

EDMOND CENTRAL URBAN DISTRICT REGIONAL DETENTION STUDY

HIGHLIGHTS:

- **Client: City of Edmond, OK**

Mr. Steve Manek, P.E.
Edmond City Engineer
P.O. Box 2970
Edmond, OK 73083
(405) 359-4770

- **Project Year: 2005**

Project consisted of investigating/analyzing development of regional stormwater detention sites for the Central Urban District in the City of Edmond, Oklahoma through a study entitled the Edmond Central Urban District Regional Detention Study.

The study included:

- Conference with City to Review Project Requirements
- Preparation of all necessary Preliminary Surveys, Investigations, Maps, Plans and Models
- Determination of Basin Boundaries
- Evaluation/Depiction of Existing Storm Sewer Capacities

- Stormwater Models of Basins
- Historic/Existing/Future Conditions Development
- Detention Requirements
- Alternative Detention Sites
- Input/Update Meetings
- Interim Report to Summarize Findings (6 copies)
- Final Report to Summarize Work Performed and Outline Recommendations (6 copies)



SMILING HILLS / PERSIMMON CREEK DRAINAGE IMPROVEMENTS

HIGHLIGHTS:

- **Client: City of Edmond, OK**
Mr. Steve Manek, P.E.
Edmond City Engineer
P.O. Box 2970
Edmond, OK 73083
(405) 359-4770
- **Project Year: 2008**
- **Project Cost: 734,246.00**

As City Engineer, members of our staff are totally responsible for the drainage improvements to the Smiling Hills area along Persimmon Creek including investigation, development and design.

Upon determination of the scope of the problem, members of our staff prepared a preliminary engineering report including a cost analysis to determine the scope of the project. Topographical survey was conducted and rehabilitation plans and specifications are being prepared for approximately:

- 528 L. F. of 18" RCP
- 989 L.F. of 24" RCP
- 528 L.F. of 30" RCP
- 705 S.Y. of 6" concrete paving
- 6 EA. junction boxes (4'x4')
- 22 inlets (various sizes)
- 1,125 S.Y. of solid slab sod
- 127 S.Y. of sidewalks/ramps

Members of our staff provided experienced construction administration.



Intersection Of Smiling Hills Blvd and Bryant Ave



Looking Southeast Along Creek At The Outlet Of The Small Detention Aids



Creek Looking Downstream From Headwall On East Side Of Bryant Ave

DC-0126 MAPS BRICKTOWN STORM SEWER

HIGHLIGHTS:

- **Client: City of Oklahoma City, OK**

OKC MAPS Projects Office
420 West Main St., Suite 1000
Oklahoma City, OK 73102
Tel.: 405/297-2287

- **Project Year: 1996**
- **Project Cost: \$811,006.50**

Research data was compiled and field work done to establish horizontal and vertical controls and to identify topographic features of the construction of a new storm sewer system to serve the proposed Baseball Park, Canal and Parking in the Bricktown area.

A determination of public and private utility locations was made and a pedological survey was done. Hydrologic and hydraulic design was determined and design alignments and variations in scope of project were proposed.

A coordination meeting with MAPS consultants to discuss possible impacts of scope changes and utility relocation was held.



Preliminary design plans were prepared and the design impact on existing utilities was determined. An updated estimate of costs was prepared and a plan-in-hand was held.

Final design plans and specifications including right-of-way documents were then prepared along with a final cost estimate.

The project fixed limit was set at \$1,050,000 by the MAPS Engineer.

SANITARY SEWER AND STORM SEWER FOR DOWNTOWN REDEVELOPMENT

HIGHLIGHTS:

- **Client: City of Midwest City, OK**

Mr. John D. Jackson, P.E., City Engr.
 100 N. Midwest Blvd.
 Midwest City, OK 73140-1570
 (405) 732-2281

- **Project Year: 2003**
- **Project Cost: \$1,523,990.63**

As Consulting Engineer, members of our staff were totally responsible for the rehabilitation of the deteriorated sanitary sewer lines including investigation and development, design, bidding and contract administration.

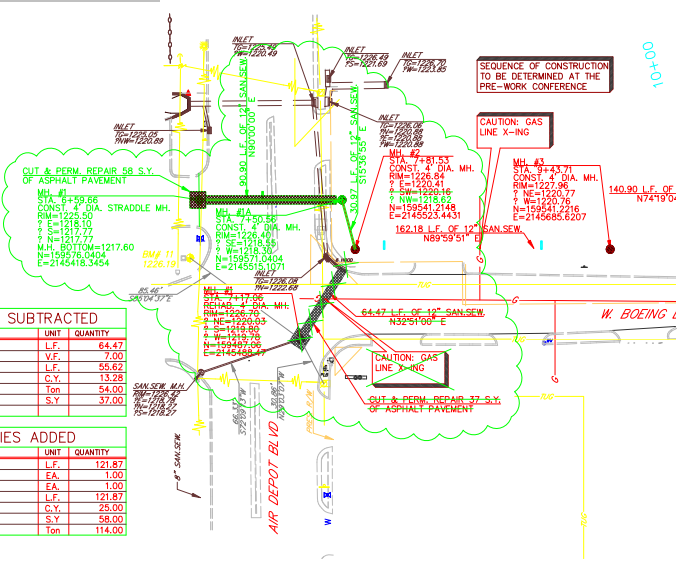
Upon determination of the scope of the problem, members of our staff prepared a cost analysis to determine the type of rehabilitation to be utilized. Different types of equipment and methods of repair were compared.

Site investigation was conducted and rehabilitation plans and specifications were prepared for:

- 4,367 L.F. of 12" sanitary sewer pipe
 - 1,617 L.F. 8'x5' RCB
 - 499 L.F. 8'x4' RCB
 - 353 L.F. 7'x4' RCB
 - 317 L.F. 6'x4' RCB
 - 582 L.F. 5'x5' RCB
 - 444 L.F. 5'x4' RCB
 - 612 L.F. 4'x4' RCB

FIELD CHANGE QUANTITIES SUBTRACTED			
ITEM NO.	ITEM	UNIT	QUANTITY
1	12" Sanitary Sewer Line	L.F.	64.47
2	Sanitary Sewer Manhole Rehab. (4' Dia.)	V.F.	2.00
3	Sanitary Sewer Trenching (6'-10')	L.F.	58.62
4	Embedment Material	C.Y.	13.28
5	Crusher Run Backfill	Ton	54.00
6	Cut & Perm. Repair (Asphalt Paving)	S.Y.	37.00

FIELD CHANGE QUANTITIES ADDED			
ITEM NO.	ITEM	UNIT	QUANTITY
1	12" Sanitary Sewer Line	L.F.	121.87
2	Sanitary Sewer Manhole (4' Dia.)	EA.	1.00
3	Sanitary Sewer Straddle Manhole (4' Dia.)	EA.	1.00
4	Sanitary Sewer Trenching (8'-10')	L.F.	121.87
5	Embedment Material	C.Y.	25.00
6	Cut & Perm. Repair (Asphalt Paving)	S.Y.	58.00
7	Crusher Run Backfill	Ton	114.00



Members of our staff provided experienced construction administration including amendments and change orders. Upon completion of the project, as-built plans were prepared and provided to the City.

DC-9601 1996 G. O. BOND ISSUE DRAINAGE IMPROVEMENTS PROJECT PHASE I—DAVIS PARK

HIGHLIGHTS:

- **Client: City of Nichols Hills, OK**

Mr. David Poole, City Manager
6407 Avondale Drive
Nichols Hills, OK 73116
Tel.: 405/843-6637
- **Project Year: 1996**
- **Project Cost: \$56,147.55**

As City Engineer, members of our staff were totally responsible for the drainage improvements to Davis Park including investigation and development, design, bidding, funding, inspection and contract administration.

Upon determination of the project issues, members of our staff prepared a cost analysis to determine the scope of the project.

Topographical survey was conducted and rehabilitation plans and specifications were prepared for:

- 446 L.F. of 30" RCP
- 168 S.Y. of 4' concrete sidewalk
- 166 S.Y. of 6" concrete pavement complete with 6" curb
- 190 L.F. of perforated pipe underdrain



Members of our staff provided experienced construction administration including amendments and change orders. Upon completion of the project, as-built plans were prepared and provided to the City.

DC-9901 1997 G. O. BOND ISSUE GRAND BOULEVARD DRAINAGE/CHANNEL IMPROVEMENTS PROJECT

HIGHLIGHTS:

- **Client: City of Nichols Hills, OK**

Mr. David Poole, City Manager
6407 Avondale Drive
Nichols Hills, OK 73116
Tel.: 405/843-6637

- **Project Year: 2001**
- **Project Cost: \$737,972.58**

As City Engineer, members of our staff were totally responsible for the drainage improvements to the Grand Boulevard area including investigation and development, design, bidding, funding, inspection and contract administration.

Upon determination of the scope of the problem, members of our staff prepared a cost analysis to determine the scope of the project.

Topographical survey was conducted and rehabilitation plans and specifications were prepared for:

- 228 L.F. of 36" RCP
- 240 S.Y. of 4' concrete sidewalk
- 4,025 S.Y. of Monoslab
- 13,915 S.Y. of solid slab sod



Members of our staff provided experienced construction administration including amendments and change orders. Upon completion of the project, as-built plans were prepared and provided to the City.

DC-0701 2007 G. O. BOND ISSUE STRATFORD DRIVE DRAINAGE IMPROVEMENT PROJECT

HIGHLIGHTS:

- **Client: City of Nichols Hills, OK**

Mr. David Poole, City Manager
6407 Avondale Drive
Nichols Hills, OK 73116
Tel.: 405/843-6637

- **Project Year: 2009**
- **Project Cost: \$1,949,140.00**

As City Engineer, members of our staff were totally responsible for the drainage improvements to the Stratford Drive area including investigation and development, design, bidding, funding, inspection and contract administration.

Upon determination of the scope of the problem, members of our staff prepared a cost analysis to determine the scope of the project.

Topographical survey was conducted and rehabilitation plans and specifications were prepared for:

- 4,279 SY of 6" PC concrete paving
- 2,527 LF integral curb
- 3,126 LF 7'x4' Des. #18 RCB
- 430 SY concrete pavement cut & permanent repair
- 298 SY 6" PC concrete driveway remove/replace (HES)

Members of our staff provided experienced construction administration including amendments and change orders.

Upon completion of the project, as-built plans were prepared and provided to the City.



IMHOFF CREEK LOMR

HIGHLIGHTS:

- **Client: City of Norman, OK**

Mr. Bob Hanger, P.E.
Norman City Engineer
201 W. Gray
Norman, OK 73069
Tel.: (405) 366-5452

- **Project Year: 1996**

The City of Norman requested a complete study to update existing FIS/FEMA Map revisions and to create a long-range plan for improvements along four (4) miles of Imhoff Creek.

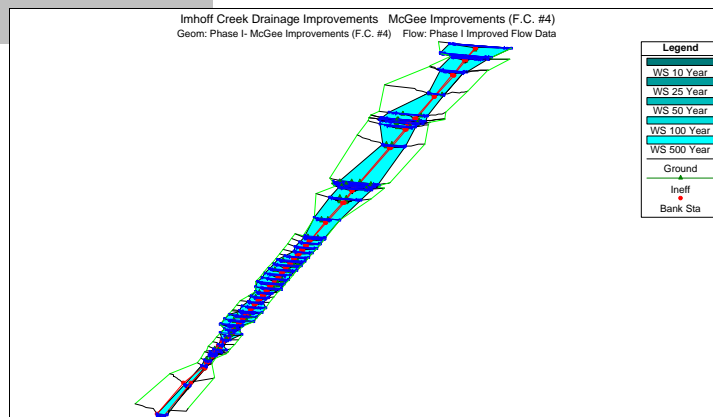
The project included four primary phases:

- **Phase 1.** Cross section topography, hydraulic structure inventory and terrain characteristics were assembled.
- **Phase 2.** An HEC-1 hydrological model was developed of the entire area. Two HEC-1 models were developed; one to apply to existing conditions and an additional model to anticipate the hydrologic changes at Lake McGee (insofar as could be ascertained during the study period).
- **Phase 3.** A master HEC-RAS hydraulic model was completed of the entire riverine corridor. This model entailed an analysis

of the 10, 50, 100 and 500 year recurrent flows. Additionally, a separate floodway execution model was performed and a new master LOMR rendered.

- **Phase 4.** A Capital Improvements Program detailing the most efficient and cost effective schedule for improvements within the

Imhoff Creek floodplain was accomplished. A collection of HEC-RAS models was developed to determine the impact of each new structure as it relates to the overall base flood elevation.



MCGEE-LINDSEY DRAINAGE IMPROVEMENTS PHASES I & II

HIGHLIGHTS:

- **Client: City of Norman, OK**

Mr. Bob Hanger, P.E.
Norman City Engineer
201 W. Gray
Norman, OK 73069
Tel.: (405) 366-5452

- **Project Year: 1998**
- **Project Cost: \$1,970,000.00**

Project consisted of providing necessary right-of-way documents and construction documents for drainage improvements to the McGee Drive and Lindsey Street drainage project in Norman, Oklahoma.

Phase I construction improvements included:

- construction of a 2,650 L. F. culvert storm sewer system with reinforced concrete box (RCB) to Imhoff Creek
- removal/replacement of concrete-lined drainage segway
- improvements to the storm water collection system in the general vicinity
- urbanize creek channel improvements

Project budget was set at \$2,100,000.00.



MERKLE CREEK CHANNELIZATION AND CRESTMONT STREET BRIDGE REPLACEMENT

HIGHLIGHTS:

- **Client: City of Norman, OK**

Mr. Bob Hanger, P.E.
Norman City Engineer
201 W. Gray
Norman, OK 73069
Tel.: (405) 366-5452

- **Project Year: 1995**
- **Project Cost: \$281,559.25**

As Engineering Consultant to the City of Norman, our staff was responsible for channelization of approximately two thousand linear feet (2,000 L.F.) of Merkle Creek including replacement of the Crestmont Street Bridge. A meeting with the City of Norman was held to obtain a total understanding of the project and to determine project goals. A complete topographical survey in total station format was done to locate all utilities.

Preliminary plans, including an engineering report consisting of all hydraulic and design analysis with calculations were completed. All existing reports available pertaining to Merkle Creek were analyzed to determine the best possible solution. A design was then recommended in accordance with the established goals and a preliminary cost estimate was submitted.

After a review of the preliminary plans and engineering report, the City along with the Consulting Engineer and other interested parties conducted a plan-in-hand on the entire project to assure that all goals were achieved and also to determine if any changes were justified.



Members of our firm prepared final plans and specifications in accordance with the approved preliminary plans at the direction of the City of Norman. These plans included all hydraulic and design calculations, along with the complete LOMR. The final design met the design standards of the City of Norman, FEMA, the U. S. Army Corps of Engineers and other applicable parties.

Utility and neighborhood meetings were held to aid in the right-of-way acquisition and to clear the way for construction.

Assistance was given to the City during the construction process, coordinating monthly progress meetings with the Contractor, Engineer and City representatives. Upon completion of the project, the Engineer provided the City with a set of as-built plans.

FLOOD STUDY AT N. MACARTHUR BLVD. BETWEEN N. W. 178TH ST. & N. W. 192ND ST.

HIGHLIGHTS:

- **Client: Oklahoma County**

Mr. Ray Reaves, P. E., County Engr.
320 Robert S. Kerr Avenue
Oklahoma City, OK 73102
(405) 278-1495

- **Project Year: 1999**

Our firm was selected by Oklahoma County to complete a study and create a long-range plan for improvements MacArthur Boulevard.

The project included cross section topography, hydraulic structure inventory and terrain characteristic identification.

An HEC-1 hydrological model was developed of the area. Two HEC-1 situations were developed; one to apply to existing conditions and an additional model to anticipate the hydrologic changes with proposed improvements (insofar as could be ascertained during the study period).

A master HEC-RAS hydraulic model was completed of the area showing analysis of the 10, 50, 100 and 500 year recurrent flows.



A report detailing the most efficient and cost effective schedule for improvements within the study area was completed and a collection of HEC-RAS models was developed to determine the impact of each new structure as it relates to the overall base flood elevation.

DC-0165, WC-0492 & SC-0677 LIGHTNING CREEK DRAINAGE IMPROVEMENTS PROJECT

HIGHLIGHTS:

- **Client: City of Oklahoma City, OK**

Mr. Dennis Clowers, P.E.
City Engineer
420 W. Main - 7th Fl.
OKC, OK 73102
Tel.: (405) 297-2033

- **Project Year: 2006**
- **Project Cost: \$3,600,000.00**

Project consisted of providing necessary right-of-way documents and construction documents for drainage improvements to a main tributary of the Lightning Creek drainage basin in Oklahoma City, Oklahoma.

Construction improvements included:

- 25,200 S.Y. of concrete channel liner
- 1,464 L.F. culvert storm sewer system with reinforced concrete pipe
- removal/replacement of three concrete box culverts at major arterial streets
- storm water collection system improvements
- 590 L.F. waterline
- 1,246 L.F. sanitary sewer pipe

Proposed channel improvement was the first phase of a basin-wide drainage improvement plan.



WT-0048 DAM INSPECTION OF LAKES & LAGOONS

HIGHLIGHTS:

- **Client: City of Oklahoma City (OKC)**

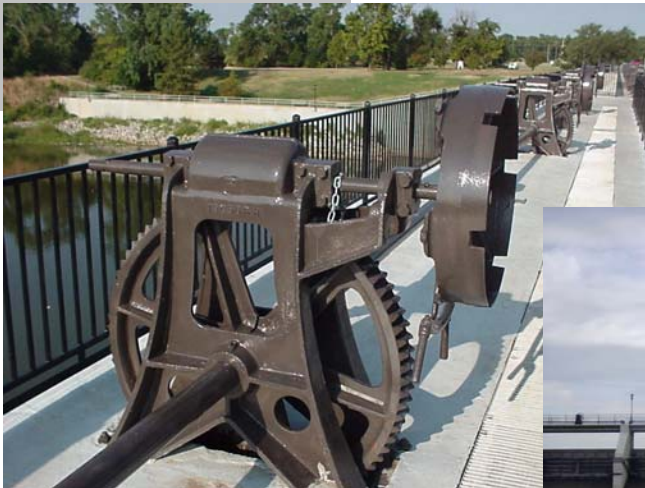
Mr. Dennis Clowers, P.E.
City Engineer
420 W. Main - 7th Fl.
OKC, OK 73102
Tel.: (405) 297-2033

- **Project Years: 2003, 2004, 2005, 2006**

A yearly inspection of high hazard dams is required by the Oklahoma Water Resources Board (OWRB) to determine any evidence of potentially hazardous conditions that could result in loss of property or life.

Atoka Lake, Draper Lake, Hefner Lake, Overholser Lake and the Northwest Sludge Lagoon are all classified as high hazard structures and as City Engineer, Smith Roberts Baldischwiler, LLC provided the annual inspection for 2003 including the Annual Inspection Report for each dam containing:

- Description and History
- Inspection Results
- Recommended Activities
- OWRB Checklist



UNIVERSITY OF CENTRAL OKLAHOMA WANTLAND FOOTBALL STADIUM

HIGHLIGHTS:

- **Client: University of Central Oklahoma (UCO)**

Mr. David Stapleton
A & E Services
100 N. University Dr.
Edmond, OK 73034-5209
Tel.: (405) 974-2576

- **Project Year: 2003**
- **Project Cost:
\$1,900,000.00**

As Engineering Consultant for the University of Central Oklahoma (UCO), our staff was responsible for providing design for grading, drainage, structures, concrete retaining wall and concrete sidewalk in addition to construction observation for the turf improvements project at Wantland Football Stadium at the UCO Campus in Edmond, Oklahoma.

In addition to providing construction plans and specifications our staff provided Inspector's Diaries for each day of the project showing work completed, equipment on site, etc.

