, surface and decked parking, recreational fields, wetland/flood storage mitigation areas, and buildings. Construction of these features affects stormwater runoff patterns on the site, including drainage paths, quantity, quality, and timing. Proper design and construction of stormwater conveyance and treatment measures is required to drain stormwater runoff within the site and prevent increases to peak discharges or runoff pollutant concentrations from the project area. This summary describes existing drainage patterns on the site, stormwater impacts from the proposed development, and recommendations to mitigate the impacts and provide proper drainage for the proposed development.

## Background

The West Haymarket project area spans two creeks (Salt Creek and Oak Creek) and includes several different drainage areas with complex drainage patterns. The area east of Salt Creek, including the existing Haymarket area generally drains from east to west and ultimately is discharged into Salt Creek. The area between Salt Creek and Oak Creek drains in many directions and runoff is discharged to Oak Creek, Salt Creek or Oak Lake. North of Oak Creek the runoff flows overland to the north and east where it is intercepted by a drainage ditch and eventually conveyed south to Oak Creek. The existing drainage patterns are illustrated in Figure 1 on page 158.

As illustrated in Figure 2 on page 159, many of the drainage areas within the West Haymarket project area include wetlands or water features, where runoff is ponded or even retained. Some of the wetlands are saline wetlands, which have specific hydrologic requirements in order to maintain the appropriate soil salinity concentrations.

The primary redevelopment area for the West Haymarket project is located along the western edge of the existing Haymarket. Development in this area will include the proposed arena, hotels, and commercial facilities. Approximately 50 acres of land will be redeveloped within this area. Currently, the land in this area is being used as a railyard. In addition to the 50 acres immediately west of the Haymarket, approximately 15 acres of surface parking will be provided between the proposed railroad tracks and Haymarket Park. Recreational fields and sports facilities are being considered for areas north and west of Salt Creek, including the open areas between Salt Creek and Oak Creek and the open area north of Oak Creek. These facilities could include a few buildings. Surface parking will be constructed in conjunction with these facilities. The athletic fields will probably not drastically alter the finished grade nor the drainage patterns in these areas.

## Recommendations

The recommendations for stormwater management for future development in the project area are threefold:

- **Reduce stormwater runoff peak flows, volume, and pollutant concentrations by incorporating Low Impact Development (LID) features into the proposed developments.** LID features may include grasspave surface parking areas, pervious paver blocks for open spaces and courtyards, rain gardens, bioswales, green roofs, cisterns for rainwater collection and storage, infiltration trenches, and pervious pavement.
- **Incorporate surface drainage features, such as bioswales and ditches into the drainage system, where possible.** Provide for vegetative filtration of stormwater runoff by selecting appropriate species of native vegetation. Slow down the runoff and decrease sediment transport capacity and erosive potential.
- **Construct wetlands within the proposed flood storage mitigation areas.** Direct stormwater runoff to the constructed wetlands to enhance water quality of runoff. Construct adjustable hydraulic structures at the outlet of the wetlands, such as stop-log weirs in order to control the hydrology of the constructed wetlands and optimize the hydrology of the adjacent saline wetlands. Use adaptive management to adjust the hydraulic structures and outflow in order to optimize the hydrology of the adjacent saline wetlands.

If the above measures are implemented within the proposed development, then stormwater runoff peak flows, volumes, and pollutant concentrations should all decrease or be maintained at the same levels following development.

Adaptive management of the constructed wetlands/flood storage mitigation areas is required in order to ensure optimum hydrologic conditions for the adjacent saline wetlands.

Where contaminated soils are present in construction and grading areas, those soils may need to be contained or treated, depending on contaminant type and concentration. Where possible, grading and construction activities should be kept outside contaminated areas. If construction and grading must occur within contaminated areas, the soils should be treated or properly contained by clay soils or physical barriers to prevent stormwater or groundwater contamination. It may be possible to reuse contaminated materials as structural fill. If untreated, the contaminated soils may be useful as structural fill under impervious surfaces, such as asphalt parking lots. If treated, the soils may be useful for structural fill under building pad sites. Excavated soils should be examined and tested to determine if the soils are contaminated and the level of contamination prior to determining any treatment or reuse options.

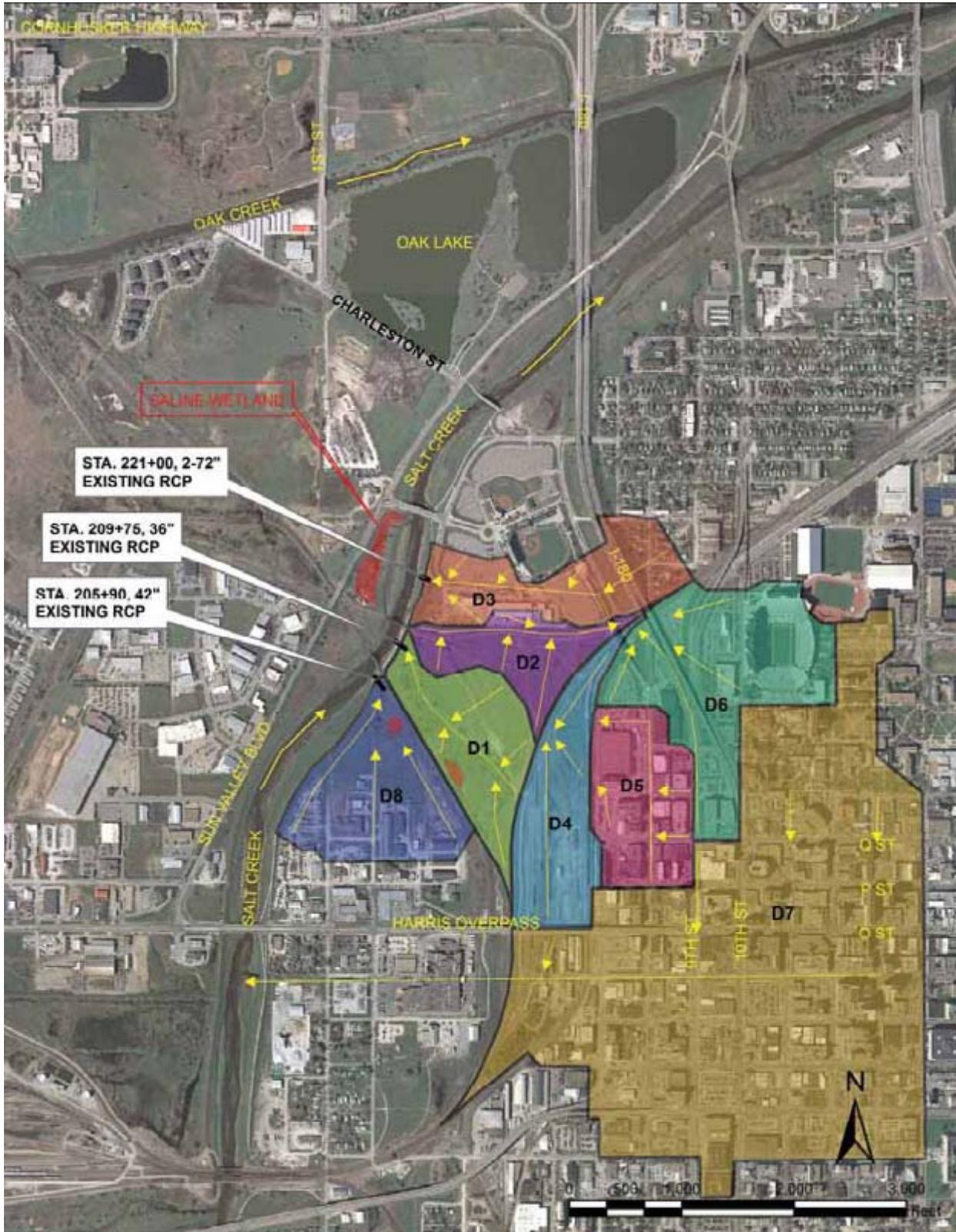


Figure 1 - Existing drainage areas and drainage flow paths for SCFSA 9

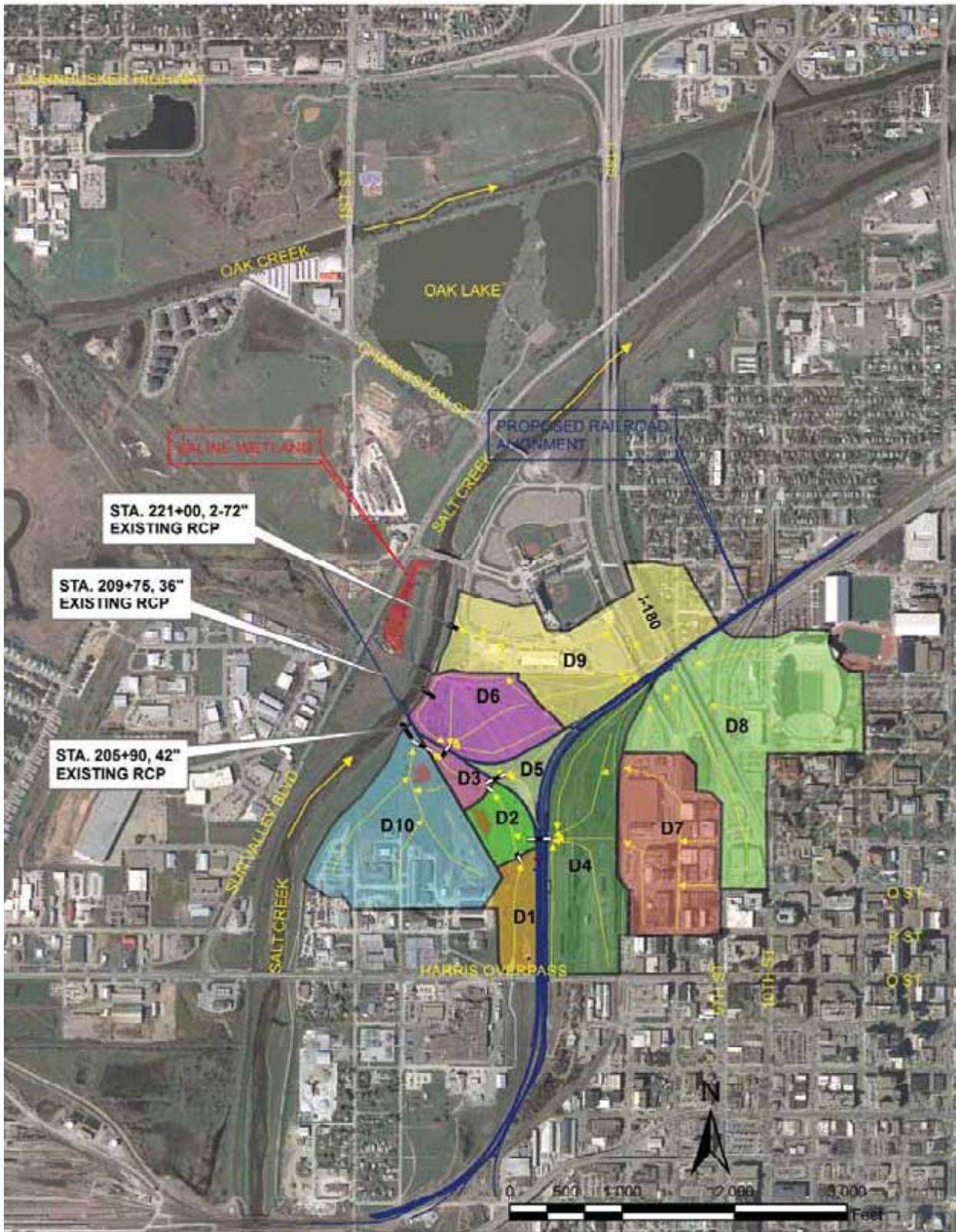


Figure 2 - Proposed drainage areas and drainage flow paths



# Capitol View Corridors

## Summary

The greater West Haymarket project area is partially located within the view corridors of the State Capitol Building. Construction within the view corridors is regulated so that the view of the Capitol Building is not impaired. Structures which could impair the view would need to be approved by the Capitol Environments Commission.

## Background

### Existing Conditions

Most of the West Haymarket project area is not located within a Capitol View Corridor. The figure to the right highlights the portions within the corridors (shaded areas) at the extreme northern and the southern parts of the site.

### Anticipated Conditions

The West Haymarket development is unlikely to include structures that could impact the view corridors. How structures in the vicinity of 'O' Street in particular could be within view corridors, and impacts to views of the State Capitol would thus need to be considered in the design of those buildings.

## Recommendations

Coordination with the Nebraska Capitol Environments Commission will be pursued for any buildings or other tall structures located within the areas designated as "Capitol View Corridors."



*Capitol View Corridors (shaded regions)*





# *West Haymarket*

**SITE** 'RECREATIONAL' DEVELOPMENT



In progress



# West Haymarket Recreation

## Summary

Recreation opportunities are a critically component in the quality of life for persons of all ages. As a community, Lincoln must ensure ever local resident has access to recreation opportunities appropriate for them. To support this objective the West Haymarket endeavor seeks to provide recreational activities which serve multiple outcomes:

- Enlarge Lincoln's economic base by fostering tourism, entrepreneurship, and investment opportunities
- Promote community health , wellness, and environmental education
- Increase opportunities for post college-age students and our children to become long-term Lincoln residents
- Expand entertainment opportunities
- Assist the University of Nebraska-Lincoln in leveraging its education and student athletic mission
- Encourage private charitable giving and business investing to create public-private partnerships to advance strategic community projects.

In addition, the creation of recreation opportunities in the West Haymarket meets the Project's goals by facilitating an expanded Haymarket Park and the surrounding area into a multi-purpose recreation complex. This in turn complements formation of the "Nebraska Sports Triangle" – the strategic triad tying together Memorial Stadium, Haymarket Park and the proposed West Haymarket Civic Arena.

Through dialogue with recreation providers in Lincoln, extensive research on successful recreation programs, and engagement of local stakeholders, the need for several recreation facilities has been identified. The most significant near term need found through this community input and research is for baseball and softball facilities—specifically, for practice, local league play, and hosting of tournaments.

Another priority need is a community ice center available for use by local hockey leagues, the University of Nebraska club hockey teams, figure skaters, and the general public. Other needs are multi-purpose fields for practice, University intramural activities, and multi-use activities. Finally, the West Haymarket area is the focal point for connectivity for the city's trail system. Any recreation uses in the area will be greatly enhanced by expanding and providing connections to the existing trail system.



## Background

Over the past two years an extensive effort has been made to develop a solid understanding of the recreation needs in Lincoln with a focus on how these needs may be accommodated in the West Haymarket area. The impetus of this effort was the 2015 Vision Group's desire to expand Haymarket Park and to create the "Nebraska Sports Triangle."



This task began with the completion of extensive interviews with Lincoln area recreation providers, including meetings with the following groups:

- Lincoln Parks and Recreation
- University of Nebraska Campus Recreation
- Youth baseball club team and league representatives
- American Legion Baseball
- Adult baseball leagues
- Youth softball club team and league representatives
- Doris Bair Softball Complex representatives
- Abbott Sports Complex
- Capital Soccer Association
- Nebraska Soccer Association
- Lincoln Public Schools
- YMCA
- Nebraska Sports Council
- Great Plains Trails Network
- Lincoln Optimists Club
- Lincoln Saltdogs
- Nebraska State Activities Association

This resulted in a comprehensive understanding of the recreation needs for youth and adults, and for public and private providers in Lincoln. The participants in the interviews were asked about their goals for promoting community recreation in Lincoln, existing conditions regarding participation, facilities and expectations for the future. Every recreation provider confirmed the importance of recreation — not just for the sport or group they represented—as a component in the quality of life in Lincoln. Furthermore, the providers indicated participation in recreation activities across areas was increasing. Naturally, some activities are increasing faster than others.

The findings of the interviews revealed the greatest need for additional baseball and softball facilities for practice, local league games and the ability to host tournaments. Another priority need is a community ice arena available for use by local hockey leagues, the University of Ne-

braska club hockey teams, figure skaters and the general public. The need and desire for an ice arena is being addressed in the West Haymarket area. Through a generous private donation, an ice arena is being designed and will potentially locate in the area adjacent to the proposed West Haymarket arena.

Multi-purpose fields for practice areas, University intramural activities, and multi-use activities such as programming and seating for community 4th of July activities also form a critical part of recreation in West Haymarket. The West Haymarket area is the focal point for connectivity for the city's trail system. Recreational uses in the area will be greatly enhanced by expanding and providing connections to the existing trail system. Finally, the West Haymarket area is laced with valued saline wetlands. Combining trails and recreation areas with this critical habitat provides environmental education opportunities for Lincoln residents and visitors alike.

A second component in determining how the West Haymarket area may accommodate recreation needs in Lincoln included research into the following topics:

- Inventory of existing programs and facilities
- Study of business models
  - Sports councils
  - Private, non-profit operation
  - Private, for profit operation
  - City operation
- Economic development opportunities
- Promoting community health and recreation

Based on the identified need for baseball and softball facilities, Lincoln Mayor Chris Beutler appointed an ad-hoc task force to develop recommendations for how baseball and softball facility needs may be met within the West Haymarket area. The purpose of this group was:

- Determine the current and anticipated need for baseball and softball facilities in Lincoln, including facilities that may be used to host tournament events
- Create a program statement for a new baseball/softball complex including fields and support facilities (parking, concessions, maintenance, playground, picnic, and day use)
- Discuss potential locations where a baseball/softball complex may be developed with a focus on West Haymarket
- Review cost estimates for a baseball/softball complex and develop funding strategies
- Review a business plan for operations and maintenance of a baseball/softball complex, including a fee structure to offset operational costs

The task force identified the existence of over sixty club teams in Lincoln with the teams playing over 4,000 games per season, but only three-quarters of the games were played in Lincoln. If additional facilities were constructed, over 1,000 games could be played in Lincoln versus at tournament events in other cities. Also, there is a significant need for additional facilities to provide for adequate practice time. And, the greatest need is for ball fields appropriately sized for youth baseball and softball.

Research and consultation with the Lincoln Convention and Visitors Bureau indicated developing a youth ball field complex in Lincoln could provide a lucrative economic development component for the city. The optimal size for the facility is eight to twelve fields. The task force concluded

that the West Haymarket area – with its central location in Lincoln and easy access to downtown and the University of Nebraska – is an ideal location for such a complex.

## Recommendations

The recreation needs of Lincoln are many, with the corresponding space needs even exceeding the area available in West Haymarket. As a result, it is recommended a complex be built to meet the pressing needs for youth baseball and softball in Lincoln in the West Haymarket area – while retaining and expanding as possible opportunities within the overall area for neighborhood recreation and facilities meeting community recreation needs, such as 4th of July events, trail connections, dog run, and environmental education related to Lincoln's unique saline wetlands. In addition, the opportunity for future expansion of the recreational use of the Oak Lake area should be studied to determine its feasibility.

A conceptual plan for West Haymarket recreational enhancements should consider the following facilities as part of the overall programming process:

- Youth baseball/softball fields
- Regulation size baseball field(s)
- Concession, restroom and storage building(s)
- Playground
- Radio-control model race track
- Internal trail/pedestrian system with linkage to the city wide trail network
- Concession, restroom and storage building(s)
- Internal trail/pedestrian system with linkage to the city wide trail network
- Parking facilities



# *West Haymarket*

**SUSTAINABLE 'GREEN' DEVELOPMENT**



In progress



# LEED ND Description & Benchmarking

## Summary

With the signing of the Mayor's Executive Order (EO) #080968 in April of 2008, the City of Lincoln took an important step toward pursuit of a more affirmative "green development policy." This EO encourages sustainable building practices for new and renovated city building, reducing waste through recycling and other techniques, and greater water conservation with sustainable landscaping.

As part of this commitment, the Executive Order promotes the use of the United States Green Building Council's (USGBC) LEED (Leadership in Energy & Environmental Design) Green Building Rating System as a benchmark for meeting the City's sustainability goals.

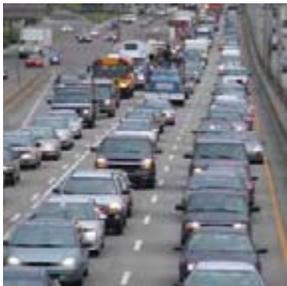
The reclaiming of the West Haymarket for development presents an unparalleled opportunity for Lincoln to plan and construct a significant urban neighborhood' embodying LEED concepts. These concepts can include multi-use building development, revitalization of an existing urban area, reduction in automobile dependence, promotion of pedestrian activity, and decreases in stormwater runoff and water pollution.

With that goal in mind, the City seeks to redevelop West Haymarket consistent with guidelines of the LEED Neighborhood Development (LEED-ND) Pilot Program.

LEED-'ND' is based upon a rating system which consists of four major evaluative categories:

- Smart Location & Linkage
- Neighborhood Pattern & Design
- Green Construction & Technology
- Innovation & Design Process

Within each of these categories, there are both 'pre-requisite' components and 'available credits' from which the development can benchmark (rate) its level of performance as to the USGBC sustainable development goals. A copy of the recommended 'Benchmarking Checklist' for the West Haymarket Development is included at the end of this section; however a broader explanation of each component within the four categories as it applies to the West Haymarket's ability to achieve or exceed the criteria set up within LEED 'ND', is shown on the following pages.



## Smart Location & Linkage

The primary goals of this category are to a) encourage development within & near existing public transportation infrastructure, b) conserve natural and financial resources associated with the construction and maintenance of infrastructure, c) protect imperiled species and ecologies, d) conserve water bodies and wetlands, e) preserve irreplaceable agricultural resources and f) promote habitat conservation, enhanced water quality and natural hydrological systems.

These six goals are evaluated relative to the following subcategories which carry a potential for 30 LEED ND credits.

Credit 1	Brownfield Redevelopment	2 points
Credit 2	High Priority Brownfields Redevelopment	1 point
Credit 3	Preferred Locations	2-10 points
Credit 4	Reduced Automobile Dependence	1-8 points
Credit 5	Bicycle Network	1 point
Credit 6	Housing and Jobs Proximity	3 point
Credit 7	School Proximity	1 point
Credit 8	Steep Slope Protection	1 point
Credit 9	Site Design for Habitat or Wetlands Conservation	1 point
Credit 10	Restoration of Habitat or Wetlands	1 point
Credit 11	Conservation Management of Habitat or Wetlands	1 point
		<b>= 30 possible points</b>

The West Haymarket development offers the following opportunities relative to these credits.

### Brownfield Redevelopment & High Priority Brownfields Redevelopment

The term 'Brownfield' is associated with existing industrial and/or commercial land (that is underused or abandoned) in which the potential for redevelopment of such a site is complicated by



environmental contamination such as hazardous waste or pollution. The West Haymarket development should qualify for 2 LEED 'ND' credits in terms of its upgraded use of the current railyards in addition to the remediation & protection of various environmental issues inherent to the location. However since the project is not within a Federal Empowerment Zone, or Federal Enterprise Community or a Federal Renewal Community, it is unlikely to qualify for the 1 credit available for High Priority Brownfields Redevelopment.

Yes	?	No	Credit	Possible Points
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 1: Brownfield Redevelopment	2
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Credit 2: High Priority Brownfields Redevelopment	1

### Preferred Location



Previously developed existing infill sites are given preference in that they take advantage of current underused networks within a City. Projects can qualify for up to 10 points depending upon particular street grid density calculations. The West Haymarket development should be

able to qualify for at least 7 LEED 'ND' credits with additional credits available upon final traffic infrastructure layouts and their interface with existing traffic grids.

**7** **3** **1** Credit 3 Preferred Location

## Reduced Automobile Dependence



This credit is designed to encourage developments to provide superior transportation options, thus reducing the need for motor vehicle use within the development area. With Amtrak being part of the development as well as the proximity & likelihood of extending bus service down into the West Haymarket area, it is felt that at least 4 LEED 'ND' credits of the 8 available in this category, can be easily achieved. Any of the 4 remaining credits will be derived as a result of the final number of total rides available per weekday.

**4** **3** **1** Credit 4 Reduced Automobile Dependence

## Bicycle Networks

One of the key aspects of creating a sustainable neighborhood development involves the incorporation of alternative transportation networks. LEED 'ND' encourages the development of bicycle trail networks which either connect to an existing network or create a new bicycle route within the district. The West Haymarket project will easily qualify for the 1 LEED 'ND' credit available under this category because of its planned linkage into the existing Downtown trails network.



**1** **3** **1** Credit 5 Bicycle Network

## Housing and Jobs Proximity



Strong 'sustainable' neighborhoods provide opportunities to both live and work within a reasonable walking distance of each other. The Historic Haymarket already has a significant housing component within its boundaries and the new West Haymarket is envisioned to incorporate a significant additional amount of residential development. Depending upon the final square footage constructed, it is felt that at least 1 LEED 'ND' credit of the 3 possible can be achieved. If the residential component results in an area that is 25% of the total building area square footage in West Haymarket, the remaining 2 points may be achievable as well.

**1** **3** **1** Credit 6 Housing and Jobs Proximity

## School Proximity



LEED 'ND' encourages residential development that is in close proximity of planned or existing schools, for the obvious benefit of reducing the need for significant transportation commitments. With the West Haymarket being within 1/2 mile of the University of Nebraska City Campus, the development will easily qualify for the 1 LEED 'ND' credit available under this category.



## Steep Slope Protection & Site Design for Habitat or Wetlands Conservation & Restoration of Habitat or Wetlands & Conservation Management of Habitat or Wetlands

The West Haymarket Development includes a long-term management plan that involves both



local and natural resource agencies in terms of wetland & habitat conservation. Because of this concerted effort, the West Haymarket development should be able to qualify for the 3 LEED 'ND' credits available under these categories. The only credit not available is the one for steep slope protection, as the development site is fairly level in it's topographic profile.



## Neighborhood Pattern & Design

The primary goals of this category are to a) foster 'connectedness' between the development and the surrounding community and b) promote livability, transportation efficiency and walkability within the development. These two goals are evaluated relative to the following subcategories which carry a potential for 39 LEED ND credits.

Credit 1	Compact Development	1-7 points
Credit 2	Diversity of Uses	1-4 points
Credit 3	Diversity of Housing Types	1-3 points
Credit 4	Affordable Rental Housing	1-2 points
Credit 5	Affordable For-Sale Housing	1-2 points
Credit 6	Reduced Parking Footprint	2 points
Credit 7	Walkable Streets	4-8 points
Credit 8	Street Network	1-2 points
Credit 9	Transit Facilities	1 point
Credit 10	Transportation Demand Management	2 point
Credit 11	Access to Surrounding Vicinity	1 point
Credit 12	Access to Public Spaces	1 point
Credit 13	Access to Active Public Spaces	1 point
Credit 14	Universal Accessibility	1 point
Credit 15	Community Outreach and Involvement	1 point
Credit 16	Local Food Production	1 point
		<b>= 39 possible points</b>

The West Haymarket development offers the following opportunities relative to these credits.

## Compact Development



This credit is meant to encourage the conservation of open land by promoting livability, walkability and transportation efficiency through an increased density in both residential and non-residential component within a project. While a determination cannot be made until both private & public components are completely designed, the intent within West Haymarket will be to achieve at least 4 LEED 'ND' credits of the 7 available under this category. This will require a residential density within the development of 40 to 50 dwelling units per acre and a non-residential density of 2.0 to 2.5 FAR.

Yes	No	Possible Points
4	3	7

Credit 1 Compact Development

## Diversity of Uses

This credit shares the same goal as 'COMPACT DEVELOPMENT' in terms of promoting community livability, transportation efficiency and walk-

ability. But it seeks to achieve that goal through encouraging residential development to be within walking distance of two to ten community uses (e.g. Child Care, Convenience Stores, Laundries, Medical facilities, Restaurants, Theaters). Again, knowing that a determination cannot be made until both private & public components are completely designed, the intent within West Haymarket will be to achieve at least 2 LEED 'ND' credits of the 4 available under this category. This will require that the development be in proximity to at least four diverse uses.



2	3	4	Possible Points
2	3	4	4

Credit 2 Diversity of Uses

## Diversity of Housing Types

The goal of this credit is to promote residential development that appeals to a wide range of economic & age levels from the community. The City's intent is to encourage all private residential development within West Haymarket to achieve the minimum requirements of this goal. So at least 1 LEED 'ND' credit of the 3 available under this category can be reasonably assumed.

1	2	3	Possible Points
1	2	3	3

Credit 3 Diversity of Housing Types







### Transit Facilities & Transportation Demand Management

These credits are meant to encourage the use of multimodal transportation through the provisions of covered or partially covered transit shelters and enactment of a transportation management program aimed at reducing weekday period trips by at least 20%. Since it is currently assumed that the increased activity in the West Haymarket



design will result in the extension of LTS routes into the development, the project should be able to qualify for at least 2 LEED 'ND' credits of the three available.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 9	Transit Facilities	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 10	Transportation Demand Management	<input type="checkbox"/>

### Access to Surrounding Vicinity & Access to Public Spaces & Access to Active Public Spaces



These credits are meant to promote safe and direct connections for pedestrians and bicyclists, to local destinations and neighborhood centers. An additional goal is to provide a variety of open spaces close to places of work & residence within the development. With the planned Festival 'Green' Space and connections to Lincoln's existing bicycle trails network, all of the 3 LEED 'ND' credits should be attainable.

<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 11	Access to Surrounding Vicinity	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 12	Access to Public Spaces	<input type="checkbox"/>
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 13	Access to Active Public Spaces	<input type="checkbox"/>

### Universal Accessibility

This credit is designed to assure that the widest spectrum of people, regardless of age or ability, are able to participate in the activities within the development. This goal is benchmarked against the standard of having at least 20% of each type of residential unit constructed in compliance with



the Fair Housing Act. This goal will be incorporated into any redevelopment agreements with private developers, so the project should qualify for the 1 LEED 'ND' credit available.

**Credit 14 Universal Accessibility**

### Community Outreach and Involvement

This credit is designed to encourage community participation in the project design and planning. This has been, and will continue to be, a primary



goal from the City's perspective. Many public sessions have been held throughout the initial planning stages, so the project should easily qualify for the 1 LEED 'ND' credit available.

**Credit 15 Community Outreach and Involvement**

### Local Food Production

This credit is given for projects that are able to incorporate community-based and local food productions as a component of the project to minimize the environmental impacts of food transportation. Since the scope of West Haymarket does not include that possibility, the project will not be able to qualify for the 1 LEED 'ND' credit available.

**Credit 16 Local Food Production**

### Green Construction & Technology

The primary goal of this category is to reduce pollution from construction activities by controlling soil erosion, waterway sedimentation and airborne dust generation.

This goal is evaluated relative to the following subcategories which carry a potential for 31 LEED ND credits.

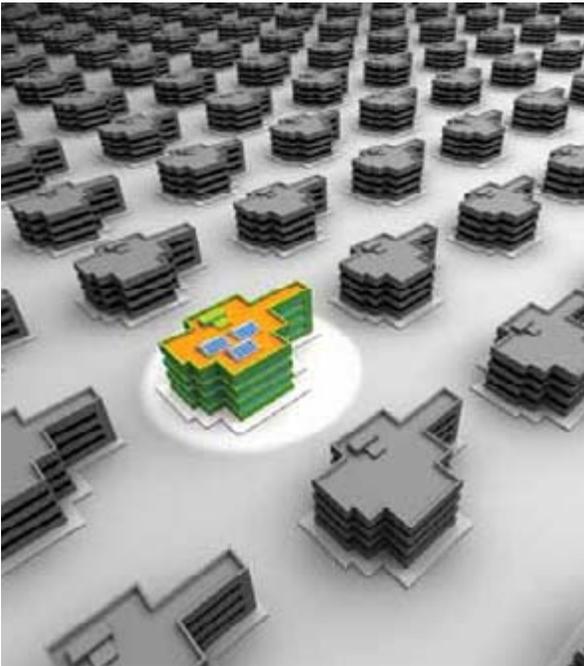
Credit 1	Certified Green Buildings	1-3 points
Credit 2	Energy Efficiency in Buildings	1-3 points
Credit 3	Reduced Water Use	1-3 points
Credit 4	Building Reuse and Adaptive Reuse	1-2 points
Credit 5	Reuse of Historic Buildings	1 point
Credit 6	Minimize Site Disturbance through Site Design	1 point
Credit 7	Minimize Site Disturbance during Construction	1 point
Credit 8	Contaminant Reduction in Brownfields Remediation	1 point
Credit 9	Stormwater Management	1-5 points

Credit 10 Heat Island Reduction	1 point
Credit 11 Solar Orientation	1 point
Credit 12 On-Site Energy Generation	1 point
Credit 13 On-Site Renewable Energy Sources	1 point
Credit 14 District Heating and Cooling	1 point
Credit 15 Infrastructure Energy Efficiency	1 point
Credit 16 Wastewater Management	1 point
Credit 17 Recycled Content in Infrastructure	1 point
Credit 18 Construction Waste Management	1 point
Credit 19 Comprehensive Waste Management	1 point
Credit 20 Light Pollution Reduction	1 point
<b>= 31 possible points</b>	

The West Haymarket development offers the following opportunities relative to these credits.

### LEED Certified Green Buildings

The purpose of this credit is to encourage the construction of buildings within the development which incorporate ‘green’ building prac-



tices. There are three credits available and they are given in relation to the percentage of ‘total’ square footage for which buildings obtain some level of LEED certification. While it is perhaps too early to establish how this goal will be benchmarked, one might assume that at least 1 LEED ‘ND’ credit of the 3 available can be counted.



### Energy Efficiency in Buildings

This credit is rewarded based upon the level of reduction in air, water and land pollution obtained by buildings in terms of their energy production or consumption. The criteria used for evaluation involves data obtained through ‘whole building energy simulation’ and other analytical processes. With the City’s emphasis on energy efficient design in its new construction, it is assumed that at least 1 LEED ‘ND’ credit of the 3 available can be achieved.



## Reduced Water Use

Minimizing the water usage of both buildings and landscape irrigation components can provide significant reduction in the burden on the City's water & wastewater systems. With the City's increased awareness and emphasis on energy efficient design in both building & utility construction, it is assumed that at least 1 LEED 'ND' credit of the 3 available can be achieved in the West Haymarket project.



**Credit 3: Reduced Water Use**

## Building Reuse and Adaptive Reuse & Reuse of Historic Buildings

One of the unique aspects of the West Haymarket development centers on the creation of 'Canopy Road' just to the west of the existing Burlington Station rail canopies. These two existing canopies qualify as contributing structures

to the local Historic Haymarket District. Through their refurbishing and incorporation into the new pedestrian street/market environment of the West Haymarket, as well as some potential renovation of space within the historic Lincoln Station development, it is felt that the project should qualify for at least 1 LEED 'ND' credit of the three available in these two categories.

**Credit 4: Building Reuse and Adaptive Reuse**  
**Credit 5: Reuse of Historic Buildings**



## Minimize Site Disturbance Through Site Design & Minimize Site Disturbance During Construction

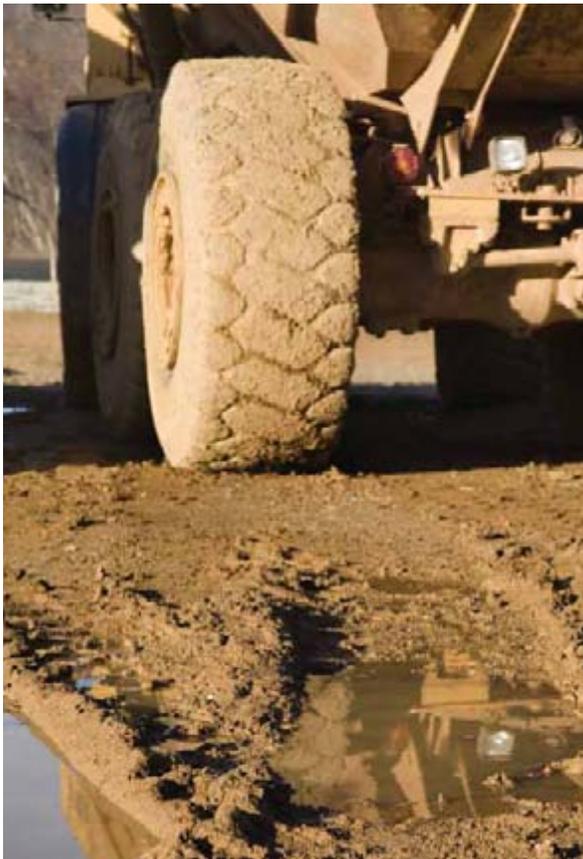
These credits are given in recognition of projects that are able to preserve existing tree canopies and pervious surfaces from development, and to also encourage the preservation of existing natural areas and protection of trees during

construction as a means of promoting biodiversity. Since the portions of the site designated for construction within West Haymarket do not have those types of environmental components, the project will not be able to qualify for the 2 LEED 'ND' credits available.



## Contaminant Reduction in Brownfields Remediation

This credit is given to encourage cleanup methods that reduce contaminant volume or toxicity. The methods being proposed for the West Haymarket project should allow the project to qualify for the 1 LEED 'ND' credit available.



## Stormwater Management



*photo by Mike Smail on Flickr*

With better control of stormwater run-off gaining an ever-growing prominence in communities across the country, the West Haymarket presents an excellent opportunity to address this most critical environmental issue. By incorporating urban 'rain gardens' as a major design feature within street rights of way to infiltrate, reuse &/or evaporate water run-off, significant benefits can be achieved for the area and the City as a whole. The additional inclusion of grass paving blocks within public surface parking areas (see description within 'Heat Island Reduction' below), should also help to gain at least 3 LEED 'ND' credits of the five available in this category.



## Heat Island Reduction

"Heat Islands" are the phenomenon created in large surface parking lots that are dark in color with minimal tree cover &/or vegetation. Extreme temperature rises occur on sunny days, which in turn result in the ambient temperatures within and around adjacent buildings becoming inordinate. Several reasonable solutions exist to compensate for this impact. They include increasing the amount of shade trees provided, changing the color of the paved surfaces, or a combination of both such as the use of grass paving blocks on surface parking lots. The West Haymarket should be able to appropriately address this condition through any or all of the techniques mentioned, thereby qualifying for the 1 LEED 'ND' credit available in this category.

 Credit 10 Heat Island Reduction 



## Solar Orientation

This credit is given for projects that achieve enhanced energy efficiency through the use of passive & active solar strategies. While every effort will be made to have the construction within West Haymarket be energy efficient, the density & general layout of the blocks will most likely not allow the particular LEED criteria of this goal to be met. Therefore it is assumed that the project will not be able to qualify for the 1 LEED 'ND' credit available.

 Credit 11 Solar Orientation 



## On-Site Energy Generation & On-Site Renewable Energy Sources

These credits are given to projects which incorporate 'energy production' measures within the constraints of the actual building site itself. These might include wind or solar electricity generators as well as geothermal energy systems. Since it is too early to ascertain whether these systems might be incorporated in the various future projects, qualifying for the 2 LEED 'ND' credits is best described as 'uncertain' on the chart..

 Credit 12 On-Site Energy Generation 

 Credit 13 On-Site Renewable Energy Sources 



## District Heating and Cooling

The intent of this credit is to reduce air, water and land pollution from building energy consumption by employing efficient ‘district’ energy technologies. As is described in another chapter of the Integrated Development Plan, plans are being formalized for development of a District Energy System within the West Haymarket. Therefore it is assumed that the project will be able to qualify for the 1 LEED ‘ND’ credit available.

 Credit 14 **District Heating & Cooling** 



## Infrastructure Energy Efficiency & Wastewater Management

These credits are given to projects which incorporate ‘energy reduction’ measures which might include high efficiency traffic & street lights, wastewater treatment systems and/or wastewater ‘reuse’ systems within the infrastructure of the project. The intent within this plan is to encourage the investigation and incorporation of these components. But until final designs are undertaken, qualifying for the 2 LEED ‘ND’ credits is best described as ‘uncertain’ at this point on the chart..

 Credit 15 **Infrastructure Energy Efficiency** 

 Credit 16 **Wastewater Management** 



## Recycled Content in Infrastructure

This encourages the use of recycled materials in roadways, pavements and parking lots. This is fully in-line with the Mayor’s Executive Order on new civic improvements, so the project should be able to qualify for the 1 LEED ‘ND’ credit available.

 Credit 17 **Recycled Content for Infrastructure** 



## Construction Waste Management & Comprehensive Waste Management

With wood, concrete, masonry, metals and dry-wall composing approximately 75% of the waste stream in our country, it is obvious how important efforts to managing & reducing this waste generation can be to our community. It is the goal of the West Haymarket project to recycle and/or salvage at least 50% of all non-hazardous construction & demolition debris associated with public buildings. In addition, locations for convenient recycling & reuse stations within the boundaries of the development should qualify the project for the 2 LEED 'ND' credits available.



## Light Pollution Reduction



All too often, new developments fail to recognize the adverse affect that exterior lighting on buildings or parking lots can have on neighboring spaces or the community as a whole. LEED 'ND' encourages projects to limit their exterior lighting on buildings and landscape to standards for safety & comfort only. The West Haymarket development should be able to meet this benchmark and thereby qualify for the 1 LEED 'ND' credit available in this category.



## Innovation & Design Process

The primary goal of this category is to encourage exceptional performance above the requirements set by LEED ND, and/or innovative performance in green building, smart growth, or new urbanist categories not specifically addressed in the LEED ND rating system.

This goal is evaluated relative to the following subcategories which carry a potential for 6 LEED ND credits.

Credit 1	Innovation in Design	1-5 points
Credit 2	LEED Accredited Professional	1 point
		<b>=6 possible points</b>

## LEED 'ND' Summary

			Smart Location & Linkage			
Yes	?	No			Possible Points	
2			Credit 1	<b>Brownfield Redevelopment</b>		2
		1	Credit 2	<b>High Priority Brownfields Redevelopment</b>		1
7	3		Credit 3	<b>Preferred Location</b>		10
4	4		Credit 4	<b>Reduced Automobile Dependence</b>		8
1			Credit 5	<b>Bicycle Network</b>		1
1	2		Credit 6	<b>Housing and Jobs Proximity</b>		3
1			Credit 7	<b>School Proximity</b>		1
		1	Credit 8	<b>Steep Slope Protection</b>		1
1			Credit 9	<b>Site Design for Habitat or Wetlands Conservation</b>		1
1			Credit 10	<b>Restoration of Habitat or Wetlands</b>		1
1			Credit 11	<b>Conservation Management of Habitat or Wetlands</b>		1
19	9	2				30
Yes	?	No	Neighborhood Pattern & Design		39 Points Possible	
Yes	?	No			Possible Points	
4	3		Credit 1	<b>Compact Development</b>		7
2	2		Credit 2	<b>Diversity of Uses</b>		4
1	2		Credit 3	<b>Diversity of Housing Types</b>		3
1	1		Credit 4	<b>Affordable Rental Housing</b>		2
1	1		Credit 5	<b>Affordable For-Sale Housing</b>		2
		2	Credit 6	<b>Reduced Parking Footprint</b>		2

6	2		Credit 7	<b>Walkable Streets</b>	8
1	1		Credit 8	<b>Street Network</b>	2
1			Credit 9	<b>Transit Facilities</b>	1
1	1		Credit 10	<b>Transportation Demand Management</b>	2
1			Credit 11	<b>Access to Surrounding Vicinity</b>	1
1			Credit 12	<b>Access to Public Spaces</b>	1
1			Credit 13	<b>Access to Active Public Spaces</b>	1
1			Credit 14	<b>Universal Accessibility</b>	1
1			Credit 15	<b>Community Outreach and Involvement</b>	1
		1	Credit 16	<b>Local Food Production</b>	1
23	13	3			39
Yes	?	No			

### Green Construction & Technology

31 Points Possible

Yes	?	No			Possible Points
1	2		Credit 1	<b>LEED Certified Green Buildings</b>	3
1	2		Credit 2	<b>Energy Efficiency in Buildings</b>	3
1	2		Credit 3	<b>Reduced Water Use</b>	3
1	1		Credit 4	<b>Building Reuse and Adaptive Reuse</b>	2
	1		Credit 5	<b>Reuse of Historic Buildings</b>	1
		1	Credit 6	<b>Minimize Site Disturbance through Site Design</b>	1
		1	Credit 7	<b>Minimize Site Disturbance during Construction</b>	1
1			Credit 8	<b>Contaminant Reduction in Brownfields Remediation</b>	1
3	2		Credit 9	<b>Stormwater Management</b>	5
1			Credit 10	<b>Heat Island Reduction</b>	1

<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Credit 11	<b>Solar Orientation</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 12	<b>On-Site Energy Generation</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 13	<b>On-Site Renewable Energy Sources</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 14	<b>District Heating &amp; Cooling</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 15	<b>Infrastructure Energy Efficiency</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 16	<b>Wastewater Management</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 17	<b>Recycled Content for Infrastructure</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 18	<b>Construction Waste Management</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 19	<b>Comprehensive Waste Management</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 20	<b>Light Pollution Reduction</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				<b>31</b>
<b>14</b>	<b>14</b>	<b>3</b>				
<b>Yes</b>	<b>?</b>	<b>No</b>				

			<b>Innovation &amp; Design Process</b>		<b>6 Points Possible</b>	
<b>Yes</b>	<b>?</b>	<b>No</b>				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 1.1	<b>Innovation in Design: Provide Specific Title</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 1.2	<b>Innovation in Design: Provide Specific Title</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 1.3	<b>Innovation in Design: Provide Specific Title</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 1.4	<b>Innovation in Design: Provide Specific Title</b>	<input type="checkbox"/>	1
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	Credit 1.5	<b>Innovation in Design: Provide Specific Title</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Credit 2	<b>LEED® Accredited Professional</b>	<input type="checkbox"/>	1
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>				<b>6</b>
<b>1</b>	<b>5</b>					
<b>Yes</b>	<b>?</b>	<b>No</b>				

<b>57</b>	<b>41</b>	<b>8</b>	<b>Project Totals (pre-certification estimates)</b>		<b>106 Points Possible</b>	
<b>Yes</b>	<b>?</b>	<b>No</b>	<b>Certified 40-49 points Silver 50-59 points</b> <b>Gold 60-79 points Platinum 80-106 points</b>			