

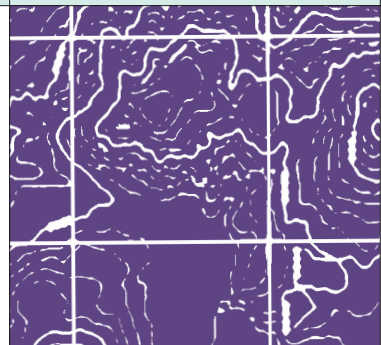
Oklahoma City SDAT

Industrial Transformation—Creating Sustainable
Opportunities for Economic Renewal



A Report by the Sustainable
Design Assessment Team

Oklahoma City, Oklahoma
November 7–9, 2005



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Celeste Allen Novak, AIA, LEED AP, *Team Leader*

Kofi Boone, MLA, *Environmental Justice*

David Markley, *Transportation*

Kit Krankel McCullough, *Land Use and Development*

Deborah Nazon, *Ecological Economics*

Ken Peregon, RLA, MLA, *Water Resources*

Steven Radel, JD, *Brownfields*

Erin Simmons, AIA Center for Communities by Design

EXECUTIVE SUMMARY

The Sustainable Design Assessment Team (SDAT) visit focused on

- Land use and development
- Brownfields
- Transportation
- Water resources
- Ecological economics
- Environmental justice.

The SDAT reviewed the Reno corridor and the many challenges faced by Oklahoma City to develop this area. The team is optimistic that change directed by a sustainable initiative can occur. There are challenges and difficulties that may make change occur slowly; however, the positive response by the business community and the willingness by the economic development department are reasons to believe the future will include new initiatives for community inclusiveness and redevelopment of this blighted area.

Land Use and Development

Strengths

- The East Reno corridor is convenient to downtown Oklahoma City, Bricktown, the American Indian Cultural Center, the medical center, and interstate highways
- Reno's proximity to Bricktown and downtown makes it an ideal candidate for absorbing complementary development that is inappropriate for those areas
- The redevelopment of Interstate 40 and the construction of the American Indian Cultural Center will make Reno Avenue a main gateway into downtown, which will in turn create pressure to upgrade the avenue.
- Reno Avenue boasts a well-developed and economically viable industrial community that is an asset to Oklahoma City

Weaknesses/Challenges

- Redevelopment efforts in the downtown and surrounding areas may take precedence over redevelopment in the Reno corridor
- Without proper direction and partnerships, development pressure within the Reno area would likely result in generic strip development without capitalizing on any of the unique opportunities the area has to offer and without adding any value to Oklahoma City as a whole
- Reno Avenue is in need of numerous street improvements in order to create an attractive environment for commercial development and to enhance the visitor and resident experience on the avenue

Brownfields

Strengths

- Using the existing development and infrastructure within the Reno corridor can result in more economically efficient development
- Several funding resources are available for the remediation of contaminated sites
- The remediated superfund Double Eagle site provides an excellent opportunity for complementary development within the corridor
- The variety and number of existing industrial facilities and businesses present the potential for regenerative development in the area

Weaknesses/Challenges

- Existing environmental contamination could potentially hamper redevelopment without proper education and preparation
- Given the history of industrial usages in this area, the potential for hitherto unsuspected soil and groundwater contamination is high
- The growth of regenerative development within the area will require more communication and cooperation between property owners

Transportation

Strengths

- Reno Avenue's proximity to downtown Oklahoma City and access to the interstate highway promises to make the avenue an important transportation corridor
- Pedestrian and bike trails are already developed along the river and through the undeveloped parcels of land
- Construction of the American Indian Cultural Center will ensure the expansion of the Oklahoma City tourism industry, bringing more traffic and activity into the Reno corridor

Weaknesses/Challenges

- The area is in need of some streetscape improvements, including but not limited to new or additional drainage systems, enhanced lighting and sidewalks, and landscaping
- The existing roadways will be inadequate for the increased traffic the American Indian Cultural Center will bring to the area
- Existing signage is confusing or inadequate and does not successfully guide visitors to areas of interest within Oklahoma City
- Current mass transit options are inadequate to meet the needs of residents and visitors to the city

Water Resources

Strengths

- The existing stormwater drain that flows south to the river has the potential to enhance the aesthetic and natural quality of the Reno corridor
- Intellectual resources from the University of Oklahoma for green buildings and remediation strategies, such as phytoremediation, are available to property owners and the city

Weaknesses/Challenges

- Given the industrial nature of the area, soil and groundwater contamination will complicate any development endeavors
- The creation of an areawide stormwater management system must be concurrent and integrated with development in the Reno corridor

Ecological Economics

Strengths

- Initiatives such as the American Indian Cultural Center and the proposed Page Woodson restoration project have the potential to add immeasurable wealth to the community while fostering diversity
- Oklahoma City features a unique heritage that can be turned into an asset for the community and visitors to the area
- The close proximity to many institutions of higher learning provides residents of these communities with access to education and workforce training

Weaknesses/Challenges

- Communication is lacking among property owners, staff at the medical complex, and other employers with neighborhood workforce
- The focus of the community should shift from perceived liabilities to the numerous opportunities currently available throughout the area
- The various resources for brownfield redevelopment that are available at the state and federal levels should be capitalized on to further the economic opportunities of the community and its residents

Environmental Justice

Strengths

- The Reno Avenue community has a unique collection of residents, developments, and sites that make it stand out from other areas throughout the city
- Remediation and clean-up efforts of contaminated sites within the Reno corridor have thus far been successful
- The Economic Development Division of the Oklahoma City Planning Department has already committed to developing a downtown plan that will provide pedestrian friendly communities and sustainable development

Weaknesses/Challenges

- Pedestrian and other nonmotorized forms of transportation are hampered by the lack of sidewalks and dedicated bike lanes in the area
- The overwhelming majority of residents in this area are not within walking distance to grocery stores, restaurants, or other necessary commercial developments
- The overabundance of vacant structures and land contributes nothing to the tax base of the community and is a liability to creating a successful community

Introduction

In March 2005, Oklahoma City submitted a proposal to the American Institute of Architects (AIA) for a Sustainable Design Assessment Team (SDAT) to assist the town and its citizens in addressing key issues facing the community. The issues ranged from the redevelopment of two remediated superfund sites to the linkage of the Reno corridor with the new American Indian Cultural Center.

The AIA accepted the proposal and, after an initial scoping visit by a small group in August, the SDAT members arrived in Oklahoma City on November 7. For three days, the team members, working closely with local officials, community leaders, technical experts, and citizens, studied the community and its concerns. During those three days, the team came to understand the issues and used its expertise to frame a wide range of recommendations, which were presented to the community in a public meeting on November 9.

This report is a more detailed version of the findings and recommendations that were presented to the community on November 9. After a brief overview of the SDAT program and process, and a short discussion of Oklahoma City and the issues it is facing, the report covers

- Land use and development
- Brownfields
- Transportation
- Water resources
- Ecological economics
- Environmental justice.

A closing section offers some thoughts on how the community can best move forward to address the range of issues and recommendations covered in the report.



What is the SDAT Program?

The SDAT program is an interdisciplinary community assistance program that focuses on principles of sustainability. Launched in 2005, the program represents an exciting new chapter in the AIA's history of supporting communities with volunteer design expertise. The Oklahoma City SDAT is the fifth completed project under the new program.

The SDAT program is modeled on the AIA's R/UDAT (Regional and Urban Design Assistance Team) program. Although the R/UDAT program provides communities with specific design solutions, the SDAT program provides broad assessments to help frame future policies or design solutions in the context of sustainability and helps communities plan the first steps of implementation. The SDAT program is based on an understanding of design as a process that

- Is integrative, holistic, and visual
- Is central to achieving a sustainable relationship between humans, the natural environment, and the place
- Gives three-dimensional form to a culture and a place
- Achieves balance between culture, environment, and economic systems.

The SDAT program is grounded in the AIA design assistance team values, which call for a multidisciplinary approach, objectivity of the participating team members, and broad public participation.

Why is the SDAT Program Valuable?

Many communities are immobilized by conflicting agendas, politics, personalities, or even the overabundance of opportunity. Many communities have not yet taken stock of their current practices and policies within a sustainability framework, while others have identified issues of concern but desire assistance in developing a plan of action to increase sustainability. The SDAT process ensures that alternative solutions are given a fair hearing and that options are weighed impartially. The SDAT process

- Informs the community of opportunities and encourages them to take action to protect local and regional resources
- Helps the community understand the structure of the place at various scales and contexts—from regional resources to the neighborhood scale
- Explores and articulates the larger contexts and interactions of ecological, sociological, economic, and physical systems
- Visualizes potential futures
- Recognizes and describes the qualities of a place by preserving the best elements of the past, addressing the needs of the present, and planning for the needs of future generations
- Identifies and describes choices and consequences
- Connects plans and actions
- Advances the principles of quality sustainable communities
- Helps the community define the roles of various stakeholders
- Develops a roadmap for the implementation of more sustainable policies and practices.

The key to SDAT success is diversity and participation; the process involves multiple disciplines and multiple stakeholders. The SDAT process includes not only the expert team but also government agencies and officials, private businesses, schools and students, community members, and other parties as appropriate.

Who are the Key Participants in the SDAT Process?

SDATs bring a team of respected professionals, selected on the basis of their experience with the specific issues facing the community, to work with community decision-makers to help them develop a vision and framework for a sustainable future. Team members volunteer their time to be a member of the SDAT. To ensure their objectivity, they agree to refrain from taking paid work for three years from the date of completion of the SDAT project. A distinct team is assembled for each project based on the project's unique features. The team consists of a leader, five to seven members, and a staff person from the AIA Center for Communities by Design.

The professional stature of the SDAT members, their independence, and the pro bono nature of their work generate community respect and enthusiasm for the SDAT process which, in turn, encourages the participation of community stakeholders. The passion and creativity that are unleashed by a top-notch multidisciplinary team of professionals working collaboratively can produce extraordinary results.

Local Steering Committee

The steering committee is the key organizing group for an SDAT project. It is responsible for assembling local and regional information, organizing the preliminary meeting and SDAT visit, and generating local media coverage during the entire project. After the SDAT visits, the steering committee typically evolves into a group that is dedicated to implementing the SDAT recommendations.



Local Technical Committee

The local technical committee is the technical support group for the SDAT project, including local design professionals, environmental professionals, economists, and others whose skills and experience parallel those of the SDAT members and who bring with them detailed knowledge of local conditions, issues, and information resources. Their presence magnifies the effectiveness of the team.

Citizens

In the end, the citizens of the community are the critical players, both for their insights and observations during the team visit and for their support for the new directions that emerge from the SDAT process.

On behalf of the Oklahoma City SDAT and the American Institute of Architects, it is hoped this report will be a useful guide to the Oklahoma City community as it charts its future for the coming years and for coming generations.

OKLAHOMA CITY TODAY

Located within the heartland of America, Oklahoma City is spread over 625 square miles and boasts a population of approximately 1.25 million residents. This sprawling size and dense population are in striking contrast to the Oklahoma City of more than 100 years ago. Until the fabled land run of 1889, this region was known as the largely uninhabited Unassigned Lands, named for its distinction of being the only parcel within the Oklahoma Territory not designated for the relocation of Native American tribes. Shortly after the territory was opened to settlement, more than 10,000 people had staked claims around the area that is now known as Oklahoma City.

Once known principally for its homesteads and oil wells, Oklahoma City now boasts a diversified economic base with a variety of industrial and commercial resources and higher education institutions. The city is continuing its commitment to economic and cultural growth, as evidenced by the continued construction of new health care facilities, reconstruction of its high schools, encouragement of new corporate centers, and development of the American Indian Cultural Center.

The Reno corridor consists of a 1.5-mile stretch of road that constitutes one of the main “gateways” to downtown Oklahoma City. Located near the intersection of two major interstates, Reno is adjacent to many amenities, including the recently redeveloped North Canadian Riverfront as well as a great deal of commercial, industrial, and residential development. The corridor is largely industrial in nature, with large salvage and recycling yards and a recently renovated concrete and gravel plant and two remediated superfund sites.

The Reno corridor possesses several assets for future growth and development. Its proximity to downtown, the Bricktown entertainment district, the American Indian Cultural Center, and the Oklahoma health district make it extremely attractive for future development and ensure its position as a major gateway into Oklahoma City proper. In addition, the active industrial properties and the existing infrastructure support an already developed community economy. On the other hand, many planning challenges exist, including the need for physical improvements to the road, the question of water quality in the underlying aquifer, the potentially negative public perception of the area as “one large brownfield,” and the cultural divide between Reno Avenue residents and those inhabiting the surrounding neighborhoods.

LAND USE AND DEVELOPMENT

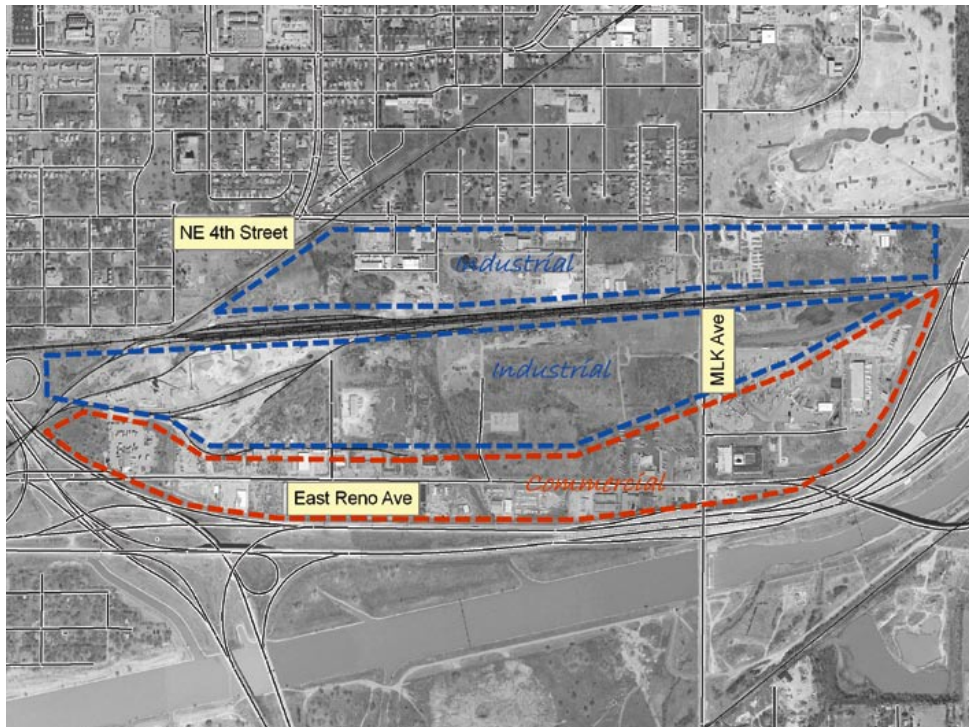
At the regional scale, a primary principle of sustainability is to channel development into the central city and away from the periphery in order to reduce land consumption and travel distances, and support the use of transit and nonmotorized means of travel. Several districts in downtown Oklahoma City have been targeted for revitalization and new development, and these areas should take precedence over the Reno corridor. Office buildings in the central business district have a fairly high vacancy rate, and efforts should be focused here first—not only by working to attract more office tenants to fill the vacancies, but also by making downtown a more vibrant, desirable location, with a greater diversity of commercial, retail, and other services and more downtown residences. The possibility of converting office buildings to residential use should be explored.

Bricktown, while very successful, also has room for further development and diversification of uses. Residential development, in particular, would be very successful here and would help support an active, urban environment. In addition to Bricktown and the central business district, the new district that will be created by the relocation of Interstate 40 will absorb residential and commercial development activity for a long time. In its approach to the East Reno corridor, the SDAT recommends care be taken to avoid creating yet another competing urban district that will further dilute Oklahoma City's energy.

Nevertheless, East Reno is poised for some significant development in the near future, due to its strategic location between downtown, the American Indian Cultural Center, and the interstate highways. East Reno can and should absorb the development of uses that do not belong in downtown or Bricktown—in particular, affordable hotels, motels, and restaurants that serve the budget traveler and inexpensive commercial space for small-scale light industrial, artists and artisans, and office uses. If the market is left to its own devices, East Reno will be redeveloped with an automobile-oriented “strip” of national chain motels and fast food restaurants, industrial parks, and mini-storage warehouses. This “anywhere USA” environment would result in an unfortunate gateway for downtown and the American Indian Cultural Center, and would provide a negative experience for the thousands of visitors the cultural center is expected to draw. The SDAT recommends the city and property owners work together to steer development toward a more positive, higher-quality environment that celebrates Oklahoma City's and East Reno's unique historical and cultural heri-

tage and landscape. Coordinated development can provide a better visitor experience, help build Oklahoma City’s tourism industry, strengthen the city’s tax base, support higher rents, and raise property values along East Reno.

The SDAT considered the study area as four distinct zones: East Reno, an industrial zone to the north, the highway and riverfront, and the northeast neighborhoods. For this report, the SDAT primarily focused on two zones in the study area: the industrial zone and East Reno.



The study area comprised four distinct zones, three of which are shown here.

The Industrial Zone

Industry in this area is very viable and an asset to the city’s economy; it should be preserved and even expanded. Oklahoma City could develop a niche in “eco-industries” like recycling and biodiesel fuels. Phytoremediation research, testing, and demonstration facilities and fields, perhaps in conjunction with a university, are also a possibility.

Building a new east-west roadway on the north side of Reno Avenue will create dedicated access to the industries in this area, while allowing the frontage along Reno Avenue to be developed with commercial uses.

East Reno Corridor

The city and private property owners have an opportunity to work together to set up a process that benefits everyone: investments in infrastructure and coordination of design and development can result in a higher-quality environment that enhances tourism, commands higher rents, and raises property values. Construction of the new east-west roadway will make it possible for property owners to develop frontage on Reno Avenue with commercial uses, while allowing the existing industries to remain and even expand. The zone of transition between industrial and commercial uses should be designed and landscaped to create a defensible space separating the uses.

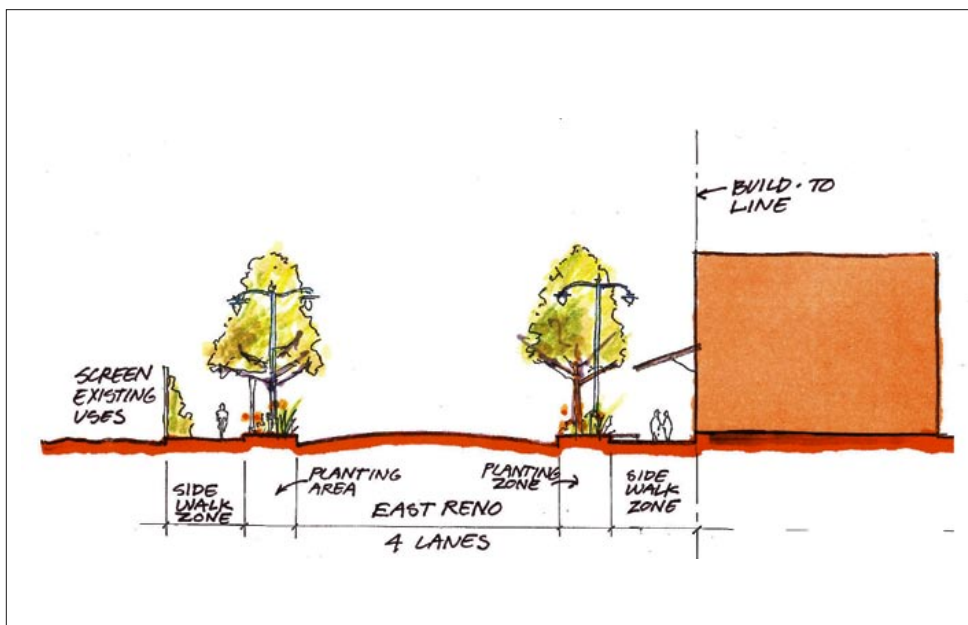
Street improvements on East Reno, including sidewalks, curbs, gutters, and landscape improvements, will help to make East Reno very attractive for commercial development. Architecture and site design for development on Reno must also be coordinated to create a high-quality, attractive environment.



Street improvements and coordinated development will help make East Reno very attractive for commercial development.

East Reno Avenue Street Improvements

- Curbs, street trees, lighting, and sidewalks can make East Reno more attractive and pedestrian friendly and increase the perception of safety.
- A mix of street tree species should be installed at fairly regular intervals to create a comfortable rhythm.
- East Reno should be reconstructed with curb and gutter to create a well-defined edge and control stormwater runoff.
- Planting strips should be designed to retain runoff and can serve as demonstrations of rain gardens and phytoremediation.



Street improvements will create a walkable community.

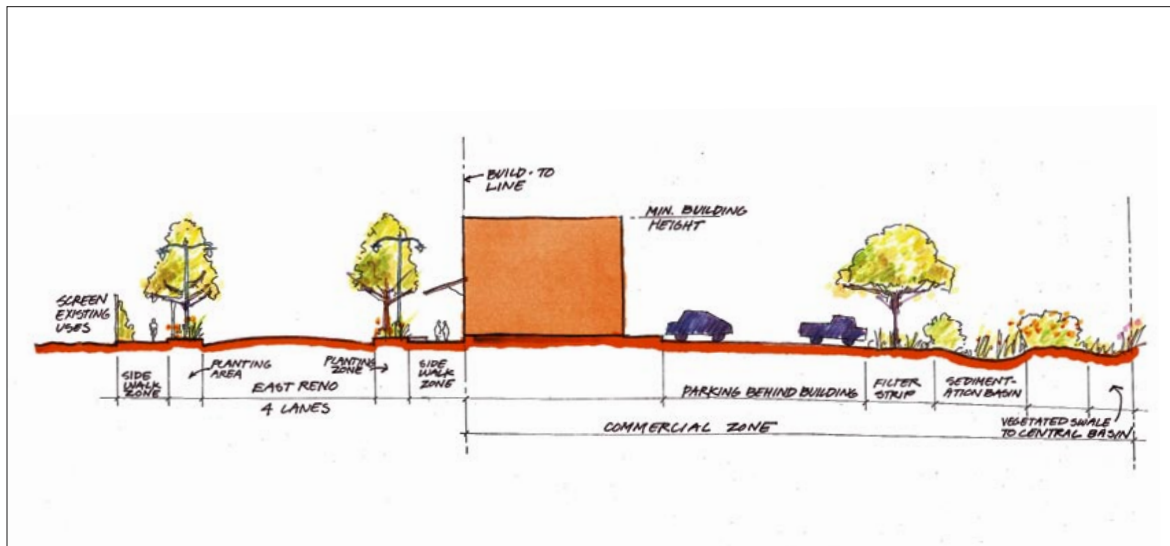
- Distinctive light fixtures should be mounted at a pedestrian scale (12 feet to 15 feet mounting height).
- Sidewalks should be wide enough to permit bicycles, as well as outdoor café seating and other uses.
- Signalized pedestrian crosswalks should be provided where possible. While most users will likely access East Reno by car, they should be encouraged to “park once.” A walkable environment, including the ability to cross the street, can create a synergy between uses. Guests at a hotel will appreciate being able to walk comfortably to a nearby restaurant, for example.

- Connect East Reno to river and Katy trail systems. East Reno is a comfortable biking distance from Bricktown and other neighborhoods.
- Plan for a future fixed-rail streetcar. Every district that is made more walkable plants a seed for a future destination for a transit system.
- Include art and the interpretation of history, industry, and ecological processes in the streetscape. Visitors will want to see what makes Oklahoma City, and East Reno in particular, unique and special. East Reno’s history as an oil field and its current use for eco-industries are important and fascinating. This story should be told to visitors.

Building Placement and Site Design Guidelines

- Buildings adjacent to the sidewalk, with windows and active uses, are necessary for a comfortable walking environment.
- A “build-to” line should be established to require buildings to be placed adjacent to the sidewalk.
- Ground floor facades that face the sidewalk should have large windows, with active uses wherever possible. Building entrances should face the sidewalk.
- A two-story minimum building height should be set so that buildings on Reno Avenue have some presence.
- Parking should be placed behind buildings or otherwise screened from the sidewalk.
- Parking lots should be screened with a combination of landscaping and ornamental fencing. Landscaping need only be high enough to screen headlights and hoods of automobiles. Fencing should be transparent.
- Industrial uses should be screened with higher landscaping and mostly opaque fencing. Continuous, solid fencing should be discouraged.
- Screening of industrial uses from both East Reno and Interstate 40 is desirable.
- Shared access drives should be encouraged to limit the number of curb cuts connecting to East Reno.
- Parking lots should be designed for sheet-flow of stormwater where possible.
- The use of such materials as porous pavements should be encouraged to reduce stormwater runoff.
- Use of native plant materials in landscaping and high-efficiency irrigation systems (or no irrigation) should be encouraged.

- Reno Avenue will be most attractive to large national chains. These chains will demand to use their standard template of a building set back from the street, surrounded by asphalt parking lots. It will require a great deal of resolve on the part of the city and developers to insist that chains conform to these guidelines. Creating a desirable, high-quality environment on East Reno, however, will make chains more willing to do what they have to do to locate there. Locally or individually owned businesses, which will have greater flexibility and willingness to build appropriately, should also be cultivated.



Site design guidelines will help create a successful commercial district.

East Reno Architecture

To contribute to the uniqueness of East Reno, new buildings should use an architectural vocabulary and materials that build on the local context and climate. Consider encouraging an “industrial chic” aesthetic using corrugated metal and concrete. Construction cannot and should not be expensive. National chains will resist, preferring to use their corporate imagery, materials, and colors. Allowing this would turn East Reno into “Anywhere USA.” Again, the city and developers must insist that national chains follow the guidelines if they want to locate here.

In accordance with sustainability principles, encourage the reuse and rehabilitation of existing buildings. New and redeveloped buildings should follow green building guidelines by preserving water resources; enhancing indoor air quality; increasing energy efficiency, particularly through the use of natural daylighting, ventilation, and passive solar design, as well as the use of Energy Star equipment; using renewable resources for building materials; and recycling demolition waste.



Innovative, progressive design should be encouraged.

Creating Place

The trend in development, driven partly by consolidation within the development and finance industries, as well as by Real Estate Investment Trusts (REITs), is toward nationally scaled, conservative, formulaic development that relies heavily on national franchises and ignores local interests. High-quality, progressive development is more likely to come from a high-quality, progressive development team. To encourage this, the city and property owners should make a proactive, concerted effort to seek progressive developers, both national and local, who demonstrate a creative and caring approach to the built environment. Oklahoma City has achieved world-class architecture in some of its public buildings, installations, and infrastructure in its downtown. The city should continue to work to build a local culture of progressive development throughout the city by insisting on quality in both public and private development efforts.

Developers should be encouraged to seek local tenants and businesses. Lower land costs in the East Reno corridor provide an opportunity for young, visionary developers and creative business entrepreneurs to participate in making East Reno an exciting, unique environment. To retain a local sense of place and encourage quality design, local architects, landscape architects, and artisans should be included in the development process.

BROWNFIELDS

Despite the additional environmental requirements, reusing industrial zones does not differ greatly from revitalizing other underused areas. The cost of cleaning up the land for reuse becomes just another line item in the business plan. The redevelopment of industrial land can benefit both land owners and community members. The reuse of existing infrastructure can often be a great deal more efficient than new construction in previously undeveloped areas. Regeneration of resources, taking advantage of the existing presence of the scrap steel industries in the area, and turning these and other waste materials into new materials are opportunities for new businesses in the Reno corridor.



Redevelopment in the Reno corridor is similar to redeveloping other unused areas.

Preparing Industrial Sites for Redevelopment

The key to the successful redevelopment of industrial sites is an in-depth knowledge of the process before its commencement. Careful preparation prior to the redevelopment, including the identification of existing or potential issues, can allow the project to proceed smoothly and minimize difficulties. Contacting professionals to review a contaminated site assures that the newest scientific methods for clean up and the latest funding opportunities are available for the project. Contacting the Oklahoma City brownfields coordinator is the first step for a property owner interested in redevelopment.

Potential pollution problems in the redevelopment of property within the Reno corridor include abandoned oil wells and the possibility of soil and groundwater contamination. State resources are available through the Oklahoma Conservation Commission (OCC) and the Oklahoma Energy Resource Board (OERB), which has cleaned up thousands of abandoned oil wells in Oklahoma. The OERB is funded through a 1 percent assessment on the sale of natural gas and oil, paid for by producers and royalty owners in Oklahoma. Contacting state officials for additional information on state and federal programs can reveal several additional resources.

Methods for preparing the Reno sites for nonresidential use include risk-based clean ups. Surface soil contaminants can be capped with paving, clay soils, or foundations with vapor barriers. Redevelopment should be sensitive to new environmental issues and provide filters for stormwater. Biofilters can be installed before stormwater drains. Because the regional shallow groundwater has been affected by historical drilling, the Environmental Protection Agency (EPA) and the Oklahoma Department of Environmental Quality (ODEQ) have consequently deemed groundwater below this site nonpotable. The use of institutional controls, such as restricted use of groundwater, would simplify brownfield redevelopment.

Brownfield Redevelopment Process

During the brownfield redevelopment process, traditional and nontraditional financial deals can be used. The sharing of risk associated with contamination should be clear to all participants in these sales agreements. Typically, Phase I assessments of the sites, which research the historical uses of the property through the examination of records and other readily available information, are conducted with a Phase II Assessment, using field data to fill in the gaps of the historical record. Depending upon the type of contamination, a risk assessment will be determined and clean up standards will be based on reducing any health risk for the proposed use of the site.

An example of a superfund clean up is the Double Eagle site, which the Oklahoma City EPA has prepared for reuse. Its first step toward reuse included the deletion or removal of the property from the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) program, thereby providing greater opportunities for development. The institutional controls listed and provided for the restriction of the property uses and created a permanence for potential lenders. This streamlined the process for developers. Funding and liability protections should be available for all buyers.

Regenerative Development

Regenerative development helps identify uses that complement each other. Ideally, waste from one user can be used as raw material for a neighboring user. Regenerative development can consequently be used to diversify the industrial base by attracting a mix of new users to the area. The Reno corridor could potentially benefit from the introduction of renewable energy opportunities and expanded recycling options (such as wallboard).

The Reno scrap metal industries are in an ideal industrial setting, adjacent to the rail lines with quick access to major highways. An added benefit is their proximity to a new entertainment district. Property owners can maximize this potential by clustering existing and new industry adjacent to the rail yards while developing new uses for their sites adjacent to Reno Avenue. By encouraging complementary industries adjacent to existing industries, there are added benefits in reduced transportation costs. Art foundries adjacent to scrap metal yards and a tire collection adjacent to the factory that uses tires in recycled flooring are only some examples. “Cradle to grave” industries provide new services and products by using manufacturing methods that use waste to create valuable resources.

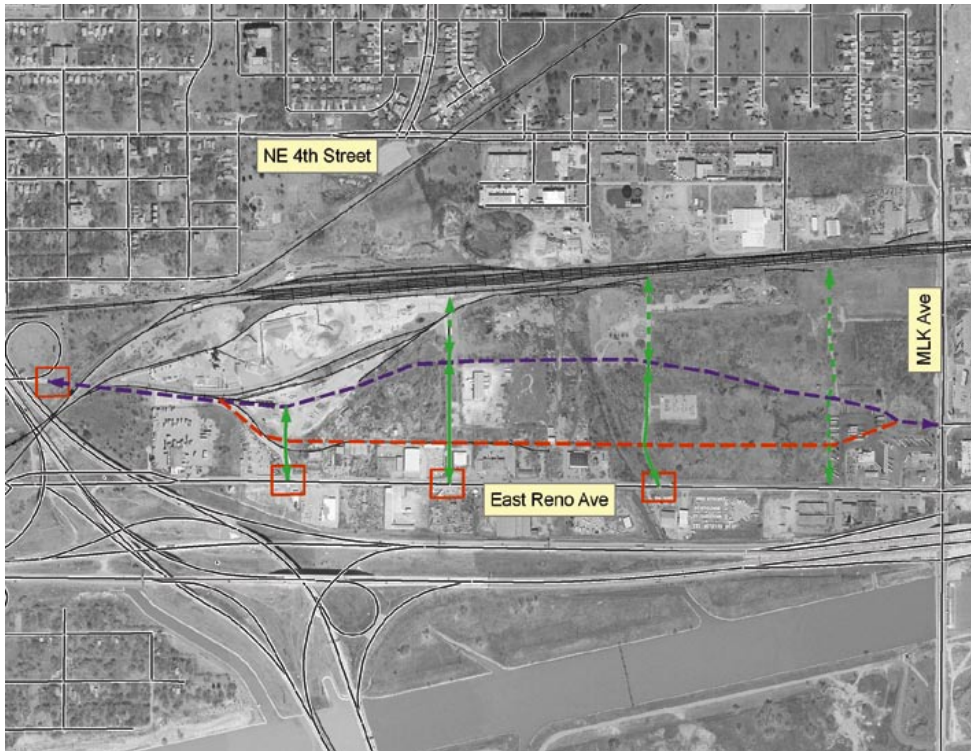
TRANSPORTATION

Accessibility

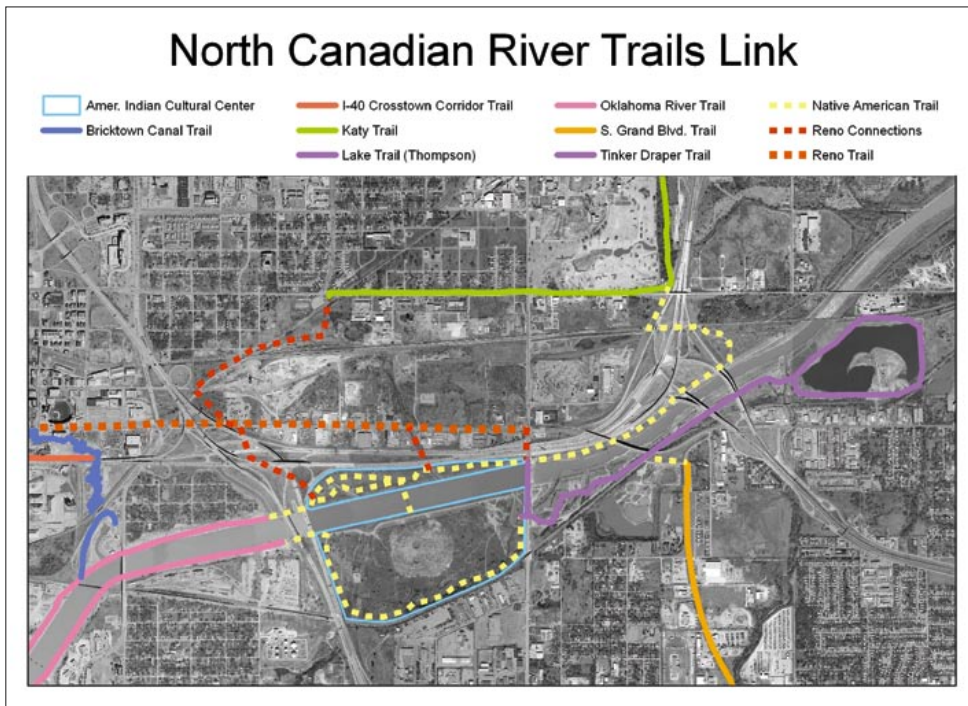
Reno Avenue is the strong spine of the corridor. As the main thoroughfare, it should be enhanced to efficiently accommodate vehicular and pedestrian traffic. The construction of curbs, gutters, sidewalks, and lighting will clarify the street edge and increase vehicular and nonmotorized mobility and safety. Developing screening solutions along the Reno frontage that are particular to the property usage (with the stronger screening of the storage yards of industrial facilities and the lower level screening of the parking lots of commercial properties—preferable vegetative landscape materials) will create a more attractive streetscape and enhance the area for property owners as well as visitors. A new stormwater system with biofilters to treat surface water will help to alleviate the occasional flooding and washouts of the roadbed.

To facilitate new growth and development in the Reno community, a new street network should be developed north of Reno Avenue. New and improved existing roads would branch off from Reno Avenue and provide cross-connections and nodes to areas that are currently underserved by the existing road system. The missing links at Sheridan to California should be created. A network that will help distribute and segregate truck and industrial traffic for businesses along the railway will allow for the development of a commercial zone along Reno. There are also several nonmotorized transportation options currently in existence in this area, primarily the paths and trails that wind along the river and through the undeveloped parcels of land. These routes should be connected and enhanced to encourage pedestrian and biking alternatives. All these travel modes should be integrated together at logical junctions and activity locations.

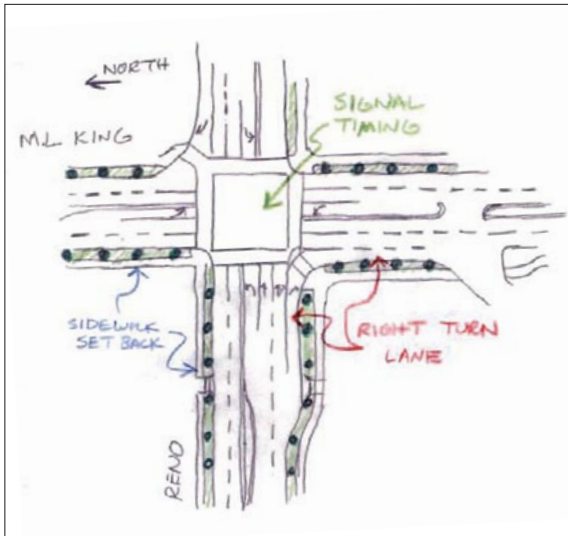
The timing for these improvements is dependent upon several factors, including funding by municipal bonds and the market-driven pace of industrial developments and their associated frontage improvements. As further development enters the area and the cultural center opens its doors to visitors, the increased volume of traffic on Reno Avenue and the surrounding streets will require expansion and improvement of the existing roadways to provide necessary capacity and safety.



A new street network would alleviate traffic congestion and improve access to underserved areas.



Connecting trails would encourage walking and biking.



Improving signal channelization will increase arterial capacity.

Capacity

The arterial capacity of the existing roadways can be noticeably increased by enhancing the efficiency of intersection operations and improvements in the channelization of the intersections as contrasted to major road widening. Providing for improved signal interconnections, improved loop detection, and camera surveillance to the traffic control center will improve the intersections and allow for increased traffic flow with less delay. These changes could be made concurrent with the Reno Avenue improvements or be part of an immediate traffic system upgrade as there are already problems with truck queuing at the major intersections.



Signage

The existing road system, which includes two major expressway intersections, is confusing for those unfamiliar with the Reno area. To clarify the route from here to there, additional and coordinated signage should be developed, both on the freeways and the surface roads. The existing freeway signage should be improved concurrent with the Interstate 40 realignment and should be periodically updated as the Reno corridor and adjacent areas are further developed and expanded. As Reno Avenue promises to be a major gateway to the city, providing access to districts throughout Oklahoma City, signature signing and/or hardscape elements should be developed to guide visitors to special areas or sites and provide continuity and identity within the Reno area. Street design and landscape elements should be implemented as a way to ensure the journey into the city is an attractive, efficient, and safe one.



Signage will help guide residents and visitors.

Mass Transit

In a city the size of Oklahoma City, there is a responsibility to its residents and visitors to provide multimode transportation as an alternative to automobile travel. The study area is in particular need of additional transit options. A fixed route, which would provide prescheduled service to provide access to nodes throughout the city, could accommodate visitor and resident travel. Special event and/or seasonal service could potentially accommodate those times that experience increased transit needs without resulting in consistently underused services. Varying the frequency of the service to match the demand would likewise increase the efficiency of the system.

As the visitor industry continues to expand in Oklahoma City, forming partnerships between transit operators and service vendors could be mutually beneficial for all parties. Hotel validation of visitor transit passes, the development of parking/transit guest packages, and the coupling of traditional transit methods with the river shuttle and tourist trains would contribute to lessening the volume of traffic on the surface streets and fostering a seamless and integrated mass transit system. These measures should be initiated by the development of the American Indian Cultural Center. There will be an increased volume of tourists entering the city and public/private partnerships should be created linking the new cultural center with hotels and Bricktown businesses to provide alternatives to travel by automobile.

WATER RESOURCES

The Reno study area is the historic location of resource (oil) extraction and industrial land uses that may be associated with soil and groundwater contamination. To allow redevelopment to occur while contamination from past activities is present, it will be necessary to construct and provide an areawide stormwater handling system designed specifically for this area, to prevent concentrated infiltration of stormwater from individual developments in areas affected by contamination.

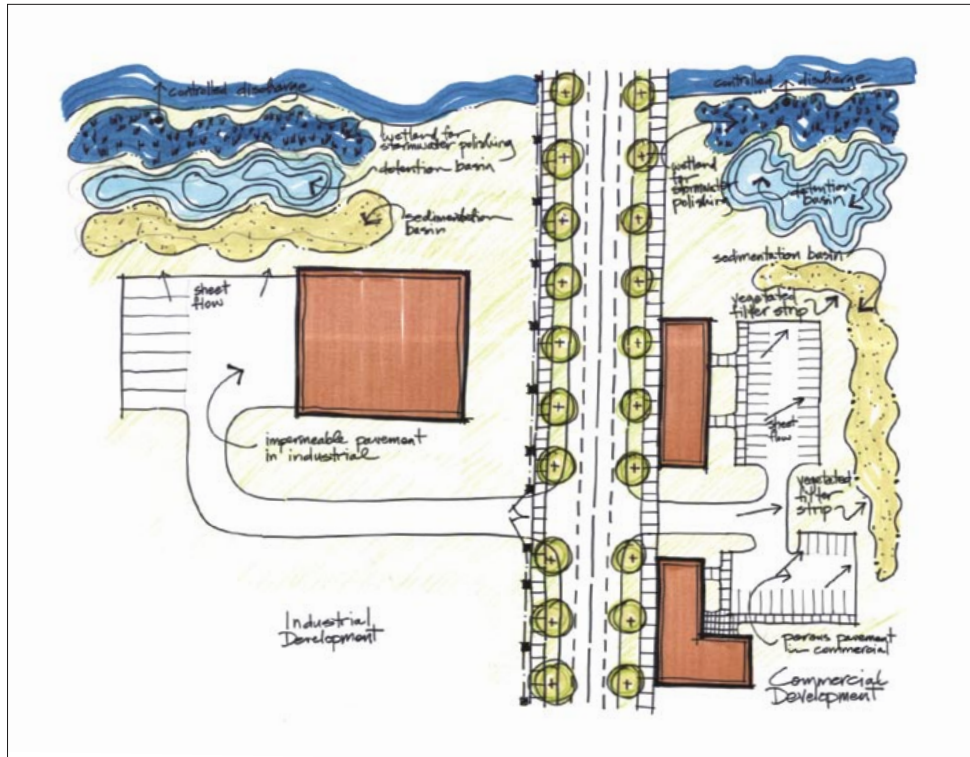
The SDAT recommends Oklahoma City provide a rate of stormwater discharge from the area less than the rate that would occur if the land were undeveloped. In addition, the city should commit to minimize infiltration of stormwater into site soils, except within detention basins carefully located outside any zones of contamination to reduce contact between stormwater runoff and possible contamination that may have resulted from previous use of the area.

Stormwater management for the entire Reno study area should be integrated with the overall development plan for the area. Stormwater should be directed from each development by sheet flow across vegetated filter strips into constructed vegetated swales for conveyance to the area stormwater management system. The system should direct stormwater away from contaminated portions of the site to locations that are appropriate for detention, infiltration, and discharge.

With proper design, elements of the areawide stormwater management system can provide the visual amenities of native grassland vegetation, created wetlands (used for stormwater quality “polishing”), and open water. The shape and appearance of these elements should be designed as a naturalistic system that stores stormwater and improves its quality prior to discharge and can also accommodate access via paths, boardwalks, and overlook decks.

The existing drain that flows south to the Oklahoma River should be considered an opportunity around which the development plan might be organized, at least in part. With proper treatment, the drain has the potential to serve as a focal element within the development. Consideration should be given to restoring the drain to a natural meandering route to enhance aesthetics and to provide naturalized plant and wildlife habitat. Long-term, the city may wish to explore the possibility of using the drain as a connector to the Oklahoma River, either via watercraft or through construction of bike and walking paths along its banks.

Through the development of an areawide stormwater management system, an overall reduction of infiltration in areas possibly affected by contamination should assist the city and the ODEQ in remediation efforts. Using swales to convey stormwater should reduce the site development infrastructure costs associated with storm sewers. An areawide stormwater management system can substantially decrease individual development costs by eliminating the need for onsite detention and freeing up property for other uses.



A stormwater management system can be an amenity for the community.

Provisions for accommodating stormwater for individual parcels should be based on the following concepts:

- Stormwater from roofing and paving should be sheet drained across vegetated filter strips and vegetated swales.
- In lawn areas, the use of appropriate low maintenance turf grasses is recommended to minimize the need for water, fertilizer, and pesticide applications.
- During construction, erosion and sedimentation control measures should be enforced to prevent sedimentation from entering the areawide detention basin(s).

The stormwater management system should be consistent with the following design criteria:

- Swales should have a positive slope to provide conveyance and decrease infiltration or ponding of water
- Loamy topsoil should be applied at a depth of 6 to 12 inches to reduce infiltration
- Swales should be planted with shallow rooted vegetation to decrease infiltration
- Side slopes should be no steeper than 3:1 (H:V)
- Rock check dams or grade control structures should be used to reduce overall flow velocities.

Vegetated filter strips should be used whenever possible to treat stormwater runoff.

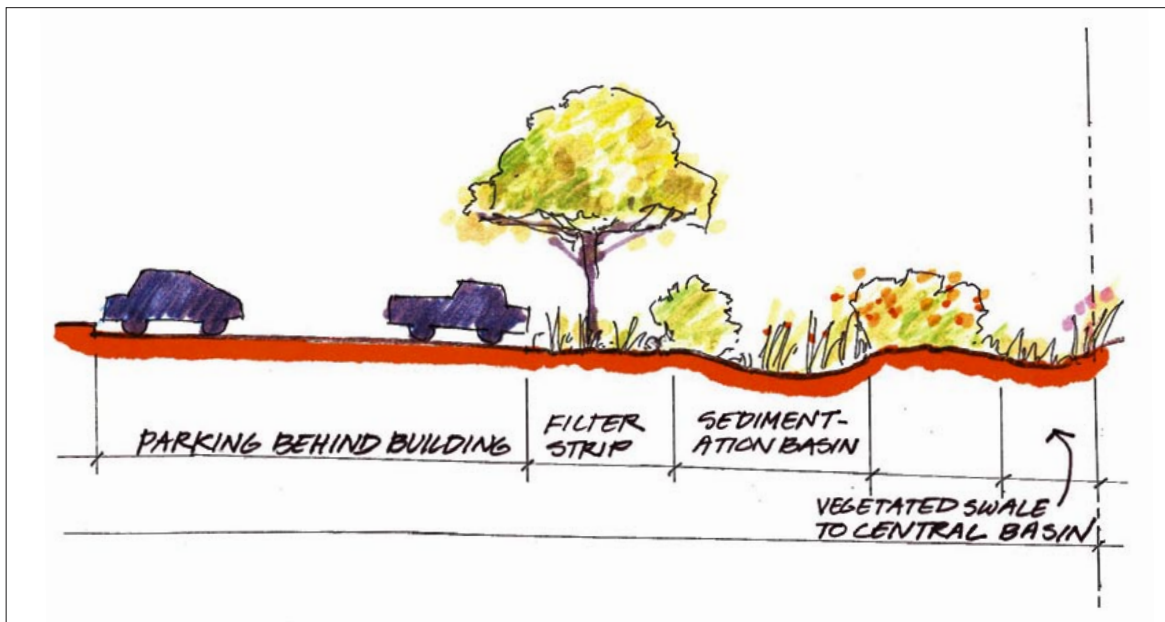
Size of filter strips should be based on the following criteria:

- Percentage of the half-year frequency storm that can be infiltrated based on the soil permeability
- For sediment trapping efficiency, the slope and length of filter strips are critical as they largely determine the pollutant capabilities
- For 70 percent sediment trapping efficiency, 15 linear feet of grass filter strip per 1 percent of slope is required (i.e., if the slope is 2 percent, use a 30-linear-foot filter)
- For 90 percent sediment trapping efficiency, 45 linear feet of filter strip per 1 percent of slope is required (i.e., 2 percent slope requires a 90-linear-foot filter)
- The minimum width-to-percent slope ratio should be 4:1
- Concentrating the flow into a channel across the filter strip should be avoided
- Grass filter strips used for parking lot runoff should be planted with seed mixtures that are salt tolerant.

Where overland flow is not feasible and piped conveyance systems are necessary, the final structure (manhole) prior to discharge into sedimentation or detention basins should include an engineered stormwater separator or treatment structure that removes oil and sediment from stormwater runoff. Composed of a precast concrete tank with a fiberglass partition inserted, the treatment structure replaces a standard manhole in the storm sewer system. By capturing oil spills and suspended solids, the system prevents nonpoint source pollution from entering downstream lakes and rivers. These are commonly referred to as oil and grit separators or oil and sediment separators.

Sedimentation basins should collect stormwater from individual sites, discharging any overflow to detention basins. These basins should be shallow and not visually apparent to those who use the area. Where soil and groundwater contamination are not at issue, these basins can be designed to infiltrate small rain showers. Larger rains should be discharged through an outlet structure to detention basins.

In combination, the vegetated filter strips, grassed swales, and sedimentation basins should be designed to store and infiltrate (where appropriate) the first flush of stormwater runoff from parking lots. Typically, the first half-inch of rain contains the highest levels of contamination from oil, grease, and coolants from vehicles. Filtering by vegetation and short-term storage that encourages solids to settle out of the water column can improve the quality of water discharged to receiving bodies of water.



Stormwater runoff from parking lots can be managed by filter strips, sedimentation basins, and swales.

The SDAT suggests constructed wetlands for stormwater “polishing” as a final step in improving the quality of water discharged from the Reno study area. Construction of wetlands as the final stage in stormwater management allows natural systems of plants and animals to treat and remove potential contaminants prior to discharge to receiving bodies. The stems of wetland plants provide an additional filtering device while some species of plants will absorb nutrients into their systems, thereby removing them from the water column. Constructed wetlands also provide habitat for waterfowl, amphibians, small fish, and invertebrates and provide a positive, aesthetic component to the landscape.

Because the Reno study area contains existing and former industrial uses with possible associated contamination present, concentrated infiltration of stormwater in areas impacted by contamination must be avoided. Onsite pretreatment systems, such as rain gardens, in contaminated areas should be lined with an impermeable fabric (e.g., vinyl or Ethylene Propylene Diene Monomer rubber). In addition to a liner, rain gardens must also have an underdrain. The outflow from the underdrain and overflow from the system must discharge to the downstream conveyance swales described above. These swales will convey stormwater to the overall stormwater management system.

Lined rain gardens provide additional treatment and spill containment prior to the overall stormwater management system. They will further limit pollution of natural water flows. A lined rain garden is an engineered natural treatment system consisting of a slightly recessed landscaped area constructed with a specialized soil mixture, an aggregate base, an underdrain, a liner, and site-appropriate plant materials that tolerate moist and dry conditions. The site is graded to intercept runoff from paved areas, swales, or roof leaders. The soil and plants filter and store runoff, removing petroleum products, nutrients, metals, and sediments. The cells should be lined to prevent infiltration into contaminated soil. Some typical uses include parking lot islands and edges of paved areas (roads or parking lots) adjacent to buildings, open space, median strips, and swales.

One aspect of the stormwater management system that deserves exploration is the potential to use vegetation for phytoremediation to assist clean-up efforts where soil contamination may exist. Phytoremediation is the use of plants to contain, destroy, or extract contaminants in the environment. Different plants use various mechanisms to perform these tasks, including extraction of contaminants from soil or groundwater; concentration in plant tissue; degradation of contaminants by various processes; transpiration of volatile compounds into the air; immobilization in the root zone; hydraulic control of groundwater; and control of runoff, erosion, and infiltration by vegetative cover.

The SDAT recommends the study of native plants that can contribute to stormwater management through control of the quantity of runoff and improvement of water quality and that may also help with remediation or clean up of contamination of the study area through one or more of the mechanisms identified above. Research into native plants that can contribute on all these levels has the potential to contribute to the environmental and economic well-being of the community by providing work opportunities for community residents in the research that will be required to identify the plant species that have the greatest potential in this area with its unique set of conditions.

ECOLOGICAL ECONOMICS

The field of economics has begun to broaden its scope by recognizing that economies do not function independently but rather are dependent on the structure and function of social institutions and the environment. Ecological economics presents a school of thought that explicitly recognizes the interconnections and interdependence of the economic, biophysical, and social worlds and provides the perfect approach to analyze the complexities of brownfield redevelopment. Ecological economics calls for models of economic behavior that encompass consumption and production in the broadest sense, including their biophysical, social, and ethical dimensions, as well as their market consequences.

To foster a comprehensive understanding of brownfield redevelopment, a tactical approach must be taken that recognizes brownfield redevelopment as an outgrowth of a complex system that encompasses environmental, economic, and social concerns. It should be seen as a cornerstone of economic and community revitalization. Therefore, a fundamental goal of the brownfields movement must be to develop market opportunities that facilitate brownfield redevelopment and enhance the economic viability of the community while protecting and maintaining its environmental quality. Economic viability and environmental quality and protection are critical forces that must be in alliance to ensure the success of brownfield redevelopment.

The Reno Corridor: A Vision in the Making

The Reno corridor has a unique opportunity to create a community grounded in principles of sustainability. Its vision should include

- Leveraging public/private partnerships
- Creating job opportunities and wealth with the local community
- Promoting brownfield redevelopment as a local economic development strategy
- Focusing on rebuilding community to address the human dimension of economic growth.

Public/Private Partnerships

A report prepared by the University of Southern California's Center for Economic Development and School of Policy, Planning, and Development, *Leveraging Private Investment Capital for Brownfield Cleanup and Redevelopment*, states the following:

The benefits (both public and private) in redeveloping brownfield sites include bringing jobs back to underutilized sites, increased revenues for property taxes, new business opportunities in untapped markets, continued economic growth while reducing the effects of urban sprawl, and access to land with well-developed infrastructure. In addition, there is an increase in the environmental and community standing and an improved quality of life that accompanies these benefits.

An example of how multiple partners can help play a pivotal role in brownfield redevelopment is seen in Seattle where a 208-unit affordable senior housing project now sits on the site of former warehouses and junkyards. The project not only achieved environmental protection, economic development, and community revitalization but also more than \$1 million in brownfield grants helped leverage the \$17-million project. The property owners within the Reno corridor, particularly those who own salvage and recycling yards, have a real opportunity to “think outside the box” to enhance and improve existing infrastructures. It is a fact, according to the International Economic Development Council, that for every public dollar invested in brownfield projects, \$2.5 in private-sector investment is leveraged.

Partnerships may also come from an unlikely source. Case in point, recognizing that crime prevention and community revitalization go hand in hand, in 1999 the U.S. Department of Justice (DOJ) began a program called Operation Weed and Seed. The first program began in Providence, R.I. Operation Weed and Seed is a community-based initiative that provides an innovative and comprehensive approach to law enforcement, crime prevention, and community revitalization. Providence received training, technical assistance, and \$625,000 over three years from the DOJ and has leveraged additional funding for its Drug-Free Communities Support Program.

The planning department has already invested in a brownfields coordinator and worked on clean up for two superfund sites. The Reno corridor business owners can work with the economic development office to understand how to leverage the opportunities in their brownfield sites.

Job Opportunities and Wealth Within the Local Community

To create real wealth in local communities and to be competitive, Oklahoma City officials should rethink how they view the economy. A paradigm shift for the old static economic development model to a new dynamic economic model presents a “real world” outcome that maximizes potential within the community. This “Competitive Advantage Theory,” coined by Harvard Professor Michael Porter, sees economic development as a collaborative process involving government at multiple levels, companies, teaching and research institutions, and institutions for collaboration. Using the old model, government drives economic development through policy decisions and incentives.

The American Indian Cultural Center, scheduled to open in 2007, and the proposed Page Woodson Restoration Program are two examples of projects that have the ability to not only create job opportunities but also create wealth within the local community. Each has a vision that will restore cultural pride throughout the corridor. Continued support of these initiatives will allow the growth of new community partnerships.



Projects such as the Page Woodson School Restoration will enhance the community.

Brownfield Redevelopment as a Local Economic Development Strategy

The two federal agencies that provide direct funding for brownfield redevelopment, the U.S. Environmental Protection Agency (EPA) and the U.S. Department of Housing and Urban Development (HUD), offer funding that promote local economies. The president’s fiscal 2006 budget requested \$210 million for EPA brownfield programs, a figure that included \$60 million to support state response programs. According to Charles Bartsch, senior policy analyst at the Northeast-Midwest Institute, Congress provided \$165 million for the program, including \$50 million for state programs—an amount relatively comparable to current year levels.

The Federal Brownfields Tax Incentive is just one example of the many economic opportunities for those interested in brownfield redevelopment. The program encourages brownfield redevelopment by allowing taxpayers to reduce their taxable income by the cost of their eligible clean up expenses and is designed to spur investment in blighted properties and assist in revitalizing communities.

Asset or Liability? The “Bobbing Head” Oil Rigs. Turning perceived liabilities into assets is major attribute of brownfield redevelopment. The Reno corridor has an opportunity to turn what some may perceive as a liability into a real asset to their community, namely the “bobbing head” oil rigs that are quite obvious throughout the corridor and surrounding community. Individually these structures, particularly those that have not been maintained, may be seen as eyesores that contribute to the blight within the community. Yet, these structures also represent a past heritage that is unique to Oklahoma City. The community can provide an opportunity to create an industrial art from these structures and from other historic elements in the district. By capitalizing on the positive, restoring these infrastructures could become a vital part of the revitalization process and, like Bricktown, become part of the tourist attraction. As the research shows, authenticity and uniqueness of a place are very important factors that are assets and play a central role in creating identity in real communities.

Human Capital Drives Economic Growth. Nobel Prize-winning economist Robert Lucas sees the productivity effects that come from the clustering of human capital as the critical factor in regional economic growth. The proponents of the human capital theory argue that the key to regional growth lies not in reducing the costs of doing business, but the endowments of highly educated and productive people. The benefits of living in an area with diverse populations that celebrates and welcomes its diversity can only be realized by collaborative interactions between residents and property owners within the Reno corridor and the surrounding community.

While the American Indian Cultural Center will help bring about positive social and economic change, there appears to be little communication with African-American, Asian, and Hispanic communities regarding the project. This lack of communication reduces the ability to capitalize on the power of collaborative human capital, both intellectually and financially. For example, as reported in the June 2005 issue of *Inc. Magazine*, the retail market in the inner city is worth \$90 billion a year, and the national inner-city population is equal to that of the state of Texas. The magnitude of what this could mean to the project has not been realized and is very evident by the exclusion of the untapped markets in the northeast neighborhoods surrounding the corridor.

A business consortium of minority property owners and developers should be encouraged. A strategy for encouraging investment in the area by residents can be to provide investment training and opportunities for funding through micro loans.

Opportunity: Education

Education is a key ingredient to success and should be a high priority for the development of the Reno corridor. Partnerships with local high schools, colleges, and universities will foster and strengthen the local community. Job training programs with local business owners and Douglas High School, for example, could ensure that local residents acquire appropriate skills to sustain the local economy. Summer internship programs can also provide opportunities for young people in the community. The University of Oklahoma, Langston University, and the Metro Technology Centers throughout the region could partner with local entrepreneurs to develop incubator businesses that will spur economic prosperity.

The proposed Page Woodson Restoration Program is an illustration of what is possible through collaborative efforts and educational pursuits. To date, the following activities have occurred regarding the project:

- Phases I, II, and III environmental assessment have been completed by the Army Corp of Engineers
- The project has been nominated to the National Registry of Historic Places (listing on the Register would allow the project to be eligible for historic tax credits and grant application to the National Historic Treasures)
- The project has been adopted as an enterprise zone project by a national organization for the social and intellectual development of African-American children to enhance financial and conflict resolution literacy
- The project has partnered with an urban planning professor at the University of Oklahoma.

Opportunity: Empowerment

To make certain opportunities for community progress and economic growth are sustainable achievements throughout the Reno corridor and the surrounding communities, a separate entity should be established to handle growth in a new way such that redevelopment opportunities are not missed in the Interstate 40 realignment area. The fact that land values within the area range from zero to \$2 million is an indication that some real properties are not being used to their fullest, thus further depleting the economic vitality of the community. This new entity should

- Focus on economic development opportunities at all levels
- Foster high-impact development
- Identify development incentives to attract private development
- Oversee the project from start to finish.

What are the opportunities to create a forum for minority businesses to direct redevelopment by neighborhood residents? Communities that are empowered with knowledge are reclaiming their neighborhoods and creating economic stability “one brownfield at a time.”

ENVIRONMENTAL JUSTICE

The environment is not just the wilderness “out there”; it is where we all live, “in here” in urban centers. Over time, urban processes have affected the quality of the environment in cities and the health of communities living in the environment. In some cases, urban industrial processes have degraded the quality of the environment, negatively affecting water, soil, and air quality. In these cases, adjacent neighborhood residents have felt the short- and long-term effects. These effects range from human and public health concerns to the inability to attract new development. The Reno corridor and its surrounding neighborhood exhibit some of these characteristics: a mix of stable businesses and residents surrounded by industrial and vacant land in various states of repair. Additionally, the surrounding neighborhood is predominately African American and is the largest African-American neighborhood in Oklahoma City.

Environmental justice is the concept that everyone has a right to live in an environment with clean air, clean land, and clean water. Further, environmental justice advocates proactive policy responses to legacies of environmental degradation. Historically, toxic and hazardous waste, as well as other damaging activities, had a disproportionate effect on communities of color and poor neighborhoods. In a landmark study published by the United Church of Christ’s Commission for Racial Justice in 1987, researchers found that independent of income, people of color were more likely to live near toxic and hazardous waste than any other group. Through various policies and solution strategies, these disproportionate impacts can be addressed. The concept of environmental justice has grown from resistance to the impacts of toxic and hazardous waste to advocacy for all components of a healthy community.

Community health represents the sum total of many indicators describing how the actual personal health and public health compares to its potential in a place. Indicators of community health include

- Protection from and remediation of contamination of the air, land, and water
- Fair access to transportation, including public transit and nonmotorized transportation
- Access to healthy food
- Fair distribution to parks, open space, and active living infrastructure
- Preservation of unique cultural resources and assets.

Community health is important to the future of Oklahoma City's Reno corridor. Business owners and employees can and should benefit from improvements to air, water, land use, and transportation quality. Nearby residents can and should benefit from improved public infrastructure, and the health of surrounding communities can and should buoy the redevelopment potential of the corridor. Visitors can and should benefit from an enhanced area image and memorable experiences born of a healthy and stable neighborhood.

Ecological and Cultural Trends

A community's character and health evolve over time. The Reno corridor is not different. A brief survey of ecological and development trends in the area of Reno Avenue identified several environmental justice issues. In particular, the unique qualities of the site and neighborhood, its proximity to downtown Oklahoma City, and its demographic patterns indicated that disproportionate impacts on community health have occurred over a long period of time. Describing patterns helps to identify trends and prepare appropriate design solutions.

Presettlement

The site now occupies land that is a part of the high plains prairie. Grasses, shrubs, and trees tolerant of long droughts and occasional fires dominated this ecosystem. Large fauna roamed the plains. The Oklahoma River and its floodplain had a radically different location and shape compared to today; the river arched through the eastern edge of the site and traveled north through what is now a golf course and park space. What is now the Reno corridor flooded seasonally and burned occasionally.

But the dominant ecological site feature was the rich oil deposits that extended throughout the area. These deposits were between layers of rock and other deposits separating the oil from aquifers above and below. Water quality became an issue as oil drilling developed and expanded in the 1800s.

Native Americans used the area but there were no settlements until the Indian Relocation Act forcibly moved thousands of Cherokee and other nations from the southeastern United States to the plains. Although they were primarily forest-living communities, they adapted to life on the plains and along the rivers. Between the time of the Indian Relocation Act and the Land Run of 1889, Native Americans lived in the area, on the margins of what would become downtown Oklahoma City.

The Land Run of 1889

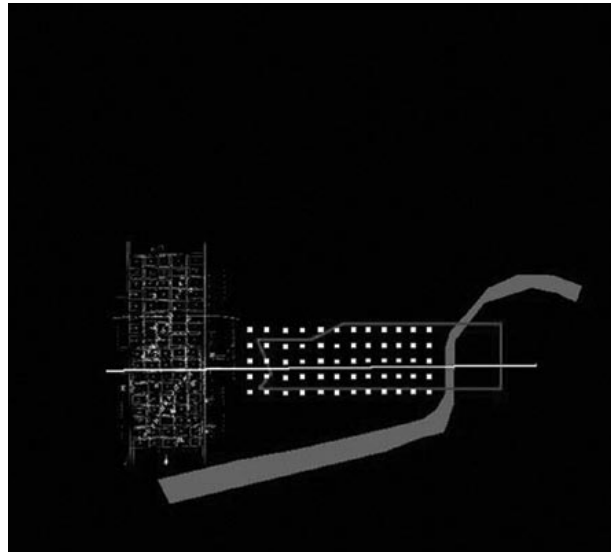
When oil was discovered in Oklahoma, an unprecedented piece of federal legislation granted parcels to the first people who arrived on the land that would become Oklahoma City. This distribution was to happen on a specific date, and thousands of settlers arrived and camped the night before to be in position for their parcels. This event was significant for several reasons. The early arrival of settlers in anticipation of the Land Run begat the state's nickname, the "Sooners." The land that was redistributed was taken from Native Americans who had been relocated previously. Human settlement intermingled with oil wells and other industrial processes. This coexistence between industrial process and human settlement intensified over time, producing some of the environmental justice issues present in the current Reno corridor.

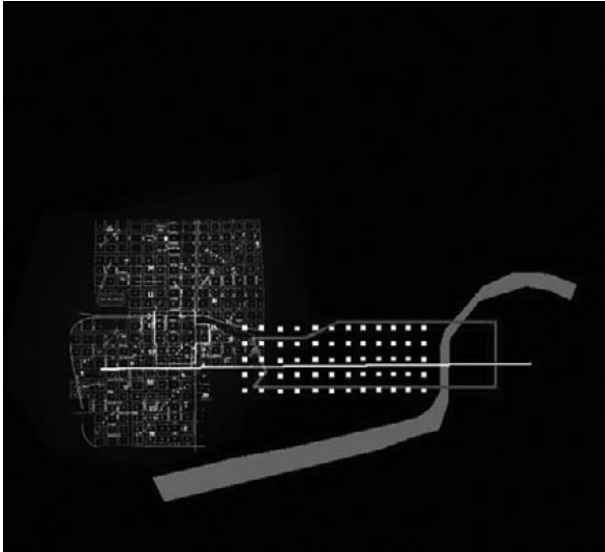
Urban Growth and Residential Segregation

As corporations gained stronger control over subsurface mineral rights, surface land ownership became less desirable in oil fields and industrial areas. The surface land uses in the Reno corridor shifted to industrial and warehousing facilities to support the center city. The proximity to rail lines and expanding road networks made the area desirable.

The growth of Oklahoma City in the late 19th and early 20th centuries attracted many immigrants, including African Americans.

However, Oklahoma City was segregated with strong political and geographic boundaries limiting African-American advancement. The neighborhoods immediately east of downtown, transitioning from oil fields to industrial uses along the river, became the segregated home of many black Oklahomans. Ironically, no African Americans operated businesses in the Reno corridor. Additionally, there was no access to the Oklahoma River, despite its proximity to the neighborhoods. However, African Americans began to suffer the effects of industrial intensification in the area, namely emissions from chimneys and smoke stacks, runoff from storage tanks and rail yards, and contaminants leaching into area groundwater.





Suburban Growth and Urban Renewal

After World War II, Oklahoma City emerged as a major hub for transportation and freight rail. The Federal Highway Act funded the creation of an interstate highway system that featured a major crossroads in Oklahoma City, Interstate 40 and Interstate 35. Interstate 40 was built as an elevated freeway through the central city and currently blocks neighborhood access to the Oklahoma River. Anticipating private automobiles as the principal mode of transportation, Reno Avenue and many other neighborhood streets were

built without sidewalks. Streetscape improvements that required road widening did not replace sidewalks. A dearth of pedestrian infrastructure remains in the area.

Following national trends, Oklahoma City coupled freeway construction with aggressive decentralized growth patterns. Places of business, shopping, and dwelling were rapidly developed in low-density patterns at the edges of the existing city. Currently, few restaurants, shops, and other non-industrial businesses exist within walking distance of Reno corridor users. Concerned with perceived urban decay, and attempting to attract suburban-style development within the central city, large-scale land clearance occurred in the central city, particularly in the African-American neighborhoods

surrounding the Reno corridor. Much of this land remains vacant and unoccupied.



During the same period, the U.S. Army Corps of Engineers channelized and relocated the Oklahoma River. Current business owners and residents report there is reduced flooding in the area because of the realignment. City officials identify increased public access to parts of the Oklahoma River as a benefit to the river's relocation. However, there is still no public access to the river in the Reno corridor.

Impacts on Community Health

There is a long pattern of negative impacts on community health, and a trend of intensification of those industrial urban processes that have been identified nationally as causes for degraded community health. However, have these processes manifested in degraded public health? Are people who use the Reno corridor or live adjacent to it suffering disproportionately from this trend?

Exposure to Toxic and Hazardous Waste

A brief survey of public health inventories describing Oklahoma City produced several alarming findings. According to an ARI analysis in 2004, of all counties in the United States, Oklahoma County ranks among the bottom third in major chemical releases that are identified as carcinogens and toxicants. The county is in the bottom 10 percent for cancer risk and in the bottom 20 percent for impaired water bodies (contaminated sources of drinking water). Of 22 businesses in Oklahoma County identified as contributing to this degraded environment, none was in the study area, but three were within the surrounding neighborhood.

African Americans and Native Americans in Oklahoma County have the highest rates of respiratory disease and cancer. Although few Native Americans live in the study area, the neighborhood surrounding the Reno corridor is predominately African American. In 2002, the Oklahoma State Board of Health did an assessment of its public health infrastructure to evaluate whether there were disparities in public health service delivery. It identified a previous lack of health delivery infrastructure as a contributor to health disparities prior to 2000, but the board has made tremendous strides in the physical infrastructure since. However, board officials noted they were still not adequately delivering services to African Americans and Native Americans.

There are indicators of toxic emissions, including carcinogens coming from the surrounding area. The area is predominately African American, and African Americans in Oklahoma County suffer disproportionately from respiratory disease and cancer, and the state board of health admits to a self-identified gap in public health service. However, no relationship between the presence of pollution and community public health beyond risk could be determined. The EPA, Oklahoma state agencies, and other entities are charged with enforcing environmental protection policies. These agencies have been effective in several brownfield clean up projects recently completed

on Reno Avenue. However, little is known about agency involvement in assessing community public health. There is a need for a detailed public health assessment of the Reno corridor to determine at the site scale if area industrial processes are manifesting in decreased public health.

Mobility and Obesity

Oklahoma City has an extensive freeway and road system. However, very few streets in the study area have sidewalks or other pedestrian infrastructure. Reno Avenue lacks sidewalks. The urban renewal zone to the north has been redeveloped with no sidewalks, has placed new structures with their backdoors/yards facing the streets, and is completely automobile oriented. According to the Urban Mobility Report from the Texas Transportation Institute at Texas A&M University, Oklahoma City's road network is one of the most efficient

in the nation, resulting in some of the lowest commuter stress levels in the country.

However, the federal Centers for Disease Control identified disturbing obesity trends, specifically targeting lack of physical activity as a cause. Fifty-seven percent of Oklahoma City residents exceed their ideal body weight and are more susceptible to disease. Only



15 percent of Oklahoma City residents self-reported they were getting their daily recommended amounts of fruits and vegetables. African-American Oklahomans have the highest rates of obesity and obesity-related ailments in the state.

In a national survey, Oklahoma City's falling health and fitness indicators were also attributed to a general lack of parks and recreation centers (compared to the national average for cities with high health and fitness indicators). In the Reno corridor, no parks and recreational facilities or sidewalks exist. Park space in the surrounding neighborhood essentially overlaps land reserved from the relocation of the Oklahoma River. Only one-half of the neighborhood is within walking distance of a park or open space. Residents of the area reported that park space was not programmed to suit neighborhood needs and was not in walking distance of most residents to encourage planned and unplanned use.

Oklahoma City’s well-developed road system serves people who have access to a car, are old enough to drive a car, and can afford to maintain a car. According to the 2000 U.S. Census, this represents one-third of the American population. Seniors, youth, the mobility impaired, and the poor are not served by automobile infrastructure, two-thirds of the U.S. population. Additionally, in a 1990 survey, 66 percent of unemployed people reported they would have a job if they had reliable access to transportation. Therefore, lack of mobility has far-reaching implications on community health, from personal health concerns to lack of neighborhood amenities like parks to the relative wealth of communities determined by their residents’ ability to access employment.

Distribution of Neighborhood Services

Communities are generally healthier when their residents can access their daily needs without the need of a car. Traditional American town planning principles distributed schools, businesses, shops, and restaurants such that residents could access all by walking or riding transit. The urban renewal era planning model that has transformed the neighborhood surrounding the Reno corridor not only removed sidewalks but also those “pedestrian-generating” uses that inspire walking. Based on site inventory, only one-third of the current community is within walking distance of a grocery store, restaurant, or shop. Aside from the restaurant and banquet facilities at the east end of the Reno corridor, even business owners and workers in the study area lack easy access to daily needs outside of downtown.

There is a need to work with the community to develop a pedestrian friendly infrastructure, supported by transit and activated by pedestrian-generating activities like shopping. The National Institute of Health through Active Living by Design funds public infrastructure improvements that facilitate this work. This process should consider the urban design of the Reno corridor as an opportunity to encourage non-automobile users to have memorable, safe, and functional experiences. It should consider reprogramming current open spaces to suit neighborhood needs and it should find opportunities for additional open spaces that are accessible to currently underserved parts of the community. This process should emphasize ways of better connecting the Reno corridor to its surrounding neighborhood.

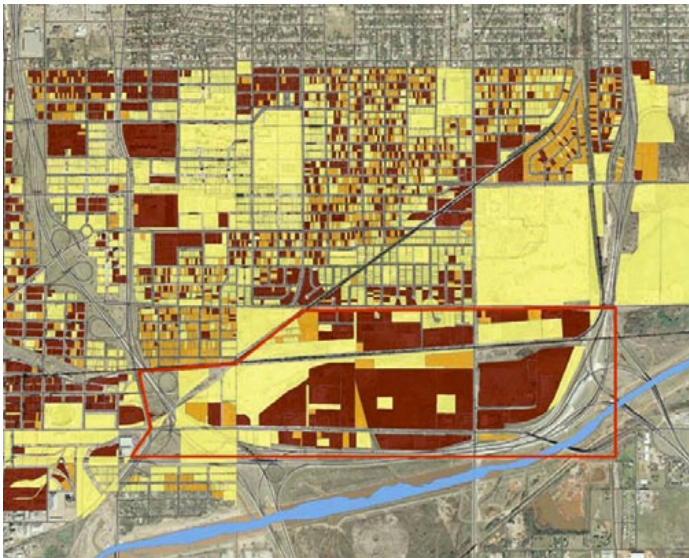
Unique Cultural and Urban Assets

There is a wealth of historic landmarks, individuals, and events that make the Reno corridor and its neighborhood unique. There are exciting community-based activities under way to leverage the collective memory of the area. This process is covered in more detail in another section. There are many examples of successful efforts in other areas, and they should be studied and applied to the study area. These assets add richness and a local sense of place to the character of future development.

Just Distribution of Development

A challenging question to ask of any community is whether there is a just distribution of development. Is there just distribution within a community and between communities? Are there disparities? What constitutes just distribution? Although these questions are beyond the scope of the Reno corridor study, some basic observations can be made about development in the neighborhood that affects the future of the study area.

Many of the recommendations made in this report focus on public infrastructure or involve public partnerships requiring resources. A community's tax base has a tremendous impact on its ability to make public improvements. Although the study team was aware of the industrial and residential uses in the area, there was no comprehensive picture describing broader land use and tax base trends.



Reno Corridor and Its Surroundings

Oklahoma City Geographic Information Systems (GIS) produced a series of maps based on 2004 data coding all of the parcels in the study area and surrounding neighborhood. The first shows three categories:

- No real property value (generating no taxable income—lightest tone)
- Median property value (\$41,500)
- Above median property value (above \$41,500—darkest tone)

More than 60 percent of the neighborhood consists of parcels with no real property value and are contributing nothing to the community's tax base. When parks, schools, and other institutions are removed from the list, roughly 50 percent of the neighborhood consists of vacant land and structures that are currently producing no resources for the community. One-half of the community is not engaged in any contributing uses that could support basic neighborhood infrastructure needs, including an improved Reno corridor. In an immediate and tangible way, the state of the broader community has real impacts on the potential and possibilities of an improved Reno Avenue. An improved community, in addition to broader community character factors, translates into more resources for public improvements in the corridor.

Another GIS map shows all Urban Renewal Authority (URA)-owned property in the surrounding neighborhood. All the parcels identified produce no taxable income. The URA is the dominant land owner of properties with no taxable value. Neighborhood residents reported a lack of involvement in URA land planning and they think the slow period of redevelopment after land clearance promotes a negative image of the community. Nationally, the large-scale land clearance and land assembly process in cities has contributed to a perception of neglect and lack of developer confidence. The large process is best suited for large-scale redevelopment. Contemporary urban economics identifies diverse development strategies, including small site redevelopment, as more sustainable models.

The combination of large tracts of land generating no taxable income and a redevelopment process disproportionately affected by a large land control philosophy is disenfranchising the community. It is creating disincentives for small scale/small site developers, and is resulting in lost taxable revenue that cannot be used for neighborhood improvements. There is a need for policy and economic strategies that create more agile, diverse, and small-scaled redevelopment.

Oklahoma City

Oklahoma City's population has grown by 1 percent since 2000. Over the same period, Oklahoma City's developed land area has grown by 6 percent. This represents a de-urbanizing regional pattern of growth, an unchanged amount of people distributed across a broader land area. Although within the range of national trends in cities, this disparity between population and land area begs serious questions in light of observations of the Reno corridor. The city is currently engaged in a comprehensive downtown vision plan that proposes pedestrian friendly and diverse communities that are strongly connected to the Oklahoma River. This plan will require long-term commitment, stewardship, and resources. But lacking significant immigration to downtown, there are legitimate concerns about who will live in these new neighborhoods and how they will be built.

Urban renewal, interstate highway funds, and the U.S. Army Corps of Engineers have channeled tremendous resources into southeastern Oklahoma City, paying for large-scale infrastructure projects that have not revitalized that community. Yet it remains more than 50 percent vacant while downtown demands resources and residents. If the Reno corridor will benefit from new residents and uses, and requires these sufficient resources to leverage public improvements, there is a need for a city and regional dialogue that positions southeastern Oklahoma City as a partner in the revitalization of the central city. Lacking vigilant advocacy, ironically, southeastern Oklahoma City and the Reno corridor could become disenfranchised in the short term by downtown revitalization.

MOVING FORWARD

This report has outlined an extensive road map for the future of Oklahoma City, designed to enable Oklahoma City to focus on one small piece of its planning puzzle in order to model future projects for redevelopment. The investigation of economic growth in the most contaminated area of the city, and the discussions of how to connect the poorest populations in that area, allow the community to hone in to the most needed areas of the city. On the surface, change in the Reno corridor can be easily obtained through the redesign of a road; however, the more intensive challenge is to provide an opportunity to change its inhabitants' way of thinking. This challenge is a brave commitment to build a new economy based on environmental and social sustainability. While no one can predict the future, the goal in outlining this road map is to try, to the extent possible, to suggest the directions that will provide for the community's long-term sustainability and vitality, rather than offer "quick-fix" solutions for tomorrow.

Creating and implementing a long-term vision for a community is difficult and requires the sustained commitment from the local government, the business and civic leadership, and the community as a whole. Four approaches to redevelopment of the Reno corridor might also apply to change for the whole city as it grows with the 21st century.

Optimize Economic Redevelopment

By prioritizing redevelopment and supporting new development zones, the city will allow public/private partnerships to flourish. Reno Avenue must be rebuilt and this will take public funding. Placing the avenue on the appropriate bond lists is only the first step. The Reno business owners who met each other for the first time during the study need support and mentoring. Initiating zoning changes will encourage commercial development along the immediate roadway corridor. In addition, zoning overlays and facade improvement grants will encourage private development. New community redevelopment in the neighborhoods to the north of Reno Avenue will strengthen the economic viability of the area and should be encouraged through special reviews of urban renewal policies.

The advantage of the Reno corridor is its location, adjacent to major highways, rail lines, and a prime entertainment district. In the long term, planning priorities will determine improvements for each area of the city and its gateways, including Reno Avenue.

Lead Environmental Change

Oklahoma City, the leader in oil and energy resources, can lead the charge for environmental change. The intellectual wealth of the city and its universities are available to investigate new means of turning waste into opportunity. University research on phytoremediation can be channeled in the corridor. Research funding will open the doors for new landscaping and the study of solutions to the critical issues of cleaning soil and groundwater. Symbiotic relationships between property owners, recycling facilities, and new industries based on waste reduction and reuse can be developed and encouraged by creating forums for industrial and university leaders as partners.

Recognize the Importance of Place

Through the gateways of the Oklahoma memorial one journeys through a faith in the future in spite of terrible tragedy. Centered in the heart of America, Oklahoma City celebrates its unique qualities of place. Art projects designed to celebrate the oil fields and machinery of energy production are only one example of how to create identity for this area.

Affirm Connections in the Community and Leave a Legacy

The wealth of a community is its people and their ability to live and support each other in good as well as difficult times. Oklahoma City has already been challenged by tragedy and triumph. This is a city that wants to keep its youth energized and engaged in the community. Diverse communities provide energy and creativity in urban environments. Empowering the minority populations to redevelop their neighborhoods will create new wealth, cultural and economic. Connections in the community to transportation, entertainment, the environment, the river, and to each other will require communication to become intensified between the developers of new city projects and the residents.

The legacy of the Reno Avenue Sustainable Design Charrette may be the initiation of discussions between neighbors as to how to create change. These discussions may indeed lead to real economic and environmental change through the commitment from neighbors and the city to sustainable development.

The American Institute of Architects
1735 New York Avenue NW
Washington, D.C. 20006-5292
www.aia.org