

# **ATTACHMENT 1**

**ATTACHMENT 1**



**NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH**

## 319(h) Grant Proposal E-Form Application

Submittal Deadline: 5:00 PM, September 23, 2022  
WQP Email Received, Stamped Received OR Postmarked

**NOTE REGARDING FILL FIELDS SHADED YELLOW: ENTER F1 FOR FILL FIELD HELP.  
REFERENCE THE E-FORM INSTRUCTIONS FOR ADDITIONAL GUIDANCE.**

## 1. PROPOSAL SUMMARY

Project Title: Clark County Coanda Stormwater BMP Program

Primary Contact Person: Sara Gedo

**Lead Agency Organization:** Clark County Water Reclamation District  
on behalf of Clark County

Organization UEI Number: 058938413

Contact Person's Email Address:	sgedo@cleanwaterteam.com
Contact Person's Mailing Address:	5857 E. Flamingo Rd
City	Las Vegas
State	NV
Zip	89122
Contact Person's Phone:	
Land Line	702-668-8664
Mobile	
Fax	702-668-9275

### Project Fiscal Summary:

319(h) funds requested \$59,021.60

Total amount of non-federal match funds \$59,109.00

(Cash + Inkind: Must be at least 50% of Total Project Cost.)

Total Project Cost \$118,130.60



Jason Kuchnicki, Lake Tahoe Watershed Unit Supervisor  
Zachary Carter  
Holly Holwager  
Jon Paul Kiel  
Charles Schembre

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Applicant is one of the following:

- Federal, State, local, tribal Government
- Interstate, Intrastate public agency
- Public nonprofit organization
- Private nonprofit organization
- Educational Institution

Project Type: BMP - LID Effectiveness Monitoring

Has a 319(h) Pre-Application Determination of Eligibility been provided by Water Quality Planning, and determined Eligible?

- Yes
- No

Project Location Information:

Watershed(s) Name: Clark County 208 Area Wide Water Quality Management Plan

1<sup>st</sup> County: Clark Other Counties  Statewide

Nevada 8-Digit Hydrologic Unit Code(s) & Catalog Name(s):

15010015 Las Vegas Wash HUC List 2 of 3 16060015 Ivanpah-Pahrump Valleys

15010005 Lake Mead HUC List 2 of 3 16060014 Sand Spring-Tikaboo Valleys

15010010 Lower Virgin HUC List 2 of 3 HUC List 3 of 3

Additional HUCs

HUC(s) Unknown

USGS Hydrographic Region (Check all that apply)

- Carson River
- Colorado River/Las Vegas Wash
- Humboldt River
- Lake Tahoe
- Truckee River
- Walker River
- Other

Latitude:

Longitude:

Type and Name of Waterbody(ies) Affected:

Waterbody Type: Lakes Waterbody Name: Lake Mead

Waterbody Type: Streams Waterbody Name: Las Vegas Wash

Waterbody Type: Rivers/Streams Waterbody Name: Colorado River

(If applicable, submit a map of the project area in a portable document format, attached as a separate file to this proposal.)

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Project Summary (150 word limit). State the non-point water quality problems to be addressed, the project's goals and objectives, provide a project overview, and describe the methods proposed to address the problem:

Project Objectives: Reduce debris, trash, and fine sand (> 1 mm) conveyed to storm drain conveyances, the Las Vegas Wash, and Lake Mead by the installation and maintenance of Coanda™ curb inlet filters.

Project Overview: This project will include the design, installation, and maintenance of eight Coanda™ curb inlet filters installed on Convention Center Dr., between Las Vegas Blvd and Paradise Rd. The filters are a patented technology that will aid in trash and debris removal by limiting the amount of trash and debris entering the Las Vegas Valley storm sewer system.

Project Methods: Trash removal through the installation of a structural best management practice.

NPS Categories of Pollution:		Urban Runoff/Stormwater	100%	TOTAL PERCENT
<i>MUST = 100</i>				
--	--	--%		
--	--	--%		
--	--	--%		

Estimated Pollutant Reductions:

<input type="checkbox"/>	Phosphorus	lbs/yr
<input checked="" type="checkbox"/>	Sediment	Tons/yr
<input type="checkbox"/>	Nitrogen	lbs/yr
<input checked="" type="checkbox"/>	Other	lbs/yr

Other Pollutant Description: Litter, plant debris, cigarette butts, and sediment (> 1 mm)

Describe how pollutant load reduction estimates were calculated:

STEPL Model     Region 5 Model     Other

If Other is selected above, explain load reduction calculation method:

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Project Timeline:

Anticipated Project Start Date: 7/1/2023  
Anticipated Project Completion Date: 6/30/2025

Project Partners: Provide information (Including primary contact information) for any partners involved with the project. Attach Letters of Commitment separately.

CCWRD will partner with Clark County Public Works on the project.

Primary Contact: Dean Mosher

Assistant Manager, Clark County Public Works Road Division

5825 E. Flamingo Rd

Las Vegas, NV, 89122

**2. SCOPE OF WORK (WORKPLAN)**

**SEE NEXT PAGE**

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Introduction and Problem Statement.

In the Las Vegas Valley, precipitation is channeled into roads, gutters and washes, and flows untreated to the Las Vegas Wash and ultimately Lake Mead, Southern Nevada's primary source of drinking water. As this water moves across the Valley, it gathers litter, debris, sediment and other floatable materials and transports them to the municipal separate storm sewer system (MS4). While trash, debris, and sediment are within the MS4 at all times, they are mobilized during rain events and high concentrations of pollutants are conveyed into storm drains.

Hydrologic and climatic conditions in the Las Vegas Valley are unique compared to other large metropolitan areas in the U.S., and thus capturing and removing pollutants from the MS4 requires a unique approach. A favored management approach is to intercept and capture pollution before it enters the MS4. However, conventional filtering devices such as bags, netting, conventional screens, and trash booms are not designed to handle high velocity and volume flows, and typically clog or suffer mechanical failures.

This project will provide a mechanism to collect trash, debris, and fine sand (> 1 mm) that enter the Las Vegas Valley's MS4 before reaching the Las Vegas Wash and Lake Mead. Trash and debris will be collected by installing Coanda™ curb inlet filters which employ stainless steel tilted wedge wire technology to capture and slough off trash. Unlike conventional filters which are prone to clogging, the Coanda™ curb inlet filters are designed specifically to handle high velocity (1 cfs per sq. ft of Coanda™ screens) and high-volume flow rates associated with concentrated peak flows. The Coanda™ curb inlet filters contain no moving parts and are self-cleaning and non-clogging. Vector control is not an issue and bacterial growth is significantly impeded because the captured debris dries quickly and remains dry. No special handling techniques are required for debris removal and the debris can be disposed of as ordinary waste. All elements of the Coanda™ filters including the screen, debris fence, bolts, and accessories are made of high-grade stainless steel. The installation of Coanda™ curb inlet filters will not only reduce trash and debris from entering the Las Vegas Valley's storm sewer system, but it will also significantly reduce maintenance efforts.

Name of applicable Watershed Plan and/or TMDL:  N/A  
Watershed Plan: Las Vegas Wash TMDL: Las Vegas Wash  
Other: Area-Wide 208 Water Quality Management Plan

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Goals:

The main goals of the project are:

- 1) Provide a structural best management practice to intercept and contain trash, debris, and fine sand (> 1 mm).
- 2) Successfully design and install Coanda™ filters to ensure proper operation.
- 3) Evaluate the effectiveness of the Coanda™ filters.
- 4) Determine if the Coanda™ filters require less maintenance than typical drop inlet/storm drain conveyance cleaning.
- 5) Conduct monthly visual inspections and post-storm inspections to assess the Coanda™ filter's effectiveness and functionality.
- 6) Reduce NPS pollution in the Las Vegas Valley's MS4.

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Tasks: If additional space is required to adequately describe the proposed project tasks, check below under Item 8 – Supplemental Information. Up to three additional pages of tasks may be included and attached separately.

**Task 1:** Hrs\* PM - 25; PP - 20; P - 224; PW Asst. Manager - 8; PW Manager - 16  
Develop scope of work for Coanda™ curb inlet filter contract. Water Sharks Systems LLC will design, fabricate, and deliver the Coanda™ filters. The contractor chosen to complete the work will be responsible for the installation. Water Sharks Systems LLC will be under contract throughout the project period in order to troubleshoot and repair any damage or installation issues, should they occur.

**Deliverable 1:** Execute subcontract.

**Deliverable 2:** Install Coanda™ curb inlet filters on eight (8) curb inlets located along Convention Center Dr., between Las Vegas Blvd and Paradise Rd.

**Task 2:** Hrs: PM - 25; PP - 20; PP - 168; PW Staff - 64; PW Asst. Manager - 32  
Monitor and maintain Coanda™ curb inlet filters.

**Deliverable 3:** Monthly inspection reports of the curb inlets noting any damage to the Conada™ screens. The debris chamber will be emptied, and the Coanda™ screens will be cleaned, if necessary. Clark County Public Works will perform cleaning and maintenance of the Conada™ curb inlet filters at an hourly rate of \$28.66 and vehicle costs of \$25.36 per hour. Staff time and equipment will be covered by the grant.

**Deliverable 4:** Conduct rainfall simulation test. Staff will simulate a rainfall event by releasing a known volume of water, at a specified discharge, into the public right-of-way to evaluate how the Conada™ curb inlet filters handle high volumes of water. Staff will review field data and determine the Coanda™ filters flow capacity and estimate the flood risk.

**Deliverable 5:** Staff will review and interpret data to evaluate if the Coanda™ curb inlet filters provide cost savings and reductions in maintenance time. Staff will determine a permanent maintenance schedule to service the Coanda™ filters after the grant closes.

**Task 3:** Quarterly, Annual, and Final Reporting: Hrs: PM - 10; P - 358

**Deliverable 6:** Provide quarterly, annual and final reports and invoices to NDEP.

**Deliverable 7:** Upon completion of the grant, provide a summary of the quantity of trash, debris and litter removed.

\*Hours worked reported per employee: PM: Compliance Planning Manager; PP - Principal Planner; P - Planner; PW Staff: Maintenance Staff; PW Asst. Manager: Assistant Manager

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

**3. PROJECT EVALUATION**

Measures of Success:

Measures of success will be based on the project schedule and work plan and will include a minimum of the following:

- Were project deliverables completed and delivered on time?
- Were project deliverables completed within the scope?

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

Monitoring and Maintenance Program:

Monthly inspections will be conducted to note any damage to the Coanda™ filters and service them needed. Damage will be reported to the contractor (Task 1).

Cleaning will be completed in order to remove trash and debris collected by the Coanda™ filters. Cleaning will utilize a 1-man Public Works crew and equipment costs.

Additional maintenance will be performed after rainfall events that produce runoff (greater than 0.2 inches) at the McCarron Airport gage. The data collected at this location is representative of any given location in the Las Vegas Valley.

The volume of debris removed from the Coanda™ filters will be tracked. Types of material being carried in the flow, e.g., litter, plant debris, etc., will be sorted and reported to NDEP. CCWRD will collect and analyze the debris throughout the life of the grant..

#### 4. PROJECT SCHEDULE

Include key dates for completion of major tasks to be accomplished and submittal of associated deliverables:

Quarterly and final reporting will be completed based on the schedule dictated by NDEP. Full program development will occur between July 2023 and October 2023. Installation and monitoring of the Coanda™ curb inlet filters will begin by November 2023 and will run through the end of the project, June 30, 2025.

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

## 5. CONTINGENCY PLAN

Describe alternative actions to be taken if the project cannot be completed as originally proposed:

Timeline: Should CCWRD experience an issue with the stated timeline, CCWRD will contact NDEP and determine an acceptable solution.

Budget: Should CCWRD experience an issue with the stated budget, CCWRD will contact NDEP and work toward an acceptable solution.

Drought Conditions: If climatic conditions result in less than normal rainfall, CCWRD will contact NDEP and work to determine an acceptable alternative.

COVID-19: Should CCWRD experience COVID-related impacts to the stated deliverables, CCWRD will contact NDEP and work towards an acceptable alternative.

Maintenance Schedule: If preliminary field data reveals that the Coanda™ filters require frequent maintenance, CCWRD will contact NDEP and determine a revised schedule, which may require a budget revision.

Cash Match: If staff cash match hours are unable to cover the budget estimates, CCWRD can add cash funding from the CCWRD budget.

## 6. PROJECT BUDGET DETAIL

*Provide project budget detail by attaching a separate budget document in the proposal submittal email.*

*Use Microsoft Excel spreadsheet format.*

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

**7. REFERENCE DOCUMENTS AND CITATIONS**

N/A

**8. SUPPLEMENTAL INFORMATION**

Submit electronically the following documents in Microsoft Word and/or Excel format or portable document format. Check those that apply and which will be submitted concurrently with this proposal. Items in **bold** are required to be submitted:

- Project Location Map**
- Project Partner(s) Letters of Support
- Project Partner(s) Letters of Commitment (To provide inkind or cash match)
- Negotiated Indirect Cost Rate Documentation
- Project Tasks, Additional Detail (3 pages maximum, 8.5" x 11", 10 pt font minimum)
- Project Budget Detail (Excel Format)**

NEVADA DIVISION OF ENVIRONMENTAL PROTECTION  
WATER QUALITY PLANNING  
NONPOINT SOURCE BRANCH

***For Agency Use (BWQP) Only:***

Received by: --      Reviewed by:--

Date Received: Click or tap to enter a date.

Determination of Eligibility:

- Eligible
- Ineligible

Additional information required to make determination:

- Yes
- No

Request for Additional Information, Date: Click or tap to enter a date.

Notice of Determination, Date: Click or tap to enter a date.

Notes: