

Appendix C
Agency Coordination



February 3, 2010

Ron L. Hilliard
State Conservationist
Natural Resources Conservation Service
United States Department of Agriculture
100 USDA, Suite 206
Stillwater, OK 74074-2655

Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Mr. Hilliard:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

To reduce damages associated with future flooding events in the Willowood neighborhood, the City of Edmond proposes to improve approximately 1,550 linear feet of Spring Creek Tributary I (Figure 3). Proposed improvements include:

- Modifying approximately 1,320 linear feet of previously channelized creek bank in the Willowood neighborhood by converting the existing 30-foot wide concrete-bottom trapezoidal channel into a 30-foot wide concrete-lined vertical wall channel, except in the segment from Lonsdale Drive to the northern extent of the project area, where the vertical wall channel would be 46 feet wide;
- Expanding the Lonsdale Drive culvert system from a double 10-foot wide by 5-foot high concrete box structure to a quadruple 10-foot wide by 10-foot high concrete box structure;
- Channelizing an additional 230 linear feet of Spring Creek Tributary I south of the Willowood neighborhood with a 12-foot wide concrete-bottom trapezoidal channel with 7:1 riprap side slopes; and
- Installing five drop-down structures within the channel to reduce flow velocities.

The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment for the proposed Willowood Flood Protection Project. In accordance with the National Environmental Policy Act of 1969, as amended, URS requests that your agency review and comment on the proposed project, and provide any available information on resources within the project area that are under your agency's jurisdiction. If you have any questions or need additional information, please contact me by phone at 713.914.6490, by electronic mail at brian_mehok@urscorp.com, or by U.S. mail at URS Group, Inc., 10550 Richmond Avenue, Suite 155, Houston, TX 77042.

Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI



March 22, 2010

Mr. Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.
10550 Richmond Avenue, Suite 155
Houston, TX. 77042

SUBJECT: Hazard Mitigation Grant

Dear Mr. Mehok:

This letter is in response to your correspondence of February 10th requesting comment from the Natural Resources Conservation Service (NRCS) on a proposed hazard mitigation grant for the Willowood neighborhood in Edmond Oklahoma. The grant will fund the construction of a drainage improvement project to mitigate repetitive flooding of structures within this neighborhood. The NRCS has no objection to this Hazard Mitigation Grant.

Please be advised that the NRCS does not research or comment on design or legal issues when reviewing hazard mitigation grant applications. The NRCS only addresses natural resource concerns during review of these grant applications. The NRCS does not have any additional information or data available for this project area.

Respectfully,

A handwritten signature in black ink that reads "Gary W Utley". The signature is written in a cursive, slightly slanted style.

GARY W. UTLEY
Water Resources



February 3, 2010

Miguel I. Flores
Director, Water Quality Protection Division
U.S. Environmental Protection Agency, Region VI
1445 Ross Avenue, Suite 1200
Dallas, TX 75202

Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Mr. Flores:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

To reduce damages associated with future flooding events in the Willowood neighborhood, the City of Edmond proposes to improve approximately 1,550 linear feet of Spring Creek Tributary I (Figure 3). Proposed improvements include:

- Modifying approximately 1,320 linear feet of previously channelized creek bank in the Willowood neighborhood by converting the existing 30-foot wide concrete-bottom trapezoidal

channel into a 30-foot wide concrete-lined vertical wall channel, except in the segment from Lonsdale Drive to the northern extent of the project area, where the vertical wall channel would be 46 feet wide;

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- Installing five drop-down structures within the channel to reduce flow velocities.

The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

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Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI



February 3, 2010

Mark Derichsweiler
Water Quality Division
Oklahoma Department of Environmental Quality
P.O. Box 1677
Oklahoma City, OK 73101-1677

**Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project,
Oklahoma County, Oklahoma**

Dear Mr. Derichsweiler:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

To reduce damages associated with future flooding events in the Willowood neighborhood, the City of Edmond proposes to improve approximately 1,550 linear feet of Spring Creek Tributary I (Figure 3). Proposed improvements include:

- Modifying approximately 1,320 linear feet of previously channelized creek bank in the Willowood neighborhood by converting the existing 30-foot wide concrete-bottom trapezoidal

channel into a 30-foot wide concrete-lined vertical wall channel, except in the segment from Lonsdale Drive to the northern extent of the project area, where the vertical wall channel would be 46 feet wide;

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- Installing five drop-down structures within the channel to reduce flow velocities.

The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment for the proposed Willowood Flood Protection Project. In accordance with the National Environmental Policy Act of 1969, as amended, URS requests that your agency review and comment on the proposed project, and provide any available information on resources within the project area that are under your agency's jurisdiction. If you have any questions or need additional information, please contact me by phone at 713.914.6490, by electronic mail at brian_mehok@urscorp.com, or by U.S. mail at URS Group, Inc., 10550 Richmond Avenue, Suite 155, Houston, TX 77042.

Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI



STEVEN A. THOMPSON
Executive Director

OKLAHOMA DEPARTMENT OF ENVIRONMENTAL QUALITY

BRAD HENRY
Governor

April 7, 2010

Brian Mehok
URS Group, Inc.
10550 Richmond Avenue, Suite 155
Houston, Texas 77042

RE: City of Edmond, OK - Willowood Flood Protection Project

Dear Mr. Mehok:

In response to your request, we have completed a review regarding the above referenced proposals with regard to water quality, air quality, hazardous waste and solid waste. At this time, we have no objections regarding the projects and offer only the following guidelines:

- a) The project falls within the watershed of Arcadia Lake, a Corps of Engineers lake and a public water supply lake, therefore any plan and work performed should comply with any Corps restrictions and also with any restrictions contained in the Oklahoma Water Quality Standards relevant to public water supply lakes.

If you have any questions or need clarification, do not hesitate to contact me at 405/702-1019 or 1/800-869-1400.

Sincerely,

A handwritten signature in black ink that reads "Margaret M. Graham". The signature is written in a cursive style and is positioned above the typed name and title.

Margaret M. Graham
Environmental Review Coordinator
CUSTOMER ASSISTANCE PROGRAM





February 3, 2010

Shannon Phillips
Director, Water Quality
Oklahoma Conservation Commission
2800 North Lincoln Boulevard, Suite 160
Oklahoma City, OK 73105

Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Ms. Phillips:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

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The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment for the proposed Willowood Flood Protection Project. In accordance with the National Environmental Policy Act of 1969, as amended, URS requests that your agency review and comment on the proposed project, and provide any available information on resources within the project area that are under your agency's jurisdiction. If you have any questions or need additional information, please contact me by phone at 713.914.6490, by electronic mail at brian_mehok@urscorp.com, or by U.S. mail at URS Group, Inc., 10550 Richmond Avenue, Suite 155, Houston, TX 77042.

Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI

BRAD HENRY
GOVERNOR

JARI ASKINS
LIEUTENANT GOVERNOR



MIKE THRALLS
EXECUTIVE DIRECTOR

BEN POLLARD
ASSISTANT DIRECTOR

Responsible Care For Oklahoma's Natural Resources

March 5, 2010

Brian Mehok
Senior Environmental Specialist
URS Group, Inc.
10550 Richmond Ave., Suite 155
Houston, TX 77042

RE: City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Mr. Mehok,

The proposed channel modifications to the unnamed tributary to Spring Creek have been reviewed. This appears to be a classic example of development constructed too close to a stream and the Oklahoma Conservation Commission (OCC) has concerns regarding the loss of stream and riparian functions and habitat by lining the described channel with concrete and riprap. All streams flood and need access to their floodplains to account for high flows after stormwater events. Your stream modification calls for the construction of a concrete channel with some drop-down structures. While the drop-down structures will reduce velocity, the water will flow wholly untreated through the concrete flume which eventually flows into Lake Arcadia, which is the drinking water supply for the City of Edmond. OCC recommends that the principles of fluvial geomorphology with natural channel design and riparian vegetative plantings be used to stabilize the stream system as an alternative to concrete and riprap. In addition the use of wetlands adjacent to the channel should be utilized for floodwater storage. This natural stabilization and storage method is considerably more economical and beneficial to the environment than historical conveyance and stabilization techniques. Restoring riparian corridors using fluvial geomorphology ultimately produces stream systems that are more stable and efficient in transporting bed load and flood flows while providing habitat and water quality benefits for citizens and wildlife.

Please refer to photo 7; although there is trash in this picture this part of the channel looks fairly stable and could become more stable with the development of a riparian zone and continued access between the stream and its floodplain. The City of Norman is currently working on a similar project to address stormwater using natural channel design techniques and wetlands for stormwater storage and conveyance contact Watershed Restoration Inc. Geoff.Canty@estinc.net or Riverman Engineering russ@riverman-engineering.com for design details.

Thank you for the opportunity to review your proposed project. If you have any questions or concerns, I can be contacted at 405/522-4733 or chris.dubois@conservation.ok.gov.

Sincerely,


Christopher R. DuBois
Wetlands Program Coordinator
Water Quality Division

cc: Shanon Phillips, Water Quality Director

STATE OF OKLAHOMA • OKLAHOMA CONSERVATION COMMISSION

2800 NORTH LINCOLN BOULEVARD, SUITE 160 • OKLAHOMA CITY, OKLAHOMA 73105-4210 • (405) 521-2384 • FAX (405) 521-6686 • WWW.CONSERVATION.OK.GOV

 recycled paper



February 3, 2010

Nancy Kennedy, CFM
Floodplain Manager
City of Edmond Engineering Department
P.O. Box 2970
Edmond, OK 73083-2970

Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Ms. Kennedy:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

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Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI



March 10, 2010

Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.
10550 Richmond Avenue, Suite 155
Houston, TX 77042

Re: Request for Project Review - City of Edmond - Willowood Flood Protection Project,
Oklahoma County, Oklahoma

Dear Mr. Mehok,

The City of Edmond is in receipt of your request for comments on the above referenced project. The City welcomes its chance to respond to this request. Edmond is highly supportive of this HMGP Project. The City has strived for numerous years to mitigate the serious potential of loss of life as well as property damage due to the flooding that affects this neighborhood and would truly appreciate FEMA's financial support of this project.

The City of Edmond participates in the National Flood Insurance Program and is a Class 7 CRS Community. This proposed project is located in a Zone AE FEMA Regulatory Floodplain on Panel 40109C0065H with an Index Date of December 18, 2009 which is part of the Oklahoma County and Incorporated Areas Flood Insurance Study recently completed by FEMA. Hydraulic modeling has been extensively used in the development of this project's design to ensure that there will not be any detrimental floodplain effect to any upstream, downstream, or adjacent property in this area, thus yielding a No-Rise Certification. Upon acquisition of all required permits and before construction begins, a Floodplain Development Permit will be issued by the City. At the completion of this project, the City will obtain a Letter of Map Revision to update the FIS and FIRM to reflect this project.

Thank you for soliciting comments and preparing the Environmental Assessment for this proposed project. Should you have any questions, please feel free to contact me at (405) 359-4772.

Sincerely,

Nancy L. Kennedy, CFM
Stormwater Manager / Floodplain Administrator
City of Edmond Engineering Department
P.O. Box 2970
Edmond, OK 73083-2970

w w w . e d m o n d o k . c o m

A GREAT PLACE TO GROW



TREE CITY USA

October 11, 2010

Mr. Tim Hartsfield,
Regulator
U.S. Army Corps of Engineers, Tulsa District
Regulatory Office – CESWT-RO
1645 South 101st East Avenue
Tulsa, OK 74128

Reference: 404 Permit Application For Willowood Flood Control Project, Edmond, OK

Dear Mr. Hartsfield:

This letter is to append the 404 permit application submitted in April of 2009. The construction plans have been revised to minimize the impact on the natural stream. The attached plans will supersede plans included in the permit application.

A brief overview of the project: The Willowood channel is on Spring creek tributary in the Northwest Quarter of Section 32, Township 14 North and Range 2 West of the Indian Meridian. The limit of the work consists of the replacement of an undersized roadway box culvert, the repair of the existing channel with a vertical wall concrete channel and the construction of limited storm sewer within the existing channel right of way.

This channel is confined by residential development on both sides for nearly the extent of the proposed improvements. This section of the channel is the site of several repetitive flood losses. The footprint of the proposed channel is approximately the same as it exists now. The hydraulic improvement to the channel consists of lowering the existing concrete bottom of the channel from three to five feet, replacing the nearly vertical, severely eroded earthen side slopes with vertical concrete walls and removing the existing sanitary sewer manholes that now create obstructions to the flow in the middle of the channel.

The existing channel discharges at a point where the likelihood of erosive scour causes increased maintenance problems with the downstream receiving stream as well as Stonepoint Drive, a city street adjacent to the tributary. The steep slope of the existing channel creates a high velocity discharge. The proposed channel will have two vertical drops to reduce the slope to match the downstream channel slope. Also, the proposed channel extends approximately two hundred fifty feet beyond the downstream end of the existing channel to the location where the original channel should have ended in order to prevent the type of erosive damages presently underway. By ending the channel as shown, the potential for severe scour and erosion is reduced.

At the upstream end, the double ten foot by five foot reinforced concrete box will be replaced with a four cell ten foot by ten foot reinforced concrete box. The existing culvert overtops frequently creating dangerous conditions for persons traveling on the residential street. This street is the only way in or out of the addition. The increased capacity box

will eliminate overtopping during the one-percent storm event. Upstream from the new culvert, approximate fifty feet of transition channel will tie the channel improvements into the existing channel. Minimal grading of the existing trapezoidal, grass lined channel is expected.

Over the history of the channel, several projects have incrementally brought the channel to the state to which it is in today. The storm drainage projects and the sanitary sewer projects have had conflicting design constraints and thus left the channel constricted. Our goal in this process has been to prepare plans to address the frequent flooding problems, maintain the function of the sanitary sewer and other utilities and minimize the impact on the existing natural channel at both ends.

We would like for you to consider authorizing this project under a Nationwide 404 permit. As stated, the footprint of the improvement lies within the limits of the existing channel with the exception of only minimal channel improvements to reduce the potential for continued scour.

Please call if you have any questions. You may reach me at 918-392-5620 or on my cell phone at 918-606-2778.

Sincerely,

Meshek & Associates, PLC



William T. Meshek, PE, PLS
Principal Engineer

Weir, Dorothy

From: Tom Meshek [TMeshek@meshekengr.com]
Sent: Thursday, October 14, 2010 11:05 AM
To: Nancy Kennedy; Dorothy.Weir@dhs.gov
Cc: Janet Meshek
Subject: FW: Tulsa District File ID # 2009-247; Willowood Stormwater Drainage; City of Edmond (Meshek Assoc.)

Importance: High

Nancy / Dorothy

Below is the response on the 404 permit. We should have a conference call at some point soon to discuss the HMG going forward. Should we contact OEM or will Dorothy do that?

Thanks

Tom

From: Hartsfield, Timothy SWT [<mailto:Timothy.Hartsfield@SWT03.usace.army.mil>]
Sent: Thursday, October 14, 2010 10:43 AM
To: Tom Meshek
Cc: Hartsfield, Timothy SWT
Subject: Tulsa District File ID # 2009-247; Willowood Stormwater Drainage; City of Edmond (Meshek Assoc.)
Importance: High

Subject:

Tulsa District Corps of Engineers Nationwide Permits for Linear Transportation Projects (NWP-14), Bank

Stabilization (NWP-13), and Maintenance of Existing Stormwater Control Projects (NWP-31).

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Tulsa District Regulatory Office File Tracking Permit Identification Numbers 2009-247.

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Project Name:

Willowood Stormwater Drainage Maintenance Project, City of Edmond,
Oklahoma.

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Corps Project Manager: Mr. Timothy Hartsfield, 918-669-7237.

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. .
Mr. William T. Meshek, PE PLS; Meshek and Associates; Tulsa; Agent for City
of Edmond; Oklahoma:

via electronic mail

Dear Mr. Meshek:

Regarding the proposed Willowood stormwater drainage system maintenance
project in Edmond, Oklahoma; please refer to information originally received
by the Regulatory Office April 2, 2009; and several conversations and
supplemental information received in multiple transmittals since.

All submitted material has been reviewed. This electronic mail message
provides multiple validated NWPs.

Our review confirms your proposal falls within the scope of the Nationwide
Permit for Linear Transportation Projects (NWP-14) as well as those
Nationwide Permits for Bank Stabilization (NWP-13) and for Maintenance of
Existing Stormwater Control Projects (NWP-31) provided the conditions
therein are met. These NWPs are scheduled to expire on March 18, 2012. It
is incumbent on you to remain informed of changes to the NWPs. The Corps
will issue a public notice announcing the changes as they occur.
Furthermore, if you commence, or are under contract to commence, the
activity before the date the NWP is modified or revoked, you will have 12
months from the date of the modification or revocation to complete the
activity under the present terms and conditions of this NWP.

/s/Timothy Hartsfield
Regulatory Office
Tulsa District

U. S. Army Corps of Engineers

Attention: CESWT-OD-R (TH)

1645 South 101st East Avenue

Tulsa, Oklahoma, 74128-4609

Telephone: 918-669-7237 (voicemail)

Telefacsimile: 918-669-4306

Electronic Mail: "Timothy.Hartsfield@USACE.Army.MIL"

* USACE ENVIRONMENTAL OPERATING PRINCIPLES *

- Strive to achieve environmental sustainability
- Recognize the interdependence of life and the physical environment
- Seek balance and synergy among human development activities and natural systems
- Continue to accept corporate responsibility and accountability under the law
- Seek ways and means to assess and mitigate cumulative impacts to the environment
- Build and share an integrated scientific, economic, and social knowledge base
- Respect the views of individuals and groups interested in Corps activities

Regulatory Program Information

<http://www.swt.usace.army.mil/permits/permits.cfm>

Our Regulatory Service Survey is at:

<http://per2.nwp.usace.army.mil/survey.html>

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February 3, 2010

Dawn Sullivan, P.E.
Division Engineer
Environmental Programs Division
Oklahoma Department of Transportation
200 N.E. 21st Street, Room 3D2a
Oklahoma City, OK 73105

Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Ms. Sullivan:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

To reduce damages associated with future flooding events in the Willowood neighborhood, the City of Edmond proposes to improve approximately 1,550 linear feet of Spring Creek Tributary I (Figure 3). Proposed improvements include:

- Modifying approximately 1,320 linear feet of previously channelized creek bank in the Willowood neighborhood by converting the existing 30-foot wide concrete-bottom trapezoidal channel into a 30-foot wide concrete-lined vertical wall channel, except in the segment from Lonsdale Drive to the northern extent of the project area, where the vertical wall channel would be 46 feet wide;
- Expanding the Lonsdale Drive culvert system from a double 10-foot wide by 5-foot high concrete box structure to a quadruple 10-foot wide by 10-foot high concrete box structure;
- Channelizing an additional 230 linear feet of Spring Creek Tributary I south of the Willowood neighborhood with a 12-foot wide concrete-bottom trapezoidal channel with 7:1 riprap side slopes; and
- Installing five drop-down structures within the channel to reduce flow velocities.

The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment for the proposed Willowood Flood Protection Project. In accordance with the National Environmental Policy Act of 1969, as amended, URS requests that your agency review and comment on the proposed project, and provide any available information on resources within the project area that are under your agency's jurisdiction. If you have any questions or need additional information, please contact me by phone at 713.914.6490, by electronic mail at brian_mehok@urscorp.com, or by U.S. mail at URS Group, Inc., 10550 Richmond Avenue, Suite 155, Houston, TX 77042.

Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI



February 3, 2010

Ken Collins
Fish and Wildlife Biologist
Oklahoma Ecological Services Field Office
U.S. Fish and Wildlife Service
9014 East 21st Street
Tulsa, OK 74129-1428

**Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project,
Oklahoma County, Oklahoma**

Dear Mr. Collins:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

To reduce damages associated with future flooding events in the Willowood neighborhood, the City of Edmond proposes to improve approximately 1,550 linear feet of Spring Creek Tributary I (Figure 3). Proposed improvements include:

- Modifying approximately 1,320 linear feet of previously channelized creek bank in the Willowood neighborhood by converting the existing 30-foot wide concrete-bottom trapezoidal channel into a 30-foot wide concrete-lined vertical wall channel, except in the segment from Lonsdale Drive to the northern extent of the project area, where the vertical wall channel would be 46 feet wide;
- Expanding the Lonsdale Drive culvert system from a double 10-foot wide by 5-foot high concrete box structure to a quadruple 10-foot wide by 10-foot high concrete box structure;
- Channelizing an additional 230 linear feet of Spring Creek Tributary I south of the Willowood neighborhood with a 12-foot wide concrete-bottom trapezoidal channel with 7:1 riprap side slopes; and
- Installing five drop-down structures within the channel to reduce flow velocities.

The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

This project was previously brought to your attention by Meshek and Associates in August, 2009. Please see the attached figures for any changes from the initial design.

URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment for the proposed Willowood Flood Protection Project. In accordance with the National Environmental Policy Act of 1969, as amended, URS requests that your agency review and comment on the proposed project, and provide any available information on resources within the project area that are under your agency's jurisdiction. If you have any questions or need additional information, please contact me by phone at 713.914.6490, by electronic mail at brian_mehok@urscorp.com, or by U.S. mail at URS Group, Inc., 10550 Richmond Avenue, Suite 155, Houston, TX 77042.

Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI



February 3, 2010

Alan Peoples
Wildlife Chief
Oklahoma Department of Wildlife Conservation
P.O. Box 53465
Oklahoma City, OK 73152

Re: Request for Project Review – City of Edmond – Willowood Flood Protection Project, Oklahoma County, Oklahoma

Dear Mr. Peoples:

The City of Edmond, Oklahoma has applied to the Federal Emergency Management Agency (FEMA) for assistance with a Hazard Mitigation Grant Program (HMGP) project under application number 1678-OK-0052. FEMA's HMGP provides grants to State and local governments to implement long-term hazard mitigation measures after a major disaster declaration. The purpose of the HMGP is to reduce the loss of life and property due to natural disasters and to enable mitigation measures to be implemented during the immediate recovery from a disaster. The HMGP is authorized under Section 404 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act. FEMA proposes to provide assistance for this project through the HMGP under Presidential Disaster Declaration FEMA-DR-1678-OK.

FEMA proposes to assist the City of Edmond with a drainage improvement project to mitigate repetitive flooding which damages homes and infrastructure in the City's Willowood neighborhood, located southeast of the intersection of U.S. Highway 77 and South Coltrane Road (Figure 1). Based on the U.S. Geological Survey Edmond, Oklahoma topographic map, the drainage that extends through the neighborhood between Manner Park Avenue and Belmont Drive is an unnamed, intermittent tributary to Spring Creek (Figure 2). This unnamed tributary is identified as Spring Creek Tributary I on FEMA Flood Insurance Rate Map 40109C0065H. The existing channelized section of Spring Creek Tributary I has the capacity to contain a 10-year flood event and has experienced frequent flooding from severe rainfall events, resulting in significant damage to approximately 50 homes in the Willowood neighborhood. In addition, previous flooding events have resulted in high flow velocities in Spring Creek Tributary I, which have caused severe scouring of the Lonsdale Drive culvert and the subsequent partial collapse of the roadway. Lonsdale Drive is the only roadway that provides access to 59 homes on Lonsdale Drive, Belmont Drive, and Belmont Circle; these homes are cut off from emergency services when Lonsdale Drive is overtopped by floodwaters.

To reduce damages associated with future flooding events in the Willowood neighborhood, the City of Edmond proposes to improve approximately 1,550 linear feet of Spring Creek Tributary I (Figure 3). Proposed improvements include:

- Modifying approximately 1,320 linear feet of previously channelized creek bank in the Willowood neighborhood by converting the existing 30-foot wide concrete-bottom trapezoidal

channel into a 30-foot wide concrete-lined vertical wall channel, except in the segment from Lonsdale Drive to the northern extent of the project area, where the vertical wall channel would be 46 feet wide;

- Expanding the Lonsdale Drive culvert system from a double 10-foot wide by 5-foot high concrete box structure to a quadruple 10-foot wide by 10-foot high concrete box structure;
- Channelizing an additional 230 linear feet of Spring Creek Tributary I south of the Willowood neighborhood with a 12-foot wide concrete-bottom trapezoidal channel with 7:1 riprap side slopes; and
- Installing five drop-down structures within the channel to reduce flow velocities.

The proposed improvements would increase the channel capacity from a 10-year to a 100-year flood event.

URS Group, Inc. (URS) has been retained by FEMA to prepare an Environmental Assessment for the proposed Willowood Flood Protection Project. In accordance with the National Environmental Policy Act of 1969, as amended, URS requests that your agency review and comment on the proposed project, and provide any available information on resources within the project area that are under your agency's jurisdiction. If you have any questions or need additional information, please contact me by phone at 713.914.6490, by electronic mail at brian_mehok@urscorp.com, or by U.S. mail at URS Group, Inc., 10550 Richmond Avenue, Suite 155, Houston, TX 77042.

Sincerely,



Brian Mehok, CFM
Senior Environmental Specialist
URS Group, Inc.

cc: Dorothy Weir, Environmental Specialist, FEMA Region VI

WILDLIFE CONSERVATION COMMISSION

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1801 N. LINCOLN P.O. BOX 53465 OKLAHOMA CITY, OK 73105 PH. (405) 521-3851

March 22, 2010

Brian Mehok
Senior Environmental Specialist
URS Group, Inc.
10550 Richmond Avenue, Suite 155
Houston, TX 77402

RE: Threatened and Endangered Species Review

Dear Mr. Mehok,

This responds to your letter of February 3rd, 2010 requesting information regarding the potential impact on threatened and endangered species in your proposed project. The project is described as improvements to the City of Edmond mitigation measures for drainage improvements in the Willowood neighborhood, located southeast of HWY 77 and South of Coltrane Oklahoma County, Oklahoma.

Please understand that due to time and personnel constraints we have not performed a field survey of the proposed reference area. We have reviewed the information you sent to our office regarding this project and its potential effect on the natural resources and threatened and endangered species located within the project boundary. Based on our search, no state listed threatened or endangered species are known to occur within the project boundaries and it is unlikely that the project will have lasting negative impacts on listed species found within the state. For additional information on state of Oklahoma threatened and endangered species, we recommend that you contact the Oklahoma Natural Heritage Inventory, 111 E. Chesapeake Street, Norman, Ok. 73019.

The Oklahoma Department of Wildlife Conservation (ODWC) is not the US Fish and Wildlife Service and we have no authority over federal listed threatened or endangered species. We recommend, for information on federally listed threatened or endangered species, contacting the USFWS, Ecological Services, 9014 E. 21st St, Tulsa, OK 74129 or visit them online at <http://www.fws.gov/southwest/es/oklahoma>. We appreciate the opportunity to review and provide comments on this project. If we can be of further assistance, please contact our Environmental Program at 405-424-6062.

Sincerely,

William Ray
Environmental Biologist



FEMA

December 3, 2010

Ms. Melvena Heisch
Deputy State Historic Preservation Officer
Oklahoma State Historic Preservation Office
Oklahoma Historical Society
800 Nazih Zuhdi Drive
Oklahoma City, Oklahoma 73105

Robert Brooks, PhD.
University of Oklahoma
Oklahoma Archeological Survey
Room 102, 111 Chesapeake Street
Norman, Oklahoma 73019-5111

RE: Request for Project Review – City of Edmond Proposed Willowood Additional Channel Improvements Project, Oklahoma County, Oklahoma (File #0719-09)

Dear Ms. Heisch and Dr. Brooks:

The Federal Emergency Management Agency (FEMA) is formally initiating the Section 106 Process under 36 CFR 800, "Protection of Historic Properties," the regulations that implement this section of the National Historic Preservation Act of 1966, as amended, for the proposed Willowood subdivision channel improvements of a portion of Spring Creek Tributary 1 located in Edmond, Oklahoma County, Oklahoma.

Under contract to the City of Edmond (City), Meshek & Associates, PLC (Meshek) in Tulsa, Oklahoma, initiated consultation with the State Historic Preservation Office (SHPO) for the proposed channel improvements in the Willowood subdivision (Willowood) of Edmond, Oklahoma. Funding for this project will be provided by a FEMA grant with matching funds from the City of Edmond (City).

In response to the coordination initiated by Meshek, the Oklahoma Archeological Survey (OAS) determined that an archeological field inspection was necessary prior to the initiation of project construction (OAS, February 4, 2009, response letter). This investigation was performed at the request of OAS. A copy of the report entitled *Phase I Archeological and Above-Ground Resource Survey Summary Report: Proposed Willowood Addition Channel Improvements of Spring Creek Tributary 1, City of Edmond, Oklahoma County, Oklahoma* (Report) is enclosed.

Undertaking

Willowood is located southeast of the U.S. Highway 77 (NW 178th Street) and North Coltrane Road intersection and is comprised of approximately 60 houses constructed between 1983 and 1995. Stonepoint Addition, a second subdivision, is located southwest of the project area and contains houses constructed after 1995.

The proposed channel improvements meet the definition of an undertaking as defined in 36 CFR 80.16(y) (in Part 800 "Protection of Historic Properties"). The proposed project involves:

- Lowering the Lonsdale Drive culvert system approximately 6.5 feet and upgrading the system from a double 10-foot-wide by 5-foot-high concrete box structure to a four cell 10-foot-wide by 10-foot-high concrete box structure. The proposed project would include installation of a concrete-bottom transition with grouted riprap side slopes to be installed on the northern side of the culvert system (Station 25+50 to 24+95). In addition, the existing ground adjacent to the channel, upstream from the new culvert will be raised to an elevation of 1,066 feet North American Vertical Datum (NAVD) of 1988 to prevent overtopping of Lonsdale Drive. The project includes the replacement of approximately 140 linear feet of 28-foot wide asphalt roadway with curb and gutter and 280 linear feet of adjacent sidewalk in the area disturbed by the construction of the new reinforced concrete box on Lonsdale drive. (Segment A: see Report; Attachment 3).
- Modifying the existing Willowood channel system. The existing trapezoidal channel has a concrete bottom that varies from 20 to 30-foot in width and has eroded earthen side slopes between stations 15+00 to 24+20. The new channel will be a 30 foot wide vertical wall concrete channel from station 12+50 to 23+46, then transitioning to 46 feet in width to the four cell 10-foot wide by 10-foot high concrete box structure. From station 24+75 to station 25+50, the channel transitions back to existing earthen channel with a sloping drop structure. In addition, existing in-channel elevated manhole covers, which provide access to a sanitary sewer line that is buried under the channel, would be replaced with at-grade sealed manhole covers. (Segment B: Attachment 3).
- Re-grading an additional 175 feet of Spring Creek Tributary I to allow transition from the improved channel from stations 10+00 to 11+75. The channel is to be graded to drain to the existing undisturbed channel. This work will be confined to the bottom of the channel only with no re-grading outside the low banks. A single rip-rap check dam will be placed in the channel to control sedimentation at station 10+50. Additional hydraulic controls include four drop structures along the length of the modified channel to reduce flow velocities (stations 24+95, 25+50, 15+00 and 13+60). (Segment C: see Report; Attachment 3).

Area of Potential Effects

The proposed undertaking as described above was finalized in November 2010. The original scope of work for the proposed undertaking encompassed a much larger Area of Potential Effect (APE) than the current scope of work therefore, requiring a larger survey area. Even with these changes, the proposed projects scaled-down APE is still within the survey boundaries of the attached Report.

In February 2009, individuals qualified in their respective disciplines under *Secretary of the Interior's Professional Qualification Standards* (36 CFR Part 61), conducted an assessment of the project's potential to affect historic properties within the APE.

For above-ground resources, the APE consists of the proposed construction footprint to account for direct effects, and a visual buffer of 150 ft (45.7 m) on all sides to account for indirect effects (see Report; Attachment 2). General ingress, egress and staging near the improvement are anticipated. The APE includes the immediate area of Spring Creek Tributary 1 beginning at approximately 100 ft (30.5 m) north of Lonsdale Drive and extending southeast along the drainage for approximately 1,500 ft (457 m). The width of the APE (east-west) varies from approximately 350 ft (107 m) along the concrete-lined channelized section to approximately 400 ft (122 m) along the non-concrete-lined sections. This APE totals approximately 11 acres (ac) or 4.5 hectares (ha) and encompasses portions of residential buildings within Willowood.

For archeological resources, an APE of approximately 2.13 ac (0.86 ha) was delineated to include the existing 50-ft (15.2-m) wide Right of Way (ROW) for the stream channel, extending the length of the proposed channel improvements (see Report; Attachment 3). This includes a width to 100 ft (30.5 m) for the APE of Segment A and C at the north and south ends, respectively. This APE corresponds to the construction footprint provided in engineering drawings by Meshek dated July 7, 2009. The three segments of the archeological APE include:

- Segment A: 100 ft (30.5 m) for improvements proposed for the north end of the project area north of Lonsdale Drive.
- Segment B: 1,320 ft (402.3 m) of previously channelized streambed traversing Willowood.
- Segment C: Channelization of an additional 230 linear ft (70.1 m) of stream south of Willowood with a 12-ft (3.7-m) wide concrete-bottom trapezoidal channel and 7:1 riprap sides.

Identification of Historic Properties in APE

Per 36 CFR 800.4, the City of Edmond is required to identify all properties listed, or eligible for listing, in the National Register of Historic Places (NRHP), which may be affected by the proposed undertaking.

Above-ground Resources: The Oklahoma Historical Society's Landmark Inventory files were searched on March 12, 2009. No previously identified historic properties, districts, or Oklahoma Landmark properties were located within 2 miles (mi) or 3.2 kilometers (km) of the project area. Aerial photographs were used to determine the construction timelines in the APE and surrounding areas.

Topographic maps and aerial photographs show that the development of Willowood began after 1983. The 1966 Edmond, Oklahoma topographic map indicates Willowood had not yet been constructed. As the 1966 map was photorevised in 1983, the subdivision would have been constructed after this time. This is consistent with the architecture of the dwellings in the project area.

A reconnaissance survey of the above-ground APE substantiates the aerial photograph documentation (see Report; Attachments 12 through 13). All buildings appear to date from 1983 or later. No potential historic properties were observed in the project area.

Archeological Resources: Research for the project area in 2009 included a review of the Oklahoma archeological site files, Environmental Data Resources Aerial Photo Decade Package, background data on the local environment, and engineering design plans. Field investigation included a site visit with a pedestrian reconnaissance survey and excavation of one shovel test.

Archeological sites within the project vicinity were reviewed at OAS in Norman on February 27, 2009. Nine archeological sites have been recorded within 3 miles of the project area. All are located along Spring Creek and identified as lithic workshops with the exception of one open camp.

Through pedestrian reconnaissance and surface survey, the project archeologist identified the APE limits and assessed the degree of previous disturbances. The pedestrian survey was documented by field notes, notations on project maps, photographs, and accompanying log. In addition, a shovel test was excavated at the southern end of the APE in Segment C.

Summary of Effects to Cultural Resources

Research and field reconnaissance indicate that the project area has been heavily disturbed beginning with canalization of the stream in the 1950s and suburban development and the built environment beginning in the 1980s.

The local prehistoric settlement pattern suggests that there are no preferred landforms in the project area. Soil types identified by the United States Department of Agriculture for the project area indicate that in-situ archeological resources are unlikely to be encountered in the dynamic environment of the Pulaski soils of the project area. Engineering schematics indicate that, in addition to the extensive impacts of stream canalization, the project area is crossed by numerous buried utilities. Suburban development in the 1980s resulted in alterations to the surrounding landscape for construction and water flow control measures throughout the neighborhood. Stream channelization materials in the APE included concrete, riprap, and fill soil.

Field reconnaissance confirmed the APE has been disturbed and altered. Subsurface investigation consisting of one shovel test confirmed the landform was disturbed. The extensive disturbance and evidence of modern fill episodes indicate a low potential to yield intact archeological deposits.

No intact landforms or historic properties were identified within the APE for the undertaking. Based on the information provided in the enclosed Phase I Archeological and Above-Ground Resource Survey Summary report, FEMA makes a determination of **No Historic Properties Affected** by the proposed Willowood Channel Improvements project.

Heisch and Brooks
December 3, 2010
Page 5

We request concurrence with this determination. If you have any questions or need additional information, please contact Leah Anderson, FEMA Deputy Regional Environmental Officer, by telephone at (940) 383-7288.

Sincerely,



Kevin Jaynes, CHMM
Regional Environmental Officer
FEMA Region VI

Enclosures: *Phase I Archeological and Above-Ground Resource Survey Summary Report:
Proposed Willowood Addition Channel Improvements of Spring Creek Tributary 1,
City of Edmond, Oklahoma County, Oklahoma (May 2010)*

Station Index Map for Spring Creek Tributary I



RECEIVED NATIONAL ROOM
FEMA, REGION 6

Oklahoma Archeological Survey

THE UNIVERSITY OF OKLAHOMA

December 13, 2010

Kevin Jaynes
FEMA, Region 6
800 North Loop 288
Denton, Texas 76209-3698

Re: City of Edmond proposed Willowood Additional Channel Improvements Project to a Tributary of Spring Creek. Legal Description: NW ¼ Section 32 T14N R2W, Oklahoma County, Oklahoma.

Dear Mr. Jaynes:

A cultural resources report of investigations has been received by this agency on the above referenced project. This agency confirms the recommendations contained in the report. The review was conducted in cooperation with the State Historic Preservation Office, Oklahoma Historical Society.

Please contact this office at (405) 325-7211 if buried archaeological materials such as chipped stone tools, pottery, bone, historic crockery, glass, metal items, or building materials are exposed during construction activities.

In addition to our comment on the cultural resource inventory conducted for this project, under 36CFR Part 800.3 you are reminded of your responsibility to consult with the appropriate Native American tribe/groups for any concerns they may have pertaining to this report.

Sincerely,

Robert L. Brooks
State Archaeologist

:ls

Cc: SHPO





Oklahoma Historical Society
State Historic Preservation Office

Founded May 27, 1893

Oklahoma History Center • 800 Nazih Zuhdi Drive • Oklahoma City, OK 73105-7917
(405) 521-6249 • Fax (405) 522-0816 • www.okhistory.org/shpo/shpom.htm

December 16, 2010

Mr. Kevin Jaynes, CHMM
US Department of Homeland Security
FEMA Region 6
800 North Loop 288
Denton, TX 76209-3698

RE: File #0432-11; Edmond Proposed Willowood Channel Improvements Project

Dear Mr. Jaynes:

We have received and reviewed the documentation concerning the referenced project in Oklahoma County. Additionally, we have examined the information contained in the Oklahoma Landmarks Inventory (OLI) files and other materials on historic resources available in our office. We find that there are no historic properties affected by the referenced project.

Thank you for the opportunity to comment on this project. We look forward to working with you in the future.

If you have any questions, please contact Timothy G. Baugh, Ph.D., Historical Archaeologist, at 405/521-6381.

Should further correspondence pertaining to this project be necessary, please reference the above underlined file number. Thank you.

Sincerely,

Melvena Heisch
Deputy State Historic
Preservation Officer

MH:jr