

Assessor's Parcel Number: N/A

Date: MAY 9, 2017

Recording Requested By:

Name: ERIK NILSSEN, ENGINEERING

Address: _____

City/State/Zip: _____

Real Property Transfer Tax: \$ N/A



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KAREN ELLISON, RECORDER

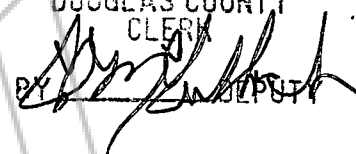
INTERLOCAL CONTRACT #2017.054
(Title of Document)

FILED

NO. 2017.054

2017 MAY -8 PM 4: 09

INTERLOCAL CONTRACT
BETWEEN
DOUGLAS COUNTY, NEVADA
AND

DOUGLAS COUNTY
CLERK
BY 

THE CARSON WATER SUBCONSERVENCY DISTRICT

This Interlocal Contract (“Contract”) is made by and between Douglas County (the “County”), a political subdivision of the State of Nevada, and the Carson Water Subconservancy District (the “CWSD”), a political subdivision of the State of Nevada and organized under the provisions of N.R.S. Chapter 318.

RECITALS

WHEREAS, the parties are public agencies pursuant to N.R.S. 277.100 and N.R.S. 277.180(1) provides that any one or more public agencies may contract with any one or more other public agencies to perform any governmental service, activity, or undertaking which any of the contracting agencies is authorized by law to perform; and

WHEREAS, each party is authorized by the laws of the State of Nevada to perform or undertake governmental functions and responsibilities as separate legal entities; and

WHEREAS, the County and the CWSD will be able to provide more effective and efficient services by entering into the Contract.

NOW, THEREFORE, in consideration of the mutual covenants hereinafter set forth, the parties agree as follows:

- 1. EFFECTIVE DATE OF CONTRACT AND TERM.** The term of the Contract shall commence upon approval of the Contract by the governing boards of both parties and will expire June 1, 2018, unless terminated in accordance with Paragraph 4 of the Contract.
- 2. Services Provided.** The services to be provided by CWSD include administering a grant to complete the Johnson Lane Area Drainage Master Plan (ADMP). The services are described in detail in **Attachment A, Scope of Work**, which is attached to this contract and made a part thereof.

3. **PAYMENT FOR SERVICES.** The payment for services will not exceed \$95,000 which will supplement a FEMA Grant of \$285,000 and is further detailed in Attachment "A" Scope of Work. Payment shall be made within fifteen working days of receipt of invoice.
4. **TERMINATION OF CONTRACT.** Either party may revoke the Contract without cause, provided only that a revocation shall not be effective until 30 days after the terminating party has served written notice upon the other party. The notice of termination may provide for the termination of all or only some of the services provided by CWSD to the County. All monies due and owing up to the point of termination shall be paid by Douglas County.
5. **CONFORMITY WITH COUNTY POLICIES.** The CWSD will perform the work as set forth in Section 2 in conformity with applicable County Community Development policies.
6. **CONSTRUCTION OF CONTRACT.** The Contract shall be construed and interpreted according to the laws of the State of Nevada. Any dispute regarding the Contract shall be resolved by binding arbitration, with an arbiter to be selected from a list of senior judges maintained by the Nevada Supreme Court of senior judges, with both parties to pay an equal share of the expenses charged by the senior judge and any other related court fees. Each party is responsible for their own attorney's fees. There shall be no presumption for or against the drafter in interpreting or enforcing the Contract.
7. **COMPLIANCE WITH APPLICABLE LAWS.** CWSD shall fully and completely comply with all applicable local, state and federal laws, regulations, orders, or requirements of any sort in carrying out the obligations of the Contract.
8. **INDEMNIFICATION.** Each party agrees to indemnify and hold the other party harmless to the fullest extent allowed by law, including, but not limited to, the provisions of Nevada Revised Statutes Chapter 41, from and against any liability relating to or arising from the performance of the Contract proximately caused by any act or omission of its own officers, agents, or employees.
9. **SEVERABILITY.** The illegality or invalidity of any provision or portion of this contract shall not affect the validity of the remainder of the contract.
10. **NON-APPROPRIATION OF FUNDS.** All payments and services provided under this contract are contingent upon the availability of the necessary public funding. In the event that Douglas County does not receive the funding necessary to perform in accordance with the terms of the Contract, the Contract shall automatically terminate.
11. **ASSIGNMENT.** The parties will not assign or transfer any of the rights, obligations or duties conferred pursuant to the terms of this contract.

12. **ENTIRE CONTRACT.** The Contract constitutes the full and final contract between the parties and shall not be modified except in writing and signed by both parties.

13. **NOTICE.** All written notices under the Contract shall be mailed or hand delivered to the following officials at the addresses stated below:

Erik Nilssen, County Engineer
Douglas County, State of Nevada
Post Office Box 218
Minden, Nevada 89423

Ed James, District Manager
Carson Water Subconservancy District
777 E. Williams Street #110A
Carson City, NV 89701

IN WITNESS WHEREOF, the parties hereto have caused this Interlocal Contract between Douglas County and the Carson Water Subconservancy District to be executed.

On behalf of and with authority to sign for
Douglas County:

By: 
William B. Penzel, Board Chairman (Date)

On behalf of and with authority to sign for
Carson Water Subconservancy District:

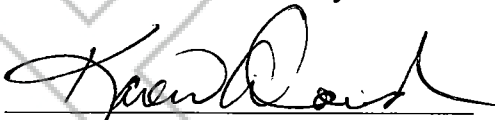
By: 
Karen Abowd, Chair CWSD (Date)

Exhibit A

March 9, 2017

The following is a Scope of Work (SOW) for the Johnson Lane Area Drainage Master Plan (JLADMP). It is project team’s understanding that the overall vision for the project is to identify and quantify the flood hazard risk to stakeholders and residents within the Johnson Lane community, and develop flood risk mitigation alternatives. Residents and stakeholders will be informed of the project and have the opportunity to engage and provide input throughout the project through a public outreach process that is defined in the SOW.

Project Goals

1. Define flood hazards for the 25-year, 24-hour storm.
2. Determine the minimum driveway culvert size for up to 18 streets to pass the peak discharge from the 25-year, 24-hour storm.
3. Define flood hazards for the 100-year storm. The rainfall duration for the 100-year storm will be determined during the project.
4. Identify flood hazard mitigation alternatives for both the 25-year, and 100-year storms to minimize the impact of flooding.
5. Flood hazard mitigation alternatives will include all weather access for Johnson Lane, Stephanie Way, and the proposed East Valley Road alignment.

Study Area

For modeling purposes as defined in this SOW, the JLADMP is divided into two study areas. Although interrelated, they are segregated within this SOW to clearly differentiate tasks related to each area. It should be noted that the exact limits of each study area is approximate and may change (slightly) during the course of the project. The Study Areas are shown in Figure 1 and briefly defined below.

1. Watershed Area – This includes the entire watershed that contributes runoff to the Johnson Lane community.
2. 2D Model Area – This is a sub-set of the Watershed Area and includes the area that will be analyzed using a 2-dimensional hydrologic and hydraulic model.

There are approximately 12 watercourses that impact the study area (Figure 2). They originate in both the Hot Springs Mountains and the Pine Nut Mountains and are listed in Table 1.

Table 1. Watercourses impacting the study area

<u>Hot Springs Mountains</u>	<u>Pine Nut Mountains</u>
1. Unnamed Wash A	5. Buck Brush Wash
2. Southwest Wash	6. Romero Wash
3. South Central Wash	7. Stephanie Wash
4. Southeast Wash	8. Chowbuck Wash
	9. Skyline Wash
	10. Johnson Lane Wash
	11. Unnamed Wash B
	12. Sunrise Pass Wash

Project Team

The project team is comprised of the following Consultant Team: JE Fuller/Hydrology & Geomorphology (JEF) who will serve as Prime and Lumos and Associates (LA) as Subconsultant. Each Task outlined in the SOW will identify the primary responsible party.

- Project Manager: Mike Kellogg (JEF) (480) 222-5712
- Project Principal: Jon Fuller (JEF) (480) 222-5710

Client Team

The Client Team is comprised of Douglas County and the Carson Water Subconservancy District. Lead contacts are listed below.

- Douglas County: Erik Nilssen (775) 782-9063
- Carson Water Subconservancy District: Ed James (775) 887-7456

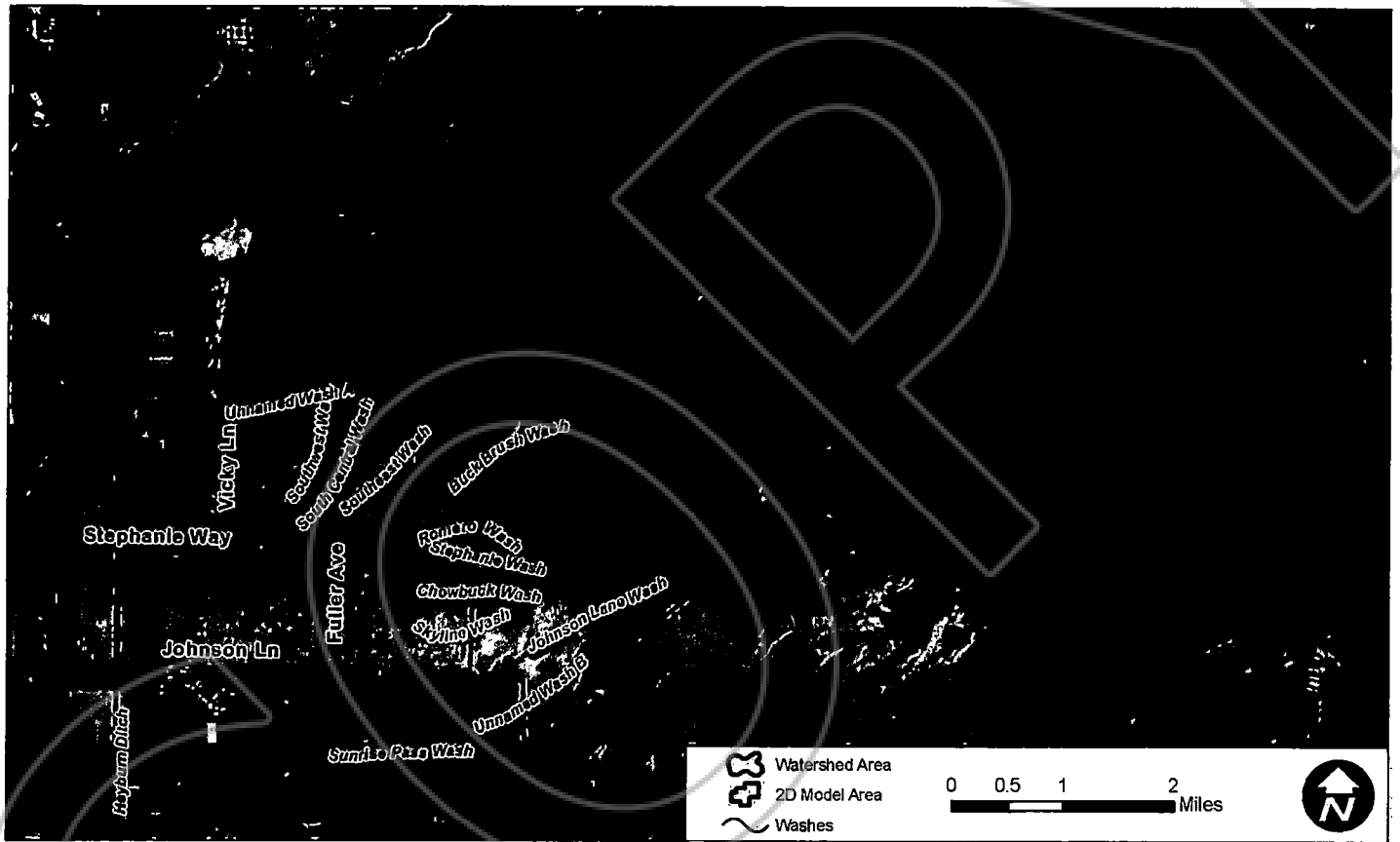


Figure 1. Project Study Areas

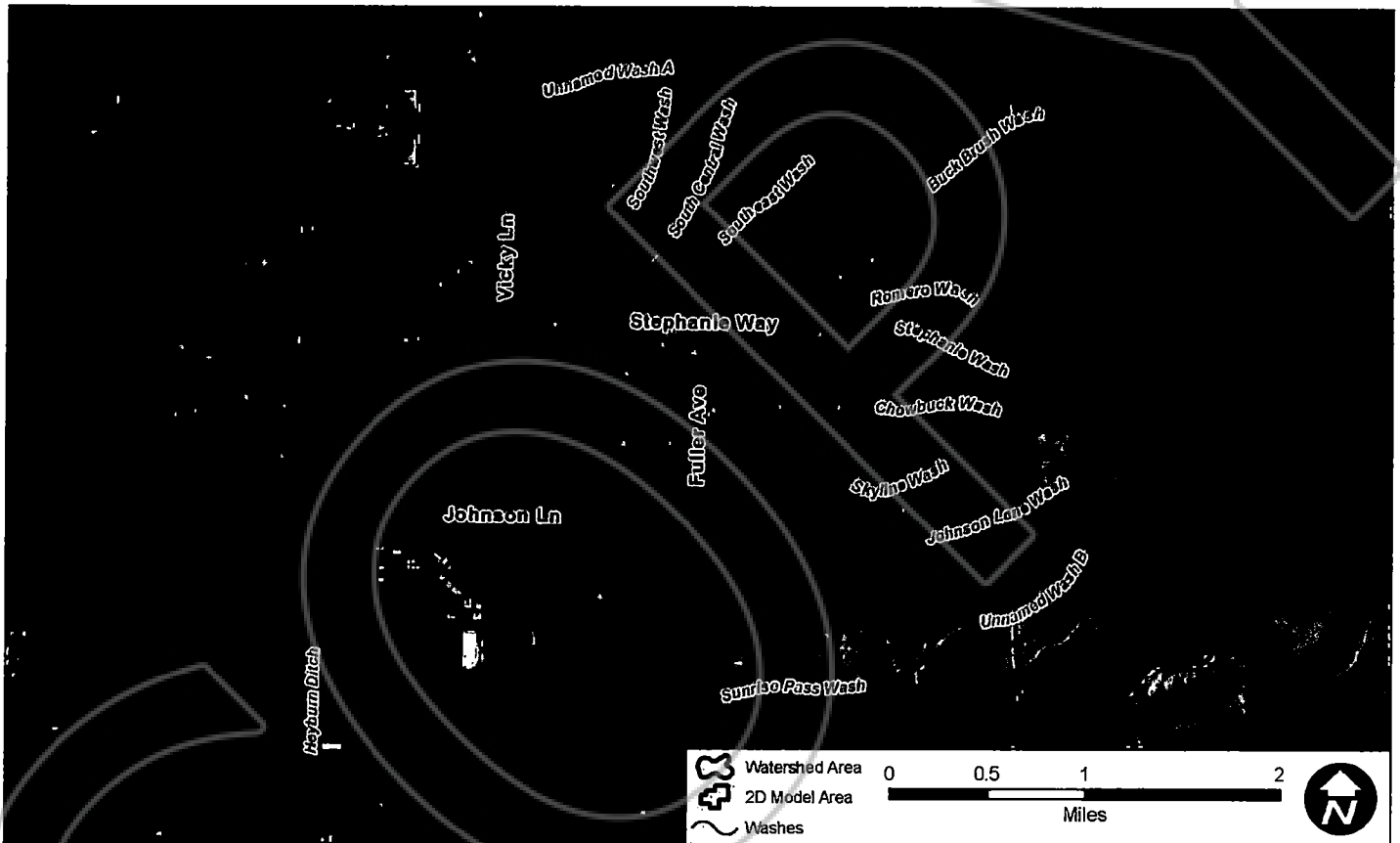


Figure 2. Watercourses impacting the study area

SCOPE OF WORK

Task 1.0 DATA COLLECTION

- 1.1 The CONSULTANTS (JEF, LA) will collect, organize, and review existing data, reports, plans, and records that affect the study area provided by the Client Team and other sources. Data may include but will not be limited to:
- Historical aerial photography
 - Historical topography
 - Geologic Mapping
 - NRCS Soils Mapping
 - Photographs and video of documented flooding, erosion, and sedimentation.
 - Drainage reports
 - Computer modeling
 - Land Use

Task 2.0 MAPPING AND SURVEY

- 2.1 **LiDAR Acquisition.** LA will supervise the acquisition of LiDAR to be flown at an average density of 4/ppm (points per square meter) using Optech Galaxy system, specifically designed to handle rough, vegetated terrain and capable of putting down 550,000/pps (points per second). A Cessna 180 (low/slow) aircraft will be utilized to further enhance the resulting LiDAR data. We expect an accuracy of 8cm or better on delivered topographic data (95% confidence level). Please note that the LiDAR will not be able to penetrate any planted winter crops or dense vegetation to any reliable detail. These areas will not meet the 8cm vertical accuracy.

Delivery will include: Classified .LAS/.LAZ files containing ground/first return/multi-level vegetation classified point data. Contour data derived from the classified ground points will also be delivered in an AutoCAD format. These contours will be rougher than you are used to seeing due to the density of the LiDAR point cloud. No planimetric data will be delivered. During final design of improvements, it may be necessary to supplement the project basemap with planimetrics and/or additional detailed ground shots.

Control for the project will be referenced to the Nevada Coordinate System, West Zone, NAD83. The vertical datum for the project will be reference to NAVD88. The area to be mapped will be as shown on the attached exhibit which includes approximately 13 square miles in the Johnson Lane area. No boundary information will be provided with this scope service.

- 2.2 **Supplemental Survey.** LA will provide supplemental field survey as requested by JEF (supplemental topography and ground shots). The additional survey field work would be conducted to tie in with the Lidar topography control to ensure the supplemental work can be tied into the initial base mapping.

Task 3.0 HISTORICAL FLOW PATH ASSESSMENT

- 3.1 JEF will conduct a historical flow path assessment. The purpose of this task is to determine the historical preferred flow path of the major wash corridors within 2D Model Area. The assessment will be conducted using historical aerial photography and topography (as available). The results of the assessment will aid in better understanding the present flooding issues and help in calibrating the 2-dimensional model (see Task 8.0).

Task 4.0 WATERSHED HYDROLOGIC MODELING

- 4.1 **Software.** JEF will develop a hydrologic model for the Watershed Area using the HEC-HMS software package developed by the U.S. Army Corps of Engineers Hydrologic Engineering Center. The latest HEC-HMS version will be used at the onset of the modeling effort and will be used consistently throughout the project.
- 4.2 **Rainfall.** JEF will obtain rainfall data/distributions for the 25-year, 24-hour and 100-year storms. The 25-year, 24-hour distribution will use the Soil Conservation Service (SCS) Type II, 24-hour synthetic rainfall distribution. Precipitation depths will be determined using NOAA Atlas 14 precipitation frequency estimates¹. The 100-year storm duration/distribution will be determined by modeling several duration storms and selecting the storm that yields the highest peak discharges for Buck Brush Wash and Johnson Lane Wash.
- 4.3 **Rainfall Losses.** The Green-Ampt loss method will be applied to compute rainfall losses due to soil infiltration. The XKSAT, DTHETA, and PSIF will be assigned based on the NRCS soil survey within the area, existing land use conditions, and other data sources provided by Douglas County. The input parameters will be verified against similar parameters from applicable past-projects.
- 4.4 **Outflow Hydrographs.** Outflow hydrographs from the following watercourses will be extracted from the HEC-HMS model and used as Inflow Hydrographs for the 2D Model Area:
- Buck Brush Wash
 - Romero Wash
 - Stephanie Wash
 - Chowbuck Wash
 - Skyline Wash
 - Johnson Lane Wash
 - Unnamed Wash B
 - Sunrise Pass Wash

¹ Per Douglas County Design Criteria and Improvement Standards, Section 6.6.2, September 1, 2011.

Task 5.0 TWO-DIMENSIONAL MODELING

5.1 **Software.** The software used for 2D modeling will be the FLO-2D PRO version developed by FLO-2D Software, Inc. The latest FLO-2D PRO version will be used at the onset of the modeling effort and will be used consistently throughout the project.

5.2 **Existing Conditions Model Development.** JEF will develop the base 2D model assuming existing conditions. Topography will be derived from the project LiDAR data (Task 2.1) and supplemental survey data (Task 2.1).

5.2.1 **Grid Size.** The maximum grid size for the 2D modeling will be between 10 and 20-feet. The smaller grid size of 10-feet may be used if model stability allows it. This size should be adequate to represent the road-side ditches and other major hydraulic structures within the modeling area. The grid elevations will be determined by converting the LiDAR data (and other supplemental survey data as necessary) into a gridded raster dataset at the same cell size as the 2D model. Depending on the number of grids, multiple 2D model domains may be necessary.

5.2.2 **Rainfall.** The rainfall durations and distributions for the 25-year, 24-hour and 100-year storms that were developed for Task 4.2 will be incorporated into the 2D model. The NOAA Atlas 14 Rainfall depths will be spatially varied across the 2D domain based on the NOAA atlas 14 dataset.

5.2.3 **Rainfall Losses.** The Green-Ampt method will be applied in the 2D model. The XKSAT, DTHETA, and PSIF will be assigned based on the NRCS soil survey within the area, existing land use conditions, and other data sources provided by Douglas County. The soils descriptions will be used to determine if a limiting infiltration depth is indicated (e.g., shallow clay or bedrock, and/or engineering judgment).

5.2.4 **Inflows.** Outflow hydrographs from Task 4.4 will be incorporated into the 2D model as inflow hydrographs. The inflow hydrograph locations will be at the model boundary between HEC-HMS and FLO-2D.

5.2.5 **Impervious Area.** Impervious area will be estimated based on general assumptions on a zoning-level basis. Any rock outcrop areas identified in the NRCS soil survey will also be included.

5.2.6 Land Use/Friction Losses. Any existing datasets that identify surface characteristics will be incorporated into the model. In areas without existing data, a n-value dataset will be generated based on major surface characteristics (e.g. roads, natural desert, developed parcels, etc.).

5.2.7 Obstructions to Storage and flows. Volumetric and flow obstructions will be modeled from existing datasets (e.g. building footprints) using the area reduction factor (ARF) input data file. Other flow obstructions (such as berms) should be captured in the project LiDAR mapping but may be modified as necessary using the FLO-2D Levee file.

5.2.8 Culverts. Most of the residential driveways in the model area have low-flow culverts. Historical flood accounts indicate the driveway culverts can be a significant source of flow diversions and adverse flooding impacts. Driveway culverts determined to be hydrologically or hydraulically significant based on preliminary 2D model results will be included in the model though the development of generalized hydraulic rating curves for the range of driveway culvert sizes. Hydraulic rating curves for larger, regional culverts will be developed from field survey data (Task 2.1) and incorporated into the model as hydraulic structures. Given the historical problem with sedimentation, a clogging factor will likely be used in when developing the hydraulic rating curves.

5.2.9 Floodplain Cross-Sections. Floodplain cross-sections will be established throughout the model area based on preliminary 2D model results. The cross-sections will be aligned as perpendicular to the direction of flow as possible. The project team will coordinate with Douglas County regarding the desired locations of floodplain cross-sections.

5.2.10 Sediment. The study area watershed is unique in that the watershed contains large volumes of eolian sediments that are highly mobile during rainfall events. Sedimentation has been a consistent problem within the Johnson Lane community. JEF will perform sediment yield computations to estimate the percent concentration of sediment for the 25-year and 100-year events. The inflow hydrographs will be “bulked” to account for the sediment concentration.

5.2.11 **Model Calibration.** A preliminary existing conditions model will be reviewed by Douglas County staff (Engineering, Road Maintenance, etc.) to verify the model is appropriately representing the locations and magnitude of flooding compared with historical flooding accounts. The preliminary results will also be compared with historical drainage complaints and damage reports provided by Douglas County. There are no applicable gages in the study area to calibrate model results.

Task 6.0 SITE VISITS

6.1 **Site Visits.** JEF will conduct up to two (2) site visits as necessary for data collection, field inspection, and model verification purposes. These site visits will be in addition to public meetings and board presentation meetings (Task 10.0).

Task 7.0 FLOOD HAZARD CLASSIFICATION

- 7.1 **Flood Hazard Classification.** JEF will define flood hazard risk to pedestrians, vehicles, and buildings using the depth-velocity relationship outlined in the United States Bureau of Reclamation (USBR) Technical Memorandum 11 (TM 11) (1988). The analysis will be conducted for the 25-year and 100-year flood events. The results will be a hazard classification of Low, Moderate, and High for impacted buildings and roadway locations for each flood event.
- 7.2 **Building Inundation Assessment.** JEF will quantify the approximate number of structures susceptible to flooding for the 25-year and 100-year base conditions model results. The analysis will be repeated using the Task 8.10 Recommended Alternatives FLO-2D model results to conduct a quantitative benefit analysis. This effort will generally be limited to intersecting building footprints provided by the County with FLO-2D depth grids in excess of 0.5-feet or more
- 7.3 **HAZUS Event-Based Analysis.** JEF will use HAZUS version 3.1 and the flood depth grids generated from the FLO-2D to perform a post-project Level 2 analysis of the study region to obtain the economic loss for the 25- and 100-year events. The HAZUS supplied General Building Stock (GBS) will be used without change or modification. The analysis will be repeated using the Task 8.0 Recommended Alternatives FLO-2D model results to conduct a quantitative benefit analysis.

Task 8.0 ALTERNATIVES FORMULATION

8.1 **Off-road Vehicle Use Impacts.** There is some concern that the use of off-highway vehicles (OHV) within the watershed has resulted in adverse flooding conditions downstream by concentrating flows along dirt road corridors. JEF will develop a 2D "mini model" that includes a portion of the Hot Springs Mountain watershed impacted by OHV use. The model will be developed using the same parameters as the existing conditions model with the exception that changes to the mini model will include modifying the friction loss and rainfall loss input files specific to the OHV impacted areas. The goal of this assessment will be to

determine if, and to what extent, OHV use results in adverse flooding conditions. Mini models for the 25-year and 100-year events will be created.

- 8.2 **Individual Lot Management Plan.** JEF will investigate the viability of a no-structure alternative through implementing an Individual Lot Management Plan (ILMP). Such a plan would rely on individual residents to provide flood protection for their properties through the use of berms, levees, and/or other diversion structures. JEF will select an area within the overall 2D modeling area and develop a 2D mini model to test the viability of this alternative. JEF will artificially create individual lot diversion structures within the model. The modeling results will show potential benefits and/or adverse impacts of implementing an ILMP. Mini models for the 25-year and 100-year events will be created.
- 8.3 **Individual Lot BMP.** JEF will investigate the potential benefit and impacts of individual lot best management practice (BMP) using retention. JEF will select an area within the overall 2D modeling area and develop a 2D mini model to test the potential benefit and impact of retention of the 20-year, 1-hour storm (or similar) on each individual lot.
- 8.4 **Upper Watershed Contour Trenches.** JEF will investigate the potential benefit and impacts of contour trenching in the upper watershed to capture rainfall runoff. The contour trenching procedure has been developed by the U.S. Forest Service and consists of a series of zero-grade in-sloping-type trenches spaced sufficiently close to hold a predetermined amount of surface runoff. Small check dams or baffles are constructed across the trenches at intervals of about 35 feet to segment them. These baffles are slightly lower than the fill-dike to allow water to flow along the trench without overtopping the trench.
- 8.5 **Roadside Ditch Lining/Check Dams.** Most of the streets within the community are lined by drainage ditches. Douglas County maintenance is responsible to keep the ditches clear of sediment and debris. This is accomplished by use of a mechanical scraper. Many residents have lined ditches adjacent to the property for aesthetics and/or erosion protection. This is problematic for County maintenance crews. JEF will investigate possible lining alternatives that would be compatible with the County's maintenance procedures. JEF will also investigate the benefits and impacts of installing check-dams in the ditches to reduce erosive velocities.
- 8.6 **Individual Lot Driveway Culvert Assessment.** Douglas County will select up to eighteen (18) streets within the study area for driveway culvert analyses. JEF will compute the minimum driveway culvert size required per-street to convey the 25-year, 24-hour flood event.
- 8.7 **All Weather Access for Johnson Lane, Stephanie Way, and East Valley Road.** JEF will formulate alternatives which will result in Johnson Lane, Stephanie Way, and the proposed East Valley Road remaining open for all-weather access for both the 25-year and 100-year flood events. Presently, Johnson Lane and Stephanie Way experience flooding at multiple locations during floods event much lower than the 100-year.

- 8.8 **25-Year Flood Mitigation.** The Consultant Team will develop a regional alternative for each of the 12 watercourses listed in Table 1, and up to five (5) local alternatives to reduce the flood risk to the Johnson Lane community from the 25-year event. This Task will include a priority list of projects to reduce flood risk.
- 8.9 **100-Year Flood Mitigation.** The Consultant Team will develop a regional alternative for each of the 12 watercourses listed in Table 1, and up to five (5) local alternatives to reduce the flood risk to the Johnson Lane community from the 100-year event. This Task will include a priority list of projects to reduce flood risk.
- 8.10 **Alternative Phasing Assessment.** JEF will assess the results from Tasks 8.8 and 8.9 and develop a recommended phasing plan for the regional alternatives. Up to three additional 2D models will be created to aid in developing the recommended phasing plan.
- 8.11 **Off-Site 15% Design Plans.** LA will prepare 15% preliminary engineering drawings based upon the following scenarios for the approximately 12 washes listed in Table 1. For scoping purposes in this task we are assuming that the 15% designs will be conducted upon BLM or County property upstream of the developed areas of Johnson Lane.

Per coordination discussions, LA anticipates that for each of these washes we will need to develop 15% schematic grading designs and cost estimates for both the 25 year, 24-hour storm event and the 100-year peak storm event to allow Douglas County the ability to decide the level of protection they want to achieve and the cost to reach that level of protection. These improvements would be sited to retain/detain off site flows and sediment to mitigate downstream impacts to the developed Johnson Lane area.

Based upon the estimated number of washes this will result in an estimated 24 schematic grading plans (2 flow conditions per site for 12 sites) to be developed along with their associated cost estimates for construction. The schematic plans will include:

- The drawings will be prepared on 11"x17" format sheets at a standard engineering scale.
- Plan view grading plans for basins
- Development of preliminary grading quantity estimates
- Plan view layout of piping
- Plan and profile concepts for channels to understand grading impacts

This task includes review meetings with JEF and Douglas County. It is assumed that there will be one round of comments and edits.

- 8.12 **On-Site 15% Design Plans.** LA will prepare 15% preliminary engineering drawings for up to 5 sites or blocks within the developed Johnson Lane area based upon coordination with JEF to identify those locations where improvements will provide the most viable flood mitigation for the area.

Based upon the estimated number of site this will result in an estimated 10 schematic plans (2 flow conditions per site for 5 sites) to be developed along with their associated cost estimates for construction. The schematic plans will include:

- The drawings will be prepared on 11"x17" format sheets at a standard engineering scale.
- Plan view grading plans for basins
- Development of preliminary grading quantity estimates
- Plan view layout of piping
- Plan and profile concepts for channels to understand grading impacts.

8.13 **Life Cycle Cost Estimates.** LA will prepare life cycle cost estimates for the facilities to account for annual maintenance and future replacement costs of the proposed facilities, based upon the 15% design plans. LA will provide these for all 34 conceptual designs.

Task 9.0 DELIVERABLES AND SUBMITTALS

9.1 **Deliverable Format.** All Deliverables and Submittals for the JLADMP will be provided to the Client Team in digital format.

9.2 **Submittals.** A submittal for each task will be provided to the Client Team for review and approval. The DRAFT submittals will be organized as followed:

9.2.1 **Task 2.0.** Technical Report with supporting digital data.

9.2.2 **Task 4.0.** Base model HEC-HMS input files will be submitted for review and approval. A DRAFT Hydrology (Task 4.0) and Hydraulics (Task 5.0) Technical Report will be submitted for review. All hydrologic models will be included with the Technical Report submittal.

9.2.3 **Task 5.0.** Base model FLO-2D input files will be submitted for review and. A DRAFT Hydrology (Task 4.0) and Hydraulics (Task 5.0) Technical Report will be submitted for review. The base FLO-2D model will be included with the Technical Report submittal.

9.2.4 **Task 8.0.** A DRAFT Alternatives Technical Report will be submitted for review. The report will discuss the modeling input and results for each of the alternatives. All alternative FLO-2D models will be included with the Alternatives Technical Report.

9.2.5 **Final Report.** A FINAL JLADMP report will be submitted. The FINAL report will be comprised of all previously submitted and approved Technical Reports.

9.2.6 **Executive Summary.** A separate Executive Summary report will be submitted.

Task 10.0 PUBLIC OUTREACH

10.1 Public Meetings. LA will lead the public outreach and information efforts for this project, including the preparation and implementation of public meetings, designed to educate and gather initial input and concerns regarding the Douglas County Area Drainage Master Plan. JEF will attend the meetings in whatever capacity is determined by LA. For the purposes of this SOW, LA will lead and implement a total of two (2) public meetings and presentations including the following tasks:

- Location research, availability, confirmation and set-up
- Development and review of speaker and content order
- Development of Boards
- Development of feedback handout
- Advertising
- Press Release development and distribution
- Public input reporting
- Website correspondence management
- Compilation of input from residents

10.2 Agency Board Meetings (Douglas County Board of Commissioners and Carson Conservancy). LA will lead and implement, and JEF will attend in whatever capacity is determined by LA, a total of two (2) agency board meetings and presentations including the following tasks:

- Development and review of speaker and content order
- Public input reporting
- Website correspondence management

Task 11.0 PROJECT MANAGEMENT AND COORDINATION

11.1 Project Manager. The JEF Project Manager will be the official point of contact between the Client Team and the Consultant Team for all issues related to the project.

11.2 Project Coordination Meetings. The Consultant Team will participate in monthly project coordination meetings with the Client Team via teleconference and WebEx meetings.

11.3 Contract Type. The project contract type will be lump-sum.

11.4 Invoicing. JEF will invoice the Carson Water Subconservancy District monthly with a percent complete estimate for each task. The invoice will include a brief progress report per task.

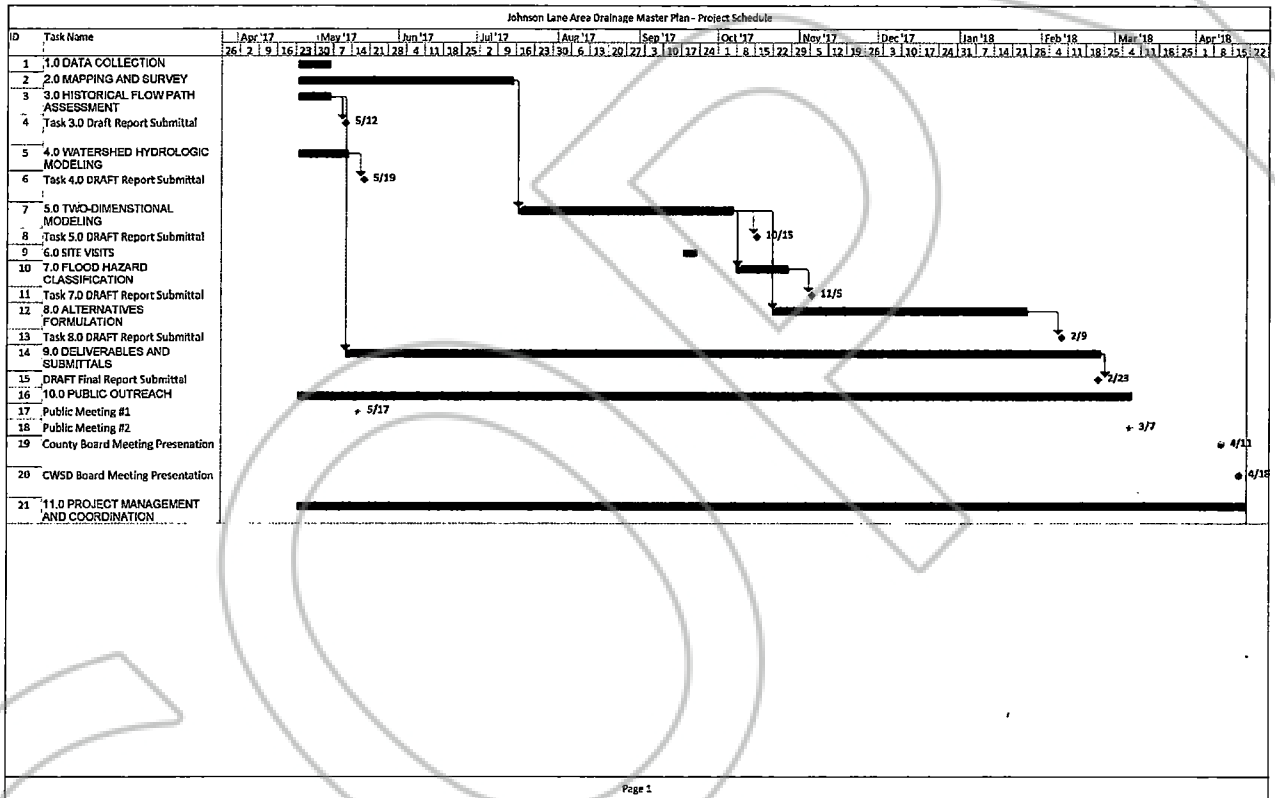
11.5 Project Schedule. The project will be completed within 365 days of notice-to-proceed. A project schedule is included with this SOW as Attachment A.

11.6 **Project Fee.** A project fee table is included with the SOW as Attachment B.

EXCLUSIONS, LIMITATIONS, AND ASSUMPTIONS

The following are exclusions, limitations, and assumptions associated with this scope of work:

- Preparation of FEMA submittals are not included
- All data collected with the exception of the LiDAR mapping will be available at no cost
- A geotechnical report is not included
- Environmental Permitting is not included
- Storm Water Pollution Prevention Plan is not included
- Final construction plans are not included
- Landscape Plans are not included
- The County will assist in locating documentation regarding existing easements and property information
- The County will pay for any meeting location fees
- The County will pay for any website fees



ATTACHMENT A. PROJECT SCHEDULE

JOHNSON LANES/RA DRAINAGE MASTER PLAN

Task	TASK DESCRIPTION	JE FULLER						LUMMA										Team Total With Expenses			
		Project Manager	Project Principal	Project Engineer	Project Engineer	Admin	JEP Labor Total	Group Manager	Project Manager	Survey Manager	Senior Engineer	Project Engineer	Project Designer	2-Person Survey Crew	Project Coordinator	Lumma Labor Total	Lumma Direct Expenses				
1.0	DATA COLLECTION	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
1.1	Road Closure	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1.2	Sediment Sample Analysis	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.0	MAPPIING AND SURVEY	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2.1	LEAP Acquisition	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2.2	Topographical Survey	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
3.0	HISTORICAL FLOW PATH ASSESSMENT	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
3.1	Historical Flow Path Assessment	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40	40
4.0	HYDROLOGICAL MODELING	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140	140
4.1	Software	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.2	Revised	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
4.3	Revised Losses	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4.4	Outflow Hydrograph	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
5.0	TWO-DIMENSIONAL MODELING	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36
5.1	Software	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5.2	Existing Conditions Model Development	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
6.0	SITE VISITS	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
6.1	Site Visits	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
7.0	FLOOD HAZARD CLASSIFICATION	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
7.1	Flood Hazard Classification	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
7.2	Building Function Assessment	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
7.3	HAZUS Event-Based Analysis	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
8.0	ALTERNATIVE CONFORMANCE	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192	192
8.1	Off-Road Vehicle Lick Impacts	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
8.2	Individual Lot Management Plan	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
8.3	Individual Lot BMP	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
8.4	Upper Watershed Contour Trenches	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
8.5	Rebate Ditch Lining	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
8.6	Individual Lot Driveway Culvert Assessment	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
8.7	All-Weather Access for Johnson Lane and Stephanie Way	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
8.8	25-Year Flood Mitigation	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8.9	100-Year Flood Mitigation	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8.10	Alternative Design Assessment	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8.11	Off-Site 15% Design Plans	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8.12	On-Site 15% Design Plans	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
8.13	Life Cycle Cost Estimates	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
9.0	CONTRACTS AND SUBMITTALS	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56	56
9.1	Deliverable Format	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9.2	Submittals	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50	50
10.0	PUBLIC OUTREACH	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
10.1	Public Meetings (2)	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
10.2	Agency Board Meetings (2)	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
11.0	PROJECT MANAGEMENT AND COORDINATION	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
11.1	Project Manager	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30	30
11.2	Project Coordination Meetings	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.3	Contract Type	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.4	Tracking	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
11.5	Project Schedule	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11.6	Project Fee	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS		378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378	378
PROJECT TOTAL																					\$ 380,000.00

ATTACHMENT B. FEE TABLE

Douglas County State of Nevada

CERTIFIED COPY

I certify that the document to which this certificate is attached is a full and correct copy of the original record on file in the Clerk-Treasurer's Office on this

By *[Signature]* of *[Signature]*, 2017
 Deputy