

OKLAHOMA DEPARTMENT OF TRANSPORTATION

Tulsa Area Multimodal Transportation Stimulus Package

Downtown – Arkansas River Crossing



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April 2009

CENTRAL TULSA – MULTIMODAL TRANSPORTATION ASSISTANCE REQUEST

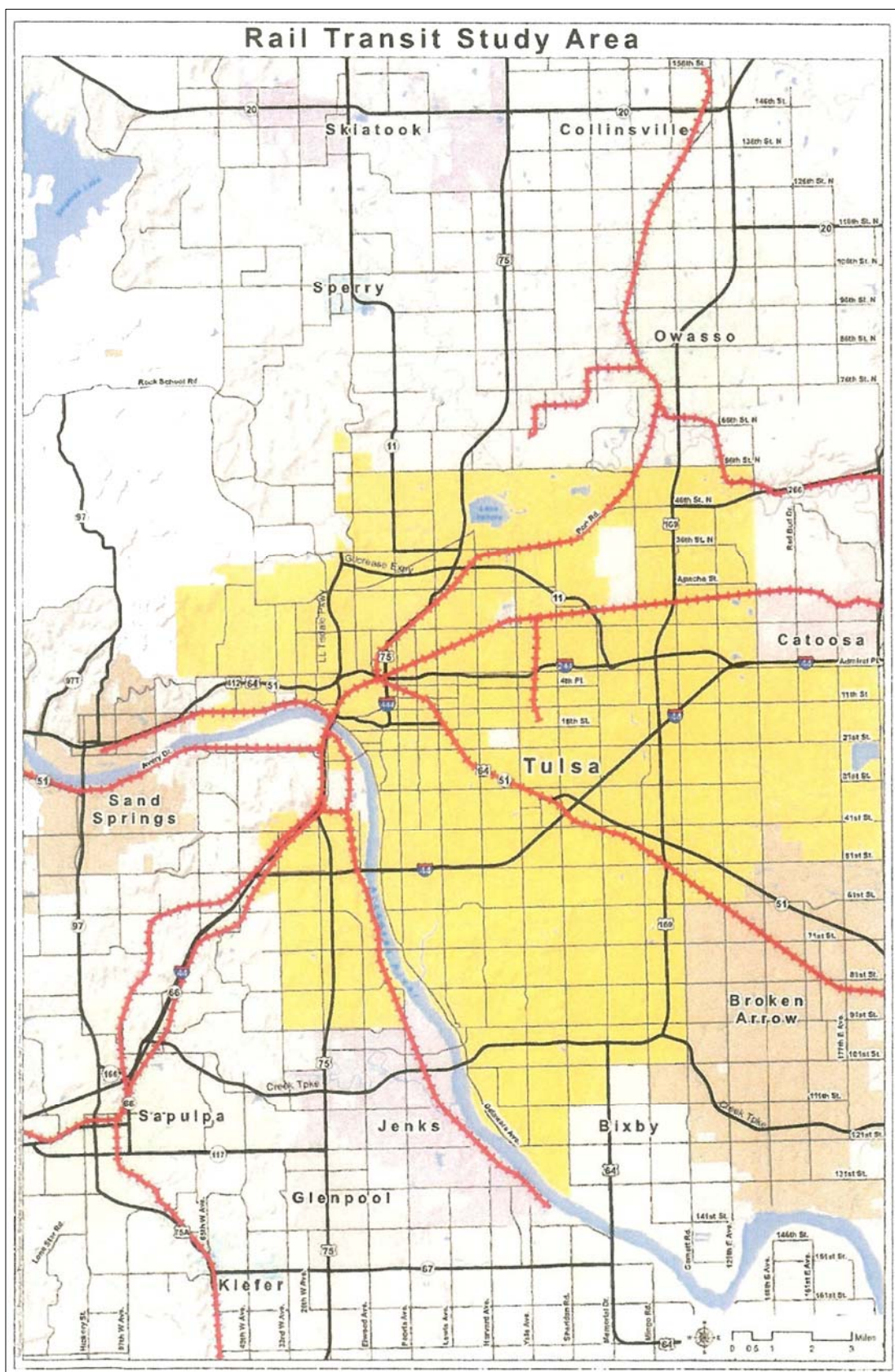
A point on the Arkansas River where the southwest corner of Tulsa's Central Business District intersects is both an historic and significant modern day crossing for virtually all forms of transportation. The stone ledges that formed shoals at the bend of the river provided excellent support for Tulsa's earliest bridges connecting the turn of the century business district on the east side to the southwest. It is the site of rudimentary bridges for horses and wagons, later for freight and passenger rail, Route 66, local arterials, interstate highways and more recently bicycles and pedestrians. In the most contemporary iteration it is a key crossing point for the new, alternative forms of public transportation including high speed intercity (Oklahoma City – Tulsa) rail and proposed local transit rail.

In effect this request for transportation assistance addresses a full transportation mix that involves the key Arkansas River Crossing above noted. The illustrative exhibits depict the larger transportation plan for the area then focus on the specifics of the Arkansas River Crossing "Multimodal Transportation Bundle."

1. Rail Transit Study Area

A key element of River Crossing will be the modification of the Interstate Highway Bridge to accommodate both local rail transit and the inter-city high speed rail corridor from Oklahoma City to Tulsa as it enters the Tulsa Central Business District where the main station is proposed. The "Rail Transit Study Area" exhibit shows the existing rail system in the Tulsa metropolitan area. The rail transit segment of the Tulsa plan proposes to follow the existing freight rail corridors and add transit track which meets freight rail specifications.

Two strategic transportation missions are served. The first is to prevent the reduction of rail freight capacity which in the future will be a major transportation growth sector. In fact, the transit track specifications are made to enhance the rail freight system particularly for "off hour transit" local delivery. Secondly the earliest Tulsa developments, and therefore the oldest and largely the most obsolete, were dependent on rail and trolley access. These Tulsa rail corridors afford the greatest opportunities for transit oriented redevelopment at stations positioned in the obsolete "oil field industrial" sites. These sites tend to be surrounded by inner city single family neighborhoods. The subject crossing is located in the center of Exhibit 1 where the "red tracks" are shown over the "blue Arkansas River." In addition, the pair of tracks shown to be running to the lower left hand corner of the diagram (to Sapulpa) represents the Burlington Northern Santa Fe (BNSF) and short-line tracks that comprise the beginning of the High Speed Rail Corridor to Oklahoma City. Exhibit 2 depicts in greater detail the southwestern quadrant of the Tulsa area (or central Tulsa).



2. Tulsa – Central Area Multimodal Corridors

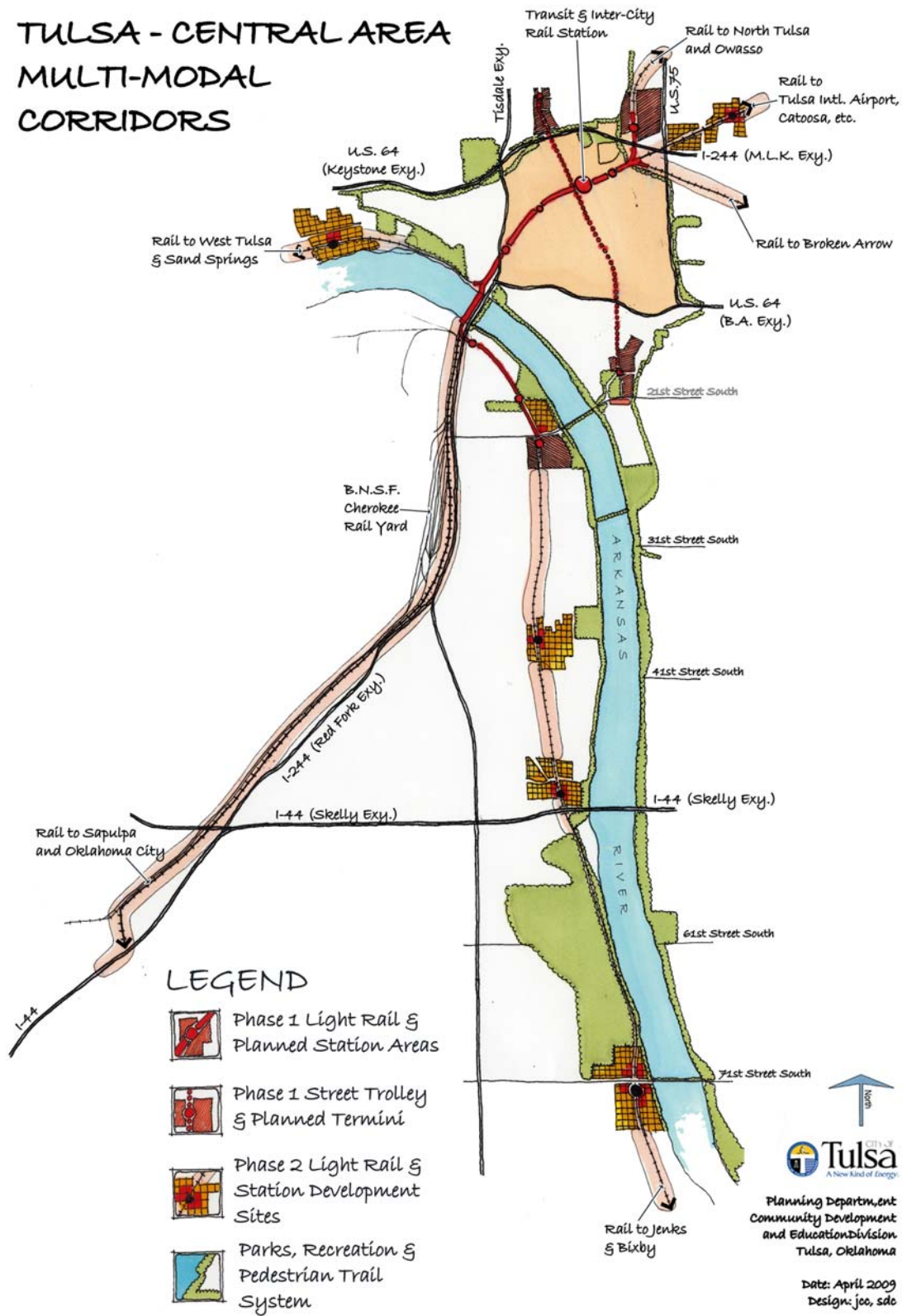
Exhibit 2 shows the importance of the multimodal river crossing as it connects Central Tulsa to the west and south. Tulsa's "Downtown - River Connection - Phase I Rail Transit Plan", in final draft, calls for the beginning of rail transit connecting the West Bank through the Central Business District to Tulsa North Side (3.5 miles). This line together with potential stops along its route is shown in red in Exhibit 2. This rail line is proposed to cross the Arkansas River on a bridge which involves the modification of the Interstate 244 Bridge. This line begins and ends at two large vacant city-owned tracts. These tracts (25 acres and 50 acres respectfully) are planned as major transit served urban redevelopment sites whose land lease revenues can be dedicated to the operations and maintenance of the transit. Stops include the "West Bank" Development shown in the next diagram, the city's "Festival Park" on the River, the O.S.U. Medical Center and new Forensics Laboratory, the Oklahoma State Office Complex, BOK Center Arena and Convention Center, Williams Center and the new City Hall, Blue Dome-Greenwood-Brady Entertainment Districts, and the new downtown ONEOK Ballpark, and a 25 acre development site and the Tulsa campuses of O.S.U. and Langston University. This rail line connects three diverse sections of Tulsa, adds significantly to further development and revitalization of these core areas of Tulsa, and facilitates future multi-modal project development.

Another important consideration in planning the initial rail transit is that it is the central section is the common "denominator" to all of Tulsa's proposed transit lines as depicted in Exhibit 2.

North -	Owasso and North Tulsa
East -	Tulsa International Airport, Catoosa and potential inter-city connections toward Kansas City and St. Louis
Southeast -	Broken Arrow
South -	Jenks, Bixby
Southwest -	Red Fork, Sapulpa and the High Speed Rail Corridor to Oklahoma City
West -	Sand Springs

Exhibit 2

TULSA - CENTRAL AREA MULTI-MODAL CORRIDORS



Also depicted in Exhibit 2 is a dotted red line which represents a proposed north-south street car line along Boulder Avenue with a transfer point with the rail transit in the Williams Center/High Speed Rail Station. The exhibit also shows at least one track is to be built for the future high speed rail. It would be built along the I-244 frontage and bypass the BNSF Cherokee Switching Yard which is currently congested. This track is designed to cross the Arkansas River on the proposed transit rail bridge and will greatly assist two rail freight short line operators (WATCO and Sapulpa) and avoid the BNSF bottleneck in the Cherokee Switching Yard. The plan also assumes that the future high speed rail corridor will follow I-44 (Turner Turnpike). This assumption follows the French and Japanese Models for high speed rail (cost effective specialized corridors) rather than the British Model for upgrading local rail and effecting rail freight capacity.

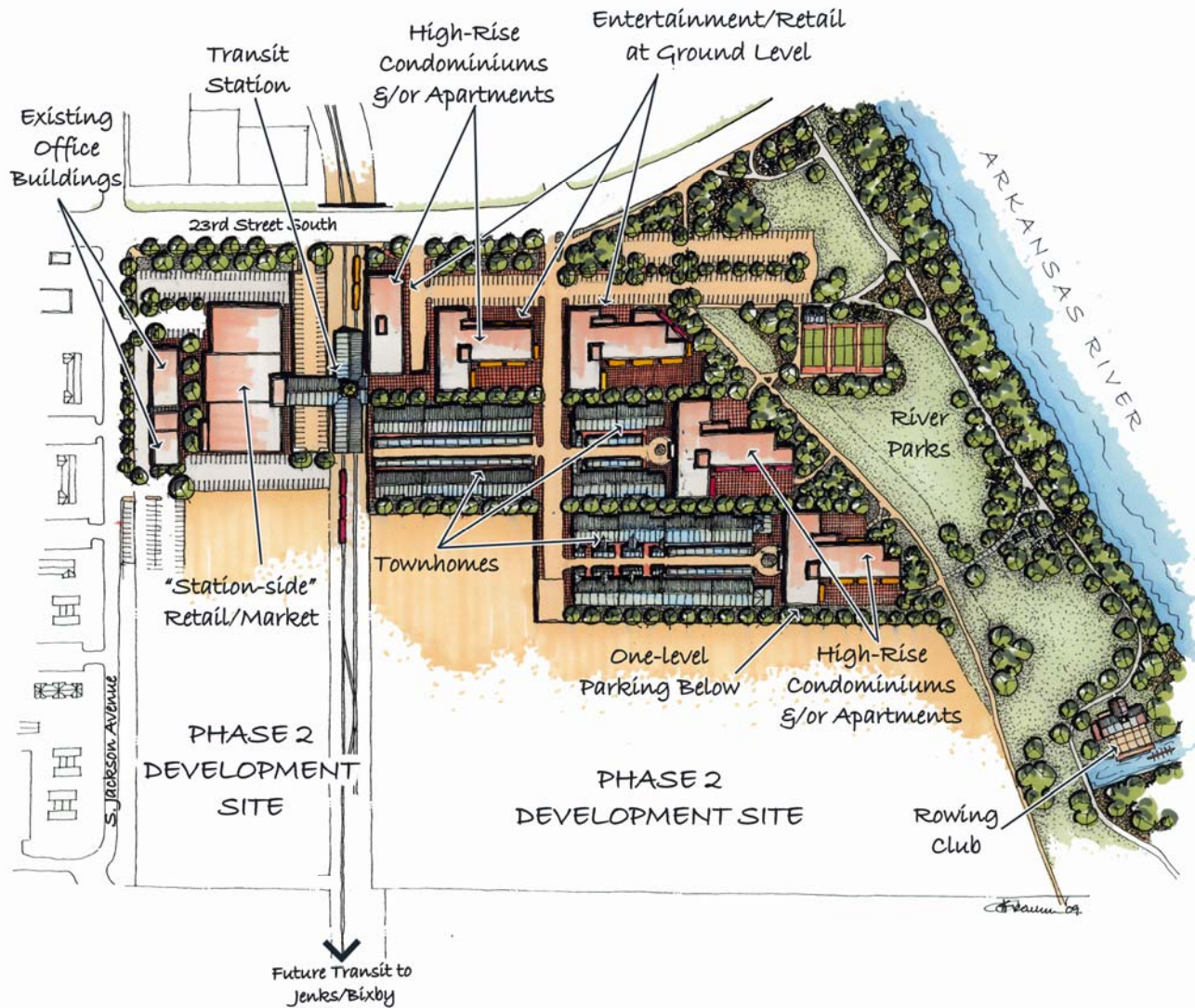
The exhibit also shows the actual location of several significant vacant or redevelopment sites which will serve as future moderate-to-high-density urban villages at transit stations. Tulsa also has an extensive bike and pedestrian trail system (off street) of more than 120 miles some of which is shown here as well.

In a nutshell, Tulsa is building a local alternative transportation network which is capable of getting riders to and from the future intercity rail system as well as to origins and destinations throughout the metropolitan area.

3. West Bank Development Concept Plan – Phase I

Exhibit 3 depicts the first phase of a Transit Oriented Urban Development (TOD) on a city owned 50 acre tract located along the River Park system and the Arkansas River. The transit station is the southernmost terminus of the Phase I Rail Transit project. This segment relies on the adoption and initiation of the I-244 Arkansas River Bridge bundled improvements to reach the downtown. This Phase 1 mixed use riverside project, which includes almost 1000 residential units, utilizes only a half of the site. The balance of the site can be built out over 15 years.

"WEST BANK" DEVELOPMENT CONCEPT PLAN - PHASE 1 **23rd Street South & S. Jackson Avenue, Tulsa, Oklahoma**



PHASE 1 - DEVELOPMENT SUMMARY

850 High-Rise Residential Units
 (5 Ten Story Buildings)

85 Townhomes

935 Residential Units

30,000 S.F. Office Space (Existing)

80,000 S.F. Retail/Commercial Space



Date: April 2009
 Design: jcc, sdc

4. "I-244 Bundle" Arkansas River Crossing Concept

Exhibit 4 is a plan view of all of the modes of transportation crossing at this key point on the Arkansas River. Exhibit 5 depicts the transportation layer below the Interstate 244 Bridge decks. The rail system will be described later in this crossing concept summary. Description of the upper level of the crossing begins with the Southwest Boulevard. Description of the remaining crossing elements will follow and progress with description of improvements on the right side (southeast side) of the crossing and move to the left side (northwestward side) of the crossing.

Southwest Boulevard was built to replace the 11th Street or "Route 66" Bridge to accommodate four 11-foot traffic lanes and a protected pedestrian/bicycle lane. Presently the west end of this bridge meets a street which drops in elevation approximately four feet (4') to a Union Pacific freight track that is the proposed West Bank Rail Transit alignment. After the at-grade crossing, Southwest Boulevard climbs approximately four feet (4') before intersecting with 17th Street. The distance from the bridge to 17th Street is in excess of nine hundred feet (900'). Part one of the request for transportation assistance is to grade-separate Southwest Boulevard from the Freight/Transit track. This would be done by raising the street so that it clears the resultant rail underpass by twenty-three feet (23'). Therefore the street would climb approximately twenty feet (20') from the Arkansas River Bridge to the track and then slope downward twenty feet (20') to the 17th Street interchange.

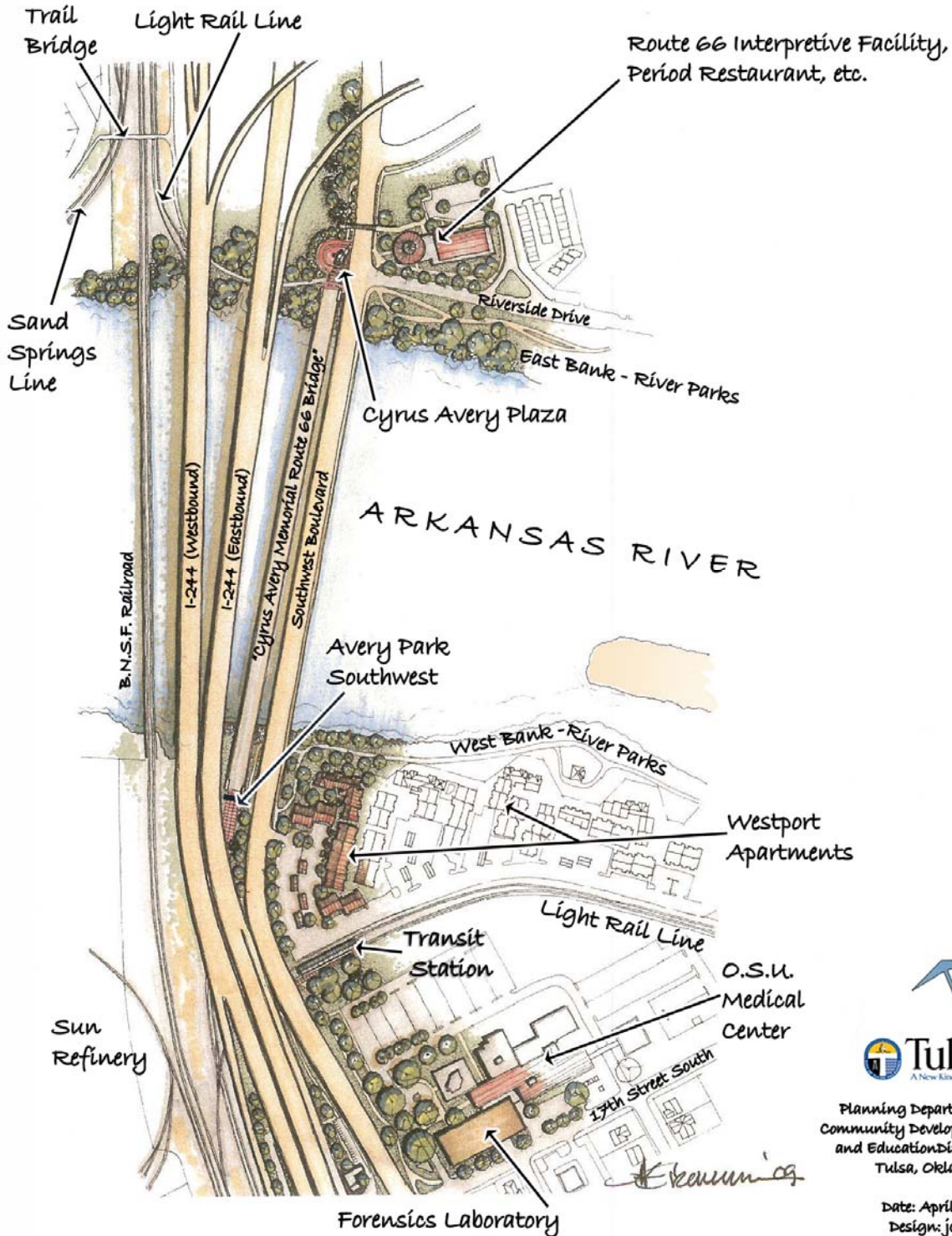
The raised street can be built on fill with a retaining wall and provision for two "box culvert" style underpasses. The first underpass would need to accommodate two rail tracks with freight rail clearance, as well as passage for pedestrians and bicycles to connect parking beneath the I-244 Bridge and the Route 66 Bridge foot and bike traffic (Avery Park West). The second passageway should accommodate a twenty foot (20') wide drive between the "under highway" parking and the Forensics Laboratory and O.S.U. Medical School. An adjacent eight foot (8') pedestrian sidewalk would also be required. This cross-under west of the rail line would require a ten foot (10') clearance. The Southwest Boulevard and grade separation cost estimate is \$10 million.

Under-Bridge Surface Parking

On-grade asphalt parking with attendant signage and lighting is proposed in order to facilitate the future growth of the O.S.U. Medical School, the Forensics Laboratory and add residential density in the area of the West Bank Transit Station. The parking would be sheltered by the large Interstate 244 Bridge and would have no landscaping. The parking would also serve as a park-and-ride facility as well as parking for river related and Route 66 events. Surface Parking Phase I cost estimate is \$2 million.

Exhibit 4

"I-244 BUNDLE" ARKANSAS RIVER CROSSING CONCEPT Tulsa, Oklahoma



Planning Department
Community Development
and Education Division
Tulsa, Oklahoma

Date: April 2009
Design: jee, sdc

Route 66 Bridge Deck Reconstruction

The surface condition on the deck of the historic Route 66 (11th Street) Bridge over the Arkansas River is unsafe and fenced off from pedestrian traffic. The leakage and structural conditions are eroding the integrity of the historic support arches beneath. The City and County have already invested approximately \$5 million for Historic Route 66 plazas and restaurant and museum sites. An additional \$8 to \$10 million is scheduled for an Avery Park West and the Interpretive Museum/Restaurant Structures at both ends of the bridge (shown in the diagram). Cost estimate for deck and historic bridge railing reconstruction is \$15 million.

I-244 Eastbound Bridge Reconstruction/Repair

Both of the I-244 bridges have very low ratings and ODOT has given their repair a top priority. The eastbound bridge is proposed for reconstruction/repair for its Interstate vehicular usage only. Cost estimate for reconstruction/repair is \$40 million.

I-244 Westbound Bridge Reconstruction/Repair

As in the case of the eastbound bridge the westbound bridge requires considerable, high priority reconstruction and repair. In addition, the columns and cross bracing beneath the highway deck are proposed to be reinforced and adapted for use as a two-track rail bridge to accommodate both local transit rail (Phase I) and the Tulsa end of the high speed rail connection to Oklahoma City. The under-bridge clearances can accommodate three tracks in width and only transit equipment in height or approximately eighteen feet (18'). The alignment is conceptually shown in Exhibit 5. The height of the proposed two-track transit rail bridge is the same as the adjacent (existing) two-track freight bridge and therefore will not effect river flow elevations or the 100 year "floodplain" on either side. Cost estimate for the westbound I-244 Bridge reconstruction/repair and the transit rail bridge only is \$60 million (does not include actual track installation).

New track alignment from the Union Pacific intersection with the BNSF Cherokee Yard to the West end of the Cherokee Yard

Install two tracks qualified for both freight and rail transit and use a combination of the western edges of the I-244 and frontage road rights-of-way and the adjacent BNSF right-of-way. This would accomplish two missions. First, it will serve as the inbound and outbound lines on the Tulsa end of the future high speed rail, as well as serve a transit line to the Red Fork area of Tulsa and eventually the City of Sapulpa. Secondly, it provides a freight rail "bypass" of the BNSF Cherokee Yard for the Sapulpa and WATCO short-line freight railroad companies as well as some BNSF rail traffic. This area is a serious bottleneck for the entire region's freight rail and does not have any capacity for transit rail. The cost estimate for two new tracks of 14,000 feet is \$10 million.

BNSF Freight Rail – 2 Track Arkansas River Bridge

There are no plans to request assistance for this Bridge although it is presently "over capacity" due to the amount of originating and through traffic as well as

the fact that it is constantly used during the assembly of trains out of the east end of Cherokee Yard.

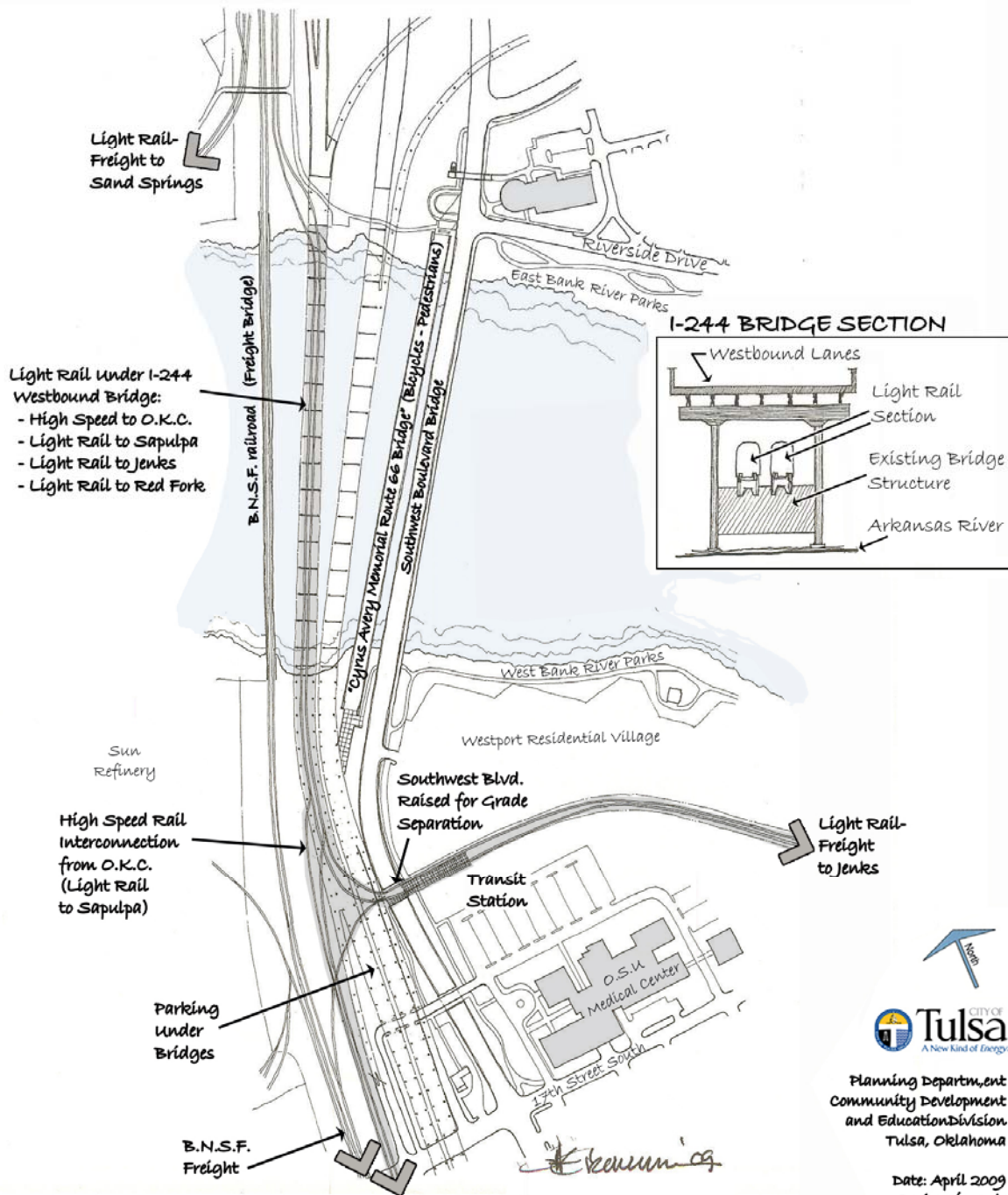
5. Arkansas River Crossing Concept – Ground Level Plan

Exhibit 5 is provided primarily to show the various existing and proposed rail alignments as well as the “under-bridge parking” and underpasses of Southwest Boulevard. Presently the BNSF has a two-track bridge across the Arkansas River. On the northeast bank (left side of exhibit) is shown an area where the existing freight (and eventual transit) line turns off to extend to Sand Springs. On the southwest side (left side) of the river existing sidings are shown connecting into the Sun Refinery area and straight southwestward into the Cherokee Yard. An existing single track also cuts off of the BNSF line from an area at the northeast end of the Cherokee Yard. It connects to the Union Pacific/Sapulpa short-line freight track which passes under I-244, is proposed to cross under Southwest Boulevard, and travels down the west bank of the river to Jenks and Bixby. This is the West Bank alignment for the proposed Phase I Rail Transit system. The proposed additional rail improvements are shown.

- A. The West Bank Rail Transit alignment adds a second track and proposes a station at Southwest Boulevard.
- B. The two tracks then turn, one at a time northward between the I-244 Bridge support columns to an alignment on the proposed rail bridge beneath the Westbound I-244 Bridge. Upon reaching the northeast bank of the river, the tracks pass one at a time out from under the bridge to two proposed tracks to be installed along the southeastern edge of the BNSF right-of-way as it passes through the downtown Tulsa.
- C. The previously noted pair of new tracks are designed to “bypass” the Cherokee Switching Yard and are shown to connect both to the Union Pacific line passing under the Highway bridges and eventually to the rail transit alignment on the proposed rail bridge beneath westbound I-244.

Exhibit 5

"I-244 BUNDLE" **ARKANSAS RIVER CROSSING CONCEPT** Tulsa, Oklahoma **GROUND LEVEL PLAN**



SUMMARY
Tulsa Arkansas River Crossing – Multimodal Transportation “Bundle”

This proposal addresses a key transportation crossing point for Tulsa’s metropolitan region. It addresses critical reconstruction and repair of an Interstate Highway Bridge (I-244). It serves an important matter of Transportation enhancement in the repair of the historic Route 66 Bridge which also serves to accommodate an important corridor of alternative transportation (bicycle and pedestrian). It enhances freight rail capacity in the rail region’s most significant “bottleneck” or “chokepoint.” It begins Phase I of Tulsa’s rail transit system and it prepares the “receiving” end of a future high speed rail connection to Oklahoma City. This high speed rail segment is part of the nationally developed set of high speed rail priorities. As a stimulus project, the construction and materials required have a significant and immediate effect. More importantly, the finished infrastructure product has both a sustaining long term stimulus effect and a substantial transportation transforming impact on an auto dependent region.

PROJECT ELEMENT COSTS

ITEM NO.	ITEM	COST (\$)
1	Southwest Boulevard	10,000,000
2	Under-Bridge Parking	2,000,000
3	Route 66 Bridge Deck & Railing	15,000,000
4	I-244 Eastbound Bridge	40,000,000
5	I-244 Westbound Bridge & Rail Structure	60,000,000
6	New “Bypass” Track	10,000,000
7	Contingency (10%)	13,000,000
	TOTAL	150,000,000