



NEVADA DIVISION OF ENVIRONMENTAL PROTECTION
WATER QUALITY PLANNING
NONPOINT SOURCE BRANCH

319(h) Grant Proposal E-Form

Refer to RFP No. 319-2021-01,

<https://ndep.nv.gov/water/rivers-streams-lakes/nonpoint-source-pollution-management-program/cwa-319h-grants>

Submission Deadline: 5:00 PM, October 15, 2021

WQP Email Received, Stamped Received OR Postmarked

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 DUNS 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 _____ \$56,800.00
Total amount of non-federal match funds _____ \$58,073.37
(Cash + Inkind: Must be at least 50% of Total Project Cost.)
Total Project Cost _____ \$114,873.37



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

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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

1st County: Clark Other Counties ☐ Statewide

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

15010015 Las Vegas Wash HUC List 2 of 3 HUC List 3 of 3

15010005 Lake Mead HUC List 2 of 3 HUC List 3 of 3

HUC List 1 of 3 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.)

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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 the storm drain conveyances, Las Vegas Wash, and Lake Mead through 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:	<input type="checkbox"/>	--%	<i>TOTAL PERCENT MUST = 100</i>
	<input type="checkbox"/>	--%	
	<input type="checkbox"/>	--%	
	<input type="checkbox"/>	--%	

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

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Project Timeline:

Anticipated Project Start Date: 7/1/2022
Anticipated Project Completion Date: 6/30/2024

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

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

Primary Contact: Dean Mosher

Assistant Manager, Clark County Public Works Roads Division

5825 E. Flamingo Rd

Las Vegas, NV, 89122

2. SCOPE OF WORK (WORKPLAN)

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Introduction and Problem Statement.

In the Las Vegas Valley rainwater and precipitation are channeled into roads, gutters, washes, and the storm drain system and flow untreated to the Las Vegas Wash and 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 it to the municipal storm sewer system (MS4) and Lake Mead. While trash, debris, and sediment are within the MS4 system 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 the debris 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. The collection of trash and debris will be accomplished through the installation of Coanda™ curb inlet filters that employs stainless steel tilted wedge wire technology to capture and slough off trash. Unlike conventional filter devices which are prone to clogging, the Coanda™ curb inlet filters are designed to 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 capture debris dries quickly and remains dry. No special handling techniques are required for debris removal and can be disposed of as ordinary waste. All elements of the filters including Coanda™ 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: -- TMDL: --

Other:

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Goals:

The main goals of the project are:

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

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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™ curb inlet 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; P - 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 Coanda™ curb inlet filters. 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 Coanda™ curb inlet filters at an hourly rate of \$27.83 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 Coanda™ curb inlet filters handles high volumes of water. Staff will review field data and will determine the Coanda™ curb inlet filters flow capacity and 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 for the Coanda™ curb inlet filters to regularly service the screens after the grant period 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

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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?

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Monitoring and Maintenance Program:

Monthly inspections will be conducted noting any damage to the Coanda™ curb inlet filters and the filters will be serviced when they need cleaning. Damage will be reported to the contractor (Task 1).

Cleaning will be completed in order to remove trash and debris collected by the Coanda™ curb inlet 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 McCarran Airport gage. This is representative of any given location in the Las Vegas Valley.

The volume of debris removed from the Coanda™ curb inlet filters will be tracked. Types of material being carried in the flow, e.g., litter, plant debris, etc., will be completed and reported to NDEP. CCWRD will collect and analyze data throughout the course 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 2022 and October 2022. Installation and monitoring of the Coanda™ curb inlet filters will begin by November 2022 and will run through the project completion date of June 30, 2024.

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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 with NDEP 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 reveal that the Coanda™ curb inlet 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.

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6. PROJECT BUDGET DETAIL

Table A: Project Costs by Budget Category:

Category	Rate	319(h) Funds	Cash Match	Inkind Match	Total Budget
Salaries	Hourly				
Compliance Planning Manager	50.93	\$	\$3,055.80	\$	\$3,055.80
Principal Planner	47.71	\$	\$1,908.40	\$	\$1,908.40
Planner	31.85	\$	\$23,887.50	\$	\$23,887.50
Public Works Roads - Manager	60.60	\$	\$969.60	\$	\$969.60
Public Works Roads - Asst. Manager	51.52	\$	\$2,060.80	\$	\$2,060.80
Public Works Maintenance Staff	27.83	\$	\$1,781.12	\$	\$1,781.12
Fringe Benefits	% of Salaries				
Fringe Benefits for salaried employees		\$	\$14,138.55	\$	\$14,138.55
Operating	Actual Cost				
Coanda™ curb inlet filters Design and Fabrication		\$41,100.00	\$8,750.00	\$	\$49,850.00
Coanda™ curb inlet filters Delivery and Installation		\$15,700.00	\$	\$	\$15,700.00
		\$	\$	\$	\$
Travel	State Rate				
		\$	\$	\$	\$
IDC	% of TDC				
		\$	\$	\$	\$
Equipment	Actual Cost				
Vehicle Costs (Drain Truck)	25.36	\$	\$1,521.60	\$	\$1,521.60
		\$	\$	\$	\$
		\$	\$	\$	\$
Subcontract	Actual Cost				
		\$	\$	\$	\$
		\$	\$	\$	\$
		\$	\$	\$	\$
Totals:		\$56,800.00	\$58,073.37	\$	\$114,873.37

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Table B: Total* Project Costs by Task

*319(h) Funds + Cash Match + Inkind Match

	Budget Category							
	Salaries	Fringe Benefits	Operating	Travel	IDC	Equipment	Subcontract	Other
Project Task								
A. Grant Administration: Reporting, Invoicing, Preparation of Final Project Report	\$11,911.60	\$5,002.87	\$	\$	\$	\$	\$	\$
B. Contract for Coanda™ curb inlet filters	\$10,743.61	\$4,512.32	\$	\$	\$	\$	\$	\$
C. Install, monitor and maintain Coanda™ curb inlet filters	\$11,008.01	\$4,623.36	\$65,550.00	\$	\$	\$1,521.60	\$	\$
D.	\$	\$	\$	\$	\$	\$	\$	\$
E.	\$	\$	\$	\$	\$	\$	\$	\$
F.	\$	\$	\$	\$	\$	\$	\$	\$
G.	\$	\$	\$	\$	\$	\$	\$	\$
H.	\$	\$	\$	\$	\$	\$	\$	\$
I.	\$	\$	\$	\$	\$	\$	\$	\$
J.	\$	\$	\$	\$	\$	\$	\$	\$
Total Cost by Category:	\$	\$	\$	\$	\$	\$	\$	\$
Total Project Cost:								\$114,873.37

Explain "Other" Budget Category: [Click here to enter text.](#)

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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)

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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: